

Contributors to This Issue

E. Craig Bender, B.S.E.E., 1964, Syracuse University; M.S.E.E., 1966, University of California at Los Angeles; Bell Laboratories, 1966-1974; AT&T, 1974—. At Bell Laboratories, Mr. Bender was primarily involved in system studies of wideband data services. He was most recently concerned with the engineering and performance aspects of local DDS transmission and is currently an Assistant Engineering Manager with AT&T working on new data network services.

Paul Benowitz, B.S., 1952, Brooklyn College; B.S.E.E., 1958, Polytechnic Institute of Brooklyn; M.S.E.E., 1961, New York University; Bell Laboratories, 1957—. Mr. Benowitz has worked on the conversion of rwx service from a private line network to an integral part of the DDS network. He also participated in the development of the 43B1 Voice Frequency Carrier Data System, the 1A Data Station, and the Data Line Concentrator System. He supervised the development of multiplexers for the Digital Data System and is currently supervising investigation of message switching applications.

P. F. Brown, Jr., B.S.E.E., 1965, Duke University; M.S.O.R., 1966, Cornell University; 1971, Columbia University; Bell Laboratories, 1965-72; Southern Bell Telephone and Telegraph Company, 1972—. Mr. Brown initially worked in data station engineering and studies of communications for business information systems. He later was involved in studies of buffered digital networks and planning for the Digital Data System.

S. J. Butterfield, B.S.E.E., 1967, Ohio University; S.M.(E.E.), 1968, Massachusetts Institute of Technology; Bell Laboratories, 1967-1973; New England Telephone, 1973—. At Bell Laboratories, Mr. Butterfield was engaged in system studies and equipment design for the L-mastergroup digital system, T1, T1C and coaxial digital systems, and the T1WB4 data-voice multiplexer for the DDS. Mr. Butterfield is currently concerned with T1 Carrier performance with the New England Telephone Company. Member, IEEE, Phi Kappa Phi, Sigma Xi, Eta Kappa Nu, Tau Beta Pi.

Michael P. Cichetti, Jr., B.E.E., 1966, Cooper Union, New York; M.S.E.E., 1967, Stanford University; Bell Laboratories 1966—. Mr. Cichetti has worked on low-speed data transmission and low-speed data multiplexing prior to his work on DDS multiplexers. He is currently involved with interactive message switching. Member, Tau Beta Pi, Eta Kappa Nu.

Thomas G. Cross, B.S.E.E., 1963, California State Polytechnic College; M.S.E.E., 1965, Northwestern University; Bell Laboratories, 1963–1968, 1970–1972; American Telephone and Telegraph Company, 1968–1970, 1973—. At Bell Laboratories, Mr. Cross was involved in development of long-haul microwave radio systems, short-haul digital carrier systems, and wideband digital data terminals. At AT&T, he was involved in long-range fundamental planning for transmission systems and is currently responsible for technical regulatory matters.

S. M. Fitch, B.S.E.E., 1960, and M.S.E.E., 1962, Purdue University; Ph.D., 1973, New York University; Bell Laboratories, 1963—. Mr. Fitch initially worked on the development of data stations for the No. 1 ESS ADF Data Switching System and then on the 85 and 86 Data Selective Calling Systems. More recently, his work involved developing multipoint services for the DDS. He is presently supervisor of the Data Network Testing Group and is responsible for developing maintenance and testing equipment for DDS. Member, IEEE, Eta Kappa Nu.

H. C. Illium, B.S.A.E., 1954, Purdue University; M.E.E., 1960, New York University; Bell Laboratories, 1956—. Mr. Illium has been involved with the physical design of data sets and data transmission equipment. He currently supervises a data systems physical design group at Holmdel. Member, Sigma Gamma Tau.

Nicholas Knapp, Jr., B.S.E.E., College of the City of New York, 1929; Bell Laboratories, 1929–1973. Mr. Knapp was engaged largely in physical developments. His early work was on toll switching systems, switchboards, toll ticket distributing systems, and radio. During World War II he worked on land-based, shipboard, and airborne radar equipment. Subsequently, he was engaged in coaxial and military carrier systems and on data sets and data systems.

Joseph G. Kneuer, B.S.E.E., 1958, University of Notre Dame; M.S.E.E., 1965, and Ph.D., 1966, Syracuse University; Bell Laboratories, 1966—. At Bell Laboratories, Mr. Kneuer has worked in high-speed data communication and later in the development of the Digital Data System. Since 1972 he has supervised a circuit design group responsible for the local distribution system of dds. Member, IEEE, Sigma Xi.

William J. Lawless, B.S.E.E., 1959, Newark College of Engineering; M.S.E.E., 1961, New York University; Ph.D., 1971, Polytechnic Institute of Brooklyn; Bell Laboratories, 1959—. Mr. Lawless has worked on the design and development of data communication equipment. He is currently head of the Data Network Transmission Department. Member, IEEE, Tau Beta Pi, Eta Kappa Nu.

W. B. Lueft, B.S.E.E., Worcester Polytechnic Institute, 1953; Western Electric, 1953-1961; Bell Laboratories, 1961—. Currently, Mr. Lueft is supervisor of a physical design data testing group. Senior member, IEEE; member, Eta Kappa Nu.

J. J. Mahoney, Jr., A.T.&T., 1926-34; Bell Laboratories, 1934—. At Bell Laboratories, Mr. Mahoney has worked on studies of electrical protection of telephone facilities, the design of oscilloscopes used in development of radar systems, and on systems engineering studies for carrier and wideband data transmission. He worked on performance objectives for the Digital Data System and currently supervises a group responsible for data performance studies. Senior Member, IEEE.

James J. Mansell, B.S.E.E., 1962, St. Louis University; M.S.E.E., 1963, University of Pennsylvania; Bell Laboratories, 1962—. Mr. Mansell has been involved in systems engineering of data communications networks. He currently supervises a data systems operations group.

Richard C. Matlack, B.S., 1938, University of Pittsburgh; U. S. Army, 1941-1945; Bell Laboratories, 1945—. Mr. Matlack has been involved in switching development of the No. 5 Crossbar systems in-

cluding the planning for direct dialing arrangements for the step-by-step system and concentrator arrangements. While in the Army, he was engaged in radar and electronic gun director work with the Army Antiaircraft Artillery Corps. He is past secretary-treasurer of the Professional Group of Electronic Computers; member, AIEE, Eta Kappa Nu, and Sigma Tau.

G. W. Phipps, B.S.E.E., 1960, Rose Polytechnic Institute; M.S.E.E., 1963, New York University; Bell Laboratories, 1961—. Mr. Phipps initially worked in data station engineering for both line-switched and store-and-forward data systems. He supervised a group responsible for studies of communications for business information systems and later a group responsible for computer-access planning for *Picturephone*[®] service. He was involved in network planning for the Digital Data System and software to aid telephone companies in planning and administering the network. Mr. Phipps is currently head of a department responsible for data message switching planning and software development. Member, IEEE, Tau Beta Pi.

D. L. Rechtenbaugh, B.S.E.E., 1960, South Dakota State College; M.E.E., 1962, New York University; American Telephone and Telegraph Company, 1969–1972; Bell Laboratories, 1960–1969 and 1972—. Mr. Rechtenbaugh initially worked on maintenance planning for private line and *DataPhone*[®] services and the No. 1 ESS ADF Data Switching System. During his assignment at AT&T, he was responsible for trunk maintenance planning including centralized automatic testing arrangements. He is presently supervisor of the Digital Network Maintenance Planning Group and is responsible for developing the T-Carrier Administration System and maintenance planning for the emerging digital network.

Donald W. Rice, B.S.E.E., 1958, University of Pennsylvania; M.S.E.E., 1959, California Institute of Technology; Bell Laboratories, 1959—. Mr. Rice has been engaged in various development activities on data systems including systems planning, circuit design, and physical design. Member, IEEE, Eta Kappa Nu, Tau Beta Pi.

Burton R. Saltzberg, B.S.E.E., 1954, New York University; M.S., 1955, University of Wisconsin; Eng. Sc.D., 1964, New York Uni-

versity; Bell Laboratories, 1957—. Mr. Saltzberg has been engaged in the development, exploration, and analysis of data transmission techniques. He presently supervises a group involved in the development of equipment for data communication networks. Member, IEEE, Eta Kappa Nu, Tau Beta Pi, Sigma Xi.

Norman E. Snow, B.S.E.E., 1952, University of Arkansas; Southwestern Bell, 1952-1957; Bell Laboratories, 1957—. Mr. Snow initially worked in the Arkansas area of Southwestern Bell where he engineered toll terminal, local switching, and central office power installations. At Bell Laboratories, he has worked in both systems engineering and development of voiceband and wideband data sets and systems for a variety of standard and special-purpose Bell System data services. Registered professional engineer; member, Tau Beta Pi, Theta Tau, Phi Eta Sigma, Pi Mu Epsilon.

L. A. Spindel, B.S.E.E., 1967, Lehigh University; M.S.E.E., 1969, Rutgers University; Bell Laboratories, 1967—. Mr. Spindel has worked on the systems engineering aspects of various data communications services, including analog data transmission and network planning for the Digital Data System. He is presently supervisor of an analytical support group for marketing and economic analyses of new data services. Member, IEEE, Phi Beta Kappa, Tau Beta Pi, Eta Kappa Nu, Omicron Delta Kappa.

Herbert M. Zydney, B.A., 1954, Columbia College; B.S.E.E., 1955, and M.S.E.E., 1959, Columbia University; Bell Laboratories, 1959—. Mr. Zydney has been engaged in data communications systems and the design of circuits and computer programs for digital communications in the Bell System. He was responsible for a number of developments for the Digital Data System. He is presently Director of the Facilities Network Planning Center, which provides planning methods for the evolution of the facilities used in telephone service and improved procedures for the activities needed in operating the telephone network. He is a registered professional engineer. Member, IEEE, Tau Beta Pi, Eta Kappa Nu.

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