

# Contributors

G. Boudouris (SM'58) was born in Kyparissia, Greece, on September 11, 1919. He studied mechanical and electrical engineering from 1937 to 1941 and in 1946, at the Polytechnic Institute of Athens, Greece, where he received the diploma in mechanical and electrical engineering. He went to Paris in 1950 and obtained the diploma of radio engineer at the Ecole Supérieure d'Electricité in 1952.

Continuing his studies at the Sorbonne, University of Paris, he received the degree of "Docteur ès Sciences" in physics in 1958.

He is now on the research staff of the Laboratoire de Spectroscopie Hertzienne at the Centre National de la Recherche Scientifique, in Paris.



G. BOUDOURIS

with the Microwave Receiver, and Millimeter Wave Divisions. From 1954 to 1956 he was a member of the Radio Physics Laboratory, Ottawa, Canada, where he worked on scattering, and antenna problems. He joined the staff of the National Bureau of Standards, Boulder Laboratories, Boulder, Colo., in 1956, and is now chief of the Millimeter Wave Research Section.

W. CULSHAW

Dr. Culshaw is a member of the Scientific Research Society of America.

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Bernard C. De Loach, Jr. (M'57) was born in Birmingham, Ala., on February 19, 1930. He received the B.S. and M.S. degrees from Auburn University, Auburn, Ala., in 1951 and 1952, respectively, and the Ph.D. degree from Ohio State University, Columbus, in 1956, all in physics.

Since 1956, he has been associated with Bell Telephone Laboratories, Holmdel, N. J., where he has been concerned with microwave filters and high-frequency parametric amplifiers.

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Wilhelm H. Eggimann was born in April, 1929, in Zurich, Switzerland. He received the diploma in electrical engineering in 1954 from the Swiss Federal Institute of Technology, Zurich. From 1954 to 56, he worked as an instructor and research assistant at the same institute. In 1956, he entered Case Institute of Technology, Cleveland, Ohio, working as an instructor. He received the M.S.E.E. degree in 1959 from

Case Institute, where he is now studying towards the Ph.D. degree. He is presently engaged in research work on ferrites in microwave applications and artificial dielectrics.

Mr. Eggimann is an associate member of Sigma Xi.



W. H. EGGIMANN

Peter Foldes (M'58) was born in Budapest, Hungary, on April 8, 1928. He received the B.S. degree in electrical engineering from the Technical University of Budapest in 1950.

From 1950 to 1956, he was a research engineer at the Hungarian Telecommunication Research Institute, and from 1953 to 1956, on a part-time basis, was also a lecturer on antennas at the Technical University of Budapest.

In 1957, he joined RCA Victor Company, Ltd., Montreal, Canada, as a project engineer. His work has been mostly in the field of antenna, propagation and system engineering studies. Since 1958, he has been responsible for the theoretical aspects of the microwave subsystem in a wide band microwave communication equipment. Recently he has made some theoretical and experimental investigations on low-noise antenna systems.

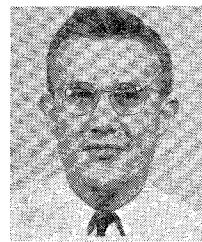


P. FOLDES

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Nicholas Gothard was born in Pecs, Hungary, in 1933. He received the B.Sc. degree from Budapest Technical University in 1956.

He then came to Canada, where he worked for Radio Communications Equipment and Engineering Ltd., Montreal, and was engaged on development of a radar target simulator. He joined RCA Victor Company, Ltd., in Montreal in 1958, and participated in the design of the MM-600 microwave radio relay equipment, of which he was concerned mainly with the design of antennas, waveguide and RF filters.



N. GOTTHARD

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D. J. Ilias (M'59) was born in Kymi, Greece, on January 21, 1922. He received the B.S. degree in physics and a post graduate certificate in electronics engineering degree from the University of Athens, Greece, in 1952 and 1953, respectively, and the "diplome d'études supérieure de science physiques" from the Sorbonne, University of Paris, France, in 1959.

From 1952 to 1953 he worked as an assistant at the University of Athens, and

Robert E. Collin (M'54) was born on October 24, 1928, in Donalda, Alberta, Canada. He received the B.S. degree in engineering physics from the University of Saskatchewan, Saskatoon, Canada, in 1951. The following two and a half years were spent in graduate work at Imperial College, London, England, from which he received the Ph.D. degree and the diploma of Imperial College in 1954.

Upon returning to Canada, he worked from 1954 to 1958 at the Canadian Arment Research and Development Establishment, Quebec. Since 1958, he has been on the professorial staff of the Electrical Engineering Department at Case Institute of Technology, Cleveland, Ohio.

Dr. Collin is a member of Sigma Xi.



R. E. COLLIN

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William Culshaw (SM'57) was born on February 5, 1914, in Lancashire, England. He received the B.Sc. degree in physics from the university of Sheffield, England, in 1941, the B.Sc. degree in mathematics from the University of London in 1947, and the Ph.D. degree from the University of London, in 1952.

From 1952 to 1954 he was a staff member of the Telecommunications Research Establishment, Malvern, England, where he was



W. CULSHAW

from 1953 to 1956 he was a professor at the Radio-technical School of Athens and also did research work on semiconductors. From

1956 to 1960, he was working in the Laboratoire de Physique de l'Atmosphère, of the Faculty of Sciences, the Sorbonne, where his research concerned microwave spectroscopy. He is now a research physicist in charge of the Ionospheric Institute of Athens observatory.

D. J. ILIAS

Mr. Ilias is a member of the Greek Electronics Engineer Association and the Société Française des Électronicien et des Radioélectronicien.

Kenneth M. Johnson, for a photograph and biography, please see page 576 of the September, 1960, issue of these TRANSACTIONS.

Richard Y. Y. Lee was born on August 26, 1937, in Shanghai, China. He was educated in elementary schools in Shanghai, and graduated from high school in Hong Kong in July, 1955. He spent one year at Taiwan University, Formosa, majoring in electrical engineering, and from February, 1957, to February, 1960, was an undergraduate at The University of Michigan,

R. Y. Y. LEE

Ann Arbor, from which he received the B.S.E. degree in electrical engineering and mathematics in 1960. Since February, 1960, he has been a graduate student in physics at The University of Michigan.

He is a member of Eta Kappa Nu, Phi Kappa Phi, the American Physical Society, and an associate member of Sigma Xi.

Enrique A. J. Marcatili (M'56) was born on August 1, 1925, in Argentina. He received the Aeronautical Engineer and Electrical Engineer degrees from the University of Córdoba, Argentina, in 1947 and 1948, respectively.

He joined the technical staff of Bell Telephone Laboratories in 1954 after studies of Cherenkov radiation in Córdoba, and has been engaged in microwave research in Holmdel,

E. A. J. MARCATILI

N. J. Specifically, Mr. Marcatili has been concerned with theory and design of filters in multimode waveguides and lately with communication systems analysis.

Mr. Marcatili is a member of the Physical Association of Argentina.



Frank A. Olson was born in Boise, Idaho, on February 12, 1933. He received the B.S.E.E. degree from Oregon State College, Corvallis, in 1955, during which time he also received the Westinghouse Achievement Award.

He performed graduate studies under Sylvania's Honors Cooperative program and received the M.S. and Ph.D. degrees from Stanford University, Stanford, Calif., in 1957 and 1960, respectively.

In 1955 he joined the Sylvania Electronic Defense Laboratory, Mountain View, Calif., working in the Applied Physics Group which later became the Microwave Physics Laboratory. There, he performed studies on plasmas, crossed-field tubes, and parametric devices. In 1958 he was a research assistant at Stanford Electronics Laboratories, working on parametric circuits. He is presently serving with the USAF at the Cambridge Research Laboratories, Bedford, Mass., engaged in studies of solid-state materials at microwave frequencies, principally the interaction of microwave phonons with ferrimagnetic materials.

Dr. Olson is a member of Sigma Xi, Phi Kappa Phi, Tau Beta Pi, and Eta Kappa Nu.

J. E. Rowe (A'51-M'55) was born in Highland Park, Mich., in 1927. He received the B.S. degree in electrical engineering and in mathematics in 1951, the M.S. degree in electrical engineering in 1952, and the Ph.D. degree in electrical engineering in 1955, all from The University of Michigan, Ann Arbor.

Since 1951, he has been associated with The University of Michigan Research Institute, engaging in fundamental research on microwave systems, microwave devices, electromagnetic field theory and plasmas. Formerly a lecturer, assistant professor, and associate professor of electrical engineering, he is now professor of electrical engineering and Director of the Electron Physics Laboratory at The University of Michigan.

Dr. Rowe is a member of the AIEE, the



F. A. OLSON

American Mathematical Society, and the Society for Industrial and Applied Mathematics; also, of Sigma Xi, Phi Kappa Phi, Tau Beta Pi, and Eta Kappa Nu.



Elisabeth M. Rutz (SM'56) was born in Vienna, Austria, on August 28, 1912. She received the Diplom-Ingenieur degree and, in 1946, the Ph.D. degree, in applied physics from the Technical University, Vienna.

In 1938 she joined the Research Laboratories of Siemens and Halske in Berlin, Germany, which later were transferred to Vienna. From 1938 to 1942 she was engaged in research and

development of electro-acoustic transducers, and from 1942 to 1948 in research and development of microwave and commercial tubes. From 1950 to 1955 she worked part time as a research scientist at the Universities of Darmstadt, Germany and Aachen, Germany. After coming to the United States in 1955, she joined the Emerson Research Laboratories, Silver Spring, Md., where she first was in charge of research and development of microwave antennas and components. In 1959 she was transferred to the Advanced Systems Department where she is a Fellow Engineer in charge of applied research in the fields of propagation phenomena, microwave antennas and components, and of CW-FW systems.

Sheldon S. Sandler was born in Cleveland, Ohio, on December 17, 1932. He received the B.S.E.E. degree from Case Institute of Technology, Cleveland, Ohio, in 1954.

Under a Thomas A. Edison Fellowship at Yale University, New Haven, Conn., he received the M.E.E.E. degree in 1955. In 1958 he received the M.A. degree from Harvard University, Cambridge, Mass.

From 1955 to 1956, he was a research associate in the Department of Physics, Horizons Inc., Cleveland. From 1956 to 1958, he was engaged in graduate study in the Department of Engineering and Applied Physics, Harvard University, Cambridge, Mass. From 1958 to 1959, he was a staff member of M.I.T. Lincoln Laboratory, Lexington, Mass. From 1959 to September, 1960, he was associated with Electronic Communications Inc., Timonium, Md., investigating problems in antenna theory and wave propagation in



E. M. RUTZ



J. E. ROWE

ferrites at microwave frequencies. Currently he is a graduate student at Harvard University.

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

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Louis Stark (M'54-SM'60) was born in Detroit, Mich., on April 5, 1926. He received the B.S.E.E. and M.S.E.E. degrees from the Massachusetts Institute of Technology, Cambridge, in 1950 and 1952, respectively.

He worked at Hughes Research Laboratories from 1954-1957 on UHF and microwave antenna design. He then joined M.I.T. Lincoln Laboratory, Lexington, Mass., where he was

assistant group leader in microwave circuits and antennas. In 1959, he joined Ground Systems Group, Hughes Aircraft Company, Fullerton, Calif., and is now Manager of the Microwave Department.

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

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James E. Storer (A'54-SM'58) was born on October 26, 1927, in Buffalo, N. Y. He received the B.A. degree in physics from Cornell University, Ithaca, N. Y., in 1947, and the A.M. and Ph.D. degrees in 1948 and 1951, respectively, from the division of engineering sciences and applied physics, Harvard University, Cambridge, Mass.

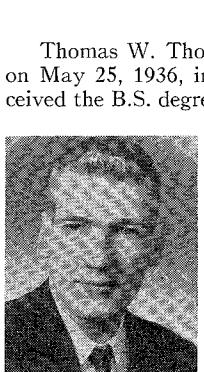
From 1949 to 1951 he was an Atomic Energy Commission Fellow; from 1951 to 1952 he was a Research Fellow at Harvard, and from 1952 to 1953 a lecturer at Harvard. He was an assistant professor in the division of applied science at Harvard from 1953 to

1957, teaching courses in network analysis, network synthesis, microwave circuits, scattering, and graduate mathematics. He was a Guggenheim Fellow in 1956.

Prior to joining Sylvania in Waltham, Mass., in 1957, he served as a consultant to the applied research laboratory at Sylvania, performing studies on both electronic countermeasures and airborne pulse-Doppler radar systems. Since

becoming a member of the Applied Research Laboratory, he has been concerned with system design studies for electronic countermeasures on the ASD-1 program and on the GLR-4 reconnaissance program. In addition, he has carried out studies on error rates in advanced binary communications systems, secure communications systems, and on optimum correlation codes for long pulse radar. He is the author of several books and papers.

Dr. Storer is a member of Sigma Xi, the American Association of Physics Teachers, and the American Institute of Physics.



T. W. THOMPSON

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ducts, Waltham, Mass., and is engaged in work on a multimode transmission line study.

Mr. Thompson is a member of Sigma Xi and Tau Beta Pi.

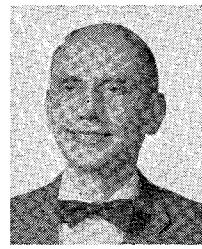
Glen Wade (S'51-A'55-SM'57) was born in Ogden, Utah, on March 19, 1921. He served in the U. S. Navy in World War II

as an electronics technician and later as an electronics officer. He received the B.S.E.E. and M.S.E.E. degrees from the University of Utah, Salt Lake City, in 1948 and 1949, respectively. After working at the Naval Research Laboratory, Washington, D. C., he returned to gradu-

ate studies at Stanford University, Stanford, Calif., where he was first a Sperry Fellow and then an RCA Fellow in electronics. He received the Ph.D. degree from Stanford in 1954, and was then employed as a research associate by the General Electric Microwave Laboratory there.

Until recently, he was an associate professor of electrical engineering at Stanford University and a senior staff member of the Stanford Electronics Laboratories. He also served as a consultant for the Zenith Radio Corporation, Philco Corporation, and Diamond Ordnance Fuze Laboratory. Early in 1960, he joined the Raytheon Company, Spencer Laboratory, Burlington, Mass., as associate director of engineering for general research.

Dr. Wade received an Eta Kappa Nu Award for "Outstanding Young Electrical Engineer" in 1955 and a National Electronics Conference Annual Award in 1959. He is a member of the American Physical Society, Phi Kappa Phi, Tau Beta Pi, Eta Kappa Nu, and Sigma Xi.



G. WADE