

SAN JOSE LABORATORY
ADVANCED SYSTEMS DEVELOPMENT

May 16, 1960

FILE MEMORANDUM: 5720-7.0

SUBJECT: Bibliography of Communication Theory - Introduction and
Sub-Section Headings.

This is a listing of existing bibliographies and a listing of new items:

The material is organized in the structure of F. L. Stumpers, "A Bibliography of Information Theory," MIT RLE, Feb. 2, 1953, (also Trans. IRE, No. PGIT-2, Nov., 1953), Supplement Trans. IRE, Vol. IT-2, No. 2, p. 33-44 (Sept., 1955), Second Supplement, Trans. IRE, Vol. IT-3, No. 2, p. 150-166, (June, 1957).

Sections on Russian references, Miscellaneous, and SJ-ASDD Data Transmission Project have been added.

It is assumed that Stumpers will continue his supplements and that some indexing will continue to be done by our library, so this bibliography need not be complete.

This bibliography is not intended to be complete where other groups are providing frequent updating service. For example, A. B. Fontaine, University of Wisconsin, and W. W. Peterson, Massachusetts Institute of Technology, have a Coding Newsletter which is bringing up to date news of coding developments.

Each section is issued as a separate file memorandum when sufficient material has accumulated. The numbering of the separate sections is tabulated on the next page.

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**SUBJECT CLASSIFICATION
FOR FILE MEMORANDA ON COMMUNICATION THEORY BIBLIOGRAPHIES**

<u>Stumpers Section Number</u>	<u>Subject</u>	<u>Classification in This file</u>
	Introduction	*7.0
I.	General Theory	7.1
II.	Bandwidth and transmission capacity. Time-frequency uncertainty.	7.2A
	Signal-to-Noise ratios. Comparison of systems . . .	7.2B
	Instantaneous frequency	7.2C
	Analytical signals	7.2D
III.	Definition, relation with statistical mechanics, philosophy	7.3
IV.	Correlation, prediction, filtering, storage	7.4
V.	Radar.	7.5A
	Radionavigation.	7.5B
VI.	Speech	7.6A
	Hearing	7.6B
	Vision	7.6C
	Linguistics, semantics	7.6D
VII.	Other biophysical applications. (Cybernetics and the nervous system)	7.7A
	Human engineering	7.7B
	Group communication	7.7C
VIII.	Television	7.8
IX.	Miscellaneous applications	7.9A
	Optics	7.9B
	Games	7.9C
	Servomechanisms	7.9D
X.	Mathematics	7.10A
	Statistics	7.10B
	Relay algebra	7.10C
	Noise analysis.	7.10D

XI.	Pulse modulation	7.11A
	Multiplex	7.11B
	Coding (Alphabet)	*7.11C
	Coding (Error-Detecting and Correction)	*7.11D

Supplements

	Russian References	7.12
	Miscellaneous Lists	*7.13
	SJ-ASDD Data Transmission Project	*7.14

* An asterisk indicates sections which exist as of this date.

INDUSTRIAL ARTS INDEX 1955

COMMUNICATION, Theory of

- Average spectrum of a periodic series of identical pulses randomly displaced and distorted. R. M. Fortet. *Elec Com* 31:283-7 D '54
- Coding for constant-data-rate systems. R. A. Silverman and M. Baber. *Bibliog Inst Radio Eng Proc* 42:1428-35; 43:728-35 S '54, Jc '55; Discussion, 43:626 My '55
- Concept of an instantaneous power spectrum, and its relationship to the autocorrelation function. C. H. M. Turner. *J Ap Phys* 25: 1317-21 N '54
- Entropy equivalence in the time- and frequency domains. R. Price. *Bibliog Inst Radio Eng Proc* 43:181-5 Ap '55
- Entropy of information and the odd ball problem. P. J. Kelloff and D. J. Kelloff. *J Ap Phys* 25:1433-9 N '54
- Geometric aspects of least squares smoothing. A. A. Hausser, Jr. *diags Inst Radio Eng Proc* 42:501-4 Ap '54
- Information; now it's the realm of theorists. *News W* p58-60 F JI 30 '55
- Information of elementary multidimensional auditory displays. I. Pollack and L. Ficks. *Acoustical Soc Am J* 26:156-8 Mr '54
- Information theory. H. Robbins. *Inst Radio Eng Proc* 42:1193 JI '54
- Information theory aspects of propagation through time-varying media. J. Feinstein. *bibliog J Ap Phys* 26:219-29 F '55
- Link between information and energy. J. H. Petker. *Inst Radio Eng Proc* 40:728-9 Jo '54; Discussion, P. P. Adler. 42:1191; Reply. 1191 JI '54

- Measurement of human channel transmission characteristics. W. A. Manton and J. E. Kurita. *diags Acoustical Soc Am J* 26:512-54 JI '54
- Problem of optimum detection of pulsed signals in noise. A. H. Benzer and R. E. Drenth. *bibliog diags RCA R* 16:461-79 S '55
- Resolution of signals in white, Gaussian noise. C. W. Helstrom. *bibliog Inst Radio Eng Proc* 43:1111-18 S '55
- Resolving power and information. G. Toraldo di Francia. *bibliog Opt Soc Am J* 45:497-501 JI '55
- Spectral response of a quadratic device to non-Gaussian noise. T. A. Matheos. *bibliog diags J Ap Phys* 25:1357-65 N '54
- Study of the bubbling blocks in speech. C. M. Harris. *diags Acoustical Soc Am J* 25: 792-9 S '54
- Toward a measure for measuring. L. J. Fogel. *Inst Radio Eng Proc* 43:1015 Ag '55

Bibliography

- Radio progress during 1953; information theory. *bibliog Inst Radio Eng Proc* 42: 752-4 Ap '54

INDUSTRIAL ARTS INDEX 1956

COMMUNICATION, Theory of

- Class of binary signaling alphabets. D. Stepan. *bibliog diags Bell System Tech J* 35:293-31 Ja '56
- Information and memory. G. A. Miller. *diags Sci Am* 195:42-6 Ag '56
- Information theory. M. L. Klein and others. *Instruments & Automation* 29:1519-24 Ag '56
- Information theory and melody. R. C. Plinkerton. *diags Sci Am* 194:77-84 F '56
- Information theory and optical images. B. H. Linfoot. *bibliog diags Opt Soc Am J* 45: 808-19 O '55
- Introduction to some technical factors affecting point-to-point radio communication systems. P. J. M. Laver. *diags Inst Radio Eng Proc* 102 pt B:733-43. *bibliog*(100 titles, p742-3) N '55; Discussion, 103 pt B:261-2 My '56
- Jet noise problem in aircraft carrier landing. A. C. Pietrasanta. *diags Acoustical Soc Am J* 28:427-33 My '56
- New interpretation of information rate. J. L. Kelly, Jr. *Bell System Tech J* 35:917-26 JI '56
- Resolving power and information. G. Toraldo di Francia. *bibliog Opt Soc Am J* 45:497-501 JI '55; Discussion, B. H. Linfoot. 46:72; Reply, 72 Ja '56
- Speech communication research symposium. *bibliog diags Acoustical Soc Am J* 28:31-606 JI '56
- Theory of communication. R. A. Firthorne. *Arch Proc* 6:256-65; Discussion, 265-7 N '54

7.2 Bandwidth and transmission capacity, etc.

BIBL10G89 (through Feb. 1953)

Doelz, Heald, and Martin, "Binary Data Transmission Techniques for Linear Systems", Proc. IRE, Vol. 45, p. 656-661, May 1957.

Doelz and Heald, "A Predicted Wave Radio Teletype System", Conv. Rec. IRE, Part 8, Vol. 2, (1954) p. 63-67 (Same as Collins Radio Co. Report No. CTR-114).

Heald and Clabaugh, "A Predicted Wave Signalling Phase-Shift Telegram System", Elec. E. 76, P. 410-413, May, 1957.

Collins and Doelz, "Predicted Wave Signalling" (Kineplex) Collins Radio Co., Report No. CTR-140, June 20, 1955.

H. R. Huntley, "Where We Are and Where We Are Going in Telephone Transmission", Comm. and Electronics, No. 29, Mar. 1957, p. 54-63.

T. A. Combellich and M. E. Ferguson, "Noise Consideration on Toll Telephone Microwave Radio Systems", Comm. and Electronics, No. 29, Mar. 1957, p. 67-70.

R. Kitai, "Coherent and Incoherent Detectors", Electronic and Radio Eng. 34, Mar. 1957, p. 96-99.

BIBLIOGRAPHY ON BANDWIDTH COMPRESSION SYSTEM - May 21, 1953

1. Cherry, E. G., Gouriel, G. C: SOME POSSIBILITIES FOR THE COMPRESSION OF TELEVISION SIGNALS BY RECODING." Proc. London Symp. (1952)
2. Laemmel, A. E., CODING PROCESSES FOR BANDWIDTH REDUCTION IN PICTURE TRANSMISSION, Brook Polyt. Inst., Report R-243-251 (1951), Proc. IRE 39 293 (1951) Abstr.
3. Loeb, J., COMMUNICATION THEORY OF TRANSMISSION OF SIMPLE DRAWINGS, Proc. London Symp. (1952)
4. Bell, D. A., ECONOMY OF BANDWIDTH IN TELEVISION, Jour Brit IRE, Vol. 13 (1953) pp 446 - 523, Disc. Vol 13 (1953) pp 590 - 591
5. Kretzner, E. R., REDUNDANCY IN TELEVISION, Bell Labs Record, Vol. 32 (1954) pp 401 - 404
6. Deutsch, S., THE POSSIBILITY OF REDUCED TELEVISION BANDWIDTH, IRE Trans. Vol. BTR-2 (Oct. 1950) pp 69 - 81.
7. Kretzner, E. R., REDUCED ALPHABET REPRESENTATION OF TELEVISION SIGNALS, 1956 IRE Conf. Rec. Part 4, pp 140 - 147.
8. Michel, W. S., Fleckenstein, W. C., Kretzner, E. R., A CODED FACSIMILE SYSTEM, 1957 IRE WESCON Conf Rec. Part 2, pp 84 - 88

7.1 General Theory

"Index of Books Reviewed in Science 27 Apr 1956
through 19 Apr 1957" Science 125, 831-898
26 Apr 1957.

7.3 Definition, relation with statistical
mechanics, philosophy

7.4 Correlation, prediction, fullerene storage

Pr 7-4 1953. See Stumpers Bathog (PGIT-2)

1953-1955. See Stumpers Supplement (IT-1, No. 2)

1955

W.L. Post and J.S. Pitter "Some Remarks
on Intellectual Detection MIT Lincoln Lab
Tech Rep No. 92 10 Aug 1955"

7.6 Speech, Hearing, Vision, Linguistics

(d)

Joseph Ballant "Literature, Science and the
"Empowerment Crisis" Science 125:787 26 Apr 57.

7.7 (A) Other Biophysical Application
(Cybernetics and the nervous system)

(a) Human Engineering,

(c) Group Communication

(a)

R.W. Gerard, Clyde Kluckhohn and Anatol Rapoport "Biological and Cultural Evolution: Some Analogies and Exploration" Behavioral Science 1, p 6 Jan 1956

Richard L. Meier "Communication and Social Change" Behavioral Science 7, p 43, Jan 1956

Homer Jacobson "Information, Reproduction and the Organizing Life" Amer Scientist, 1955 p 119-127
vol 43. Abst Behavioral Science 1, p 81, 1956.

Y.S. Touloukian "The Concept of Entropy in Communication, Living Organism, and Thermodynamics" Purdue Univ. Engin Exp Sta. Bull No. 130

7.9

- (a) Miscellaneous Application
- (b) Optics
- (c) Games
- (d) Servomechanisms

(c) Games

Melvin Drescher "Theory of Games of Strategy"
Applied Mech. Rev. 10, pp 133-135, Apr 1955

7.10 Mathematics

- (a) Statistics — game theory
- (c) Relay Algebra
- (d) Noise Analysis

(d) Noise Analysis

008.075.612 H.W. Cochrane "The Effect of logical Noise in Transistor Inverted Circuits"

005.110.625 R.A. Barbou "Error Checking for Five-Channel Telegraphic Tape"

George R. Cooper "Analysis of Waveforms for a Standard Radio Noise Generator" Purdue Univ. Engin. Exp. Sta. Bull. No. 124 May 1955

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FILE MEMORANDUM: 5720-7.11D

SUBJECT: Bibliography on Error-Detection and Error-Correcting Codes.

1. For a more general class of coding see F. L. Stumpers Bibliographies issued by MIT and the IRE Professional Group on Information Theory. Detailed references are in File Memo: 5720-7.0
2. For a chronological listing restricted in a more narrow sense to error-detecting and error-correcting codes, refer to:

F. B. Wood, "Bibliography on Error-Detecting and Error-Correcting Codes," IBM Report RJ-170, June 11, 1959.

Part I. Public Literature

Part II. Internal IBM reports (Company confidential)

3. For Bibliography of Literature References prepared by Technical Information Service, IBM, Endicott, see:

Bibliography of Literature References on SELF CORRECTING CODES, (Code 01.01), July 30, 1958.

Bibliography of Literature References on COMPUTER CODING (ERROR DETECTION ASPECTS) (Code 01.01), August 13, 1958.

4. For more recent papers on coding, refer to:

Coding Newsletter, No. 60.1, April 1, 1960, issued by A. B. Fontaine, Elec. Engin. Dept., University of Wisconsin, and W. W. Peterson, Elec. Engin. Dept., Massachusetts Institute of Technology.

5. The purpose of this bibliography is to provide a listing of references which may not have been covered by the above three bibliographies, or which have been republished, or which are still IBM Confidential.

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I. PUBLIC LITERATURE

1959

For first part of 1959, see Report RJ-170.

N. M. Abramson, "A Class of Systematic Codes for Non-Independent Errors," IRE Trans. on I.T., Vol. IT-5, No. 4, December, 1959, pp. 150-157.

L. Calabi and H. G. Haefli, "A Class of Primary Systematic Codes Correcting Errors at Random and in Bursts," IRE Trans. on I.T., Vol. IT-5, Special Supplement, May, 1959, pp. 79-94.

Robert Chien, "On the Characteristics of Error-Correcting Codes," IRE Trans. on I.T., Vol. IT-5, No. 2, June, 1959, p. 91.

John Cocke, "Lossless Symbol Coding with Nonprimes," IRE Trans on I.T., Vol. IT-5, No. 1, March, 1959, pp. 33-34.

Philip Fire, "A Class of Multiple Error-Correcting Binary Codes for Non-Independent Errors," Stanford Electronics Laboratories, Technical Report No. 55, April 24, 1959.

Philip Fire, (same paper), Conference Paper, AIEE, Chicago, Oct., 1959.

A. B. Fontaine and W. W. Peterson, "Group Code Equivalence and Optimum Codes," IRE Trans. on I.T., Vol. IT-5, Special Supplement, May, 1959, pp. 60-70.

Wan H. Kim, "Error-Correcting Codes for an Assymmetric Nonbinary Channel," IRE Trans. on I.T., Vol. IT-5, No. 4, Dec., 1959, pp. 188-190.

W. H. Kim and C. V. Freiman, "Single Error-Correcting Codes for Asymmetric Binary Channels," IRE Trans. on I.T., Vol. IT-5, No. 2, June, 1959, pp. 62-66.

W. H. Kim and C. V. Freiman, "Multi-Error Correcting Codes for a Binary Asymmetric Channel," IRE Trans. on I.T., Vol. IT-5, Special Supplement, May, 1959, pp. 71-78.

Jerome Rothstein, "Residues of Binary Numbers Modulo Three," IRE Trans. Electronic Computers, Vol. EC-8, No. 2, June, 1959, p. 229.

Nelson Wax, "On Upper Bounds for Error Detecting and Error Correcting Codes," IRE Trans. on I.T., Vol. IT-5, No. 4, Dec., 1959, pp. 168-174.

1960

Coding Newsletter, A. B. Fontaine and W. W. Peterson, No. 60.1,
April 1, 1960.

Lists 16 current papers, either published or in process.

J. E. Meggitt, "Error Correcting Codes for Correcting Bursts of Errors,"
AIEE Paper DP 60-654, May 4, 1960.

II. IBM INTERNAL REPORTS

1959

See RJ-170 for items up to March 1, 1959.

R. T. Chien, "On Error-Correcting Codes Over a Finite Field," RC-154, Oct., 1959.

A. B. Fontaine, "The Use of a Hamming Code with a Channel that has Dependent Noise," Yorktown Hts., New York, IBM Research Report RC-93, May 1, 1959.

James P. MacDougall, "Error Correction for a Ten-Channel Tape System," Poughkeepsie: IBM Prod. Dev. Lab., Tech. Note TN 00.02045.356, April 27, 1959, (Reliability and Serviceability Bulletin No. 32).

M. P. Marcus, File Memorandum (Endicott) on File Memorandum by J. E. MacDonald, March 19, 1959, Ref. Endicott Coding Study Report, Endicott, Prod. Dev. Lab., April 24, 1959.

M. P. Marcus, G. J. Saxenmeyer, M. Schatzoff, and L. H. Tung, "Coding Study Report," TR 01.01.012, 565, April 30, 1959.

C. M. Melas, "A New Group of Codes for Correction of Dependent Errors in Data Transmission," IBM Report RJ-174, June, 1959.

R. F. Stevens and W. G. Bouricius, "The Heuristic Generation of Large Error Correcting Codes," Yorktown Hts., New York, IBM Research Memorandum, RC-123, August 1, 1959.

7.11 Pulse Modulation
 Multiplex
 Coding

References for Block Length for Checking

BIBL.89 p 44 Hamming

SJC-12 AD-91919 A. Cohen

Mc-1 (SJA-92) T.A. McLaughlin

Sc-1 M. Schatzoff - - -

1957

Ba-1 R.A. Barbau "Error Checking for Five Channel
 Telegraphic Type" IBM Code 005,110.62.
 April 30, 1957

Ra-1 Anthony Palston "Error Detection and Error
 Correction in Real Time Digital Computers
 Bell Telephone Laboratories, Whippany, N.J.
 AF Contract AF 33(600)-21536

7.12 Miscellaneous References.

Dr. E. R. Pierre "Philosophy of Research in IBM"
 Feb 9, 1957. Tape recording of engineering
 seminars. Engin Lab, Endicott (Repl 673)

TIS Bibliographies

- 01.07 Production Theory
- 01.08 Operations Research
- 01.09 Creative Engineering
- 03.03 Condenser and Storage Matrices Memory
 Using Diodes and Capacitors
- 05.11 Transmission of Digital Data over Long Distances
- 05.11 High Speed Electronic Facsimile
- 07.03 Reliability, Computer
- 07.03 Reliability, System
- 08.08 Computer Checking Circuits
- 15.01 Kerr Electro-Optical and Magneto-Optical
 Effects
- 15.01 Quenching of Phosphorescence by Infrared
 Radiation
- 15.01 Usage of Reflected Polarized Light in the
 Measurement of Film Thickness - Ellipsometry.
- 15.07 Thermoelectricity and the Peltier Cooling Effect

- 16.02 Thin Film of Aluminum Oxide
- 16.10 Field Responsive Fluids
- 16.10 Magnetic Field Responsive Fluids
- 19.03 Impulse Storage Devices

Some Selected Russian Translation references:
(from Morris D. Friedman, Inc.)

Avtomatika i Telemekhanika*, vol. 17, No. 9, 1956

- I. A. Zakhariia, V. N. Mikhailovskii: On a method of time-pulse transformation. 836
 Abstract: Properties are analyzed of a new method of transforming the voltages of rectangular pulses in direct proportion to the value of the time segment between the leading fronts of two pulses fulfilling oscillations of heightened frequency. The results of the analysis indicate the possibility of using this method in telemetering systems. *, vol. 17, No. 9, 1956
- A. A. Fel'DBaum: On the use of computers in automatic systems. 1046
 Abstract: The paper contains a survey and classification of the directions of using computers in automatic systems. Considered are certain tendencies in the development of automatic systems and also questions related thereto which concern the theory and constructional principles of an automatic system. * vol. 17, No. 11, 1956.
- IU. D. Farber: On interference-immunity of remote communication channels. 35
 Abstract: The question is considered of the interference-immunity of signals transmitted over remote communication channels. It is shown that the frequency characteristics of the amplification of a typical compressing device are not optimum in telephone transmission. Simple methods are recommended to raise the interference-immunity of speech signals. Elektrosviaz' **vol. 10, No. 10, 1956
- V. N. Roginskii: On systems of number transmission in automatizing long distance telephone communication.
 From the editor: A number of questions are touched upon in this paper, which is published as a formulation of the problem, related to automatization of telephone communications between cities. The editors ask specialists to discuss the questions.
 Considered in the paper are number transmission systems over long distance communication channels. A conclusion is made on the expediency of using multi-frequency coding of all the numbers of the interurban stations in the Soviet Union network. **
- G. F. Pramnek: Automatized re-reception of telegrams with code commutation. 55
 Abstract: Considered are the basic principles of a system of automatic telegram re-reception by code commutation developed by the TsNIIS. Automatization is provided in the system both for the basic processes or re-reception of telegrams in transit and for a number of auxiliary operations. The control of telegram commutation is carried out by using routing indices placed at the head of each telegram. **

-2-

- E. S. Gorbunov: Comparison of certain interference-immune codes 42
 Abstract: A comparison is made of the interference-immunity and capacity of correcting codes correcting unitary and binary errors and a seven-digit code. It is shown that the seven-digit code is more interference-immune in a system with automatic reference. *Elektrosviaz'*,* vol. 10, No. 12, 1956
- M. B. Rabinovich: Comparison of transmission stability over a tone telegraph channel with frequency and amplitude modulation 67
 Abstract: Given are results of comparison test of tone telegraph channels with frequency and with amplitude modulation on compressed overhead lines of great length. *
- E. L. Blokh, A. A. Kharkevich: To the question of the geometric proof of the Shannon theorem 5
 Abstract: An attempt to construct, in previous works, a geometric proof of the theorem on the capacity led to a divergence from the well-known result of Shannon. Further investigation has shown that the reason for this divergence is the use of an incorrect geometric model; the questions related thereto are explained in this paper. *Radiotekhnika***, vol. 11, No. 11, 1956
- L. I. Kastal'skii: To the question of generating bell-shaped pulses 73
 Abstract: Described herein is one of the circuits to generate bell-shaped pulses as well as results of its experimental verification. ** vol. 12, No. 1, 1957
- IA. I. Likhter: On certain statistical properties of atmospheric radio noise. 1296
 Abstract: Results are cited of an experimental investigation of the statistical properties of atmospheric noise. It is shown that the distribution of atmospheric noise is not normal and that the distribution function depends on several parameters. *Radiotekhnika i Elektronika*, vol. 1, No. 10, 1956
- K. Urbanik: Random processes whose realizations are generalized functions (English summary) 146
 Theory of Probability and its Applications, vol. 1, No. 1, 1956

- a. E.G. Newman and L.O. Nippe "Simulation of an Information Channel on the IBM 704 Computer"
IBM Poughkeepsie PDL June 10, 1958
- b. L.O. Nippe "High Density Tape Channel Simulation Study" (1957)
- c. Report No. 1. "Initialize Routine Feasibility Study for Magnetic Tape Error Code Analysis" (1957)
- d. Report No. 2 L.O. Nippe "Feasibility Study for Magnetic Tape Error Code Analysis" (1957) -
Uses Samuel Code: Double-error-correction, diagonally-checked code, 18 information bits
4 parity check tracks.

Miscellaneous Reference

- ★ AIEE 59-812 E. F. Schwenzfeger
 "A High ~~Speed~~ Volume, High Speed Weather
 Information Distribution System"
- Michel "Statistical Encoding for Teletext Pictures
 Communication" Com & Elect Mar 1958 p 33
 (AIEE 57-723)
- Boughtwood Christ "Data Transmission Error
 Rate" Com & Elect Mar 1958 p 101
 (AIEE 58-172)
- Schubert "Matrix Analysis of Logical Networks"
Com & Elect Mar 58, p 100
- Yeh "Communication in Space" Elec. Ind
 Feb 59, p. 54
- Rector "Space Age Computation" Datamation Mar/Apr
 1959, p 8
- Kim and Freiman "Single Error-Correcting Codes for
 Asymmetric Binary Channels" IRE Trans Inf Theory
 Vol IT-5, No. 2, June 1959, p 62
- Chien "On the Characteristics of Error-Correcting Codes"
IRE Trans Inf Theory, Vol IT-5, No. 2, June 1959,
 p 91.
- de Large and Pustelnykh "Experiment on the Limits
 of regenerative repeater" BTS Monographs 3154

Schwartz "Application of Inductive Probabilities to Communications" Proc IRE Dec 1955, p 1968

Eppstein "Algebraic Decoding for A Binary Fractional Channel" Proc IRE Mar 58, p. 641

Pruce and Green "A Communication Technique for Multipath Channels" Proc. IRE, Mar 1958 p. 555

Suppes "The Design of Machine to Simulate the Behavior of the Human Brain" IRE Trans on Elec Computers Vol EC-5, No 4, Dec 1956, p. 240

"Phase Multiplex Communication" Avst. Ele Ind Nov 1958 p171

Doely & Hald "A Predicted Wave Radio Telegraph System" Conf. Rec. of IRE - Part 8 (1957) p 65

Harris and Morgan "Binary Symmetric Decision Feedback System" Comm & Elect. Sys 158, p. 436 (57-1041)
(includes H vs S/N)

Voelcker "Simple Codes for Fading Circuits" IRE Trans on Comm Syst Vol CS-6, No 2, Dec 58 p. 47

Meier "The Economic and Social Consequences of the Growth in the Application of Automatic Controls" IRE Conf. Rec - Part 4 (1955) p 62

Bagno "The Communicative Theory Model and Economics" IRE Conf. Rec (Part 4, 1955) p. 162

White "Information Loss in Regenerative Pulse Code Systems" IRE Conv Rec - Part 4 (1954) p18

Rochefort "Matched Filter for Dilectum Pulsed Signals in Noise" IRE Conv Rec - Part 4 (1954) p30

Scott "An Experimental Study of the Information Rate of a Digital Computer" IRE Conv. Rec - Part 4 (1954), p35

Kautz "Optimized Encoding for Digital Computers" IRE Conv Rec - Part 4 (1954)

Turin "Error Probabilities for Binary Symmetric Ideal Receiver Through Nonselective Slow Fading and Noise" Proc IRE Sept 1958, p1603

Storer and Turyn "Optimum Finite Code Groups" Proc. IRE Sept 58, p1699.

Coggeshall "Telegraphy Next 25 Years" Elc E May 1959, p. 493

Watson "Man's Most Versatile Machine" Elc E May 1959, p. 502

E. L. Harder "Computers and Automation" Elc E May 1957, p. 508

Hafner, "Microwave by Wire" Elc. E. Mar 59, p221.

"Remote Control by 'Near' Magnetic Field"
Elec Ind July 59, p 82

"Noise Parameters in VHF-UHF Circuit Design"
p 90 (above)

Goley "Notes on Binary Decoding" Proc. IRE
May 1959, p. 996.

Wigington "A New Concept in Computing"
Proc. IRE Apr. 59, p. 516 (on Neumann)

Pulhass "The Transponder: An Electrostatically
Controlled Circuit Impedance with Stored Saturation"
Proc. IRE June 59, p. 1117.

Perry "CCITT Recommendation for Multichannel
Rotted Relays and White Noise" Comm. & Elect. May
1959 p. 107 (MEE 59-6)

Edson, Froehlich, Townley "Measurement of
Narrow-Band Noise" Comm. & Elect. May
1959, p. 83 (58-1241)

Schwartz "Marginal Utility of Communication
and Radar Systems" Comm. & Elect. May 1959
p. 117

Smith, Votaw, Whitman "83B1 Teletypewriter System"
Comm. & Elect. May 59, p. 116 (58-443)

Bloom, Charny, Helms, Hauptstien & Morgan
 "Improvement of Binary Transmission by Null-
 Zone Reception" Proc. IRE July 1957, p 963

King, McKenna, & Raisbach "Experimental Check of
 Formulas for Capacitance of Shielded Balanced &
 Pair Transmission Line" Proc IRE May 1958,
 p 922.

Mullen and Middleton "Limiting Form of FM
 Noise Spectra" Proc IRE June 1957, p. 874

Russian Translation Elec E Feb 1958, p173

Broughtwood & Christie "Data Transmission
 Tester Set" Elec. E Mar 1958, p 237.

Urbowich "Signal-to-Noise Ratio in Strong-
 Carrier FM System" Comm & Elect. Nov 57, p559
 (576)

Lawton "Theoretical Error Rate of "Differentially
 Coherent" Binary and "Hexplex" Data Transmission
Proc. IRE, Feb 1959 p 333

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FILE MEMORANDUM: 5720-7.13A

SUBJECT: Reference List of Miscellaneous Books
Relating to Data Transmission

Q175 Science and Information Theory
B786 Leon Bullouin (1956)

QA76 Symbolic Logic and Intelleigent Machines
B 512 E. C. Berkeley (1959)

QA401 Analytical Transients
W136 T. C. G. Wagner (1959)

TK399 Telemetering Systems
B728 P. A. Borden and W. J. Mayo-Wells (1959)

TK3221 Transmission Line Theory
K 540 R. W. P. King (1955)

 X Transmission Lines and Networks
 W. C. Johnson (1950)

TK3226 Principles of Circuit Synthesis
K 960 E. S. Kuh and D. O. Pederson (1959)

TK5101 The Mathematical Theory of Communication
545 C. E. Shannon and W. Weaver (1949)

TK5261 Telegraphy
F 853 J. W. Freebody (1958)

 X Statistical Methods in Radio Wave Propagation
 Proc. of Symposium at University of California,
 June 18-20, 1958.
 W. C. Hoffman, editor (1960)

F. B. Wood
F. B. Wood

FBW:pm

X - Not catalogued.

7.13 sources list on information theory

- OP* PAM _____ L J Savage "The Theory of Statistics and Decision Making" Trans Amer Stat Assoc. 46
 # 122 p55-67 March 1951
- OP PAM _____ R Jay Specter "Statistics and Decision by the Method of Moments" Trans Amer Stat Assoc. 48
 # 125 June 1953 p 238-248
- * MIT LRF
 TR 438 J. Edgar Hoover "The Law of Probability" Science, Apr 1952
- MIT LL
 TR 35 James M. Hildner "The Statistics of Language" in Collected Papers of James Hildner
 of the University of Michigan 1953
- * MIT LRF
 TR 252 Arnold Emmerich "A new theory of the theory of information" (1952)
- _____ John T. Hayward "The Law of Information" The Journal of the Royal Statistical Society (1952) (1952)
- QA 276
 W29 D. K. Johnson "Statistical Decision Making" (1955)
- MIT RLE
 TR 310 Robert M. Hockett "The Law of Information" in Journal of the Royal Statistical Society 6
 (1957)
- QA 104
 C187 Campbell and Jay P. Garcia "The Law of Information" (1956)

QD 276
P 12 715

Proc. Third Family Symposium
(1955 - 1956)

On the behavior of *Proctos...*
in the *U...* (1955)
In the *U...* (1955) p 3

Proctos... (1955) p 1

U 445
K 2

Proc. 1st Symposium
(1956)

Proc. IRT
1955

p 1697 *M...*

IRT
May 57

p 1697 *M...*

Proc. IRT
Dec 56

p 1713 *S...*

Length H. ...
in *R...*
... p 68

Proc. IRT
1951

...

...
p 1257

Proc. IRT
1957

U 1257

not TRF
Mangrove

Museo N. L. 555
D 609

Robert Rosen "Some Further Comments on the
DNA-Protein Coding Problem" Bull Math Biol
vol 21, Sept 59, pp 289-298

40167 R Tarjan "Neural Automata" Cybernetica
1958. 3 (Vol I) pp 189-196

Stofford Beer "The Intelligence of Automation"
Cybernetica 1958 Vol. 5. 4 pp 280-285.

Alvin M. Weinberg "Energy as an ultimate
new material or - problems of burning the sea and
burning the rocks" Physics Today Nov 1959
pp. 18-25 Vol 12, No 11.

Bernard Stepan "The Tunnel Diode - Its Action
and Properties" Electronics Nov 6, 1959 - pp 54-
57.

"Cancer Linked to Enzymes" Sci News Letter Oct 1
1959, p 254

Elihu I. Jury Sampled-Data Control Systems
N.Y.: John Wiley (1959) rev. Op 10s Avant Times
p 110

1095 Omar Wang and Wah H. Kern "The Path Memory
and Switching Function" Trans. Franklin Inst
Vol 268, No 4, Oct 59, p 251-269

Data Communication Notes

Bibliography of Reports and Reprints on Data Transmission Project and Related Topics

Physical Channels

- | | |
|-------------------------|---------------------------------|
| RJ-DR-523-020 | Cable Installation Costs |
| RJ-134 | Primary Cable Constants |
| AIEE CP 60-482 | Survey of Cable Characteristics |
| Supplement to CP 60-482 | Cable Bibliography |

Noise

- | | |
|----------|------------------------------------|
| RJ-MR-13 | Inter-Pulse Interference and Noise |
| RJD-1002 | Noise Sources |

Modulation Systems

- | | |
|-------------------------------|-------------------------|
| IBM Jour., Jan., 59 (reprint) | Mod-Demod Scheme |
| RJ-159 | Transistorized Data Set |

Signal Waveform

See RJ-MR-13 under Noise

Channel Capacity

See AIEE CP 60-482 under Physical Channels
 See RJ-DR-523-024 under Magnetic Recording

Coding

- | | |
|------------------------------|---|
| RJD-1005 | Single and Double Adjacent Error Correction |
| RJ-170 | Bibliography |
| RJ-174 | New Group of Codes |
| IBM Jour., Jan, 60 (reprint) | New Groups of Codes |
| AIEE CP 60-400 | (Same as above) |

Message Organization (Block Length)

AIEE 58-1181
RJ-168

Optimum Block Length
Supplementary Note's Op. Blk. Ln.

Time Domain Techniques

RJ-163
RJ-175

Time Domain Digital Techniques
Min. Component Delay Line
Calculator

Magnetic Recording

RJ-DR-523-024

High Density Recording

Decision Theory

RJ-MR-8
16.01.071.003

Seminar on Decision Theory
Appl. D.T. to Voice Recognition

F. B. Wood
IBM-San Jose ASDD Laboratory

pm/ 1/ 25/ 60