



SP-0/001/01

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Index of Published Papers

C. G. Lambert

C. A. Rosenman

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15 March 1968

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SP *a professional paper*

Index of Published Papers

C. G. Lambert

C. A. Rosenman

15 March 1968

SYSTEM

DEVELOPMENT

CORPORATION

2500 COLORADO AVE.

SANTA MONICA

CALIFORNIA

90406



15 March 1968

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SP-0/001/01

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ABSTRACT

This annotated index supersedes SP-0/001/00 dated 5 October 1967 and supplements SP-0/000/05. It lists papers written by members of the professional staff of the System Development Corporation. All of these papers appeared as books, as chapters of books, as articles in journals, and/or as reports in SDC's "SP" series from December 1966 to February 29, 1968

INTRODUCTION

This annotated index supersedes SP-0/001/00 dated 5 October 1967 and supplements SP-0/000/05 and is in three parts. Part 1 lists the papers alphabetically by author and gives information concerning publication. The information given includes the DDC (Defense Documentation Center) AD Number whenever possible. Annotations are included in most cases. Part 2 lists the papers alphabetically by subject, and Part 3 lists them alphabetically by title and by selected key-words in the titles. All titles are unclassified.

To obtain copies of these papers order directly from the periodical or book publisher indicated. Order from SDC only those items not available elsewhere. An "(L)" (as in SP-(L)-2979) is an indication that the document is limited and that the author's permission must be obtained before Document Distribution can issue or show it to a requester.

A U T H O R I N D E X

PART 1

Adelson, M.EDUCATIONAL ENDS AND INNOVATIONAL MEANS (SP-2293)
31pp.Published as chapter 13 (p.233-253) of "Inventing Education for the Future" edited by W.Z. Nirech, San Francisco, Chandler Pub. Co., 1967
SDC Library no. LS 1028.N66
Printed at SDC, Oct 1966.

Proposes responsible innovation as a way of life in education, and argues that the process of educational change needs to be institutionalized.

Adelson, M.THE WELFARE SYSTEM: DOES IT HAVE A FUTURE?
(SP-2860) 49pp.

Printed at SDC, 31 May 1967.

Views the future of the welfare system and outlines trends on which this future may depend.

Alter, R.ON THE NON-EXISTENCE OF CLOSE-PACKED DOUBLE ERROR-CORRECTING CODES ON $q=7$ SYMBOLS (SP-3048) 14pp.

Printed at SDC, 6 Feb 1968.

The diophantine equation $2y^2 = 7^k + 1$ is shown to have no solutions in integers for $k > 2$. Since this is a necessary condition for the existence of close-packed double error-correcting codes on $q = 7$ symbols, there exist no such codes.Acker, C. J.

THE STATUS OF DEVELOPMENTS IN THE THEORY OF STOCHASTIC DUELS - II (SP-1017/008/01) 32pp.

Published in Operations Research, Vol. 15, No. 3, May-June 1967.Printed at SDC, 28 September 1966.
DDC number: AD-640 592

Outlines the history and principal features of the Theory of Stochastic Duels as well as the major analytical results to date. Considers areas for future research and possible fields of application. Discusses the connection with other models of combat such as Lanchester's equations and games of strategy. Includes an annotated bibliography.

Acker, C. J.STOCHASTIC DUELS WITH TIME-OF-FLIGHT INCLUDED
(SP-1017/009/00) 28pp.Published in Opssearch, Vol. 3, No. 2, 1966 (p. 71-92).
Printed at SDC, 19 May 1966
DDC number: AD-633 912

The fundamental duel in the Theory of Stochastic Duels is extended to include projectile time-of-flight. As a preliminary, the marksman firing at a passive target is studied. General solutions and examples are given. The analysis indicates in a quantitative way how time-of-flight may radically influence the outcome.

Acker, C. J.A SIMPLE RENEWAL MODEL OF THROUGHPUT AT AN OVERSATURATED SIGNALIZED INTERSECTION
(SP-1122/000/01) 19pp.Published in Transportation Research, Vol. 1, 1967 (p. 57-65).Printed at SDC, 28 October 1966.
DDC number: AD-645 434

The effect of random headways on throughput at an oversaturated signalized intersection is studied. It is shown that a deterministic (mean value) model is quite accurate for mean value calculations, but that variability in headways does cause significant variance in throughput.

Anderson, J.W.

IMPROVING THE VALIDITY OF COMPARATIVE TECHNICAL LIBRARY STATISTICS (SP-2857) 6pp.

Presented at the Special Libraries Association Annual Convention, New York, New York, 31 May 1967
Published in Special Libraries, Vol. 58, No. 10, December 1967 (p. 697-702).

Discusses the various areas to be explored by comparative studies and states that the validity of comparative library statistics is borne out by the tendency of information gathered to fall into patterns. Presentation of data in graphic form generates curves peculiar to particular industries. Concludes that the quality of comparative technical library statistics can be improved by defining terms, by delineating the kinds and numbers of patrons served, and by detailing the basic service provided by each library.

Anderson, J.W.THE SCI-TECH TACK, FROM THE CHAIRMAN'S QUARTER
(SP-2945) 2pp.Published in the Sci-Tech News, Vol. 21, No. 3, Fall 1967, (p. 66-67)Anderson, J.W.

SOME THOUGHTS ON THE LIBRARY WORLD (SP-2949) 2pp.

Published in Sci-Tech News, Vol. 21, No. 4, Winter 1967 (p. 96-97).Anderson, J.W.

FROM THE CHAIRMAN'S QUARTER: SCI-TECH TACK (SP-3008) 2pp.

Published in Sci-Tech News, Vol. 21, No. 4, Winter 1967, (p. 98-100).

Atkinson, R. C. and R. E. Dear, D. P. Estavan,
H. P. Silberman
AN OPTIMAL STRATEGY FOR THE PRESENTATION OF
PAIRED-ASSOCIATE ITEMS (TM-1935/101/00) 58pp.

Published in Behavioral Science, Vol. 12, No. 1,
January 1967 (p. 1-13).
Printed at SDC, 10 March 1965.
DDC number: AD-615 713

This study was concerned with the implementation of
certain mathematical results that give optimal ways
to present stimulus items in learning experiences.
The effects of training subjects in several paired-
associated experiences were compared by the strategy
and by another simple presentation strategy.

Barnett, J.A.
ALGORITHMIC COMPILATION OF PREDICATES (SP-(L)-2856)
12pp.

Printed at SDC, 16 Feb 1968.

Describes a special technique used by the LISP 2 and
COMETA compilers for compiling predicates algorithmically
by defining a model language, machine, and compiler
and then demonstrating how the technique operates.

Barnett, J.A.
THE SDC LISP 1.5 SYSTEM FOR IBM 360 COMPUTERS
(SP-3043) 17pp.

Printed at SDC, 11 Jan 1968

Describes the LISP 1.5 system for the IBM-360 computer.
States that this system provides all the features
available for the Q-32 computer time-sharing system
and is compatible with it.

Barrar, R. B.
CONVERGENCE OF THE VON ZEIPPEL PROCEDURE
(SP-2810/000/01) 20pp.

Printed at SDC, 20 July 1967.

DDC number: AD-658 479

Presents another mathematical proof for solving
problems in celestial mechanics. The proof is
based on a suggestion of A. N. Kolmogorov in
the 1954 Doklady.

Barrett, R. P. and L. F. Carter, M. H. Goer,
J. W. Singleton, V. F. Shankla*
SOCIAL SCIENCES INFORMATION SYSTEMS WORKSHOP
PROCEEDINGS (Warrenton, Wa., May 1966)
(Unnumbered) 115pp.

Shelved as SDC Library #48564.

Co-sponsored by American University, Center of
Research in Social Systems. Contents: Keynote
address..The Social Sciences and Information
Systems, by L. F. Carter (SP-2510); Information
Technology and Automation Group, summary by
J. W. Singleton, and M. H. Goer; Closing remarks
and summary by R. P. Barrett, J. W. Singleton,
and others.

Bartram, P. R. and W. D. Williams*
COMPOSE/PRODUCE: A USER-ORIENTED REPORT GENERATOR
CAPABILITY WITHIN THE SDC TIME SHARED DATA
MANAGEMENT SYSTEM (SP-2634) 38pp.

Published in the Proceedings of the Spring Joint
Computer Conference, Vol. 30, April 1967 (p. 635-640).
Printed at SDC, 8 February 1967.

Describes a two-step report generation program to
give a non-programming-oriented user the ability to
access a large file of data on-line so as to
describe and generate a report. This program is part
of TMS.

Biel, W.C. and H.N. Harman, M.S. Sheldon
EXERCISING TEAMS IN MILITARY SYSTEM THROUGH THE USE
OF SIMULATION (SP-1739) 44pp.

Published in "Psychological Research in National
Defense Today," Vol. 2, June 1967, Publ. by Army
Behavioral Research Lab.

SDC Library no. 50029.

Printed at SDC, 15 Oct 1964.

DDC number: AD-611 125.

Part I Planning for Team Training in the System
Development Process, by W.C. Biel, explains why
analyses and decisions about training must be made
early in the design of an operation system so that the
types of training around which Parts II and III are
focused can be well designed and ready when needed.
Part II, Designing and Implementing the System Model,
by H.N. Harman, details the design of team-training
programs and reports that this design follows analysis
and planning.
Part III, The Evaluation of Training in a Simulated
Environment, by M.S. Sheldon, discusses problems
associated with the evaluation of team training or
system exercising.

Blanchard, W.H.
THE REBELLION OF ROUSSEAU (SP-2959)

Published in the Los Angeles Times, "Opinion" Section G,
1 Oct 1967, (p. 17).

Compares the behavior of modern day hippies to that
of 18th century Jean-Jacques Rousseau.

Blanchard, W.H.
ROUSSEAU AND THE SPIRIT OF REVOLT, A PSYCHOLOGICAL
STUDY (SP-2960) 300pp.

Published by University of Michigan Press, 1967.

Examines the interplay between Rousseau's complex
personality and his political writings.

Bledsoe, R.C.
A ROLE FOR RESEARCH AND TECHNOLOGY DEVELOPMENT
STAFFS IN DISASTER PREPAREDNESS AND PLANNING (SP-2991)
7pp.

Printed at SDC, 31 Oct 1967.

DDC number: AD-661 601

Outlines the resources of industrial organizations in
developing testing techniques, training exercises,
alerting and control devices for industry-wide disaster
preparedness.

Bleier, R. E.
TREATING HIERARCHICAL DATA STRUCTURES IN THE
SDC TIME-SHARED DATA MANAGEMENT SYSTEM (TMS)
(SP-2750) 23pp.

Printed at SDC, 29 August 1967.

Describes a method within the Time-shared Data Management System (TMS) that permits the automatic association of related data. Discusses the design features required to implement the technique and gives numerous examples of the use of the TMS language to define, load, and query a personnel data base.

Borko, H. (Ed.)
AUTOMATED LANGUAGE PROCESSING: THE STATE-OF-THE ART
(SP-2018) 386pp. illus.

Published by John Wiley and Sons, New York, 1967
Shelved as an SDC book, number Z699.B73.

Compiles works on the theory and techniques of information storage and retrieval procedures.

Borko, H.
UTILIZATION OF ON-LINE INTERACTIVE DISPLAYS (SP-2496)
8pp. illus.

Published in Information System Science and Technology: Papers Prepared for the Third Congress, edited by Donald E. Walker, Washington, Thompson Book Co., 1967, (p. 327-334).

Shelved as an SDC book, number UR215.W17.

Describes three interactive programming systems: General Purpose Display System (GPDS) sentence analysis system (PLP II), and an interactive document retrieval system called BOLD.

Borko, H. and H. P. Burnaugh
INTERACTIVE DISPLAYS FOR DOCUMENT RETRIEVAL
(SP-2557) 25pp.

Published in Information Display, Vol. 3, No. 5, September/October 1966 (p. 47-61).
Printed at SDC, 4 August 1966.

Discusses BOLD (Bibliographic On-Line Display) and states that it is an example of a highly automated interactive document storage and retrieval system that is in operation at SDC. BOLD enables the user to browse through the data base by subject categories or search for specific documents. The response is rapid and the results are satisfying.

Borko, H.
THE ANALYSIS AND DESIGN OF INFORMATION SYSTEMS
(SP-2655) 21pp.

Published in the Proceedings of the Drexel Institute of Technology Symposium, June 1967.
Printed at SDC, 10 November 1966.

DDC number: AD-645 517

Provides an orientation to the procedures used in systems analysis and in the design of information systems. The principles used in the analysis and design are derived from information science which provides a conceptual basis for understanding the functioning of information handling system.

Borko, H.
INFORMATION PROCESSING (SP-2802) 24pp.

Published in Encyclopedia Britannica, Vol. 1, (p.244A-244X).

Borko, H.
INFORMATION SCIENCE: WHAT IS IT? (SP-2952) 3pp.

Published in American Documentation, Vol. 19, No. 1, January 1968 (p. 3-5).

Printed at SDC, 22 Sep 1967. Informal handout.

Discusses the meaning of the term "information science" its relationship to documentation and the role of the information scientist.

Bratten, J.E. and L.T. Krebs, F.A. Yett.
SPLAN (SP-2898/001/00)

Published in Nation's Schools Journal, Vol. 80, No. 4, 1967, (p.67).

Bumsted, A.R.
COMPUTOPICS - 1967 (SP-2795) 29pp.

Published as a special issue of Computopics sponsored by SDC, March 1967.

Brings SP-1433 up to date. Presents an annotated bibliography of courses, guidance material in mathematics, computer science and related fields.

Burke, J. P. and R. E. Long, R. P. Simmons
AN INTERACTIVE SYSTEM COMPUTING DEPENDENCIES,
PHRASE STRUCTURES AND KERNELS (SP-2454/000/01)
29pp.

Printed at SDC, 29 June 1967.

DDC number: AD-654 926

Describes an automatic syntactic analysis system programmed in LISP. Reports that this is an interactive system that derives a grammar from hand-parsed sentences. Interactive features include the capability for users to change the grammar, to select one of several presented parses, to correct errors in the parsing, and to select various displays either on a CRT or in printed form.

Burke, J. P.
UMPIRE: AN AUTOMATIC KRIEGSSPIEL REFEREE FOR
A TIME-SHARED COMPUTER (SP-2752) 17pp.

Printed at SDC, 17 February 1967.

DDC number: AD-648 759

Describes a computer program that performs all of the functions of referee for the game of Kriegsspiel, a variation of the game of chess. While not a game-playing or heuristic program in itself, the program contains all the necessary routines for the basic representation of a dynamic chess game, and may thus be used as the core upon which could be built the heuristic for actual chess-playing program.

Campbell, J.C.DESIGN CONSIDERATIONS FOR AN AIR QUALITY PREDICTION
AND DISPLAY SYSTEM (SP-3053) 14pp.

Printed at SDC, 29 Jan 1968.

Discusses SDC's computer-based system to predict and
display the pattern and radio-active intensity of
fallout and possible system design considerations
relevant to the air quality display problem.Cannon, W. M. and D. K. PerryVOCATIONAL INTEREST OF COMPUTER PROGRAMMERS
(SP-2348) 7pp.Published in the Journal of Applied Psychology,
Vol. 51, No. 1, 1967 (p. 28-34).Analyzes the results of the revised SVIB (Strong
Vocational Interest Blank) tests administered to
1,378 computer programmers to determine their
primary interest as compared to the interest of
other professional men.Cantley, G. and L. F. Carter, J. T. Rowell, L. Schults,
H. R. Seiden, E. Wallace, R. Watson, R.E. Wyllys
NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE
AND TECHNOLOGY (unnumbered) 344pp.Book published by John Wiley & Sons, Inc., New York.
Shelved as an SDC book number 7699-5-33C32.Describes present systems. Discusses basic
proportions and requirements to be satisfied by an
adequate S & T document system, and elucidates
problems in current system. Sets forth plans for a
new document handling system. Summarizes 15
previous proposals. Briefly describes VIRITY and
details the organization of a Capping Agency.
Evaluates proposed systems.Carlson, A. R.CONCEPT FREQUENCIES IN POLITICAL TEXT: AN
APPLICATION OF A TOTAL INDEXING METHOD OF
AUTOMATIC CONTEXT ANALYSIS (SP-2192) 10pp.Published in Behavioral Science, Vol. 12, No. 1,
January 1966 (p. 68-77).Uses a computer routine, originally designed for
information retrieval in natural language, to
analyze the content of a political text. The
uniqueness of the method lies in the fact that the
data base is totally indexed.Carter, L. F. and G. Cantley, J. T. Rowell,
L. Schults, H. R. Seiden, E. Wallace,
R. Watson, R. E. Wyllys
NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE
AND TECHNOLOGY (unnumbered) 344pp.Book published by John Wiley & Sons, Inc., New York.
Shelved as an SDC book number 2699-5-33C32.

For annotation, see this title under G. Cantley.

Carter, L. F. and R. P. Barrett, M. H. Coer,
V. F. Shankles, ed., J. W. Singleton,
H. C. Ullman, ed.SOCIAL SCIENCES INFORMATION SYSTEMS WORKSHOP
PROCEEDINGS (Warrentown, Va., May 1966) 115pp.

Shelved as SDC Library #48564.

For annotation, see this title under R. P. Barrett.

Carter, L. F.NATIONAL DOCUMENT HANDLING SYSTEMS IN SCIENCE
AND TECHNOLOGY (SP-2353) 5pp.Published in Science, Vol. 154, No. 3754,
9 December 1966 (p. 1299-1304).Outlines the federal government's responsibility
for scientific and technical documentation and
ways in which they can be met.Carter, L. F.KEYNOTE ADDRESS--THE SOCIAL SCIENCES AND
INFORMATION SYSTEMS (SP-2510)Published in Social Sciences Information Systems
Workshop Proceedings, November 1966 (p. 9-21).Carter, L. F.PERSONALIZING INSTRUCTION IN MASS EDUCATION BY
INNOVATIONS IN THE TEACHING-LEARNING PROCESS
(SP-2722) 21pp.

Printed at SDC, 27 January 1967.

Discusses possibilities of personalizing education
with major emphasis on applications and impact of
computers and modern data processing.Carter, L.F.KNOWLEDGE PRODUCTION AND UTILIZATION IN CONTEMPORARY
ORGANIZATIONS (SP-2976) 27pp.

Printed at SDC, 9 Oct 1967.

Discusses the problem of knowledge production and
utilization as one of the major concerns facing the
intellectual community. Suggests that the whole problem
of a strategy for change and the method for bringing
together the necessary resources deserves the most
serious attention.Carter, L.F.THE COMPUTER AND INSTRUCTIONAL TECHNOLOGY (SP-3041)
7pp.Published in Current Issues in Higher Education,
American Association for Higher Education, 1967,
(p. 253-259).Examines changes brought to the instructional process by
technological innovations, as well as the broad system
changes that will take place in educational institutions
because of these changes.Coswell, J. F. and C. P. Donahoe, D. P. Estavan,
B. A. RosenquistAN ETHICAL AND MORAL ANALYSIS OF THE DESIGN FOR
A MAN-MACHINE COUNSELING SYSTEM: REACTIONS BY
A UCLA GRADUATE CLASS IN COUNSELING (SP-2874)
68pp.

Printed at SDC, 9 June 1967.

DDC number: AD-658 482

Presents a compilation of quotations from 16 UCLA
students' term papers examining the design of the
man-machine counseling system, with particular
emphasis on evaluating the system from a moral and
ethical standpoint. Concludes that the value of
this compendium of student reactions might well be
that it encourages people to become aware of their
values before inflicting them on others.

Connelly, J. J.
DESIGN AND PRODUCTION OF COMPUTER PROGRAMS
(SP-1724/002/00) 30pp.

Published by John Wiley & Sons, New York.
Chapter 5 (p. 138-167) in "Developing Computer Base
Information Systems." Shelved as SDC Library
#Z699.R78.

Describes the production process for a set of
computer programs in an information system development
context.

Coulson, J. E.
COMPUTERS IN RESEARCH AND DEVELOPMENT ON
AUTOMATED INSTRUCTION (SP-2473)

Published in LeConocours Medical, January 1967,
Vol. 1 of the 89th year (p. 11-23).

Coulson, J. E.
TECHNOLOGY AND EDUCATIONAL PLANNING (SP-3006) 8pp.

Printed at SDC, 24 Nov 1967.

Discusses a few of the most significant technological
developments in education, their implications for
educational planning and the impact on school
operations.

Quad, C. A.
REPORT OF THE PROGRAM COMMITTEE FOR THE 1966 ADI
CONVENTION (SP-2692) 71pp.

Printed at SDC, 30 December 1966.
DDC numbers: AD-645 440

Presents a comprehensive report on the experiences
of the Program Committee for the 29th Annual
Meeting of the American Documentation Institute,
held in Santa Monica, California, from October 3-7,
1966. The report describes the program planning
and program support activities in detail; provides
samples of the materials, forms and schedules used;
highlights problems and successes; and makes a
number of detailed and general recommendations for
streamlining future ADI convention planning.

Danchick, R.
FURTHER RESULTS ON GENERALIZED PREDICTOR-
CORRECTOR METHODS (SP-2901) 28pp.

Printed at SDC, 29 July 1967.

Extends the existence of stable, maximal order,
multistep predictor-corrector methods described by
Gragg and Stetter. The key notion utilized in the
derivations is similar to that described by
Butcher, a quasi-Hermite Interpolating Polynomial.

Dear, R. E.
OPTIMAL STRATEGY FOR ITEM PRESENTATION IN A LEARNING
PROCESS (SP-1922/002/00) 13pp.

Published in Management Science, Vol. 13, No. 11, July
1967 (p. 773-785).

Presents a model of learning based on stimulus-sampling
theory in which a subject is to be taught n items in the
course of N trials. Considers the problem of determining

a strategy of presentation which brings the subject to
a maximal level of achievement with respect to all n items
at the end of the process.

Dear, R. E. and R. C. Atkinson, D. P. Estavan,
H. P. Silberman
AN OPTIMAL STRATEGY FOR THE PRESENTATION OF
PAIRED-ASSOCIATE ITEMS (TM-1935/101/00) 58pp.

Published in Behavioral Science, Vol. 12, No. 1,
January 1967 (p. 1-13).
Printed at SDC, 10 March 1965.
DDC number: AD-615 713

For annotation, see this title under R. C. Atkinson.

Dias, F. E.
DEFINITION PROBLEMS OF COMMAND CONTROL SYSTEMS
(SP-2680) 6pp.

Published in Information System Science and Technology:
Papers Prepared for the Third Congress, edited by
Donald E. Walker, Washington, Thomson Book Co., 1967
(p. 389-394).

Shelved as an SDC book, number: UB215.W17.

Discusses some of the problem areas which are brought
about by the application of essentially politically-
defined concepts to a decision-making and developmental
effort which is essentially technical in nature.

Difford, L.
QUALITY ASSURANCE AND STANDARDS FOR SOFTWARE
(SP-2852) 15pp.

Printed at SDC, 21 July 1967.

Reviews efforts made in computer software quality
assurance and standards. Presents suggestions that a
company could follow for improvement in these areas.

Dlugatch, I. and S. D. Manus
LARGE CAPACITY LASER MEMORY SPACE-BORNE COMPUTERS
(SP-2665) 10pp.

Printed at SDC, 13 March 1967.
DDC number: AD-648 752

Discusses the necessity for a space-borne computer
memory of at least 10^6 bit capacity. Shows that
such a device could minimize computer hardware and,
at the same time, make feasible such devices as
spaceborne random-multiple-access and synergetic
satellites.

Dlugatch, I.
COMPUTER-AIDED DESIGN AS APPLIED TO SPACE
SYSTEMS (SP-2746), 41pp.

Printed at SDC, 15 February 1967.

Demonstrates that Computer-Aided Design (C-AD) can be
an implementation of the systems concept and could
increase efficiency in systems design. Establishes
the nature of design and the requirements for computer
use for this purpose. Defines the characteristics
of problems suited to C-AD and investigates samples of
such problems in communication satellite systems.

Diugatch, I.

GAME THEORY SOLUTION FOR NON-REGULAR RANDOM EVENT PROBLEMS: SMALL SAMPLE SIGNALS IN NOISY CHANNELS (SP-2756) 17pp.

Printed at SDC, 21 February 1967.
DDC number: AD-651 575

Suggests a decision technique for use in noisy channels with small samplings.

Diugatch, I.

PREDICTING THE RELIABILITY OF MANNEED SPACE SYSTEMS (SP-2768) 15pp.

Printed at SDC, 28 February 1967.

Explains that the prediction of system reliability can be performed by comparing the reliability of an existing design to that of the reliability of the new design. The success of the scheme depends on the availability of data from engineering-psychology tests for the calculation of human "failure" rates.

Diugatch, I.

THE NEED FOR AND THE FEASIBILITY OF RANDOM MULTIPLE ACCESS FOR COMMUNICATION SATELLITE (SP-2858) 15pp.

Printed at SDC, 22 May 1967.

Examines random multiple access, its nature and its problems. Outlines small size computers and memory systems for spaceborne applications. Suggests the use of a laser for this purpose.

Donahoe, C. P. and J. F. Cogswell, D. P. Estavan, B. A. Rosenquist
THE DESIGN OF A MAN-MACHINE COUNSELING SYSTEM (SP-2576/001/01) 17pp.

Printed at SDC, 30 September 1966.
DDC number: AD-640 653

For annotation, see this title under J. F. Cogswell.

Donahoe, C. P. and J. F. Cogswell, D. P. Estavan, B. A. Rosenquist
AN ETHICAL AND MORAL ANALYSIS OF THE DESIGN FOR A MAN-MACHINE COUNSELING SYSTEM: REACTIONS BY A UCLA GRADUATE CLASS IN COUNSELING (SP-2874) 68pp.

Printed at SDC, 9 June 1967.
DDC number: AD-658 482

For annotation, see this title under J. F. Cogswell.

Doner, J. E. and A. Tarski*
AN EXTENDED ARITHMETIC OF ORDINAL NUMBERS (SP-2811) 58pp.

Printed at SDC, 31 March 1967.

Discusses extending the Arithmetic of Ordinals to a transfinite sequence of higher operations. Introduces a whole transfinite sequence of binary ordinal operations based upon a single concise recursion formula. Establishes a number of interesting similarities involving higher operation. Discusses problems concerning the existence of further identities of this type.

Drukey, D.L.

LABORATORY DESIGN OF COMMAND AND CONTROL SYSTEMS (SP-2551) 4pp.

Published in Information System Science and Technology: Papers Prepared for the Third Congress, edited by Donald E. Walker, Washington, Thompson Book Co., 1967, (p. 47-50).

Shelved as an SDC book, number UE215.W17.

Discusses the feasibility of designing a command and control system for a military headquarters at the facilities of the developing organization.

Estavan, D. P. and J. F. Cogswell, C. P. Donahoe, B. A. Rosenquist

AN ETHICAL AND MORAL ANALYSIS OF THE DESIGN FOR A MAN-MACHINE COUNSELING SYSTEM: REACTIONS BY A UCLA GRADUATE CLASS IN COUNSELING (SP-2874) 68pp.

Printed at SDC, 9 June 1967.
DDC number: AD-658 482.

For annotation, see this title under J. F. Cogswell.

Estavan, D. P. and R. C. Atkinson, R. E. Dear, H. F. Silberman

AN OPTIMAL STRATEGY FOR THE PRESENTATION OF PAIRED-ASSOCIATE ITEMS (TM-1935/101/00) 58pp.

Printed at SDC, 10 March 1965.

For annotation, see this title under R. C. Atkinson.

Fanwick, C.

SYSTEMS DEVELOPMENT AS A PART OF PLANNING FOR HEALTH ENTERPRISES (SP-2745) 276pp.

Printed at SDC, 1 March 1967.

Describes the use of system analysis techniques to improve the efficiency of health facilities. Explains that the study of the information handling aspects of a health facility such as a hospital is central to the development of an efficient, total operating system. Describes the Puerto Rico Medical Center as an example.

Fanwick, C.

CAVEAT EMPTOR SYSTEMATIBUS (LET THE BUYER OF SYSTEMS BEWARE) (SP-2900) 10pp.

Printed at SDC, 1 Aug 1967.
DDC number: AD-658 481.

Takes a cynical look at some of the dangers of the "Systems Approach." Points to the paralysis wrought by over-analysis, and to the necessity of the systemist to recognize the user's needs.

Farr, L. and L. B. McCabe

AN INFORMATION SYSTEM FOR LAW ENFORCEMENT (SP-2447) 7pp.

Published in the Proceedings-Fall Joint Computer Conference, 1966, San Francisco, California, 8-10 November 1966.

Summarizes activities of SDC and the LAPD in the analysis and design of phase I of the LAPD Information System by describing the most salient

features of each. Discusses the implications for the phase I System as a regional system. Provides directions in which the LAPD System can expand to develop into a total law enforcement command and control system.

Feingold, S.L.

PLANIT A FLEXIBLE LANGUAGE DESIGNED FOR COMPUTER-HUMAN INTERACTION (SP-2640) 17pp.

Printed at SDC, 11 Oct 1967.

Discusses a new programming language, PLANIT, designed to handle problems encountered in using time-sharing systems where computer human interaction (CHI) is of fundamental importance.

Fowers, M. H. and T. P. Haney

THE EMERGENCY OPERATIONS RESEARCH CENTER:
DISASTER BY DESIGN (SP-2807) 10pp.

Printed at SDC, 3 April 1967.
DDC number: AD-651 592

Emergency Operations Research Center (EORC) capabilities provide in a laboratory setting, an opportunity for the city's emergency operations team to evaluate and modify its plans and procedures in preparing for real emergency. Suggests a potential application of EORC technology to comprehensive urban and regional planning.

Filip, E. T.

THE RELATIONSHIP OF LEARNER CHARACTERISTICS TO MEDIA STIMULI AND PROGRAMING SEQUENCES (SP-2718/000/01) 35pp.

Printed at SDC, 3 April 1967.

Examines the relationship of learner characteristics presented in linear and branching sequences, develops and explores the value of a specially designed test battery comprise of divergent and convergent figural items for predicting learner performance.

Franks, E.W.

THE MADAM SYSTEM: DATA MANAGEMENT WITH A SMALL COMPUTER (2944) 16pp.

Printed at SDC, 8 Sep 1967.
DDC number: AD-658 472.

Discusses the uses of the MADAM system for data management tasks on the small, free-standing computer such as the IBM 1401 or IBM 360/30. It is largely non-technical in approach and is addressed to managers rather than to computer personnel.

Friedman, L. A.

DESIGN AND PRODUCTION OF SYSTEM PROCEDURES (SP-1724/003/00) 36pp.

Published by John Wiley & Sons, New York. Chapter 7 (p. 199-234) in "Developing Computer-Based Information Systems." Shelved as SDC Library #Z699.R78.

Presents a set of system procedures to enable thorough acquaintance with a computer, and mastery of it.

Friedman, L. A.

INSTINCTIVE BEHAVIOR AND ITS COMPUTER SYNTHESIS (SP-2292/001/00) 55pp.

Published in Behavioral Science, Vol. 12, No. 2, March 1967 (p. 85-108).

Analyzes theories of instinctive behavior. Reports that in order to validate the theories and permit their development in greater detail, a computer simulation of these theories has been undertaken, using an artificial animal, ADROIT, as the "guinea pig". Discusses progress to date with this simulation.

Friedman, L. A.

THE DESCRIPTION OF A NEW THEORY OF INSTINCTIVE BEHAVIORAL MECHANISM AND ITS USE IN THE INTERPRETATION OF NEURAL PHYSIOLOGICAL EXPERIMENTS (SP-2536) 1p.

Published in American Zoologist, Vol. 6, No. 4, November 1966 (p. 176, abstract).

Presents a theory of instinctive behavioral mechanisms and its use in the interpretation of neurophysiological experiments.

Friedman, L. A.

FOUNDATIONS OF A THEORY OF NEURAL MECHANISMS (SP-2702) 9pp.

Printed at SDC, 20 January 1967.
DDC number: AD-648 753

Explains the underlying principles of a model of functional neural mechanisms that produce instinctive behavior.

Gafarian, A. V. and C. J. Ancker

A SIMPLE REVENAL MODEL OF THROUGHPUT AT AN OVER-SATURATED SIGNALIZED INTERSECTION (SP-2122/000/01) 19pp.

Printed at SDC, 28 October 1966.
Published in Transportation Research, Vol. 1, 1967 (p. 57-65).
DDC number: AD-645 434

For annotation, see this title under C. J. Ancker.

Gallenson, L.

A GRAPHIC TABLET DISPLAY CONSOLE FOR USE UNDER TIME-SHARING (SP-2835/000/01) 15pp.

Printed at SDC, 11 Aug 1967.
DDC number: AD-658 470.

Discusses the problems of using highly interactive graphic consoles with a time-shared processor. Presents solutions to the problems, and describes the components of the Graphic Tablet Display (GTD) console used with the Time-Sharing System (TSS).

Galloway, P. T.

TRANSMISSION OF DIGITAL INFORMATION ON RF CIRCUITS (SP-2695) 21pp.

Printed at SDC, 8 March 1967.

Describes a system for rapid transmission and processing of physical identification data among police officers and central stations. Defines the information requirements and basic processing tasks permitting inference of requirements for Digital Message Entry Devices (DMED) and data processing techniques.

Ginsburg, S.

BRACKETED CONTEXT-FREE LANGUAGES (SP-2343) 23pp.

Published in Journal of Computer and Systems Sciences, Vol. 1, No. 1, April 1967 (p. 1-23).

Presented at the RAND Corporation, Santa Monica, California, 3 February 1966.

Ginsburg, S. and S. Greibach* M. Harrison*
ONE WAY STACK AUTOMATA (SP-2439) 30pp.Published in the Journal of the ACM, Vol. 14, No. 2, April 1967 (p. 389-418).Ginsburg, S. and S. Greibach*
DETERMINISTIC CONTEXT FREE LANGUAGES
(TM-738/014/00) 44pp.Published in Information & Control, Vol. 9, No. 6, December 1966 (p. 620-650).
Printed at SDC, 7 May 1965.
DDC number: AD-624 938

A number of results about deterministic languages (languages accepted by pushdown automata with no choice of moves) are established. In particular,

1. each deterministic language is unambiguous,
2. the complement of each deterministic language is a deterministic language,
3. numerous operations which preserve deterministic languages (for example, intersection with a regular set) are obtained and,
4. several problems are shown to be recursively unsolvable.

Ginsburg, S. and S. Greibach*, M. A. Harrison*
STACK AUTOMATA AND COMPILING (TM-738/021/00) 63pp.Published in the Journal of the Association for Computing Machinery, Vol. 14, No. 1, January 1967 (pp. 12-201).Printed at SDC, 17 November 1965.
DDC number: AD-628 205

Presents a mathematical model which embodies salient features of many modern compiling techniques. The model, called the stack automaton is deterministic in nature. This deterministic device is generalized to a nondeterministic device.

Givon, T.*

SOME NOUN-TO-NOUN DERIVATIONAL AFFIXES (SP-2893) 45pp.

Printed at SDC, 20 July 1967.

Discusses sense shifts within the category "Noun" achieved by morphological affixation and the discovery of interesting similarities or differences between affixal and non-affixal sense shifts.

Givon, T.*TRANSFORMATIONS OF ELLIPSIS, SENSE DEVELOPMENT
AND RULES OF LEXICAL DERIVATION (SP-2896) 60pp.

Printed at SDC, 22 July 1967.

Studies the shifting of the grammatical category of lexical items without morphological affixation and compares it with derivational morphology and non-affixal sense development. States that syntactic phenomena are the reflexion of semantic structure.

Coor, M. H. and R. P. Barrett, L. P. Carter,
J. W. Singleton, V. P. Shanklas* (ed.),
H. C. Ullman (ed.)SOCIAL SCIENCES INFORMATION SYSTEMS WORKSHOP
PROCEEDINGS (Warrentown, Va., May 1966)
(Unnumbered) 115pp.

Shelved as SDC Library #48564.

For annotation, see this title under R. P. Barrett.

Grace, G. L.APPLICATION OF EMPIRICAL METHODS TO COMPUTER-
BASED SYSTEM DESIGN (SP-1952) 37pp.Published in the Journal of Applied Psychology,
Vol. 50, No. 6, 1966 (p. 442-450).
Printed at SDC, 1 June 1965.
DDC number: AD-617 772

Provides information about the clarity and usefulness of different printout formats. Reports that three forms of actual printouts were prepared: Verbal, Data Block and Eidoform. Concludes that for all three trials, Verbal and Data Block printouts were about equally effective, while Eidoform printouts tend to be less effective and harder to understand.

Grace, G. L. and W. A. Hofland
MULTI-MEDIA TRAINING FOR CROSS-CULTURAL
INTERACTION (SP-2812) 16pp.Printed at SDC, 17 April 1967.
DDC number: AD-651 574

Discusses the training material packages created by SDC to develop cross-cultural interaction skills, and describes the training aids included in these packages, particularly the self-contained PACKAGE (Planned Aids for Cross-Cultural Knowledge, Action and Growth in Effectiveness).

Grant, E. E. and H. SackmanAN EXPLORATORY INVESTIGATION OF PROGRAMMER
PERFORMANCE UNDER ON-LINE AND OFF-LINE
CONDITIONS (SP-2581) 42pp.Published in the IEEE Transactions on Human Factors
in Electronics, Vol. HFE-8, No. 1, March 1967.
(p. 33-48).Printed at SDC, 2 September 1966.
DDC number: AD-640 654

Compares the performance of programmers under controlled conditions for standard tasks. Statistically significant results indicated faster debugging under the on-line mode. Very large individual differences in programmer performance are probably the most important practical findings in this study. Describes methodological problems, presents several hypotheses to account for the results, and makes suggestions for future research.

Greibach, S. A.A NOTE ON PUSHDOWN STORE AUTOMATA AND REGULAR
SYSTEMS (TM-738/016/00) 13pp.Published in Proceedings of the American
Mathematical Society, Vol. 18, No. 2, April 1967
(p. 269-270).Printed at SDC, 31 August 1965.
DDC number: AD-628 203

Haney, T. P. and F. M. Peuers
THE EMERGENCY OPERATIONS RESEARCH CENTER:
DISASTER BY DESIGN (SP-2807) 10pp.

Printed at SDC, 3 April 1967.
DDC number: AD-651 592

For annotation, see this title under F. M. Peuers.

Harman, H.H. and W.C. Biel, M.S. Sheldon
EXERCISING TEAMS IN MILITARY SYSTEMS THROUGH THE
USE OF SIMULATION (SP-1739) 44pp.

Published in Psychological Research in National Defense Today, Vol. 2, June 1967, Publ. by Army Behavioral Research Lab.
SDC Library no. 50029.

For annotation, see this title under W.C. Biel.

Harris, J. K.
AUTOMATING WELFARE: POTENTIAL AND PROBLEMS
(SP-2698) 16pp.

Printed at SDC, 2 March 1967.

Provides welfare administrators with a view of public welfare programs as seen from the standpoint of automation and system analysis. This paper is divided into six parts: 1) The State of Technology, 2) The State of Welfare, 3) Emerging Programs, 4) Emerging Policies, 5) Recognizing the System of Concern, 6) Maintaining the State-of-the-Art in Welfare. States that application of the system sciences in support of technology will increase the quality of service, increase coordination of services, improve response time and enhance control and analysis.

Harris, J. K.
AUTOMATING NEIGHBORHOOD SERVICE - CENTERS:
POTENTIAL AND PROBLEMS (SP-2796) 15pp.

Printed at SDC, 10 May 1967.

Describes problems in developing a computer program to expose the needs of clients of Neighborhood Service Centers in relation to actual or needed services, to provide a basis for community-wide planning of social services, and to meet the Bureau of the Budget's requirement that such centers achieve a functional integration of programs.

Hartman, W. W.
THE SYSTEMS APPROACH IN CRIME PREVENTION AND
CONTROL (SP-2751) 19pp.

Printed at SDC, 1 February 1967.
DDC number: AD-648 758

The fundamental functions of a command-and-control system in the context of a generalised view of portions of the police process are discussed in general terms.

Hertzog, J.K.
TWO SOLUTIONS IN SEARCH OF A PROBLEM (SP-2723)

Published in Technical Communications: Man's Record of Reality: Proceedings, 11th International Technical Communications Conference, edited by Harold L. Mensch, Washington, 1967.

Shelved as an SDC book, number T11.869, 1967.

Suggests that technical writing is part of management's

information system and that there is no "best way" to produce written technical material that can be chosen without regard to the demands of the ultimate user--management.

Hibbard, T. and J. Ullian
THE INDEPENDENCE OF INHERENT AMBIGUITY FROM
COMPLEMENTEDNESS AMONG CONTEXT FREE LANGUAGES
(TM-738/010/00) 21pp.

Published in the Journal of the Association for Computing Machinery, Vol. 13, No. 4, October 1966.
Printed at SDC, 10 November 1964.
DDC number: AD-613 290

Presents two theorems to establish the independence of inherent ambiguity from complementedness among the context-free languages.

Hofland, N. A. and G. L. Grace
MULTI-MEDIA TRAINING FOR CROSS-CULTURAL INTERACTION
(SP-2812) 16pp.

Printed at SDC, 17 April 1967.
DDC number: AD-651 574

For annotation, see this title under G. L. Grace.

Hormann, A.
DESIGNING A MACHINE PARTNER--PROSPECTS AND
PROBLEMS (SP-2169/000/01) 5pp.

Published in Datamation, Vol. 13, No. 2, February 1967 (p. 29-33).
Printed at SDC, 15 October 1965.
DDC number: AD-626 173

Discusses some possibilities for extending man's intellectual and creative power through "partnership" with machines of increased responsiveness and sophistication. States some of the general requirements for a machine partner that are likely to differ depending on problems domains and gives reasons for handling some problems by machine alone, some by man-machine team, and still others by man alone. Suggests the possibility of having "ideation sessions" with a machine partner in problem situations requiring new ideas.

Hudson, G.R.
PROGRAM ERRORS AS A BIRTH-AND-DEATH PROCESS (SP-3011)
29pp.

Printed at SDC, 4 Dec 1967.

Presents a development of the equations which describe or model the process of detecting computer program errors.

Jaffe, J.
THE SYSTEM DESIGN PHASE (SP-1724/001/00) 14pp.

Published by John Wiley & Sons, New York, chapter 4 (p. 94-137) in "Developing a Computer Based Information System."
Shelved as SDC Library #2679.R78.

Discusses the major objectives of an information system: "To bring to relevant data in usable form the right user at the right time."

Jarrett, H. F.
TECHNOLOGY AND THE FIRE SERVICE: COMMAND POST
IMPLICATIONS (SP-2731) 17pp.

Printed at SDC, 5 April 1967.

Examines the implications of systems technology to

the fire service. Includes three examples of how new techniques and approaches — such as system analyses, system training — can help fire personnel improve their operations.

Jarrett, H.F.

THE WINGSPREAD CONFERENCE: A CHALLENGE TO ACTION (SP-2937) 34pp.

Printed at SDC, 2 Sep 1967.
DDC number: AD-658 475.

Reviews the Wingspread Conference on fire service administration, education and research.

Jarrett, H.R.

COST-EFFECTIVENESS ANALYSIS FOR THE FIRE SERVICE: AN OVERVIEW (SP-2938) 17pp.

Printed at SDC, 2 Sep 1967.
DDC number: AD-658 471.

Examines the technique of cost-effectiveness analysis, including its advantages and limitations, and discusses its potential usefulness to the fire service.

Jones, K. S.

NOTES ON SEMANTIC DISCOURSE STRUCTURE (SP-2714) 29pp.

Printed at SDC, 3 March 1967.

Explores different aspects of a notion of semantic discourse structure and exhibits their connection with a semantic classification.

Kamrany, M. M.

SOVIET ECONOMIC PLANNING: A REVIEW OF MAJOR WORKS IN ECONOMICS (SP-2684) 15pp.

Printed at SDC, 13 February 1967.

Reviews four leading textbooks in Soviet economic planning: Ames, Edward, Soviet Economic Processes; Cambell, Robert W., Soviet Economic Power; Dobbs, Maurice H., Soviet Economic Development Since 1917; Nove, Alec, The Soviet Economy: An Introduction.

Karush, W. and R.E. Dear

OPTIMAL STRATEGY FOR ITEM PRESENTATION IN A LEARNING PROCESS (SP-1922/002/00) 13pp.

Published in Management Science, Vol. 13, No. 11, July 1967 (p. 773-785).

For annotation, see this title under R.E. Dear.

Karush, W.

ON SCHEDULING A NETWORK OF ACTIVITIES UNDER RESOURCES RESTRAINTS OVER TIME (SP-2654) 35pp.

Printed at SDC, 15 November 1966.
DDC number: AD-648 749

Discusses a project as a finite set of activities satisfying given precedence relations, with each activity having a known duration time. One question considered relates to enumeration of schedules to find an optimal one. Another question is that of assigning individual workers to activities in a feasible schedule so as to realize "maximal continuity of assignment."

Katter, R. V., and R. L. Weis

MULTIDIMENSIONAL SCALING OF DOCUMENTS AND SURROGATES (SP-2713) 22pp.

Printed at SDC, 23 January 1967.
PB-174 677

Develops a technique for investigating the adequacy of representation systems that would not involve a simulation of the retrieval task but that would be sensitive to changes in representation systems. The method developed is an outgrowth of the technique of multidimensional psychological scaling.

Kellogg, C.H.

DESIGNING ARTIFICIAL LANGUAGES FOR INFORMATION STORAGE AND RETRIEVAL (SP-2018/001/00) 1967.

Published as Chapter 10 in Automated Language Processing, the State of the Art, edited by Harold Borko, New York, Wiley, 1967. (SDC number SP-2018)
Shelved as DDC book, number 2699.873.

Surveys operational and proposed language processing systems for retrieving information from computer files, with emphasis on artificial information storage and retrieval languages.

Kellogg, C. H.

CONVERSE—A SYSTEM FOR THE ON-LINE DESCRIPTION AND RETRIEVAL OF STRUCTURED DATA USING NATURAL LANGUAGE (SP-2635) 16pp.

Printed at SDC, 26 May 1967.
DDC number: AD-654 622

Describes CONVERSE a program to develop improved methods for communicating data and requests for data to time-shared data management systems. Introduces notions of "fact" predicate calculus and set theory to clarify retrievable from CONVERSE.

Keogh, B.K. and C. E. Smith

VISUO-MOTOR ABILITY FOR SCHOOL PREDICTION: A SEVEN YEAR STUDY (SP-2709) 10pp. illus.

Published in Perceptual and Motor Skills, Vol. 25, 1967, (p. 101-110).

Examines the relationship of visuo-motor ability and school achievement over the elementary school period. Results suggest that the kindergarten Bender is a surprisingly useful predictor of educational achievement in the upper elementary grades.

Kibbee, J. M.

THE EXECUTIVE AND THE INFORMATION EXPLOSION: SOME REQUIREMENTS ON THE PUBLIC ADMINISTRATOR (SP-2777) 8pp.

Printed at SDC, 29 March 1967.

States that if the computer is going to help us benefit from more and better information, then there are requirements which fall upon the public administrator. Discusses three requirements: 1—the need for user discipline; 2—the need for additional applied socioeconomic theory; and 3—the need for a better acceptance of governmental research and development, particularly at the state and local government level.

15 March 1968

Klein, S.
DYNAMIC SIMULATION OF HISTORICAL CHANGE IN
LANGUAGE USING MONTE CARLO TECHNIQUES (SP-1908) 19pp.

Published in Mechanical Translation and Computational
Linguistics, Vol. 9, Nos. 3&4, September/December
1956 (p. 67-82).

Printed at SDC, 30 December 1964.
DDC number: AD-610 695

Reports that a system designed to serve as a vehicle
for testing hypotheses about language change through
time is being programmed in JOVIAL. Anticipates
that the simulation system will provide a formal
mechanism for checking the adequacy and internal
consistency of various explanations about the causes
of language change.

Kooi, B.Y.
DEFINITION OF COURSE OBJECTIVES AND PREPARATION OF
DIAGNOSTIC TESTS FOR IMS (SP-3056) 11p.

Printed at SDC, 8 Feb 1968.

Discusses the levels of IMS (Instructional Management
System) a teacher might use and the procedures for
defining objectives and developing tests to be used
in the system. The system allows pupil responses
marked on machine readable answer sheets to serve as
computer input.

Krebs, L.T. and J.E. Bratten, F.A. Yett.
SPLAN (SP-2898/001/00)

Published in Nation's Schools Journal, Vol. 80, No. 1,
1967 (p.67).

Krishnamoorthi, B.* and R. C. Wood
TIME-SHARED COMPUTER OPERATIONS WITH BOTH
INTERARRIVAL AND SERVICE TIMES EXPONENTIAL
(SP-1848/000/01) 48pp.

Published in the Journal of the Association for
Computing Machinery, Vol. 13, No. 3, July 1966
(p. 317-338).

Printed at SDC, 22 September 1965.
DDC number: AD-622 016

Describes the concept of time-shared computer
operations and proposes a model of a time-sharing
system based on the assumption that both inter-
arrival and service times possess an exponential
distribution. Discusses the concept of cycle time
and develops two measures of cycle time for a
scheduling discipline employing a single queue.

Lind, R. M.
AUTOMATING WELFARE: A COMMENTARY (SP-2699) 12pp.

Printed at SDC, 2 March 1967.
A response to SP-2698: John K. Harris, "Automating
Welfare: Problems and Potential."

Discusses the problems of implementing a new system
of technology for welfare. States that the
difficulties in implementing the change will have to
be examined carefully to insure that a real value is
at issue. Questions under what circumstances
benefits are greater than improvement costs.

Lind, R. M.
AUTOMATION AND THE NEIGHBORHOOD SERVICE CENTER:
ARE THEY COMPATIBLE? (SP-2797) 15pp.

Printed at SDC, 12 July 1967.

Discusses the humanizing benefits which can accrue
in automating the service center. Concludes that
there is still a large period of thinking,
experimenting and discussion ahead, even though
technically automation could begin tomorrow in the
area of the development and administration of the
community social data bank.

Londe, D.L. and J.C. Olney.
AN ANALYSIS OF ENGLISH DISCOURSE STRUCTURE, WITH
PARTICULAR ATTENTION TO ANAPHORIC RELATIONS (SP-2769)
12pp.

Printed at SDC, 10 Nov 1967.

Gives brief account and sample of a program system that
attempts to recognize relationships constitutive of
English discourse structure on the basis of syntactic
and morphemic parallels. Discusses the nature of
discourse relationships, and the problem of how to
interpret discourse equivalences obtained by Harris'
techniques.

Long, R. E. and J. F. Burger, R. F. Simons
AN INTERACTIVE SYSTEM COMPUTING DEPENDENCIES,
PHRASE STRUCTURES AND KERNELS (SP-2454/000/01) 29pp.

Printed at SDC, 29 June 1967.

For annotation, see this title under J. F. Burger.

Long, R.E. and J.A. Barnett.
THE SDC LISP 1.5 SYSTEM FOR IBM 360 COMPUTERS
(SP-3043) 17pp.

Printed at SDC, 11 Jan 1968.

For annotation, see this title under J.A. Barnett.

Luke, A.W.
COMMENTS ON THE 1966 ADI MEETING (SP-(L)-2979) 14pp.

Printed at SDC, 10 Oct 1967.
DDC number: AD-661 602.

Summarizes results from a questionnaire designed to gain
general opinions, impressions, and comments on the annual
meeting by the attendees.

Manus, S. D. and I. Diugatch
LARGE CAPACITY LASER MEMORY SPACEBORNE
COMPUTERS (SP-2665) 10pp.

Printed at SDC, 13 March 1967.

For annotation, see this title under I. Diugatch

McCabe, L. B. and L. Farr
AN INFORMATION SYSTEM FOR LAW ENFORCEMENT
(SP-2447) 7pp.

Published in the Proceedings-Fall Joint Computer
Conference, 1966, San Francisco, California,
8-10 November 1966.

For annotation, see this title under L. Farr.

McCabe, L. B. and C. P. Smith
SYSTEM ANALYSIS IN CRIMINAL JUSTICE INFORMATION
SYSTEMS (SP-2749) 13pp.

Printed at SDC, 17 February 1967.

Describes the concept of system analysis and its relative position and critical importance in the system development process. Discusses how such a technique can be applied to the requirements of the criminal justice information system.

McCornack, R. L.
A NEW METHOD FOR FITTING SALARY CURVES
(SP-2730) 16pp.

Printed at SDC, 28 February 1967.

DDC number: AD-648 757

Describes a method for improving salary curves by means of a single restriction empirical evidence suggests that the new method produces salary curves which are always better, as judged by five criteria. However, even the improved salary curves do not always satisfy criteria to an acceptable degree.

Meeker, R. J. and W.H. Moore, G. H. Shure
TRACE: TIME-SHARED ROUTINE FOR ANALYSIS AND
EVALUATION (SP-2469/003/00) 5pp.

Published in the Proceedings of the Spring Joint Computer Conference, Vol. 30, April 1967 (p. 525-529).

Meeker, R. J. and W. H. Moore, G. H. Shure
TRACE (TIME-SHARED ROUTINE FOR ANALYSIS
CLASSIFICATION AND EVALUATION) (SP-2469/004/00) 5pp.

Published in the Proceedings of the Spring Joint Computer Conference, Vol. 30, April 1967 (p.525-529).

Describes TRACE, a program developed to scan data and define variables among complex sets of data.

Meeker, R.J. and G.H. Shure.
A PERSONALITY-ATTITUDE SCHEDULE FOR USE IN EXPERI-
MENTAL BARGAINING STUDIES (SP-2675)

Published in Journal of Psychology, Vol. 65., 1967,
(p. 233-252).

Melahn, V. S.
THE STATE OF THE ART (SP-2711) 16pp.

Printed at SDC, 18 January 1967.

Address made at the special one-day meeting on "The Challenge of Technology-Management and Man in the Computer Age," conducted by the National Industrial Conference Board, New York City, 30 November 1966.

Moore, W.H. and R. J. Meeker, G. H. Shure
TRACE: TIME-SHARED ROUTINE FOR ANALYSIS AND
EVALUATION (SP-2469/003/00) 5pp.

Published in the Proceedings of the Spring Joint Computer Conference, Vol. 30, April 1967 (p. 525-529).

Moore, W. H. and R. J. Meeker, G. H. Shure
TRACE (TIME-SHARED ROUTINE FOR ANALYSIS
CLASSIFICATION AND EVALUATION) (SP-2469/004/00)
5pp.

Published in the Proceedings of the Spring Joint Computer Conference, Vol. 30, April 1967 (p.525-529).

For annotation, see this title under R. J. Meeker.

Marthy, V.K. and V.R. Rao Uppuluri
FAILURE DISTRIBUTIONS WITH DECREASING MEAN RESIDUAL
LIFE (SP-2964) 21pp. illus.

Printed at SDC, 10 Oct 1968.

DDC number: AD-661 663.

Studies DMR distributions starting with a random variable $T > 0$, which has all its moments, and with distribution function $F_0(x)$, constructing a sequence of distribution functions.

Mehneva, J.
ELEMENTS OF A THEORY OF INTERNAL WAR (SP-3055) 41pp.

Printed at SDC, 5 Feb 1968.

Presents part of the current Social Planning Research Program studies of potential conflict as the outcome of societal dissatisfaction. Discusses the genesis, focus and extent of dissatisfaction and suggests resulting ramifications of violence.

Nelson, E. A.
THE VOPIR TECHNIQUE FOR THE EVALUATION OF COMPUTER
AUGMENTED ADMINISTRATIVE SYSTEMS (SP-2765) 68pp.

Printed at SDC, 17 May 1967.

Describes a technique for measuring the comparative cost-effects procedures. Uses the life insurance industry as an example to illustrate the use of the methods.

Newmark, G.
USE OF CHILDREN'S FILMS AND OTHER CHILDREN'S
MATERIALS IN TEACHING FOREIGN LANGUAGES TO ADULT
(SP-2643) 4pp.

Published in the Modern Language Journal, Vol. 5,
May 1967 (p. 272-275).

Presents a description of classroom experiences for the use of children's materials in adult French classes conducted in 1962. The main focus is on the adult reaction to the use of these materials.

Ng, J.
A REAL-TIME MULTIPLE VEHICLE ON-ORBIT SUPPORT
SYSTEM (SP(L)-2861) 24pp.

Printed at SDC, 19 May 1967.

Olney, J. C. and C. C. Revard, P. Ziff*
INTERACTIVE PROCESSOR FOR A MACHINE USABLE VERSION
OF WEBSTER'S "SEVENTH NEW COLLEGIATE DICTIONARY"
(W7) AND THE NEW MERRIAM WEBSTER POCKET DICTIONARY
(WPD) (SP-2728/001/00)

Published in the Finite String, Vol. 4, No. 3,
March 1967 (p. 1-2).

Olney, J.C. and D.L. Loude.
AN ANALYSIS OF ENGLISH DISCOURSE STRUCTURE, WITH
PARTICULAR ATTENTION TO ANAPHORIC RELATIONS (SP-2769)
12pp.

Printed at SDC, 10 Nov 1967.

For annotation, see this title under R.J. Melaragno.

Ottina, J.R.

SOFTWARE LESSONS LEARNED IN MILITARY COMMAND SYSTEMS
(SP-2565) 4pp.

Published in Information System Science and Technology: Papers Prepared for the Third Congress, edited by Donald E. Walker, Washington, Thompson Book Co. 1967, (p. 215-218).

Shelved as an SDC book, number UB215.W17.

Presents a review of selected management/development problems. Discusses three problems which have not been resolved and proposes techniques for solving them.

Ozbekhan, H.

THE IDEA OF A "LOOK-OUT" INSTITUTION
(SP-2017) 21pp.

Printed at SDC, 26 April 1967.

Compares the "political institutions of the future" and "look-out institutions" whose function is to conceive of possible futures, create standards of comparison between possible futures, and define ways to estimate these futures. Outlines a model for the evolution of futures-creative planning work.

Ozbekhan, H.

THE TRIUMPH OF TECHNOLOGY: "CAN" IMPLIES
"MIGHT" (SP-2830) 18pp.

Printed at SDC, 6 June 1967.

DDC number: AD-654 623

Discusses "the Quality of Life in the Future" in terms of normative planning. Views technology as triumphant. Discusses what the advent of the technological age has done to—as well as for—mankind.

Parsons, W. W. and T. C. Rowan, I. R. Sternlich
CRIME AND DELINQUENCY—A SUMMARY (SP-2895) 15pp.

Published in: "The Evaluation Meeting on Space General Corporation's Report on the Prevention and Control of Crime and Delinquency in California" - February 28-March 2, 1966, Williamsburg, Va.
Shelved as an external document under Library #49438.

Outlines Space General Corporation's system analysis and cost/effectiveness study of the California system of criminal justice. The objectives of this study were to critically evaluate the present system and to recommend more effective prevention and control of crime and delinquency in the State.

Perry, D. K. and W. M. Cannon
VOCATIONAL INTEREST OF COMPUTER PROGRAMMERS
(SP-2348) 7pp.

Published in the Journal of Applied Psychology, Vol. 51, No. 1, 1967 (p. 28-34).

For annotation, see this title under W. M. Cannon.

Perstein, M.H.

SOME TECHNIQUES FOR DESCRIBING PROGRAMMING LANGUAGES
(SP-2916/000/01) 29pp.

Printed at SDC, 4 Jan 1968.

Points out desirable qualities in programming language description. A lean mix of compact syntax metalanguage with natural language is recommended for writing a single definitive document.

Porter, E.H.

A PARADIGM FOR SYSTEM ANALYSIS OF COMMAND AND CONTROL
FUNCTIONS (SP-1701/001/00) 12pp.

Published in Psychological Research in National Defense Today, Vol. 1, June 1967, Publ. by Army Behavioral Science Research Lab.

SDC Library document no. 50029.

Printed at SDC, 1 Oct 1964.

DDC number: AD-451 862.

Reports that the mating of stimulus to response (S-R) is only part of the total picture. Introduces a paradigm conceived in the course of system analysis activities, which presents many more behavioral functions. States that the new paradigm is that of Stimulus - Organism - Response (S-O-R). Presents the evolution of the paradigm, illustrates its usefulness in system analysis, and relates it to individual behavior.

Revard, C. C. and J. C. Olney, P. Ziff*

INTERACTIVE PROCESSOR FOR A MACHINE USABLE
VERSION OF WEBSTER'S "SEVENTH NEW COLLEGIATE
DICTIONARY" (W7) AND THE NEW MERRIAM WEBSTER
POCKET DICTIONARY (WPD) (SP-2728/001/00)

Published in the Finite String, Vol. 4, No. 3, March 1967 (p. 1-2).

Revard, C. C.

QUANTITATIVE ACCOUNT OF SEMANTIC CHANGES AND
ENGLISH WORDS, 1000-1900 AD (SP-2775) 9pp.

Published in the Finite String, Vol. 4, No. 6, June 1967 (p. 1-9).

Revard, C. C.

LEXICON PROJECT (SP-2782) 2pp.

Published in Computers and Humanities, Vol. 1, No. 5, May 1967 (p. 218-219).

Riffe, P. D.

CARTOGRAPHIC SUPPORT FOR SYSTEM SIMULATION (SP-2616)
22pp.

Printed at SDC, 17 May 1967.

States that cartography is concerned with the representation of environmental conditions for a given area. Cartographic support is provided where system simulation projects are spatially oriented. Explains cartographic support of the SDC System Training Program and states that this support includes planning and evaluation materials, computer maps and environmental data provided by software.

Risch, R. H.

THE PROBLEM OF INTEGRATION IN FINITE TERMS (SP-2801)
51pp.

Printed at SDC, 23 March 1967.

DDC number: AD-651 587

Formulates the problem of integration in finite terms. Discusses and solves the problem for those elementary functions of a real or complex variable built up without using irrational algebraic operations.

Risch, R. H.
ON REAL ELEMENTARY FUNCTIONS (SP-2801/001/00)
8pp.

Printed at SDC, 22 May 1967
SDC number: AD-654 594

Uses the same notation and terminology as used in SP-2801 to show how algorithms can be used to integrate real elementary functions.

Robertson, T.B.
THE PUBLIC'S SHARE IN SHAPING EDUCATIONAL POLICY: A PILOT STUDY (SP-3022) 37pp.

Printed at SDC, 12 Dec 1967.

Discusses a pilot study being conducted by the Educational Policy Research and Support Center designed to experiment with methods for ascertaining educational "wants", ascertain what a selected number of groups agree or disagree on with respect to educational wants, and expose potential issues raised by these wants. Discusses the outcome of meetings held in Los Angeles, Santa Monica, and New York and presents tentative findings concerning methods, group wants, and educational issues.

Robertson, T.B.
THE IMPLICATION OF SELECTED EDUCATIONAL TRENDS FOR FUTURE SCHOOL SYSTEMS (SP-3046) 84pp. illus.

Printed at SDC, 23 Jan 1968.

Presents the results of an experiment in the extrapolation of two perceived educational trends and a counter-trend which may have direct impact upon school systems in the future. A general discussion of trends and forecasting is included as well as two speculative "histories" of how two of the school systems might come into being.

Rome, S.C. and B.K. Rome.
HUMANISTIC RESEARCH ON LARGE ORGANIZATIONS (SP-2380)
13pp.

Published as Chapter 19 of Challenges of Humanistic Psychology, edited by James F. Bugental, New York, McGraw-Hill, 1967 (p.181-193).
Shelved as an SDC book number SP149.B93.

Describes two series of experiments to develop and perfect "Leviathan", a method of studying the organization and government of large social organizations. Concludes that a humanistic-operational science of organizational behavior is now possible.

Rosenquist, B. A. and J. P. Cogswell, C. P. Donahoe, D. P. Estavan
AN ETHICAL AND MORAL ANALYSIS OF THE DESIGN FOR A MAN-MACHINE COUNSELING SYSTEM: REACTIONS BY A UCLA GRADUATE CLASS IN COUNSELING (SP-2874) 68pp.

Printed at SDC, 9 June 1967.

AD number: AD-658 482.

For annotation, see this title under J. P. Cogswell.

Rosove, P. E.
DEVELOPING A COMPUTER-BASED INFORMATION SYSTEM (SP-1724/000/01) 384pp.

Published by John Wiley & Sons, New York.
Shelved as SDC Library #2699.R78.

Describes the nature of and critical problems associated with the application of computer-based information systems to governmental, business and military institutions.

Rosove, P. E.
COMPUTERS AND THE ACADEMIC MARKET-PLACE (SP-2819)
14pp.

Printed at SDC, 10 April 1967.

Reports that studies of existing recruitment and placement procedures in the field of education find them wasteful and damaging to both individuals and institutions. Outlines computerized personnel referral systems. Concludes that these developments have long-range implications for the rationalization of the process of matching people to jobs in education.

Rosove, P.E.
THE USE OF CONTEXTUAL MAPPING TO SUPPORT LONG RANGE EDUCATIONAL POLICY MAKING (SP-3026) 28pp. illus.

Printed at SDC, 14 Dec 1967.

Describes the structure of a "contextual map", a graphic display of the logical and causal dependencies of functionally related phenomena, for use in long-range educational policy making.

Rowan, T. C.
TECHNOLOGICAL CHANGE AND PUBLIC ADMINISTRATION (SP-2817) 17pp.

Printed at SDC, 15 August 1967.

Outlines the rapidly accelerating rate of technological change in relation to social goals. Discusses techniques for facilitating change, and examples of two areas of technology, communication and information processing as they impact on public administration.

Rowan, T. C. and W. W. Parsons, I. R. Sternlich
CRIME AND DELINQUENCY - A SUMMARY (SP-2895) 15pp.

Published in: "The Evaluation Meeting on Space General Corporation's Report on the Prevention and Control of Crime and Delinquency in California" - February 28-March 2, 1966, Williamsburg, Va.
Shelved as an external document under Library #48438.

For annotation, see this title under W. W. Parsons.

Rowan, T.C.
MODERN TECHNOLOGY AND ITS IMPACT ON URBAN MANAGEMENT (SP-2963) 7pp.

Printed at SDC, 26 Sep 1967.

Discusses the effect of new developments in communications, information processing and system analysis upon governmental operations.

Rowell, J.T.

SYSTEM EXERCISING IN THE COMMAND/CONTROL SYSTEM ENVIRONMENT (SP-2934) 8pp. illus.

Printed at SDC, 6 Dec 1967.

Discusses the use of simulation system exercising as a tool for training personnel in the operation of computer aided command and control systems.

Rowell, J. T. and G. Cantley, L. P. Carter, L. Schultz, H. R. Seiden, F. Wallace, R. Watson, R. E. Wyllys

NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE AND TECHNOLOGY (unnumbered) 344pp.

Book published by John Wiley & Sons, Inc., New York. Shelves as an SDC Library #Z699 .5 .S3 .C32.

For annotation, see this title under G. Cantley.

Rugg, A. M. and N. F. Schneidewind

SHIPBOARD COMPUTER REQUIREMENTS FOR UNDERSEA MINING EXPLORATION (SP-2646) 12pp.

Published in the New Thrust Seaward: Transactions of the Third Annual MTS Conference and Exhibit; 5-7 June 1967, San Diego, California (p. 115-126).Sackman, H.

COMPUTERS, SYSTEM SCIENCE, AND EVOLVING SOCIETY: THE CHALLENGE OF MAN-MACHINE DIGITAL SYSTEMS (SP-1379) 638pp.

Published by John Wiley & Sons, New York, 1967.

Shelves as SDC Library #QA76.S12.

Sackman, H.

SYSTEM TESTING AND EVALUATION (SP-1724/004/00) 39pp.

Published by John Wiley & Sons, New York. Chapter 10 (p. 310-348) in "Developing Computer-Based Information Systems." Shelves as SDC Library #Z699.R78.

Presents an overview of system testing as related to computer-based information systems in real-time application.

Sackman, H. and E. E. Grant

AN EXPLORATORY INVESTIGATION OF PROGRAMMER PERFORMANCE UNDER ON-LINE AND OFF-LINE CONDITIONS (SP-2581) 42pp.

Printed at SDC, 2 September 1966.

Published in the IEEE Transactions on Human Factors in Electronics, Vol. E, No. 1, March 1967 (p. 33-48). DDC number: AD-640 654

For annotation, see this title under E. E. Grant.

Sackman, H.

EXPERIMENTAL INVESTIGATION OF USER PERFORMANCE IN TIME-SHARED COMPUTING SYSTEMS: RETROSPECT, PROSPECT, AND THE PUBLIC INTEREST (SP-2846) 102pp.

Printed at SDC, 6 May 1967.

DDC number: AD-654 624

Develops the need for experimental studies of user performance in time-sharing systems. Constructs a conceptual framework for user studies. Concludes with a plea for interdisciplinary applied research to meet the challenge of the public information utility.

Sackman, H.

TIME-SHARING VERSUS BATCH PROCESSING: THE EXPERIMENTAL EVIDENCE (SP-2975) 39pp. illus.

Printed at SDC, 10 Oct 1967.

DDC number: AD-661 665.

Summarizes findings of a review of five experimental studies comparing time-sharing and batch processing. Outlines problems and pitfalls, and offers recommendations for future experimental work in this field.

Sackman, H.

TIME-SHARING AND SELF-TUTORING: AN EXPLORATORY CASE HISTORY AND AN EXPERIMENTAL CRITIQUE (SP-3000) 30pp. illus.

Printed at SDC, 10 Nov 1967.

Studies the effectiveness of individual user performance following the TINT self-tutoring user manual in the SDC Q-32 Time-sharing System at a teletype console. Quantitative and qualitative results are discussed.

Sandin, N. A.

AN INTRODUCTION TO JS AS IMPLEMENTED ON THE IBM S/360 (SP-2824) 10pp.

Printed at SDC, 11 April 1967.

DDC number: AD-651 593

Presents an introduction to and a brief description of the JOVIAL subset compiler (JS), which is implemented on the IBM S/360, Model 65 computer at SDC. Covers signs and symbols of the language processed by JS and features available through control card options.

Schneidewind, N. F. and A. M. Rugg

SHIPBOARD COMPUTER REQUIREMENTS FOR UNDERSEA MINING EXPLORATION (SP-2646) 12pp.

Published in the New Thrust Seaward: Transactions of the Third Annual MTS Conference and Exhibit; 5-7 June 1967 San Diego, California (p. 115-126).Schultz, L. and G. Cantley, L. P. Carter, J. T. Rowell, H. R. Seiden, F. Wallace, R. Watson, R. E. Wyllys

NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE AND TECHNOLOGY (unnumbered) 344pp.

Book published by John Wiley & Sons, Inc., New York. Shelves as SDC Library #Z699 .5 .S3 .C32.

For annotation, see this title under G. Cantley.

Schwartz, J.I.

ANALYZING TIME-SHARING SYSTEMS (SP-2717) 10pp.

Published in Electronic Handling of Information, edited by A.E. Kent (and others), Washington, D.C., Thompson, 1967 (p.291-299). Printed at ADC, 19 May 67.

Discusses whether controversy in evaluating time-sharing is justified. Outlines the problems encountered and establishes techniques for evaluating this kind of system.

Schwartz, J. J. and C. Weissman
THE SDC TIME-SHARING SYSTEM REVISED (SP-2876) 25pp.
Printed at SDC, 11 Aug 1967.
DDC number: AD-658 477.

Describes the present capabilities of TSS (Time-Sharing System), discusses the critical problems of resource management (and the solution to those problems employed in TSS), and reviews the authors original statements regarding the advantages of time-sharing for such tasks as on-line programming and debugging.

Seiden, H. R. and G. Cantley, L. P. Carter, L. Schultz, J. T. Rowell, E. Wallace, R. Watson, R. E. Wyllys
NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE AND TECHNOLOGY (unnumbered) 344pp.

Book published by John Wiley & Sons, Inc., New York. Shelves as SDC Library #Z699.5 .S3 .C32.

For annotation, see this title under G. Cantley.

Shaw, C. J.
WHAT A NON-PROGRAMMER SHOULD KNOW ABOUT PROGRAMMING LANGUAGES (SP-2663) 8pp.

Published in the IEEE Computer Group News, Vol. 1, No. 4, January 1967 (p. 1-9).

Shaw, C. J.
NOTATIONAL EXTENSIONS (SP-2733)

Published in SICPLAN Notices, Vol. 2, No. 3, March 1967.

Shaw, C. J.
KEEP I/O AND CONVERSION APART (SP-2734), 1p.

Published in SICPLAN Notices, Vol. 2, No. 3, March 1967 (p. 15).

Shaw, C. J.
TENTATIVE STATEMENT EXECUTION (SP-2735) 1p.

Published in SICPLAN Notices, Vol. 2, No. 7, July 1967 (p. 16).

Shaw, C. J.
TYPOGRAPHIC CONVENTIONS FOR DESCRIBING COMPUTER PROGRAMMING LANGUAGES (SP-2926)

Published in SICPLAN Notices, Vol. 2, 1967, (p. 13-15)

Shaw, C. J.
THE UTILITY OF PL/1 FOR COMMAND AND CONTROL PROGRAMMING (SP-3014/000/01) 20pp. illus.

Printed at SDC, 15 Dec 1967.

Defines and characterizes the command and control application area. Discusses the requirements it imposes on programming languages, and how well PL/1 meets these requirements. Comments on PL/1's prospects for use in the command and control area, and recommends the continued use by the Air Force of the JOVIAL programming language until PL/1 can demonstrate that it is an improvement over JOVIAL.

Sheldon, M. E. and W. C. Biel, H. H. Harman.
EXERCISING TEAMS IN MILITARY SYSTEMS THROUGH THE USE OF SIMULATION (SP-1739) 44pp.

Printed at SDC 15 Oct 64

Published in "Psychological Research in National Defense Today," Vol. 2, June 1967, Publ. by Army Behavioral Research Lab.

SDC Library document no. 50029.
DDC number: AS-611 125.

For annotation, see this title under W. C. Biel.

Sheldon, M. E. and H. J. Zagorski.
A NEW APPROACH TO SYSTEM EVALUATION (SP-2890) 13pp.

Printed at SDC, 10 July 1967

Describes Systemetrics (an organized collection of analytical methods and procedures designed to provide meaningful evaluative information concerning the behavior of a system) as meeting the needs of military management, e.g. SAGE system.

Shiben, J. R.
A THEORY OF USE-EVALUATION FOR COMPUTER-BASED SYSTEMS (SP-2754) 13pp.

Printed at SDC, 1 March 1967.

Use-Evaluation determines the acceptability of a computer-based system to its intended audience. The theory outlines both an absolute and a relative determination of usability depending upon the existence of prior models of the system being evaluated.

Shure, G. H. and R. J. Meeker, W. H. Moore
TRACE: TIME-SHARED ROUTINE FOR ANALYSIS AND EVALUATION (SP-2469/003/00) 5pp.

Published in the Proceedings of the Spring Joint Computer Conference, Vol. 30, April 1967 (p. 525-529).

Shure, G. H. and R. J. Meeker, W. H. Moore
TRACE (TIME-SHARED ROUTINE FOR ANALYSIS CLASSIFICATION AND EVALUATION (SP-2469/004/00) 5pp.

Published in the Proceedings of the Spring Joint Computer Conference, Vol. 30, April 1967 (p. 525-529).

For annotation, see this title under R. J. Meeker.

Shure, G. H. and R. J. Meeker.
A PERSONALITY-ATTITUDE SCHEDULE FOR USE IN EXPERIMENTAL BARGAINING STUDIES (SP-2675)

Published in Journal of Psychology, Vol. 65, 1967, (p. 233-252).

Silberman, H. F.

TRENDS IN EDUCATIONAL TECHNOLOGY (SP-2291)

Published in Der Programmierete Unterricht in der USA Heute (West Germany), 1967 (p. 89-98).
Presented at the Conference on Educational Innovations, UCLA at Lake Arrowhead, California, 22 December 1965.

Silberman, H. F.

USING COMPUTERS IN EDUCATION: SOME PROBLEMS AND SOLUTIONS (SP-2545/002/00) 10pp.

Published in Educational Leadership, Vol. 24, No. 7, April 1967 (p. 630-639).
Printed at SDC, 18 November 1966.

DDC number: AD-658 476.

Considers problems of system development, cost, communication, system integration, and user acceptance.

Silberman, H. F.

APPLICATIONS OF COMPUTERS IN EDUCATION (SP-2909/000/01) 15pp.

Printed at SDC, 29 August 1967.

Views the computer as a subject of instruction, as a tool of instruction, as a research and development tool, and as a management tool, in the context of an operational time-sharing system connecting many schools with a central computer.

Silberman, H. F. and R. C. Atkinson, R. E. Dear, D. P. Estavan

AN OPTIMAL STRATEGY FOR THE PRESENTATION OF PAIRED-ASSOCIATE ITEMS (TM-1935/101/00) 58pp.

Published in Behavioral Science, Vol. 12, No. 1, January 1967 (p. 1-13).

Published at SDC, 10 March 1965.

DDC number: AD-615 713

For annotation, see this title under R. C. Atkinson.

Simmons, R. F.

ANSWERING ENGLISH QUESTIONS BY COMPUTER (SP-1556/000/01) 35pp. illus.

Published as Chapter 8 in Automated Language Processing, the State of the Art, edited by Harold Borko, New York, Wiley, 1967 (p. 253-287).

Describes and reviews fourteen question-answering systems. Classifies these systems as data based, text based, and inferential. Concludes that the most difficult and important research questions are concerned with measuring meaning, dealing with ambiguities, translating into formal languages and searching large tree structures.

Simmons, R. F. and J. P. Burger, R. E. Long
AN INTERACTIVE SYSTEM COMPUTING DEPENDENCIES, PHRASE STRUCTURES AND KERNELS (SP-2454/000/01) 29pp.

Printed at SDC, 29 June 1967.

For annotation, see title under J. P. Burger.

Simmons, R. F.

AUTOMATED LANGUAGE PROCESSING (SP-2820)

Published as Chapter 6 in Volume 1 of Information Science and Technology, by C. A. Quadra, published by Interscience Publishers, New York (p. 137-169).

Singleton, J. W. and R. P. Barrett, L. F. Carter, M. H. Coar, V. F. Shanklas**, H. C. Ullman
SOCIAL SCIENCES INFORMATION SYSTEMS WORKSHOP PROCEEDINGS (Warrentown, Va., May 1966) (unnumbered) 115pp.

Shelved as SDC library #48564.

For annotation, see this title under R. P. Barrett.

Smith, C. E. and B. K. Keogh.

VISUO-MOTOR ABILITY FOR SCHOOL PREDICTION: A SEVEN YEAR STUDY (SP-2709) 10pp. illus.

Published in Perceptual and Motor Skills, Vol. 25, 1967, (p. 101-110)

For annotation, see this title under B. K. Keogh.

Smith, C. P. and L. B. McCabe

SYSTEM ANALYSIS IN CRIMINAL JUSTICE INFORMATION SYSTEMS (SP-2749) 13pp.

Printed at SDC, 17 February 1967.

For annotation, see this title under L. B. McCabe.

Smith, C. P.

KNOWLEDGE FOR SALE: PRIVATE KNOWLEDGE FOR PUBLIC PURPOSES (SP-2781) 10pp.

Printed at SDC, 10 March 1967.

Considers the implications of applying system analysis techniques to government problems, such as the utilization of scientific manpower, or the study of pollution. Comments on the types of organization that can provide the most immediate assistance in the resolution of government problems.

Steel, T. B.

STANDARDS FOR COMPUTERS AND INFORMATION PROCESSING (SP-2485) 50pp.

Published in Advances in Computers, Vol. 8, 1967, New York, Academic Press (p. 103-152).

Forecasts real progress in the next decade toward the creation of systematic standards to replace the prevalent chaotic situation, particularly in the programming languages area.

Steel, T. B.

ARTIFICIAL INTELLIGENCE - RETROSPECT AND PROSPECTS (SP-2672) 3pp.

Published in Computers in Automation, Vol. 16, No. 1, January 1967 (p. 22-24).

Original title: "Artificial Intelligence Research."

Stefferd, F.A.
THE ENVIRONMENT OF COMPUTER OPERATING SYSTEM
SCHEDULING: TOWARD AN UNDERSTANDING (SP-2995) 14pp.

Printed at SDC, 7 Nov 1967.

Establishes the required context for scheduling and allocation of computing facilities through the use of marketing principles.

Stern, S.
TRAFFIC FLOW DATA ACQUISITION USING MAGNETIC-
LOOP VEHICLE DETECTORS (SP-2101) 31pp.

Published in Highway Research Record, No. 154, 1967
(p. 38-52).

Printed at SDC, 19 July 1965.

DDC number: AD-622 000

Discusses techniques developed to extend existing loop-detector capabilities permitting direct measurement of vehicle parameters (measurements were theretofore available only on a statistical basis) and experiments conducted to determine detector/sensor-loop response characteristics. Investigates measurement accuracy, considering the effects of varying vehicle height and of closely following vehicles (tailgating), such as might be expected in heavy traffic.

Sternlich, J. R. and W. W. Parsons, T. C. Rowan
CRIME AND DELINQUENCY - A SUMMARY (SP-2895) 15pp.

Published in "The Evaluation Meeting on Space General Corporation's Report on the Prevention and Control of Crime and Delinquency in California" - February 28-March 2, 1966, Williamsburgh, Va.
Shelved as SDC Library #49438.

For annotation, see this title under W. W. Parsons.

Topfite, A.
LIBRARY FICHE, AN INTRODUCTION AND EXPLANATION
(SP-2922/000/01) 13pp.

Printed at SDC, 9 Oct 67.

DDC number: AD-661 660.

Describes the library sized fiche, its general characteristics, its use in a distribution library, and its economic considerations.

Ullman, J. and T. Hibbard
THE IMPEDIMENT OF INHERENT AMBIGUITY FROM
COMPLEMENTEDNESS AMONG CONTEXT FREE LANGUAGES
(TM-738/010/00) 21pp.

Published in the Journal of the Association for Computer Machinery, Vol. 13, No. 4, October 1966.

Printed at SDC, 10 November 1964.

DDC number: AD-613 290

For annotation, see this title under T. Hibbard.

Ullman, H. C. and R. P. Barrett, L. F. Carter, N. H. Goer
V. F. Shanklas*, J. W. Singleton
SOCIAL SCIENCE INFORMATION SYSTEMS WORKSHOP
PROCEEDINGS (Warrenton, Va., May 1966)
(Unnumbered) 115pp.

Shelved as SDC Library #48564.

For annotation, see this title under R. P. Barrett.

Ullmann, H.C.
THE SYSTEMS APPROACH TO SOCIAL SCIENCE INFORMATION
(SP-2935) 12pp.

Printed at SDC, 1 Nov 67.

Traces the development of an information system from conception, through the various analytical phases, to design and testing of the system. Concludes that the system approach presents a unique instrument for overall planning by allowing a view of the total problem.

Uppaluri, V.R. Rao and V.K. Murthy.
FAILURE DISTRIBUTION WITH DECREASING MEAN RESIDUAL
LIFE (SP-2964) 21pp. illus.

Printed at SDC, 10 Oct 1967.

DDC number: AD-661 663.

For annotation, see this title under V.K. Murthy.

Vorhaus, A. H. and R. D. Willis
THE TIME-SHARED DATA MANAGEMENT SYSTEM: A NEW
APPROACH TO DATA MANAGEMENT (SP-2747) 11pp.

Printed at SDC, 13 February 1967.

Presents a rationale for the development of the Time-Shared Data Management System (TMS). Describes and discusses the purpose and functions of the system. Surveys its design concepts and gives an example of the use of the system on a personnel data base.

Vorhaus, A.H.
TMS: A NEW APPROACH TO DATA MANAGEMENT (SP-2798)

Published in the Systems and Procedures Journal, 1967,
(p. 32-35).

Wallace, E. and G. Cantley, L. F. Carter, J.T. Rowell,
L. Schultz, N. R. Seiden, R. Watson,
R. E. Wyllys
NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE
AND TECHNOLOGY (unnumbered) 344pp.

Book published by John Wiley & Sons, Inc., New York.
Shelved as SDC Library #2699.5.83.C32.

For annotation, see this title under G. Cantley.

Walsh, J. E. and A. McCulloch*
LIFE-TESTING RESULTS BASED ON A FEW HETEROGENEOUS
LIFETIME OBSERVATIONS (SP-2038) 15pp.

Published in the Journal of the American Statistical Association, March 1967.

Printed at SDC, 19 April 1965.

States that the problem is: First, to establish a (hypothetical) set of "typical" life-testing conditions for given items; Second, to determine a length of time such that the probability of an item surviving this long under the "typical" conditions is at least a specified amount. Concludes that this approach can have strong advantages when there are only two or three observations.

Walsh, J. E. and A. McCulloch*
LIFE-TESTING RESULTS BASED ON A FEW HETEROGENEOUS
LOG-NORMAL OBSERVATIONS (SP-2038/001/00) 3pp.

Published in the Journal of the American Statistical
Association, March 1967 (p. 45-47).

States that for some items to be independently life-
tested under typical conditions a time duration must
be determined such that the probability is at least
a stated amount that an item will survive this long
under typical conditions.

Walsh, J.E.
PROBABILITIES FOR TOTAL WORTH OF BINOMIAL EVENTS
ON BASIS OF EXPECTED TOTAL WORTH (SP-2074/001/00)
13pp. illus.

Printed at SDC, 16 Oct 1967.

States that a situation where knowledge of expected
values is essentially equivalent to knowing
distributions is where a distribution is determined
except for the value of a univariate parameter.
Concludes that in this case evaluating the
expected value is nearly always equivalent to evaluating
the parameter.

Walsh, J. E.
PROBABILITY OF LOCATING A SUBMARINE WITH A STATED
DISTANCE ON THE BASIS OF TWO DIRECTIONAL SENSORS
(SP-2757) 13pp.

Printed at SDC, 22 February 1967.

The specific problem is to approximately determine
the probability that the true submarine position is
within a stated distance (on the ocean surface) of
the estimated position. Identifies the parameters
involved and, in terms of these parameters, develops
an approximate expression for the probability value.

Walsh, J. E.
PROBABILITY OF LOCATING A SUBMARINE WITHIN A STATED
DISTANCE BY USE OF A RANGE-BEARING SENSOR (SP-2831)
9pp.

Printed at SDC, 14 April 1967.

An approximate expression is developed for the value
of the probability that the true location of a
submarine is within a stated distance of the estimated
location. Estimation is based on the observed
submarine range, and its observed horizontal bearing
furnished by a range-bearing sensor that is at a
determined location in the ocean.

Walsh, J. E.
CONFIDENCE INTERVALS FOR DIFFERENCES OF FREQUENCIES
IN MATCHED SAMPLES (SP-2868) 4pp.

Printed at SDC, 5 June 1967.

Informal handout.

Presented at the Western Regional Meeting, Institute of
Mathematical Statistics, Missoula, Montana,
15-17 June 1967.

Watson, R. and G. Cantley, L. P. Carter, J. T. Rowell,
L. Schultz, H. R. Seiden, E. Wallace,
R. E. Wyllyn
NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE AND
TECHNOLOGY (unnumbered) 344pp.

Book published by John Wiley & Sons, Inc., New York.
Shelved as SDC Library #699.5.S3.C32.

For annotation, see this title under G. Cantley.

Watson, R.M.C.
STORAGE AND RETRIEVAL OF ADMINISTRATIVE-LEGAL
MATERIALS (SP-2931) 12pp.

Printed at SDC, 29 Sep 1967.

Outlines a classification system for administrative
and legal information based on the documentary files of
a Federal Agency and appropriate to a computer-assisted
retrieval and announcement system.

Weinwurm, G. F.
ON THE ECONOMIC ANALYSIS OF COMPUTER PROGRAMMING
(SP-2772) 38pp.

Printed at SDC, August 1967.

Presents empirical evidence that suggest that computer
programming can be analyzed as an economic process.
Demonstrates some preliminary relationships between
the information processing power of computers, the
languages in which programs are coded, and the varieties
of application, as they affect the relative resource
cost of program development.

Weis, R. L. and R. V. Katter
MULTIDIMENSIONAL SCALING OF DOCUMENTS AND
SYNOGATES (SP-2713) 22pp.

Printed at SDC, 23 January 1967.

PB-174 677

For annotation, see this title under R. V. Katter.

Weissman, C.
LISP 1.5 PRIMER (SP-2721) 226pp.

Published by Dickenson Publishing Company, Inc.,
Belmont, California.
Shelved as an SDC book no. QA76.5.W49.

Introduces the programming language LISP and presents
a systematic exposition of symbolic computation, and
serves as a self-tutor for those wishing to acquire a
practical facility with LISP 1.5 programming language.

Weissman, C. and J.I. Schwartz.
THE SDC TIME-SHARING SYSTEM REVISITED (SP-2876)
25pp.

Printed at SDC, 11 Aug 1967.

DDC number: AD-658 477.

For annotation, see title under J.I. Schwartz.

Wilks, Y.
SEMANTIC CONSISTENCY IN TEXT — AN EXPERIMENT AND
SOME SUGGESTIONS (SP-2758) 38pp.

Printed at SDC, 20 February 1967.

Attacks the problem of the resolution of word-sense ambiguity in texts by a method that can be extended so as to allow a program to construct a word-sense that was not present in the dictionary at the beginning. The resolution proceeds by means of rules of sequence operating on coded message forms or templates.

Wilks, Y.
TRANSFORMATIONAL GRAMMARS AGAIN (SP-2936) 39pp.

Printed at SDC, 29 Aug 1967.
DDC number: AD-661 669.

Presents criticisms of Chomsky's theory of Transformational Grammar particularly his demarcation of syntax from semantics.

Willmorth, H.E.
ON THE CONSTRUCTION OF ORTHOGONALIZED SQUARES BY
FINITE FIELDS (SP-2897) 15pp.

Printed at SDC, 26 July 1967.
DDC number: AD-658 468.

States that this paper is limited to the finite field approach to the generation of orthogonalized squares. Discusses the general cases of orthogonalized squares which cover all positive integers.

Wills, R. D. and A. H. Vorhaus
THE TIME-SHARED DATA MANAGEMENT SYSTEM: A NEW
APPROACH TO DATA MANAGEMENT (SP-2747) 11pp.

Printed at SDC, 13 February 1967.

For annotation, see this title under A. H. Vorhaus.

Wood, R. G. and B. Krishnamoorthi*
TIME-SHARED COMPUTER OPERATIONS WITH BOTH
INTERARRIVAL AND SERVICE TIMES EXPONENTIAL
(SP-1848/000/01) 48pp.

Published in the Journal of the Association for Computing Machinery, Vol. 13, No. 3, July 1966 (p. 317-338).
Printed at SDC, 22 September 1965.

DDC number: AD-622 016

For annotation, see this title under B. Krishnamoorthi.

Wood, R. G. and E. G. Coffman
INTERARRIVAL STATISTICS FOR TIME-SHARING SYSTEM
(SP-2161) 13pp.

Published in the Communications of the ACM, Vol. 9, No. 7, July 1966 (p. 500-503).

Printed at SDC, 3 August 1965.

For annotation, see this title under E. G. Coffman.

Wurtele, E.S.
MATHEMATICAL MODELS FOR EDUCATIONAL PLANNING
(SP-3015) 29pp.

Printed at SDC, 30 Nov 1967.

Discusses theoretical problems associated with the formulation and implementation of mathematical models for educational planning.

Wyllie, R. E. and G. Cantley, L. F. Carter,
J. T. Rowell, L. Schults, H. E. Seiden,
E. Wallace, R. Watson
NATIONAL DOCUMENT-HANDLING SYSTEMS FOR SCIENCE
AND TECHNOLOGY (unnumbered) 344pp.

Book published by Joyn Wiley & Sons, Inc., New York.
Shelved as an SDC book number Z699.5.33.C32.

For annotation, see this title under G. Cantley.

Yett, F.A. and J.E. Bratten, L.T. Krebs.
SPLAN (SP-2898/001/00)

Published in Nation's Schools Journal, Vol. 80, No. 4, 1967, (p. 67).

Zagorski, H.J. and M.S. Sheldon.
A NEW APPROACH TO SYSTEM EVALUATION (SP-2890) 13pp.

Printed at SDC, 10 July 1967.

For annotation, see this title under M.S. Sheldon.

Ziff, P.* and J. C. Olney, C. C. Revard
INTERACTIVE PROCESSOR FOR A MACHINE USABLE
VERSION OF WEBSTER'S "SEVENTH NEW COLLEGIATE
DICTIONARY" (S7) AND THE NEW MERRIAM WEBSTER
POCKET DICTIONARY (MPD) (SP-2728/001/00)

Published in the Finite String, Vol. 4, No. 3, March 1967 (p.1-2).

SUBJECT INDEXPART 2

For information on publication of papers listed here please refer to the author index. Items in this section may appear several times if several subject headings are appropriate.

ACADEMIC ACHIEVEMENTS, PREDICTION OF

(SP-2709) Visuo-Motor Ability for School Prediction: A Seven Year Study, by Carol E. Smith and Barbara K. Keogh.

ADI see AMERICAN DOCUMENTATION INSTITUTEAIR - POLLUTION

(SP-3053) Design Considerations for and Air Quality Prediction and Display System, by Jack C. Campbell.

AMERICAN DOCUMENTATION INSTITUTE

(SP-2692) Report of the Program Committee for the 1966 ADI Convention, by C. A. Cuadra.

(SP-(L)-2979) Comments on the 1966 ADI Meeting, by Ann W. Luke.

AN/PSQ-32 see COMPUTERS - AN/PSQ-32ARTIFICIAL INTELLIGENCE

(SP-2292/001/00) Instinctive Behavior and Its Computer Synthesis, by I. A. Friedman.

(SP-2672) Artificial Intelligence—Retrospect and Prospects, by T. R. Steel.

AUTOMATED TEACHING

(SP-2473) Committee in Research and Development on Automated Instruction, by J. E. Coulson.

(SP-2643) Use of Children's Films and Other Children's Materials in Teaching Foreign Languages to Adults, by T. Newmark.

(SP-2722) Personalizing Instruction in Mass Education by Innovations in the Teaching-Learning Process, by L. F. Carter.

(SP-2909/000/01) Applications of Computers in Education, by H. F. Silberman.

(SP-3041) The Computer and Instructional Technology, by Lauror F. Carter.

BEHAVIORISM (PSYCHOLOGY)

(SP-2292/001/00) Instinctive Behavior and Its Computer Synthesis, by I. A. Friedman.

(SP-2380) Humanistic Research on Large Organizations, by Beatrice K. Rome and Sydney C. Rome.

(SP-2536) The Description of a New Theory of Instinctive Behavioral Mechanism and Its Use in the Interpretation of Neural Physiological Experiments, by I. A. Friedman.

BEHAVIORISM (PSYCHOLOGY) cont'd.

(SP-2830) The Triumph of Technology: "Can" Implies "Ought", by H. Osbekhan.

(SP-2959) The Rebellion of Rousseau, by William H. Blanchard.

BUSINESS MANAGEMENT

(SP-2765) The VOPTR Technique for the Evaluation of Computer Augmented Administrative Systems, by E. A. Nelson.

BUSINESS MANAGEMENT - SIMULATION

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CARTOGRAPHY

(SP-2616) Cartographic Support for System Simulation, by P. D. Riffe.

CHESS

(SP-2752) Empire: An Automatic Kriegsspiel Referee for a Time-Shared Computer, by J. P. Burger.

CIVIL DEFENSE - EOC

(SP-2907) The Emergency Operations Research Center: Disaster by Design, by W. W. Feuers and T. P. Haney.

CIVIL DEFENSE - TRAINING

(SP-2807) The Emergency Operations Research Center: Disaster by Design, by W. W. Feuers and T. P. Haney.

COMMAND & CONTROL SYSTEMS

(SP-1701/001/00) A Paradigm for System Analysis of Command and Control Functions, by E.H. Porter.

((SP-2565) Software Lessons Learned in Military Command Systems, by John R. Ottina.

(SP-2680) Definition Problems of Command Control Systems, by Frank E. Diaz.

COMMAND & CONTROL SYSTEMS - COMPUTER PROGRAMMING

(SP-3014/000/01) The Utility of PL/1 for Command and Control Programming, by Christopher J. Shew.

COMMAND & CONTROL SYSTEMS - DESIGN

(SP-2551) Laboratory Design of Command and Control Systems, by Donald L. Drukey.

COMMAND & CONTROL SYSTEMS - SIMULATION

(SP-2934) System Exercising in the Command/Control System Environment, by John T. Rowell.

COMMUNICATIONS - SPACE

(SP-2744) Computer-Aided Design As Applied to Space Systems, by I. Dlugatch.

COMPUTER LANGUAGES

(SP-1556) Answering English Questions by Computer - A Survey, by R. F. Simmons.

(SP-1556/000/01) Answering English Questions by Computer, by Robert F. Simmons.

(SP-2018) Automated Language Processing: The State-of-the-Art, by Harold Borko.

(SP-2018/001/00) Designing Artificial Languages for Information Storage and Retrieval, by Charles H. Kellogg.

(SP-2343) Bracketed Context-Free Languages, by S. Ginsburg.

(SP-2439) One Way Stack Automata, by S. Ginsburg, S. Greibach and M. Harrison.

(SP-2663) What a Non-Programmer Should Know About Programming Languages, by C. J. Shaw.

(SP-2721) LISP 1.5 Primer, by C. Weissman.

(SP-2734) Keep I/O and Conversion Apart, by C. J. Shaw.

(SP-2735) Tentative Statement Execution, by C. J. Shaw.

(SP-2840) PLANIT a Flexible Language Designed for Computer-Human Interaction, by Samuel L. Feingold.

(SP-(L)-2856) Algorithmic Compilation of Predicates, by Jeffrey A. Barnett.

(SP-2916/000/01) Some Techniques for Describing Programming Languages, by Millard H. Perstein.

(SP-2926) Typographic Conventions for Describing Computer Programming Languages, by Christopher J. Shaw.

(SP-3014/000/01) The Utility of PL/1 for Command and Control Programming, by Christopher J. Shaw.

(SP-3043) The SDC LISP 1.5 System for IBM 360 COMPUTERS, by Jeffrey A. Barnett and Robert E. Long.

(TM-738/010/00) The Independence of Inherent Ambiguity From Complementedness Among Context Free Languages, by J. Ullian and T. Hibbard.

(TM-738/014/00) Deterministic Context Free Languages, by S. Ginsburg and S. Greibach.

(TM-738/016/00) A Note on Pushdown Store Automata and Regular Systems, by S. A. Greibach.

(TM-738/021/00) Stack Automata and Compiling, by S. Ginsburg, S. Greibach and M. Harrison.

COMPUTER PROGRAMMERS

(SP-2348) Vocational Interest of Computer Programmers, by W. M. Cannon and D. K. Perry.

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(SP-1724/000/01) Developing a Computer-Based Information System, by P. E. Rosove.

(SP-1724/002/00) Design and Production of Computer Programs, by J. J. Connelly.

(SP-2485) Standards for Computers and Information Processing, by T. B. Steel.

(SP-2565) Software Lessons Learned in Military Command Systems, by John R. Ottina.

(SP-2734) Keep I/O and Conversion Apart, by C. J. Shaw.

(SP-3011) Program Errors as a Birth-and-Death Process, by George R. Hudson.

COMPUTER PROGRAMMING - EVALUATION

(SP-2772) On the Economic Analysis of Computer Programming, by G. F. Weinwurm.

COMPUTER PROGRAMMING - INDICES

(SP-2795) Computopics -1967, edited by Alec R. Burnsted.

COMPUTER PROGRAMMING - QUALITY CONTROL

(SP-2852) Quality Assurance and Standards for Software, by Lionel Difford.

COMPUTER PROGRAMMING - RESEARCH

(SP-2846) Experimental Investigation of User Performance in Time-Shared Computing Systems; Retrospect, Prospect; and the Public Interest, by H. Sackman.

(SP-3000) Time-Sharing and Self-Tutoring: An Exploratory Case History and an Experimental Critique, by Harold Sackman.

COMPUTER PROGRAMMING - SPACEBORNE

(SP-2665) Large Capacity Laser Memory Spaceborne Computers, by I. Dlugatch and S. D. Manns.

COMPUTER TIME - SCHEDULING

(SP-2995) The Environment of Computer Operating System Scheduling. Toward an Understanding, by Einar A. Stefferud.

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(SP-1379) Computers, System Science, and Evolving Society; the Challenge of Man-Machine Digital Systems, by H. Sackman.

COMPUTERS - AI/TSO-32

(SP-2635) Converse—A System for the On-Line Description and Retrieval of Structured Data Using Natural Language, by C. H. Kellogg.

(SP-2876) The SDC Time-Sharing System Revisited, by J. I. Schwartz and C. Weissman.

COMPUTERS - COSTS

(SP-2765) The VOPIR Technique for the Evaluation of Computer Augmented Administrative Systems, by E. A. Nelson.

(SP-2909/000/01) Applications of Computers in Education, by H. F. Silberman.

(SP-2772) On the Economic Analysis of Computer Programming, by G. F. Weinwurm.

COMPUTERS - IBM 360

(SP-3043) The SDC LISP 1.5 System for IBM 360 Computers, by Jeffrey A. Barnett.

COMPUTERS - TIME-SHARING

(SP-2469/003/00) TRACE: Time-Shared Routine for Analysis and Evaluation, by R. J. Meeker, W. H. Moore, and G. H. Shure.

(SP-2469/004/00) TRACE (Time-Shared Routine for Analysis Classification and Evaluation), by R. J. Meeker, W. H. Moore and G. H. Shure.

(SP-2635) Converse—A System for the On-Line Description and Retrieval of Structured Data Using Natural Language, by C. H. Kellogg.

(SP-2717) Analyzing Time-Sharing Systems, by J. I. Schwartz.

(SP-2752) Umpire: An Automatic Vriesspiel Referee for a Time-Shared Computer, by J. P. Burger.

(SP-2835) A Graphic Tablet Display Console for Use under Time-Sharing, by Louis Gallenson.

(SP-2840) PLANIT a Flexible Language Designed for Computer-Human Interaction, by Samuel L. Feingold.

(SP-2846) Experimental Investigation of User Performance on Time-Shared Computing Systems: Retrospect, Prospect, and the Public Interest, by H. Sacmann.

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(SP-2975) Time-Sharing Versus Batch Processing: The Experimental Evidence, by Harold Sackman.

COMPUTERS - TIME-SHARING - TDMS

(SP-2634) Compose/Produce: A User-Oriented Report Generator Capability Within the SDC Time-Shared Data Management System, by P. W. Bartram and W. D. Williams.

COMPUTERS - TIME-SHARING - TDMS cont'd.

(SP-2750) Treating Hierarchical Data Structures in the SDC Time-Shared Data Management (TDMS), R. E. Bleier.

(SP-2747) The Time-Shared Data Management System: A New Approach to Data Management, by A. H. Vorhaus and R. D. Wills.

(SP-2798) TDMS: A New Approach to Data Management, by Alfred H. Vorhaus.

COMPUTERS - TIME-SHARING - TINT

(SP-2864) Simple Instructions for TINT, by E. P. Myer.

(SP-3000) Time Sharing and Self-Tutoring: An Exploratory Case History and an Experimental Critique, by Harold Sackman.

COUNSELING

(SP-2874) An Ethical and Moral Analysis of the Design for a Man-Machine Counseling System: Reactions by a UCLA Graduate Class in Counseling, by J. M. Cogswell, C. P. Donahoe, D. P. Estavan and B. A. Rosenquist.

CRIME & CRIMINALS - CALIFORNIA

(SP-2895) Crime and Delinquency - A Summary, by W. W. Parsons, T. C. Rowan and I. R. Sternlich.

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(SP-2936) Cost-Effectiveness Analysis for the Fire Service: An Overview, by Milton P. Jarrett.

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(SP-2485) Standards for Computers and Information Processing, by T. B. Steel.

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(SP-2874) An Ethical and Moral Analysis of the Design for a Man-Machine Counseling System: Reactions by a UCLA Graduate Class in Counseling, by J. P. Cogswell, C. P. Donahoe, D. P. Estavan and B. A. Rosenquist.

(SP-3056) Definition of Course Objectives and Preparation of Diagnostic Tests for DMS, by Beverly Y. Kool.

INFORMATION PROCESSING - GOVERNMENT

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(SP-2749) System Analysis in Criminal Justice Information Systems, by L. C. McCabe and C. P. Smith.

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(SP-1556/000/01) Answering English Questions by Computer, by Robert F. Simmons.

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(SP-2510) Keynote Address - The Social Sciences and Information Systems, by L. F. Carter.

(SP-2711) The State of the Art, by W. S. Melahn.

(SP-2952) Information Science: What is it?, by Harold Borko.

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(Unnumbered) National Document-Handling Systems for Science and Technology, by L. F. Carter, G. Cantley, J. T. Rowell, L. Schults, H. E. Seiden, E. Wallace, R. Watson, R. E. Wyllys.

(SP-1996/000/01) Answering English Questions by Computer, by Robert F. Simmons.

(SP-2018) Automated Language Processing: The State-of-the-Art, by Harold Borko.

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(SP-2769) An Analysis of English Discourse Structure, with Particular Attention to Anaphoric Relations, by John C. Olney and David L. Londe.

(SP-2775) Quantitative Account of Semantic Changes and English Words, 1000-1900, by C. C. Revard.

(SP-2782) LEXICON Project, by C. C. Revard.

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(TM-738/010/00) The Independence of Inherent Ambiguity From Complementation Among Context Free Languages, by T. Hibbard and J. Ullian.

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LANGUAGE & LANGUAGES - GRAMMAR

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(SP-2936) Transformational Grammars Again, by Yorick Wilks.

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(SP-1922/002/00) Optimal Strategy for Item Presentation in a Learning Process, by William Karush and Robert E. Dear.

(SP-2718/000/01) The Relationship of Learner Characteristics to Media Stimuli and Programming Sequences, by R. T. Filem.

(TM-1935/101/00) An Optimal Strategy for the Presentation of Paired-Associate Items, by R. C. Atkinson, R. E. Dear, D. P. Estavan, and H. F. Silberman.

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