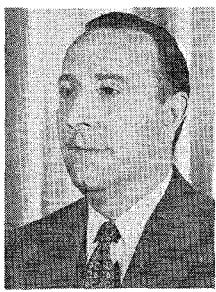




TORE N. ANDERSON was born in Västerås, Sweden. He is a graduate of Oregon State College and Cooper Union, with degrees in electrical engineering. During the war, he served with the Engineer Research and Development Agency, Fort Belvoir, Virginia, as Project Officer on underwater mine detectors and Chief, Laboratory and Test Section, engaged in design and development of mine detectors.

After the war, he was employed by Electrical Testing Laboratories in New York. Since 1948, Mr. Anderson has been with Airtron, Inc., as a Project Engineer, and as Engineer-in-Charge of the Engineering Laboratory, engaged in the development of rigid and flexible waveguide components. In 1951, he was appointed Chief Engineer engaged in the design and development of microwave components. In 1954, Mr. Anderson was elected to the Board of Directors and appointed Vice President and Chief Engineer.



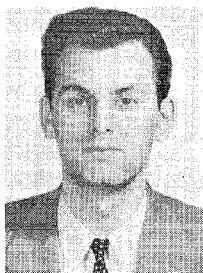
MAURICE ARDITI was born on March 1, 1913 in Paris, France. In 1933, he received a degree in physics engineering at the Ecole de Physique et Chimie Industrielles of Paris; in 1934, a degree in electrical engineering at Ecole Supérieure Electrique; and in 1935, an M.S. in physics and chemistry from the Sorbonne University, Paris. He has been associated with the I.T.T. system since 1939 and

with the Federal Telecommunications Laboratories since 1944, working on development of UHF tubes and microwave receivers for radio links. He is now engaged as a Senior Project Engineer in the development of the Microstrip line. Mr. Arditi is a senior member of IRE.



ROBERT M. BARRETT was born in Farmington, Utah, on March 3, 1920. He received his B.S. degree in electrical engineering in 1942 from the University of California and has done post-graduate work in physics at MIT and Boston University since 1946. On active duty with the U.S. Air Force, he did research on multiphase oscillator circuits and semi-automatic blind aircraft landing. Since 1946,

he has been on the staff of the Air Force Cambridge Research Center, primarily concerned with research on advanced antennas and associated circuitry for military applications. At present, he is Chief of the Airborne Antenna Section.



NICHOLAS A. BEGOVICH (S'41-A'48) was born on November 29, 1921, in Oakland, California. He received the B.S., M.S., and Ph.D. degrees in electrical engineering at the California Institute of Technology in 1943, 1944, and 1948, respectively. From 1944 to 1948, he was employed by the California Institute of Technology as a research engineer on various war research projects, and as a teaching fellow and instructor in the Electrical Engineering Department.

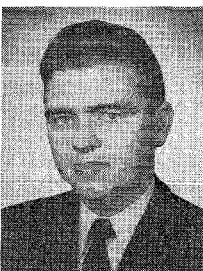
In June, 1948, he joined the Antenna and Microwave Group at Hughes Aircraft Company, Culver City, California. In 1951, he was loaned for a special study to the Office of the Secretary of Defense, Washington, D.C. Since his return to Hughes, he has been involved in radar systems design and analysis.

Dr. Begovich is an associate of AIEE and a member of the American Physical Society, the Operations Research Society of America, and Sigma Xi.



KENNETH G. BLACK was born in Chicago, Illinois, on October 6, 1919. He received the B.S. degree in electrical engineering from the Illinois Institute of Technology in 1944. He received the M.S. degree in 1951 and the Ph.D. degree in 1953, both from the University of Wisconsin. Dr. Black has been employed by the Naval Research Laboratory, Washington, D.C., and by the Square D Company, Milwaukee, Wisconsin. He is now with the Analytical Engineering Section of the General Electric Company.

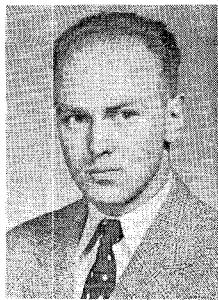
He is a member of Eta Kappa Nu, Tau Beta Pi, Sigma Xi, and AIEE.



E. H. BRADLEY (A'51) was born on December 8, 1927, in Hampton, Virginia. He received the B.S. degree in electrical engineering, summa cum laude, from Duke University in 1949, and the M.S. degree in 1950 from MIT.

Since 1950, Mr. Bradley has been employed by Melpar, Inc., of Alexandria, Virginia, in the development of missile guidance and submarine and aircraft detection systems. He is currently serving as Project Engineer in charge of the design and development of microwave components and receivers.

He is a member of Phi Beta Kappa, Tau Beta Pi and Sigma Xi.



ERIC C. CARLSON was born in New York City on February 27, 1927. He served in the U.S. Navy from 1944 to 1946 as a radio technician maintaining radio and radar gear. He was a cooperative student at MIT and Philco from 1948 to 1952, receiving his B.S. in electrical engineering in 1952. Mr. Carlson has been employed by Sylvania since 1952 as a microwave engineer working on an improved rotary joint, crystal evaluation studies, crystal mounts, and circular waveguide propagation studies.

Mr. Carlson is a member of IRE.



SEYMOUR B. COHN (S'41-A'44-M'46-SM'51) was born in Stamford, Connecticut in 1920. He received the B.E. degree in electrical engineering from Yale University in 1942; the M.S. degree in communication engineering in 1946, and the Ph.D. degree in engineering sciences and applied physics in 1948, both from Harvard University. From 1942 to 1945, he was employed as a special re-

search associate by the Radio Research Laboratory of Harvard University, also representing that Laboratory as a technical observer with the U.S. Army Air Force in the Mediterranean Theater of Operations. He worked at Sperry Gyroscope Company from 1948 to 1953, where he held the position of research engineer in the Microwave Instruments and Components Department.

Since February, 1953, Dr. Cohn has been with the Stanford Research Institute, as head of the Microwave Group of the Antenna Systems Laboratory. He is a member of Tau Beta Pi and Sigma Xi.



H. WARREN COOPER, III, (S'48-A'50) was born in Chicago, Illinois in 1920. He received his B.A. degree in electrical engineering from the New Mexico College of Agriculture and Mechanical Arts in 1947 and his M.S. degree in electrical engineering from Stanford University in 1948. During the period 1942-1946, he served with the U.S. Army, Office of Strategic Services, and during

1947-1948, he was teaching and completing research work at the New Mexico College of Agriculture and Mechanical Arts and Stanford University. In 1948, he joined the engineering staff of Airborne Instruments Laboratory, Mineola, New York.

Mr. Cooper was appointed head of the Antenna and Microwave Section of the Maryland Electronic Manufacturing Corporation, College Park, Maryland, in 1953.



WINFIELD E. FROMM was born in Haddonfield, New Jersey, in 1918. He received his B.S. degree in electrical engineering from Drexel Institute of Technology in 1940 and his M.E.E. degree from Polytechnic Institute of Brooklyn in 1948. In 1940, he joined Transcontinental and Western Air, Inc., as an aircraft radio engineer. In 1941, he joined Columbia University's Airborne Instrument

Laboratory and spent the next four years as a project engineer on magnetic airborne detector development. He served in the South Pacific as a technical advisor to the U.S. Navy on anti-submarine warfare in 1943 and 1944.

Remaining with Airborne Instruments Laboratory after it became commercial in 1945, he has done development work on magnetic airborne detectors, antenna pattern measuring systems, automatic SWR and impedance plotters, and various microwave components and equipment. He became assistant supervising engineer of the Special Devices Section in 1949.

Mr. Fromm belongs to Phi Kappa Phi, Tau Beta Pi, Eta Kappa Nu, and is a Senior Member of IRE.



ALBERT D. FROST (S'45-A'52) was born in Boston, Massachusetts, in 1922. He received the B.S. degree from Tufts College in 1945, the A.M. degree in Applied Science from Harvard in 1947, and the Sc.D. degree in Physics from MIT in 1952. Since 1947, he has been a faculty member of the Department of Physics and a Research Associate in the Research Laboratory of Physical Electronics at Tufts College. Presently, Dr. Frost is Assistant Professor of Physics.

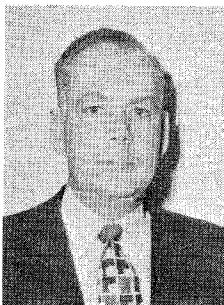
He is a member of Phi Beta Kappa, Sigma Xi, Sigma Pi Sigma, the American Physical Society, and the Acoustical Society of America.



EUGENE G. FUBINI was born in 1913 in Italy, where he completed his studies with a Doctor of Physics degree in Rome under Fermi in 1933. From 1935 to 1938, he did research for the National Electric Technical Institute, Italy. He worked with Columbia Broadcasting System in their General Engineering Department, Short Wave Division, from 1938 to 1943, during which time, he was acting engineer

for the design and installation of VHF links. During the war, he was a research associate at Harvard Radio Research Laboratory and technical observer in countermeasure work with the Eighth Air Force in England. In 1945, he became a special consultant to the Air Communications Officer, Headquarters,

U.S. Air Force, Washington, D.C. From 1945 to date, he has been with Airborne Instruments Laboratory. In 1947, he was appointed Supervising Engineer of the Special Devices Section. Mr. Fubini was made a fellow of IRE in 1954.



JOHN W. GRIEMMANN (A'45) was born in Brooklyn, New York, in 1916. He received the degree of B.E.E. in 1936 and the M.E.E. degree in 1938 from Polytechnic Institute of Brooklyn, where he held a Research Fellowship from June, 1938, to September, 1939. He was a Research Engineer with Westinghouse Research Laboratories from 1939 to May, 1942, while studying toward the Ph.D. degree in physics at the University of Pittsburgh. In May, 1942, he returned to Polytechnic Institute of Brooklyn as a Research Associate, and received his D.E.E. degree from that school in 1946. He has since been with the Microwave Research Institute, becoming Associate Director in 1952. He was appointed Research Professor of Polytechnic Institute of Brooklyn in 1953.

Since 1945, Dr. Griemann has been a participant in the Army-Navy R.F. Cable Coordinating Committee, a member of the R.D.B. Sub-panel on Transmission Lines and Components, and a member of RETMA. He was Joint Chief Delegate for the U.S. to Sub-Committee 12-5 of the International Electrotechnical Commission at the 1954 Philadelphia meeting.

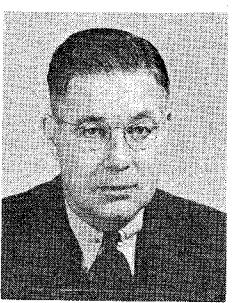
Dr. Griemann belongs to Eta Kappa Nu, Sigma Xi, AAAS, AIEE, and the Insulation Conference (NRC).



WILLIAM H. HAYT, Jr., was born in Wilmette, Illinois, in 1920. After receiving the degree of B.S.E.E. in 1942 from Purdue University, he joined the Sperry Gyroscope Company as an assistant project engineer and later as a field service engineer under contract to the U.S. Navy. He received his M.S.E.E. degree in 1948 from Purdue, remaining there to teach communications engineer-

ing until 1953, during which year, he completed the Ph.D. program at the University of Illinois.

Presently, Dr. Hayt is Associate Professor of Electrical Engineering at Purdue. He is a member of IRE, Eta Kappa Nu, Tau Beta Pi and Sigma Xi.



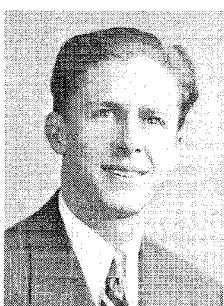
THOMAS J. HIGGINS was born in Charlottesville, Virginia in 1911. He received his degree in electrical engineering in 1932 and his M.A. degree in mathematics in 1937 from Cornell, and his Ph.D. in electrical engineering in 1941 from Purdue University, where he was an instructor in electrical engineering. He has also taught at Auburn Intercollegiate

Center (1933-34), Wyoming Polytechnic Institute (1935-37), Tulane University (1941-42), and Illinois Institute of Technology (1942-48). Since 1948, at the University of Wisconsin, he outlined and taught five new courses in electrical engineering.

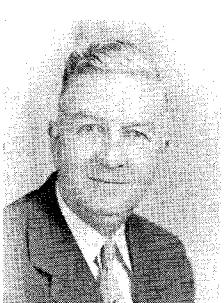
Dr. Higgins' publications cover a broad field including emphasis on analytical solution of electrical engineering problems, and several exhaustive bibliographies listing biographies of men of science and technology. He is a registered engineer in Illinois and Wisconsin, as well as a member of Sigma Xi, Eta Kappa Nu, AIEE, ASEE, NSPE, AAUP, the Mathematical Association of America, and the Wisconsin Society of Professional Engineers.



D. D. KING (M'46) was born in Rochester, New York, in 1919. He received the A.B. degree in engineering sciences from Harvard College in 1942, and the Ph.D. degree in physics from Harvard University in 1946. In 1943, he was a teaching fellow in physics and communications engineering, serving as a staff member of the pre-radar Officers' Training School at Crufft Laboratory, Harvard University. He was a research associate at Crufft Laboratory in 1945. In 1946, he was appointed research fellow in electronics and in 1947, assistant professor of applied physics at Harvard University. In 1948, he was appointed associate professor of physics in the Institute for Cooperative Research of Johns Hopkins University; in 1950, assistant director, and in 1954, associate director of the Radiation Laboratory. Dr. King is a member of Sigma Xi and the American Physical Society.



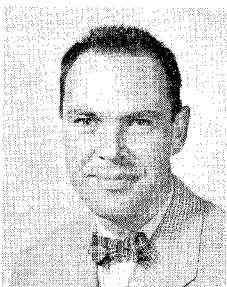
MAX MICHELSON was born in Riga, Latvia in 1924. In 1951, he received the B.E.E. degree from the College of the City of New York. He did graduate work at MIT in 1953 and 1954. From 1948 to 1951, he worked for Sintercast Corporation of America, where he took part in high temperature material development work. Since 1951, he has worked for the Raytheon Manufacturing Company, engaged in the development of microwave circuits and devices. He is a member of Tau Beta Pi and Eta Kappa Nu.



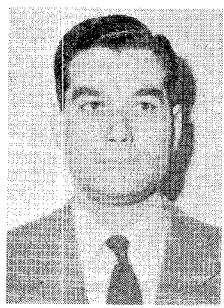
CHARLES R. MINGINS, born in Lawrence, Massachusetts, in 1899, is Professor of Physics and Director of the Research Laboratory of Physical Electronics at Tufts College. He holds the A.B. degree from Wesleyan University (1925) and the Ph.D. from Cornell University (1935). He is a member of Sigma Xi, Phi Beta Kappa, the American Physical Society, and other groups.



JOHN F. MOORE was born in London, England, in 1928. He received a B.S. degree in physics from MIT in 1949, and an M.S. degree in physics from MIT and Harvard in 1953, as a fellow of the National Science Foundation. Mr. Moore has worked for Sylvania Electric Products Corporation and for the Woburn Engineering Company. Since 1947, he has worked for the Raytheon Manufacturing Company in the development of heat transfer and photographic drying equipment, and since 1953, he has done work on microwave components and equipment.



MAURICE RINGENBACH (A'50) was born in New York City in 1923. He received his B.S. degree in electrical engineering from Polytechnic Institute of Brooklyn in 1948. During 1943-46, he was in the U.S. Army. From 1948 to 1950, he was on the engineering staffs of Airborne Instruments Laboratory and Bendix Radio, and from 1952 to 1954, he was on the research staff of the Johns Hopkins University Radiation Laboratory. Mr. Ringenbach joined the Maryland Electronic Manufacturing Corporation as assistant head of the Antenna and Microwave Section in 1954. He belongs to Eta Kappa Nu.



ARTHUR A. OLINER (M'47-SM'52) was born in Shanghai, China, on March 5, 1921. He received the B.A. degree in 1941 from Brooklyn College, and the Ph.D. degree in physics in 1946 from Cornell University. From 1941 to 1944, he was a graduate teaching assistant in the physics department at Cornell, and participated as a research assistant in an Office of Scientific Research and Development project at Cornell during 1944-1945.

Since 1946, Dr. Oliner has been with the Microwave Research Institute of Polytechnic Institute of Brooklyn, where he has been engaged in research in waveguide theory. While on a leave of absence, he spent the summer of 1952 at the Microwave Research Department of the Hughes Aircraft Company in Culver City, California. He has taught several graduate courses in physics and electrical engineering, and is a Research Associate Professor at the Institute.

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



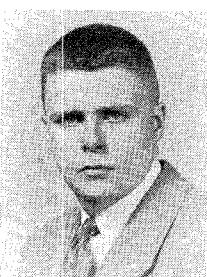
DONALD J. SOMMERS (A'54) was born in Clifton Springs, New York, in 1925. After serving in the U.S. Army Air Force as a radio technician from 1943 to 1945, he attended the Catholic University of America and received the B.E.E. degree in 1949. He joined the Glenn L. Martin Company of Baltimore, where he was engaged in the design and development of microwave antennas for three years.

Since November, 1952, Mr. Sommers has been with Sanders Associates, Inc., employed in the development of microwave printed circuits.



EUGENE N. TORGOW (S'48-A'49-SM'54) was born in 1925 in New York City. He received the B.E.E. degree from Cooper Union School of Engineering in 1946, and the M.E.E. degree at Polytechnic Institute of Brooklyn in 1949. During 1946-47, he was in the U.S. Army Air Force, doing radar repair and maintenance in the Pacific Theater. In 1948, he joined the staff of the Microwave Research Institute of Polytechnic Institute of Brooklyn, where he worked on research and development of microwave attenuators and power measuring devices. From 1951 to 1953, he established and supervised a microwave laboratory at the Allen B. DuMont Laboratories, East Paterson, New Jersey.

In 1953, Mr. Torgow returned to the Microwave Research Institute and since then, has been engaged in strip line and microwave filter development. He is a member of Sigma Xi and AIEE.



ROBERT L. PEASE was born in Fitchburg, Massachusetts, on July 13, 1925. He received the A.B. degree in physics from Miami University, Oxford, Ohio, in 1943, and his Ph.D. degree in physics from MIT in 1950. During the war, he was a naval radar officer. At present, he is Assistant Professor of Physics and Research Associate in the Research Laboratory of Physical Electronics at Tufts College. Dr. Pease is a member of Phi Beta Kappa, Sigma Xi, and the American Physical Society.

D. R. WHITE, Jr. (M'52) was born October 8, 1926, in Detroit Michigan. He received the B.S. E.E. degree from the University of Maryland in 1948 and in 1953, completed work on the M.S.E.E. degree from the same school. From 1948 to 1953, he was employed at the Naval Research Laboratories in Washington, D.C. He was employed by Melpar, Inc., of Alexandria, Virginia, from 1953 to 1954, as a senior engineer in the development of microwave components. Currently, Mr. White is employed at the Emerson Research Laboratories, Washington, D.C. He is a member of Tau Beta Pi.



NORMAN R. WILD was born in Hartford, Connecticut, in 1921. He attended Northwestern University as an undergraduate and did advanced study at MIT. He was engaged by the Cardox Corporation in 1940 as a research engineer and assisted in the development of automatic controls for the chemical industry. He joined the Raytheon Manufacturing Company in 1942. While there, he participated in the development of the SG Radar, organized the section which designed and manufactured all test production equipment for the Power Tube Division, and did fundamental K-band propagation studies in 1944, during which time, he also served as a consultant to the U.S. Navy Radio and Sound Laboratory.

He was responsible for the development of the radar range, the first electronic cooker built

commercially, research and development in the fields of microwave spectroscopy and moisture measurement and control by means of microwave systems, and design and development of RF systems and antennas for guided missiles and radio altimeters.

Presently an associate of Sanders Associates, Inc., Mr. Wild is also Assistant Secretary and Head of the Microwave Department of that company.



KURT E. ZUBLIN was born in Singen a.H., Germany, on March 27, 1923. He received the degree of a Diploma Engineer in Electrical Engineering from the Swiss Federal Institute of Technology in 1946. From 1947 to 1949, he was employed by the Research Department of PYE Radio Works, Ltd., Cambridge, England, doing research and development work in the microwave field. During

1950-51, Mr. Zublin was a member of the High Frequency Department of the Brown, Boveri Company, Baden, Switzerland, where he was responsible for the design of microwave transmitting and receiving equipment for experimental television transmissions.

In 1952, he joined the Microwave Applications Unit of the Electronics Laboratory, Electronics Division of the General Electric Company, Syracuse. His work has been concerned with the development of microwave receiver head-ends, studies of stable oscillators and transit time effects in microwave triodes.