

Contributors to This Issue

John E. Abate, B.S.E.E., 1954, Newark College of Engineering; M.S.E.E., 1960, Stevens Institute of Technology; Sc.D.E.E., 1967, Newark College of Engineering; Bell Laboratories, 1963—. Mr. Abate has worked on problems in adaptive quantization and prediction of speech and video signals, digital transmission systems analysis, and digital network performance studies. Since 1970, he has been supervisor of a Digital Network Planning Group responsible for planning the evolution of digital switching and transmission facilities into the Bell System network. Member, IEEE, Sigma Xi, Tau Beta Pi, Eta Kappa Nu, and AAAS.

J. F. Boyle, B.S.E.E., 1963, Newark College of Engineering; M.S.E.E., 1965, Columbia University; Bell Laboratories, 1963—. Mr. Boyle has worked on physical design of utilized facility terminals, digroup terminals, and switched maintenance access systems and on voice-frequency applications. He was assistant engineering manager—transmission for AT&T for two years. Currently, he is supervisor of the voice-frequency equipment group at Bell Laboratories. Member, Tau Beta Pi, Eta Kappa Nu.

Lane H. Brandenburg, B.S.E.E., 1962, M.S.E.E., 1963, Ph.D., Columbia University; Bell Laboratories, 1963—. As a member of the Digital Network Planning Department, Mr. Brandenburg is concerned with the orderly introduction of digital systems into the nationwide Bell System telecommunications network, with emphasis on special requirements and compatibility issues.

Thomas J. Cieslak, B.S. (math) 1965, Illinois Institute of Technology; M.S.E.E., 1966, University of California (Berkeley); Bell Laboratories 1965—. Mr. Cieslak began at Bell Laboratories working on No. 1 ESS arranged for AUTOVON in the fault-recovery area. Since 1968 he has been engaged in software design on time-division network control and CCIS security arrangements for No. 4 ESS and is currently working on No. 4 ESS peripheral-fault recovery. Member of ACM.

John R. Colton, B.S.E.E., 1964, University of Pennsylvania; M.S.E.E., 1966, MIT; Bell Laboratories, 1964—. Mr. Colton has been engaged in the development of hardware and maintenance software for equipment that directly terminates digital carrier systems onto No. 4 ESS. In 1972 he became supervisor of a group responsible for system design, planning, and maintenance of the Digroup Terminal. He is currently supervisor of a group responsible for the development of remote access and test systems for special service circuits. Member, IEEE, Eta Kappa Nu, Tau Beta Pi, Sigma Xi.

Harry B. Compton, B.E.E., 1950, M.E.E., 1955, Polytechnic Institute of Brooklyn; Bell Laboratories, 1955—. His early work was in circuit design for radar systems including the DEW Line and Nike projects. He then worked on logic and system design on the UNICOM and AUTOVON communication systems. Most recently he supervised a group responsible for field testing the first No. 4 ESS in Chicago. Member, Tau Beta Pi, Eta Kappa Nu, IEEE; associate member, Sigma Xi.

Lance M. Croxall, B.S.E.E., 1965, M.S.E.E., 1966, Purdue University; Bell Laboratories 1966—. Mr. Croxall was initially responsible for the development of the network management program for the electronic translator system for 4A crossbar. He later supervised groups responsible for operational program development for No. 4 ESS, including input/output, traffic measurements, and CCIS. He currently supervises a group responsible for international call handling features for No. 4 ESS. Member, Tau Beta Pi, Eta Kappa Nu.

Carl L. Dammann, B.S.E.E., 1961, University of Maryland; M.S.E.E., 1963, New York University; Bell Laboratories, 1961—. Mr. Dammann has been involved in digital terminal design, including design of wide-band coding terminals and digital channel banks. Currently supervising digital terminal design. Member, IEEE.

Paul K. Giloth, B.A., 1942, Beloit College; B.S.E.E., 1947, Northwestern University; Illinois Bell Telephone Company, 1947-1950; Bell Laboratories, 1951—. Mr. Giloth worked initially on analog computer simulators for military applications. Following this he supervised development of TRADIC, a transistorized bombing and navigation system, and the guidance computers for the NIKE-ZEUS ABM system. In 1961 he was appointed head of the UNICOM Test Model Department and was

responsible for digital terminal equipment and the store-and-forward message portion of the UNICOM system. In 1963 he became head of the Data Switching Systems Department and was responsible for development of the No. 1 ESS ADF Data Switching System. From 1970 to 1972 he was responsible for AUTOVON development. As head of the No. 4 ESS Coordination and Evaluation Department, he is now responsible for developing software tools for system evaluation and the planning, engineering, and integration of early No. 4 ESS offices. Senior Member, IEEE; Member, Sigma Xi.

John A. Giunta, B.S.E.E., 1965, University of Dayton; M.S.E.E., 1967, Columbia University; Bell Laboratories, 1965—. Mr. Giunta initially worked on studies of military communications systems. In 1967 he became involved in the system and hardware design of trunk maintenance systems, including test positions and the Switched Maintenance Access System (SMAS). He currently supervises the group responsible for the development of the Circuit Maintenance System (CMS) 1A. Member, Tau Beta Pi.

T. V. Greene, B.S.E.E. 1957, Polytechnic Institute of Brooklyn; M.S.E.E. 1959, New York University; Bell Telephone Laboratories, 1957—. Mr. Greene's early work on automation of design processes for the manufacture of Nike-Zeus computer systems was followed by processor design for the UNICOM system and software development for AUTOVON switching offices. He supervised the software development of features for the AUTOVON and No. 4 ESS systems. He currently supervises the development of network management and traffic administration features for No. 4 ESS.

D. G. Haenschke, Diplom Vorpruefung 1951, Dipl. Ing. 1953, Technical University, Vienna; Institute for Telecommunications, Vienna University, 1953-1955; Bell Telephone Laboratories, 1955—. He was engaged in the planning of communications systems for air traffic control, and later in traffic studies applied to data communication systems and a long-range toll network planning. During 1968 Mr. Haenschke supervised a group responsible for performance appraisal of new services, including *PICTUREPHONE*[®] service. Since 1969 he has been responsible for the planning of traffic network management and overload control features for new switching systems such as No. 4 ESS. He is currently supervising a group engaged in the feature planning of computer-based centralized network management surveillance and control

systems. Senior member, IEEE; member, AAAS, Verband Deutscher Elektrotechniker.

Michael B. Haverty, B.S.E.E., 1960, University of North Dakota; M.S.E.E., 1962, New York University. Bell Laboratories, 1960—. Mr. Haverty has worked on many phases of electronic switching development including circuit and logic design, program design, and system testing. From 1965 to 1972, he was associated with the development of the No. 1 ESS used in the government AUTOVON communications network. Since 1972, he has been head of the department responsible for development and operation of No. 4 ESS test facilities. Member, IEEE, Sigma Tau, and Sigma Xi.

S. F. Heath III, B.S., 1965, University of Minnesota; M.S., 1966, Stanford University; Bell Laboratories, 1965 to 1976; AT&T, 1976—. Mr. Heath has been engaged in program development for No. 1 ESS, No. 2 ESS, and No. 4 ESS. In No. 4 ESS, he has supervised the Data Administration Group and later the Toll System Evaluation and Utility Group. Mr. Heath is currently the Assistant Engineering Manager—Local Switching, AT&T. Member, Phi Beta Kappa.

Barbara H. Hornbach, A.B. (mathematics) 1969, Vassar College; M.S. (information science) 1972, University of Chicago; Bell Laboratories, 1969—. Ms. Hornbach has been responsible for the development of operational software for the No. 4 ESS network management and traffic and plant measurement systems. Currently she is designing software for No. 4 ESS international trunk maintenance features.

John H. Huttenhoff, B.S.E.E., 1960, University of Illinois; MSEE, 1962, New York University; Bell Laboratories, 1960—. Mr. Huttenhoff worked on the design of new computer systems for military applications from 1960 to 1971, when he joined the No. 4 ESS project. He has worked on the network clock for No. 4 ESS and is presently supervisor of the Peripheral Recovery Program Group.

John Janik, Jr., B.S.E.E., 1954, New York University; 1954–1957 Communications Development Training Program; 1958 Digital Techniques Laboratory Program; Bell Laboratories 1954—. Mr. Janik is head of the Peripheral Circuit and Physical Design Department on No. 4 ESS.

He has worked on several military projects, UNICOM, AUTOVON, and No. 4 ESS. His present responsibilities are for the network and peripheral unit designs in No. 4 ESS. He is a member of the IEEE, Eta Kappa Nu, and Tau Beta Pi.

Carl E. Johnson, B.S.C.E., 1957, Syracuse University; M.S.C.E., 1964, University of Southern California; Jet Propulsion Laboratory, 1959–1965; Bellcomm, Inc., 1965–1972; Bell Laboratories, 1972—. Mr. Johnson has worked on systems studies concerned with advanced manned missions to Mars in support of the Apollo lunar project. At Bell Laboratories, he has worked on systems tasks on a computerized maintenance and administration system. Most recently he has worked on the requirements for the No. 4 ESS engineering and administration reports.

G. Douglas Johnson, B.S.E.E., Texas A&M University; Bell Laboratories 1936—. Mr. Johnson was involved in the development of mobile communications systems, radar, analog-digital converters, and data communications. For a number of years he has been concerned with toll switching systems, particularly evaluating and selecting the time-division network, as well as other design activities related to No. 4 ESS. He is supervisor of the Special Studies and Planning Group in the AUTOSEVOCOM II Development Laboratory.

Barry J. Karafin, B.S.E.E., 1961, University of Pennsylvania; M.E.E., 1963, New York University; Ph.D., 1974, University of Pennsylvania; Bell Laboratories, 1961—. Mr. Karafin has worked in the areas of digital transmission systems, computer language and compiler design, and computer-aided circuit analysis. His recent work has been in the design of controllers for digital switching system peripherals. Presently, he heads a department developing business customer telephone systems.

John C. Lawson, B.S.E.E., 1962, Yale University; M.S.E.E., 1967, The George Washington University; Bell Laboratories, 1967—. Mr. Lawson has worked on systems engineering and economic problems concerned with toll and local digital switching. He is currently engaged in studies of provision of digital services.

Henry J. Luer, B.S.M.E., 1956, Newark College of Engineering; Bell

Telephone Laboratories, 1956—. Mr. Luer's work has included development of guided missile inertial instruments and guidance systems. He presently supervises a group engaged in the physical design of power equipment.

H. Mann, B.A., 1950, Brooklyn College; M.S.E.E., 1955, Columbia University; Bell Laboratories, 1954—. Mr. Mann's early work was in exploratory development of framers and coders for T1 carrier. Subsequently he worked on the comand decoder for Telstar, on development of signaling units and the 4A signaling test set, and on development of the Digroup Terminal. Currently he is engaged in development of the No. 4 ESS digital interface frame. Member, IEEE and Pi Mu Epsilon.

Peter S. McCabe, B.S. (engineering), 1956, Trinity College; B.S.E.E., 1957, Rensselaer Polytechnic Institute; Bell Laboratories, 1957—. Mr. McCabe has worked on memories for Nike-Zeus, digital circuits for the 101 EPBX, and software design for the UNICOM, AUTOVON, and four-wire No. 1 ESS projects. Since 1967, Mr. McCabe has worked on support software system design and program administration for No. 4 ESS. He currently supervises a group that administers the No. 4 ESS program and designs support software for the No. 4 ESS development.

Michael N. Meyers, B. A., 1967, University of Illinois; M. S., 1969, University of Chicago; Bell Laboratories, 1967—. Mr. Meyers first worked on program administration and the office parameter data assembler for No. 1 ESS ADF. From 1970 until recently he has been involved with many aspects of No. 4 ESS diagnostic design and development. Currently he is engaged in advanced fault-recovery studies. Member, IEEE, Pi Mu Epsilon.

Billy G. Niedfeldt, B.S.E.E., 1959, University of Maryland; M.S.E.E., 1961, New York University; Bell Laboratories, 1959-1962; Bellcomm, Inc., 1962-1970; Bell Laboratories, 1970—. Mr. Niedfeldt's initial assignment at Bell Laboratories was exploratory development of high-speed data terminals. His assignments at Bellcomm were guidance and control system analysis, Apollo lunar landing mission error analysis, and determination of an engineering model of the lunar gravitational potential field. After rejoining Bell Laboratories in 1970, his initial assignments were in the Safeguard project where he was responsible for the operations of the tactical system laboratories and for the engineering,

planning, and coordination of the Madison, N.J., building. Later he was responsible for the system test and integration of the tactical operating system. In 1974, Mr. Niedfeldt joined the No. 4 ESS project where his first assignment was the responsibility of the first generic software package system test. He currently supervises a group responsible for No. 4 ESS system laboratory operations and utility system development.

Roman Ostapiak, B.S.E.E., 1961, University of Pennsylvania; M.S.E.E., 1963, New York University; Bell Telephone Laboratories, 1961—. Since joining Bell Telephone Laboratories, Mr. Ostapiak has been engaged in the design of power-conditioning circuits. Presently he is a supervisor of a group responsible for the design of common power equipment.

John B. Otto, B.S. (mathematics), 1959, St. Norbert College; M.S., 1966, Stevens Institute of Technology; Western Electric Company, 1959–1963; Bell Laboratories, 1963—. Mr. Otto has been involved with acceptance testing for the SAGE project, programming for No. 1 ESS AUTOVON and design and development of utility, support, and test programs for No. 4 ESS.

James T. Raleigh, B.S. (engineering science), 1957, Pennsylvania State University; Bell Laboratories, 1957—. Mr. Raleigh initially worked on precision frequency standards and portable transmission test equipment. In 1962 he transferred to Bellcomm Inc., where he was involved with system engineering and analysis in support of the manned lunar landing. He later supervised a group concerned with spacecraft and ground communications. Upon his return to Bell Laboratories in 1972, Mr. Raleigh supervised a group involved with switched special services and later the transmission aspects of operator and attendant services. He currently supervises the group responsible for the development of the No. 4 ESS 51A test position and test positions for 4A crossbar and special services. Member, IEEE, Tau Beta Pi.

A. E. Ritchie, A.B. 1935, M.A. 1937 (physics), Dartmouth College; Bell Laboratories, 1937—. His initial work was in designing crossbar switching systems and in organizing courses, writing texts, and teaching in the fields of radar, switching circuits, and system design. Since 1951, his assignments have been in systems engineering and fundamental planning in the telephone switching field. He became director of

Switching Systems Engineering in 1958 and, when responsibilities were divided in 1965, director of Toll Switching Engineering. This position includes responsibility for planning studies leading to new toll switching systems such as No. 4 ESS, and planning for development and implementation of new signaling systems, notably Common Channel Inter-office Signaling. Senior member, IEEE.

Joyce B. Roberts, B.S., 1957, Dickinson College; Bell Laboratories, 1961—. As a resident visitor at Bell Laboratories, she worked on data reduction and analysis of the SAGE air defense project. She joined Bell Laboratories to work on UNICOM, a military communication system, where her specific assignments included the code simulator, traffic and supervisory consoles, and hot-line feature. She later worked on AUTOVON call processing and office parameters. Since 1968, she has been involved with call processing for No. 4 ESS with prime responsibilities for the numbering plan, digit reception and analysis, and service evaluation. At present she is in the International Call Processing Design Group.

William L. Ross, B.A. (chemistry), 1948, M.A. (physics), 1950, Ph.D. (physics), 1953, University of British Columbia; Bell Laboratories, 1955—. Mr. Ross conducted systems engineering studies on negative impedance loading, T1 carrier, and digital transmission on coaxial and waveguide systems. Since 1965, he has worked on network modeling algorithms for optimal transmission facilities deployment, on toll network planning, and on initial planning for No. 4 ESS in the evolving network.

William A. Routt, B.S.E.E., 1966, Pennsylvania State University; M.S.E.E., 1967, Carnegie Institute of Technology; Bell Laboratories, 1966—. Mr. Routt initially worked on requirements for No. 4 ESS and then worked on the design and development of the software integrity programs for No. 4 ESS. Currently, he is supervisor of the group that is responsible for international trunk maintenance software for No. 4 ESS. Member, Eta Kappa Nu, Sigma Tau.

Sumit Roy, B.E.E.E., 1969, Calcutta University; M.S.E.E., 1965, Ph.D., 1970, Illinois Institute of Technology; Bell Laboratories, 1970—. Mr. Roy was involved with the development of automated software testing methods for No. 4 ESS software. He has also worked on trouble-

locating procedures, data-base management, and programming productivity issues related to No. 4 ESS. He is supervisor of the Advanced Software Design Group. Member, Tau Beta Pi, IEEE, Sigma Xi.

Michael W. Saad, B.S.E.E., 1964; M.S.E.E., 1965, University of Illinois; Bell Laboratories, 1966—. Mr. Saad first worked in the maintenance software area for the AUTOVON system. His No. 4 ESS experience includes MF and DP call-processing design, peripheral error-analysis strategies and design, and peripheral-unit-configuration program design. Mr. Saad is currently working on No. 4 ESS translations for international switching features. Member, Tau Beta Pi.

Jack M. Scanlon, B.A.S.C., 1964, University of Toronto; M.S., 1965, Cornell University; Bell Laboratories, 1965—. Mr. Scanlon initially worked on the development of the signal processor for No. 1 ESS and No. 1 ESS peripheral-fault recovery and diagnostics programs, then supervised groups responsible for the addition of new call features to No. 1 ESS and No. 4 ESS call-handling design. He currently heads a department responsible for the No. 4 ESS system design, design of No. 4 ESS call-handling software, program administration for No. 4 ESS, and exploration of new software development techniques. Member, IEEE.

Walter R. Schleicher, B.S.E.E., 1955, Newark College of Engineering (New Jersey Institute of Technology); Bell Laboratories 1941—. In the earlier part of his career, Mr. Schleicher worked on the design and development of telephone apparatus and transmission measuring equipment. In 1956, he was involved in the design and development of a naval air-to-ground data communications system. This was followed by UNICOM, a military electronic switching system. Since 1962, he has supervised physical design groups working on the design and development of electronic switching systems—AUTOVON and No. 4 ESS. Member, Tau Beta Pi.

Gabe A. Sellers, Jr., B.S.E.E. Kansas State University, 1948; Bell Laboratories 1948—. Mr. Sellers has been associated with the development of military data communications, Nike-Zeus digital computers, UNICOM, AUTOVON, and four-wire No. 1 ESS. He has been associated with the No. 4 ESS project since 1967. He currently supervises a group responsible for No. 4 ESS system design and planning.

Matthew F. Slana, B.S.E.E., 1957, University of Notre Dame; M.S.E.E., 1958, University of Wisconsin; Bell Laboratories 1958—. Mr. Slana first worked in the Military Computer Research Laboratory, investigating high-speed logic circuits, cryotrons, and radiation effects on devices and circuits. He next worked in the Military Communications Engineering Laboratory, engineering communication links for Nike and SAFEGUARD missile systems, and was a member of a Minuteman Missile Safety Study team. Since 1964, he has been involved with the development of a variety of electronic switching systems, including responsibility for the design of the time-division network for No. 4 ESS. Currently, he supervises the System Design Group in the AUTOSEVOCOM II Development Laboratory. Senior member, IEEE, Eta Kappa Nu.

Muerl T. Smith, Jr., B.S.E.E., 1961, Clarkson College of Technology; M.S.E.E., 1963, New York University; Bell Laboratories, 1961—. Mr. Smith initially worked in the development of operational software for the UNICOM and later the No. 1 ESS ADF systems. He then supervised the group responsible for the development of the No. 4 ESS trunk and service circuit maintenance software. Since 1976 he has been involved with No. 4 ESS call processing and system architecture requirements and design. Member, IEEE, Eta Kappa Nu, Tau Beta Pi.

Albert E. Spencer, Jr., B.S.E.E., Drexel University, 1951; Bell Laboratories, 1951—. Mr. Spencer initially participated in the design of transmission systems, then had several development and systems engineering assignments related to military and government communications, and to central office and customer switching. In 1971, Mr. Spencer was appointed director of the Customer Switching Laboratory, Denver. He assumed his present position as executive director of the Toll Electronic Switching Division, Naperville, Illinois, in 1975.

Frank H. Tendick, Jr., B.S.E.E., 1951, University of Michigan; Bell Laboratories, 1951—. Mr. Tendick was first engaged on exploratory transistor circuits for airborne military computers and submarine cable amplifiers. He has supervised groups on development of twistor stores for Nike Zeus, time-division switch units and control circuits for No. 101 ESS PBX, and the signal processors for No. 4 ESS. At the present, he is supervisor of the No. 4 ESS System Laboratory and Test Facilities Group. Member IEEE, Tau Beta Pi, Phi Kappa Phi, Eta Kappa Nu, and Sigma Xi.

L. S. Tuomonoksa, B.S.E.E. 1952, Worcester Polytechnic Institute; M.S.E.E. 1954, Massachusetts Institute of Technology; Bell Laboratories, 1954—. His first assignment was in the development of the Morris experimental electronic switching system. At the completion of the Morris trial, he was assigned to development of No. 1 ESS, responsible for the maintenance planning and design for that system. In 1966 he was appointed department head responsible first for maintenance planning and later for operational program design. In 1968, he became department head of the No. 4 ESS System Planning and Operational Program Design Department. In April of 1974 he was appointed assistant director of the No. 4 ESS Switching System Laboratory and in March 1976, the director of that laboratory. In May 1977, he became director of the No. 1 ESS Switching System Laboratory.

Keith W. Yoder, B.S.E.E., 1966, University of Cincinnati; M.S., 1968, Northwestern University; Bell Laboratories, 1966—. Mr. Yoder initially worked on system initialization and manual interface programs for No. 1 ESS arranged for data features. He also worked on No. 4 ESS peripheral fault recovery. He is currently working on international switching features for No. 4 ESS. Member, Tau Beta Pi and Eta Kappa Nu.

Kenneth W. Zweifel, B.S.E.E., 1962, Washington University (St. Louis); M.S.E.E., 1963, Carnegie Institute of Technology; Bell Laboratories, 1962—. Mr. Zweifel has worked on diagnostic program requirements for No. 1 ESS ADF and the development of a system for control and reporting of switching system projects. He had responsibility for the design of the software system and overall system design responsibility for the Programmed Electronic Traffic Simulator.

