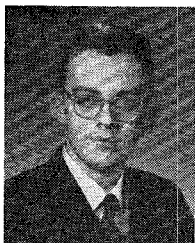


# Contributors



**Thomas E. MacKenzie** was born in Weymouth, Mass., on March 10, 1936. He received the B.S. degree in electrical engineering and the M.S. degree in physics from Northeastern University, Boston, Mass., in 1958

and 1963, respectively.

From 1954 to 1962 he was associated with the Andrew Alford Consulting Engineers, Boston, Mass., where he was engaged primarily in the development of impedance measuring equipment. Since 1962, he has been with the General Radio Company, West Concord, Mass., where he is presently engaged in the development of precision coaxial instruments and standards.

Mr. MacKenzie is a member of Tau Beta Pi.



**Sally J. Naumann** received the B.A. degree in physics from Wellesley College in 1953.

She has since been associated with the Cloud Physics Laboratory and the Atmospheric Electricity Laboratory of the Air

Force Cambridge Research Laboratories, Bedford, Mass. In 1956 she joined the Microwave Physics Laboratory, AFCRL, where she has worked on trough waveguide antennas and at present is working on dielectric resonators.



**Albert E. Sanderson** (A'50-M'54-SM'63) was born in Bethlehem, Penn., on August 8, 1928. He received the A.B. and A.M. degrees in engineering sciences and applied physics in 1949 and 1950, respectively, from Har-

vard University, Cambridge, Mass., where he is presently working towards the Ph.D. degree in electromagnetic theory.

From 1950 to 1957 he was employed by Aircraft Radio Corporation, Boonton, N. J., where he designed VHF and UHF receivers, transmitters, and antennas for aircraft communications. In 1958 he joined General Radio Company, West Concord, Mass., and engaged in the theory and design of low-noise transistorized amplifiers. Subsequently

he shifted to the microwave field, and developed methods of high-precision measurement in coaxial lines, which were applied to the design of a precision coaxial connector, slotted line, and termination. In 1965 he returned to Harvard University as a Teaching Fellow in the Department of Engineering and Applied Physics, under the Graduate Traineeship Program of the National Science Foundation.



**Ernst Schlömann** was born in Borgholzhausen, Germany, on December 13, 1926. He received the M.S. and the Ph.D. degrees, both in theoretical physics, from the University of Göttingen, Germany, in 1953 and 1954, re-

spectively. From 1954 to 1955 he did postdoctoral work in theoretical solid-state physics at Massachusetts Institute of Technology, Cambridge, Mass., under a Fulbright Scholarship.

In 1955 he became a full-time member of the Raytheon Research Division after having been employed on a part-time basis since November, 1954. His field is the theoretical study of ferromagnetic materials and their application to microwave devices. During the academic year 1961 to 1962, he served as a Visiting Associate Professor at the W. W. Hansen Microwave Laboratory, Stanford University, Stanford, Calif. He returned to Raytheon in June 1962 to resume his research on ferromagnetic materials. In April 1964 he was advanced to the rank of Scientific Fellow. This special recognition of outstanding research or engineering achievement was instituted by Raytheon in 1962 and has been given to only nine members of the Company's professional staff. He is the first scientist in the Research Division to be so named.

Dr. Schlömann is a Fellow of the American Physical Society and is a member of Sigma Xi.



**Robert Seckelmann** (M'62) was born in Schwelm, Germany, on January 17, 1932. He received the Diplom-Ingenieur degree (equivalent to the M.S.) in electrical engineering from the Technische Hochschule, Aachen, Germany, in 1957. Subsequently he studied

solid-state masers at the Heinrich-Hertz Institut, West Berlin, Germany. He received the Doktor-Ingenieur degree (equivalent to the Ph.D.) in electrical engineering from the Technische Universität, Berlin, Germany, in 1962.

He joined the Microwave Devices Group of the Electronics Laboratory, General Electric Co., Syracuse, N. Y., in 1963, where he is presently engaged in the development of ferrite devices.



**James C. Sethares** (M'65) was born in Hyannis, Mass., on December 13, 1928. He received the B.S. degree in electrical engineering in 1959 from the University of Massachusetts, Amherst, and the S.M. degree in 1962

from the Massachusetts Institute of Technology, Cambridge.

From 1959 to 1962 he was a teaching assistant in the Electrical Engineering Department of M.I.T. In 1962 he joined the Microwave Physics Laboratory at AFCRL, Bedford, Mass., as a research engineer to investigate fundamental interactions between electromagnetic waves and matter. He has specialized in the study of microwave magneto-elastic properties of ferromagnetic materials. He is a member of Tau Beta Pi, Sigma Xi, Phi Kappa Phi, and RESA.



**J. Paul Shelton, Jr.** (M'56) was born in Detroit, Mich., on December 24, 1931. He received the B.S. degree in physics from Ohio State University, Columbus, in 1953. He is now enrolled in a graduate study program at

the Catholic University of America, Washington, D. C.

He has worked at Applied Physics Laboratory (1953-1954), Melpar, Inc. (1954-1958), and Keltec Industries (1958-1960). He was one of the founders of Radiation Systems, Inc., Alexandria, Va., in 1960, and became Vice President for Advanced Development. Since the fall of 1964, he has been a member of the staff of the Institute for Defense Analyses, Arlington, Va. His fields of professional activity have included microwave and antenna systems and components and radar systems.