

# Contributors

Wesley P. Ayres, for a photograph and biography, please see page 268 of the October, 1957, issue of these TRANSACTIONS.



Henry L. Bachman (S'51-A'52) was born in Brooklyn, N. Y., on April 29, 1930. He received the B.E.E. degree in 1951 and M.E.E. degree in 1954 from the Polytechnic Institute of Brooklyn.

Mr. Bachman has been employed since 1951 as an engineer by the Wheeler Laboratories, Great Neck, N. Y., where he has specialized in microwave antennas and transmission lines.

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

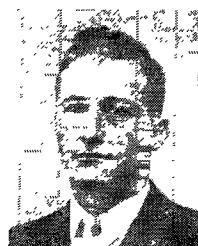


Richard C. Becker (S'53-M'56) was born on March 1, 1931, in Chicago, Ill. He received the B.S. degree in electrical engineering from Fournier Institute of Technology in 1953. In 1954 he was awarded the M.S. degree in electrical engineering, and in 1956 the M.S. degree in mathematics at the University of Illinois, where he is now completing the requirements for the Ph.D. degree in electrical engineering.

During the summer of 1952, Mr. Becker was employed by the Illinois Bell Telephone Company and participated in the engineering planning and design of a light-route microwave radio relay system. The following summer was spent at the Advanced Antenna Laboratory of the Andrew Corporation.

In 1954 he was engaged in research on microstrip transmission lines and components at the University of Illinois, and from September, 1954, to November, 1956, was employed there as research assistant in the Antenna Laboratory. His present position is that of research assistant in the Ultramicro-wave Laboratory at the University of Illinois, where he is working on the problem of submillimeter wave generation, and is a part-time member of the instructional staff of the Electrical Engineering Department.

Mr. Becker is a member of Eta Kappa Nu and Tau Beta Pi.



R. C. BECKER

W. Earl Bell was born on April 2, 1921, in Winnipeg, Man., Canada. He attended the University of Alberta, Edmonton, Alta., and the University of London in England.

From 1940 to 1945, he served as an electrical engineer with the Royal Canadian Navy. He then joined the National Research Council of Canada at the Chalk River Laboratories, Ont., Canada, working on atomic physics and cosmic rays.

He became affiliated with Newmont Exploration Ltd., Jerome, Ariz., in 1950, and was engaged in exploration geophysics and instrument research and development. At Varian Associates, Palo Alto, Calif., where he has been since 1954, he is concerned with atomic physics and geophysical research.

He has held an appointment as research associate in geophysics at Stanford University, Stanford, Calif., since 1957. He holds a U. S. patent, and has eight more pending.

Mr. Bell is a member of the American Physical Society, American Geophysical Union, Peninsula Geological Society, and the Society of Exploration Geophysicists.



A. Bloom was born in Chicago, Ill., on March 7, 1923. After attending the University of California in Berkeley for one year, he served with the U. S. Signal Corps from 1943-1946, including duty in China.

Returning to the University, he received the B.A. degree with honors in physics in 1947 and the Ph.D. degree in 1951. His dissertation concerned "Experiments on Scattering of 190-MEV Deuterons by Protons."

He was a research assistant at the Westinghouse Electric Company's Research Laboratories during the summer of 1947, and from 1948 to 1951 he was a teaching assistant at the University of California.

He has been employed by Varian Associates, Palo Alto, Calif., since 1951.

Dr. Bloom is a member of Phi Beta Kappa, Sigma Xi, the American Physical Society, and the American Association for the Advancement of Science.



W. E. BELL

Sanborn C. Brown was born in Beirut, Lebanon, on January 19, 1913. He received the B.A. and M.A. degrees from Dartmouth

College, Hanover, N. H., in 1935 and 1937, respectively, and the Ph.D. degree in physics from the Massachusetts Institute of Technology, Cambridge, in 1944.

From 1935-1937, he was an assistant in physics at Dartmouth. He was a teaching fellow at M.I.T. from 1938 to 1941, when he became an instructor. He was an assistant professor from 1945 to 1949. He then was appointed to his present position as associate professor of physics.

In 1941 he worked as a civilian with the Office of Scientific Research and Development.

Dr. Brown is a Fellow of the American Physical Society, and served as chairman of its Division of Electron Physics from 1951-1952, a Fellow of the AAAS, and treasurer of the American Association of Physics Teachers. He also served as secretary of the Gaseous Electronics Conference Committee, 1956-1957, and as a member of the AIEE Subcommittee on Electrical Properties of Gases during 1952-1955.



Herman N. Chait (A'55) was born in Boston, Mass., on February 15, 1924. He attended Northeastern University in Boston and transferred to Tufts College, Medford, Mass., where he obtained the B.S.E.E. degree in 1945. He has since done graduate work at the University of Maryland.



H. N. CHAIT

After serving for three years as an electronics technician in the U. S. Navy, Mr. Chait joined the Naval Research Laboratory, Washington, D. C., where he has done research and development work in the microwave region. He has also worked on the design of signal generators and test equipment. At present he is a member of the Microwave Antennas and Components Branch at NRL, doing research on antennas and microwave applications of ferrites.

Mr. Chait is a member of RESA and co-holder of the first Microwave Prize of the PGMTT.



A. BLOOM

J. F. Cline (A'43-SM'47) was born on June 19, 1917, in Cadillac, Mich. He received the B.S.E., M.S., and Ph.D. degrees in electrical engineering from the University of Michigan, Ann Arbor, in 1938, 1941, and 1950, respectively, and was employed in both the Engineering Research Institute and the Department of Electrical Engineering of that university from 1942 to 1957.

He was appointed assistant professor in 1950. During the summer of 1952 he was employed as research engineer in the Physical Research Unit of Boeing Airplane Company. While on leave from the university for the academic year 1953-1954, he was employed as design specialist in the antenna laboratory of the Long Beach plant of the Douglas Aircraft Company. During the summer of 1956, he was employed as research physicist at Hughes Research and Development Laboratories. Since February, 1957, he has been employed as senior research engineer in the Electromagnetics Laboratory of Stanford Research Institute, Menlo Park, Calif.

Dr. Cline is a member of AIEE, Eta Kappa Nu, and Sigma Xi.



J. F. CLINE

tronics at M.I.T., where he was concerned with the generation of submillimeter waves.

In 1951 Mr. Coleman became an associate professor in electrical engineering at the University of Illinois, where he established the Ultramicrowave Group in the Electrical Engineering Research Laboratory. He is presently a Professor on the Graduate Electrical Engineering staff, directing research on submillimeter wave generation.

He is a member of the American Physical Society, Sigma Xi, and Pi Mu Epsilon.

Gerard L. Hanley was born in Brooklyn, N. Y., on August 9, 1930. He received the B.S. degree in electrical engineering from the University of Notre Dame, South Bend, Ind., in 1952. From 1952 to 1954 he was employed by the Sperry Gyroscope Company in the Microwave Antenna and Component Development Department in Great Neck, N. Y. After two years of service in the U. S. Army, he returned

to Sperry to work with the same group. In June, 1957, Polytechnic Institute of Brooklyn, Brooklyn, N. Y. awarded him the M.E.E. degree.



G. L. HANLEY

L. B. Felsen was born in Munich, Germany, on May 7, 1924. He entered the United States in 1940, and during World

War II was concerned with work on electronic ballistic calibration devices in the U. S. Army. He received the B.E.E., M.E.E., and D.E.E. degrees from the Polytechnic Institute of Brooklyn, N. Y., in 1948, 1949, and 1952, respectively.

Since 1948, he has been employed at the Microwave Research Institute of the Polytechnic Institute of Brooklyn and presently holds the position of research associate professor. His work has been concerned chiefly with electromagnetic diffraction problems and microwave circuit and measurement techniques.

Dr. Felsen is a member of Eta Kappa Nu, Tau Beta Pi, Sigma Xi, and USA Commission 6 of URSI.

Dominic A. Fleri was born in Brooklyn, N. Y., on November 8, 1931. He received the B.S. degree in physics from the Polytechnic

Institute of Brooklyn, Brooklyn, N. Y. in 1953, and the M.S. degree in physics from New York University in June, 1958. He joined the Sperry Gyroscope Company in Great Neck, N. Y., in June, 1953 but was called to active duty with the U. S. Army Signal Corps in February, 1954. During

his two-year military service he was assigned primarily as an electronics instructor at the Signal School, Fort Monmouth, N. J.

He returned to Sperry in January, 1956, and since then he has been engaged in microwave applications in the Microwave Circuits Section of the Microwave Electronics Department, Great Neck, N. Y.

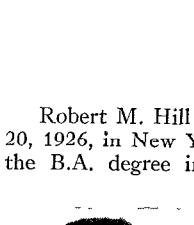


D. A. FLERİ

Hubert Heffner (S'49-A'52-SM'56) was born in Lincolnton, N. C., on December 26, 1924. He received the B.S. degree in physics in 1947 and the M.S. and Ph.D. degrees in electrical engineering in 1949 and 1952, respectively, from Stanford University, Stanford, Calif. From 1949 to 1951, he was a predoctoral fellow of the Atomic Energy Commission.

During World War II he served in the U. S. Army Signal Corps, and was in charge of several microwave relay stations in Germany. From 1952-1954, Dr. Heffner was on the technical staff of Bell Telephone Laboratories, where he was engaged in vacuum-tube research. Since 1954, he has been on the faculty of Stanford University, and is now associate professor of electrical engineering.

Dr. Heffner is a member of Phi Beta Kappa, Sigma Xi, and the American Physical Society.



Robert M. Hill was born on September 20, 1926, in New York, N. Y. He received the B.A. degree in physics from Cornell

University, Ithaca, N. Y., in 1949, and the Ph.D. degree in 1953 from Duke University, Durham, N.C., where he was successively a teaching assistant, research fellow, and research associate.

He served with the U. S. Army as a radio technician from



R. M. HILL

Paul D. Coleman (A'46-M'56) was born in Stoystown, Pa., on June 4, 1918. He received the B.A. degree from Susquehanna University, Selinsgrove, Pa., in January, 1940, the M.S. degree in physics from Pennsylvania State University in 1942, and the Ph.D. degree in physics from Massachusetts Institute of Technology in 1951.

Mr. Coleman was employed as a physicist with the Signal Corps, later Air Corps WADC, Dayton, Ohio, from May, 1942, to September, 1946. During this period he was engaged in work on electromagnetic theory, and received the Air Force Meritorious Civilian Award in 1946 for his contribution to aircraft antenna theory.

From 1946 to 1951, he was concurrently a physicist with the Air Force Cambridge Research Center and a research associate in physics in the Research Laboratory of Elec-



P. D. COLEMAN

1943 to 1945. He joined Sylvania Electric Products, Inc., in 1953, and is presently head of the Research Department at the Microwave Physics Laboratory, Mountain View, Calif.

Dr. Hill is a member of Sigma Pi Sigma, Sigma Xi, and the American Physical Society.

❖

Charles M. Johnson was born in Nashville, Tenn., on May 31, 1923. He received the B.E. degree in civil engineering from



C. M. JOHNSON

Vanderbilt University in Nashville in 1944, and was employed as a structural engineer until 1948, when he returned to graduate school at Duke University in Durham, N. C. He received the Ph.D. degree in physics in 1951 for microwave spectroscopy research in the

millimeter region. From July, 1951, until October, 1956, he was a staff member of the Radiation Laboratory of The Johns Hopkins University, Baltimore, Md., as research associate until 1953 and research scientist until 1956. Since then he has been research manager of the microwave and infrared sections of Electronic Communications, Inc., Timonium, Md.

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

❖

E. M. T. Jones, for photograph and biography, please see p. 458 of the October, 1958, issue of these TRANSACTIONS.

❖

Walter K. Kahn (S'50-A'51-M'56) was born on March 24, 1929, in Mannheim, Germany, and came to the United States in 1938. He completed his undergraduate studies at the Cooper Union School of Engineering, New York, N. Y., receiving the bachelor's degree in electrical engineering in 1951.

Upon graduation, Mr. Kahn was employed at the Wheeler Laboratories, New York, where he worked on microwave radar system de-



W. K. KAHN

velopment. Concurrently he engaged in graduate study at the Polytechnic Institute of Brooklyn, N. Y., receiving the master's degree in electrical engineering in 1954.

At that time he joined the staff of the Microwave Research Institute of the Polytechnic Institute of Brooklyn, where he is presently studying general diffraction theory and propagation in multimode waveguides.

Mr. Kahn is a member of Sigma Xi.

❖

R. H. Kingston (S'48-A'52-SM'58) was born in Somerville, Mass., on February 13, 1928. He received the B.S. and M.S. degrees

in electrical engineering from the Massachusetts Institute of Technology, Cambridge, in 1948. Under the co-operative plan in electrical engineering during the years 1945 to 1948, he worked at the Philco Corporation on component testing, radar system design, and frequency modulation and circuit theory. In June, 1951 he received the Ph.D. degree in physics from M.I.T., where his major field was the physics of solids.

He joined the staff of the Lincoln Laboratory at M.I.T. at this time, where he has been engaged in solid-state device research and development. From September, 1951 to September, 1952, on leave of absence from the Lincoln Laboratory, he was a member of the technical staff at Bell Telephone Laboratories in Murray Hill, N. J. He edited the book, "Semiconductor Surface Physics."

Dr. Kingston is a member of Tau Beta Pi and Sigma Xi, and a Fellow of the American Physical Society.

❖

Herbert Kirschbaum (A'55) was born in Cleveland, Ohio, on February 6, 1920. He received the B.S. degree in 1942 from

Cooper Union, New York, N. Y., thereafter entering the employ of the Westinghouse Electric Corporation. He received the M.S. degree from the University of Pittsburgh, Pennsylvania, under the Pitt-Westinghouse cooperative plan, in 1946. In the



H. KIRSCHBAUM

same year he joined the staff of The Ohio State University to teach and do research on pulse transformers.

During 1952-1953, he took a leave of absence from The Ohio State University to complete requirements for the Ph.D. degree at the Carnegie Institute of Technology, Pittsburgh, Pa. Upon returning to The Ohio State University, in addition to teaching, he was affiliated with the Antenna Laboratory of The University. He left Ohio State in September, 1957, to join the Systems Engineering Division of Battelle Memorial Institute, Columbus, Ohio, where he is currently engaged in research on servo systems.

Dr. Kirschbaum is a member of Eta Kappa Nu and Sigma Xi.

❖

Lawrence Levey (S'52-M'56) was born in Brooklyn, N. Y., on March 23, 1930. He received the B.E.E. degree in 1952 and the M.E.E. degree in 1953 from the Polytechnic Institute of Brooklyn, N. Y., where he currently is continuing his graduate studies.

In 1952-1953 Mr. Levey held a research fellowship at the Microwave Research Institute of the Polytechnic Institute of Brooklyn. Since then he has been employed at the Institute presently in the capacity of research associate.

His work has been concerned chiefly with the development of microwave power standards, multimode measurement techniques, and ferrite components.

Mr. Levey is a member of Eta Kappa Nu and Sigma Xi.

❖

David J. Lewis was born in Denver, Colo., on March 16, 1930. He received the B.S. degree in electrical engineering from

Massachusetts Institute of Technology, Cambridge, Mass., in 1955 and the M.S. degree from the University of Pennsylvania, Philadelphia, Pa., in 1957. Mr. Lewis has been employed as a research assistant and instructor by the University of Pennsylvania since 1955. He is currently engaged in radar interference problems.



D. J. LEWIS

Richard S. Mangiaracina was born on August 31, 1931, in Brooklyn, N. Y. He received the B.S. degree in physics from the Polytechnic Institute of Brooklyn in 1953. He worked for the Sylvania Electric Products Company and then served two years with the U. S. Army as an instructor in electronics.

In 1956, he became affiliated with the Sperry Gyroscope Company's Microwave Electronics Division in Great Neck, N. Y. In August, 1958, he became a research assistant in physics at the University of Buffalo.

R. MANGIARACINA

Jack L. Melchor (SM'56) was born on July 6, 1925, in Mooresville, N. C. He received the B.S. and M.S. degrees in physics from the University of North Carolina in Chapel Hill. His undergraduate studies were interrupted by military service in the U. S. Navy. In 1949 he worked as a civilian physicist with the U. S. Navy Mine Countermeasures Station.

While attending the University of Notre Dame, South Bend, Ind., in 1950 he was a U. S. Rubber Company Fellow in high polymer physics. In 1952 and 1953 he worked with the Missile Division of Bendix Aviation Corporation, and received the Ph.D. degree from Notre Dame in 1953. He then joined the Electronic Defense Laboratory of Sylvania Electric Products, Inc., Mountain View, Calif., where he was engaged in ferrite research at microwave frequencies.

In 1956 Dr. Melchor left Sylvania to form Microwave Engineering Laboratories, Inc., Palo Alto, Calif. He is president of the organization and does research and development on microwave components and systems. He is a member of Sigma Xi and RESA.

F. R. Morgenthaler, for a photograph and biography, please see page 243 of the April, 1958, issue of these TRANSACTIONS.

Francis J. O'Hara (A'55) was born on April 9, 1930, in Cambridge, Mass. He received the B.S. degree in physics in 1951

from Boston College, Newton, Mass. He subsequently studied at Harvard University, Cambridge, Mass., and at Northeastern University, Boston, Mass., and was awarded the M.S. degree in communications by the latter university in 1958.

In 1953, he joined the engineering staff of Microwave Associates, Inc., where he performed product development work on TR tubes. Since 1955 he has been a member of a development group for microwave ferrite devices at the Raytheon Manufacturing Company, Waltham, Mass.

F. J. O'HARA

then joined the underwater sound staff at the Navy Electronics Laboratory. In 1955 Mr. Price joined the General Electric Microwave Laboratory, where he has been working on measurement and control of harmonic and spurious microwave energy.

Walter Rotman (A'49-M'53) was born in St. Louis, Mo., on August 24, 1922. He received the B.S. and M.S. degrees from Massachusetts Institute of Technology in 1947 and 1948. From 1942 to 1945, he served in the Air Force, working on radar equipment.

During his student career he worked as a research assistant in the Research Laboratory of Electronics at M.I.T. In 1948, Mr. Rotman joined the Airborne Antenna Group of the Air Force Cambridge Research Center, where he is now engaged in antenna research. His fields of interest include progressive wave antennas, microwave optical systems, and missile antennas.

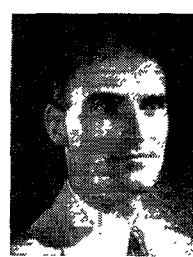
Mr. Rotman is a member of RESA and Sigma Xi.

Nicholas G. Sakiots (S'48-A'50-M'55) was born in Lakeland, Fla., on March 5, 1928. He received the B.E.E. degree from the College of the City of New York in 1950.

After working with the Glenn L. Martin Company and the Marine Radar Design Branch of the Bureau of Ships, Mr. Sakiots joined the Antenna Research Branch of the Naval Research Laboratory, Washington, D. C., in 1951. While with the Laboratory, he has investigated figure-of-revolution scanners and is at present engaged in making a study of the microwave properties of the ferrite materials.

He is a co-holder of the first Microwave Prize of the PGM TT.

Howard Scharfman (S'47-A'50-M'55) was born in New York, N. Y., on December 27, 1924. He served with the U. S. Signal Corps, working on radar and pulse modulation equipment, from 1943-1946. He received the B.S.E.E. degree in 1947 from New York University and the M.S.E.E. degree



R. MANGIARACINA



F. J. O'HARA

University from 1944 to 1945.

Since 1946 Dr. Oliner has been with the Microwave Research Institute of the Polytechnic Institute of Brooklyn, N. Y., where he has been engaged in research on a variety of topics in the microwave field. While on a leave of absence he spent the summer of 1952 at the Microwave Laboratory of Hughes Aircraft Company, Culver City, Calif. He has also taught graduate courses in physics and electrical engineering, and is a research associate professor at Brooklyn Polytechnic.

He is a member of the American Physical Society and Sigma Xi. He is also a member of the IRE Committee on Antennas and Waveguides, and the Administrative Committee of the PGM TT.



V. G. PRICE



W. ROTMAN

N. G. SAKIOTS



H. SCHARFMAN

Howard Scharfman (S'47-A'50-M'55) was born in New York, N. Y., on December 27, 1924. He served with the U. S. Signal Corps, working on radar and pulse modulation equipment, from 1943-1946. He received the B.S.E.E. degree in 1947 from New York University and the M.S.E.E. degree

in 1948 from Northwestern University.

After working at the Kew Gardens, N. Y., plant of the Sylvania Electric Company during the summer of 1948, he taught undergraduate electrical engineering and continued his graduate studies at the Polytechnic Institute of Brooklyn until 1950. He then joined the Antenna Section of the Seattle, Wash., division of the Boeing Airplane Company, where he did research and development on receivers, antenna pattern ranges, and aircraft antennas.

From 1951-1954, he was at the Radiation Laboratory of The Johns Hopkins University, Institute for Cooperative Research, where he worked on VHF and UHF circuits and microwave scattering problems while completing graduate studies for the D.S.E.E. degree in electrical engineering.

In 1954 he became affiliated with the Missile and Radar Division of the Raytheon Manufacturing Company, Waltham, Mass., as head of the microwave ferrite section. Since January, 1957, he has been manager of the Special Microwave Device Group, which is engaged in research, development, and production of ferrite materials and devices for commercial sale.

Dr. Scharfman is a member of Eta Kappa Nu and Sigma Xi.

B. M. Schiffman, for a photograph and biography, please see page 244 of the April, 1958, issue of these TRANSACTIONS.

J. K. Shimizu, for photograph and biography, please see page 459 of the October, 1958, issue of these TRANSACTIONS.

Ernest Stern (S'55-M'56) was born on June 5, 1928, in Wetter, Germany. He served as an electronics technician with the U. S. Navy during 1946 and 1947. He received the B.S. degree in engineering from Columbia University, New York, N. Y., in 1953 and completed studies for the M.S. degree at Cornell University, Ithaca, N. Y., in 1955. From 1953 to 1955 he was a re-



E. STERN

search assistant in the Radio Astronomy Laboratory at Cornell University.

In 1955 he joined the engineering staff of the Sperry Gyroscope Company, Great Neck, N. Y., where he performed experimental studies on the nonlinear microwave properties of ferrites at high microwave power levels. His current activities involve the evaluation and design of solid-state microwave amplifiers.

Sidney J. Tetenbaum (S'47-A'53) was born on August 30, 1922, in the Bronx, N. Y. He received the B.S. degree in mathematics

from the City College of New York in 1943, the master's degree in electrical engineering from New York University in 1948, and the Ph.D. degree in physics from Yale University, New Haven, Conn., in 1952.

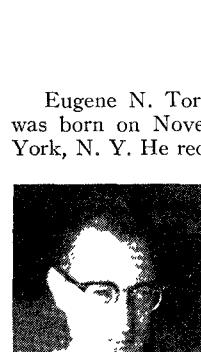
He served with the U. S. Army Signal Corps from 1943 to 1946. From 1946 to 1948 he was employed as a scientific investigator on the Panel on Electron Tubes of the Research and Development Board. He was a research engineer with Varian Associates, Palo Alto, Calif., during 1952 to 1954.

He then joined Sylvania Electric Products, Inc., and is presently a project leader at the Microwave Physics Laboratory, Mountain View, Calif.

Dr. Tetenbaum is a member of Phi Beta Kappa, Sigma Xi, and the American Physical Society.

Eugene N. Torgow (S'48-A'49-SM'54) was born on November 26, 1925 in New York, N. Y. He received the B.E.E. degree from the Cooper Union School of Engineering, New York, N. Y., in 1946, and the M.E.E. degree at the Polytechnic Institute of Brooklyn, Brooklyn, N. Y., in 1949.

During 1946-47, he served with 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 the 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, N. J.



E. N. TORGOW

In 1953, Mr. Torgow returned to the Microwave Research Institute and since then has been engaged in strip line and waveguide filter development. He became leader of the Component Research Section in 1957.

Mr. Torgow is a member of Sigma Xi and AIEE.



Raphael Tsu was born on December 27, 1932, in Shanghai, China. He received the B.E.E. degree from the University of Dayton, Ohio, in 1956, and the M.S. degree from The Ohio State University in Columbus in 1957.

He came to this country in January, 1953. From then until January, 1956, he did research on electronic tubes at the University of Dayton. While still a candidate for the B.E.E. degree he instructed laboratory courses at the University. From February, 1956 to September, 1956, he was a research assistant at the Nuclear Research Center of Carnegie Institute of Technology, Pittsburgh, Pa., where he was a graduate student in physics. Since 1956 he has been employed by the Antenna Laboratory at The Ohio State University, and is currently working toward the Ph.D. degree.

Mr. Tsu is a member of Sigma Xi and Pi Mu Epsilon.



Lauren P. Tuttle, Jr. (S'56) was born in Bloomfield, N. J., on June 21, 1931. He attended the University of Chattanooga,

Tenn., and received the B.S. degree in electrical engineering at the University of Florida in Gainesville in 1957. While in college, Mr. Tuttle worked two years as student assistant at the Severe Weather Radar Laboratory of the University of Florida; there he engaged in the radar tracking of hurricanes and unusually severe weather.

During the Korean conflict he served as leading division petty officer on the *USS Boxer* in charge of shipboard electronics systems.

Since graduation he has been in the Antenna Laboratory of Melpar, Inc., Falls Church, Va., working on the development of strip-transmission-line circuits.

Mr. Tuttle was a student member of the AIEE.

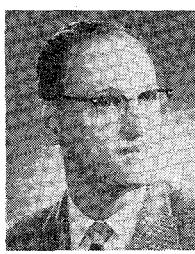


L. P. TUTTLE

George S. Uebel (M'56) was born on January 28, 1930, in San Francisco, Calif. In 1952, he received the B.S. degree in engineering from the University of California at Berkeley. He joined the technical staff at Hughes Aircraft Company and was awarded a Hughes Aircraft scholarship to the University of Southern California, where he received the M.S. degree in engineering in 1954.

Since 1952, he has been concerned with the development of microwave components, especially ferrite devices. He is now head of the component development group, circuits section, Microwave Engineering Department, Microwave Laboratory.

Mr. Uebel is a member of Tau Beta Pi and Eta Kappa Nu.



G. S. UEBEL

Harold A. Wheeler (A'27-M'28-F'35) was born in St. Paul, Minn., on May 10, 1903. He received the B.S. degree in physics from George Washington University, Washington, D. C., in 1925 and did post-graduate studies in physics at The Johns Hopkins University, Baltimore, Md., until 1928.

He was employed by the Hazeltine Corporation from 1924 to 1945, advancing to vice-president and chief consulting engineer. Since 1946, he has engaged in independent work as a consulting radio physicist, and since 1947, his principal occupation has been as President of Wheeler Laboratories, Inc. In this capacity, he is directing the Great Neck and Smithtown laboratories, specializing in microwaves and antennas.

His specialization in frequency-selective networks dates back to a college thesis on "wave filter determinants," published in 1928. Subsequent work on wideband amplifiers for television was presented in IRE papers, which were recognized by the Morris N. Liebman Memorial Prize in 1940. "Wheeler Monographs," Vol. I, is a collection of postwar papers dealing mostly with special topics in network theory.

Mr. Wheeler has served the IRE in such positions as Director (1934, 1940-1945), chairman of the Standards Committee, and chairman of the Long Island Section. He is a Fellow of the AIEE and Radio Club of America, Associate Member of IEE, and member of Sigma Xi and Tau Beta Pi.

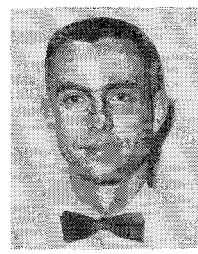


H. A. WHEELER

James C. Wiltse (S'48-A'53) was born on March 16, 1926, in Tannersville, N. Y. He received the B.E.E. degree in 1946 from Rensselaer Polytechnic Institute, Troy, N. Y. After one year of shipboard duty as an electronics officer in the U. S. Navy he was employed by the General Electric Company for about a year. From 1948 to 1951 he taught in the department of electrical engineering at Rensselaer. Mr. Wiltse also continued his graduate studies there and completed the requirements for the M.E.E. degree in 1951.

From then until 1958 he was associated with The Johns Hopkins University, most recently as a member of the staff of the Radiation Laboratory. He concurrently completed studying for the Doctor of Engineering degree at Johns Hopkins. At the present time he is employed by Electronic Communications, Inc., of Timonium, Md.

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



J. C. WILTSE

Perry H. Vartanian, Jr. (S'52-M'56-SM'56), for a photograph and biography, please see pages 244-245 of the April, 1958, issue of these TRANSACTIONS.



R. D. WANSELLOW

Robert D. Wanselow (S'52-M'55) was born on June 21, 1930, in Mineola, N. Y. He received the B.A. and B.S.E.E. degrees in 1953 and the M.S.E.E. degree in 1955, all from Columbia University, New York, N. Y., and was a graduate assistant there in the engineering school while working for his advanced degree.

In 1955, Mr. Wanselow joined the Hughes Aircraft Company, Culver City, Calif. As a research engineer he instructed engineers on Hughes' latest fire control systems and performed evaluation and maintenance studies on a surveillance radar system.

Since 1957, when he joined Melpar, Inc., Falls Church, Va., as a senior engineer, he has been engaged in research and development work on electronic countermeasures systems. At present he is working on the design and development of antennas and microwave components in the Melpar Antenna Laboratory.

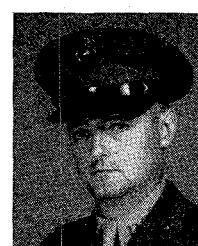
Mr. Wanselow was a student member of the AIEE.

Robert G. Williams, Captain, USMC, (S'52-A'53-M'58) was born on June 30, 1931, in Brooklyn, N. Y. He received the B.S.E.E. degree in 1953 from the University of Colorado in Boulder. He then was commissioned a second lieutenant in the U. S. Marine Corps.

After attending Basic School and the Communication Officer's School, Quantico, Va., he served with the Communication Company, Third Marine Division, in Japan until July, 1955.

Following his overseas duty, he entered the U. S. Naval Postgraduate School, Monterey, Calif., and received the M.S. degree in electronic engineering in 1958. Presently, he is assistant project officer, Marine Aviation Detachment, at the Naval Air Missile Test Center, Point Mugu, Calif.

Capt. Williams is a member of Eta Kappa Nu and Sigma Tau.



R. G. WILLIAMS

Leo Young (M'54-SM'57) was born in Vienna, Austria, on August 18, 1926. After winning a scholarship from St. John's College, Cambridge, England, he obtained the B.A. degree with honors in mathematics in 1945 and the B.A. degree in physics with honors in 1947. He received the M.A. degree from Cambridge University in 1950.

He was an engineer with A. C. Cosser, Ltd., London, from 1948 to 1951. From then until 1953 he was associated with Decca Radar, Ltd., as head of the Microwave and Antenna Laboratory.

He came to the United States in 1953 and joined the Westinghouse Electric Corporation, Baltimore, Md., where he is presently a fellow engineer in the Electronics Division.

He was awarded the M.S. degree in electrical engineering by The Johns Hopkins University in 1956. He won the Westinghouse Corporation's B. G. Lamme Scholarship for 1958, and is using it for one year of graduate studies at Johns Hopkins before returning to Westinghouse.

Mr. Young, a registered professional engineer in Maryland, is a member of Sigma Xi and the American Institute of Electrical Engineers, and an associate member of the Institution of Electrical Engineers.



L. YOUNG