

Contributors to This Issue

R. B. BLACKMAN, A.B., California Institute of Technology, 1926; Bell Telephone Laboratories, 1926-. From 1926 to 1936, Mr. Blackman was engaged in physical research in hearing, acoustics and electro-mechanical filters. Since 1936, he has been engaged in applied mathematical research, and in military problems, specializing in linear circuits, and in data-smoothing and prediction. He is a member of Tau Beta Pi and Institute of Radio Engineers.

DAVID J. BRANGACCIO, B. of M.E., 1942, New York University; Bell Telephone Laboratories, 1934-. Mr. Brangaccio engaged in work in television research and later with wide-band amplifiers before transferring to the Radio Research Department in 1945. He worked with traveling wave tubes and later took charge of a group making experimental microwave tubes. After work on the development of a broadband oscilloscope tube in 1954 he is again concerned with traveling wave tubes.

A. FRANCIS DIETRICH, Bell Telephone Laboratories, 1942-. During 1942 and 1943, Mr. Dietrich worked on radar projects. Since 1943 he has been engaged with experimental studies in broadband systems and with terminals and repeaters for microwave radio and waveguide applications.

DAVID H. EVANS, B.S., 1948, Lehigh University; Ph.D., 1953, Brown University; Bell Telephone Laboratories, 1953-. Since joining the technical staff of Bell Laboratories, Mr. Evans has engaged chiefly in mathematical consulting on electronic switching with members of the switching systems development department. Member of Operations Research Society of America, Institute of Management Sciences, Phi Beta Kappa, Tau Beta Pi and Sigma Xi.

A. C. GILMORE, Western Electric Company, 1916-1925; Bell Telephone Laboratories, 1925-1958. Mr. Gilmore died in January, 1958, after 41 years of Bell System service. His early work was the design of central

office and crossbar system equipment. After 1940 he was concerned with military and defense projects, including mobile fire control radar, air warning control centers and the Army telephone central office.

PRESTON R. GRAY, Bell Telephone Laboratories, 1924-. For many years Mr. Gray was engaged in testing work for step-by-step system circuits and analyzation of orders for manual and dial systems. During World War II he worked on the design of switchboards for the armed forces. Until 1951 Mr. Gray was concerned with designing circuits for special service desks and announcement machine systems. After working on the development of circuits for the Army switchboard, Mr. Gray became leader of a group for the analyzation and development of special circuits.

ESTILL I. GREEN, A.B., 1915, Westminster College; B.S.E.E., 1921, Harvard University; Hon. D. Sc., 1956, Westminster College; American Telephone and Telegraph Company, 1921-1934; Bell Telephone Laboratories 1934-. Vice President in charge of Systems Engineering since 1955, Mr. Green has engaged in a wide range of Bell System activities. For many years he took part in planning the development of new transmission systems and services and facilities for special customers. In 1939 he was appointed Test Engineer, responsible for the development of transmission circuit field testing apparatus. During World War II Mr. Green was in charge of the development of radar test equipment and other military developments. As Director of Transmission Apparatus Development in 1948, he headed the development of systems components including electronic parts for transistorized systems. In 1953 Mr. Green was named Director of Military Communications Systems, in charge of planning and development in that area. Mr. Green holds more than 70 patents and is the author of many articles in scientific and personnel fields. Fellow of American Institute of Electrical Engineers and Institute of Radio Engineers and member of Acoustical Society of America, American Physical Society, Operations Research Society of America, and American Association for the Advancement of Science.

W. S. IRVINE, B.S. in E.E., 1936, Union College; New Jersey Bell Telephone Company, 1936-1944; Bell Telephone Laboratories, 1944-. With New Jersey Bell, Mr. Irvine was concerned with central office maintenance and was an outside plant engineer. At Bell Laboratories, he took part in airborne radar projects with the trial installation group. After 1945 Mr. Irvine was concerned with circuits standards and design

of step-by-step and PBX circuits. In 1951 he transferred to military work and took part in the development of the Army switchboard. Member of Eta Kappa Nu.

L. A. MEACHAM, B.S. in E.E., 1929, University of Washington; Certificate of Research, 1930, Cambridge University; Bell Telephone Laboratories, 1930-. Mr. Meacham, station development engineer at Bell Laboratories, engaged in frequency standards research until 1940. He then worked for two years on the application of electronic devices to telephone switching. From 1941 to 1953 Mr. Meacham was concerned with radar development, studies of pulse code modulation, and underwater sound. Since then he has engaged in studies of transistorized telephone sets. Mr. Meacham, who has 52 patents, received the Eta Kappa Nu Recognition of Outstanding Young Electrical Engineers in 1939. Fellow of Institute of Radio Engineers, member of Phi Beta Kappa, Sigma Xi, Eta Kappa Nu and Tau Beta Pi.

J. R. POWER, B.S. in E.E., 1927, Carnegie Institute of Technology; Bell Telephone Laboratories, 1927-. Mr. Power was concerned with the design of special motors and generators, chiefly for use with motion pictures and television, until 1935 when he began studies of noise reduction. During World War II he worked on high-power loud speaker systems for the government. After the war Mr. Power took part in the development of hearing aids, artificial larynges, and later, telephone ringers. His recent work has been with transistorized telephone sets. Member of Acoustical Society of America, American Association for the Advancement of Science, Tau Beta Pi and Eta Kappa Nu.

GORDON RAISBECK, B.A., 1944, Stanford University; Ph.D., 1949, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1949-. Mr. Raisbeck has been an instructor at Stanford Univ., at M. I. T., and at Drew Univ., and served in the U. S. Navy as a Radio Technical Officer during World War II. His early work at Bell Laboratories was in research in acoustics and underwater sound. From 1950 to 1953 he concentrated on research in transistor circuits and then took his present post in charge of a group engaged in transmission line research. Throughout his Laboratories career, Mr. Raisbeck has done work on information theory. He was a Rhodes Scholar at Oxford University in 1947. Senior member of Institute of Radio Engineers, member of American Mathematical Society, Mathematical Association of America, Society for Industrial and Applied Mathematics, American Management Association and Sigma Xi.

W. T. READ, JR., B.S., 1944, Rutgers University; M.S., 1948, Brown University; National Defense Research Committee, 1943-1946; Bell

Telephone Laboratories, 1947-. With the N. D. R. C. at Princeton, Mr. Read was engaged in shock-wave tests and he supervised part of the air blast measurements at the Bikini atom bomb tests. With Bell Laboratories he concentrated on stress analysis before turning to studies in dislocation theory in crystals and electrical and mechanical effects of dislocations in semiconductors. Since 1950 Mr. Read has been concerned with problems in semiconductor device theory. Member of Phi Beta Kappa.

J. W. SULLIVAN, B.E.E., M.Sc., 1952, Ohio State University; Bell Telephone Laboratories, 1952-1956. Mr. Sullivan was engaged in research and development in microwave tubes during his association with Bell Laboratories. Member of Institute of Radio Engineers, Tau Beta Pi, Eta Kappa Nu and Sigma Xi.

JOHN W. TUKEY, Sc.B. Chem., 1936, Sc.M., 1937, Brown University; M.A., 1938, Ph.D., 1939, Princeton University. Mathematics Department, Princeton U., 1939-. Bell Laboratories, 1945-. Mr. Tukey's work has covered development of new statistical techniques; broad systems analysis and synthesis problems in studies of highly complex weapons systems; and other problems with mathematical or statistical aspects. He is the author of numerous articles, and is a co-author with W. G. Cochran and Frederick Mosteller of *The Statistical Problems of the Kinsey Report*. Mr. Tukey is co-inventor with C. E. Shannon and J. R. Pierce of a cathode ray device. He is a member of the American Statistical Association, American Association for Advancement of Science; American Society for Quality Control, Sigma Xi, Biometric Society, American Mathematical Society, Mathematical Association of America, Institute of Mathematical Statistics, N. Y. Academy of Sciences, Econometric Society, American Society for Human Genetics, Association for Computing Machinery, Royal Statistical Society, American Association of University Professors, Operations Research Society of America, American Association of Mathematics Teachers, Society for Industrial and Applied Mathematics, International Statistical Institute, and the Cosmos Club.

FRED WEST, B.E., 1928, Johns Hopkins University; Bell Telephone Laboratories, 1928-. With the station development department since joining Bell Laboratories, Mr. West has worked on studies of transmission systems and components and on the development of methods for measuring characteristics of station apparatus. He later took part in developing test equipment for manufacturing control and during World War II in development of deception devices. He is now engaged in exploratory development of station apparatus.

