



Joseph P. Rouse

JOSEPH E. ROWE

1927–2002

Elected in 1977

“For contributions to the theory and design of high-power microwave electron tubes and solid-state microwave devices.”

BY GEORGE HADDAD AND JONATHAN ROWE

JOSEPH E. ROWE, a leading pioneer in the development of microwave electron tube and solid state device technologies, and former vice president and chief scientist at Harris Corporation, Gould Corporation, and Pittsburgh Plate Glass, as well as former provost and dean of engineering at Case Western Reserve University and chair of electrical and computer engineering at the University of Michigan, died on October 23, 2002, at the age of 75.

Joe was born in Detroit on June 4, 1927, the son of an auto worker who emigrated from Cornwall, England, in 1920. Immediately upon graduation from high school, Joe enlisted in the U.S. Marine Corps and served in active combat in the Pacific theater. When his tour of duty ended in December 1946, Joe came home to study electrical engineering at the University of Michigan on the G.I. Bill. He always credited the Marine Corps with not only paying for his education but, more importantly, for teaching him the tough-minded discipline and unflinching work ethic that served him so well in his professional career. For the rest of his life, in all the best ways, Joe Rowe never stopped being a Marine.

Joe received his B.S.E. in electrical engineering and mathematics in 1951. In the summer of 1950 he married his college sweetheart, Anne Prine Rowe. Anne later distinguished

herself as a University of Michigan metallurgical engineer (B.S.E., 1950; Ph.D., 1970), and she and Joe became the first couple to each receive distinguished engineering alumni awards from their alma mater. Joe and Anne were married 52 years. Their son, Jonathan, was born in 1954 and their daughter, Carol, in 1956.

Joe received his M.S.E.E. and Ph.D. in electrical engineering also from University of Michigan in 1952 and 1955 respectively, and promptly joined the university's engineering faculty—thus began the “academic phase” of his career. While at Michigan, Joe literally “wrote the book” on microwave electron tube devices and won the university's prestigious Distinguished Faculty Achievement Award in 1970 for his outstanding research and teaching and for mentoring scores of fine engineers. He served as director of the Electron Physics Laboratory from 1958 to 1968, where he managed and developed research programs in microwave electron tube devices, gaseous plasmas, and semiconductors. He was appointed chair of electrical and computer engineering in 1968 and served in that position until he left the university in 1974.

Joe was not only a first-rate scientist who made very significant technical contributions, he was also a great visionary and an astute businessman. He was a major pioneer in the area of microwave devices and, in particular, vacuum tube devices, such as traveling wave tubes and magnetrons, which are still in wide use today in many applications, including high-power communication and radar systems as well as microwave ovens. He wrote a book in 1965, *Nonlinear Electron Wave Interaction Phenomena* (New York: Academic Press), that to this day is a standard in the field.

Joe was an excellent researcher who published many seminal papers and supervised many Ph.D. students who went on to occupy leadership positions in academia and industry. After spending approximately 20 years on the faculty of the University of Michigan, serving as director of the Electron Physics Laboratory and chair of the department, he accepted the position of dean of engineering at Case Western Reserve University. He then went on to industry, where he held

several important positions as vice president at Harris, Gould, Pittsburgh Plate Glass, and the Dayton Research Institute.

Under Joe's leadership, the Electron Physics Laboratory was one of the premier laboratories on campus and was the forerunner of the present Solid State Electronics Laboratory. During his years at Michigan, he also served as a consultant to several major industries and government laboratories.

Joe was truly an accomplished individual who made an impact during his long and distinguished career. In recognition of his accomplishments, he was elected a fellow of the Institute of Electrical and Electronics Engineers (IEEE), which is the highest honor for an electrical engineer. He was also elected a member of the National Academy of Engineering, which is the highest honor for any engineer. He served on many national committees, such as the Army Science Board and the Advisory Group on Electron Devices for the U.S. Department of Defense. He also chaired many conferences and symposia and provided excellent professional service to IEEE, the National Academy of Engineering, and other organizations.

In 1974, Joe became dean of engineering at Case Western, and soon thereafter was appointed provost. He very much enjoyed his time there, but in 1980 the Harris Corporation made him an offer he could not refuse—Harris bought Joe's "Shared Applications" business, which he had started while at Michigan to help in the design of electron tube devices, and, more importantly, gave Joe the opportunity to test his talents in the competitive world of private industry. This began the private-sector phase of Joe Rowe's career.

From 1980 to 1993, Joe worked as vice president and chief scientist, first at Harris in Melbourne, Florida, next at Gould Corporation in Chicago, and finally at Pittsburgh Plate Glass in Pittsburgh. For these three Fortune 500 companies, Joe was the perfect hire because he was able to apply his vast detailed academic expertise to their practical commercial engineering problems. For Joe, at a personal level, all three private industry jobs were immensely satisfying because they allowed him to engage fully both sides of his personality—the creative academic side and the hard-headed practical Marine side.

By way of one modest example, the next time you are in your car, and you think about how well your windshield keeps the heat out, compared to, say, your 1964 Dodge or even your 1985 Chevy, thank Joe Rowe because in the later stages of his career, Joe did a lot of truly outstanding work for Pittsburgh Plate Glass on glass and light refraction issues.

In 1993, Joe retired from the company, but retirement for him did not mean hitting golf balls in Florida. Instead, he accepted the position of director of the University of Dayton's Research Institute—what most people would regard as a full-time job, but for Joe, at age 66, it was a reduced schedule that afforded him the chance to get back to his first love: mentoring young engineers, as he had done a generation earlier at the University of Michigan.

Although Joe Rowe officially departed the University of Michigan in 1974, he never really left. He served in leadership roles on several fund-raising campaigns in the 1980s and 1990s. Later, in 2002, he and Anne endowed a faculty chair in electrical engineering and computer science (EECS) at the University of Michigan's Engineering College. Joe was also the first recipient of the EECS department's Distinguished Alumni Award. Perhaps most revealingly, official university records disclosed that, of the 324 home football games that Michigan played between 1946 and 2000, Joe attended approximately 300—despite living in Cleveland, Florida, Chicago, Pittsburgh, and Dayton during almost half of those years. Right to the end, Joe Rowe was a Michigan man, through and through. He was a very loyal alumnus and helped the department and the college on many occasions, particularly as a member of the national advisory committees for both and in development activities for the college. He was the first chair of the EECS Advisory Committee when it was established in 1986.

With all of Joe's accomplishments and superb professional career, he was always the most proud of his family and their accomplishments and often spoke about them. In particular, he was excited and pleased when Anne decided to enroll in the graduate program in chemistry and receive her Ph.D.

To Joe's great credit, he did not abandon his son Jonathan—the proverbial wastrel child—even when Jonathan decided to become a lawyer instead of an engineer (imagine Joe's dismay). Joe took great pride in Jonathan starting his own law firm, much as Joe had started "Shared Applications" a generation earlier. But Joe was most delighted when his daughter, Carol, was appointed director of engineering communications for the University of Colorado, Boulder. At least one acorn didn't fall so far from the tree.

It would be a great understatement to say that Joe Rowe is sorely missed, in all the many places where he plied his talents, by his family and friends, and of course most of all by his loving wife, Anne, and their children. Additional survivors included his father, Joseph, who succeeded him in death in 2005; his brother, Donald; and four grandchildren—Rachel, Alethea, Kyla, and Aaron. As the years go by, we who are left behind also realize, more and more, how much Joe taught us by his great example of unwavering personal integrity and plain old-fashioned hard work.