

## Contributors to This Issue

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T. R. D. COLLINS, A.B., 1925, John Fletcher College; M.S., 1929, State University of Iowa; Bell Telephone Laboratories, 1929—. His first work was on high-quality recording and reproducing systems and later development of coaxial cable. Following this he was concerned with television requirements and a television monitor system. During the war Mr. Collins worked on radar and a proximity fuse and since

SCHEINMAN, A. H.

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the war he has been engaged in work on microwave radio relay system problems. Member American Physical Society.

HAROLD E. CURTIS, B.S. and M.S., 1929, Massachusetts Institute of Technology; American Telephone & Telegraph Co., 1929-34; Bell Telephone Laboratories, 1934—. He has specialized in work on transmission problems related to multi-channel carrier telephony, including microwave radio relay, coaxial cable and waveguide systems.

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MARK B. GARDNER, B.S., 1930, Brigham Young University; Bell Telephone Laboratories, 1930—. He has specialized in speech and hearing studies and problems in physiological acoustics, particularly as applied to individuals with impaired hearing. During World War II he worked on problems of underwater sound in connection with the development of the acoustic torpedo. Fellow Acoustical Society of America.

J. L. GARRISON, B.E.E., 1934, and M.E.E., 1936, Polytechnic Institute of Brooklyn; Bell Telephone Laboratories, 1936—. Mr. Garrison's first work was design of transmission transformers. He later was concerned with final development of transistors before turning to work on Bell Laboratories technical publications. In 1956 he transferred to Merrimack Valley, where he is now head of a group engaged in transmission networks development. Member Sigma Xi, Tau Beta Pi.

EUGENE I. GORDON, B.S., 1952, City College of New York; Ph.D., 1957, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1957—. A member of the Electron Device Department, he is engaged in research in beam-type parametric amplifiers. Member American Physical Society, Phi Beta Kappa, Sigma Xi.

PHILIP HUSTA, Western Electric Co., 1918-24; Bell Telephone Laboratories, 1924—. Mr. Husta's early work was in development of low-frequency signaling systems. He was later in charge of a group concerned with fundamental pulsing studies and development tests of switching circuits. During the war he worked on development of maintenance equipment for fire control equipment. Since the war he has been concerned with switching apparatus and he now heads a group concerned with capability and application of sealed-contact relays in switching systems. Member A.I.E.E.

B. C. JAMISON, B.S.E.E., 1930, Purdue University; American Telephone & Telegraph Co., Long Lines, 1927—. He was engaged in engineering carrier system layouts and in the problems resulting from the operation and maintenance of those systems. Since 1958 he has been doing similar work on microwave radio systems. He is in charge of a group in the General Methods Section of Long Lines Headquarters Engineering. Member A.I.E.E., Eta Kappa Nu, Tau Beta Pi.

WILLIAM J. KOPP, B.S. in E.E., 1937, New York University; Bell Telephone Laboratories, 1929—. Mr. Kopp first was concerned with transmission measuring apparatus related to studies on transmission standards and effective transmission rating systems. During World War II he worked on wire and radio networks and, after the war, on system aspects of early mobile radio telephone equipment. Since 1947 his work has been mainly concerned with negative impedance repeaters.

ANDREW D. LIEHR, B.S., 1952, University of Illinois; M.A., 1953 and Ph.D., 1955, Harvard University; National Science Foundation Post-Doctoral Fellow, Harvard University, 1955-56; Bell Telephone Laboratories, 1956—. He has been engaged in basic research in chemistry and physics, including studies of the electronic properties and structures of certain organic and inorganic materials with regard to their optical and magnetic properties. Member American Association for the Advancement of Science, American Association of Physics Teachers, American Chemical Society, American Institute of Physics, American Physical Society.

SAMUEL P. MORGAN, B.S., 1943, M.S., 1944, and Ph.D., 1947, California Institute of Technology; Bell Telephone Laboratories, 1947—. A research mathematician, Mr. Morgan has been particularly concerned with the applications of electromagnetic theory to microwave and other

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GEORGE E. PERREAULT, B.S. in M.E., 1930, Worcester Polytechnic Institute; Bell Telephone Laboratories, 1930—. His early work was concerned with sound picture and picture transmission apparatus, and later magnetic tape recording and hearing-test machines for the Bell System exhibit in the New York World's Fair. During World War II he took part in work on electrical gun directors and other military projects. Since the war he has been engaged in work on selectors, switches and relays, and he now heads a group working on development of dry reed and mercury contact relays.

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