

## Contributors to This Issue

WILLIAM F. CLEMENCY, E.E., 1934, Polytechnic Institute of Brooklyn; Western Electric Co., 1923-26; Bell Telephone Laboratories, 1926—. His early work was concerned with manufacturing processes for carbon for transmitters and development of carbon transmitters. During World War II he was concerned with the design of transmitters and earphones for use in military communication systems under high ambient noise. Later he worked on development of acoustical instruments and measurements. Since 1953 he has been concerned with development of telephone sets.

H. G. COOPER, B.S., 1949, M.S., 1950, and Ph.D., 1954, University of Illinois; Bell Telephone Laboratories, 1954—. His work has been in the field of cathode ray beam devices, particularly studies of electron lenses, deflection systems and electron guns. He heads a group concerned with storage tubes and beam-deflection devices. Member American Physical Society, Pi Mu Epsilon, Sigma Tau, Sigma Xi, Tau Beta Pi.

WALTER D. GOODALE, JR., E.E., 1928, Lehigh University; M.E.E., 1937, Polytechnic Institute of Brooklyn; American Telephone & Telegraph Co., 1928-34; Bell Telephone Laboratories, 1934—. For a number of years he was concerned with transmission studies of operators' and station telephone sets and with transmission problems related to central office room noise. He has also worked on coin collector development and, more recently, speakerphone design. Member I.R.E.

JOHN L. KELLY, JR., B.A., 1950, M.A., 1952, and Ph.D., 1953, University of Texas; Bell Telephone Laboratories, 1953—. He has been engaged in studies of television and the application of information theory to television, and in studies of information processing. He recently became head of a subdepartment engaged in information coding research.

OSCAR KUMMER, B.E.E., 1940, Cooper Union; graduate studies, 1940-41, Stevens Institute of Technology; Bell Telephone Laboratories, 1934—. His first work was in the area of communication transformer design, followed by development of oscillators and detectors. During the war he was concerned with defense projects for the Navy and later he

turned to design of measuring equipment for coaxial cable systems. He is now engaged in development of transmission and phase measurement techniques over the range 250 to 4000 mc.

KANEYUKI KUROKAWA, B.S., 1951, and Dr. of Eng., 1958, University of Tokyo; Bell Telephone Laboratories, 1959—. Mr. Kurokawa is on leave of absence from his position as assistant professor at the University of Tokyo. He has been engaged in research on parametric amplifiers. Member I.R.E., Institute of Electrical Engineers (Japan), Institute of Electrical Communication Engineers (Japan).

DANIEL LEED, B.S., 1941, College of the City of New York; M.E.E., 1957, Polytechnic Institute of Brooklyn; Bell Telephone Laboratories, 1946—. He heads a group concerned with the development of systems for measuring the frequency characteristics of parameters significant in network design, including insertion phase shift, loss, envelope delay, and reflection coefficient.

NATHAN LEVINE, B.S., 1952, Massachusetts Institute of Technology; M.S., 1954, and Ph.D., 1957, University of Illinois; Bell Telephone Laboratories, 1957—. He has been engaged in the design and simulation of radar data processing systems in connection with the Nike-Zeus AICBM project. He is currently working on new digital data smoothing techniques. Member American Physical Society.

CAROL C. LOCHBAUM, B.A., Douglass College, 1958; Bell Telephone Laboratories, 1958—. She has been engaged in computer programming for visual and acoustics research problems. Member Phi Beta Kappa.

MASON A. LOGAN, B.S., 1927, California Institute of Technology; M.A., 1933, Columbia University; Bell Telephone Laboratories, 1927—. His early work included transmission design problems of local manual and dial circuits and circuit research on alternating current methods of signaling. During and immediately after the war he worked on mine fire-control systems, proximity fuses, Nike-Ajax, and other military projects. Later he was engaged in development of electromagnets and relays, followed by development of instrumentation for semiconductor device process control and evaluation. At present he is engaged in design and development of data transmission terminals.

E. A. MARCATILI, Aeronautical Engineer, 1947, and E.E., 1948, University of Cordoba (Argentina); Research staff, University of Cordoba, 1947-54; Bell Telephone Laboratories, 1954—. He has been engaged in theory and design of filters in multimode waveguides. More recently he has concentrated on waveguide systems research. Member I.R.E., Physical Association of Argentina.

MAX V. MATHEWS, B.S., 1950, California Institute of Technology; M.S., 1952, and Sc.D., 1954, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1955—. He has specialized in acoustics research in speech transmission and has been especially concerned with stimulation of speech experiments on a digital computer. He recently became head of a subdepartment engaged in human information processing research. Member Acoustical Society of America, I.R.E., Sigma Xi.

JOHN RIORDAN, B.S., 1923, Yale University; American Telephone and Telegraph Co., 1926-34; Bell Telephone Laboratories, 1934—. For a number of years he concentrated on studies of the distribution of currents in railway networks and tracks and in the ground, and the effects of these currents on telephone circuits. Since 1940 he has been engaged in mathematical studies, including Boolean algebra in switching, number theory in cable splicing, combinatorial analysis and probability studies of traffic. Member American Association for the Advancement of Science, American Mathematical Society, Institute of Mathematical Statistics, Mathematical Association of America.

IRWIN W. SANDBERG, B.E.E., 1955, M.E.E., 1956, and D.E.E., 1958, Polytechnic Institute of Brooklyn; Bell Telephone Laboratories, 1958—. He has been concerned with analysis of military systems, particularly radar systems, and with synthesis and analysis of active and time-varying networks. Recently he transferred to a group engaged in research on communications fundamentals. Member I.R.E., Eta Kappa Nu, Sigma Xi, Tau Beta Pi.

LAJOS F. TAKÁCS, Doctor's Degree, 1948, University of Technical and Economical Sciences, Budapest; Doctor of Mathematical Sciences, 1957, Hungarian Academy of Sciences; Tungsram Research Laboratory (Telecommunications Research Institute), Budapest, 1945-55; Research Institute for Mathematics of the Hungarian Academy of Sciences, 1950-58; Roland Eötvös University, Budapest, 1953-58; Columbia University,

1959—; consultant, Bell Telephone Laboratories, 1959—. At present he is teaching probability theory and stochastic processes, and is engaged in research in the mathematical theory of telephone traffic. Member American Mathematical Society, Mathematical Association of America, Society for Industrial and Applied Mathematics, Institute of Mathematical Statistics, Sigma Xi.

MICHIYUKI UENOHARA, B.E., 1949, Nihon University (Japan); M.S., 1953, and Ph.D., 1956, Ohio State University; D.E., Tohoku University (Japan), 1958; Bell Telephone Laboratories, 1957—. He has been engaged in exploratory studies of microwave variable reactance amplifiers and microwave tubes. He was also engaged in microwave tube research at Nihon University from 1949 to 1952, and taught there in 1957. Member American Physical Society, I.R.E., Institute of Electrical Communication Engineers (Japan), Eta Kappa Nu, Pi Mu Epsilon, Sigma Xi, RESA.

V. A. VYSSOTSKY, A. B., 1950, and M.S., 1956, University of Chicago; Bell Telephone Laboratories, 1956—. He has been studying problems in speech compression and phoneme recognition.