

## Contributors to This Issue

HAROLD L. BARNEY, A.B., 1928, Elon College; M.S., 1929, North Carolina State College; Bell Telephone Laboratories, 1929—. Mr. Barney has been engaged primarily in research in acoustics and speech. He was concerned in work on voice-operated devices for switching and automatic gain control and control terminal equipment for transatlantic radiotelephony. During World War II, he was engaged in studies of speech privacy systems for military use and later made studies of visible speech and speech analysis using the sound spectrograph. In 1948 he did exploratory research on circuit applications of transistors. In 1950 he took charge of a group engaged in design and testing sonar apparatus for the Navy. He is now concerned with studies in psychoacoustics involving speech and hearing processes. Fellow Acoustical Society of America; member I.R.E.

HUGH K. DUNN, A.B., 1918, Miami University; Ph.D., 1925, California Institute of Technology; Bell Telephone Laboratories, 1925—. For a number of years he was engaged in statistical studies of amplitudes and spectra in music and speech, and the characteristics of telephone instruments and circuits in terms of real speech. He took part in the early work on the sound spectrograph, and during World War II he worked on an acoustic torpedo. After the war he returned to speech studies, including development of the transmission-line analog of the vocal tract, and showing how it leads to prediction of vowel formant positions. He has recently been concerned with improvement of the artificial larynx. Fellow Acoustical Society of America, American Association for the Advancement of Science; member American Physical Society, Phi Beta Kappa, Sigma Xi.

ROBERT C. FLETCHER, B.S., 1943, and Ph.D., 1949, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1949—. After joining Bell Laboratories he was engaged in research on traveling wave tubes. In 1952 he turned to studies of semiconductors, including work on irradiation damage and infra-red absorption in germanium and studies of donor impurities in silicon. In 1956 he took charge of a group engaged in development of solid state devices, mainly new magnetic de-

vices such as masers, ferrite sheet memories and twistors. Fellow American Physical Society; senior member I.R.E.; member Sigma Xi.

F. J. FUCHS, JR., B.S. in M.E., 1947, Duke University; Western Electric Co., 1947—. He has been engaged in manufacturing development engineering and has been particularly concerned with special processes, tooling and machinery for waveguide manufacture. Member American Society of Mechanical Engineers, American Society of Metals.

F. E. HAWORTH, A.B., 1924, University of Oregon; M.A., 1929, Columbia University; Bell Telephone Laboratories, 1925—. He has been engaged in studies of magnetic materials, dielectrics and crystal analysis by X-ray diffraction and electron diffraction. He has also been engaged in research in physics of electrical contacts and acoustical instruments. Fellow American Physical Society; member Acoustical Society of America, Phi Beta Kappa.

E. J. McCLUSKEY, JR., A.B., 1953, Bowdoin College; B.S. and M.S., 1953, and Sc.D., 1956, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1955–1959. He is now associate professor of electrical engineering at Princeton University. At Bell Laboratories he was engaged in research in switching theory and logical design, and was a consultant on problems in the design of an electronic telephone central office. He has also been an instructor, lecturer and visiting professor at M.I.T., College of the City of New York and Princeton University. Member I.R.E., Phi Beta Kappa, Tau Beta Pi, Sigma Xi, Eta Kappa Nu.

DUNCAN M. MITCHEL, Bell Telephone Laboratories, 1953—. Since joining Bell Laboratories Mr. Mitchel has been a member of the construction methods group in the Outside Plant Department. He has worked chiefly on underground conduits.

R. G. RAUSCH, B.S., 1949, M.S., 1950, and Ph.D., 1956, Princeton University; Bell Telephone Laboratories, 1951—. As a member of a military systems studies group he has been engaged in general mathematical investigations of systems, system design, hydraulic servo design and simulation studies. Member Sigma Xi, Phi Beta Kappa.

HAROLD SEIDEL, B.E.E., 1943, College of the City of New York; M.E.E., 1947, and D.E.E., 1954, Polytechnic Institute of Brooklyn;

Microwave Research Institute, 1947; Arma Corp, 1947-48; Federal Telecommunications Labs, 1948-53; Bell Telephone Laboratories, 1953—. He has been concerned with general electromagnetic problems, especially regarding waveguide applications and with analysis of microwave ferrite devices. Member I.R.E., Sigma Xi.

ERLING D. SUNDE, E.E., 1926, Technische Hochschule, Darmstadt, Germany; American Telephone and Telegraph Company, 1927-34; Bell Telephone Laboratories, 1934—. He has made theoretical and experimental studies of inductive interference from railway and power systems, lightning protection of the telephone plant and fundamental transmission studies in connection with the use of pulse modulation systems. Author of *Earth Conduction Effects in Transmission Systems*, a Bell Laboratories Series book. Senior member I.R.E.; member A.I.E.E., American Mathematical Society, American Association for the Advancement of Science.

DONALD E. THOMAS, B.S. in E.E., 1929, Pennsylvania State University; M.A., 1932, Columbia University; Bell Telephone Laboratories, 1929—. His early work was in development of telephone submarine cable systems. He later turned to sea and airborne radar development until he left to serve in the Signal Corps and the Air Force as a member of the Joint and Combined Chiefs of Staff Committees on Radio Countermeasures during World War II. When he returned in 1946, he took part in development and installation of the first deep sea repeatered submarine telephone cable system. Since 1950 he has been engaged in development and evaluation of new semiconductor devices. Senior member I.R.E.; member Tau Beta Pi, Phi Kappa Phi.

GERD F. WEISSMANN, Dipl.-Ing., Technical University of Berlin, 1950; M.S., 1953, Pennsylvania State University; Bell Telephone Laboratories, 1953—. His work has been in stress analysis, engineering mechanics, strain measurements and metal properties and testing. He has recently been concerned with soil mechanics studies and with an investigation of the damping properties of materials. Member Society for Experimental Stress Analysis.

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