

Contributors to This Issue

RICHARD R. ANDERSON, B.S.M.E., 1949, Northwestern University; M.S.E.E., 1960 Stevens Institute of Technology; Bell Telephone Laboratories, 1949—. Mr. Anderson first engaged in research on electronic switching systems for telephone central offices. In 1956 he joined the data transmission exploratory development department and made several prototype magnetic-tape transports for storing digital data. He has conducted theoretical studies of data transmission systems by computer simulation. Member, AAAS, Sigma Xi, Tau Beta Pi.

VÁCLAV E. BENEŠ, A.B., 1950, Harvard College; M.A. and Ph.D., 1953, Princeton University; Bell Telephone Laboratories, 1953—. Mr. Beneš has been engaged in mathematical research on stochastic processes, traffic theory, and servomechanisms. In 1959-60 he was visiting lecturer in mathematics at Dartmouth College. He is the author of *General Stochastic Process in the Theory of Queues* (Addison-Wesley, 1963), and of *Mathematical Theory of Connecting Networks and Telephone Traffic* (Academic Press, 1955). Member, American Mathematical Society, Association for Symbolic Logic, Institute of Mathematical Statistics, SIAM, Mind Association, Phi Beta Kappa.

DWIGHT W. BERREMAN, B.S., 1950, University of Oregon; M.S., Ph.D., 1955, California Institute of Technology; Stanford Research Institute 1955-56; Physics Faculty, University of Oregon, 1956-61; Bell Telephone Laboratories, 1961—. Mr. Berreman has worked in X-ray, visible and infrared optics. As a member of the Chemical Physics Research Department, he has recently been engaged in infrared spectroscopy of crystal films and in the invention and study of gas lenses. Member, Phi Beta Kappa, Sigma Xi, American Physical Society, Optical Society of America.

JAMES O. EDSON, B.S.E.E., 1929, University of Kansas; Bell Telephone Laboratories, 1929—. Mr. Edson has worked on D-2 Carrier and K-1 and K-2 Carrier Repeater development. He also developed the terminal amplifier for type J carrier. His wartime activities included short assignments in radar and underwater sound and was primarily concerned with pulse modulation for communication systems. Mr. Edson

spent several years in transmission research working on laminated transmission lines. He has engaged in development of a transistorized vocoder system, pitch detectors, variolossers, and other equipment for use in the Data-Phone service. He is now concerned with development of high-speed solid-state coders. Senior Member, IEEE.

HANSJUERGEN H. HENNING, B.E.E., 1955, Polytechnic Institute of Brooklyn; M.E.E., 1961, New York University; Bell Telephone Laboratories, 1955—. Mr. Henning has been primarily engaged in circuit design for PCM systems, including the T1 exchange carrier system and a 224 Mb/s experimental PCM system. He is presently responsible for a group concerned with the development of a new PCM carrier terminal. Member, Sigma Xi.

T. T. KADOTA, B. S., 1953, Yokohama National University (Japan); M.S., 1956, Ph.D., 1960, University of California (Berkeley); Bell Telephone Laboratories, 1960—. Mr. Kadota has been engaged in the study of noise theory with application to optimum detection theory. Member, Sigma Xi, SIAM, IMS.

L. U. KIBLER, B.S., 1950, U. S. Coast Guard Academy; M.S.E.E., 1956, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1956—. At present, Mr. Kibler is working toward the Ph.D. degree in Electrophysics at Polytechnic Institute of Brooklyn. His work has included studies of microwave logic and diode use, parametric and tunnel diode microwave amplifiers, high-speed optical detector diodes and light emitting diodes, and most recently high-power, high-frequency transistor amplifiers. Member, IEEE, Eta Kappa Nu.

DIETRICH MARCUSE, Diplom Vorpruefung, 1952, Dipl. Phys., 1954, Berlin Free University; D.E.E., 1962, Technische Hochschule, Karlsruhe, Germany; Siemens and Halske (Germany), 1954-57; Bell Telephone Laboratories, 1957—. At Siemens and Halske, Mr. Marcuse was engaged in transmission research, studying coaxial cable and circular waveguide transmission. At Bell Telephone Laboratories, he has been engaged in studies of circular electric waveguides and work on gaseous masers. He is presently working on the transmission aspect of a light communications system. Member, IEEE.

JOHN S. MAYO, B.S., 1952, M.S., 1953, Ph.D., 1955, North Carolina State University; Bell Telephone Laboratories, 1955—. Mr. Mayo was

first engaged in computer research, including studies relating to the use of digital computers for radar and military weapons control systems. He was subsequently involved in the development of repeaters for an exchange carrier PCM system, and high-speed PCM terminals for an experimental high-speed PCM system. In 1960 he assumed his present responsibilities as Head, Pulse Code Modulation Terminal Department, where he is in charge of the coding and processing of broadband signals for transmission by pulse code modulation. Member, IEEE, Sigma Xi, Phi Kappa Phi.

JAMES E. MAZO, B.S., 1958, Massachusetts Institute of Technology; M.S., 1960, and Ph.D., 1963, Syracuse University; Research Associate, University of Indiana, 1963-64; Bell Telephone Laboratories, 1964—. At Indiana University, Mr. Mazo was engaged in work on quantum scattering theory. At present, he is engaged in theoretical analysis of data systems. Member, American Physical Society, IEEE, Sigma Xi.

STEWART E. MILLER, B.S. and M.S., 1941, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1941—. Mr. Miller first worked on coaxial carrier repeaters and later shifted to microwave radar systems development. At the close of World War II, he returned to coaxial carrier repeater development until 1949, when he joined the radio research department. There his work has been in the field of circular electric waveguide communication, microwave ferrite devices, and other components for microwave radio systems. As Director, Guided Wave Research Laboratory, he heads a group engaged in research on communication techniques for the millimeter wave and optical regions. Fellow, IEEE.

J. SALZ, B.S.E.E., 1955, M.S.E., 1956, Ph.D., 1961, University of Florida; the Martin Company, 1958-60; Bell Telephone Laboratories, 1961—. Mr. Salz first worked on the remote line concentrators for the electronic switching system. He has since engaged in theoretical studies of data transmission systems. Member, IEEE; associate member, Sigma Xi.

IRWIN W. SANDBERG, B.E.E., 1955, M.E.E., 1956, and D.E.E., 1958, Polytechnic Institute of Brooklyn; Bell Telephone Laboratories, 1958—. Mr. Sandberg has been concerned with analysis of military systems, particularly radar systems, and with synthesis and analysis of active and time-varying networks. He is currently involved in a study of the

signal-theoretic properties of nonlinear systems. Member, IEEE, SIAM, Eta Kappa Nu, Sigma Xi, Tau Beta Pi.

FRANCIS J. WITT, B.S.E.E., 1953, M.S.E.E., 1955, Johns Hopkins University; Bell Telephone Laboratories, 1954-55, 1957—. Mr. Witt has engaged in active and sampled-data network exploratory research and in solid-state circuit development for short-haul carrier systems. Later he was in charge of a group responsible for the development of some of the solid-state circuits in the TELSTAR experimental communications satellite. He was concerned with the development of digital processing circuitry for a high-speed digital transmission system. At present, as Head, Transmission Analysis Department, he is responsible for analysis and computing support for the development of coaxial cable and radio relay transmission systems.