

Contributors to This Issue

VACLAV 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 Processes in the Theory of Queues* (Addison-Wesley, 1963). Member, American Mathematical Society, Association for Symbolic Logic, Institute of Mathematical Statistics, Society for Industrial and Applied Mathematics, Mind Association and Phi Beta Kappa.

MARTIN R. BIAZZO, Bell Telephone Laboratories, 1951—. He attended Rutgers University College. His first assignment at Bell Laboratories was on PCM systems, primarily in the area of ferrite core transformers and PCM repeaters. His present interest is in the measurement of optical losses with the application of electronic techniques on optical lasers.

JAMES O. CAPPELLARI, JR., B.S., 1953, Marshall University; B.S.A.E., 1956, M.S.A.E., 1957, Ph.D., 1961, Purdue University; Instructor, School of Aeronautical and Engineering Sciences, Purdue, 1957-1961; Bell Telephone Laboratories, 1961-1962, Bellcomm, Inc., 1962—. While at Bell Laboratories he was engaged in attitude control, rigid body dynamics, and orbital mechanics problems connected with Project Telstar. Since going to Bellcomm, Inc., he has been concerned with a wide variety of trajectory analysis studies connected with Project Apollo. Member, A.I.A.A. and Sigma Xi.

G. F. FOXHALL, B.S. (Physics), Worcester Polytechnic Institute, 1961, M.S. (Physics), University of Illinois, 1962; Bell Telephone Laboratories, 1961—. He has investigated the effects of gaseous ambients on silicon surfaces, worked on the development of a germanium bridge rectifier polarity guard, and studied metal-semiconductor contacts. Member, Sigma Xi.

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JOHN P. HYDE, A.B., Princeton University, 1959; M.S., Northwestern University, 1960; Bell Telephone Laboratories, 1960—. He has worked on machine aids to design, and especially computer aids to sequential circuit synthesis. He is presently engaged in further development of the ALPAK system and other aspects of computer algebra.

JAMES F. KAISER, E.E., University of Cincinnati, 1952; S.M., 1954, and Sc.D., 1959, Massachusetts Institute of Technology; faculty of the Massachusetts Institute of Technology, 1956–1960; Bell Telephone Laboratories, 1959—. He has been concerned with problems of data processing, digital filter design, and system simulation. Member, IEEE, Association for Computing Machinery, Society for Industrial and Applied Mathematics, Eta Kappa Nu, Sigma Xi and Tau Beta Pi.

B. K. KINARIWALA, B.S., 1951, Benares University (India); M.S., 1954, and Ph.D., 1957, University of California; Bell Telephone Laboratories, 1957—. He was first engaged in research in circuit theory involving, in particular, active and time-varying networks. More recently, he has been concerned with problems in digital communication systems. Member, IEEE and Sigma Xi.

DAVID A. KLEINMAN, S.B., 1946, and S.M., 1947, Massachusetts Institute of Technology; Ph.D., 1952, Brown University; Brookhaven National Laboratory, 1949–53; Bell Telephone Laboratories, 1953—. Mr. Kleinman has worked in the areas of neutron scattering in solids, semiconductor electronics, electron energy bands, and the infrared properties of crystals, and is currently working on problems related to the optical maser. Member, American Physical Society.

JOHN A. LEWIS, B.S., 1944, Worcester Polytechnic Institute, Sc. M., 1948, Brown University, Ph.D., 1950, Brown University, Bell Telephone Laboratories, May, 1951—. A member of the mathematical physics department, he has been engaged in theoretical investigation of problems of fluid dynamics, piezoelectric vibrations, heat transfer, and

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E. A. J. MARCATILI, Aeronautical Engineer, 1947, and E.E., 1948, University of Córdoba (Argentina); Research staff, University of Córdoba, 1947-54; Bell Telephone Laboratories, 1954—. He has been engaged in theory and design of filters in multimode waveguides and in waveguide systems research. More recently he has concentrated on the study of optical transmission media. Member, IEEE.

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

STEWART E. MILLER, B.S. and M.S., 1941, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1941—. He 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 fields 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.

A. J. RACK, B.S., 1930, University of Illinois; M.A., 1935, Columbia University; Bell Telephone Laboratories, 1930—. He has been engaged in the application of circuits in the communication field, including studies of tube noise, feedback amplifiers, transistor circuits and PCM. At present he is investigating the field of optical loss measurement.

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. He is currently involved in a study of the signal-theoretic properties of nonlinear systems. Member, IEEE, Society for Industrial and Applied Mathematics, Eta Kappa Nu, Sigma Xi and Tau Beta Pi.

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LEWIS C. THOMAS, B.E.E., Cornell University, 1949, M.S. in E.E., c.s.l., 1958, Newark College of Engineering; Bell Telephone Laboratories, 1949—. He has worked on the Nike missile systems, pulse code modulation systems, and data transmission systems. His recent work has included attitude and orbital mechanics studies for Project Telstar and communication satellite system studies. He is on the lecture staff of the American Museum-Hayden Planetarium. Member, IEEE, A.I.A.A., Royal Astronomical Society of Canada and Eta Kappa Nu; honorary member, Epsilon Pi Tau.