

# Recent Monographs of Bell System Technical Papers Not Published in This Journal\*

BAKANOWSKI, A. E., CRANNA, N. G. and UHLIR, A., JR.

**Diffused Silicon Nonlinear Capacitors**, Monograph 3588.

BARRY, P. H. and WHITMAN, A. L.

**An Error-Detection System for 5-Unit-Code Teletypewriter Transmission**, Monograph 3616.

BENEŠ, V. E.

**Theory of Queues with One Server**, Monograph 3612.

BÖMMEL, H. E. and DRANSFELD, K.

**Excitation and Attenuation of Hypersonic Waves in Quartz**, Monograph 3589.

BOWERS, K. D., see HEMPSTEAD, C. F.

CHYNOWETH, A. G.

**Pyroelectricity, Internal Domains, and Interface Charges in Triglycine Sulfate**, Monograph 3590.

CLOGSTON, A. M., GORDON, J. P., JACCARINO, V., PETER, M. and WALKER, L. R.

**Hfs of  $F^{19}$  in the Electron Paramagnetic Resonance of  $Mn:ZnF_2$** , Monograph 3591.

CRANNA, N. G., see Bakanowski, A. E.

D'AMICO, C., see Hagstrum, H. D.

---

\* Copies of these monographs may be obtained on request to the Publication Department, Bell Telephone Laboratories, Inc., 463 West Street, New York 14, N. Y. The numbers of the monographs should be given in all requests.

DE GRASSE, R. W., HOGG, D. C., OHM, E. A. and SCOVIL, H. E. D.  
**Ultra-Low Noise Receiving System for Satellite or Space Communication**, Monograph 3624.

DE MONTE, R. W.  
**Synthesis of Cable Simulation Networks**, Monograph 3487.

DEVERALL, G. V., see Purvis, M. B.

DODD, D. M.  
**Effects of X-Irradiation on Ferroelectric Triglycine Sulfate**, Monograph 3614.

DODD, D. M.  
**Infrared Absorption Characteristics of Ferroelectric Triglycine Sulfate**, Monograph 3617.

DRANSFELD, K., see Bömmel, H. E.

DRENICK, R. F.  
**Mathematical Aspects of the Reliability Problem**, Monograph 3592.

DUNBAR, F. C.  
**A Delay Distortion Simulation Set**, Monograph 3625.

DURAND, J. L., see Geller, S.

DURKEE, A. L., METCALFE, D. and TIDD, W. H.  
**White Alice System—Design and Performance**, Monograph 3593.

FLETCHER, R. C., LE CRAW, R. C. and SPENCER, E. G.  
**Electron Spin Relaxation in Ferromagnetic Insulators**, Monograph 3594.

FRISCH, H. L., see Rice, S. A.

GELLER, S.  
**Magnetic Interactions and Distribution of Ions in the Garnets**, Monograph 3626.

GELLER, S. and DURAND, J. L.  
**Refinement of the Structure of  $\text{LiMnPO}_4$** , Monograph 3595.

DE GRASSE, R. W., HOGG, D. C., OHM, E. A. and SCOVIL, H. E. D.  
**Ultra-Low Noise Receiving System for Satellite or Space Communication**, Monograph 3624.

DE MONTE, R. W.

**Synthesis of Cable Simulation Networks**, Monograph 3487.

DEVERALL, G. V., see Purvis, M. B.

DODD, D. M.

**Effects of X-Irradiation on Ferroelectric Triglycine Sulfate**, Monograph 3614.

DODD, D. M.

**Infrared Absorption Characteristics of Ferroelectric Triglycine Sulfate**, Monograph 3617.

DRANSFELD, K., see Bömmel, H. E.

DRENICK, R. F.

**Mathematical Aspects of the Reliability Problem**, Monograph 3592.

DUNBAR, F. C.

**A Delay Distortion Simulation Set**, Monograph 3625.

DURAND, J. L., see Geller, S.

DURKEE, A. L., METCALFE, D. and TIDD, W. H.

**White Alice System—Design and Performance**, Monograph 3593.

FLETCHER, R. C., LE CRAW, R. C. and SPENCER, E. G.

**Electron Spin Relaxation in Ferromagnetic Insulators**, Monograph 3594.

FRISCH, H. L., see Rice, S. A.

GELLER, S.

**Magnetic Interactions and Distribution of Ions in the Garnets**, Monograph 3626.

GELLER, S. and DURAND, J. L.

**Refinement of the Structure of  $\text{LiMnPO}_4$** , Monograph 3595.

## Recent Monographs of Bell System Technical Papers Not Published in This Journal\*

BAKANOWSKI, A. E., CRANNA, N. G. and UHLIR, A., JR.

**Diffused Silicon Nonlinear Capacitors**, Monograph 3588.

BARRY, P. H. and WHITMAN, A. L.

**An Error-Detection System for 5-Unit-Code Teletypewriter Transmission**, Monograph 3616.

BENEŠ, V. E.

**Theory of Queues with One Server**, Monograph 3612.

BÖMMEL, H. E. and DRANSFELD, K.

**Excitation and Attenuation of Hypersonic Waves in Quartz**, Monograph 3589.

BOWERS, K. D., see HEMPSTEAD, C. F.

CHYNOWETH, A. G.

**Pyroelectricity, Internal Domains, and Interface Charges in Triglycine Sulfate**, Monograph 3590.

CLOGSTON, A. M., GORDON, J. P., JACCARINO, V., PETER, M. and WALKER, L. R.

**Hfs of  $F^{19}$  in the Electron Paramagnetic Resonance of  $Mn:ZnF_2$** , Monograph 3591.

CRANNA, N. G., see Bakanowski, A. E.

D'AMICO, C., see Hagstrum, H. D.

---

\* Copies of these monographs may be obtained on request to the Publication Department, Bell Telephone Laboratories, Inc., 463 West Street, New York 14, N. Y. The numbers of the monographs should be given in all requests.

GIGUERE, W. J., JAMISON, J. H. and NOLL, J. C.

**Transistor Pulse Circuits for 160-MC Clock Rates**, Monograph 3613.

GORDON, J. P., see Clogston, A. M.

GREEN, E. I.

**Progress and Problems in World Communication**, Monograph 3634.

GUPTA, S. S.

**Order Statistics from the Gamma Distribution**, Monograph 3597.

HAGSTRUM, H. D. and D'AMICO, C.

**Production and Demonstration of Atomically Clean Metal Surfaces**,  
Monograph 3598.

HEMPSTEAD, C. F. and BOWERS, K. D.

**Parametric Resonance of Impurities in  $\text{CaWO}_4$** , Monograph 3599.

HOGG, D. C., see De Grasse, R. W.

JACCARINO, V., see Clogston, A. M.

JAMISON, J. H., see Giguere, W. J.

KLEINMAN, D. A. and SPITZER, W. G.

**The GaP Crystal: Infrared Lattice Absorption; Anharmonic Forces**,  
Monograph 3629.

LE CRAW, R. C., see Fletcher, R. C.

LUONGO, J. P.

**Infrared Study of Oxygenated Groups Formed in Polyethylene during  
Oxidation**, Monograph 3600.

MASON, W. P.

**Phonon Viscosity and Its Effect on Acoustic Wave Attenuation and  
Dislocation**, Monograph 3601.

MATTHIAS, B. T.

**Relations Between Superconductors and Ferromagnets**, Monograph  
3630.

MAY, J. E., JR.

**Thickness-Shear Mode BaTiO<sub>3</sub> Ceramic Transducers for Ultrasonic Delay Lines**, Monograph 3602.

MCCCLUSKEY, E. J., JR. and UNGER, S. H.

**Number of Internal Variable Assignments for Sequential Switching Circuits**, Monograph 3618.

METCALFE, D., see Durkee, A. L.

MILLER, R. C. and SAVAGE, A.

**Domain-Walls in Metal Electroded Barium Titanate Crystals**, Monograph 3603.

MILLER, R. C. and WEINREICH, G.

**Mechanism for the Sidewise Motion of 180° Domain Walls in Barium Titanate**, Monograph 3604.

MURPHY, R. B.

**Stopping Rules with CSP-1 Sampling Inspection Plans**, Monograph 2936.

NOLL, J. C., see Giguere, W. J.

OHM, E. A., see De Grasse, R. W.

OLSEN, K. M.

**Effect of Trace Elements on High Purity Nickel**, Monograph 3632.

PETER, M., see Clogston, A. M.

PURVIS, M. B. and DEVERALL, G. V.

**Photographic Problems Associated with Construction of a Large Computer Memory**, Monograph 3605.

RICE, S. A. and FRISCH, H. L.

**Dynamical Theory of Diffusion in Crystals**, Monograph 3606.

RUNGE, W. A., see Willson, F. E.

SAVAGE, A., see MILLER, R. C.

MAY, J. E., JR.

**Thickness-Shear Mode BaTiO<sub>3</sub> Ceramic Transducers for Ultrasonic Delay Lines**, Monograph 3602.

MCCLUSKEY, E. J., JR. and UNGER, S. H.

**Number of Internal Variable Assignments for Sequential Switching Circuits**, Monograph 3618.

METCALFE, D., see Durkee, A. L.

MILLER, R. C. and SAVAGE, A.

**Domain-Walls in Metal Electroded Barium Titanate Crystals**, Monograph 3603.

MILLER, R. C. and WEINREICH, G.

**Mechanism for the Sidewise Motion of 180° Domain Walls in Barium Titanate**, Monograph 3604.

MURPHY, R. B.

**Stopping Rules with CSP-1 Sampling Inspection Plans**, Monograph 2936.

NOLL, J. C., see Giguere, W. J.

OHM, E. A., see De Grasse, R. W.

OLSEN, K. M.

**Effect of Trace Elements on High Purity Nickel**, Monograph 3632.

PETER, M., see Clogston, A. M.

PURVIS, M. B. and DEVERALL, G. V.

**Photographic Problems Associated with Construction of a Large Computer Memory**, Monograph 3605.

RICE, S. A. and FRISCH, H. L.

**Dynamical Theory of Diffusion in Crystals**, Monograph 3606.

RUNGE, W. A., see Willson, F. E.

SAVAGE, A., see MILLER, R. C.

- GIGUERE, W. J., JAMISON, J. H. and NOLL, J. C.  
**Transistor Pulse Circuits for 160-MC Clock Rates**, Monograph 3613.
- GORDON, J. P., see Clogston, A. M.
- GREEN, E. I.  
**Progress and Problems in World Communication**, Monograph 3634.
- GUPTA, S. S.  
**Order Statistics from the Gamma Distribution**, Monograph 3597.
- HAGSTRUM, H. D. and D'AMICO, C.  
**Production and Demonstration of Atomically Clean Metal Surfaces**,  
Monograph 3598.
- HEMPSTEAD, C. F. and BOWERS, K. D.  
**Parametric Resonance of Impurities in  $\text{CaWO}_4$** , Monograph 3599.
- HOGG, D. C., see De Grasse, R. W.
- JACCARINO, V., see Clogston, A. M.
- JAMISON, J. H., see Giguere, W. J.
- KLEINMAN, D. A. and SPITZER, W. G.  
**The GaP Crystal: Infrared Lattice Absorption; Anharmonic Forces**,  
Monograph 3629.
- LE CRAW, R. C., see Fletcher, R. C.
- LUONGO, J. P.  
**Infrared Study of Oxygenated Groups Formed in Polyethylene during  
Oxidation**, Monograph 3600.
- MASON, W. P.  
**Phonon Viscosity and Its Effect on Acoustic Wave Attenuation and  
Dislocation**, Monograph 3601.
- MATTHIAS, B. T.  
**Relations Between Superconductors and Ferromagnets**, Monograph  
3630.

SCHEINMAN, A. H.

**Numerical-Graphical Method in the Design of Multiterminal Switching Circuits**, Monograph 3495.

SCHELKUNOFF, S. A.

**Anatomy of "Surface Waves,"** Monograph 3615.

SCOVIL, H. E. D., see De Grasse, R. W.

SHAIR, R. C.

**Lead-Acid Storage Batteries in Telephone Service**, Monograph 3607.

SODEN, R. R., see Van Uitert, L. G.

SPENCER, E. G., see Fletcher, R. C.

SPITZER, W. G., see Kleinman, D. A.

THURSTON, R. N.

**Electrical and Mechanical Terminating Resistances of a Piezoelectric Transducer**, Monograph 3608.

TIDD, W. H., see Durkee, A. L.

UHLIR, A., JR., see BAKANOWSKI, A. E.

UNGER, S. H.

**A Theorem on Self-Overlapping Sequences**, Monograph 3611.

UNGER, S. H.

**Pattern Detection and Recognition**, Monograph 3609.

UNGER, S. H., see McCluskey, E. J., Jr.

VAN UITERT, L. G. and SODEN, R. R.

**Emission Spectra of Trivalent Terbium**, Monograph 3610.

WALKER, L. R., see Clogston, A. M.

WEINREICH, G., see Miller, R. C.

WHITMAN, A. L., see Barry, P. H.

WILLSON, F. E. and RUNGE, W. A.

**Data Transmission Tests on Tropospheric Beyond-the-Horizon Radio System**, Monograph 3619.

## Contributors to This Issue

ARTHUR L. BONNER, B.S. in E.E., 1927, University of Minnesota; Columbia University, 1929-30; Northwestern Bell Telephone Co., 1919-23; Tri-State Telephone & Telegraph Co., 1924-27; Bell Telephone Laboratories, 1927—. As a member of the technical staff of Bell Laboratories, Mr. Bonner worked on step-by-step switching and has been primarily engaged in work on transmission development and voice-frequency, radio and carrier transmission systems.

C. BREEN, E.E., 1930, Cornell University; American Telephone & Telegraph Co., 1930-38; Bell Telephone Laboratories, 1938—. After early assignments with the Long Lines Plant Department, Mr. Breen transferred to Bell Laboratories, where he was engaged in systems studies for No. 4 toll crossbar. During World War II he was concerned with military radar and microwave communication. After the war he was occupied with systems maintenance engineering on No. 4A and 5 crossbar, and later was in charge of work of this type on all local and toll switching, signaling and AMA systems. At present he is Special Systems Engineer in charge of work on PBXs and special service projects. Member Eta Kappa Nu.

ROBINSON D. BURBANK, A.B., 1942, Colby College; Ph.D., 1950, Massachusetts Institute of Technology; Carbide & Carbon Chemicals Co., 1950-53; Olin-Mathieson Chemical Corp., 1953-55; Bell Telephone Laboratories, 1955—. He has been engaged in X-ray studies of soft magnetic alloys and in studies of methods of X-ray analysis. Member American Crystallographic Association, American Physical Society, Phi Beta Kappa, Sigma Xi.

T. R. D. COLLINS, A.B., 1925, John Fletcher College; M.S., 1929, State University of Iowa; Bell Telephone Laboratories, 1929—. His first work was on high-quality recording and reproducing systems and later development of coaxial cable. Following this he was concerned with television requirements and a television monitor system. During the war Mr. Collins worked on radar and a proximity fuse and since