



Martin C. Hemsworth

MARTIN C. HEMSWORTH

1918–2009

Elected in 1980

“For contributions to all phases of aircraft gas turbine design and development including responsibility for first high bypass turbofan used worldwide.”

BY DONALD W. BAHR

MARTIN C. HEMSWORTH, a pioneer in the design and development of aircraft jet engines, died on March 28, 2009.

As an engineering leader at General Electric Aircraft Engines (GEAE), Martin was a significant contributor to the advancement of aircraft turbine engine technology for more than 60 years. Among his major accomplishments was his team leadership role, during the late 1960s, in the design, development, and qualification of the TF39 turbofan engine for the U.S. Air Force C5 Galaxy transport aircraft. This engine was the world's first high-bypass turbofan—a revolutionary design concept that rapidly transformed military and commercial aviation. With this concept, large thrust increases together with large fuel efficiency improvements were realized. This engine type is now extensively used in many military and commercial aircraft applications.

At GEAE, versions of the TF39 engine, the CF6 engine family, were soon evolved for commercial aircraft, including the Boeing 747. These efforts led, in turn, to the development of several other turbofan engine models for a large variety of aircraft applications and established GEAE as a major supplier of turbofan engines for both commercial and military aircraft.

Martin was elected to the National Academy of Engineering in 1980. He served on the Section 10 Membership Committee and on several study committees.

Martin was born on June 3, 1918, in Waterloo, Iowa. His parents were Carl A. and Gladys (nee Martin) Hemsworth. He attended the University of Nebraska, Lincoln, College of Engineering and Technology. He graduated in 1940 and immediately started his long career with GEAE.

His early assignments involved aircraft engine supercharger and jet engine test facility design efforts at the General Electric plant in Lynn, Massachusetts. In 1948 he was a part of an eight-person team sent to Cincinnati, Ohio, to set up a plant to manufacture J47 engines for the U.S. Air Force. During the next several years, in both Cincinnati and Lynn, Martin led a variety of military aircraft engine design teams. In 1964 he was designated the design team leader of the aforementioned TF39 engine project. In 1970 he was appointed to the newly established position of GEAE chief engineer. He held that post for most of the next 17 years. In this capacity he reviewed and monitored the entire array of GEAE's engineering activities, which encompassed turbofan, turbojet, and turboshaft engines for a broad spectrum of commercial and military aircraft as well as marine and industrial applications. As such, he was a key contributor to the evolution of all GEAE products during the 1970s and 1980s. He retired in 1987 but continued to participate in GEAE's activities as a senior consultant for the next 13 years.

In addition to his duties at GEAE, Martin was frequently called on to serve as a consultant to other General Electric business units. In particular, he often served as a consultant to General Electric's land-based gas turbine unit.

In addition to election to the National Academy of Engineering in 1980, Martin received several other honors. He received two prestigious General Electric awards for engineering excellence—the Ralph J. Cordiner Award in 1963 and the Charles Steinmetz Award in 1977. He was elected to the General Electric Propulsion Hall of Fame in 1987. He received the Society of Automotive Engineers (SAE) Frank W.

Kolk Award in 1964. In 2000 he received the American Society of Mechanical Engineers (ASME) R. Tom Sawyer Award. This award recognizes important and lasting contributions to the gas turbine industry. Martin had 18 patents and authored several journal papers. He was a fellow of ASME and SAE.

In 1994 Martin and his wife, Ann, established an endowed scholarship and fellowship for engineering students at the University of Nebraska, Lincoln. The university named an engineering lecture hall in their honor. In 2000 the university awarded Martin its Outstanding Alumnus Award for demonstrating ethics, community responsibility, and overall professional excellence.

Martin is survived by a son, John, and a brother, James. His wife, Ann, died in 1999. They were married for 53 years.

Martin was an exceptionally skilled engineer and an outstanding engineering leader. During a career that spanned six decades, he witnessed and directly participated in the explosive growth of aircraft jet propulsion from its earliest days. He was an important contributor to this spectacular progress. As a result, he was renowned and respected throughout the industry for his expertise and many innovations.

At GEAE he was similarly highly esteemed for his engineering excellence and for his very appreciable impact on the success and growth of the GEAE business. He was also highly esteemed for his always great enthusiasm, geniality, and abiding gentlemanliness. He was universally known as Marty by all of his associates. To generations of GEAE engineers, he was a role model and a valued adviser and mentor. To all of the many GEAE persons who enjoyed the opportunity of working with him, Marty is always fondly remembered as "The Chief Engineer."