

## Contributors to this Issue

A. F. BENNETT, Western Electric Company, 1914-25; Bell Telephone Laboratories, 1925-. Mr. Bennett, Director of Station Apparatus Development since 1948, is in charge of the development, design, field trials, and studies of telephone instruments and sets, coin collectors, telephone booths, and station systems. During World War II, Mr. Bennett supervised the development and engineering work on a number of ordnance items. For this he was awarded a Presidential Certificate of Merit in 1946. He was a representative of the office of Scientific Research and Development and in that capacity served in the United Kingdom in 1943. He is a member of the A.I.E.E., the Acoustical Society of America, and the Physical Society.

R. W. BURNS, B.A., Indiana University, 1916; B.S. in E.E., Purdue University, 1918. U. S. Army, 1918; American Telephone and Telegraph Company, 1919-34; Bell Telephone Laboratories, 1934-. Mr. Burns has been engaged in the formulation of requirements for central office maintenance equipment, principally that used for testing exchange lines and trunks. During World War II he was in charge of a group preparing instruction books for teletype communication equipment for the armed forces. Professional Engineer, New York State. Member of Sigma XI and Eta Kappa Nu.

J. W. DEHN, E.E., Polytechnic Institute of Brooklyn, 1932. Western Electric Company, 1919-25; Bell Telephone Laboratories, 1925-. Switching Systems Development Engineer, 1952. Mr. Dehn has been principally concerned with the design and development of manual and dial telephone switching systems since joining the Bell System. During World War II he developed communication systems for the Signal Corps and trained military personnel in the operation and maintenance of this equipment. Since 1945 he has been engaged in No. 5 crossbar design. Professional Engineer, New York State.

R. F. MALLINA, M.E., Vienna Technical College, 1912. London Institute of City and Guilds, 1914. Wurlitzer Piano Company, Acoustical Engineer, 1925. RCA Victor Company, Head of Apparatus Development Department, 1929. Bell Telephone Laboratories, 1929-. At the

Laboratories Mr. Mallina worked initially in acoustical research where he developed the first magnetic telephone message recorder and the five-reed telephone set. From 1936 on he was engaged in fundamental development on machine switching apparatus, first on AMA, later with the wire spring relay project. In connection with the latter, he developed the solderless wrapped connection. Mr. Mallina is also a research associate at New York University, Department of Education.

W. P. MASON, B.S. in E.E., University of Kansas, 1921; M.A., Ph.D., Columbia, 1928. Bell Telephone Laboratories, 1921-. Dr. Mason has been engaged principally in investigating the properties and applications of piezoelectric crystals, in the study of ultrasonics, and in mechanics. Fellow of the American Physical Society, Acoustical Society of America and Institute of Radio Engineers and member of Sigma Xi and Tau Beta Pi.

J. W. McRAE, B.S. in E.E., University of British Columbia, 1933; M.S., California Institute of Technology, 1934; Ph.D., California Institute of Technology, 1937. Bell Telephone Laboratories, 1937-42, 1945-. U. S. Army 1942-45, where he attained the rank of Colonel and served as Deputy Director of the Engineering Division of the Signal Corps Engineering Laboratories. Returning to Bell Telephone Laboratories in 1945, Dr. McRae became Director of Radio Projects and Television Research in 1946; Director of Electronic and Television Research, 1947; Assistant Director of Apparatus Development I, 1949; Director of Apparatus Development I, 1949; Director of Transmission Development, 1949; Vice President, 1951. Legion of Merit, 1945. President of the Institute of Radio Engineers, 1953. Member of the A.I.E.E. and Sigma Xi.

T. F. OSMER, E.E, Polytechnic Institute of Brooklyn, 1935. Bell Telephone Laboratories, 1920-. As a member of the Physical Research Department until 1952, Mr. Osmer was primarily concerned with transducers, including transmitters, receivers, loudspeakers, and high quality microphones. During World War II he worked on military contracts, and since the war he has been occupied with carbon contact studies, and more recently with studies of the solderless wrapped connection, using photoelastic techniques.

R. C. PRIM, received a B.S.E.E. degree from the University of Texas in 1941, and M.A. and Ph.D. degrees from Princeton University in 1949. Following graduation from college, he was employed by General Electric Company in Schenectady until 1944, and then, as an ensign in the

Reserve, he joined the Naval Ordnance Laboratory at White Oak, Maryland. Here he conducted research on torpedo motion and control theory. He joined Bell Telephone Laboratories in 1949, and has conducted mathematical research on non-linear partial differential equations and served as a consultant on military projects. Dr. Prim is a member of the American Mathematical Society, the American Physical Society, Sigma Xi, and Tau Beta Pi.

E. D. REED, B.Sc., University of London, 1941; M.S., Columbia University, 1947. Ardente, Ltd., 1941-43; U. S. Army, 1944-46; Bell Telephone Laboratories, 1947-. Mr. Reed is engaged in the development and design of klystrons. Associate member of the Institute of Radio Engineers and member of Sigma Xi.

HARRY SUHL, B.Sc., University of Wales, 1943; Ph. D., Oriel College, University of Oxford, 1948. Admiralty Signal Establishment, 1943-46; Bell Telephone Laboratories, 1948-. Dr. Suhl conducted research on the properties of germanium until 1950, when he became concerned with electron dynamics and solid state physics research. Member of the American Institute of Physics and the American Physical Society.

R. H. VAN HORN, B.S. in E.E., Pennsylvania State College, 1937; M.A., Columbia University, 1947. Bell Telephone Laboratories, 1937-. Mr. Van Horn is a member of the Switching Apparatus Development Department and is in charge of the machine switching apparatus laboratory. He has previously been engaged in the development of underwater sound devices and the vibrating reed selector for mobile radio applications. Member of A.I.E.E. and Acoustical Society of America.

E. F. VAAGE, E.E., Technical University of Darmstadt, 1926; M.E.E., Brooklyn Polytechnic Institute, 1932; Royal Norwegian Air Force, 1918-19; Elektrisk Bureau, 1926-27; A. T. & T. Co., 1927-34; Bell Telephone Laboratories, 1934-. Mr. Vaage is a member of a group engaged in systems studies, an outgrowth of his previous work of evaluating transmission systems. Member of American Mathematical Society and A.I.E.E.

A. S. WINDELER, B.S., Rutgers University, 1930; Bell Telephone Laboratories, 1930-. Mr. Windeler has been engaged in the design and development of toll cable, including coaxial, video pair, and microwave, types. He is currently in charge of a group concerned with the development of expanded polyethylene insulated conductors for multipair cable.

6505-1-22mw