8. REFERENCES

Abramowitz, M., and I. A. Stegun (1964), Handbook of Mathematical Functions, U.S. Dept. of Commerce, National Bureau of Standards, Applied Mathematics Series, No. 55.

Adams, J. W., W. D. Bensema, and M. Kanda (1974), Electromagnetic noise Grace mine, National Bureau of Standards Report NBSIR 74-388.

Akima, H. (1972), A method of numerical representation for the amplitude probability distribution of atmospheric radio noise, Office of Telecommunications Research and Engineering Report OT/TRER 27 (U.S. Government Printing Office, Washington, D.C.).

Algazi, V. R., and M. Lerner (1964), Binary detection in white, non-Gaussian noise, MIT Lincoln Labs Report LL/DS-2138. [See Letter to Editor, Trans. Comm., Vol. COM-13, 1975, by Nirenberg and Middleton on the correct historical evolution of threshold detection techniques.]

Antonov, O. Y. (1967), Optimum detection of signals in non-Gaussian noise, Radio Engr. and Electronic Phys., Vol. 12, 541-548.

Arthurs, E., and H. Dym (1962), On the optimum detection of digital signals--a geometric interpretation and a study of three basic data transmission systems, IRE Trans. on Comm. Systems (December), 336-372.

Beckmann, P. (1962), The amplitude probability distribution of atmospheric radio noise, Institute of Radio Engineering and Electronics, Czechoslovak Academy of Sciences, No. 26.

Beckmann, P. (1964), Amplitude probability distribution of atmospheric radio noise, Radio Science, Vol. 68D, 723-736 (June).

Bello, P. A., and R. Esposito (1969), A new method for calculating probabilities of errors due to impulsive noise, IEEE Trans. Com. Tech. COM-17, 368-379.

Bello, P. A., and R. Esposito (1971), Error probabilities due to impulsive noise in linear and hard-limited DPSK systems, IEEE Trans. Com. Tech. COM-19, 14-21.

Bernstein, S. L., and D. A. McNeill (1973), An experimental ELF receiver, MIT Lincoln Labs Technical Report F19628-73-C-0002, ESD-TC-73-243 (September).

Bolton, E. C. (1972), Simulating LF atmospheric radio noise and comparative characteristics of man-made and at- mospheric radio noise at 60, 76, and 200 kHz, Office of Telycommunications Technical Memorandum OT TM-97 (available only from author).

Capon, J. (1961), On the asymptotic efficiency of locally optimum detectors, IRE Trans. Info. Theory, Vol. IT-7 (April), 67-71.

CCIR (1963), World distribution and characteristics of at- mospheric radio noise, Report 322, Documents of the Xth Plenary Assembly of the International Radio Con- sultative Committee, International Telecommunications Union, Geneva, Switzerland.

Crichlow, W. Q., A. D. Spaulding, C. J. Roubique, and R. T. Disney (1960), Amplitude probability distributions of atmospheric radio noise, National Bureau of Standards Monograph 23.

Crichlow, W. Q., C. J. Roubique, A. D. Spaulding, and W. M. Beery (1960), Determination of the amplitude probabil- ity distribution of atmospheric radio noise from statistical moments, J. Research NBS 64D (Radio Prop.), No. 1, 49.

Disney, R. T., and A. D. Spaulding (1970), Amplitude and time statistics of atmospheric and man-made radio noise, ESSA Technical Report ERL 150-ITS 98 (U.S. Government Printing Office, Washington, D.C. 20402).

Eastwood, L. F., and R. Lugannani (1973), Approximate likeli- hood ratio detectors for linear processes, unpublished paper, Center for Development Technology and Depart- ment of Electrical Engineering, Washington University, St. Louis, Missouri 63130.

Engel, J. S. (1965), Digital transmission in the presence of impulsive noise, Bell System Tech. J., 1699-1743 (Oct.).

Espeland, L. R., and A. D. Spaulding (1971), Amplitude and time statistics for atmospheric radio noise, ESSA Technical Memorandum ERLTM-ITS 253 (available only from authors).

Fennick, J. H. (1964), A report on some characteristics of impulsive noise in telephone communications, IEEE Trans on Comm. Sys. Vol. COM-12, No. 75, 700-705.

Furutsu, K., and T. Ishida (1960), On the theory of amplitude distribution of impulsive random noise and its applica- tion to the atmospheric noise, Journal of the Radio Research Laboratories (Japan), Vol. 7, No. 32.

Galejs, J. (1966), Amplitude distribution of radio noise at ELF and VLF, J. Geophys. Res., Vol. 71, 201-216.

Galejs, J. (1967), Amplitude statistics of lightning discharge currents and ELF and VLF radio noise, J. Geophys. Res., Vol. 72, 2943-2953.

Gallager, R. G. (1968), Information Theory and Reliable Communication (John Wiley and Sons, Inc., New York).

Giordano, A. A. (1970), Modeling of atmospheric noise, Ph.D. Thesis, Graduate School of Arts and Sciences, Univ. of Pennsylvania, Philadelphia, Pa.

Giordano, A. A., and F. Haber (1972), Modeling of atmospheric noise, Radio Science, Vol. 7, No. 11, 1011-1023.

Hall, H. M. (1966), A new model for "impulsive" phenomena: Application to atmospheric-noise communications channels, Stanford University Electronics Laboratories Technical Report No. 3412-8 and No. 7050-7, SU-SEL-66-052.

Halton, J. H., and A. D. Spaulding (1966), Error rates in differentially coherent phase systems in non-Gaussian noise, IEEE Trans. on Comm. Technology, Vol. COM-14, No. 5, 594-601.

Hancock, J. C., and P. W. Wintz (1966), Signal Detection Theory (McGraw-Hill Book Company, New York).

Hellman, M. E., and J. Raviv (1970), Probability of error, equivocation, and the Chernoff bound, IEEE Trans. on Information Theory, Vol. IT-16, No. 4, 368-372.

Ibukun, O. (1966), Structural aspects of atmospheric radio noise in the tropics, Proc. IEEE, Vol. 54, 361-367.

Ishida, T. (1956), Bulletin of the XIIth Symposium of the Radio Research Laboratory, Tokyo, 23-24 October, 113-120 (in Japanese).

Ishida, T. (1969), Statistical characteristics of atmospheric noise 1966-1969, Radio Research Laboratories Ministry of Posts and Telecommunications, Tokyo, Japan, 1-31.

Kneuer, J. G. (1964), A simplified physical model for amplitude distribution of impulsive noise, IEEE Trans. Comm. Sys., Vol. COM-12, 220 (December).

Kushner, A. F., and B. R. Levin, Optimal ranking algorithms
for the detection of signals in noise, Problemy
Peredachi Inform., Vol. 4.

Levin, B. R., and A. F. Kushnir (1970), Asymptotically opti-
mal algorithms of detection and extraction of signals
from noise, Radio Engr. and Electronic Phys., Vol. 14,
No. 2, 213-221.

Levin, B. R., H. F. Kushnir, and A. I. Pinskiy (1970), Asymp-
totically optimal algorithms for detection and discrim-
ination of signals immersed in correlated noise, Radio
Engr. and Electronic Phys., Vol. 14, No. 2, 784-793.

Levin, B. R., and Y. S. Shinakov (1970), Asymptotic properties
of Bayes estimates of parameters of a signal masked
by interference, International Symposium on Information
Theory, Noordwijk, The Netherlands, June 15-19.

Likhter, J. I. (1956), О НЕКОТОРЫХ СТАТИСТИЧЕСКИХ СВОЙСТВАХ
АТМОСФЕРНЫХ РАДИОПОМЕХ, Radiotekh i Electron, Vol. 1,
1295-1302.

Mayer, R. J. (1972), Interference performance degradation to
digital systems, 1972 IEEE International Electromag-
netic Compatibility Symposium Record, 97-104 (IEEE 72
CHO 638-7EMC).

Mertz, P. (1961a), Model of impulsive noise for data trans-
mission, IRE Trans. Comm. Sys. 130-137 (June).

Mertz, P. (1961b), Statistics of hyperbolic error distribution
in data transmission, IRE Trans. Comm. Sys., Vol. COM-
9, 377-382 (December).

Middleton, D. (1954), Statistical theory of signal detection,
Symposium of Statistical Methods in Communications
Engineering, IRE Trans. on Information Theory, PGIT-
3:26.

Middleton, D. (1960), An Introduction to Statistical Com-
munication Theory (McGraw-Hill Book Company, Inc., New
York).

Middleton, D. (1965), Canonically optimum threshold detection,
The Rand Corp. Memorandum RM-4687-PR (NTIS AD626162).

Middleton, D. (1966), Canonically optimum threshold detection,
IEEE Trans. Information Theory, Vol. IT-12, No. 2, 230-
243.

Middleton, D. (1967), A statistical theory of reverberation and similar first-order scattered fields; I, 372-392; II, 393-414; IEEE Trans. Info. Theory, IT-13, No. 3.

Middleton, D. (1972), Statistical-physical models of urban radio-noise environments-Part I: Foundations, IEEE Trans. of Electro. Comp., Vol. EMC-14, No. 2, 38-56.

Middleton, D. (1974), Statistical-physical models of man-made radio noise, Part I, First-order probability models of the instantaneous amplitude, Office of Tele-communications Technical Report, OT 74-36 (U.S. Govt. Printing Office, Washington, D.C. 20402).

Middleton, D. (1975), Statistical-physical models of man-made radio noise: Part II, First order probability models of the envelope and phase, Office of Telecom-munications Technical Report (to be published).

Miller, E. K. (1970), A variable interval width quadrature technique based on Romberg's method, J. of Computational Physics 5, 265-279.

Montgomery, G. F. (1954), Comparison of amplitude and angle modulation for narrow-band communication of binary-coded messages in flucation noise, Proc. IRE, Vol. 42, 447-454.

Morozumi, H. M., and M. M. McCormick (1968), System simula-tion--an approach to the optimization of signal pro-cessing and coding for VLF channels, IEEE EASCON 1968 Record, 217-224.

Nakai, T. (1960), The study of amplitude probability distri-bution of atmospheric radio noise, Proc. Res. Inst. Atmos. (Japan), Vol. 7, 12-17.

Nakai, T., and M. Nagatani (1970), Synchronous analysis of statistical parameters of the atmospheric noise, Proc. Res. Inst. Atmos. (Japan), Vol. 17, 29-41.

Nesenbergs, M. N. (1971), Otpimum reception of coded multiple frequency keying in presence of random variable phases, IEEE Trans. on Comm. Tech., Vol. COM-19, No. 5.

Nirenberg, L. M. (1974), Parameter estimation for an adaptive instrumentation of Hall's optimum receiver for digital signals in impulse noise, IEEE Trans. on Comm., Vol. COM-22, No. 6, 798-802.

Nirenberg, L. M. (1975), Low SNR digital communication over certain additive non-Gaussian channels, IEEE Trans. on Comm., Vol. COM-23, No. 3, 332-341. [See letter to Editor, ibid, 1975, by Nirenberg and Middleton regarding the historical evolution of threshold detectors.]

Nuttall, A. H. (1972), Some integrals involving the Q function, Naval Underwater Systems Center, New London Lab., New London, Conn. Tech. Rept. 4297 (NTIS AD 743066).

Nuttall, A. H. (1974), Some integrals involving the Q_M function, Naval Underwater Systems Center, New London Lab., New London, Conn., Tech. Rept. 4755 (NTIS AD 779846).

Nuttall, A. H. (1975), Some integrals involving the Q_M function, IEEE Trans. on Information Theory, Vol. IT-21, No. 1, 95-96.

Omura, J. K. (1969), Statistical analysis of LF/VLF communications modems, Special Technical Report 1, SRI Project 7045, Stanford Research Institute, Menlo Park, CA.

Omura, J. K., and T. Kailath (1965), Some useful probability distributions, Stanford Electronics Laboratories Technical Report No. 7050-6, SU-SEL-65-079.

Ottesen, H. (1968), Electromagnetic compatibility of random man-made noise sources, Ph.D. Thesis, Department of Electrical Engineering, Univ. of Colorado, Boulder, CO.

Ovchinnikov, L. M. (1973), Noise immunity of PSK and ASK coherent receivers to quasi-impulsive interference, Telecommunications and Radio Engineering, 28, No. 10.

Pitman, E. J. G. (1948), Lecture Notes on Nonparametric Statistical Inference, Columbia University, New York.

Ponhratov, V. S., and O. Y. Antonov (1967), Optimal reception of binary signals in a background of non-Gaussian noise, Telecommunications, Vol. 19, 19-25 (November).

Ribin, A. K. (1972), Classification of weak signals in non-Gaussian noise, Engr. Cybernet., Vol. 10, 901-909.

Richter, W. J., and T. I. Smits (1974), Numerical evaluation of Rice's integral representation of the probability density function for Poisson impulsive noise, J. Accoust. Soc. Am. 56, No. 2, 481-496.

Rudnick, P. (1961), Likelihood detection of small signals in stationary noise, J. Appl. Phys., Vol. 32, 140-143.

Schwartz, S. C. (1969), A series technique for the optimum detection of stochastic signals in noise, IEEE Trans. on Information Theory, Vol. IT-15, No. 3, 362-369.

Shaver, H. N., V. E. Hatfield, and G. H. Hagn (1972), Man-made radio noise parameter identification task, Final Report, SRI Project 1022-2, Stanford Research Institute, Menlo Park, California.

Spaulding, A. D., and R. T. Disney (1974), Man-made radio noise, Part 1: Estimates for business, residential, and rural areas, Office of Telecommunications Report 74-38 (U.S. Government Printing Office, Washington, D.C. 20402).

Spaulding, A. D., and L. R. Espeland (1971), Man-made noise characteristics on and in the vicinity of military and other government installations, Office of Telecommunications Technical Memorandum OT-TM 48 (available only from authors).

Spaulding, A. D., R. T. Disney, and L. R. Espeland (1969), Samso phase C--final report--noise data and analysis (Hard Rock Silo Development, Program 12JB), ESSA/ITS ERLTM-ITS 184 (DDC, AD861428).

Spaulding, A. D., R. T. Disney, and A. G. Hubbard (1975), Man-made radio noise, Part II: Bibliography on measurement data, applications, and measurement methods. Office of Telecommunications Technical Report 75-63.

Spaulding, A. D., C. J. Roubique, and W. Q. Crichlow (1962), Conversion of the amplitude probability distribution function for atmospheric radio noise from one bandwidth to another, J. Res. NBS-D (Radio Prop.), Vol. 66D, No. 6, 713-720.

Thompson, W. I. (1971), Bibliography on ground vehicle communications and control: A KWIX Index, Urban Mass Transportation Administration, U.S. Dept. of Transportation, Washington, D.C., Report No. DoT-UMTA-71-3.

Van Trees, H. L. (1968), Detection, Estimation, and Modulation Theory, Part I (John Wiley and Sons, Inc., New York).

Van Trees, H. L. (1971), Detection, Estimation, and Modulation Theory, Part II (John Wiley and Sons, Inc., New York).

Weber, C. L. (1968), Elements of Detection and Signal Design (McGraw-Hill Book Co., New York).