Contributors to This Issue

R. Ahmari, B.S.E.E., 1966, University of Tehran; M.S.(E.E.), 1969, and Ph.D.(E.E.), 1972, Illinois Institute of Technology; Assistant Professor, Manhattan College, New York, 1972–1973; Bell Laboratories, 1973—. Mr. Ahmari has worked on system planning for private networks, design, and development of fault tolerant systems, and system testing for TSPS. He is currently a member of the SPC System Integration Group responsible for testing and integration of various TSPS generics. Mr. Ahmari is a registered professional engineer in the State of Illinois. Member, IEEE.

Ann Barone-Wing, B. A. (psychology), 1974, Mount Holyoke College; Bell Laboratories, 1974—. Ms. Barone-Wing initially worked on the Automated Coin Toll Service (ACTS) simulation study, designed the operator interface, and supervised the customer interviews. More recently, she has contributed to additional studies of operator service mechanization and other human factors projects.

Steven M. Bauman, B.E.E., 1966, Rensselaer Polytechnic Institute, M.E. (Electrical Engineering), 1968, Stevens Institute of Technology; Western Electric, 1966–1968; Bell Laboratories, 1968—. Mr. Bauman worked on Safeguard system design and software development until 1973. He then supervised a group responsible for call processing software for the RTA. In 1977, he was appointed Head, TSPS Feature Programming Department. Member, IEEE.

M. Berger, B.E.E., 1964, City University of New York; M.S.E.E., 1968, Polytechnic Institute of Brooklyn; Airborne Instruments Laboratory, 1964–67; Sperry Systems Management Division, 1967–69; New Jersey Bell 1972–74; Bell Laboratories, 1969–72, 1974—. Mr. Berger was initially involved in developing improved trunk engineering and administrative methods for metropolitan areas. He has been engaged in engineering and planning studies of new features of TSPS No. 1 and

supervised a group conducting planning studies of operator number services systems. At present, he is supervisor of the Operator Systems Engineering Group conducting planning studies and formulating requirements for operator toll and assistance systems. Member, IEEE.

William L. Brune, B.Sc. (Eng. Physics), 1947, Lehigh University; Bell Laboratories 1947–1955; Stromberg Carlson Telecommunications Division, 1955–1959; Bell Laboratories, 1959–. Mr. Brune's early responsibilities at Bell Laboratories were in transmission transformer development. At Stromberg Carlson, he was manager of groups engaged in transmission design and development of carrier multiplex and time division switches. Soon after his return to Bell Laboratories he became supervisor of the Networks, Filters and Equalizers group in the Military Apparatus Laboratory. Since 1970, he has supervised a group engaged in transmission planning for operator and attendant services. Member, Phi Beta Kappa.

Andrew F. Bulfer, B.S. (Electrical Engineering), 1962, Massachusetts Institute of Technology; M.S. and Ph.D. (Electrical Engineering), 1970, Ohio State University; Applied Physics Laboratory, Johns Hopkins University, 1962–1967; Bell Laboratories, 1970—. While at the Applied Physics Laboratory, Mr. Bulfer worked on the analysis and design of naval guided missile systems. Since coming to Bell Laboratories, Mr. Bulfer has worked in the Operator Systems Laboratory on various TSPS No. 1 new feature projects including CATLAS, RTA, PSS No. 2, and ACTS. He is presently supervisor of the Call Programming and Analysis group.

William J. Bushnell, B.S.(E.E.), 1969, Purdue University; M.S.(E.E.), 1971, Polytechnic Institute of Brooklyn; Ph.D. (E.E.), 1975, Polytechnic Institute of New York; Bell Laboratories, 1969—. Mr. Bushnell initially worked on radar system analysis for the Safeguard project. Since 1974, he has been involved in the formulation of requirements and design of ACTS, and in 1977 he began supervising system testing of ACTS and development of other TSPS features. Member, IEEE, Tau Beta Pi, Eta Kappa Nu.

G. T. Clark, B.S.M.E., 1952, Bradley University; Western Electric Company, 1956–1961; Bell Telephone Laboratories, 1961—. Mr. Clark was first engaged in the physical design of step-by-step common

control equipment and later worked on the design of 758C PBX equipment. He has coordinated the physical design of TSPS No. 1 equipment, including detail design of network, position subsystem, TTY trunk and buffer, and the station signaling and announcement subsystem switching equipment. He was also engaged in the physical design of AIS equipment, including the file subsystem No. 2. He is currently working on physical design of new features for TSPS No. 1, including the peripheral system interface frame.

John C. Dalby, Jr., B.S. (Applied Mathematics), 1968, and M.S.E. (Computer, Information, and Control Engineering), 1969, University of Michigan; Masters of Philosophy (Computer Science), 1977, Rutgers University; Bell Laboratories, 1970—. Since joining Bell Laboratories, Mr. Dalby has been involved in TSPS No. 1 development designing call processing and maintenance software and writing system development requirements for new TSPS No. 1 features. Presently, he supervises a group responsible for developing software, hardware, and procedures to add equipment and features to in-service TSPS No. 1 sites without interrupting call processing. Member, Tau Beta Pi.

J. P. Delatore, B. A. (Mathematics), 1963, College of Steubenville; M. A. (Mathematics), 1965, Bowling Green University; Bell Laboratories, 1965—. Mr. Delatore has worked on TSPS program design and TSPS test and evaluation. He worked at AT&T from 1973 to 1975 providing computer-aided service cost methodologies. In 1975 he became supervisor of the TSPS growth and field support group, and is presently supervisor of the TSPS planning group.

Richard S. DiPietro, B.S. (Eng. Sci.), 1970, Northwestern University; M.S.E.E., 1972, New York University; Bell Laboratories, 1970—. Mr. DiPietro worked on Safeguard system performance evaluation and system testing until 1974. He then worked on circuit design and system testing for the remote trunk arrangement. In 1977, he was made supervisor of the TSPS Field Support and Test Group and is currently supervisor of the Call Programming and Operator Actions Group.

Walter E. Gibbons, S.B. (Electrical Engineering), 1974, and S.M. (Electrical Engineering), 1975, Massachusetts Institute of Technology; Bell Laboratories, summer 1972, 1973—. Mr. Gibbons was initially

involved in the exploratory development of a model for the ACTS feature. Subsequently, he has done maintenance programming and system testing for RTA/PSS No. 2 development. He is presently working for the TSPS Processor Department. Member, Sigma Xi.

John A. Hackett, B.S.E.E., 1959, University of Maine; M.S.E.E., 1961, New York University; Bell Laboratories, summer 1958, 1959—. Mr. Hackett initially worked on improvements and call-through testing for step-by-step offices. He then worked on the initial circuit designs and overall architecture of TSPS No. 1. He supervised development of TSPS peripheral circuits and more recent additions to extend TSPS to sparse areas. He is currently supervisor of the operator systems exploratory group. Member, IEEE, Tau Beta Pi, Phi Kappa Phi.

Walter S. Hayward, Jr., A.B., 1943, S.M. (Electrical Engineering), 1947, Harvard University; Bell Laboratories, 1947—. Mr. Hayward has worked in the field of telephone traffic and switching systems engineering. In 1961, he was appointed Head, Electronic Switching Studies Department. In 1964, he was appointed Director of the Traffic Studies Center and is now Director of the Switching Operations Systems Engineering Center engaged in teletraffic studies, billing systems engineering and network data systems engineering. Member, IEEE and ACM.

J. Carl Hsu, B.S.E.E., 1963, National Taiwan University; M.S., 1966; Ph.D. (Computer Science), 1971, UCLA; Senior Development Engineer, NCR, 1966–1970; Bell Laboratories, 1971—. At Bell Laboratories, Mr. Hsu has been involved with call processing and maintenance software design, circuit design, and system planning for TSPS. He is currently supervisor of the TSPS Maintenance Emulation Group.

R. J. Jaeger, Jr., B.A. (Math), 1951, Hofstra University, Bell Laboratories, 1951—. Mr. Jaeger started his Bell System career with the Long Lines Department in New York City in 1941. After serving as a naval aviator in World War II, he returned to Long Lines, and in 1951 he came to Bell Laboratories to work in switching system design. He has worked on No. 4 Toll Crossbar, telegraph switching systems, the first time assignment speech interpolation (TASI) system, panel, step-by-step and the Traffic Service Position System (TSPS). Currently, he is Head of the Feature Planning and Traffic Engineering Department for local ESS systems. Senior Member, IEEE; Member, Kappa Mu Epsilon, Sigma Kappa Alpha.

Daniel H. Larson, B.S.E.E., 1951, Northwestern University; U.S. Army 1954-1955; Communications Development Training Program (CDTP), 1956; Bell Laboratories, 1951—. Mr. Larson has worked on the design and field testing of high-frequency receiver and signal processing circuits for the radars used in the Nike and Safeguard anti-aircraft and anti-missile defense systems. Since 1975, he has worked on circuit design for the Traffic Service Position System. Member, Tau Beta Pi, Phi Eta Sigma, Eta Kappa Nu.

R. J. Piereth, B.S.E.E., 1967, Newark College of Engineering; M.S.E.E., 1969, Rutgers University; Bell Laboratories, 1961–1971; AT&T, 1971–1975; Bell Laboratories, 1975—. Mr. Piereth worked on the No. 101 ESS, No. 1 ESS, No. 2 ESS, Automatic Intercept System, and Traffic Measurements at Bell Laboratories before transferring to AT&T in 1971, where his responsibilities included traffic measurement and force administration systems and equipment. Currently, he supervises a group developing circuits and maintenance programs to provide TSPS with CCIS and busy line verification features. Member, Eta Kappa Nu, Tau Beta Pi, IEEE.

R. L. Potter, B.S.E.E., 1964, State University of New York at Buffalo; S.M.E.E., 1965, Massachusetts Institute of Technology; Bell Laboratories, 1964–1977; AT&T, 1977—. At Bell Laboratories, Mr. Potter has worked on maintenance and operational software for No. 1 ESS and has supervised hardware and software design as well as system performance analysis groups for TSPS No. 1. He is currently Assistant Engineering Manager, Exchange Switching Systems, for the American Telephone and Telegraph Company. Member, IEEE, ACM, AAAS, Tau Beta Pi, Sigma Xi.

Edward M. Prell, B.S.E.E., 1962, University of Kentucky; M.S.E.E., 1964, Columbia University; M.S. (Management Science), 1969, Stevens Institute of Technology; Bell Laboratories, 1962—. Mr. Prell has worked on various aspects of hardware and software associated with the Traffic Service Position System and the Automatic Intercept System. He is currently Head of the Traffic Service Position System Planning Department.

V. L. Ransom, B.S.E.E., 1948, Massachusetts Institute of Technology; M.S.E.E., 1952, Case Institute of Technology; National Advisory Committee for Aeronautics, 1948–53; Bell Laboratories, 1953—. Mr. Ransom was first engaged in the design of a special-purpose digital computer for collecting and processing telephone traffic data. He worked briefly on the operational program for No. 1 ESS arranged for data features. He subsequently supervised a group concerned with planning for traffic measuring and service evaluation systems. In 1970, his efforts were shifted to planning for operator services systems. At present, he is head of a department responsible for systems engineering planning for operator services. Senior Member, IEEE; member, American Association for the Advancement of Science.

Sherman C. Reed, B.S.E.E., 1956, University of Oklahoma; M.S.E.E., 1958, Newark College of Engineering; Bell Laboratories, 1956—. At Bell Laboratories, Mr. Reed had many assignments in ballistic missile defense activities from 1956 to 1974. He began work on TSPS in 1974 and has been involved with call programming and operator actions software design and new feature planning for TSPS. He is currently supervisor of the TSPS No. 1B Development Coordination and System Testing Group. Member, Tau Beta Pi, Eta Kappa Nu, Pi Mu Epsilon.

George Riddell, M.E.E., College of the City of New York, 1954; Bell Laboratories, 1951—. Mr. Riddell was initially engaged in the design of step-by-step switching systems (SXS) and was involved in the development of SXS common control systems, 4-wire PBXs, answering services switching systems, and other electromechanical switching system design work. In 1963, he was assigned to the TSPS No. 1 System development. He now has the responsibility for TSPS Operator Training Systems and TSPS hardware developments.

R. E. Staehler, B.S.E.E., 1947, The College of the City of New York; M.S.E.E., 1948, Polytechnic Institute of Brooklyn; Bell Laboratories, 1948—. Mr. Staehler's early work was on No. 5 crossbar, toll signaling systems, and trainers for guided missile systems. In 1953, he worked on the development of electronic switching systems, specifically, the processor memory for the experimental central office in Morris, Illinois, and the processor logic and call memory for No. 1 ESS. He was appointed Director of the Electronic Switching Projects Laboratory in 1964 with responsibility for special applications for No. 1

ESS to military and data networks, including No. 1 ESS AUTOVON. In 1968, he was appointed Director of the Electronic Systems Design Laboratory with responsibility for development of the 1A Processor. In 1976, he was appointed Director of the Operator Services Laboratory with responsibility for extending the automation of operator services. Member, IEEE, Eta Kappa Nu, Tau Beta Pi, Sigma Xi.

John J. Stanaway, Jr., B.S.E.E., 1969, University of Virginia; M.S.E.E., 1970, Stanford University; Bell Laboratories, 1969—. Mr. Stanaway has worked on the design of a program tape unit for TSPS, TSPS operator training, and microprocessor test equipment for the TSPS system laboratory. He is currently involved in hardware and software developments for the Automatic Intercept System.

R. T. Steinbrenner, B.M.E., 1958, Union College; M.M.E., 1960, New York University; Bell Laboratories, 1958—. Mr. Steinbrenner was responsible for the development of graphical and alphanumeric display systems and analog recording systems for various Ocean Systems projects. He transferred to Bell System activities in 1971 when he assumed his present position as Head of the Recording Systems Department where he is responsible for the development of audio and digital data storage systems.

Kenneth Streisand, B.S., Queens College, 1959; B.S.E.E., 1959, M.S.E.E., 1960, Columbia University; Bell Laboratories, 1960—. Mr. Streisand has spent most of his laboratory career in voice frequency signaling development. This included work in multifrequency, *TOUCH-TONE*®, and single frequency signaling circuits and specialized projects such as calling line identification (CLI) and automated coin toll system (ACTS). Currently he is working on new features for the remote test system (RTS) used in special service circuit maintenance (SARTS). Member, IEEE, Tau Beta Pi, Eta Kappa Nu.

C. R. Swanson, B.S.E.E., 1950, Iowa State University; Bell Laboratories, 1951—. Mr. Swanson worked on Nike-Ajax, Nike-Hercules, and Nike-Zeus radar systems as well as the ZMAR and Nike-X projects. From 1967 to 1970 he was responsible for the Nike-X missile site radar operations at Kwajalein. He was later Safeguard MSR Software Process Manager and in 1974 was responsible for the integration of the MSR software and hardware at the Safeguard MSR site in North Dakota. In 1974 he assumed responsibilities in hardware and maintenance software of the TSPS project.

D. Van Haften, B. S. and M. S. (Mathematics), 1970, Michigan State University; Ph. D. (Electrical Engineering), 1977, Stevens Institute of Technology; Bell Laboratories, 1970—. Mr. Van Haften initially worked on the Safeguard project. Since joining the Operator Systems Laboratory in 1974, he has been involved in TSPS system testing, field support, and call processing development. Currently he is a member of the Development Coordination and System Test Group. Member, Phi Beta Kappa, Phi Kappa Phi, Pi Mu Epsilon.

John J. Victor, B.S. (Mathematics), 1967, St. Peter's College; M.S. (Computer Science), 1971, Stevens Institute of Technology; Bell Laboratories, 1967–1978; Western Electric, 1978—. Mr. Victor's work at Bell Laboratories included TSPS input/output software design, maintenance software design, control software design, remote maintenance software requirements and design, system testing and integration, and field support. He currently is Department Chief at Western Electric, where his group is responsible for the planning and management of toll operator systems, including TSPS.

Laurance A. Weber, B. E. E., 1945, Cornell University; M. E. E., 1955, Polytechnic Institute of Brooklyn; Bell Laboratories, 1946—. Mr. Weber was initially involved in the design of signaling circuits. Later he participated in the design of circuits for crossbar tandem systems. Following this assignment, he was appointed supervisor in charge of designing data sets for the mechanization of TWX service. He was appointed head of the 101 ESS Design Department in 1960. He has had subsequent assignments in No. 2, No. 2B, and No. 3 ESS. He is presently head of the TSPS Evaluation and Test Department. Member, IEEE, Tau Beta Pi, Sigma Xi, Eta Kappa Nu.

R. J. Welsch, B.S. (Math), 1967, Marquette University; M.S. (Computer Science), 1972, Northwestern University; Bell Laboratories, 1967–1968; U.S. Army, 1968–1970; Bell Laboratories, 1970—. At Bell Laboratories, Mr. Welsch has had experience with No. 1 ESS/ADP, No. 4 ESS, and systems engineering for electromechanical switching systems. From 1974 to 1978, he was a member of the Program Administration and Support Program Group of the Operator Systems Laboratory. He is currently with the Software Development Systems (UNIX) Applications Group of the Microprocessor and Software Technology Laboratory.

Allen G. Weygand, M.E., 1957, Stevens Institute of Technology; M.S.(E.E.), 1959, New York University; Bell Laboratories, 1957–1962; Bellcomm, 1962–1972; Bell Laboratories 1972—. Before transferring to Bellcomm, Mr. Weygand conducted transmission performance studies of various exchange-area voice-frequency systems and short-haul analog carrier systems. While at Bellcomm, he performed communications and tracking systems planning, analysis, and engineering studies in support of the Apollo, Skylab, and space shuttle space flight programs of NASA. Since his return to Bell Laboratories, Mr. Weygand has been engaged in transmission planning and analysis for Bell System operator services and various customer attendant services. Member, Tau Beta Pi.

Edward A. Youngs, B. A. (psychology), 1964, Dartmouth College; M.A. (psychology), 1968, University of North Carolina; Ph.D. (psychology), 1969, University of North Carolina; Bell Laboratories, 1969—. Mr. Youngs initially worked on human factors aspects of electronic key telephones. Later, he contributed in-depth studies of the TSPS operator job. Recently, as supervisor of a human factors group concerned with customer and operator performance and acceptance of new TSPS services, he has participated in the design of Automated Coin Toll Service (ACTS) and other operator service mechanization efforts.