



*Jerome Lederer*

# JEROME FOX LEDERER

1902–2004

Elected in 1967

*“For air safety research.”*

BY DENNIS M. BUSHNELL

**J**EROME F. LEDERER, President Emeritus of the Flight Safety Foundation, died of congestive heart failure at Saddleback Memorial Medical Center in Laguna Hills, California, on February 6, 2004. He was 101 years old.

Born in New York City on September 26, 1902, Jerry became interested in aviation at an early age, stimulated by his attendance at the second aviation tournament in the United States in 1910 at Belmont Park, where one of the participants was the renowned Glenn Curtiss. Jerry graduated from the newly instituted aviation curriculum at New York University (NYU) in 1924 with a B.S. in mechanical engineering with aeronautical option. He received a master’s degree in mechanical engineering from NYU in 1925 and was subsequently assistant to the director of the NYU Guggenheim School of Aeronautics. Jerry was responsible for building, calibrating, and operating NYU’s 40-mph wind tunnel.

After a brief stint as a surveyor for the West Shore Railroad, Jerry began his career in aviation as the only aeronautical engineer working for the U.S. Airmail Service in 1926 and 1927. His job was to develop specifications, test parts, and examine wreckage to determine their “repairability.” His experiences in this, his first nonacademic professional position, started him in the direction of aviation safety (and eventually industrial safety), the subjects of his entire career. Many people, in many generations worldwide, are alive today thanks to the creativity and continuous efforts of Jerry Lederer.

Jerry was proud that his career made it possible for professional pilots to obtain life insurance at the same rates as clergymen. In 1926, about one in four Airmail Service pilots was killed, usually in a fire consequent to a crash. An early example of Jerry's creative, hands-on approach to problem solving was an experiment in which an Airline Service airplane (a de Havilland 4 biplane) was accelerated at full power down a ramp and crashed into a concrete wall. Photography indicated that the crash caused fuel to spill out of the tank onto the hot exhaust manifold, which then ignited, causing a fire that often incinerated the pilot. Having identified this major problem, he proceeded to redesign the aircraft, reduce pilot morbidity, and, in the process, publish his first flight-safety bulletin. Around this time, he became friends with Charles Lindbergh, one of the airmail pilots, and, at Lindbergh's request, he inspected the Spirit of St. Louis the day before Lindy's historic transatlantic flight. Jerry's oft-quoted comment after the inspection was, "I did not have too much hope that he would make it."

In 1927, Jerry became a consultant to airplane manufacturers and an insurer, and in 1929, he became chief engineer of Aero Insurance Underwriters in charge of loss prevention and safety. He remained in that position until 1940, evaluating aviation risks, reducing losses through safety audits and educational programs, and disseminating safety bulletins and newsletters on how to improve safety.

From 1940 to 1942, he was a member of the Civil Aeronautics Board (predecessor of the Federal Aviation Administration [FAA]) and director of the Bureau of Flight Safety (a predecessor of the National Transportation Safety Board), where he was responsible for rule-making and accident investigation. He developed the accident investigation procedures that are still followed by government and military safety investigation groups. Several of his decisions during this time had lasting impacts, including requirements that aircraft be equipped with flight data recorders and blinking anti-collision lights.

During World War II, Jerry was named director of training and head of the administrative section of the Airlines War Training Institute, where he developed a program that trained some

10,000 pilots and 35,000 maintenance technicians for the Air Transport Command. Later in the war, he was operations analyst for the Second Air Force and was appointed to the U.S. Strategic Bombing Survey in Europe.

In 1947, at the request of airline engineers and executives, he initiated, and directed for some 20 years thereafter, an aviation safety information service, Engineering for Safety, that later became the Flight Safety Foundation. This nonprofit organization disseminated information on operational problems that transcended competing commercial interests and national borders and conducted research in several areas. He also instituted the worldwide exchange of safety and prevention information and experiences. In 1950, in addition to his responsibilities with the Flight Safety Foundation, he became the director of the Cornell Guggenheim Aviation Safety Center.

In 1956, Jerry was appointed to President Eisenhower's seven-person Aviation Facilities Investigation Group, which modernized the air traffic control system and paved the way for the formation of the FAA. He also served on the International Civil Aviation Organization (ICAO) panel that integrated jet aircraft into the worldwide air transportation system. Jerry retired from the Flight Safety Foundation in 1967, and that same year, following the fire on the Apollo space capsule that killed three astronauts, was asked to establish and direct an office for the safety of manned space flight for the National Aeronautics and Space Administration (NASA). He later became director of safety for all NASA activities.

During his tenure at NASA, Jerry advocated changing the focus from safety per se to risk management and "systems safety engineering." He argued that safety/risk management should be "designed into" the product initially, with input from engineering, operations, and management personnel. He instituted a policy of rewarding, rather than punishing, those who admitted mistakes.

After retiring from NASA in 1972, his second retirement, Jerry remained active in the safety/risk management community. He served on numerous boards and panels and taught at the Institute of Safety and Systems Management at the University of

Southern California. In 1984, at the age of 81, he published two papers (“Past and Present in Air Safety” and “The Psychology of Copilot Assertiveness”). Starting in 1979, he served two three-year terms on the Advisory Council for the Institute of Nuclear Power Operations in the wake of the Three Mile Island accident, where he advocated applying aerospace risk management techniques to the nuclear power industry. He also served on government investigative panels for train and ship collisions.

During his remarkable career, Jerry became known as Mr. Aviation Safety and the Father of Aviation Safety, the “go-to” person first for aviation safety and later for industrial safety writ large. Jerry fulfilled this function with wit and creativity. He was acutely aware of the prevalence of human error, both in design and operation. “The alleviation of human error,” he said, “whether design or intrinsically human, continues to be the most important problem facing aerospace safety.”

In his later years, Jerry researched, spoke, and wrote about personnel safety problems, such as substance abuse, subtle cognitive incapacitation, cockpit boredom in an age of automatic systems, and the importance of interpersonal communications. Jerry was evidently of the opinion that automatic systems could be safer than human-operated systems, but he was also a consummate realist. “Of the major incentives to improve safety, by far the most compelling is that of economics,” he said. “The moral incentive, which is most evident following an accident, is more intense but relatively short lived.” In the course of his long career, he came to know not only Charles Lindbergh, but also many other brilliant individuals, such as Neil Armstrong and Werner von Braun.

Jerome Fox Lederer wrote a book, *Safety in the Operation of Air Transport*, in 1938, wrote and delivered hundreds of articles and presentations, and received about 100 honors and awards. He was elected to the National Academy of Engineering in 1967 for “air safety research.” His awards included selection as a “Laurel Legend” by *Aviation Week*, the Wright Brothers Memorial Trophy, Edward Warner Award from the ICAO, National Aeronautic Association Cliff Henderson Award, NASA Exceptional Service Medal, FAA Distinguished Service Medal, Daniel

Guggenheim Medal, Amelia Earhart Medal, Von Baumhauer Medal of the Royal Dutch Aeronautical Society, Airline Medical Directors Award, Aerospace Lifetime Achievement Award of the American Institute of Aeronautics and Astronautics (AIAA), American Society of Mechanical Engineers (ASME) Triodyne Safety Award, and K.E. Tsiolkovsky Medal from the Soviet Federation of Cosmonauts. He was awarded an honorary doctorate from Embry-Riddle University and was an honorary member of numerous organizations and societies, including the Airline Pilots Association and the Air Traffic Controllers Association.

The International Society of Air Safety Investigators established the Jerome F. Lederer Award for outstanding contributions to technical excellence in aircraft accident investigation in his honor. *Air Safety Magazine* named him the “aviation man of the century,” and he was inducted into the International Space Hall of Fame and the Safety and Health Hall of Fame. The Guggenheim Medal Citation sums up his contributions: “For his lifelong dedication to the cause of flight safety and his constant and untiring efforts to reduce the hazards of aviation.” In his “spare time,” Jerry was an avid canoeist, purportedly logging some 30,000 miles on canoeing trips in the northeast.

He is survived by Sarah, his wife of 68 years, of Santa Rosa, California; two daughters, Nancy Cain of Oklahoma City and Susan Lederer of Santa Rosa; and two grandchildren. Jerry Lederer often acknowledged the vital contributions of his wife to the success of the Flight Safety Foundation, which honored Sarah Lederer with a citation for her role in the initiation and nurturing of the foundation. The citation reads in part: “Sarah has always been at Jerry’s side or with him in spirit, sharing the difficulties and the victories.”