



Ed. Jordan

Edward Conrad Jordan

1910-1991

By George W. Swenson, Jr.

EDWARD C. JORDAN, professor emeritus of electrical engineering at the University of Illinois at Urbana-Champaign, died after a short illness on October 18, 1991. He was eighty.

He spent his life from the age of seventeen in the practice of electrical engineering, having served successfully in the gamut of roles from radio broadcast technician through engineering student, industrial engineer, professor, researcher, administrator, author, editor, and consultant to government and industry over a span of six decades. His accomplishments have been recognized by numerous awards and offices.

Born in Edmonton, Alberta, Canada, on December 31, 1910, he attended the public schools of that city and graduated from Victoria High School in 1927. The following year he enrolled in the University of Alberta in the electrical engineering department and obtained a position as control operator in the university's radio broadcasting station, CKUA. He served in that position until 1935, supporting himself while he earned BSEE and MSEE degrees in 1934 and 1936. His first electronic development project was a pioneering automatic gain control system, which provided a 30-decibel compression ratio for the radio station's studio audio system. Upon receiving his master's degree, he sought a position in the electronics industry; however, the depression limited his options, so he accepted a position as an electric power engineer in the nickel mines of Sudbury,

Ontario. After one year in this situation, he went to Ohio State University to study for a Ph.D. Although handicapped by impaired hearing, for which he designed and built his own hearing aid, he earned the degree in 1940 for a thesis supervised by Professor William L. Everitt, who became a lifelong colleague and friend.

Dr. Jordan then spent a year teaching at Worcester Polytechnic Institute, after which he returned to Ohio State to join the electrical engineering faculty. In 1943 Everitt was called to war service in Washington, whereupon Jordan assumed the entire burden of electrical communication and electromagnetic theory courses, including the developing field of microwave technology. During this period, he initiated his successful career as a textbook author, collaborating with Everitt and others on *Principles of Radio* (Prentice-Hall, New York, 1942) and starting work on *Electromagnetic Waves and Radiating Systems* (Prentice-Hall, New York, 1950). In addition, he collaborated with George Sinclair on the measurement of aircraft antenna patterns by modeling.

In 1945 Everitt was appointed head of the Department of Electrical Engineering at the University of Illinois (Urbana Champaign campus), and Jordan joined the department as associate professor. As part of Everitt's mandate to develop the department into a leading teaching and research institution, Jordan founded the Radio Direction Finding Research Laboratory. He later assumed leadership of the Antenna Research Laboratory, and he continued with a regular load of classroom teaching and thesis supervision until 1954, when he became head of the electrical engineering department. At that time, he exchanged his career as a classroom teacher and hands-on researcher for that of an academic administrator, leading his department through revolutionary changes over the next twenty five years.

Probably his best-known work was the textbook *Electromagnetic Waves and Radiating Systems*, first published in 1950, which has influenced electrical engineering seniors and graduate students for forty years. It was reprinted many times over the next sixteen years, and in 1968 an extensively revised second edition was

published, coauthored with Professor Keith C. Balmain of the University of Toronto. It still has a wide audience, has been translated and published in both Spanish and Chinese (both in Taiwan and Beijing), and has been adopted by universities in more than thirty countries. During his active years on the Illinois faculty, Edward Jordan also edited major symposium volumes for the Institute of Electrical and Electronics Engineers' (IEEE) Antennas and Propagation Society and the Union Radio Scientifique Internationale, and published many review papers on antennas, electromagnetics, electronics, and electrical engineering education.

Edward Jordan was elected a fellow of the Institute of Radio Engineers, later the Institute of Electrical and Electronics Engineers, in 1953. In subsequent years he was awarded honorary life membership by the IEEE Antennas and Propagation Society, and other IEEE awards including the Education Medal (1968) and the Centennial Medal (1984). He served in several IEEE national offices and committees.

In 1974 he was elected an eminent member of Eta Kappa Nu, the North American electrical engineering honor society, and through the years he was honored for his professional accomplishments by the University of Illinois, the Ohio State University, and the University of Alberta.

In 1967 he was elected a member of the National Academy of Engineering (NAE) "For radio direction finding and antenna research." Subsequently he served on the NAE Committee on Telecommunications until 1974, as well as on several other ad hoc committees and panels dealing with telecommunications techniques and policy.

He was in demand as a consultant to industry, government, and universities. Over the years, he served on advisory boards and panels of the Department of Defense, the U.S. Air Force, the National Science Foundation, the Institute of Electrical and Electronics Engineers, the Union Radio Scientifique Internationale, Pennsylvania State University, University of California, Massachusetts Institute of Technology, University of Houston, Purdue University, and, of course, the National Academy of Engineering. In these voluntary public service duties, he was

widely traveled throughout the world, reinforcing his stature as a world leader in his profession.

Under Edward Jordan's leadership, the University of Illinois Electrical Engineering Department continued the evolution initiated by William Everitt, from an institution primarily devoted to undergraduate teaching to a major research and graduate teaching organization. The state government of Illinois budgeted few resources for research and graduate study. At the same time, the nation demanded of its universities much greater emphasis on advanced technical education and research, mainly in response to the perceived imperatives of the cold war and the challenge posed by the Soviet Union's launching of the first artificial Earth satellites. Resources were provided mainly in the form of research grants and contracts from federal agencies, which supported salaries for faculty and graduate students, equipment acquisitions, and (through "indirect cost" allowances) infrastructure improvements. Dr. Jordan managed these opportunities skillfully and wisely, recruiting an outstanding faculty and encouraging new initiatives in promising research directions, always with primary emphasis on quality. The result, by the time of his retirement in 1979, was the country's largest department of electrical engineering (one hundred professors, not including computer science), which consistently ranked among the top four in surveys of quality of research and graduate education. At that time, the department was producing annually the country's largest number of combined undergraduate and graduate electrical engineering degrees. During his term as head, Jordan signed over six hundred Ph.D. theses in electrical engineering.

Upon his retirement, he was asked by the Howard Sams Company to act as editor in chief of the seventh edition of the classical IT&T electronics handbook, *Reference Data for Radio Engineers*, a task that occupied much of his time until 1985. The handbook was renamed *Reference Data for Engineers: Radio, Electronics, Computer and Communications* to reflect the rapid evolution of the profession since the sixth edition in 1968. The book contains 48 chapters and 1,360 pages. At the time of his death, he was engaged in preliminary work on the eighth edition.

Edward Jordan was the son of Conrad and Erna Penk Jordan. He married Mary Helen Walker in September 1941, in Edmonton. She died June 1, 1986, in Urbana. He later married Caroline W. Egbert, who survives.

Also surviving are three sons, Robert of Cairo, Egypt; David of Helena, Montana; and Thomas of Eugene, Oregon; three grandchildren; and three stepdaughters, Virginia, Barbara, and Judith.

He was greatly admired and respected throughout radio and electronic engineering circles of the world. To the younger faculty members of his department, he was a father figure; to senior colleagues and fellow Rotarians, a friend and confidant and golfing partner. He will be missed by all.