Unclassified-Unlimited

AD-679 401

A DDC BIBLIOGRAPHY ON

COMPUTERS IN INFORMATION SCIENCES

(Information Sciences Series)

VOLUME II OF III VOLUMES

DDC-TAS-68-50

OCTOBER 1968

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DEFENSE SUPPLY AGENCY

PREFACE

Any discussion of information systems of the future predicts dynamic interactions between the user and the computer. This bibliography compiles references, cataloged by DDC since 1953, that deal specifically with the role of computers in the information sciences.

The 488 unclassified and unlimited references are divided into two volumes. Volume I contains 249 references grouped under two major headings: Time Shared, On-Line, and Real Time Systems; and Computer Components. Volume II contains 239 references grouped under three major headings: Artificial and Programming Languages, Computer Processing of Analog Data, and Computer Processing of Digital Data. These headings correspond directly with those of the Panel on Information Technology, Committee on Scientific and Technical Information, Federal Council for Science and Technology.

The references are arranged in accession number (AD number) sequence within each heading. Four indexes, AD-Numeric, Corporate Author/Monitoring Agency, Personal Author, and Contract, are appended for each volume to facilitate access to references.

An unclassified and limited version has been compiled and will be announced in the Technical Abstract Bulletin (TAB).

BY ORDER OF THE DIRECTOR, DEFENSE SUPPLY AGENCY

OFFICIAL

ROBERT B. STEGMAIER, JR.
Administrator
Defense Documentation Center

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ARTIFICIAL AND PROGRAMMING LANGUAGES

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AD-259 782
PENNSYLVANIA UNIV PHILADELPHIA
THE TREATMENT OF AMBIGUITY AND PARADOX IN MECHANICAL LANGUAGES (U)

IV GORN,SAUL

CONTRACT: AF49 638 991
MONITOR: AFOSR 603

UNCLASSIFIED REPORT

DESCRIPTORS: •CODING, •COMPUTERS, •DATA PROCESSING SYSTEMS, •DATA STORAGE SYSTEMS, •DATA TRANSMISSION SYSTEMS, •LANGUAGE, COMPLEX VARIABLES, FUNCTIONS, REAL VARIABLES, SEQUENCES, THEORY (U)

A SUMMARY IS GIVEN OF THE BASIC DEFINITIONS OF THE THEORY OF MECHANICAL LANGUAGES, AND OF THE MAIN PROCESSORS FOR THE PREFIX LANGUAGES. A DISCUSSION IS GIVEN OF LANGUAGE EXTENSION WITH THE EXAMPLES OF HIERARCHIES OF EXTENSIONS IN PREFIX LANGUAGES. THE RELATIONSHIP IS ESTABLISHED BETWEEN LANGUAGE EXTENSION AND INCREASE IN CONTROL AMBIGUITY. A LANGUAGE OF SYNTACTIC AMBIGUITY DESCRIPTIONS IS DESIGNED AND THE EFFECTIVE PROCESSOR TRANSLATING FROM THIS LANGUAGE TO THE DERIVED-LANGUAGE NAMING LANGUAGE IS SPECIFIED. THE CONCEPTS OF RECOGNITION DEPTH FOR BOTH SYNTACTIC AMBIGUITIES AND ANALYZABILITY OF MECHANICAL LANGUAGES ARE DEVELOPED, AND EXAMPLES ARE GIVEN TO SHOW THE EXISTENCE OF BOTH TYPES AT ALL DEPTHS, INCLUDING INFINITE DEPTH. EXAMPLES OF CONTROL AMBIGUITY ARE DEVELOPED RANGING FROM THE EXTREMELY USEFUL TO THE PARADOXICAL. AMONG THE PARADOXES ANALYZED IN THIS WAY ARE THE EPIMENIDES PARADOX, THE LEWIS CARROLL TORTOISE AND ACHILLES PARADOX, AND THE RUSSELL PARADOX. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-259 783
PENNSYLVANIA UNIV PHILADELPHIA
COMMENTS ON THE IMPLEMENTATION OF RECURSIVE PROCEDURES AND BLOCKS IN ALGOL-60 (U)
IV IRONS,E.T.;FEURZEIG,W.;
CONTRACT: AF49 638 951
MONITOR: AFOSR TN60 1321

UNCLASSIFIED REPORT

DESCRIPTORS: *CODING, *COMPUTERS, *DATA PROCESSING SYSTEMS, *DATA STORAGE SYSTEMS, *DATA TRANSMISSION SYSTEMS, *PROGRAMMING (COMPUTERS), COMPLEX VARIABLES, LANGUAGE, REAL VARIABLES, SEQUENCES (U)

BECAUSE OF THE IMPORTANCE, FROM THE THEORETICAL POINT OF VIEW, OF RECURSIVE FUNCTIONS AND BECAUSE OF THE GROWING EXTENT AND DIRECTION OF APPLICATION OF RECURSION IN PROGRAMMING RESEARCH AND EXPERIMENTAL MATHEMATICS, IT IS WORTH SOME EFFORT TO IMPLEMENT RECURSION - GIVEN THAT THE COSTS IN COMPILATION AND STORAGE REQUIREMENTS ARE NOT TOO GREAT. THE MECHANISM FOR TREATING RECURSIVE PROCEDURES DESCRIBED HERE IS SUCH THAT THE COSTS IN TIME AND STORAGE TO PROCEDURES INVOLVED IN RECURSION ARE NO MORE THAN NECESSARY FOR A COMPLETELY GENERAL RECURSION MECHANISM FOR ALGOL 60. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-261 624
TECHNICAL OPERATIONS INC BURLINGTON MASS
AN ALGEBRAIC LANGUAGE FOR FLOW CHARTS (U)
AUG 60 IV MARSHALL,STEPHEN;
REPT. NO. B 60 22
CONTRACT: AF22 600 25190

UNCLASSIFIED REPORT

DESCRIPTORS: *ALGEBRA, *CODING, *PROGRAMMING (COMPUTERS), ALGEBRAS, COMPUTERS, LANGUAGE, MATRIX ALGEBRA (U)

AN INFORMAL EXPOSITION IS GIVEN OF AN ALGEBRAIC LANGUAGE IN WHICH TO DESCRIBE FLOW CHARTS. THE ASSUMPTION BY MACHINES OF SOME OF THE PROGRAMMING TASKS STILL PERFORMED BY HUMANS - THE ISOLATION OF SUB-ROUTINES, THE DESIGN OF TEST PROBLEMS, THE ALLOCATION OF SECTIONS OF A PROCESS TO DIFFERENT CONTROLS OR STORAGE MEDIA, FOR EXAMPLE RESTS IN PART ON THE DEVELOPMENT OF ADEQUATE LANGUAGES IN WHICH TO INDICATE PROGRAM STRUCTURE. THERE IS, MOREOVER, POSSIBLE APPLICATION FOR SUCH LANGUAGES IN THE FORMAL SIMPLICATION AND ANALYSIS OF LARGE COMPUTER GAME (I WHICH TO DESCRIBE FLOW CHARTS. THE ASSUMPTION BY MACHINES OF SOME OF THE PROGRAMMING TASKS STILL PERFORMED BY HUMANS - THE ISOLATION OF SUB-ROUTINES, THE DESIGN OF TEST PROBLEMS, THE ALLOCATION OF SECTIONS OF A PROCESS TO DIFFERENT CONTROLS OR STORAGE MEDIA, FOR EXAMPLE RESTS IN PART ON THE DEVELOPMENT OF ADEQUATE LANGUAGES IN WHICH TO INDICA (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-272 402
ITEK CORP WALTHAM MASS
AUTOMATIC WORD CODING TECHNIQUES FOR COMPUTER LANGUAGE PROCESSING. SAMPLE RESULTS OF COMPUTER TESTS (U)
FEB 62 1V NUGENT,WILLIAM R.;VEGH,ALEXANDER;
REPT. NO. IL 9018 I V2
CONTRACT: AF30 602 2377

UNCLASSIFIED REPORT

DESCRIPTORS: *CODING, *VOCABULARY, DIGITAL COMPUTERS, LANGUAGE, PROGRAMMING (COMPUTERS), TABLES (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-273 759
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD MASS
USE OF A LIST-PROCESSING LANGUAGE IN PROGRAMMING SIMPLIFICATION PROCEDURES (U)
IV PETRICK,S.R.

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER LOGIC, *COMPUTER STORAGE DEVICES, *DATA STORAGE SYSTEMS, *LANGUAGE, CODING, MACHINES, PROGRAMMING (COMPUTERS), SWITCHING CIRCUITS (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-281 864
INTERNATIONAL BUSINESS MACHINES CORP SAN JOSE CALIF
ADAPT, A SYSTEM FOR THE AUTOMATIC PROGRAMMING OF NUMERICALLY CONTROLLED MACHINE TOOLS ON SMALL COMPUTERS. (U)
DESCRIPTIVE NOTE: INTERIM TECHNICAL ENGINEERING REPT. 15 JAN-15 JUL 62,
JUL 62 170P JEANS ,H. ;SINANIAN,E. J.
;
CONTRACT: AF 33(600)-43369
PROJ: AF-7-870
MONITOR: ASD TR-62-7-870(XV)

UNCLASSIFIED REPORT

DESCRIPTORS: •CONTROL, •PROGRAMMING (COMPUTERS), AUTOMATION, DIGITAL COMPUTERS, LANGUAGE, MACHINE TOOL(U)

THE ADAPT SYSTEM IS AN AUTOMATIC PROGRAMMING SYSTEM FOR NUMERICALLY CONTROLLED MACHINE TOOLS. ITS LANGUAGE IS ENGLISH-LIKE AND PROBLEM-ORIENTED AND IS COMPATIBLE WITH APT LANGUAGE. DEVELOPMENT FOR USE WITH SMALL DIGITAL COMPUTERS, ADAPT HAS FULL TWO-DIMENSIONAL GEOMETRIC CAPABILITIES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-784 680
RAND CORP SANTA MONICA CALIF
FORTAB: A DECISION TABLE LANGUAGE FOR SCIENTIFIC COMPUTING APPLICATIONS (U)
IV ARMERDING,G.W.

UNCLASSIFIED REPORT

DESCRIPTORS: •LANGUAGE, •PROGRAMMING (COMPUTERS), DIGITAL COMPUTERS, SCIENTIFIC RESEARCH

FORTAB IS A DECISION TABLE LANGUAGE BASED ON THE FORTRAN SCIENTIFIC COMPUTING LANGUAGE. PROGRAMS WRITTEN IN THE COMBINED FORTAB AND FORTRAN LANGUAGES CAN BE COMPILED BY A FORTAB PREPROCESSOR PROGRAM WHICH WAS CONSTRUCTED FOR THE IBM 7090 COMPUTER. INITIAL EXPERIMENTS CONDUCTED USING THE FORTAB LANGUAGE INDICATE THAT A DECISION TABLE LANGUAGE ADDED TO A SCIENTIFIC COMPUTING LANGUAGE RESULTS IN A POWERFUL COMBINATION OF PROGRAMMING TOOLS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-289 831
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
JOVIAL AND ITS DOCUMENTATION (U)
OCT 62 IV SHAW,CHRISTOPHER J.
REPT. NO. SP 1013

UNCLASSIFIED REPORT

DESCRIPTORS: *PROGRAMMING (COMPUTERS), BIBLIOGRAPHIES, DIGITAL COMPUTERS, LANGUAGE (U)

JOVIAL IS DESCRIBED AS A GENERAL PURPOSE, PROCEDURE-ORIENTED, AND LARGELY COMPUTER-INDEPENDENT PROGRAMMING LANGUAGE INTENDED PRIMARILY FOR PROFESSIONAL PROGRAMMERS. JOVIAL WAS DESIGNED AND IMPLEMENTED BY SDC TO PRODUCE PROGRAMS FOR LARGE, COMPUTER-BASED, MILITARY COMMAND AND CONTROL SYSTEMS. A SHORT HISTORY OF JOVIAL'S COMPILER DESIGN AND A SELECTED BIBLIOGRAPHY ARE GIVEN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-293 106
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING
ASO EXECUTIVE ROUTINE (U)
NOV 62 IV PERRY,BENSONI
REPT. NO. 62 14
CONTRACT: NONR551(40

UNCLASSIFIED REPORT

DESCRIPTORS: •DATA STORAGE SYSTEMS, •INFORMATION RETRIEVAL, •PROGRAMMING (COMPUTERS), COMPUTERS, CONFIGURATION, DESIGN, DISPLAY SYSTEMS, SIMULATION, THEORY (U)

A PILOT MO EL OF A REAL-TIME INFORMATION STORAGE AND RETRIEVAL SYSTEM WAS CONSTRUCTED. SEVERAL FILES ARE STORED IN A LARGE, INTERMEDIATE SPEED, RANDOM ACCESS STORAGE DEVICE WHICH IS AN IBM 1405 DISK FILE. ASSOCIATED WITH THIS FILE ARE TREES (HIERARCHICAL INDEX FILES) AND VARIOUS PROGRAMS THAT ARE NEEDED TO RETRI V , O OR D O UPD E THE INFORMATION FILES. T HES AR LSO S ORE ON HE DISK. THE METHOD USED TO ACCESS THE FILES BY TRACING ONE OR MORE KEYS THROUGH THE TREES IS THE MULTI-LIST TECHNIQUE. ALL INFORMATION TO AND FROM THE 1405 DISK PASSES THROUGH AN IBM 140(PROCESSOR WHICH ALSO DOES ALL OF THE ACTUAL PROCESSING. A DIAGRAM REPRESENTING THE SYSTEM IS GIVEN. O OF H IMPORT NT F ATURES IN HE SYSTEM IS THE DIVISION OF PROGRAMS INTO TWO PRIORITI S WITH THE ABILITY TO INTERRUPT A LOW PRIORITY PROGRAM WITH A HIGH PRIORITY ONE. THE HIGH PRIORITY IS RESERVE FOR PROGRAMS THAT PROVIDE IMMEDIATE, LOW VOLUME OUTPUT IN RESPONSE TO INQUIRIES REGARDING THE FILES. CERTAIN FEATURES, ORIGINALLY PLANNED FOR THE EXECUTIVE ROUTINE, WERE OMITTED BECAUSE OF THE LIMITATIONS OF THE 1401 SYSTEM AVAILABL . IN PARTICULAR, HE SMALL MEMORY (80 O C ARACTER TOTAL, 2000 CHARAC ERS FOR THE EXECU IV ROU IN I PORT NT FACTOR. SOME DET ILS OF THE ORIGINALLY PROPOSED EXECU IVE ROUTINE ARE APPENDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-296 046
RAND CORP SANTA MONICA CALIF
PROGRAMMING LANGUAGES AND STANDARDIZATION IN COMMAND AND CONTROL (U)
JAN 63 67P HAVERTY,J.P.;PATRICK,R.L.;
REPT. NO. RM-3447-PR
CONTRACT: AF 49(638)-700

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA PROCESSING SYSTEMS, *PROGRAMMING LANGUAGES, COMMAND + CONTROL SYSTEMS, COSTS, DESIGN, MANAGEMENT ENGINEERING, MEASUREMENT, PROGRAMMING (COMPUTERS), STANDARDIZATION, TRAINING (U)

ASSESSMENT OF THE STATE OF THE ART IN PROGRAMMING LANGUAGES AND DISCUSSION OF THE CONSEQUENCES OF STANDARDIZING ON A PROGRAMMING LANGUAGE.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-408 969
NAVAL RESEARCH LAB WASHINGTON D C
NELIAC-N: A TUTORIAL REPORT, (U)
JUN 63 140P KALLANDER,J.W.;
THATCHER,R.M.;
REPT. NO. NRL-5976, NAREC-REF-29

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, MATHE MATICS), PROGRAMMING PUTERS), COMPUTERS, ALGEBRAS, DATA STORAGE SYSTEMS, COMPUTER LOGIC. (U)
IDENTIFIERS: NELIAC-N. (U)

A TUTORIAL DESCRIPTION OF NELIAC-N, THE VERSION OF THE NELIAC LANGUAGE IMPLEMENTED ON THE NAREC BY MEANS OF THE NELIAC-N COMPILER IS PRESENTED. NELIAC IS A PROBLEM-ORIENTED, MACHINE-INDEPENDENT PROGRAMMING LANGUAGE WHICH ENABLES PROGRAMMERS, SCIENTISTS, AND ENGINEERS TO WRITE THEIR PROGRAMS IN A MATHEMATICAL LANGUAGE RATHER THAN REQUIRING AN ACTUAL MACHINE LANGUAGE OR AN ASSEMBLY LANGUAGE. NELIAC THUS MINIMIZES THE KNOWLEDGE OF THE ACTUAL COMPUTER REQUIRED BY THE PROGRAMMER, MAXIMIZES THE READABILITY OF THE PROGRAMS THEM SELVES, AND PROVIDES CARRY-OVER VALUUE OF PRO GRAMS FROM ONE COMPUTER TO ANOTHER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-419 797
RAND CORP SANTA MONICA CALIF
TECHNICAL APPENDIX ON THE SIMSCRIPT SIMULATION PROGRAMMING LANGUAGE. (U)
AUG 63 19P HAUSNER,BERNARD ;
MARKOWITZ,HARRY M.;
REPT. NO. MEMO. RM3813PR
CONTRACT: AF49 (38 700

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGE, SIMULATION), LOGISTICS, MANUFACTURING METHODS, COMPUTERS. (U)
IDENTIFIERS: SIMSCRIPT, PRINT OUT, 1963. (U)

THIS PAPER PRESENTS MATERIAL WHICH CAN BE OF VALUE IN ADVANCED APPLICATIONS OF SIMSCRIPT. SIMSCRIPT IS A PROGRAMMING LANGUAGE WHICH WAS ESPECIALLY DEVELOPED TO REDUCE THE TIME REQUIRED TO INITIALLY CODE AND SUBSEQUENTLY MODIFY SIMULA TION PROGRAMS. IT HAS BEEN USED IN THE SIMULATION OF A WIDE VARIETY OF SYSTEMS INCLUDING LOGISTICS, MANUFACTURING AND COMPUTER OPERATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-419 103
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING
A SYNTAX-ORIENTED COMPILER FOR LANGUAGES WHOSE SYNTAX IS EXPRESSIBLE IN BACKUS NORMAL FORM, AND SOME PROPOSED EXTENSIONS THERETO, (U)
MAY 63 IV INGERMAN,PETER ZILAHY ;
CONTRACT: AF49 638 951 ,DA31 124AROD98
MONITOR: AROD 4166:1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (*COMPILERS, PROGRAMMING LANGUAGES), (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), PROGRAMMING (COMPUTERS), CODING, FUNCTIONS, COMPUTER STORAGE DEVICES, OPERATORS (MATHEMATICS), INPUT-OUTPUT DEVICES, CONTROL SEQUENCES, TABLES. (U)
IDENTIFIERS: SET THEORY, 1963. (U)

A SYNTAX-ORIENTED COMPILER FOR LANGUAGES WITH A CONTEXT-FREE SYNTAX EXPRESSED IN BACKUS NORMAL FORM IS DISCUSSED. THE TECHNIQUE DISCUSSED IS APPLICABLE TO AN ITERATED COMPILATION PROCESS, WHERE EACH PHASE OF THE COMPILATION GENERATES THE RULES OF SYNTAX REQUIRED FOR THE NEXT PHASE OF THE COMPILATION. COMPLETE FLOW CHARTS ARE INCLUDED FOR THE MAJOR PROCESSORS; THESE FLOW CHARTS ARE ESSENTIALLY MACHINE-INDEPENDENT. ALSO INCLUDED IS A DISCUSSION OF THE EXTENSIONS REQUIRED WHICH ALLOW THE COMPILATION TECHNIQUE TO BE EXTENDED TO CONTEXT-DEPENDENT SYNTAX, ALTHOUGH A NON-TERMINATING COMPILATION MAY RESULT IN CERTAIN CASES IF THESE EXTENSIONS ARE INCLUDED. THE GENERAL TECHNIQUE IS THEREFORE NOT ONLY SHOWN TO BE EXTENDABLE, BUT IS ALSO SHOWNCILITATE THE COMPARISON OF LANGUAGES, SINCE THE IDIOSYNCRACIES OF INDIVIDUAL COMPILERS CAN BE ELIMINATED FROM THE COMPARSION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-419 550
NAVAL RESEARCH LAB WASHINGTON D C
A PROGRAM FOR THE EXECUTION OF LGP-30 MACHINE LANGUAGE CODES ON THE NAREC COMPUTER. (U)
MAY 63 107P WALD,ELIZABETH E.;WALD,B.;
REPT. NO. NRL-5919

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING (COMPUTERS)), (*PROGRAMMING LANGUAGES), CODING, DIGITAL COMPUTERS, SIMULATION. (U)
IDENTIFIERS: 1963. (U)

IN ORDER TO ALLOW THE UTILIZATION OF DIGITAL COMPUTER PROGRAMS WRITTEN FOR THE LGP-30 COMPUTER BY AN ORGANIZATION WHICH NO LONGER HAD CONVENIENT ACCESS TO THIS MACHINE, A PROGRAM WAS WRITTEN FOR NAREC, THE NRL GENERAL PURPOSE COMPUTER, WHICH CAUSES NAREC TO SIMULATE THE ACTIONS OF AN LGP-30. ALTHOUGH THIS PROGRAM WAS WRITTEN OUT OF NECESSITY, THE SIMULATION SPEED GAIN IS SUFFICIENTLY HIGH TO MAKE THE SIMULATION OF LGP-30 OPERATIONS MORE ECONOMICAL THAN DIRECT EXECUTION FOR MANY CLASSES OF PROBLEMS. A MORE COGENT ARGUMENT FOR THE UTILIZATION OF SIMULATION IS TO FREE NRL'S LGP-30'S FROM PRODUCTION WORK AND ALLOW THEM TO BE USED IN CLOSE SUPPORT OF RESEARCH. THE SIMULATOR UTILIZES THE LGP-30 INSTRUCTIONS IN AN INTERPRETIVE MODE TO INVOKE SUBROUTINES OR ACTION BLOCKS TO PERFORM ON THE SIMULATED LGP-30 MEMORY, REGISTERS, AND INPUT-OUTPUT DEVICES THE SAME ACTIONS THAT WOULD HAVE BEEN PERFORMED BY AN ACTUAL LGP-30 EXECUTING THESE INSTRUCTIONS. ONE YEAR OF OPERATING EXPERIENCE WITH THE SIMULATOR HAS DEMONSTRATED THAT WHILE THERE CERTAINLY EXIST BETTER WAYS OF PROVIDING INTERCHANGEABILITY BETWEEN COMPUTERS, E.G., BY NOT PROGRAMMING IN MACHINE-ORIENTED LANGUAGE, IT IS PRACTICAL TO USE THE ACTUAL MACHINE CODING OF A PROBLEM WRITTEN FOR A SMALL COMPUTER AS THE CONTROL FOR A LARGER COMPUTER RUNNING AN INTERPRETIVE PROGRAM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-420 194
COMPUTER ASSOCIATES INC WOBURN MASS
CL-II PROGRAMMING SYSTEM IBM 7090 VERSION. PROGRAM DESCRIPTIONS, VOLUME 1. APPENDIX B. CONTROL NAMES AND EQUIVALENCES. (U)
AFR 63 SOP
REPT. NO. CA63 ISD
CONTRACT: AF49 638 1189

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTER), DIGITAL COMPUTERS), (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS) (U)
IDENTIFIERS: IBM 7090, 1963 (U)

CONTENTS: COMBINED LISTS OF CONTROL PARAMETERS, ROUTINES, DATA SETS, DATA SET ELEMENTS, MASKS, AND CONSTANTS (ALPHABETIZED BY NAME AND GIVING EQUIVALENCES AND CATEGORIES); LIST OF CONTROL PARAMETERS (ALPHABETIZED BY NAME AND GIVING EQUIVALENCES AND INITIAL VALUES, IF ANY); LIST OF CONTROL DATA SETS AND DATA SET ELEMENTS (ALPHABETIZED BY NAME AND GIVING EQUIVALENCES AND LIST ALLOCATIONS); LIST OF CONTROL ROUTINES (ALPHABETIZED BY NAME AND GIVING EQUIVALENCES AND SENTENCE DESCRIPTIONS); AND LIST OF CONTROL CONSTANTS AND MASKS (ALPHABETIZED BY NAME AND GIVING EQUIVALENCES AND VALUES;. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-420 484
COMPUTER ASSOCIATES INC WOBURN MASS
CL-II PROGRAMMING SYSTEM IBM 7090 VERSION PROGRAM DESCRIPTIONS VOLUME 3. INITIALIZATION. (U)
IV

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, THEORY), COMPUTERS (U)
IDENTIFIERS: 1963, ROUTINES (U)

INITIALIZATION IS THAT PART OF THE CL-II PROGRAMMING SYSTEM WHICH BRINGS INTO MEMORY THOSE PROGRAMS AND DATA SETS REQUIRED TO BEGIN A CL-II RUN. THE CL-II PROGRAMMING SYSTEM MAINTENANCE MANUAL CONTAINS GROSS FLOWS OF INITIALIZATION AND FURTHER EXPLAINS THE ROLE OF INITIALIZATION IN THE OVERALL CL-II SYSTEM. THIS VOLUME CONTAINS DETAILED SPECIFICATIONS AND FLOWCHARTS FOR ALL OF INITIALIZATION. THE VOLUME IS DIVIDED INTO PARTS (PART I -- DATA SET DESCRIPTIONS; PART II -- ROUTINE DESCRIPTIONS) AND INCLUDES AS APPENDIX A A DISCUSSION OF THE NOTATION AND FLOWCHART CONVENTIONS UTILIZED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-420 987
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO
IMPROVEMENT OF AFIT 1620 FORTRAN. (U)
AUG 63 154P ROGER PEPIN,GERARD J
HERIN,FRANK EARL ,JR.)
MONITOR: AFIT GE EE63 12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (•DATA PROCESSING SYSTEMS, PROGRAMMING (COMPUTERS), (•PROGRAMMING (COMPUTERS), ANALYSIS), (•PROGRAMMING LANGUAGES), DESIGN, SCIENTIFIC RESEARCH, COMPUTERS, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: 1963, IBM 1620, MODIFICATIONS, FORTRAN, AFIT PROGRAM, FORGO (U)

THE AFIT FORTRAN PROCESSOR PROGRAM IS EXAMINED AND MODIFIED TO INCLUDE THE USE OF THE DIRECT ADDRESSING, AUCOMATIC DIVIDE, MOVE FLAG, TRANSFER NUMERIC STRIP, AND TRANSFER NUMERIC FILL FEATURES OF THE IBM 1620 DATA PROCESSING SYSTEM. TO FURTHER IMPROVE THE OBJECT TIME OF COMPILED PROGRAMS, NECESSARY MODIFICATIONS TO INSURE COMPATIBILITY WITH THE FORGO PROCESSOR ARE INCLUDED AND ADDITIONAL PROGRAMMING FEATURES NOT PRESENTLY AVAILABLE WERE INCORPORATED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-421 913
NAVAL ORDNANCE LAB WHITE OAK MD
FNOL2, A FORTRAN (IBM 7090) SUBROUTINE FOR THE SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS WITH AUTOMATIC ADJUSTMENT OF THE INTERVAL OF INTEGRATION, (U)
28P LINNEKIN,JERRY S. ;
BELLIVEAU,L. J.;
MONITOR: NOL TR63 171

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIFFERENTIAL EQUATIONS), (*DIFFERENTIAL EQUATIONS, PROGRAMMING LANGUAGES), (*PROGRAMMING (COMPUTERS), NUMERICAL METHODS AND PROCEDURES), INTEGRATION (U)
IDENTIFIERS: 1963, FNOL2, IBM 7090 (U)

FNOL2 IS A FORTRAN SUBROUTINE USED FOR THE NUMERICAL INTEGRATION OF A SYSTEM OF UP TO 30 ORDINARY DIFFERENTIAL EQUATIONS. IT USES DOUBLE PRECISION ARITHMETIC IN KEY LOCATIONS. FNOL2 HAS THE OPTION OF AUTOMATICALLY VARYING THE INTERVAL OF INTEGRATION, H, TO HOLD THE RELATIVE OR ABSOLUTE TRUNCATION ERROR WITHIN BOUNDS FIXED BY THE USER. A FORTRAN LISTING OF THE SUBROUTINE IS INCLUDED IN THIS REPORT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-421 979
RAND CORP SANTA MONICA CALIF
TIPL, TEACH INFORMATION PROCESSING LANGUAGE, (U)
OCT 63 28P DUPCHAK,ROBERT I
REPT. NO. RM3879PR
CONTRACT: AF49 638 700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), EFFECTIVENESS), (*PROGRAMMING LANGUAGES, COMPUTERS), (*INSTRUCTION MANUALS, PROGRAMMING LANGUAGES) (U)
IDENTIFIERS: 1963, TIPL (TEACH INFORMATION PROCESSING LANGUAGE) (U)

TIPL IS A SYSTEM TO ASSIST STUDENTS IN LEARNING IPL-V, A LIST-PROCESSING COMPUTER LANGUAGE, AND IS USED IN CONJUNCTION WITH THE PROBLEMS CONTAINED IN THE INFORMATION PROCESSING LANGUAGE-V MANUAL. IT ACCEPTS AS INPUT A STUDENT'S PROGRAM AND IT PROCEEDS TO CHECK THE CORRECTNESS OF THE PROGRAM. THE FIRST SECTION OF THIS MEMORANDUM IS INTENDED FOR THE STUDENT. IT DESCRIBES HOW HE MUST PREPARE HIS PROGRAM DECK AND WHAT CONVENTIONS HE MUST OBSERVE. THE SECOND SECTION DESCRIBES HOW THE SYSTEM OPERATES AND THE MANNER IN WHICH THE INSTRUCTOR MAY MODIFY OLD PROBLEMS AND ADD NEW ONES. SINCE TIPL IS WRITTEN ENTIRELY IN IPL-V, IT REQUIRES ONLY MINIMAL EFFORT TO INCORPORATE IT INTO ANY IPL-V PROCESSOR. THOSE INTERESTED IN OBTAINING TAPE COPIES OF THE PROGRAM SHOULD WRITE THE RAND CORPORATION FOR FURTHER INFORMATION. THE PROGRAM IS WRITTEN ON IBM TAPE AS A SINGLE FILE OF BCD CARD IMAGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-422 298
RAND CORP SANTA MONICA CALIF
A COMPARISON OF LIST-PROCESSING COMPUTER LANGUAGES, (U)
OCT 63 37P BOBROW,DANIEL G. ;
RAPHAEL,BERTRAM ;
REPT. NO. RM3842PR
CONTRACT: AF49 638 700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS), (*METAMATHEMATICS, ANALYSIS), SEQUENCES, DIGITAL COMPUTERS, DATA STORAGE SYSTEMS, DOCUMENTATION (U)
IDENTIFIERS: COMIT, IPL-V, LISP 1.5, SLIP, 1963 (U)

A DETAILED COMPARISON IS PRESENTED OF COMIT, IPL-V, LISP 1.5, AND SLIP-FOUR WELL-KNOWN COMPUTER PROGRAMMING LANGUAGES WHICH, AMONG THEM, EXHIBIT ALL THE PRINCIPAL CHARACTERISTICS OF EXISTING LIST-PROCESSING LANGUAGES. IMPORTANT COMON FEATURES OF LIST-PROCESSING LANGUAGES ARE REVIEWED: FORMS OF DATA STRUCTURES WHICH ARE MANIPULATED; NECESSITY FOR DYNAMIC ALLOCATION OF STORAGE; USE OF PUSHDOWN STORES; AND USE OF RECURSIVE OPERATIONS. PRINCIPAL DIFFERENCES BETWEEN THE FOUR LANGUAGES UNDER CONSIDERATION ARE DETAILED: REPRESENTATIONS OF DATA, BOTH BY THE PROGRAMMER AND WITHIN THE MACHINE; METHODS FOR STORAGE ALLOCATION; PROGRAMMING FORMALISMS AND SPECIAL PROCESSES AVAILABLE, INCLUDING ARITHMETIC FACILITIES; AND USABILITY IN TERMS OF AVAILABILITY, DOCUMENTATION, LEARNING AIDS, AND DEBUGGING FACILITIES. FINALLY, THE AUTHORS GIVE SOME HEURISTICS TO AID IN THE SELECTION OF ONE OF THESE LANGUAGES FOR USE IN PARTICULAR PROBLEM APPLICATIONS, CONCLUDING THAT NO ONE OF THE LANGUAGES CONSIDERED IN DISTINCTLY SUPERIOR OVER ALL POSSIBLE LIST-PROCESSING APPLICATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-428 726
IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
THE LOGIC DESIGN OF ADAM, A PROBLEM-ORIENTED SYMBOL PROCESSOR PROGRAMMING MANUAL. APPENDIX I. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 63 79P SCHAUER,R. F.; MULLERY,A. P.
;
CONTRACT: AF19 628 1621
PROJ: 4641
TASK: 464109
MONITOR: AFCRL 63 910

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), INSTRUCTION MANUALS), (*MATHEMATICAL LOGIC, DESIGN), (*PROGRAMMING LANGUAGES, INFORMATION RETRIEVAL), DATA, VERBAL BEHAVIOR, INPUT-OUTPUT DEVICES, ERRORS, THEORY, DATA PROCESSING SYSTEMS, CODING, TEST METHODS (U)
IDENTIFIERS: ADAM, LOGIC DESIGN (U)

THIS MANUAL PRESENTS THE CODING TECHNIQUES WHICH WILL BE USED TO PREPARE PROBLEMS FOR SOLUTION ON ADAM, AN EXPERIMENTAL DIGITAL DATA HANDLING SYSTEM. THE PROBLEM WAS TO DESIGN A COMPUTER CAPABLE OF MANIPULATING A BROAD RANGE OF DATA FORMS. DATA WAS STRUCTURED TO INCLUDE INSTURCTIONS IN SUCH A WAY THAT THEY MAY BE COMPLETELY VARIABLE IN LENGTH. THE MACHINE WOULD ALSO HAVE A LARGE CHARACTER SET SO THAT VARIOUS CHARACTERS COULD BE ASSIGNED TO SPECIFIC HARDWARE FUNCTIONS AND STILL LEAVE A SUFFICIENT NUMBER TO BE USED AS GENERAL CHARACTERS FOR SYMBOLIC NAMES AND DATA REPRESENTATION. ADAM HAS A CHARACTER SET WITH 128 ASSIGNED CHARACTERS (THOSE ASSIGNED TO HARDWARE FUNCTIONS) AND 128 GENERAL CHARACTERS. EXAMPLES HAVE BEEN ABUNDANTLY USED IN THIS MANUAL SO THAT THE READER MAY EASILY VISUALIZE THE PERFORMANCE OF EACH OF THE MACHINE FUNCTIONS AS IT IS EXPLAINED. ONE OF THE DANGERS OF GIVING EXAMPLES, HOWEVER, IS THAT THE READER MIGHT LIMIT HIS CONCEPT OF THE FUNCTION BEING DISCUSSED TO THE SPECIFIC USE BEING ILLUSTRATED. THIS IS NOT OUR INTENTION HERE, ESPECIALLY SINCE IT IS FELT THAT ONLY BY USING THE BROADEST INTERPRETATION OF EACH FUNCTION IS IT POSSIBLE TO OBTAIN THE FULL POWER OF THE MACHINE AND ITS LANGUAGE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-433 490
COLUMBIA UNIV DOBBS FERRY N Y HUDSON LABS
COMPUTER PROGRAM REFERENCE MANUAL OF THE HUDSON LABORATORIES COMPUTING FACILITY VOLUME II, PART II: LISTINGS OF BASIC UTILITY PROGRAMS, (U)
MAY 63 106P KLERER,MELVIN ;
REPT. NO. NO. 110 ,CU132 63
CONTRACT: NONR26684

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, HANDBOOKS), (*PROGRAMMING (COMPUTERS), HANDBOOKS) (U)
IDENTIFIERS: 1963, SUBROUTINES (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-433 491
COLUMBIA UNIV DOBBS FERRY N Y HUDSON LABS
COMPUTER PROGRAM REFERENCE MANUAL OF THE HUDSON LABORATORIES COMPUTING FACILITY. (U)
MAY 63 73P KLERER,MELVIN ;
REPT. NO. 111 CU133 63
CONTRACT: NONR26684

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, HANDBOOKS), (*PROGRAMMING (COMPUTERS), HANDBOOKS) (U)
IDENTIFIERS: 1963, SUBROUTINES (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-434 760
TELEDYNE SYSTEMS CO HAWTHORNE CALIF
AUTOMATIC PROGRAMMING TECHNIQUES (PHASE I). (U)
DESCRIPTIVE NOTE: FINAL REPT.,
FEB 64 191P GILBERT,P. ;HOSLER,J. ;
EARNEST,C. ;
CONTRACT: AF30 602 2924
PROJ: 5581
TASK: 558102
MONITOR: RADC TDR63 563

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), DATA PROCESSING SYSTEMS), (*PROGRAMMING LANGUAGES, CONTROL SYSTEMS) (U)
;DENTIFIERS: (*PROGRAMMING (COMPUTERS), DATA PROCESSING SYSTEMS), (*PROGRAMMING LANGUAGES, CONTROL SYSTEMS) (U;

THE PROBLEM OF AUTOMATIC (PROGRAM; GENERATION OF COMPILERS WAS STUDIED; A COMPILER GENERATION SYSTEM WAS SPECIFIED, CONSISTING OF TWO PARTS: A 'GENERATION PROGRAM' AND A 'COMPILER MODEL'. USING THIS SYSTEM, A COMPILER IS GENERATED FOR A GIVEN LANGUAGE IN THE FOLLOWING MANNER: AN ABSTRACT SPECIFICATION OF THE LANGUAGE IS WRITTEN, USING THE METHODS AND NOTATION DEVELOPED IN CONJUNCTION WITH THE SYSTEM. THIS SPECIFICATION IS INPUT TO THE 'GENERATION PROGRAM', WHICH PERFORMS CHECKS ON THE SPECIFICATION TO INSURE ITS CORRECTNESS, AND THEN DERIVES A SET OF DATA TABLES FROM THE SPECIFICATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-447 491
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX
SLIP PRELIMINARY INSTRUCTIONAL MANUAL, (U)
AUG 64 120P ATKINSON,GEORGE W. I
REPT. NO. TDR64 98

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, HANDBOOKS), (*PROGRAMMING (COMPUTERS), HANDBOOKS), COMPUTER LOGIC, DATA PROCESSING SYSTEMS (U)

SLIP IS A COLLECTION OF A HUNDRED SUBROUTINES WHICH ENABLES THE PROGRAMMER TO USE LIST PROCESSING TECHNIQUES WITHIN A FORTRAN SYSTEM, IN THIS CASE FORTRAN 63. SLIP IS AN ACRONYM FOR SYMMETRIC LIST PROCESSOR, A SYSTEM DEVELOPED BY JOSEPH WEIZENBAUM OF THE GENERAL ELECTRIC COMPUTER LABORATORY. IN THIS SYSTEM, EACH LIST CELL CONTAINS BOTH A LINK TO THE PRECEDING CELL AND A LINK TO THE SUCCEEDING CELL. THIS PRELIMINARY INSTRUCTION MANUAL IS INTENDED AS A GUIDE TO THE PROGRAMMER TO ENABLE HIM TO USE THE SLIP SYSTEM AS MODIFIED FOR FORTRAN 63. EACH SUBROUTINE IS PRESENTED ALONG WITH AN EXPLANATION OF ITS USE. RELEVANT EXPLANATIONS OF THE SLIP SYSTEM ARE ADDED AS THE VARIOUS SUBROUTINES ARE ENCOUNTERED. THE SLIP SYSTEM IS NOW OPERATIONAL ON KIRTLAND'S 1604 COMPUTER AND THE SUBROUTINES HAVE BEEN ADDED TO THE FORTRAN 63 LIBRARY TAPE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-465 939
FRANK J SEILER RESEARCH LAB UNITED STATES AIR FORCE ACADEMY COLO
'SLASH' ALGOL SIMULATED HYBRID COMPUTER, (U)
MAY 65 205P FUNK,JAMES E. I
REPT. NO. SRL-65-1
PROJ: AF-7904
TASK: 790400

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ANALOG COMPUTERS), DIGITAL COMPUTERS, SIMULATION, DIFFERENTIAL EQUATIONS, PROGRAMMING(COMPUTERS), NONLINEAR DIFFERENTIAL EQUATIONS, ANALOG-DIGITAL COMPUTERS, COMPUTER LOGIC, TABLES (U)
IDENTIFIERS: SLASH, B-5000 COMPUTERS, B-5500 COMPUTERS, ALGOL (U)

THE ALGOL LANGUAGE PROGRAM SLASH (SEILER LABORATORY ALGOL SIMULATED HYBRID) IS A DEVELOPMENT FROM THE FORTRAN MIDAS PROGRAM. SLASH PROVIDES BURROUGHS B-5000 AND B-5500 USERS AN ANALOG SIMULATION CAPABILITY, SADSAC (SEILER ALGOL DIGITALLY SIMULATED ANALOG COMPUTER), AND IT ALSO GOES A STEP FURTHER TO PROVIDE A HYBRID SIMULATION, IN WHICH THE ANALOG SIMULATION IS COUPLED WITH AN ALGOL CONTROL PROGRAM THAT HAS BEEN TAILORED FOR A SPECIFIC PROBLEM. IN ESSENCE THE 'CONTROL PROGRAM' ALLOWS MODE CONTROL OF THE ANALOG PROGRAM AS WELL AS ADJUSTMENT OF PARAMETERS AND INITIAL CONDITIONS. THIS HYBRID CHARACTER IS PARTICULARLY SUITED TO THE ITERATIVE OPTIMAL CONTROL PROBLEMS, BUT IT ALSO HAS GENERAL APPLICATION TO ANY SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS. SLASH ALLOWS A SIGNIFICANT REDUCTION IN PROGRAMMING TIME AND EFFORT OVER THE NORMAL DIGITAL AND ANALOG METHODS; THEREFORE, ITS USE IS QUITE ADVANTAGEOUS FOR PROBLEMS WHICH WILL BE RUN ONLY A LIMITED NUMBER OF TIMES WITHOUT CHANGES OR MODIFICATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-470 849
BATTELLE MEMORIAL INST COLUMBUS OHIO
SELF-INSTRUCTIONAL TEXT FOR PLACE PROGRAMMING. THE AN/GJQ-9 (PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT). (U)
DESCRIPTIVE NOTE: REPT. FOR PERIOD FEB-DEC 64.
SEP 65 384P STOCK,JOHN R.
CONTRACT: AF33 615 1126
PROJ: AF8119
TASK: 811926
MONITOR: APL IT-65-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*CHECKOUT EQUIPMENT, PROGRAMMING(COMPUTERS)), (*PROGRAMMING LANGUAGES, CHECKOUT EQUIPMENT), INSTRUCTION MANUALS, PUNCHED TAPE, AUTOMATIC, ALGEBRA, VOLTAGE, MEASUREMENT (U)
IDENTIFIERS: AN/GJQ-9, PLACE (U)

THIS SELF-INSTRUCTIONAL TEXT IS INTENDED TO INSTRUCT ENGINEERS IN THE USE OF PLACE (PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT) TO PROGRAM THE AN/GJQ-9. IT COVERS ALL ASPECTS OF THE LANGUAGE, FROM THE BASIC ELEMENTS (WORDS, NUMBERS, OPERATION AND PUNCTUATION CHARACTERS) THROUGH THE LIBRARY FORMS FOR THE AN/GJQ-9 TO THE DEVELOPMENT OF NEW STATEMENTS USING THE PROGRAMMER-DEFINED FORM AND PHRASED-MACRO FACILITIES OF PLACE. RESULTS OF A TEST IN WHICH FIVE ENGINEERS ACTUALLY USED THE TEXT TO LEARN PLACE INDICATE THAT ABOUT 30 HOURS ARE REQUIRED TO COMPLETE IT. TO FULLY UNDERSTAND ALL OF THE MATERIAL PRESENTED, SOME KNOWLEDGE OF THE AN/GJQ-9 IS REQUIRED.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-478 496 9/2
RAND CORP SANTA MONICA CALIF
INTRODUCTION TO THE SIMSCRIPT II PROGRAMMING LANGUAGE. (U)
FEB 66 77P KIVIAT,PHILIP J. ;
REPT. NO. P-3314

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), CODING, COMPILERS, COMPUTERS, SIMULATION (U)
IDENTIFIERS: SIMSCRIPT 2, FORTRAN, ALGOL (U)

THIS REPORT TRACES THE AUTHOR'S THOUGHTS ON THE DESIGN, IMPLEMENTATION AND STRUCTURE OF SIMSCRIPT II. THE REPORT IS NOT EXHAUSTIVE; IT DOES REFLECT THE MAJOR CONSIDERATIONS OF THE LANGUAGE DESIGN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD 600 027
ARMY ELECTRONICS LABS FORT MONMOUTH N J
A COMPLETE FLOATING DECIMAL INTERPRETIVE SYSTEM FOR THE LGP-30 ROYAL MCBEE DIGITAL COMPUTER. (U)
DEC 63 99P LEFKER,ROBERT J
TASK: IAO 10901801D
MONITOR: AELHDL TR2419

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, DIGITAL COMPUTERS), (*PROGRAMMING (COMPUTERS), DIGITAL COMPUTERS), (*DIGITAL COMPUTERS, COMPUTER LOGIC), PROGRAMMING LANGUAGES (U)

AN INTERPRETIVE SYSTEM WHICH TRANSFORMS THE LGP-30 INTO A THREE ADDRESS, FLOATING DECIMAL, GENERAL-PURPOSE COMPUTER PRIMARILY SUITED FOR SCIENTIFIC AND ENGINEERING CALCULATIONS IS DESCRIBED IN THIS REPORT. THE SYSTEM IS COMPLETE IN THAT ALL MATHEMATICAL, LOGICAL, INPUT-OUTPUT, AND TRACING OPERATIONS NORMALLY CALLED FOR IN SUCH CALCULATIONS CAN BE PERFORMED WITHIN THE SYSTEM WITHOUT REFERENCE TO THE BASIC MACHINE LANGUAGE OF THE LGP-30. EASE OF USE, HIGHEST POSSIBLE SPEED OF ARITHMETIC, INCLUSION OF THE MOST FREQUENTLY USED LOGICAL OPERATIONS, AND THE GREATEST RANGE IN THE TRANSCENDENTAL FUNCTIONS HAVE BEEN THE MAIN GENERAL CONSIDERATIONS IN DEVELOPING THE SYSTEM. THE USER OF THE SYSTEM NEED ONLY CONCERN HIMSELF WITH SECTIONS ENTITLED GENERAL CONSIDERATIONS THROUGH PROGRAMMING, WHILE THOSE INTERESTED IN THE STRUCTURE OF THE SYSTEM WILL FIND IT DESCRIBED IN THE SECTIONS ENTITLED INTERNAL STRUCTURE OF THE SYSTEM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-601 171
MITRE CORP BEDFORD MASS
FORSIM IV. FORTRAN IV SIMULATION LANGUAGE USER'S GUIDE. (U)
MAY 64 98P FAMOLARI,E. I
REPT. NO. SR-99
CONTRACT: AF19 628 2390
PROJ: 416.2
MONITOR: ESD TDR64 108

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*SIMULATION, PROGRAMMING LANGUAGES), (*PROGRAMMING LANGUAGES, SIMULATION), (*CONTROL SEQUENCES, COMPILERS), (*PROGRAMMING (COMPUTERS)), SYNTHESIS, MODELS (SIMULATIONS), INTERCEPTION, CONTROL SYSTEMS, COMMAND AND CONTROL SYSTEMS, HANDBOOKS (U)

FORSIM IV WAS DEVELOPED AS AN AID TO SIMULATING CERTAIN ASPECTS OF THE BACK-UP INTERCEPTOR CONTROL (BUIC) SYSTEM, AND IS THE FIRST GENERAL SIMULATION PSEUDO-LANGUAGE DEVELOPED FOR THE IBM 7090 COMPUTER. IT REPRESENTS AN INNOVATION IN SIMULATION LANGUAGE TECHNIQUE SINCE IT IS CONSTRUCTED NOT AS A LANGUAGE, BUT AS A SUBROUTINE PACKAGE. IT CAN BE ADAPTED TO ANY COMPUTER CAPABLE OF COMPILING PROGRAMS WRITTEN IN FORTRAN IV LANGUAGE. CONSTRUCTED IN FORTRAN IV, FORSIM IV IS CONCEPTUALLY RELATED TO CONTROL AND SIMULATION LANGUAGE (CSL); HOWEVER, IT PROVIDES COMMANDS AND SERVICES NOT AVAILABLE IN CSL, WHILE ITS SUBROUTINE STRUCTURE PROVIDES FOR THE EASY EXPANSION OF THE COMMAND SET, AS WELL AS VIRTUAL MACHINE INDEPENDENCE. A MODEL FORSIM IV PROGRAM IS INCLUDED IN THE DOCUMENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-601 796
SYSTEMS RESEARCH GROUP INC MINEOLA N Y
MILITRAN PROGRAMMING MANUAL. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.
JUN 64 209P
CONTRACT: NONR2926 00 ,PROJS.
PROJ: TASK
MONITOR: ESD TDR64 220

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LANGUAGE, DATA PROCESSING SYSTEMS), (*PROGRAMMING LANGUAGES), PROGRAMMING (COMPUTERS), SIMULATION, INPUT-OUTPUT DEVICES, COMPILERS, DIGITAL COMPUTERS, INFORMATION RETRIEVAL, COMPUTER LOGIC, CONTROL SEQUENCES, READING MACHINES, CHARACTER RECOGNITION, INSTRUCTION MANUALS, OPERATIONS RESEARCH, CODING (U)
IDENTIFIERS: MILITRAN (U)

THE MILITRAN PROGRAMMING MANUAL IS ONE OF THREE TECHNICAL REPORTS WHICH CONSTITUTE A COMPLETE DESCRIPTION AND INSTRUCTIONS FOR USING THE MILITRAN LANGUAGE IN COMPUTER PROGRAMMING OF SIMULATION PROBLEMS. TOPICS DISCUSSED IN THIS REPORT INCLUDE: (1) A DEFINITION AND SAMPLING OF THE MILITRAN LANGUAGE; (2) GENERAL LANGUAGE CHARACTERISTICS; (3) BASIC MILITRAN ENVIRONMENT; (4) PROGRAMMING IN MILITRAN: ARITHMETIC AND LOGICAL PROCESSING; (5) CONTROL STATEMENTS; (6)LISTS AND LIST PROCESSING STATEMENTS; (7) EVENTS; (8) PROCEDURES; AND (9) INPUT-OUTPUT STATEMENTS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-602 229
MITRE CORP BEDFORD MASS
AN APPROACH TO COMPARING COSTS OF ELECTRONIC PROCESSING OF PERT DATA: PERT I VERSUS PERT III. (U)
JUN 64 16P AUTIO,A. E. 1
REPT. NO. W-6611
CONTRACT: AF19 628 2390
PROJ: 850
MONITOR: ESD TDR64 113

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, DIGITAL COMPUTERS), (*PROGRAMMING (COMPUTERS), COSTS), (*COMPILERS, EFFECTIVENESS), SYSTEMS ENGINEERING, PROGRAMMING LANGUAGES, ECONOMICS (U)
IDENTIFIERS: PERT (U)

THIS DOCUMENT DEVELOPS RELATIONSHIPS FOR ESTIMATING COSTS OF PROCESSING SINGLE RUNS OF PERT DATA ON THE 7090 COMPUTER ON THE BASIS OF THE NUMBER OF ACTIVITIES PER NETWORK. A COMPARISON IS ALSO MADE OF THE PERT I VS. PERT III PROCESSING COSTS IN WHICH THE LATTER APPEARS DECIDEDLY MORE ATTRACTIVE, PARTICULARLY IN THE LARGER NETWORKS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-602 506
WESTINGHOUSE DEFENSE AND SPACE CENTER BALTIMORE MD
STUDY AND INVESTIGATION TO DEVELOP COMPILER TECHNIQUES REQUIRED FOR PROGRAMMING THE PARALLEL NETWORK COMPUTER. (U)
DESCRIPTIVE NOTE: FINAL REPT.
JUN 64 108P
CONTRACT: AF30 602 3146
PROJ: 5581
TASK: 558109
MONITOR: RADC TDR64 175

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), COMPILERS), (*COMPILERS, PROGRAMMING (COMPUTERS)), CONTROL SEQUENCES, COMPUTER LOGIC, INPUT-OUTPUT DEVICES, INSTRUCTION MANUALS (U)
IDENTIFIERS: PARALLEL COMPUTERS, SOLOMON COMPUTERS, PARALLEL NETWORK COMPUTERS (U)

THIS REPORT DESCRIBES THE WORK COMPLETED ON THE FIRST PHASE OF A PLANNED PROGRAM TO DEVELOP TECHNIQUES FOR A COMPILER TO ASSIST IN THE PROGRAMMING OF PARALLEL NETWORK COMPUTERS (SOLOMON COMPUTER IN PARTICULAR). THE ONE-YEAR DEVELOPMENT CONTRACT WAS TERMINATED BY DIRECTIVE OF DOD, DDRANDE AFTER FOUR MONTHS OF PROGRESS; THEREFORE, ONLY THE SPECIFICATION OF AN ASSEMBLY LANGUAGE FOR THE PARALLEL NETWORK COMPUTER WAS COMPLETED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-603 199
IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
DESIGN MECHANIZATION OF A PROBLEM-ORIENTED SYMBOL PROCESSOR. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAY 64 40P SCHAUER,R. F. ;NOTZ,W. ;
MULLERY,A. ;
CONTRACT: AF19 628 2991
PROJ: 4641
TASK: 464105
MONITOR: AFCRL , 64 454

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTER LOGIC), (*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES), DATA PROCESSING SYSTEMS, DESIGN, PROGRAMMING (COMPUTERS), CONTROL SYSTEMS, SIMULATION, COMPILERS, COMPUTER STORAGE DEVICES (U)
IDENTIFIERS: ADAM, ALGOL, SYMBOL PROCESSORS (U)

THE REPORT DESCRIBES THE DESIGN MECHANIZATION OF THE LOGICAL DESIGN FOR THE ADAM PROBLEM ORIENTED SYMBOL PROCESSOR. THIS INCLUDES COMPUTER EVALUATION OF LOGIC CONNECTIONS, MACHINE GENERATION OF LOGIC DIAGRAMS AND OTHER APPROPRIATE LISTS AND TABLES. A PROGRAM FOR THE AUTOMATIC GENERATION OF THE LAYOUT FOR STORING THE CONTROL PROGRAMS IN THE READ-ONLY MEMORY AND A DIAGNOSTIC PROCEDURE FOR CHECKING THE CONTROL PROGRAMS ARE ALSO DESCRIBED. FINALLY THE INITIAL PARTS OF AN ALGOL COMPILER WRITTEN AS PART OF AN EVALUATION OF ADAM SYSTEM ARE PRESENTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-603 200
IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
DESIGN MECHANIZATION OF A PROBLEM-ORIENTED SYMBOL PROCESSOR. (U)
DESCRIPTIVE NOTE: APPENDICES I, III, IV, AND V TO FINAL REPT.,
MAY 64 55P SCHAUER,R. F. INOTZ,W. ;
MULLERY,A. ;
CONTRACT: AF19 628 2991
PROJ: 4641
TASK: 464105
MONITOR: AFCRL , 64-454, APP. 1, 3-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•PROGRAMMING LANGUAGES, COMPUTER LOGIC), (•DIGITAL COMPUTERS, PROGRAMMING LANGUAGES), (•PROGRAMMING (COMPUTERS), DESIGN, COMPILERS, COMPUTER STORAGE DEVICES (U)
IDENTIFIERS: ADAM, ALGOL, SYMBOL PROCESSORS (U)

THE APPENDICES ARE FOR USE WITH AD-603 199.
INCLUDED ARE: BASIC LOGIC BLOCK DIAGRAMS, DIAGNOSTIC PROGRAMS, READ-ONLY MEMORY LAYOUT PROGRAM, AND ALGOL ARITHMETIC COMPILER. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-602 482
INFORMATION INTERNATIONAL INC CAMBRIDGE MASS
THE PROGRAMMING LANGUAGE LISP: ITS OPERATION AND APPLICATIONS. (U)
MAR 64 403P ABRAHAMS,PAUL W. ; BERKELEY,EDMUND C. ;BLACK,FISCHER ;BOBROW,DANIEL G. ;EVANS,THOMAS G. ;
CONTRACT: SD-162

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, OPERATION), PROGRAMMING (COMPUTERS), COMPUTER LOGIC, DATA PROCESSING SYSTEMS, ARTIFICIAL INTELLIGENCE, TRANSFORMATIONS (MATHEMATICS), COMPUTERS (U)
IDENTIFIERS: LISP (U)

AN INTRODUCTION TO LISP IS GIVEN ON AN ELEMENTARY LEVEL. TOPICS COVERED INCLUDE THE PROGRAMMING SYSTEM, 240 EXERCISES WITH SOLUTIONS, DEBUGGING OF LISP PROGRAMS, AND STYLES OF PROGRAMMING. MORE ADVANCED DISCUSSIONS ARE CONTAINED IN THE FOLLOWING ARTICLES: TECHNIQUES USING LISP FOR AUTOMATICALLY DISCOVERING INTERESTING RELATIONS IN DATA; AUTOMATION, USING LISP, OF INDUCTIVE INFERENCE ON SEQUENCES; APPLICATION OF LISP TO MACHINE CHECKING OF MATHEMATICAL PROOFS; METEOR: A LISP INTERPRETER FOR STRING TRANSFORMATIONS; NOTES ON IMPLEMENTING LISP FOR THE M-460 COMPUTER; LISP AS THE LANGUAGE FOR AN INCREMENTAL COMPUTER; THE LISP SYSTEM FOR THE Q-2 COMPUTER; AN AUXILIARY LANGUAGE FOR MORE NATURAL EXPRESSION -- THE A-LANGUAGE. SOME APPLICATIONS OF THE UTILIZATION OF THE LISP PROGRAMMING LANGUAGE ARE GIVEN IN THE APPENDICES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-604 350
PARKE MATHEMATICAL LABS INC CARLISLE MASS
MADCAP: MAMMOTH DECIMAL ARITHMETIC PROGRAM FOR THE PDP-1 COMPUTER. (U)
DESCRIPTIVE NOTE: SCIENTIFIC REPT. NO. 1,
JUN 64 54P MYRVAAGNES,E. I
CONTRACT: AF19 628 3826
PROJ: 5628
TASK: 562801
MONITOR: AFCRL , 64 510

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, MATHEMATICS), (*COMPILERS, PROGRAMMING LANGUAGES), (*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES), COMPUTERS, CONTROL SEQUENCES, PROGRAMMING (COMPUTERS), INSTRUCTION MANUALS (U)
IDENTIFIERS: MADCAP (MAMMOTH DECIMAL ARITHMETIC PROGRAM) PDP-1 COMPUTER (U)

A MULTIPLE-PRECISION FLOATING-POINT ARITHMETIC PROGRAM, MADCAP, FOR THE PDP-1 COMPUTER IS DESCRIBED. THE NUMBER OF SIGNIFICANT DIGITS MAINTAINED DURING CALCULATIONS CAN BE VARIED EASILY TO SUIT THE USER'S REQUIREMENTS OF SPEED VS. ACCURACY. PROGRAMMING IN MADCAP'S OWN SOURCE LANGUAGE IS EXTREMELY SIMPLE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-604 531
RAND CORP SANTA MONICA CALIF
99-GATE, (U)
AUG 62 49P VAN WORMER,THEODORE A. I
REPT. NO. P-2602

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTERS), (*PROGRAMMING (COMPUTERS), PROGRAMMING LANGUAGES) (U)
IDENTIFIERS: 99-GATE (GENERAL ALGEBRAIC TRANSLATOR EXTENDED) (U)

THE PAPER IS A PRIMER FOR INSTRUCTION IN THE 99-GATE LANGUAGE. 99-GATE IS A SYSTEM IN WHICH YOU MAY INSTRUCT A COMPUTER TO PERFORM ALGEBRAIC COMPUTATIONS. SPECIFICALLY, 99-GATE IS: GENERAL ALGEBRAIC TRANSLATOR EXTENDED FOR THE IBM 709/7090. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-604 720
MASSACHUSETTS INST OF TECH CAMBRIDGE
NATURAL LANGUAGE INPUT FOR A COMPUTER PROBLEM SOLVING SYSTEM. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
SEP 64 155P BOBROW,DANIEL G. I
REPT. NO. MAC-TR-1
CONTRACT: NONR4102 01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJ. MAC.

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS), (•PROGRAMMING (COMPUTERS), LANGUAGE), COMMUNICATION THEORY, ALGEBRA, SIMULTANEOUS EQUATIONS, MATHEMATICAL PROGRAMMING, ARTIFICIAL INTELLIGENCE, TRANSFORMATIONS (MATHEMATICS), NUMERICAL ANALYSIS (U)
IDENTIFIERS: MAC PROJECT, STUDENT SYSTEM, ENGLISH LANGUAGE, LISP, SEMANTICS (U)

THE STUDENT PROBLEM SOLVING SYSTEM, PROGRAMMED IN LISP, ACCEPTS AS INPUT A COMFORTABLE BUT RESTRICTED SUBSET OF ENGLISH WHICH CAN EXPRESS A WIDE VARIETY OF ALGEBRA STORY PROBLEMS. STUDENT FINDS THE SOLUTION TO A LARGE CLASS OF THESE PROBLEMS. THE THESIS INCLUDES A SUMMARY OF OTHER ENGLISH LANGUAGE QUESTION-ANSWERING SYSTEMS. THE LINGUISTIC ANALYSIS IN STUDENT IS A FIRST APPROXIMATION TO THE ANALYTIC PORTION OF A SEMANTIC THEORY OF DISCOURSE OUTLINED IN THE THESIS. STUDENT FINDS THE SET OF KERNEL SENTENCES WHICH ARE THE BASE OF THE INPUT DISCOURSE, AND TRANSFORMS THIS SEQUENCE OF KERNEL SENTENCES INTO A SET OF SIMULTANEOUS EQUATIONS WHICH FORM THE SEMANTIC BASE OF THE STUDENT SYSTEM. STUDENT THEN TRIES TO SOLVE THIS SET OF EQUATIONS FOR THE VALUES OF REQUESTED UNKNOWNS. IF IT IS SUCCESSFUL IT GIVES THE ANSWERS IN ENGLISH. IF NOT, STUDENT ASKS THE USER FOR MORE INFORMATION, AND INDICATES THE NATURE OF THE DESIRED INFORMATION. THE STUDENT SYSTEM IS A FIRST STEP TOWARD NATURAL LANGUAGE COMMUNICATION WITH COMPUTERS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-604 818
RAND CORP SANTA MONICA CALIF
A QUICK LOOK AT SIMSCRIPT. (U)
OCT 62 24P KARR,HERBERT W. I
REPT. NO. P-2698

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT PHI DELTA KAPPA SYMPOSIUM IN EDUCATIONAL RESEARCH (NO. 4) INDIANA UNIV. BLOOMINGTON, 9 NOV 62. EXTRACTED FROM CHAP. I OF MARKOWITZ, HAUSNER, AND KARR 'SIMSCRIPT: A SIMULATED PROGRAMMING LANGUAGE'.

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), SIMULATION), (*PROGRAMMING LANGUAGES, SIMULATION), (*COMPUTERS, SIMULATION), COMPILERS, DATA PROCESSING SYSTEMS, DIGITAL COMPUTERS (U)
IDENTIFIERS: SIMSCRIPT (U)

IN SIMSCRIPT, THE STATUS OF A SIMULATED SYSTEM IS DESCRIBED IN TERMS OF ENTITIES, ATTRIBUTES OF ENTITIES, AND SETS OF ENTITIES. STATUS IS CHANGED AT POINTS IN SIMULATED TIME CALLED EVENTS. A SEPARATE EVENT ROUTINE MUST BE WRITTEN FOR EACH DIFFERENT KIND OF EVENT TO BE INCLUDED IN THE SIMULATION. FOR CONVENIENCE IN WRITING THESE ROUTINES, THE SIMSCRIPT SOURCE LANGUAGE CONTAINS A VARIETY OF COMMANDS ESPECIALLY ADAPTED TO SIMULATION PROBLEMS. SOME OF THESE COMMANDS ARE ILLUSTRATED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-606 627
RAND CORP SANTA MONICA CALIF
A COMMAND STRUCTURE FOR COMPLEX INFORMATION PROCESSING, (U)
62P SHAW,J. C. ;NEWELL,A. ;
SIMON,H. A. ;ELLIS,T. O. ;
REPT. NO. P-1277
MONITOR: PB , 164 088

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE WESTERN JOINT COMPUTER CONFERENCE, LOS ANGELES, 6 MAY 58.
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.
REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), (*CONTROL SEQUENCES, PROGRAMMING LANGUAGES), THEOREMS, PROGRAMMING (COMPUTERS), DATA PROCESSING SYSTEMS, DATA STORAGE SYSTEMS, INPUT-OUTUUTPUT DEVICES (U)
IDENTIFIERS: IPL COMPUTERS (U)

RECENT RESEARCH INTO DIGITAL COMPUTER PROGRAMS FOR DISCOVERING PROOFS TO THEOREMS IN SYMBOLIC LOGIC AND PLAYING CHESS HAS SHOWN THE DESIRABILITY OF LANGUAGES BETTER ADAPTED TO THE REQUIREMENTS OF SUCH NON-NUMERIC PROGRAMMING TASKS THAN ARE PRESENT DAY MACHINE LANGUAGES. A COMMAND STRUCTURE WHICH ALLOWS MORE INDIRECTNESS IN PROGRAMMING AND REQUIRES LESS KNOWLEDGE OF THE LOCATION AND FORM OF THE DATA IS DESCRIBED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-607 363
SYSTEMS RESEARCH LABS INC DAYTON OHIO
A NEW APPROACH TO COMPUTER COMMAND STRUCTURES. (U)
DESCRIPTIVE NOTE: FINAL REPT., ADD. FOR 15 SEP 63-15 MAR 64,
MAY 64 65P KIM,C. K. HIRSIN,L. E. ;
MAIER,E. B. ;
CONTRACT: AF30 602 2741
PROJ: 5581
TASK: 558102
MONITOR: RADC , TDR64 135

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ALGEBRA), (*COMPUTER LOGIC, CONTROL SEQUENCES), (*GROUP (MATHEMATICS), PROGRAMMING LANGUAGES), (*ALGEBRA, PROGRAMMING LANGUAGES), PROGRAMMING (COMPUTERS), MATHEMATICS (U)
IDENTIFIERS: THETA LANGUAGE (U)

THE PURPOSE OF THE RESEARCH UNDER THIS CONTRACT EXTENSION WAS TO INVESTIGATE PROGRAMMING MANIPULATION AND ASSOCIATED PROBLEMS USING THE ALGEBRAIC COMPUTER LANGUAGE (THETA-LANGUAGE) DEVELOPED PREVIOUSLY UNDER THIS RESEARCH CONTRACT. THE REPORT CONTAINS A REFINEMENT OF THE THETA-LANGUAGE, THE DESCRIPTION OF THE METALANGUAGE AS A SOURCE LANGUAGE, THE DEFINITION OF THE THETA-LANGUAGE IN TERMS OF METALANGUAGE, THE ESTABLISHMENT OF THE THETALANGUAGE AS A PRECEDENCE LANGUAGE, AND THE SYNTACTIC STRUCTURE OF THE THETA-LANGUAGE. IT ALSO CONTAINS THE PROGRAMMING MANIPULATION OF THE THETA-LANGUAGE, THE THEORETICAL INVESTIGATION OF THE PRIME PHASE STRUCTURE OF THE THETA-LANGUAGE, AND APPLICATION OF LINEAR GRAPH THEORY TO PROGRAMMING CONTROL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-607 965
ROME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y
FLOPAK: FLOATING POINT PROGRAMING PACKAGE, (U)
OCT 64 98P CORDELL,STEVE J
MONITOR: RADC , TDR64 395

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY. REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), COMMUNICATION SYSTEMS), PROGRAMMING LANGUAGES, COMMUNICATION SYSTEMS), REAL TIME, AUTOMATIC, COMPILERS (U)

FLOPAK IS A PACKARD-BELL 250 COMPUTER SEMI-AUTOMATIC, FLOATING-POINT PROGRAMING SYSTEM WHICH MAY BE OPERATED SIMULTANEOUSLY IN EITHER OF TWO MODES. THE FIRST IS A NON-TIME OPTIMIZED MODE WHICH MAY BE USED BY INEX PERIENCED CODERS; THE SECOND MODE IS A HIGH-SPEED, FULLY TIME-OPTIMIZED FLOATING-POINT ARITHMETIC SYSTEM WHICH AN EXPERIENCED PROGRAMER MAY USE IN REAL-TIME COMPUTATIONS AND IN GENERAL, SINGLE PRECISION CALCULATIONS. IT IS THE ONLY PB-250 FLOATING-POINT SYSTEM AVAILABLE WHICH MAY BE USED IN REAL-TIME CONTROL. THE SYSTEM WAS ORIGINALLY DESIGNED TO SOLVE A REAL-TIME COMMUNICATION PROBLEM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-608 292
STANFORD UNIV CALIF SCHOOL OF HUMANITIES AND SCIENCES
NUMERICAL METHODS FOR SOLVING LINEAR LEAST SQUARES PROBLEM. AN ALGOL PROCEDURE FOR FINDING LINEAR LEAST SQUARES SOLUTIONS. (U)
AUG 64 36P GOLUB,G. BUSINGER,PETER A

REPT. NO. CS-12
CONTRACT: NONR225 97
PROJ: NR044 11

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LEAST SQUARES METHOD, NUMERICAL METHODS AND PROCEDURES), (*NUMERICAL METHODS AND PROCEDURES, LEAST SQUARES METHOD), (*PROGRAMMING LANGUAGE, LEAST SQUARES METHOD), MATRIX ALGEBRA, TRANSFORMATIONS (MATHEMATICS), PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: HOUSEHOLDER TRANSFORMATION (U)

NUMERICAL METHODS FOR SOLVING LINEAR LEAST SQUARES PROBLEM. AN ALGOL PROCEDURE FOR FINDING LINEAR LEAST SQUARES SOLUTIONS.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-608 367
RAND CORP SANTA MONICA CALIF
THE LOGIC OF INTERROGATING A DIGITAL COMPUTER, (U)
NOV 64 24P HARON,M. E. I
RPT. NO. P-3006

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE 1964 LINGUISTIC INSTITUTE OF THE LINGUISTIC SOCIETY OF AMERICA, UNIV. OF INDIANA, BLOOMINGTON.

DESCRIPTORS: (•DIGITAL COMPUTERS, COMPUTER LOGIC), (•COMPUTER LOGIC, DIGITAL COMPUTERS), LANGUAGE, ARTIFICIAL INTELLIGENCE, CYBERNETICS, COMMUNICATION THEORY, INFORMATION RETRIEVAL, PROBABILITY, MATHEMATICAL LOGIC (U)

THE TOPICS DISCUSSED IN THIS PAPER ARE (1) THE INFORMATION SCIENCES, (2) INTERROGATING A DIGITAL COMPUTER, (3) DATA RETRIEVAL SYSTEMS, AND (4) CYBERNETICS, MEANING, AND COMPREHENSION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-608 499
MASSACHUSETTS INST OF TECH CAMBRIDGE
SIR: A COMPUTER PROGRAM FOR SEMANTIC INFORMATION RETRIEVAL. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS.
JUN 64 169P RAPHAEL,BERTRAM I
REPT. NO. MAC-TR-2
CONTRACT: NONR4102 01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJECT MAC.

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), INFORMATION RETRIEVAL), (*INFORMATION RETRIEVAL, LANGUAGE), (*LANGUAGE, INFORMATION RETRIEVAL), COMPUTERS, ARTIFICIAL INTELLIGENCE, DOCUMENTATION, DIGITAL COMPUTERS (U)
IDENTIFIERS: MAC PROJECT, SIR (SEMANTIC INFORMATION RETRIEVAL), THESES, SEMANTICS, LISP (U)

SIR IS A COMPUTER SYSTEM, PROGRAMMED IN THE LISP LANGUAGE, WHICH ACCEPTS INFORMATION AND ANSWERS QUESTIONS EXPRESSED IN A RESTRICTED FORM OF ENGLISH. THIS SYSTEM DEMONSTRATES WHAT CAN REASONABLY BE CALLED AN ABILITY TO 'UNDERSTAND' SEMANTIC INFORMATION. SIR'S SEMANTIC AND DEDUCTIVE ABILITY IS BASED ON THE CONSTRUCTION OF AN INTERNAL MODEL, WHICH USES WORD ASSOCIATIONS AND PROPERTY LISTS, FOR THE RELATIONAL INFORMATION NORMALLY CONVEYED IN CONVERSATIONAL STATEMENTS. A FORMAT-MATCHING PROCEDURE EXTRACTS SEMANTIC CONTENT FROM ENGLISH SENTENCES. IF AN INPUT SENTENCE IS DECLARATIVE, THE SYSTEM ADDS APPROPRIATE INFORMATION TO THE MODEL. IF AN INPUT SENTENCE IS A QUESTION, THE SYSTEM SEARCHES THE MODEL UNTIL IT EITHER FINDS THE ANSWER OR DETERMINES WHY IT CANNOT FIND THE ANSWER. IN ALL CASES SIR REPORTS ITS CONCLUSIONS. THE SYSTEM HAS SOME CAPACITY TO RECOGNIZE EXCEPTIONS TO GENERAL RULES, RESOLVE CERTAIN SEMANTIC AMBIGUITIES, AND MODIFY ITS MODEL STRUCTURE IN ORDER TO SAVE COMPUTER MEMORY SPACE. JUDGING FROM ITS CONVERSATIONAL ABILITY, SIR IS MORE 'INTELLIGENT' THAN ANY OTHER EXISTING QUESTION-ANSWERING SYSTEM. THE AUTHOR DESCRIBES HOW THIS ABILITY WAS DEVELOPED AND HOW THE BASIC FEATURES OF SIR COMPARE WITH THOSE OF OTHER SYSTEMS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-608 727
IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
COMPUTER PROGRAMMING TECHNIQUES FOR INTELLIGENCE ANALYST APPLICATION. (U)
DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 2, 16 FEB-15 MAY 64.
OCT 64 182P
CONTRACT: AF30 602 3303
MONITOR: RADC , TDR64 210

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-605 267.

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), INFORMATION RETRIEVAL), (*INFORMATION RETRIEVAL, DATA PROCESSING SYSTEMS), STATISTICAL ANALYSIS, SUBJECT INDEXING, DISPLAY SYSTEMS, PROGRAMMING LANGUAGES, LANGUAGE, COSTS, MILITARY INTELLIGENCE, ANALYSIS (U)
IDENTIFIERS: AN/GYA, STORM, ASSOCIATIVE RETRIEVAL, WORDS, LIST PROCESSING, INDEXING TERMS, THESAURI, SEMANTICS, FORTRAN PROGRAM (U)

MODIFICATIONS WERE MADE ON THE MONITOR AND APPLICATION PROGRAMS OF THE AN/GYA COMPLEX. THE MULTI-PROCESSING MONITOR CAN HANDLE DYNAMIC TAPE ALLOCATION, AND IT PERMITS UPDATING OF THE DRUM-DISK LIBRARY. ADDITIONAL DISTRIBUTION FUNCTIONS HAVE BEEN PROGRAMMED FOR INCLUSION IN STORM AND ON THE AN/GYA DISK. A LIST-PROCESSING LANGUAGE HAS BEEN DEFINED, AND IS BEING PROGRAMMED, WHICH WILL FACILITATE INCLUSION OF PROTOTYPE STUDIES IN THE LAY USER'S SYSTEM. PROGRAMS HAVE BEEN DEVELOPED TO PERMIT EXPERIMENTAL RUNS FOR THE DETERMINATION OF STATISTICAL WORD ASSOCIATION. THE CLEAR TEXT SYSTEM HAS BEEN AUGMENTED BY NOVEL ENCODING FEATURES WHICH PERMIT FASTER SEARCH. PRE-PROCESSING OF AN EXTENDED DATA BASE IS UNDER WAY. A STUDY WAS PREPARED PROPOSING THE USE OF AN ADAPTIVE THESAURUS AS AN EXPERIMENTAL TOOL TO QUANTIFY PROPERTIES OF INDEXING SYSTEMS. (AUTHOR) APPENDICES: NONCENTRAL STATISTICAL DISTRIBUTION PROGRAMS FOR A COMPUTER LANGUAGE, BY ROLF E. BARGMANN AND SAKTI P. GHOSH; AND TOWARDS DESIGN AND EVALUATION OF INDEXING SYSTEMS FOR INFORMATION RETRIEVAL, PART I AND 2, COSTS AND PARAMETERS, BY P. REISNER. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-608 894
MASSACHUSETTS COMPUTER ASSOCIATES INC WAKEFIELD
AMBIT: A PROGRAMMING LANGUAGE FOR ALGEBRAIC SYMBOL MANIPULATION. (U)
DESCRIPTIVE NOTE: SCIENTIFIC REPT. NO. 4,
OCT 64 59P CHRISTENSEN,CARLOS ;
CONTRACT: AF19 628 419 ,AF30 602 3342
PROJ: 4641
TASK: 464102
MONITOR: AFCRL , 64 909

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ALGEBRA), (*ALGEBRA, PROGRAMMING LANGUAGES), PROGRAMMING (COMPUTERS), NUMERICAL METHODS AND PROCEDURES, IDENTITIES, CONTROL SEQUENCES, COMPUTER LOGIC, DATA PROCESSING SYSTEMS, DIGITAL COMPUTERS :U;
IDENTIFIERS: AMBIT (U)

THIS PAPER DEFINES A PROGRAMMING LANGUAGE SYSTEM CALLED AMBIT (ALGEBRAIC MANIPULATION BY IDENTITY TRANSLATION). THE AMBIT LANGUAGE IS INTENDED FOR THE PRECISE DESCRIPTION OF THE OPERATIONS OF MATHEMATICS IN GENERAL, AND PROGRAMS IN THE LANGUAGES ARE SUITABLE FOR EFFICIENT COMPILATION AND EXECUTION BY AN AUTOMATIC COMPUTER. THE LANGUAGE IS DISTINGUISHED BY ITS ADHERENCE TO AN IMPORTANT PORTION OF THE CONVENTIONAL NOTATION OF ALGEBRA, THE 'IDENTITY'. AMBIT USES THE 'IDENTITY' TO EXPRESS IN A SINGLE LINGUISTIC STRUCTURE AN ARBITRARILY COMPLEX SEQUENCE OF ELEMENTARY SYMBOL-MANIPULATION OPERATIONS, JUST AS FORTRAN AND ALGOL USE THE 'FORMULA' TO EXPRESS IN A SINGLE LINGUISTIC STRUCTURE AN ARBITRARILY COMPLEX SEQUENCE OF ARITHMETIC OPERATIONS. THUS AMBIT ATTEMPTS TO SERVE ALGEBRA AS FORTRAN AND ALGOL SERVE ARITHMETIC. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-609 487
CALIFORNIA UNIV BERKELEY ELECTRONICS RESEARCH LAB
TECHNIQUES FOR AUTOMATING THE CONSTRUCTION OF TRANSLATORS FOR PROGRAMMING LANGUAGES, (U)
JAN 64 20P WATTENBURG,W. H.
REPT. NO. ERL-64-45
CONTRACT: AF AFOSR139 63 ,AF AFOSR139 64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPILERS), (*COMPILERS, PROGRAMMING LANGUAGES), PROGRAMMING (COMPUTERS), AUTOMATION, MATHEMATICAL ANALYSIS, AUTOMATION (U)
IDENTIFIERS: NELIAC PROGRAM, FORTRAN PROGRAM, IBM-7090, UNCOL LANGUAGE, REMINGTON RAND M460, CDC-3600 COMPUTER (U)

FORMAL PROCEDURES ARE SUMMARIZED FOR CONSTRUCTING TRANSLATORS WHEREBY A COMPUTER IS USED TO GENERATE SUBSTANTIAL PORTIONS OF THE TRANSLATORS, THE LATTER BEING TERMED SYMBOLIC MACHINE LANGUAGE ASSEMBLERS, MACRO EXPANDERS, OR COMPILERS. THE TRANSLATORS ALL PERFORM THE TASK OF TRANSLATING PROGRAMS WRITTEN IN ONE LANGUAGE INTO EQUIVALENT PROGRAMS WRITTEN IN ANOTHER. BASIC BOOTSTRAP PROCEDURE: THE FIRST TRANSLATORS WERE WRITTEN IN AN AVAILABLE MACHINE LANGUAGE AND WERE MOSTLY SYMBOLIC MACHINE LANGUAGE TRANSLATORS (ASSEMBLERS). APPLICATION OF THE 'BOOTSTRAP' PROCEDURE WAS THE WRITING IN SYMBOLIC LANGUAGE, INCLUDING THE TRANSLATOR ITSELF, OF PROGRAMS, ONCE A SYMBOLIC MACHINE LANGUAGE TRANSLATOR BECAME AVAILABLE FOR A PARTICULAR MACHINE. THE BOOTSTRAP PROCEDURE HAS THE PROPERTY THAT EACH TRANSLATOR CAN TRANSLATE ITS OWN DESCRIPTION INTO ITSELF SINCE IT IS DESCRIBED BY A LANGUAGE WHICH IS A SUBSET OF THE LANGUAGE IT TRANSLATES. THE NELIAC, COMPILER FOR THE REMINGTON RAND M460 IS A 'SELFCOMPILING COMPILER'. MULTIPLE BOOTSTRAP PROCEDURES: THESE PROCEDURES INVOLVE TRANSLATORS PRODUCING OBJECT PROGRAMS FOR MACHINES OTHER THAN THE MACHINE THAT PERFORMED THE TRANSLATION. AS AN EXAMPLE OF THE USE OF AN INTERMEDIATE LANGUAGE AND MULTIPLE BOOTSTRAP PROCEDURE, THERE IS CITED THE TRANSLATOR CONSTRUCTED FOR THE FORTRAN LANGUAGE AND THE IBM-7090 AND CDC-3600 COMPUTERS BY MENDICINO, STORCH, AND SUTHERLAND AT THE LAWRENCE RADIATION LAB. OF THE UNIVERSITY OF CALIFORNIA. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-610 817
INFORMATICS INC SHERMAN OAKS CALIF
EXECUTIVE CONTROL PROGRAM (ECP-1A). (U)
DESCRIPTIVE NOTE: FINAL REPT. FOR FEB-SEP 64.
JAN 65 272P
CONTRACT: AF30 602 3045
PROJ: 5581
TASK: 558102
MONITOR: RADC , TDR64 460

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*AIR FORCE RESEARCH, COMPUTERS), (*COMPUTERS, MULTIPLE OPERATION), (*AIR FORCE SYSTEMS COMMAND, COMPUTERS), DATA PROCESSING SYSTEMS, PROGRAMMING (COMPUTERS), ELECTRONIC SWITCHES, NETWORKS, MAGNETIC TAPE, INPUT-OUTPUT DEVICES, COMPUTER STORAGE DEVICES (U)
IDENTIFIERS: MAN-MACHINE SYSTEMS, COMPUTER CONSOLES, ALPHABET, CDC-160-A COMPUTER, CHARACTER SETS, BUNKER-RAMO CM-400 COMPUTER (U)

THE FIRST PHASE OF THE EXECUTIVE CONTROL PROGRAM (ECP-1A) DEVELOPED FOR THE EXPERIMENTAL COMPUTING COMPLEX AT RADC IS DESCRIBED. THE EXPERIMENTAL COMPUTER COMPLEX CONSISTS OF SUCH THINGS AS MULTIPLE USER CONSOLES, MULTI-PROGRAMMING IN ONE COMPUTER, MULTI-COMPUTERS, AND A VARIETY OF PERIPHERAL EQUIPMENT FROM DIFFERENT MANUFACTURERS, ALL INTERCONNECTED THROUGH AN ELECTRONIC SWITCHING NETWORK. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-610 824
RAND CORP SANTA MONICA CALIF
WHAT IS DETAB-X. (U)
DESCRIPTIVE NOTE: MEMORANDUM,
OCT 62 27P POLLACK,SOLOMON L. ;
REPT. NO. P-2608-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE GUIDE MEETING OF THE CODASYL DEVELOPMENT COMMITTEE IN PHILADELPHIA, PA., 1-2 NOV 62.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, FEASIBILITY STUDIES), DECISION THEORY, CONTROL SEQUENCES, PROGRAMMING (COMPUTERS), DATA PROCESSING SYSTEMS, COMMERCE (U)
IDENTIFIERS: DETAB-X (DECISION-TABLES, EXPERIMENTAL), COBOL (U)

THE AIR FORCE, LIKE MANY OTHER LARGE USERS OF COMPUTERS, CONTINUALLY SEEKS TO REDUCE ITS COMPUTER PROGRAMMING STAFFS, COSTS, AND TIME-LAGS. TOWARD THIS END, IT HAS BEEN EXPLORING THE USE OF COMPUTER-INDEPENDENT LANGUAGES FOR DESCRIBING ITS PROBLEMS. THIS MEMORANDUM DESCRIBES ONE OF THE LATEST OF THESE LANGUAGES, DETAB-X (DECISIONTABLES, EXPERIMENTAL). IN AN EFFORT TO ILLUSTRATE SOME OF THE FEATURES OF DETAB-X IT IS COMPARED WITH COBOL-61 (COMMON BUSINESS-ORIENTED LANGUAGE), USING EXAMPLES OF DATA AND PROCEDURES WRITTEN IN BOTH LANGUAGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-611 827
GENERAL ELECTRIC CO SANTA BARBARA CALIF TECHNICAL MILITARY PLANNING OPERATION
LAP-LIST ASSEMBLY PROGRAMMING SYSTEM. (U)
DESCRIPTIVE NOTE: RESEARCH MEMO.,
JUN 64 77P GWYNN,JOHN W. I
REPT. NO. RM64TMP-13

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, PROGRAMMING (COMPUTERS)), (*PROGRAMMING (COMPUTERS), PROGRAMMING LANGUAGES), COMPUTERS, DATA PROCESSING SYSTEMS, COMPUTER STORAGE DEVICES (U)
IDENTIFIERS: LIST PROCESSING, LAP (LIST ASSEMBLY PROGRAM) (U)

LAP CONSISTS OF FOUR FUNCTIONAL PACKAGES WHICH ARE COMPUTER PROGRAMS THAT RUN ON THE COMPUTER TO ALLOW EXECUTION OF PROGRAMS WRITTEN IN THE LAP LANGUAGE. FIRST, THE LAP ASSEMBLY PROGRAM WILL PROCESS A SOURCE PROGRAM TO PRODUCE AN OBJECT PROGRAM FOR A NONEXISTENT LIST-PROCESSING MACHINE. SECOND, THE LAP PROCESSOR SIMULATES THE MISSING HARDWARE AND ALLOWS THE PROGRAM TO BE EXECUTED ON THE EXISTING COMPUTER. THIRD, THE MACHINE LANGUAGE ASSEMBLY PROGRAM ASSEMBLES THOSE SUBPROGRAMS WRITTEN IN THE LANGUAGE OF THE EXISTING HARDWARE. FOURTH, THE LAP CONTROLLING TAPE SYSTEM IS THE OVERALL 'MASTER CONTROL' TO THE OTHER FUNCTIONS. THE SYSTEM IS CAPABLE OF EXECUTIVE CONTROL OVER A PROGRAM CONSISTING OF LIST MANIPULATIVE MACRO-INSTRUCTIONS AND PERHAPS SOME SUBPROGRAMS CONSISTING OF MACHINE LANGUAGE INSTRUCTIONS. THESE FOUR FUNCTIONAL, RELATED PIECES OF THE LAP SYSTEM 'MARRY' THE LANGUAGE TO THE COMPUTER PRODUCING A 'LAP MACHINE'. THIS MACHINE IS READY TO AID THE RESEARCHER IN HIS WORK. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-611 841
RAND CORP SANTA MONICA CALIF
LIPL: LINEAR INFORMATION PROCESSING LANGUAGE, (U)
FEB 65 69P DUPCHAK,ROBERT J
REPT. NO. RM-4320-PR
CONTRACT: AF49 638 700

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SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF REQUESTED BY USERS OF DDC. A COPY IS AVAILABLE FOR PUBLIC SALE.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, CONTROL SEQUENCES), (*DATA PROCESSING SYSTEMS, PROGRAMMING LANGUAGES), COMPILERS, LINEAR SYSTEMS (U)
IDENTIFIERS: LIPL (LINEAR INFORMATION PROCESSING LANGUAGE) (U)

THIS MEMORANDUM IS A SUPPLEMENT TO THE 'INFORMATION PROCESSING LANGUAGE-V MANUAL,' DETAILING A NEW ALTERNATE FORMAT IN WHICH (INFORMATION PROCESSING LANGUAGE) ROUTINES AND DATA CAN BE REPRESENTED. SPECIFICALLY, LIPL (LINEAR IPL) IS A HORIZONTAL, LINEAR, PARENTHESIS FORMAT. THIS MEMORANDUM ALSO DESCRIBES A NEW IPL BASIC PROCESS, J164, FOR IN-PROCESS LOADING OF LIPL ROUTINES AND DATA. J164 HAS BEEN CODED AS AN IPL ROUTINE, AND, THEREFORE, CAN BE USED ON ANY IPL COMPUTER. A DESCRIPTION AND LISTING OF THIS ROUTINE IS INCLUDED; CARD OR TAPE COPIES OF THE ROUTINE CAN BE OBTAINED BY WRITING THE RAND CORPORATION. THE USE OF LIPL IS DETAILED IN THE INTRODUCTION, WHICH IS FOLLOWED BY A REFERENCE SECTION ARRANGED FOR QUICK LOOKUP OF INFORMATION OF THE LIPL USER. SECTION III DESCRIBES THE IPL-CODED, IN-PROCESS LIPL LOADER, J164; THE APPENDIX GIVES A COMPLETE LISTING OF THIS ROUTINE. SECTION III AND THE APPENDIX ARE INCLUDED SOLELY FOR THE USE OF THE SYSTEMS PROGRAMMER RESPONSIBLE FOR INCORPORATING LIPL INTO A PARTICULAR OBJECT MACHINE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-613 002
RAND CORP SANTA MONICA CALIF
USE OF HYBRID COMPUTING IN DESIGN AUTOMATION, (U)
MAR 68 23P ROWE,A. J. IBROCK,P. I
REPT. NO. P-3086

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DRAFTING, AUTOMATION), (*DESIGN, AUTOMATION), (*ANALOG-DIGITAL COMPUTERS, DRAFTING), DATA PROCESSING SYSTEMS, DISPLAY SYSTEMS, PRODUCTION, MECHANICAL DRAWINGS, ENGINEERING, PROGRAMMING (COMPUTERS), PROGRAMMING LANGUAGES, INFORMATION RETRIEVAL (U)

A NUMBER OF COMPUTER DEVICES, NOW AVAILABLE FOR ASSISTANCE IN ENGINEERING AND DRAFTING ARE DISCUSSED. CONSIDERATION IS GIVEN TO PROGRAMMING LANGUAGE REQUIREMENTS. OTHER ASPECTS OF THE PROBLEM INCLUDE QUESTIONS OF INFORMATION STORAGE AND RETRIEVAL, NUMERICAL MACHINE CONTROLS, AND MORE EFFICIENT COMPUTATIONAL METHODS FOR DESIGN, INCLUDING SIMULATION AND HEURISTIC TECHNIQUES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-614 782
RAND CORP SANTA MONICA CALIF
AN EXPERIMENTAL SYNTAX-DIRECTED DATA STRUCTURE LANGUAGE. (U)
APR 65 91P LINDSAY,ROBERT K. ;
PRATT,TERRENCE W. ;SHAVOR,KENNETH M. ;
REPT. NO. P-3112

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH TEXAS UNIV., AUSTIN. GRANT NSF GU493.

DESCRIPTORS: (*COMPILERS, PROGRAMMING LANGUAGES), (*PROGRAMMING LANGUAGES, COMPILERS;, DATA STORAGE SYSTEMS, ARTIFICIAL INTELLIGENCE, WORD ASSOCIATION, PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: AMOS (ASSOCIATIVE MEMORY ORGANIZING SYSTEM) (U)

PROGRAMMERS DEVELOPING SYSTEMS OF THE COMPLEXITY REQUIRED IN ARTIFICIAL INTELLIGENCE RESEARCH ARE FREQUENTLY HINDERED BY THE RIGID PROGRAMMING LANGUAGES AVAILABLE AND THE TIME-CONSUMING TASK OF IMPLEMENTING NEW LANGUAGES. AMOS (FOR ASSOCIATIVE MEMORY ORGANIZING SYSTEM) PROVIDES A FLEXIBLE MEANS TO STRUCTURE DATA AND EXPERIMENT WITH THE SYNTACTIC FORMS OF PROGRAM STATEMENTS WHILE LESSENING THE IMPLEMENTATION BOTTLENECK. AMOS IS A SYNTAX-DIRECTED COMPILER USED TO DEFINE LANGUAGES FOR CONSTRUCTING A VARIETY OF DATA ORGANIZATIONS OF WHICH FORTRAN-LIKE ARRAYS AND IPL-LIKE LIST STRUCTUES ARE SPECIAL CASES. THIS RESEARCH EXPLORES THE USE OF SYNTACTIC DESCRIPTIONS WHICH ARE NOT BACKUS NORMAL FORM GRAMMARS AND PROVIDES MEANS FOR DEFINING TWO-DIMENSIONAL LANGUAGES AS WELL AS THE USUAL LINEAR TYPE. IN ORDER TO FACILITATE IMPLEMENTATION, THE SYSTEM MAY BE CONVENIENTLY IMBEDDED IN ANY MONITOR SYSTEM OF COMMON DESIGN; AMOS OPERATIONS ARE MANIPULATIONS WITHIN HIGH-SPEED STORAGE ONLY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-614 794
DUKE UNIV DURHAM N C
THE DUKE ALGOL COMPILER AND SYNTACTIC ROUTINE METHOD FOR SYNTAX RECOGNITION. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
APR 65 34P GALLIE,THOMAS M. ,JR.;
CONTRACT: AF AFOSR62 169
MONITOR: AFOSP , 65-0719

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, PROGRAMMING LANGUAGES), (*PROGRAMMING LANGUAGES, COMPILERS), (*MACHINE TRANSLATION, PROGRAMMING LANGUAGES), DATA PROCESSING SYSTEMS, DIGITAL COMPUTERS, PROGRAMMING (COMPUTERS), LANGUAGES, PATTERN RECOGNITION, DECISION THEORY (U)
IDENTIFIERS: SYNTAX, ALGOL, STRINGS (LINGUISTICS) (U)

THE DEVELOPMENT OF THE MOST IMPORTANT IDEAS ABOUT RECOGNITION AND ANALYSIS OF SYNTAX WITHIN MECHANICAL LANGUAGES IS DISCUSSED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-613 203
RAND CORP SANTA MONICA CALIF
SIMULATION PROGRAMMING AND ANALYSIS OF RESULTS. (U)
MAY 65 9P GINSBERG,ALLEN S. I
REPT. NO. P-3141

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: FOR PRESENTATION AT THE SIMULATION PANEL OF THE DEPARTMENT OF DEFENSE LOGISTICS CONFERENCE TO BE HELD AT WARRENTON, VA., 26-28 MAY 65.

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), SIMULATION), (*PROGRAMMING LANGUAGES, SIMULATION), STOCHASTIC PROCESSES, SERIES (U)
IDENTIFIERS: SIMSCRIPT, TIME SERIES ANALYSIS, SPECTRAL ANALYSIS (U)

TECHNIQUES ARE DISCUSSED THAT HAVE ARISEN FOR SIMPLIFYING AND SPEEDING DEVELOPMENT OF DIGITAL SIMULATION AND FOR INCREASING THE MEANINGFULNESS OF THEIR RESULTS. SIMULATION PROGRAMMING: OF PROGRAMMING LANGUAGES FOR A SIMULATION MODEL, THE GENERAL PURPOSE SYSTEMS SIMULATOR II (IBM CP DIV., B20-6946, 1963) SHOULD BE USED IF IT IS ADAPTABLE AND IF MEMORY LIMITATIONS AND RUNNING TIME ARE NOT EXCESSIVE: OTHERWISE SIMSCRIPT (B. H. MARKOWITZ AND H. KARR, 'SIMSCRIPT: A SIMULATION PROGRAMMING LANGUAGE,' ENGLEWOOD CLIFFS, N. J., PRENTICE HALL, APRIL 1963) OR OTHER LANGUAGES SHOULD BE USED. THE METHOD OF GINSBERG, MARKOWITZ, AND OLDFATHER (AD-613 976) FOR PROGRAMMING BY QUESTIONNAIRE ELIMINATES THE NEED FOR LEARNING A FORMAL SIMULATION LANGUAGE AND REDUCES THE TIME FOR OBTAINING A PROGRAM TO A MATTER OF DAYS OR HOURS. ANALYSIS OF RESULTS: THE COMPLICATION OF THE VARIABILITY OF SIMULATION RESULTS HAS BEEN APPROACHED BY CONWAY (AD-287 927) REGARDING THE TIME SERIES ASPECT AND BY FISHMAN AND KIVIAT (AD-612 281) REGARDING SPECTRAL ANALYSIS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-619 660
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ALGORITHMIC LANGUAGES PROJECT. (U)
DESCRIPTIVE NOTE: FINAL REPT. FOR 1 JUN 62-15 AUG 64;
FEB 65 12P GINSBURG,SEYMOUR I
REPT. NO. TM-738/012/00
CONTRACT: AF19 628 485
PROJ: 5632
TASK: 563208
MONITOR: AFCRL , 65-169

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-284 389.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, THEORY), MATHEMATICAL MODELS, MATHEMATICAL LOGIC, DATA PROCESSING SYSTEMS, LANGUAGE, SEQUENCES, SET THEORY, MAPPING (TRANSFORMATIONS) (U)
IDENTIFIERS: COBOL, JOVIAL, ALGOL, WORDS, GRAMMAR, COMPUTATIONAL LINGUISTICS (U)

REPORTS THAT THE PURPOSE OF THIS ALGORITHMIC LANGUAGES PROJECT WAS TO ACCOMPLISH THE FOLLOWING: 1) CONDUCT RESEARCH DESIGNED TO DEVELOP A THEORY FOR ALGORITHMIC (PROGRAMMING) LANGUAGES, 2) DEVELOP SUITABLE MATHEMATICAL MODELS OF CURRENTLY USED MATHEMATICAL LANGUAGES SUCH AS ALGOL, COBOL, AND JOVIAL, AND, 3) USE THE MATHEMATICAL MODELS TO ANSWER QUESTIONS OF INTEREST ABOUT THESE LANGUAGES. REVIEWS AND SUMMARIZES FINDINGS PRESENTED IN PREVIOUS VOLUMES IN THIS SERIES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-619 744
WISCONSIN UNIV MADISON MATHEMATICS RESEARCH CENTER
AN ARSENAL OF ALGOL PROCEDURES FOR THE EVALUATION OF CONTINUED FRACTIONS AND FOR EFFECTING THE EPSILON ALGORITHM. (U)
JAN 65 99P WYNN,P. I
REPT. NO. MRC-TSR-537
CONTRACT: DA11 022ORD2059

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CONTINUED FRACTIONS, PROGRAMMING (COMPUTERS)), (*PROGRAMMING LANGUAGES, CONTINUED FRACTIONS), TRANSFORMATIONS (MATHEMATICS), SERIES, SEQUENCES, SPECIAL FUNCTIONS (MATHEMATICAL) (U)
IDENTIFIERS: ALGOL, EPSILON ALGORITHM (U)

AN INTEGRATED SYSTEM OF ALGOL PROCEDURES FOR THE EVALUATION OF CONTINUED FRACTIONS WITH REAL COEFFICIENTS AND FOR THE TRANSFORMATION OF SLOWLY CONVERGENT SEQUENCES BY MEANS OF THE EPSILON-ALGORITHM IS GIVEN. USE OF THE PROCEDURES IS ILLUSTRATED BY THE COMPUTATION OF A NUMBER OF CLASSICAL FUNCTIONS OF MATHEMATICAL PHYSICS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-619 769
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
TEXTIR: A NATURAL LANGUAGE INFORMATION RETRIEVAL SYSTEM. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
MAY 65 37P FARELL,JULES I
REPT. NO. TM-2392

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-619 720.

DESCRIPTORS: (*INFORMATION RETRIEVAL, PROGRAMMING(COMPUTERS)), (*PROGRAMMING(COMPUTERS), INFORMATION RETRIEVAL), (*CRIMINOLOGY, INFORMATIONAL RETRIEVAL), LANGUAGE, POLICE, SUBJECT INDEXING, TELETYPE SYSTEMS, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: TEXTIR COMPUTER PROGRAM, INDX COMPUTER PROGRAM, FIND COMPUTER PROGRAM, TIME SHARING(COMPUTERS), SYNTHEX, ENGLISH LANGUAGE (U)

A SET OF PROGRAMS CALLED TEXTIR HAS BEEN DEVELOPED AS PART OF A JOINT LOS ANGELES POLICE DEPARTMENT AND SYSTEM DEVELOPMENT CORPORATION EXPERIMENT AND STUDY CONCERNING THE COMPUTER RETRIEVAL OF CRIME DATA IN NATURAL ENGLISH LANGUAGE. TEXTIR AUTOMATICALLY INDEXES TEXTUAL DATA AND RESPONDS TO NATURAL LANGUAGE QUERIES OF THE INDEXED TEXT. THIS REPORT DESCRIBES THE TEXTIR PROGRAMS AND PROVIDES PRELIMINARY RESULTS ON THE USE OF TEXTIR ON CRIME DATA. ITS POTENTIAL USE FOR HANDLING INFORMATION OTHER THAN CRIME DATA IS ALSO SUGGESTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-616 730
NAVAL MISSILE CENTER POINT MUGU CALIF
FORTRAN PROGRAM FOR PLOTTING TWO-DIMENSIONAL GRAPHS, (U)
JUN 65 18P WEST,R. G. REYNOLDS,J. R. I
REPT. NO. NMC-TM-65-21
TASK: R3401:0003A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF REQUESTED BY USERS OF DDC. COPY IS AVAILABLE FOR PUBLIC SALE.

DESCRIPTORS: (*GRAPHICS, PROGRAMMING(COMPUTERS)), (*PROGRAMMING(COMPUTERS), GRAPHICS), (*PROGRAMMING LANGUAGES, GRAPHICS) (U)
IDENTIFIERS: FORTRAN IV LANGUAGE, FORTRAN, LOOK PROGRAMMING LAUGUAGE, MAP PROGRAMMING LANGUAGE (U)

A COMPUTER PROGRAM IN FORTRAN IV LANGUAGE ENABLES USERS TO PLOT TWO-DIMENSIONAL GRAPHS WITH THE STANDARD OUTPUT PRINTER DURING THE EXECUTION PHASE OF ANY FORTRAN IV OR MAP (MACHINE LANGUAGE) MAIN PROGRAM. THIS FORTRAN PROGRAM CONSISTS OF THREE SUBROUTINES, GRAPH, PACK, AND PLACE; AND ONE THAT IS OPTIONAL, SELECT. SUBROUTINE GRAPH INCORPORATES PACK AND PLACE, WHICH ARE MAP SUBROUTINES. THESE TWO MAP SUBROUTINES CONSERVE COMPUTER STORAGE AND TIME REQUIRED TO PRINT THE OUTPUT OF THE PROGRAM. SUBROUTINE SELECT IS USED TO DEFINE THE BEGINNING AND END POINTS OF THE GRAPH SCALE. IF SELECT IS NOT USED, THE MINIMUM AND MAXIMUM SCALE VALUES FOR THE AXES MUST BE DEFINED IN THE MAIN PROGRAM. THE FOUR SUBROUTINES ARE FULLY DESCRIBED, AND THE COMPUTER LISTINGS FOR THEM ARE GIVEN. USE OF THE ABOVE SUBROUTINES IN A MAIN PROGRAM IS DEMONSTRATED WITH A SAMPLE MAIN PROGRAM, CALLED LOOK, AS A GUIDE FOR INCORPORATING THE SUBROUTINES IN ANY MAIN PROGRAM. SAMPLE GRAPHS FOR LOOK ARE SHOWN AS PRINTED BY THE COMPUTER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-617 244
MITRE CORP BEDFORD MASS
PAT, A LANGUAGE FOR PROGRAMMING AND MANCOMPUTER COMMUNICATION. (U)
JUN 65 38P SILVER,R. ;WELLS,C. ;
REPT. NO. M-07191
CONTRACT: AF19 628 2390
PROJ: 906
MONITOR: ESD ; TDR-64-626

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), PROGRAMMING LANGUAGES), (*PROGRAMMING LANGUAGES, PROGRAMMING(COMPUTERS)), COMPILERS, CONTROL SEQUENCES, COMMUNICATION THEORY (U,
IDENTIFIERS: PAT, MAN - MACHINE COMMUNICATIONS (U)

PAT IS A COMPUTER LANGUAGE OF THE MACRO-ASSEMBLY TYPE. THE PROGRAM, WHICH TRANSLATES PAT INTO COMPUTER CODE, IS DESIGNED TO BE USED NOT ONLY AS A COMPILER OF PROGRAMS, BUT AS A SYMBOLIC INTERFACE BETWEEN A USER AND A COMPUTER. IN THIS LATTER CAPACITY, IT CAN SERVE TO INTERPRET COMMANDS AND ACCEPT COMMAND DEFINITIONS FOR SUCH PROGRAMS AS A TEXT EDITOR, ON-LINE DEBUGGER, OR SIMULATED DESK CALCULATOR. THE LANGUAGE AND THE TRANSLATOR HAVE BEEN DESIGNED TO ALLOW THE STRUCTURE OF THE TRANSLATOR ITSELF TO BE MODIFIED BY CERTAIN DEFINITIONS ENCOUNTERED DURING THE TRANSLATION PROCESS. THE RULES FOR DEFINING SYMBOLS AND REFERRING TO THEM HAVE BEEN ORGANIZED TO FACILITATE COMBINING INDEPENDENTLY WRITTEN PROGRAMS INTO A SINGLE UNIT. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-618 880
ARMY ELECTRONICS COMMAND FORT MONMOUTH N J
THE COBOL COMPILER: OPTIMIZING MILITARY COMPUTER OPERATION. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 65 22P TAUPEKA,NORMAN J. I
REPT. NO. ECOM-2886
PROJ: 1X6 406090494
TASK: 1X6 406090494 09;1X6 406090494 09 02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•COMPILERS, ARMY EQUIPMENT), (•COMPUTERS, ARMED FORCES SUPPLIES), PROGRAMMING LANGUAGES, PROGRAMMING:COMPUTERS;, DIGITAL COMPUTERS, OPTIMIZATION, MAGNETIC TAPE, ERRORS, MOBILE, COMPUTER STORAGE DEVICES, LOGISTICS (U)
IDENTIFIERS: MOBIDIC, COBOL, VERBS (U)

THIS REPORT PRESENTS IN BASIC ENGINEERING TERMINOLOGY A DESCRIPTION OF THE RECENT DEVELOPMENT OF A COBOL COMPILER FOR USE WITH THE U. S. ARMY'S MILITARIZED MOBIDIC (MOBILE DIGITAL COMPUTER). THE PROCESS OF COMPILER TRANSLATION AND COMPILATION OF AN ENGLISH LANGUAGE TYPE SOURCE PROGRAM INTO AN OBJECT PROGRAM IS DISCUSSED. THE MAJOR BENEFITS DERIVED FROM THE USE OF THE COBOL COMPILER ARE EXPLAINED, I.E., (1) DOCUMENTATION, (2) MINIMIZATION OF TRAINING, AND (3) ALL REDUCTION IN PROGRAMMING TIME. DEVELOPMENT PROBLEMS AND THEIR SOLUTIONS ARE DISCUSSED. THE REASON, LOCATION, AND TREATMENT OF COMPILATION ERRORS ARE PROVIDED. DURING ACCEPTANCE TEST, THE COMPILER WAS FIRST EVALUATED BY UTILIZING DIAGNOSTIC TYPE PROGRAMS, THEN TYPICAL APPLICATION DATA PROCESSING PROGRAMS WERE COMPUYED AND EVALUATED. A RECAPITULATION IS PROVIDED WHICH EMPHASIZES THE MAIN BENEFITS ACHIEVED BY THE U. S. ARMY THUS FAR IN OPTIMIZING THEIR MILITARY COMPUTER OPERATION. THE CONCLUSION SUMMARIZES THE REPORT AND PROJECTS FURTHER LOGISTIC APPLICATIONS OF THE COBOL COMPILER AT OTHER INSTALLATIONS, AND APPLICATIONS INTO OTHER PHASES OF THE CCIS-70 PROGRAM SUCH AS PERSONNEL AND ADMINISTRATION AND INTELLIGENCE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-629 736 9/2 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
TEXTIR: A USERS' MANUAL. (U)
OCT 65 19P FARELL,JULES I
REPT. NO. TM-2392/001/00

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-619 769.

DESCRIPTORS: (•INFORMATION RETRIEVAL, PROGRAMMING(COMPUTERS)), (•PROGRAMMING(COMPUTERS), INFORMATION RETRIEVAL), INSTRUCTION MANUALS, LANGUAGE, PROGRAMMING LANGUAGES, ENGLISH LANGUAGE (U)
IDENTIFIERS: TEXTIR COMPUTER PROGRAM, AN/FSQ-32, SYNTHEX (U)

THIS DOCUMENT DESCRIBES THE OPERATION OF TEXTIR, A NATURAL LANGUAGE TEXT INDEXING AND RETRIEVAL SYSTEM, ON THE SDC-ARPA TIME-SHARING SYSTEM USING THE Q-32. IT LISTS THE STEP-BY-STEP PROCESSES NECESSARY TO INDEX A PRESTORED TEXT AND THEN QUERY THE RESULTING ORGANIZED DATA BASE USING NATURAL LANGUAGE QUSTIONS, AND PROVIDES AN APPENDIX GIVING THE SYNTHEX KEYPUNCH RULES. (AUTHOR)
(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-623 771 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SELF-INSTRUCTIONAL JOVIAL MANUAL: CHAPTERS 1, 2, 3 AND 4. (U)
DESCRIPTIVE NOTE: PROFESSIONAL PAPER,
OCT 65 50P CUTLER,DONALD J.;
REPT. NO. SP-2214/000/00

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), PUNCHED CARDS (U)
IDENTIFIERS: JOVIAL (U)

PRESENTS A MANUAL FOR JOVIAL PROGRAMMING LANGUAGE TRAINING WHICH DOES NOT REQUIRE ANY PREVIOUS PROGRAMMING KNOWLEDGE ON THE PART OF THE STUDENT. THIS ARRANGEMENT PRESENTS THE ADVANTAGES OF SENSITIVITY TO INDIVIDUAL LEARNING ABILITIES, AND INDEPENDENCE FROM A FORMAL CLASS. EACH CHAPTER CONTAINS REVIEW EXERCISES FOLLOWED BY THE ANSWERS TO THE QUESTIONS PRESENTED IN THE EXERCISES. CHAPTER I IS AN INTRODUCTION TO JOVIAL, CHAPTER II DESCRIBES ITEMS, THE ASSIGNMENT STATEMENT AND THE FOUR BASIC ARITHMETIC OPERATIONS OF JOVIAL. CHAPTER III PRESENTS JOVIAL CODING FORMATS AND A REPRESENTATION OF HOLLERITH INFORMATION ON PUNCHED CARDS. CHAPTER IV DISCUSSES THE 'IF' AND 'GOTO' STATEMENTS, STATEMENT LABELS AND COMPOUND STATEMENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-623 804 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP PRIMER: A SELF-TUTOR FOR Q-32 LISP 1.5. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JUN 65 152P WEISSMAN,CLARK I
REPT. NO. TM-2337/010/00
CONTRACT: SD-97

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS) (U)
IDENTIFIERS: LISP, AN/FSQ-32, ON-LINE SYSTEMS (U)

THE DOCUMENT IS A SELF-TUTOR FOR LISP 1.5 PROGRAMMING, PARTICULARLY FOR ON-LINE Q-32 LISP 1.5. MATERIAL IS ORGANIZED INTO CHAPTERS THAT, BY DISCUSSION AND EXAMPLE, PROGRESSIVELY EXPAND THE STUDENT'S UNDERSTANDING OF THE LANGUAGE AND ABILITY TO WRITE PROGRAMS IN THE LANGUAGE. A CAREFULLY SELECTED AND GRADUATED SET OF EXERCISES FOR USE ON-LINE IS PROVIDED AS AN INTEGRAL PART OF EACH CHAPTER. COMPUTER-CHECKED ANSWERS FOR EACH EXERCISE ARE ALSO PROVIDED AS A SEPARATE APPENDIX. THE DOCUMENT IS NOT AN EXHAUSTIVE TREATISE ON LISP 1.5, BUT, RATHER, A PRACTICAL PRIMER THAT PROVIDES THE SERIOUS STUDENT WITH A SOLID FOUNDATION FOR UNDERSTANDING THE PROGRAMMING LANGUAGE AND SYSTEM. HE MAY THEN EASILY SUPPLEMENT HIS KNOWLEDGE FROM OTHER SOURCES. (AUTHOR) (U)

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-624 940 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ALGORITHMIC LANGUAGES PROJECT. (U)
DESCRIPTIVE NOTE: FINAL REPT. 12 OCT 64-30 JUN 65,
SEP 65 11P GINSBURG,SEYMOUR I
REPT. NO. TM-738/017/00
CONTRACT: AF19(628) 3418
PROJ: AF-5632
TASK: 563203
MONITOR: AFCRL , 65-797

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-613 290, AD-614 079, AD-618 937, AD-624 938.

DESCRIPTORS: (•PROGRAMMING LANGUAGES, THEORY), MATHEMATICAL LOGIC, SET THEORY, ALGEBRA, LANGUAGE, AUTOMATA, TRANSDUCERS, MATHEMATICAL MODELS, LINEAR SYSTEMS, COMPUTER STORAGE DEVICES, CONTEXT FREE GRAMMARS, ALGORITHMS (U)
IDENTIFIERS: PUSHDOWN STORAGE (U)

THE PURPOSE OF THIS INVESTIGATION WAS TO ACCOMPLISH THE FOLLOWING: (1) CONDUCT RESEARCH DESIGNED TO DEVELOP A THEORY FOR ALGORITHMIC (PROGRAMMING) LANGUAGES. (2) DEVELOP SUITABLE MATHEMATICAL MODELS OF CURRENTLY USED MATHEMATICAL LANGUAGES SUCH AS ALGOL, COBOL, AND JOVIAL. (3) USE THE MATHEMATICAL MODELS TO ANSWER QUESTIONS OF INTEREST ABOUT THESE LANGUAGES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-625 003 9/2 5/1
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
THEORY, PRACTICE, AND TREND IN BUSINESS
PROGRAMMING. (U)
DESCRIPTIVE NOTE: PROFESSIONAL PAPER,
JUL 65 23P SHAW,CHRISTOPHER J. ;
REPT. NO. SP-2030/001/02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMMERCE),
(*PROGRAMMING(COMPUTERS), COMMERCE), THEORY,
STATE-OF-THE-ART REVIEWS, DATA PROCESSING
LANGUAGES (U)
IDENTIFIERS: TIME SHARING(COMPUTERS), ON-LINE
SYSTEMS,FILE STRUCTURES, COLINGO, LUCID LANGUAGE (U)

SURVEYS SOME WORK DONE IN THE LAST FEW YEARS IN THE UNITED STATES, BOTH PRACTICAL AND THEORETICAL IN NATURE, LIKELY TO HAVE AN IMPACT ON PROGRAMMING PRACTICES FOR COMMERCIAL AND ADMINISTRATIVE PROBLEMS. TOPICS INCLUDE: NONPROCEDURAL LANGUAGES, WHICH EMPHASIZE PROBLEM STATEMENT RATHER THAN PROBLEM-SOLVING PROCEDURES; GENERALIZED FILE PROCESSING SYSTEMS, WHICH ENABLE PROGRAM TO BE DESCRIBED IN TERMS OF FILES AND REPORTS AND SMALL SETS OF RELATIVELY POWERFUL FILEKEEPING OPERATIONS; USERORIENTED; ON-LINE SYSTEMS THAT ALLOW THE NONPROGRAMMER, SITTING AT A LOCAL OR REMOTE TERMINAL, TO RETRIEVE AND PROCESS DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000388

AD-625 751 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SELF-INSTRUCTIONAL JOVIAL MANUAL. CHAPTERS 5 AND 6. (U)
DESCRIPTIVE NOTE: PROFESSIONAL PAPER,
DEC 65 47P CUTLER,DONALD I. &
REPT. NO. SP-2214/000/00A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-623 771.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTIONAL MANUALS) (U)
IDENTIFIERS: JOVIAL (U)

SELF-INSTRUCTIONAL JOVIAL MANUAL. CHAPTERS 5 AND 6.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-628 339 9/2 12/2
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING
KINGSTON FORTRAN II LIBRARY SUBPROGRAMS AS SIMULATION AIDS. (U)
DESCRIPTIVE NOTE: MASTER'S THESIS,
DEC 65 103P KAUFFMAN,RICHARD HENRY I
REPT. NO. GRE/MATH/65-6,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPILERS), (*COMPILERS, SIMULATION), MATHEMATICAL MODELS, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: THESES, FORTRAN (U)

THIS THESIS DEVELOPED SIX KINGSTON FORTRAN II LIBRARY SUBPROGRAMS FOR REDUCING THE AMOUNT OF TIME REQUIRED TO PROGRAM MATHEMATICAL SIMULATIONS WITH THE IBM 1620. DETAILED OPERATING INSTRUCTIONS ARE GIVEN FOR THE FOLLOWING SUBPROGRAMS: LEHMER RANDOM NUMBER GENERATOR, PROCESS POINT SIMULATIONS, STATISTICAL EVALUATIONS, INTEGRATION (SIMPSON'S RULE), BINOMIAL COEFFICIENT AND THE EVALUATION OF THE CUMULATIVE NORMAL DISTRIBUTIONS. THE THESIS ALSO DESCRIBES, IN DETAIL, THE OPERATING INSTRUCTIONS OF A METHOD DEVELOPED FOR BATCH EXECUTION OF KINGSTON FORTRAN II FOR THE IBM 1620. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-629 729 9/2
DEPARTMENT OF DEFENSE WASHINGTON D C
COBOL, EDITION 1965. (U)
65 212P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SPECIFICATIONS), HISTORY (U)
IDENTIFIERS: COBOL, PHILOSOPHY (U)

CONTENTS: HISTORY OF CODASYL COBOL DEVELOPMENT; PHILOSOPHY OF COBOL USE AS A PROGRAMMING LANGUAGE; TOTAL CODASYL COBOL LANGUAGE SPECIFICATIONS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-630 245 9/2 18/9
DAVID TAYLOR MODEL BASIN WASHINGTON D C APPLIED MATHEMATICS LAB
A LARC MASTER CONTROL ROUTINE (MCR4), (U)
JAN 66 56P KENADY,SARAH E. I
PROJ: S-R003-10-01,
MONITOR: DTMB , 2125

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DIGITAL COMPUTERS, PROGRAMMING(COMPUTERS)), (*PROGRAMMING(COMPUTERS), COMPILERS), (*COMPILERS, CONTROL SEQUENCES), DATA PROCESSING SYSTEMS, REACTOR OPERATIONS, FUEL BURN UP, NUCLEAR ENGINEERING (U)
IDENTIFIERS: UNIVAC-LARC, FLAME (U)

THIS REPORT DESCRIBES AS OPERATING SYSTEM DEVELOPED FOR CODE CHECKING, DATA PROCESSING, AND BATCH RUNNING OF UNIVAC-LARC ROUTINES. IT IS A GENERAL PURPOSE EXTENSION OF THE FLAME MASTER CONTROL SYSTEM DESCRIBED IN MODEL BASIN REPORT 1843 (AD-611 779). (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-630 282 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
TRANSLATION OF PROGRAMS FROM ALGOL-60 LANGUAGE INTO LANGUAGES OF ELECTRONIC COMPUTERS. EXPERIMENT OF USING TRANSLATOR TA-2, CHAPTER III, (U)
MAR 66 22P SOSIS,P. M. I
REPT. NO. FTD-TT-66-23,
MONITOR: TT , 66-60814

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF NONO. ALGORITMICHESKI YAZYK ALGO-60 I PRIMENENIE EGO V STROITELNOI MEKHANIKE, KIEV, 1965 P112-23.

DESCRIPTORS: (*COMPILERS, USSR), *PUNCHED CARDS, COMPUTER STORAGE DEVICES, PROGRAMMING LANGUAGES, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: ALCOL (U)

TRANSLATION OF PORTION OF RUSSIAN BOOK ON TRANSLATION FROM PROGRAMS IN ALGOL 60 TO MACHINE LANGUAGE.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-621 416 9/2
ASSISTANT SECRETARY OF DEFENSE (COMPTROLLER) WASHINGTON D C
COBOL: INITIAL SPECIFICATIONS FOR A COMMON BUSINESS ORIENTED LANGUAGE. (U)
APR 60 140P

UNCLASSIFIED REPORT
AVAILABILITY: HARD COPY AVAILABLE FROM SUPERINTENDENT OF DOCUMENTS, GPO, WASHINGTON, D. C. 20402.
SUPPLEMENTARY NOTE: REPORT TO CONFERENCE ON DATA SYSTEMS LANGUAGES BY ITS SHORT RANGE TASK FORCE, JANUARY 7-8, 1960.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SPECIFICATIONS), PROGRAMMING(COMPUTERS), DIGITAL COMPUTERS, COMMERCE (U)
IDENTIFIERS: COBOL (U)

CONTENTS: GENERAL DESCRIPTION OF COBOL; CHARACTERS AND WORDS; NOTATION USED IN VERB AND ENTRY FORMATS IN THE REPORT; PROCEDURE DIVISION; DATA DIVISION; ENVIRONMENT DIVISION; REFERENCE FORMAT; SPECIAL FEATURES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-631 961 9/2
RAND CORP SANTA MONICA CALIF
DEVELOPMENT OF NEW DIGITAL SIMULATION LANGUAGES, (U)
APR 66 22P KIVIAT,PHILIP J.
REPT. NO. P-3348.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SIMULATION), (*PROGRAMMING(COMPUTERS), SIMULATION) (U)
IDENTIFIERS: SIMSCRIPT (U)

THEORIES OF SIMULATION MODELLING AND PROGRAMMING ARE DISCUSSED, AND THE DESIGN AIMS AND A FEW OF THE LANGUAGE STATEMENTS OF SIMSCRIPT II, A SECOND GENERATION SIMULATION PROGRAMMING LANGUAGE, ARE DESCRIBED. THE PROBABLE FUTURE FOR SIMULATION LANGUAGES AND SIMULATION PROGRAMMING IS POSTULATED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-633 678 17/2 9/2 9/4
MASSACHUSETTS INST OF TECH CAMBRIDGE
OCAS - ON-LINE CRYPTANALYTIC AID SYSTEM. (U)
DESCRIPTIVE NOTE: MASTER'S THESIS,
MAY 66 53P EDWARDS,DANIEL JAMES J
REPT. NO. MAC-TR-27,
CONTRACT: NONR-4102(01),
PROJ: NR-048-189,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJECT MAC.

DESCRIPTORS: (*CRYPTOGRAPHY, *PROGRAMMING LANGUAGES), (*PROGRAMMING(COMPUTERS), CRYPTOGRAPHY), (*COMPUTERS, CRYPTOGRAPHY), INFORMATION THEORY, SECRET COMMUNICATION SYSTEMS, DATA PROCESSING SYSTEMS, REAL TIME, TELEVISION DISPLAY SYSTEMS (U)
IDENTIFIERS: OCAS (U)

DEFICIENCIES OF VARIOUS PROGRAMMING LANGUAGES FOR DEALING WITH QUANTITIES FREQUENTLY ENCOUNTERED IN CRYPTANALYSIS OF SIMPLE CIPHER SYSTEMS ARE DISCUSSED. A PROGRAMMING SYSTEM IS PROPOSED WHICH WILL PERMIT A CRYPTANALYST TO WRITE AND DEBUG PROGRAMS TO AID IN THE SOLUTION OF CRYPTOGRAMS OR CRYPTOGRAPHIC SYSTEMS. THE BASIC ELEMENTS OF THE PROPOSED PROGRAMMING SYSTEM ARE DISCUSSED IN DETAIL. THEY INCLUDE: (1) A PROGRAMMING LANGUAGE TO HANDLE BOTH ALGEBRAIC QUANTITIES AND CHARACTER STRINGS, (2) A DISPLAY GENERATOR TO PERMIT QUICK SPECIFICATION OF A DISPLAY FRAME CONTAINING BOTH ALPHANUMERIC STRINGS AND NUMERICAL DATA FOR AN ON-LINE CRT DISPLAY DEVICE, AND (3) AN ON-LINE PROGRAM TO CONTROL OPERATION OF THE SYSTEM AND AID IN DEBUGGING PROGRAMS WRITTEN IN THE PROPOSED LANGUAGE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-633 727 5/2
COLUMBIA UNIV NEW YORK DEPT OF ELECTRICAL ENGINEERING
STUDY OF A COMPUTER DIRECTLY IMPLEMENTING AN ALGEBRAIC LANGUAGE. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT., 1963-1965,
JAN 66 171P BASHKOW,THEODORE R. ;
SASSON,AZRA ;KRONFELD,ARNOLD L. ;
REPT. NO. TR-87
CONTRACT: AF 19(628)-2798,
PROJ: 4F-464105,
MONITOR: AFCRL , 66-95

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•PROGRAMMING LANGUAGES, •DIGITAL COMPUTERS), ALGEBRA, COMPUTER LOGIC, PROGRAMMING(COMPUTERS), DESIGN (U)

A SYSTEM DESIGN IS GIVEN FOR A COMPUTER CAPABLE OF DIRECT EXECUTION OF FORTRAN SOURCE STATEMENTS. THE ALLOWED TYPES OF STATEMENTS ARE THE FORTRAN ARITHMETIC, DO, GO TO, COMPUTED GO TO, ARITHMETIC IF, READ, PRINT, DIMENSION, CONTINUE, PAUSE AND END STATEMENTS. UP TO TWO SUBSCRIPTS ARE ALLOWED FOR VARIABLES AND NO FORMAT STATEMENT IS REQUIRED. THE PROGRAMMERS SOURCE PROGRAM IS CONVERTED TO A SLIGHTLY MODIFIED FORM WHILE BEING LOADED AND PLACED IN A PROGRAM AREA IN LOWER MEMORY. HIS ORIGINAL VARIABLE NAMES AND STATEMENT NUMBERS ARE RETAINED IN A SYMBOL TABLE IN UPPER MEMORY, WHICH ALSO SERVES AS THE DATA STORAGE AREA. DURING EXECUTION OF THE PROGRAM EACH FORTRAN STATEMENT IS READ AND INTERPRETED AT BASIC CIRCUIT SPEED SINCE THE MACHINE IS A HARDWARE INTERPRETER FOR THESE STATEMENTS. THE MACHINE CORRESPONDS THEREFORE TO A 'ONE-PASS, LOAD-AND-GO' COMPILER EXCEPT, OF COURSE, THAT THERE IS NO TRANSLATION TO A DIFFERENT MACHINE LANGUAGE. THE DESIGN INFORMATION IS PRESENTED IN THE FORM OF MEALY STATE DIAGRAMS FOR EACH OF THE STATEMENT LOADING AND EXECUTION CIRCUITS PLUS SOME UTILITY CIRCUITS. A METHOD IS ALSO DESCRIBED FOR GOING FROM THE STATE DIAGRAMS TO THE LOGIC CIRCUITS WHICH GENERATE AND SEQUENCE THE REQUIRED MICROSTEPS (REGISTER GATE CONTROL SIGNALS, MEMORY READ AND WRITE COMMANDS, ETC.) (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-637 227 5/7
IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
AUTOMATIC ENGLISH-TO-LOGIC TRANSLATION IN A
SIMPLIFIED MODEL. A STUDY IN THE LOGIC OF GRAMMAR. (U)
DESCRIPTIVE NOTE: FINAL REPT. 1961-1966.
MAR 66 117P BOHNERT,HERBERT G. ;
BACKER,PAUL O. ;
CONTRACT: AF 49(638)-1198.
PROJ: AF-9769.
TASK: 976906.
MONITOR: AFOSR 66-1727

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*GRAMMARS, MATHEMATICAL LOGIC),
(*ENGLISH LANGUAGE, MACHINE TRANSLATION),
COMPUTATIONAL LINGUISTICS, TRANSFORMATIONAL
GRAMMARS, CHARACTER RECOGNITION,
PROGRAMMING(COMPUTERS), PROGRAMMING LANGUAGES,
SYNTAX (U)
IDENTIFIERS: SNOBOL 3 (U)

THE REPORT SUMMARIZES RESEARCH CONDUCTED TO
ESTABLISH LOGICAL STRUCTURES IMPLICIT IN PORTIONS OF
NATURAL ENGLISH AND THE CONSTRUCTION OF ARTIFICIAL
LANGUAGES WHOSE RULES PERMIT AN EXPLICIT STATEMENT OF
THOSE STRUCTURES IN TERMS OF SYMBOLIC LOGIC. A
LANGUAGE CALLED ENGLISH I WAS DESIGNED WHOSE
GRAMMAR IS ESSENTIALLY THAT OF ELEMENTARY LOGIC
ITSELF. COMPUTER PROGRAMS ARE DISCUSSED THAT
RECOGNIZE THE GRAMMATICALITY OF ENGLISH I AND
ENGLISH II, THE LATEST OF A SERIES OF SYNTHESIZED
ENGLISH-LIKE LANGUAGES, AND TRANSLATE ENGLISH
II TO ENGLISH I. RESULTS ARE GIVEN OF ANALYSES
OF THE NATURAL LANGUAGE CORRELATES OF THE LOGICAL
CONCEPTS OF DEGREE, GROUPING, QUANTIFICATION, AND
SCOPE. A 'PLACER' CONCEPT IS DESCRIBED THAT SERVES
AS A BASIC GRAMMATICAL FUNCTION CATEGORY FOR WORDS
AND PHRASES THAT FUNCTION IN PARTICULAR WAYS IN
PARTICULAR CONTEXTS THOUGH THEY MAY USUALLY BELONG TO
OTHER CATEGORIES. A PRECEDENCE SYSTEM, INCLUDING
TWO NEW CONNECTIVES, WAS DEVISED THAT AVOIDS PILE-UPS
IN THE ASSIGNMENT OF GROUPERS. THE CONCEPT OF
'FRAGMENTS' IS INTRODUCED TO HANDLE NATURAL LANGUAGE
FACTORING. A CALCULUS OF 'DEMAND' COMPUTATION IS
DESCRIBED FOR COMBINING AND ANALYZING FRAGMENTS.
THE COMPUTER PROGRAMS WERE WRITTEN IN THE STRING-
MANIPULATING LANGUAGE SNOBOL 3. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-637 956 9/2 5/7
MASSACHUSETTS COMPUTER ASSOCIATES INC WAKEFIELD
THE TRANGEN SYSTEM ON THE M460 COMPUTER. (U)
DESCRIPTIVE NOTE: FINAL REPT., 12 APR 65-11 APR 66.
JUL 66 150P PLASKOW,JONATHAN E. ;
SCHUMAN,STEPHEN A. ;
REPT. NO. CA-6607-1512,
CONTRACT: AF 19(628)-5091,
PROJ: AF-4641,
TASK: 464102,
MONITOR: AFCRL 66-516

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, *PROGRAMMING LANGUAGES), DIGITAL COMPUTERS, PROGRAMMING(COMPUTERS), LINGUISTICS, INSTRUCTION MANUALS (U)
IDENTIFIERS: TRANDIR PROGRAMMING, TRANGEN SYSTEM, M460 COMPUTER (U)

TRANGEN IS A COMPUTER SYSTEM FOR WRITING COMPILERS. TRANGEN SYSTEMS HAVE BEEN IMPLEMENTED ON THE IBM-7094, CDC-1604, AND GE-635, AND HAVE BEEN USED TO WRITE TRANSLATORS FOR PL/I, ALGOL, FORTRAN IV, AND TRANDIR. TRANDIR IS THE TRANGEN USER LANGUAGE WHICH HAS PATTERN MATCHING AND ACTION PRIMITIVES FOUND USEFUL FOR COMPILERS. THIS REPORT SERVES AS A USER'S MANUAL FOR TRANDIR/TRANGEN ON THE M460 UNIVAC COMPUTER. IN THIS IMPLEMENTATION, SEVERAL ON-LINE DEBUGGING FEATURES ARE EMPHASIZED AS WELL AS THE MODIFIABILITY OF TRANDIR THROUGH RE-ROOTSTRAPPING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-638 748 9/2
ADAMS (CHARLES W) ASSOCIATES INC CAMBRIDGE MASS
APPLIED RESEARCH ON IMPLEMENTATION AND USE OF LIST PROCESSING LANGUAGES. (U)
DESCRIPTIVE NOTE: FINAL SCIENTIFIC REPT., JAN 65-JAN 66.
MAY 66 78P SALZMAN,ROY N. ;
FLAHERTY,THOMAS A. ;PONTON,MARLENE E. ;
CONTRACT: AF 19(628)-5026,
PROJ: AF-4641,
TASK: 464102,
MONITOR: AFCRL 66-364

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SCIENTIFIC RESEARCH), COMPILERS, COMPUTERS, DISPLAY SYSTEMS, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: LIST PROCESSING, FLOATING-POINT OPERATION, LISP (U)

THE REPORT CONTAINS A SUMMARY OF THE FIVE MAJOR TASKS PERFORMED DURING THE ONE-YEAR DURATION OF THE CONTRACT. THE WORK PERFORMED CONSISTED OF: (1) A VARIABLE-PRECISION FLOATING-POINT PACKAGE FOR THE SOLUTION OF PROBLEMS REQUIRING VERY HIGH PRECISION, (2) EXTENSION OF AND IMPROVEMENTS TO THE SOFTWARE SYSTEM DEVELOPED UNDER AN EARLIER CONTRACT, (3) ASSISTANCE IN THE IMPLEMENTATION AND VALIDATION OF A LISP COMPILER, (4) DEVELOPMENT OF A PROGRAM FOR POWERFUL MANIPULATION OF SYMBOLIC TEXT (TECO), AND (5) SPECIFICATION OF A SET OF GENERALIZED DISPLAY ROUTINES FOR VISUAL COMMUNICATION WITH THE COMPUTER. ALL WORK DONE RELATED TO THE M-460 RESEARCH COMPUTER AT AFCRL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-639 675 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ALGORITHMIC LANGUAGES PROJECT. (U)
DESCRIPTIVE NOTE: FINAL REPT. 1 JUL 65-30 JUN 66,
JUL 66 13P GINSBURG,SEYMOUR ;
REPT. NO. TM-738/026/00,
CONTRACT: AF 19(628)-5166,
PROJ: AF-5632,
TASK: 563205,
MONITOR: AFCRL 66-562

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-628 202, AD-628 203, AD-628 204, AD-628 205, AD-624 [illegible], AD-629 309, AD-630 424, AD-631 337, AD-636 032 AND AD-638 194.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *ALGORITHMS), CONTEXT FREE GRAMMARS, CONTEXT SENSITIVE GRAMMARS, MATHEMATICAL LOGIC, MATHEMATICAL MODELS (U)

THE PURPOSE OF THIS PAPER IS TO REVIEW AND SUMMARIZE THE RESULTS PRESENTED IN TEN SCIENTIFIC REPORTS DURING THE CONTRACT PERIOD. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-640 069 9/2
RAND CORP SANTA MONICA CALIF
DEVELOPMENT OF DISCRETE DIGITAL SIMULATION LANGUAGES. (U)
SEP 66 15P KIVIAT,PHILIP J. 1
REPT. NO. P-3453.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PUBLICATION IN SIMULATION, THE MONTHLY JOURNAL OF SIMULATION COUNCILS, INC.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), SIMULATION, TIME, DYNAMICS, REVIEWS (U)

THE ARTICLE DEALS WITH A PARTICULAR TYPE OF SIMULATION: THE USE OF NUMERICAL AND LOGICAL MODELS TO REPRESENT DISCRETE CHANGES OF STATE OF A SYSTEM AS IT MOVES THROUGH TIME. SIMULATION MODELS OF THIS TYPE ARE USUALLY FORMULATED SYMBOLICALLY USING FLOW CHARTS OR LOGIC DIAGRAMS, CODED IN SOME PROGRAMMING LANGUAGE, AND RUN ON A DIGITAL COMPUTER. THE REPORT PRESENTS THE HISTORY, CURRENT STATUS AND POSSIBLE FUTURE OF DISCRETE DIGITAL SIMULATION LANGUAGES -- COMPUTER LANGUAGES THAT ARE USED FOR DESCRIBING THE STRUCTURE AND DYNAMICS OF DISCRETE-TIME SYSTEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-643 821 9/2 9/8
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
GRAPHICS. (U)
DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL SUMMARY REPT. 1
JUN-30 NOV 66,
NOV 66 8P RAFFEL ,JACK I. ;
CONTRACT: AF 19(628)-5167 ,ARPA ORDER-691
MONITOR: ESD TR-66-583

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-634 251.

DESCRIPTORS: (*GRAPHICS, *COMPILERS), DISPLAY SYSTEMS, WAVEFORM GENERATORS, NETWORKS, MAN-MACHINE SYSTEMS (U)

THE NEW APEX DISPLAY EXECUTIVE IS OPERATIONAL. THE COMPILER-COMPILER, VITAL, WAS USED TO GENERATE A NUMBER OF COMPILERS, INCLUDING ONE FOR A SECOND VERSION OF CORAL. A CRT DISPLAY SEQUENCE IS BEING CONSTRUCTED WHICH WILL INCORPORATE BOTH THE NEWLY DESIGNED CONIC WAVEFORM GENERATOR AND A CHARACTER GENERATOR, AND WILL HANDLE AS MANY AS TEN DISPLAY STATIONS. THE HARDWARE AND SOFTWARE FOR THE FIRST PHASE OF THE SDC NETWORK EXPERIMENT ARE COMPLETED - EXPERIMENTATION IS UNDER WAY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-644 869 5/7 5/3 9/2 6/4
RAND CORP SANTA MONICA CALIF
SOVIET CYBERNETICS TECHNOLOGY: VIII. REPORT ON THE ALGORITHMIC LANGUAGE ALGEC (FINAL VERSION). (U)
DEC 66 149P
REPT. NO. RM-5136-PR
CONTRACT: AF 49(638)-1700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF KIBERNETIKA (USSR) N2 P57-102 1966.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ECONOMICS), (*ALGORITHMS, PROGRAMMING LANGUAGES), CYBERNETICS, USSR, COMPUTATIONAL LINGUISTICS, COMPUTER PROGRAMS, LANGUAGE, LINGUISTICS, RUSSIAN LANGUAGE, ENGLISH LANGUAGE (U)

A TRANSLATION OF THE FINAL VERSION OF THE NEW SOVIET ALGORITHMIC LANGUAGE FOR ECONOMICS PROBLEMS (ALGEC), A GENERAL-PURPOSE COMPUTER PROGRAMMING LANGUAGE THAT CAN USE BOTH LATIN AND CYRILLIC ALPHABETS AND EITHER RUSSIAN OR ENGLISH RESERVED WORDS. BASED ON ALGOL 60 AND SUBSET ALGOL 60, ALGEC HAS BEEN MODIFIED TO PERMIT THE HANDLING OF TABLES, RECORDS INDEXES, ETC., AND DOCUMENTS OF COMPLEX FORMAT AND VARIABLE LENGTH AND TO PROVIDE A MEANS OF SELECTING AND PROCESSING INDIVIDUAL ITEMS FROM SUCH DOCUMENTS AND FROM NONNUMERICAL TEXTUAL MATTER. IDEAS AND INPUT-OUTPUT PROCEDURES WERE TAKEN FROM COBOL-61. THE MEMORANDUM INCLUDES A TRANSLATION OF M. KOROLEV'S ARTICLE ON THE DEVELOPMENT OF ALGEC; A BRIEF BIOGRAPHICAL NOTE ON THE RUSSIAN AUTHORS AND EDITORS; A RUSSIAN-ENGLISH GLOSSARY OF ALGEC TERMINOLOGY; AND AN ENGLISH-RUSSIAN GLOSSARY INCLUDED IN AN INDEX TO DEFINITIONS OF TERMS AND SYNTACTIC UNITS. A BIBLIOGRAPHY OF RAND PUBLICATIONS ON SOVIET CYBERNETICS AND COMPUTER TECHNOLOGY IS APPENDED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-645 120 9/2
BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS GROUP
DETECTION OF IMPLICIT COMPUTATIONAL PARALLELISM FROM INPUT-OUTPUT SETS. (U)
DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. NO. 1, 18 JUL-15 OCT 66,
DEC 66 34P BINGHAM,HARVEY W. ;
FISHER,DAVID A. ;SEMON,WARREN L. ;
CONTRACT: DA-28-043-AMC-02463(E)
PROJ: DA-1E6-20501-A485-03-01
MONITOR: ECOM 02463-1

UNCLASSIFIED REPORT

DESCRIPTORS: (•COMPILERS, •SET THEORY), (•COMPUTER PROGRAMS, ALGORITHMS), PROGRAMMING LANGUAGES, GRAPHICS, INPUT-OUTPUT DEVICES (U)

THIS IS THE FIRST REPORT OF AN INVESTIGATION DESIGNED TO SHOW HOW THE IMPLICIT PARALLELISM IN PROGRAMS WRITTEN IN PRESENT PROGRAMMING LANGUAGES CAN BE RECOGNIZED AND EXPLOITED BY COMPUTERS WITH HIGHLY PARALLEL MACHINE ORGANIZATIONS. A LANGUAGE-INDEPENDENT RECOGNITION ALGORITHM IS DEVELOPED. A PROGRAM IS TREATED AS A PARTIALLY ORDERED SET OF PROCESSES. A PROCESS IS A TRANSFORMATION OF AN INPUT SET INTO AN OUTPUT SET. THE ALGORITHM REPRESENTS A METHOD FOR CONVERTING THE GIVEN ORDERING RELATION AMONG PROCESSES IN ANY GIVEN PROGRAM INTO THE ESSENTIAL ORDERING RELATION. UNNECESSARY SERIAL ORDERING IMPOSED BY PRESENT PROGRAMMING LANGUAGES IS ELIMINATED. THE ESSENTIAL ORDERING IS RECOGNIZED BY COMPARING INPUTS TO PROCESSES WITH OUTPUTS OF SELECTED PRIOR PROCESSES. THE NUMBER OF COMPARISONS IS THE MINIMUM NECESSARY TO DETECT THE ESSENTIAL ORDERING. THE ALGORITHM IS EXPLAINED IN DETAIL AND THE EQUIVALENT GRAPHICAL OPERATIONS ARE DESCRIBED. PROGRAM LOOPS AND CONDITIONALS CAN BE ANALYZED WITHIN THE FRAMEWORK OF THE ALGORITHM. PROCESS INPUTS AND OUTPUTS ARE RELATED TO MEMORY AND INPUT-OUTPUT DEVICES. VARIOUS LEVELS OF PARTITIONING A PROGRAM INTO PROCESSES ARE DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-640 219 5/7 9/2
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING
LANGUAGE-NAMING LANGUAGES IN PREFIX FORM. (U)
66 18P GORN,SAUL I
CONTRACT: DA-31-124-ARO(D)-98 ,NSF-GP-95
MONITOR: ARO) 4166:5

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN PROCEEDINGS OF THE IF P WORKING CONFERENCE ON FORMAL LANGUAGE DESCRIPTION LANGUAGES P249-68 1966.
SUPPLEMENTARY NOTE: REPT. ON FORMAL LANGUAGE DESCRIPTION LANGUAGES FOR COMPUTER PROGRAMMING.

DESCRIPTORS: (*COMPUTATIONAL LINGUISTICS, PROGRAMMING(COMPUTERS)), (*PROGRAMMING LANGUAGES, COMPUTER PROGRAMS), LANGUAGE, SEMANTICS (U)

IN THIS PAPER THE AUTHOR DISCUSSES THE EFFECTS ON THE SPECIFICATION OF ONE-DIMENSIONAL LANGUAGES AND THEIR PROCESSORS IF ONE SYSTEMATICALLY USES THE PREFIX LANGUAGE FUNCTION P. THE SPECIFICATION BY A COMBINATION OF THEORY AND CONSTRUCTION IS CALLED THE 'STRUCTURE' OR 'ELABORATION' OF A LANGUAGE SYSTEM. THIS PAPER IS THEREFORE CONCERNED WITH THE EFFECT OF THE PREFIX LANGUAGE STRUCTURE ON THE SPECIFICATION OF LANGUAGE STRUCTURES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-649 560 12/1 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
ADEPT, A HEURISTIC PROGRAM FOR PROVING THEOREMS OF GROUP THEORY. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
SEP 66 181P NORTON,LEWIS MARK I
REPT. NO. MAC-TR-33
CONTRACT: NONR-4102(01)
PROJ: NR-048-189 ,RR-003-09-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, *GROUPS(MATHEMATICS)), (*THEOREMS, GROUPS(MATHEMATICS)), MATHEMATICAL LOGIC, ARTIFICIAL INTELLIGENCE, DIGITAL COMPUTERS, TIME SHARING, REAL TIME, THESES (U)
IDENTIFIERS: ADEPT, MULTIPLE ACCESS SYSTEM, ON-LINE SYSTEMS, HEURISTIC PROGRAM (U)

A COMPUTER PROGRAM, NAMED ADEPT (A DISTINCTLY EMPIRICAL PROVER OF THEOREMS), HAS BEEN WRITTEN WHICH PROVES THEOREMS TAKEN FROM THE ABSTRACT THEORY OF GROUPS. ITS ORGANIZATION IS BASICALLY HEURISTIC, INCORPORATING MANY OF THE TECHNIQUES OF THE HUMAN MATHEMATICIAN IN A 'NATURAL' WAY. THIS PROGRAM HAS PROVED ALMOST 100 THEOREMS, AS WELL AS SERVING AS A VEHICLE FOR TESTING AND EVALUATING SPECIAL-PURPOSE HEURISTICS. A DETAILED DESCRIPTION OF THE PROGRAM IS SUPPLEMENTED BY ACCOUNTS OF ITS PERFORMANCE ON A NUMBER OF THEOREMS, THUS PROVIDING MANY INSIGHTS INTO THE PARTICULAR PROBLEMS INHERENT IN THE DESIGN OF A PROCEDURE CAPABLE OF PROVING A VARIETY OF THEOREMS FROM THIS DOMAIN. SUGGESTIONS HAVE BEEN FORMULATED FOR FURTHER EFFORTS ALONG THESE LINES, AND COMPARISONS WITH RELATED WORK PREVIOUSLY REPORTED IN THE LITERATURE HAVE BEEN MADE.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-646 857 9/2
IIT RESEARCH INST CHICAGO ILL COMPUTER SCIENCES DIV
DIALOG: A CONVERSATIONAL PROGRAMMING SYSTEM WITH A GRAPHICAL ORIENTATION. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
SEP 66 30P CAMERON,SCOTT H.;
EWING,DUNCAN ;LIVERIGHT,MICHAEL ;
REPT. NO. IITRI-TN-109
CONTRACT: NONR-3392(00)
PROJ: RR-003-09-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *GRAPHICS), (*MAN-MACHINE SYSTEMS, COMPILERS), OPERATION, ALGEBRA, INPUT-OUTPUT DEVICES, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: DIALOG, ON-LINE SYSTEMS (U)

DIALOG IS AN ALGEBRAIC LANGUAGE FOR ON-LINE USE WITH A GRAPHICAL INPUT-OUTPUT CONSOLE DEVICE. IT IS A COMPUTATIONAL AID FOR THE CASUAL USER, WHICH PROVIDES BASIC FACILITIES FOR GRAPHICAL AND NUMERIC INPUT AND DISPLAY, ON AND OFF-LINE PROGRAM PREPARATION AND STORAGE, AND HARD COPY PRESENTATION OF RESULTS. USE OF THE SYSTEM REQUIRES A MINIMUM OF EXPERIENCE OR INSTRUCTION, SINCE THE GROWTH OF AN OVERLAYING SYSTEM CONTROL LANGUAGE HAS BEEN PREVENTED, AND THERE ARE NO PROCESSOR-ORIENTED STATEMENTS, LIKE VARIABLE TYPE OR DIMENSION DECLARATIONS. MOREOVER, IN THE ON-LINE SITUATION, THE PROCESSOR INTERACTS WITH THE GRAPHICAL KEYBOARD ON A CHARACTER BY CHARACTER BASIS SO AS TO RESTRICT THE PROGRAMMER'S CHOICE OF INPUT SYMBOLS TO THOSE WHICH ARE SYNTACTICALLY CORRECT. DIALOG HAS BEEN IN DAILY OPERATION AT THE IIT RESEARCH INSTITUTE SINCE FEBRUARY, 1966. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-647 939 5/7 9/2 6/4
RAND CORP SANTA MONICA CALIF
SOVIET CYBERNETICS TECHNOLOGY: IX. ALGEC-SUMMARY AND CRITIQUE. (U)
FEB 67 49P WIRTH,NIKLAUS I
REPT. NO. RM-4157-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), (•DATA PROCESSING SYSTEMS, PROGRAMMING LANGUAGES), CYBERNETICS, LANGUAGE, LINGUISTICS, RUSSIAN LANGUAGE, USSR, COMPUTATIONAL LINGUISTICS, PROGRAMMING(COMPUTERS), SYMBOLS (U)

THIS MEMORANDUM CONSISTS OF TWO PARTS: PART I, CONCERNING THE PRELIMINARY VERSION OF THE ALGEC REPORT, CONSISTS OF A SUMMARY AND CRITICAL EVALUATION OF THE FEATURES WHICH WERE ADDED TO ALGOL 60. PART II, CONCERNING THE FINAL VERSION, CONTAINS A SIMILAR (SELF-CONTAINED) SUMMARY OF ADDED FACILITIES AND, AGAIN, AN EVALUATION WHICH REFLECTS ON THE PROGRESS MADE WITH RESPECT TO THE PRELIMINARY VERSION. BOTH REPORTS ARE FOUND TO BE SIGNIFICANTLY LACKING IN PRECISION, CONSISTENCY, AND CLARITY OF EXPOSITION. ALTHOUGH THE ALGEC DESCRIPTION COMPARES FAVORABLY WITH MANUALS DESCRIBING NEW PROGRAMMING LANGUAGES DEVELOPED IN THIS COUNTRY, IT HARDLY CONSTITUTES A CONTRIBUTION TO THE STATE OF THE SCIENCE OF PROGRAMMING LANGUAGES. IMPORTANT ASPECTS OF DATA PROCESSING ARE NOT REFLECTED IN THE LANGUAGE, SUCH AS INPUT AND OUTPUT. ONE CAN THEREFORE PREDICT THAT THE 'FINAL' VERSION OF THE REPORT WILL HARDLY REMAIN FINAL. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-647 418 9/2
RESEARCH ANALYSIS CORP MCLEAN VA
AN INTRODUCTION TO TAB40: A PROCESSOR FOR TABLE-WRITTEN FORTRAN IV PROGRAMS. (U)
DESCRIPTIVE NOTE: TECHNICAL PAPER,
NOV 66 46P REINWALD,LEWIS T. ;
REPT. NO. RAC-TP-229
CONTRACT: DA-44-188-ARO-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, *COMPILERS), PROGRAMMING LANGUAGES, DECISION MAKING, WAR GAMES, TABLES (U)
IDENTIFIERS: TAB40, FORTRAN, DECISION TABLES, IBM 7040 (U)

THE PAPER DESCRIBES TAB40, A PROGRAM WRITTEN AT RAC FOR THE IBM 7040 COMPUTER. SPECIFICALLY TAB40 ACCEPTS INPUT WRITTEN IN A PREDOMINANTLY TABULAR FORMAT AND CONVERTS IT INTO A FREE-FORM FORMAT ACCEPTABLE FOR COMPILATION BY FORTRAN IV. THE PAPER BEGINS WITH A BRIEF DISCUSSION OF THE OBJECTIVES MOTIVATING THE DESIGN OF TAB40. THIS IS FOLLOWED BY A SUMMARY OF PREVIOUS EXPERIENCE IN USING TABLES AS AN INSTRUMENT FOR PROBLEM ANALYSIS AND COMPUTER PROGRAMMING. THEN SOME CONCEPTS FUNDAMENTAL TO TAB40 ARE INTRODUCED, FOLLOWED BY AN EXAMPLE SHOWING INPUT TO AND CORRESPONDING OUTPUT FROM TAB40. THE LAST TWO SECTIONS DESCRIBE IN DETAIL HOW TO PREPARE INPUT TO BE PROCESSED BY TAB40. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-647 549 9/2 12/1
NAVAL WEAPONS LAB DAHLGREN VA
THE FLAP LANGUAGE - A PROGRAMMER'S GUIDE. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JAN 67 54P MORRIS,ALFRED H. , JR.
REPT. NO. NWL-TM-K-8/67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-637 127.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), (*PROGRAMMING(COMPUTERS), *MATHEMATICS), ALGEBRAS, POLYNOMIALS, VECTOR ANALYSIS, MATRIX ALGEBRA (U)
IDENTIFIERS: FLAP, LISP, IBM 7090 (U)

THE GUIDE IS A PRESENTATION OF THE CAPABILITIES AND OPERATIONS OF THE LANGUAGE FLAP, A LANGUAGE WRITTEN FOR THE IBM 7090 THAT ALLOWS AN ANALYST TO HANDLE SYMBOLIC MATHEMATICAL DATA IN A VARIETY OF WAYS. EXAMPLES INVOLVING POLYNOMIALS, VECTORS, AND MATRICES, AS WELL AS OTHER FORMS OF DATA, ARE GIVEN TO ILLUSTRATE HOW THE LANGUAGE CAN BE EMPLOYED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-646 479 9/2
BALLISTIC RESEARCH LABS ABERDEEN PROVING GROUND MD
BRLESC FORTRAN IV, (U)
OCT 66 99P CAMPBELL,LLOYD W. ;
BECK,GLENN A. ;
REPT. NO. BRL-1346
PROJ: RDT/E-1P014501A148

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), COMPILERS, MAGNETIC TAPE, SUBROUTINES (U)
IDENTIFIERS: FORTRAN (U)

FORTRAN IS A POPULAR PROGRAMMING LANGUAGE THAT HAS BEEN IMPLEMENTED ON MANY COMPUTERS. IT IS AVAILABLE ON BALLISTIC RESEARCH LABORATORIES' BRLESC COMPUTER. THE REPORT DESCRIBES THE FORTRAN LANGUAGE IN GENERAL AND INCLUDES SPECIFIC DETAILS ABOUT ITS IMPLEMENTATION ON BRLESC. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-649 140 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
VITAL COMPILER SYSTEM: REFERENCE MANUAL. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
FEB 67 83P MONDSHEIN,L. F. ;
REPT. NO. TN-1967-12
CONTRACT: AF 19(628)-5167, ARPA ORDER-691
MONITOR: ESD 67-51

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, LANGUAGE), DIGITAL COMPUTERS, PROGRAMMING(COMPUTERS), SEMANTICS, PROGRAMMING LANGUAGES, ALGORITHMS, COMPUTATIONAL LINGUISTICS, SYNTAX, SYMBOLS (U)

THIS MANUAL DESCRIBES THE GENERAL OPERATION OF THE VITAL COMPILER-COMPILER SYSTEM AND THE DETAILS OF PRODUCTION LANGUAGE (PL) AND FORMAL SEMANTIC LANGUAGE (FSL). THE APPENDICES CONTAIN INFORMATION ON THE SYSTEM'S META-COMMANDS, A GUIDE TO THE USE OF PL, AN EXAMPLE OF AN ALGOL COMPILER, AND A TABLE OF SYMBOLS USED IN PL AND FSL. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-649 401 9/2
STANFORD RESEARCH INST MENLO PARK CALIF
SURVEY OF COMPUTER LANGUAGES FOR SYMBOLIC AND ALGEBRAIC MANIPULATIONS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 67 64P RAPHAEL,BERTRAM
CONTRACT: AF 49(638)-1752
PROJ: AF-9769, SRI-6084
TASK: 976905
MONITOR: AFOSR 67-0811

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), (*DIGITAL COMPUTERS, COMPUTATIONAL LINGUISTICS), DATA STORAGE SYSTEMS, SYMBOLS, INFORMATION RETRIEVAL, DECISION MAKING, COMPILERS, SYNTAX, POWER SERIES, ALGORITHMS, MATHEMATICAL MODELS (U)

THIS REPORT IS A PREPRINT OF A PAPER SUMMARIZING A STUDY CONDUCTED BY THE COMPARISON OF LANGUAGES SUBCOMMITTEE OF THE ACM SPECIAL INTEREST COMMITTEE ON SYMBOLIC AND ALGEBRAIC MANIPULATION (SICSAM) ON 18 COMPUTER LANGUAGES FOR SYMBOLIC AND ALGEBRAIC MANIPULATION THAT MET CERTAIN CRITERIA OF RELEVANCE AND AVAILABILITY: ALTRAN, AMBIT, COGENT, COMIT, CONVERT, CORAL, DYSTAL, FLIP, FORMAC, FORMULA ALGOL, IPL-V, LISP1.5, LISP2, L6, PANON, SLIP, SNOBOL, AND TRAC. SEVERAL OTHER LANGUAGES ARE ALSO BRIEFLY DISCUSSED. FOR EACH OF SIX GROUPS INTO WHICH THE LANGUAGES ARE CLASSIFIED, THE PAPER (A) DESCRIBES PROPERTIES THAT MEMBERS OF THE GROUP HAVE IN COMMON, (B) GIVES A BRIEF DESCRIPTION OF EACH LANGUAGE IN THE GROUP, INCLUDING AN EXCERPT FROM A PROGRAM IN THE LANGUAGE THAT DEMONSTRATES THE KIND OF PROBLEM FOR WHICH THE LANGUAGE IS WELL SUITED; AND (C) BRIEFLY COMPARES THE FEATURES OF THE LANGUAGES IN THE GROUP. THE PAPER CONTAINS THREE APPENDICES: (1) A REFERENCE CHART THAT SUMMARIZES THE FEATURES OF ALL OF THE LANGUAGES; (2) A COMPARISON CHART THAT EMPHASIZES THE SALIENT DISTINCTIONS BETWEEN SELECTED PAIRS OF SIMILAR LANGUAGES; AND (3) A SET OF ANNOTATED EXAMPLES OF PROGRAMS IN VARIOUS LANGUAGES THAT SOLVE SIMILAR PROBLEMS, THUS ILLUSTRATING THE DIFFERENCES IN DATA REPRESENTATIONS, PROGRAM FORMS, AND NOTATIONS. THE PAPER IS A COOPERATIVE EFFORT OF A BOARD OF CONSULTANTS, INCLUDING EXPERTS IN EACH OF THE LANGUAGES, WHO CONTRIBUTED DATA AND REVIEWED (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, 000389

AD-650 845 9/2
BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS GROUP
DETECTION OF ESSENTIAL ORDERING IMPLICIT IN COMPILER LANGUAGE PROGRAMS. (U)
DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NO. 2, 19 OCT 66-20 JAN 67,
FEB 67 41P BINGHAM,HARVEY W. ;
FISHER,DAVID A. ;SEMON,WARREN L. ;
REPT. NO. TR-67-1
CONTRACT: DA-28-043-AMC-02463(E)
PROJ: DA-1E6-20501-A-485
TASK: 1E6-20501-A-48503
MONITOR: ECOM 02463-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-645 120

DESCRIPTORS: (*COMPILERS, *PROGRAMMING LANGUAGES), DIGITAL COMPUTERS, CONTEXT FREE GRAMMARS, ALGORITHMS, INPUT-OUTPUT DEVICES, SEQUENCES, SYMBOLS, ITERATIONS (U)

AN INVESTIGATION WAS MADE TO DETERMINE HOW IMPLICIT PARALLELISM IN PROGRAMS WRITTEN IN COMPILER LANGUAGES CAN BE RECOGNIZED AND EXPLOITED BY MACHINES WITH HIGHLY PARALLEL ORGANIZATIONS. AN ALGORITHM IS DESCRIBED WHICH IDENTIFIES THE COMPLETE SERIAL ORDERING AMONG PARTS OF A PROGRAM BASED ON THE INPUT-OUTPUT SETS OF THESE PARTS, THE ORDERING GIVEN BY THE PROGRAMMER, AND ANY KNOWN ESSENTIAL ORDER AMONG THE PROGRAM PARTS. THE ALGORITHM IS PROVED AND A DEMONSTRATION GIVEN THAT A MINIMUM NUMBER OF COMPARISONS OF INPUT-OUTPUT SETS ARE MADE. APPLICATION OF THE PARALLEL RECOGNITION PROCEDURE TO SUBROUTINES, LOOPS, CONDITIONALS, RECURSIVE SUBROUTINES, AND SERIAL INPUT-OUTPUT DEVICE CALLS IS EXPLAINED. THE EFFECT OF PARTICULAR FEATURES OF SEVERAL COMPILER LANGUAGES ON PARALLELISM ARE DISCUSSED. THESE FEATURES INCLUDE LOOPS, TRANSFERS OF CONTROL, CONDITIONALS, AND CONDITIONAL SEQUENCES. REQUIREMENTS FOR REPLACING ITERATIVE LOOP CONTROL BY PARALLEL PATHS OF CONTROL ARE GIVEN. ALTERNATIVE ALGORITHMS FOR RECOGNIZING ESSENTIAL ORDERING ARE SUGGESTED WHICH CAN BE EXECUTED MORE EFFECTIVELY ON A HIGHLY PARALLEL MACHINE. APPLICATION OF THE GIVEN ALGORITHM TO THE SYNTACTIC DEFINITION OF A CONTEXT-FREE LANGUAGE IS ALSO CONSIDERED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-681 089 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ONE-WAY REAL-TIME LIST-STORAGE LANGUAGES, (U)
JAN 67 47P GINSBURG,SEYMOUR ;
HARRISON,MICHAEL A. ;
REPT. NO. SCIENTIFIC-2, TM-738/029/00
CONTRACT: F19628-67-C-0008, AF-AFOSR-1203-67
PROJ: AF-5632
TASK: 563205
MONITOR: AFCRL 67-0078

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH CALIFORNIA UNIV., BERKELEY.

DESCRIPTORS: (*DATA STORAGE SYSTEMS, PROGRAMMING LANGUAGES), AUTOMATA, DIGITAL COMPUTERS, CONTEXT FREE GRAMMARS, REAL TIME, COMPUTER STORAGE DEVICES (U)
IDENTIFIERS: LISP (U)

A DEVICE IS PRESENTED WHICH HAS ITS MEMORY ORGANIZED AS A LIST. ATTENTION IS THEN FOCUSED ON THE AUTOMATON (CALLED AN LSA) WHICH RESULTS WHEN THE INPUT IS READ ONE-WAY AND THE DEVICE OPERATES IN REAL TIME. THE SET OF WORDS (CALLED A LANGUAGE) ACCEPTED BY AN LSA IS EXTENSIVELY STUDIED. IN PARTICULAR, SEVERAL CHARACTERISTICS AND CLOSURE PROPERTIES OF LANGUAGES ARE GIVEN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-633 964 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
A UNIVERSAL PROGRAMMING LANGUAGE (ALGOL 60). (U)
MAR 67 180P LAVROV,S. S. ;
REPT. NO. FTD-HT-66-282
MONITOR: TT 67-62148

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MONO. UNIVERSALNYI YAZYK PROGRAMMIROVANIYA (ALGOL 60), MOSCOW, 1964 171P.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, TEXTBOOKS), CODING, SYMBOLS, ALGORITHMS, COMPUTERS, MATHEMATICS (U)
IDENTIFIERS: ALGOL (U)

THIS BOOK IS A MANUAL FOR THE STUDY OF THE INTERNATIONAL ALGORITHMIC LANGUAGE ALGOL 60 INTENDED FOR THE COMPLETE AND CONCISE DESCRIPTION OF COMPUTATION PROCESSES BY MEANS SIMILAR TO THE CONVENTIONAL MATHEMATICAL SYMBOLISM. THE LANGUAGE IS AN IMPORTANT AUXILIARY FOR ELECTRONIC COMPUTERS. THE BOOK IS INTENDED FOR ENGINEERS, WHO HAVE TO DEAL WITH CALCULATIONS ON ELECTRONIC COMPUTERS IN THEIR WORK WITHOUT BEING SPECIALLY TRAINED IN THIS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-654 483 12/1 9/2
STANFORD UNIV CALIF OPERATIONS RESEARCH HOUSE
MATHEMATICAL PROGRAMMING LANGUAGE. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUN 67 23P PINSKY,PAUL I
REPT. NO. TR-67-4
CONTRACT: DAHC04-67-C-0028, NL00014-67-A-0112
PROJ: NR-047-064

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY NSF, AND AEC.

DESCRIPTORS: (*MATHEMATICAL PROGRAMMING, *PROGRAMMING LANGUAGES), ALGORITHMS, CODING, COMPILERS, COMPUTERS, SUBROUTINES (U)

THE GENERAL OBJECTIVE IS TO DEVELOP A HIGHLY READABLE LANGUAGE FOR PREPARING EXPERIMENTAL PROGRAMS FOR SOLVING LARGE-SCALE MATHEMATICAL PROGRAMMING SYSTEMS. A SET OF CONVENTIONS HAVE BEEN TENTATIVELY AGREED UPON. FOR FLEXIBILITY A PROGRAM WILL BE MADE UP FROM MODULES CONSISTING OF SHORT SUBROUTINES. THE LATTER ARE EACH TRANSLATED BY A HUMAN CODER INTO A STANDARD PROGRAMMING LANGUAGE (SUCH AS FORTRAN OR ALGOL.) NO PLANS ARE CONTEMPLATED AT PRESENT FOR A MECHANICAL TRANSLATOR. (AUTHOR) (U)

CDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-657 810 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
AN ASSOCIATIVE PROCESSING SYSTEM FOR CONVENTIONAL DIGITAL COMPUTERS. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
APR 67 36P ROVNER,P. D. (FELDMAN,J.
A. J
REPT. NO. TN-1967-19
CONTRACT: AF 19(628)-5167, ARPA ORDER-691
MONITOR: ESD TR-67-242

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), (*PATTERN RECOGNITION, DIGITAL COMPUTERS), INFORMATION RETRIEVAL, CODING, COMPUTER PROGRAMS, TIME SHARING (U)
IDENTIFIERS: ALGOL, ASSOCIATIVE PROCESSOR, ASSOCIATIVE RETRIEVAL (U)

A USER-ORIENTED SYSTEM HAVING BOTH ALGEBRAIC AND ASSOCIATIVE PROCESSING CAPABILITIES IS PRESENTED IN THIS REPORT. THE ALGEBRAIC CAPABILITIES ARE ESSENTIALLY THOSE OF ALGOL. THE ASSOCIATIVE FACILITIES ARE: (1) A LANGUAGE FOR THE EXPRESSION OF ASSOCIATIVE RETRIEVAL REQUESTS (THE ASSOCIATIVE LANGUAGE). (2) A SCHEME FOR THE INTERNAL REPRESENTATION OF A STORE OF ASSOCIATIONS BETWEEN ITEMS OF INFORMATION (AN ASSOCIATIVE INFORMATION BASE). (3) PROCESSING ROUTINES FOR ASSOCIATIVE RETRIEVAL REQUESTS. THE ASSOCIATIVE LANGUAGE IS INDEPENDENT OF THE STRUCTURE OF THE ASSOCIATIVE INFORMATION BASE. IN THE SYSTEM PRESENTED HERE, THE ASSOCIATIVE INFORMATION BASE IS IMPLEMENTED VIA HASH-CODING TECHNIQUES. THE ASSOCIATIVE LANGUAGE IS IMPLEMENTED BY EXTENDING AN EXISTING ALGOL SYSTEM. THIS REPORT CONSISTS OF THREE SECTIONS: SEC. I DESCRIBES THE HIGH-LEVEL PROGRAMMING LANGUAGE FOR THE OVERALL SYSTEM; SEC. II OUTLINES THE SCHEME FOR REPRESENTING AN ASSOCIATIVE INFORMATION BASE; AND SEC. III SUMMARIZES THE PROCESSING ROUTINES FOR ASSOCIATIVE RETRIEVAL REQUESTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-655 867 9/2
BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS GROUP
PLAN FOR DETECTION OF PARALLELISM IN COMPUTER PROGRAMS. (U)
DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NO. 3, 21 JAN-21 APR 67,
JUN 67 28P BINGHAM,HARVEY W. ;
FISHER,DAVID A. ;SEWARD,JOHN W. ;
REPT. NO. TR-67-3
CONTRACT: DA-28-043-AMC-02463(E)
PROJ: DA-1E6-20501-A-485
TASK: 1E6-20501-A-485-03
MONITOR: ECOM 02463-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, PROGRAMMING LANGUAGES), (*COMPUTER PROGRAMS, COMPILERS), ITERATIVE METHODS, ALGORITHMS (U)
IDENTIFIERS: MULTIPROCESSING, MULTIPROGRAMMING, ALGOL (U)

THIS IS THE THIRD REPORT OF AN INVESTIGATION TO DETERMINE HOW IMPLICIT PARALLELISM IN PROGRAMS WRITTEN IN COMPILER LANGUAGES CAN BE RECOGNIZED AND EXPLOITED BY MACHINES WITH HIGHLY PARALLEL ORGANIZATIONS. THE ALGORITHM DEVELOPED IN THE TWO PRIOR REPORTS FOR DETECTING THE ESSENTIAL ORDER AMONG PROGRAM PARTS BASED UPON INPUT-OUTPUT SET INTERSECTIONS AND ANY INITIALLY KNOWN ESSENTIAL ORDERING HAS BEEN APPLIED IN THIS REPORT TO LOOP AND ARRAY STRUCTURES. ALTHOUGH PARALLELISM IN MANY ARRAY REFERENCES CAN BE DETECTED, RUN-TIME INDEX DETERMINATION LIMITS THE GENERAL RECOGNITION OF ARRAY ELEMENT PARALLELISM. THE EFFECTS OF DATA STRUCTURES ON PARALLELISM ARE RELATED TO MACHINE ORGANIZATION AND MEMORY ACCESSING. THE BLOCK DIAGRAM OF A PARALLELISM DETECTION PROGRAM IS GIVEN AND THE SOURCE LANGUAGE FOR PROGRAMS TO BE ANALYZED IS DESCRIBED. THIS PROGRAM WILL BE USED AS A TOOL FOR THE DEMONSTRATION OF THE DESIRABILITY AND FEASIBILITY FOR AUTOMATIC RECOGNITION OF PARALLELISM IN COMPILER LANGUAGE PROGRAMS. LEVELS OF PROGRAM PARTITIONING ARE DISCUSSED. A METHOD FOR IDENTIFYING THE DIFFERENT INSTANCES OF A VARIABLE DURING A PROGRAM AND THEIR CANDIDACY AS INPUTS FOR SUBSEQUENT REFERENCES IS DESCRIBED. (AUTHOR) (U)

CDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-656 449 9/2
RAND CORP SANTA MONICA CALIF
DATALESS PROGRAMMING, (U)
JUL 67 50P BALZER,R. M. ;
REPT. NO. RM-5290-ARPA
CONTRACT: DAHC15-67-C-0141, ARPA ORDER-189-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTERS), (*PROGRAMMING(COMPUTERS), DATA PROCESSING SYSTEMS), CODING, ALGORITHMS, ITERATIVE METHODS, ALGEBRA (U)
IDENTIFIERS: DATALESS PROGRAMMING LANGUAGE (U)

THIS MEMORANDUM DESCRIBES THE PRELIMINARY SPECIFICATIONS OF THE DATALESS PROGRAMMING LANGUAGE, A HIGH-LEVEL ALGEBRAIC LANGUAGE WHICH IS AN EXTENSION OF PL/I AND USES ITS SYNTAX (WITH SOME EXCEPTIONS). SEPARATE SECTIONS OF THE MEMORANDUM DISCUSS: SPECIFYING HIERARCHICAL DATA REFERENCES; MAINTAINING THE LANGUAGE'S TWO TYPES OF POINTERS; DEFINING INDIVIDUAL MEMBERS OF A DATA COLLECTION; SPECIAL FEATURES OF THE LANGUAGE; ITS RESTRICTED IMPLEMENTATION; EXPECTED ADVANTAGES AND DIFFICULTIES. A FINAL SECTION PROVIDES TWO DATALESS PROGRAMMING EXAMPLES, WITH COMMENTARIES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-696 771 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS
THE BBN 940 LISP SYSTEM, (U)
JUL 67 138P BOBROW,DANIEL G. ;
DARLEY,D. LUCILLE ;DEUTSCH,L. PETER ;
MURPHY,DANIEL L. ;TEITELMAN,WARREN ;
REPT. NO. SCIENTIFIC-9, BBN-1539
CONTRACT: AF 19(628)-5065, ARPA ORDER-627
PROJ: AF-8668
MONITOR: AFCRL 67-0458

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTERS), COMPUTER STORAGE DEVICES, ARTIFICIAL INTELLIGENCE, COMPILERS, SUBROUTINES, TIME SHARING, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: LISP, SDS 940 COMPUTER, LIST PROCESSING, ON-LINE SYSTEMS (U)

THE REPORT DESCRIBES THE LISP SYSTEM IMPLEMENTED AT BBN ON THE SDS 940 COMPUTER. THIS LISP IS AN UPWARD COMPATIBLE EXTENSION OF LISP 1.5 FOR THE IBM 7090, WITH A NUMBER OF NEW FEATURES WHICH MAKE IT WORK WELL AS AN ON-LINE LANGUAGE. THESE NEW FEATURES INCLUDE TRACING, AND CONDITIONAL BREAKPOINTS IN FUNCTIONS FOR DEBUGGING AND A SOPHISTICATED LISP ORIENTED EDITOR. THE BBN 940 LISP SYSTEM HAS A LARGE MEMORY STORE (APPROXIMATELY 50,000 FREE WORDS) UTILIZING SPECIAL PAGING TECHNIQUES FOR A DRUM TO PROVIDE REASONABLE COMPUTATION TIMES. THE SYSTEM INCLUDES BOTH AN INTERPRETER, A FULLY COMPATIBLE COMPILER, AND AN ASSEMBLY LANGUAGE FACILITY FOR INSERTING MACHINE CODE SUBROUTINES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-658 029 9/2
ROME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y
COMPILER GENERATION USING FORMAL SPECIFICATION OF PROCEDURE-ORIENTED AND MACHINE LANGUAGES. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 67 27P MCLELLAN,WILLIAM G. ;
GILBERT,PHILIP ;
REPT. NO. RADC-TR-67-454
PROJ: AF-4594

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, *PROGRAMMING LANGUAGES), SYNTAX, GRAMMARS, CODING, SYMBOLS (U)
IDENTIFIERS: ALGOL, FORTRAN, JOVIAL (U)

A COMPILER GENERATION SYSTEM IS DESCRIBED WHICH IS RIGOROUSLY BASED AND WHICH ALLOWS FORMAL SPECIFICATION BOTH OF THE SOURCE (PROCEDURE ORIENTED) LANGUAGES AND OF THE OBJECT (MACHINE ORIENTED) LANGUAGES. AN INTERMEDIATE OR 'BUFFER' LANGUAGE, BASE, IS INTERPOSED, REDUCING THE REQUIRED TRANSFORMATION TECHNIQUES DESCRIBED. THE SYSTEM, SO FAR, INCLUDES THOSE ELEMENTS IN BASE NECESSARY TO PRODUCE ALGOL, FORTRAN, AND JOVIAL COMPILERS. THIS PAPER WAS PRESENTED AT THE 1967 SPRING JOINT COMPUTER CONFERENCE.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-658 042 9/2
CARNEGIE INST OF TECH PITTSBURGH PA DEPT OF COMPUTER SCIENCE
A DATA DEFINITION FACILITY FOR PROGRAMMING LANGUAGES. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
MAY 67 300P STANDISH,T. A. ;
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 67-2045

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, THESES), (*PROGRAMMING(COMPUTERS), ALGORITHMS), DIGITAL COMPUTERS, COMPLEX VARIABLES, FLOW CHARTING, PROBLEM SOLVING, SYNTAX, SEMANTICS, MAPPING(TRANSFORMATIONS) (U)

THE DISSERTATION PRESENTS A DESCRIPTIVE NOTATION FOR DATA STRUCTURES WHICH IS EMBEDDED IN A PROGRAMMING LANGUAGE IN SUCH A WAY THAT THE RESULTING LANGUAGE BEHAVES AS A SYNTHETIC TOOL FOR DESCRIBING DATA AND PROCESSES IN A NUMBER OF APPLICATION AREAS. A SERIES OF EXAMPLES INCLUDING FORMULAE, LISTS, FLOW CHARTS, ALGOL TEXT, FILES, MATRICES, ORGANIC MOLECULES AND COMPLEX VARIABLES IS PRESENTED TO EXPLORE THE USE OF THIS TOOL. IN ADDITION, A SMALL FORMAL TREATMENT IS GIVEN DEALING WITH THE EQUIVALENCE OF EVALUATORS AND THEIR DATA STRUCTURES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-658 418 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 COMPILER CONTEXT RESOLVER LANGUAGE AND PROCESSOR SPECIFICATIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
APR 67 28P BARNETT,J. I
REPT. NO. TM-3417/340/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

DESCRIPTORS: (•DIGITAL COMPUTERS, •PROGRAMMING LANGUAGES), (•COMPILERS, DIGITAL COMPUTERS), DATA STORAGE SYSTEMS, SYNTAX (U)
IDENTIFIERS: LISP, IBM 360 (U)

THE DOCUMENT DESCRIBES THE LANGUAGE AND PROCESSOR REQUIRED FOR THE CONTEXT RESOLVER PASS OF THE LISP 2 COMPILER PROPOSED FOR THE IBM S/360 COMPUTER. THE CONTEXT RESOLVER (PASS II OF THE LISP 2 COMPILER) IS USED TO MACRO-EXPAND INTERMEDIATE LANGUAGE INPUTS INTO A LIST OF CONTEXT-RESOLVED INTERLUDE LANGUAGE FUNCTION DEFINITIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-658 423 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 DOCUMENT CONVENTIONS.
DESCRIPTIVE NOTE: TECHNICAL MEMO.; (U)
APR 67 7P WILLS,R. I
REPT. NO. TM-3417/001/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *SYNTAX), (*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES), SYSTEMS ENGINEERING, SYMBOLS, SEMANTICS, STANDARDIZATION
IDENTIFIERS: LISP, IBM 360 (U)
(U)

THE DOCUMENT DESCRIBES CONVENTIONS USED IN A SERIES OF DOCUMENTS WHICH SPECIFY THE LISP 2 LANGUAGE AND PROCESSOR FOR THE IBM S/360 COMPUTER. INCLUDED IN THIS DOCUMENT ARE RULES FOR WRITING SYNTAX EQUATIONS FOR THE LISP 2 LANGUAGE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-658 421 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 LANGUAGE SPECIFICATIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
APR 67 49P FIRTH,DONNA ;ABRAHAMS,P. ;
REPT. NO. TM-3417/200/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH INFORMATIONAL INTERNATIONAL, INC., LOS ANGELES, CALIF.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *SYNTAX), (*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES), SEMANTICS, SYMBOLS, CODING (U)
IDENTIFIERS: LISP, IBM 360 (U)

THE DOCUMENT DESCRIBES THE PROPOSED SYNTAX AND SEMANTICS FOR THE LISP 2 SOURCE LANGUAGE (SL) AND INTERMEDIATE LANGUAGE (IL) TO BE IMPLEMENTED ON THE IBM S/360 COMPUTER. THE SYNTAX OF TOKENS IS ALSO INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-659 156 9/2 12/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE
A PRELIMINARY SKETCH OF FORMULA ALGOL. (U)
DESCRIPTIVE NOTE: REVISED ED.,
JUL 65 58P PERLIS,ALAN J. ;
ITURRIAGA,RENATO ;STANDISH,THOMAS ;
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 67-2207

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *MATHEMATICAL LOGIC), ALGORITHMS, ALGEBRA, TAYLOR'S SERIES, SYMBOLS, SYNTAX, OPERATORS(MATHEMATICS), DATA STORAGE SYSTEMS, PROGRAMMING(COMPUTERS) (U)

IN EARLIER YEARS ALGEBRAIC LANGUAGES, LIST PROCESSING LANGUAGES AND STRING MANIPULATING LANGUAGES HAVE EXISTED SEPARATELY FROM ONE ANOTHER. RECENTLY, FORMULA MANIPULATING LANGUAGES HAVE EVOLVED, AND, IN ADDITION, THERE HAVE BEEN EFFORTS TO COMBINE VARIOUS DIFFERENT KINDS OF PROCESSING INTO ONE LANGUAGE. THE DESIGN OF FORMULA ALGOL REPPESENTS AN EFFORT IN THIS DIRECTION. SPECIFICALLY, FORMULA ALGOL IS AN EXTENSION TO ALGOL PROVIDING FORMULA MANIPULATING, LIST PROCESSING, AND LIMITED STRING CAPABILITIES. THUS, FORMULA ALGOL IS A LANGUAGE IN WHICH THE ADVANTAGES OF THESE VARIOUS DIFFERENT KINDS OF PROCESSING ARE COMBINED, BUT WE ANTICIPATE THAT FORMULA ALGOL WILL BE PARTICULARLY WELL ADAPTED TO ALGEBRAIC SYMBOL MANIPULATING PROCESSES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-659 358 9/2
RAND CORP SANTA MONICA CALIF
COMPUTER SIMULATION PROGRAMMING LANGUAGES:
PERSPECTIVE AND PROGNOSIS. (U)
SEP 67 23P KIVIAT,PHILIP J. 1
REPT. NO. P-3599

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
SIMULATION), COMPILERS, TIME SHARING,
COMPUTERS, MODELS(SIMULATIONS),
PROGRAMMING(COMPUTERS), FLOW CHARTING,
SCHEDULING, GRAPHICS (U)

SIMULATION PROGRAMMING LANGUAGES HAVE BEEN GOING THROUGH RAPID EVOLUTIONARY CHANGES. BEFORE 1959 THERE WERE NO SIMULATION LANGUAGES--THERE WERE ONLY SIMULATION PROGRAMS. SINCE 1959, WHEN THE FIRST PROGRAMMING LANGUAGES DESIGNED ESPECIALLY FOR SIMULATION APPEARED, MANY DIFFERENT SIMULATION MODELING AND PROGRAMMING SYSTEMS HAVE BEEN PROPOSED. AT LEAST FIVE UNEQUALLY DIFFERENT MODELING SCHEMES HAVE FOUND WIDESPREAD ACCEPTANCE AND USE. A LARGE AMOUNT OF MODELING AND PROGRAMMING EXPERIENCE HAS BEEN ACCUMULATED WHICH SIMULATION LANGUAGE DESIGNERS ARE NOW TAKING FULL ADVANTAGE OF. IN THIS PAPER WE FIRST DISCUSS SOME THEORIES OF SIMULATION MODELING AND PROGRAMMING. WE THEN DESCRIBE THE DESIGN AIMS AND A FEW OF THE LANGUAGE FACILITIES OF SEVERAL 'SECOND GENERATION' SIMULATION PROGRAMMING LANGUAGES. FINALLY, WE COMMENT ON A PROBABLE FUTURE FOR SIMULATION LANGUAGES AND SIMULATION PROGRAMMING. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 089 9/2 9/2
LEHIGH UNIV BETHLEHEM PA CENTER FOR THE INFORMATION SCIENCES
GRINS: AN ON-LINE STRUCTURE FOR THE NEGOTIATION OF INQUIRIES.
DESCRIPTIVE NOTE: MASTER THESIS. (U)
SEP 67 66P GREEN,JAMES SPROAT I
REPT. NO. 4
CONTRACT: AF-AFOSR-724-66
PROJ: AF-9769
TASK: 976901

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON 'STUDIES IN THE MAN-SYSTEMS INTERFACE IN LIBRARIES.' SEE ALSO AD-699 458.

DESCRIPTORS: (*LIBRARIES, INFORMATION RETRIEVAL), (*INFORMATION RETRIEVAL, *COMPUTER PROGRAMS), SEARCH THEORY, EFFECTIVENESS, EFFICIENCY, MAN-MACHINE SYSTEMS, TECHNICAL INFORMATION CENTERS, DOCUMENTATION
IDENTIFIERS: GRINS, ON-LINE SYSTEMS (U)

(U)
IN GENERAL, PROBLEMS ARE SOLVABLE ALONG A CONTINUUM OF ABSTRACTION. THERE IS, AT ANY GIVEN POINT IN THE DEVELOPMENT OF THE SOLUTION, A MOST EFFICIENT OR OPTIMUM STRATEGY. IN INFORMATION RETRIEVAL SYSTEMS THE ULTIMATE SOLUTION IS OBTAINED AT A MORE SPECIFIC RATHER THAN AT A MORE ABSTRACT LEVEL. THE QUESTION NEGOTIATION PROCESS IS VIEWED AS AN EFFICIENT PRELIMINARY STRATEGY WHICH ENABLES AN INFORMATION SEEKER TO OBTAIN HIS INFORMATION GOAL WITH THE LEAST AMOUNT OF OVERALL EFFORT. IN ORDER FOR A PROBLEM SOLUTION PROCEDURE TO REMAIN EFFICIENT A MEANS FOR PREDICTING WHEN TO CHANGE STRATEGIES MUST BE PROVIDED. IN THE PARTICULAR EXAMPLE OF QUESTION NEGOTIATION THIS PREDICTION IS BASED ON THE RATE AT WHICH THE DEFINITION OF THE USER'S NEED DEVELOPS. AN ON-LINE COMPUTER PROGRAM CALLED GRINS IS DESCRIBED WHICH IMPLEMENTS THE INFORMATION SPECIALIST'S ROLE IN THE NEGOTIATING OF A USER'S NEED. THIS PROGRAM COMMUNICATES WITH THE USER IN HIS NATURAL CONVERSATIONAL IDIOM. WHEN THE NEGOTIATION IS JUDGED BY GRINS TO BE AS WELL DEVELOPED AS IT IS LIKELY TO GET, A SEARCH IS MADE OF THE AVAILABLE DOCUMENTS. THIS SEARCH PRODUCES AN ORDERED LIST OF THE SIXTY-THREE BEST DOCUMENTS WHICH COME CLOSEST TO THE USER'S EXPRESSED NEED. THE STRUCTURE OF THE PROGRAM IS MODULAR SO THAT IMPROVEMENTS MAY BE EASILY MADE. SOME SUCH (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 127 12/1 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE
CONTRIBUTIONS TO MECHANICAL MATHEMATICS. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
MAY 67 221P ITURRIAGA,RENATO ;
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 67-2400

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, PROBLEM SOLVING), (*MATHEMATICS, COMPUTERS), TRANSFORMATIONS(MATHEMATICS), THESES, ALGEBRA, ADAPTIVE SYSTEMS, METAMATHEMATICS, DIFFERENTIAL EQUATIONS, ALGORITHMS, INEQUALITIES, SEQUENCES, ITERATIVE METHODS, TAYLOR'S SERIES, POLYNOMIALS (U)
IDENTIFIERS: FORMULA ALGOL, MECHANICAL MATHEMATICS (U)

WE DESCRIBE THE EXPERIENCE RELATING TO THE DESIGN OF A PROGRAMMING LANGUAGE, FORMULA ALGOL, WHICH IS SUITABLE FOR DESCRIBING ALGORITHMS THAT MECHANIZE SOME MATHEMATICAL TASKS. WE DEVELOP A THEORY THAT YIELDS RESULTS FROM WHICH WE CAN PROVE THE TERMINATION OF SOME MARKOV ALGORITHMS THAT PERFORM ALGEBRAIC TRANSFORMATIONS. USING THESE RESULTS, WE ALSO CAN CHARACTERIZE THE CLASSES OF FORMULAE THAT CONSTITUTE THE INPUT AND OUTPUT FOR SUCH ALGORITHMS. NEXT, WE DISCUSS IN SOME DETAIL THE VARIOUS PROBLEMS RELATED TO THE MECHANIZATION OF LIMITING PROCESSES AND INEQUALITIES. TWENTY-FIVE APPENDICES--WITH RUNNING PROGRAMS--ILLUSTRATE THE VARIOUS POINTS MADE DURING OUR PRESENTATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 252 19/4 12/1 9/2
COMPUTER APPLICATIONS INC NEW YORK
FARADA INFORMATION PROCESSING AND PRESENTATION STUDY.
VOLUME 2. COMPUTER SYSTEM MANUAL. (U)
AUG 66 135P
REPT. NO. CAI-NY-6.55
CONTRACT: N123(62738)-51870A(X)
MONITOR: ICEP 347.40.00.00-X1-01

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN COPYRIGHTED JOURNAL.
SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-660 251 AND VOLUME 3, AD-660 253.

DESCRIPTORS: (*RELIABILITY, *STATISTICAL ANALYSIS), (*SAMPLING, RELIABILITY), (COMPUTER PROGRAMS, STATISTICAL ANALYSIS), FLOW CHARTING, SUBROUTINES, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: FARADA, ON-LINE SYSTEMS (U)

THIS VOLUME DESCRIBES IN DETAIL THE SET OF COMPUTER PROGRAMS (CALLED THE FARADA SYSTEM) DEVELOPED TO PERFORM THE INFORMATION-PROCESSING AND PRESENTATION SYSTEM OBJECTIVES PRESENTED IN THE COMPANION VOLUME 1 'STUDY AND ANALYSES.' DETAILED SYSTEM AND TASK BLOCK DIAGRAMS AND FLOW CHARTS ARE PRESENTED. THESE BLOCK DIAGRAMS AND CHARTS, TOGETHER WITH THE DETAILED DESCRIPTION GIVEN FOR EACH TASK, PROVIDE THE USER WITH ALL THE INFORMATION NECESSARY TO USE OR MODIFY THE PROGRAMS OF THE COMPUTER SYSTEM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 253 14/4 12/1 9/2
COMPUTER APPLICATIONS INC NEW YORK
FARADA INFORMATION PROCESSING AND PRESENTATION STUDY.
VOLUME 3. OPERATORS MANUAL. (U)
AUG 66 22P
REPT. NO. CAI-NY-6155
CONTRACT: N123(62738)-51870A(X)
MONITOR: IDEP 347.40.00.00-X1-01

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN COPYRIGHTED JOURNAL.
SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-660 251 AND VOLUME 2, AD-660 252.

DESCRIPTORS: (*RELIABILITY, *STATISTICAL ANALYSIS), (*SAMPLING, RELIABILITY), (*DATA PROCESSING SYSTEMS, INSTRUCTION MANUALS), INPUT-OUTPUT DEVICES, DISPLAY SYSTEMS, FLOW CHARTING (U)
IDENTIFIERS: FARADA, ON-LINE SYSTEMS (U)

THIS VOLUME IS AN OPERATOR'S MANUAL GIVING DETAILED STEP-BY-STEP OPERATING INSTRUCTIONS FOR RUNNING THE FARADA COMPUTER SYSTEM ON THE IBM 1460 AND 7094 DIGITAL COMPUTERS. THE FARADA PROCESSING ROUTINES CAN BE STOPPED AND STARTED AFTER ANY OF THE COMPONENT PROGRAMS BY REFERRING TO THE CLEARLY LABELED OPERATING INSTRUCTIONS. (U)

DC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 548 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS
DESIGN AND IMPLEMENTATION OF FLIP, A LISP FORMAT DIRECTED LIST PROCESSOR, (U)
JUL 67 118P TEITELMAN,WARREN I
REPT. NO. SCIENTIFIC-10, BBN-1495
CONTRACT: AF 19(628)-5065, ARPA ORDER-627
PROJ: AF-8668
MONITOR: AFCRL 67-0514

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTERS), PROGRAMMING(COMPUTERS), MAN-MACHINE SYSTEMS, SYMBOLS, CODING, SYNTAX (U)
IDENTIFIERS: LISP, LIST PROCESSING, FLIP (U)

THE PAPER DISCUSSES SOME OF THE CONSIDERATIONS INVOLVED IN DESIGNING AND IMPLEMENTING A PATTERN MATCHING OR 'COMIT' FEATURE INSIDE OF LISP. THE PROGRAMMING LANGUAGE FLIP IS PRESENTED HERE AS A PARADIGM FOR SUCH A FEATURE. THE DESIGN AND IMPLEMENTATION OF FLIP DISCUSSED BELOW EMPHASIZES COMPACT NOTATION AND EFFICIENCY OF OPERATION. IN ADDITION, FLIP IS A MODULAR LANGUAGE AND CAN BE READILY EXTENDED AND GENERALIZED TO INCLUDE FEATURES FOUND IN OTHER PATTERN DRIVEN LANGUAGES SUCH AS CONVERT AND SNOBOL. THIS MAKES IT EXTREMELY VERSATILE. THE DEVELOPMENT OF THIS PAPER PROCEEDS FROM ABSTRACT CONSIDERATIONS TO SPECIFIC DETAILS. THE SYNTAX AND SEMANTICS OF FLIP ARE PRESENTED FIRST, FOLLOWED BY A DISCUSSION OF THE IMPLEMENTATION WITH ESPECIAL ATTENTION DEVOTED TO TECHNIQUES USED FOR REDUCING THE NUMBER OF CONSES REQUIRED AS WELL AS IMPROVING SEARCH STRATEGY. FINALLY FLIP IS TREATED AS A WORKING SYSTEM AND VIEWED FROM THE USER'S STANDPOINT. HERE WE PRESENT SOME OF THE ADDITIONS AND EXTENSIONS TO FLIP THAT HAVE EVOLVED OUT OF ALMOST TWO YEARS OF EXPERIMENTATION. THESE TRANSFORM IT FROM A NOTATIONAL SYSTEM INTO A PRACTICAL AND USEFUL PROGRAMMING SYSTEM.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 976 9/2
PERSONNEL RESEARCH LAB LACKLAND AFB TEX
INTRODUCTION TO PERSUB, (U)
AUG 67 97P WARD,JOE H. , JR;
BUCHHORN,JANICE ;HALL,KATHLEEN ;
REPT. NO. PRL-TR-67-3-PT-1
PROJ: AF-7719
TASK: 771901

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 2, AD-660 979.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, INSTRUCTION MANUALS), (*PROGRAMMING(COMPUTERS), SUBROUTINES), FLOW CHARTING, PUNCHED CARDS, CODING, MAN-MACHINE SYSTEMS, FACTOR ANALYSIS, PROBLEM SOLVING, REGRESSION ANALYSIS, CORRELATION TECHNIQUES (U)
IDENTIFIERS: PERSUB (U)

FOUR EXAMPLES OF THE APPLICATION OF THE PERSUB SUBROUTINE SYSTEM TO DATA ANALYSIS PROBLEMS ARE PRESENTED. EXAMPLES OF ALL STEPS INVOLVED IN DATA PREPARATION, FLOW CHART OF COMPUTATIONAL STEPS, CODING OF PROGRAM INSTRUCTIONS, COMPILING AND EXECUTING THE PROGRAM ARE PRESENTED IN DETAIL. THE LISTING OF EACH PROGRAM WITH CORRESPONDING RESULTS IS PRESENTED. A SECOND VERSION OF EACH PROGRAM CONTAINING EXTENSIVE COMMENTS IS ALSO INCLUDED. (AUTHOR) (U)

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 378 9/2
PERSONNEL RESEARCH LAB LACKLAND AFB TEX
PERSUB REFERENCE MANUAL, (U)
AUG 67 67P WARD,JOE H., JR.
HALL,KATHLEEN ;BUCHHORN,JANICE ;
REPT. NO. PRL-TR-67-3-PT-2
PROJ: AF-7719
TASK: 771901

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 1, AD-660 378.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, INSTRUCTION MANUALS), (*PROGRAMMING(COMPUTERS), SUBROUTINES), PUNCHED CARDS, CODING, MAN-MACHINE SYSTEMS, REGRESSION ANALYSIS, FACTOR ANALYSIS, PROBLEM SOLVING, STATISTICAL ANALYSIS, CORRELATION TECHNIQUES (U)
IDENTIFIERS: PERSUB (U)

THIS REPORT DESCRIBES THE PERSUB SUBROUTINE SYSTEM. PERSUB IS A SET OF MATRIX-ORIENTED SUBROUTINES DEVELOPED PRIMARILY FOR THE PURPOSE OF PROVIDING THE RESEARCHER A MAXIMUM OF FLEXIBILITY IN DESIGNING A SEQUENCE OF ANALYSES TO BE CARRIED OUT ON RESEARCH DATA. WITH A FEW MINOR EXCEPTIONS, THE SYSTEM IS WRITTEN ENTIRELY IN FORTRAN. THE REPORT CONTAINS A LISTING OF THE SOURCE PROGRAM AND A BRIEF DESCRIPTION OF EACH SUBROUTINE. THE SYSTEM WAS ORIGINALLY DEVELOPED FOR USE ON A 16K IBM 7040 WITH TWO CHANNELS, THREE TAPE UNITS PER CHANNEL, AND ONE DISK UNIT. IT SHOULD COMPILE AND RUN WITH FEW MODIFICATIONS ON ANY SIMILAR CONFIGURATION WITH A LARGER CORE OR ADDITIONAL PERIPHERAL UNITS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 885 9/2 9/7
CARNEGIE INST OF TECH PITTSBURGH PA DEPT OF COMPUTER SCIENCE
SOL-20. (U)
DESCRIPTIVE NOTE: SCIENTIFIC INTERIM,
APR 65 50P HANSEN,GILBERT J. ;
CONTRACT: SD-146
MONITOR: AFOSR 67-2516

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SYNTAX), PROGRAMMING(COMPUTERS), DATA STORAGE SYSTEMS, SIMULATION, CODING, SEMANTICS (U)
IDENTIFIERS: SOL, SOL-20, ALGOL (U)

THIS MANUAL IS A SUPPLEMENT TO THE ORIGINAL ARTICLE (INCLUDED AS AN APPENDIX) A FORMAL DEFINITION OF SOL BY KNUTH AND MCNELEY. THE VERSION OF SOL DESCRIBED HERE, KNOWN AS SOL-20, WAS IMPLEMENTED BY PROCEDURES WRITTEN IN ALGOL-20 AND G-20 MACHINE LANGUAGES. IT IS THE PURPOSE OF THIS DOCUMENTATION TO DESCRIBE IN DETAIL EXACT DIFFERENCES AND CHANGES IN SYNTAX BETWEEN SOL AND SOL-20. WITH SOME LIMITATIONS, THE FULL POWER OF ALGOL-20 (THE LOCAL CARNEGIE-MELLON UNIVERSITY VERSION OF THE INTERNATIONAL LANGUAGE ALGOL-60) IS AVAILABLE FOR PROGRAMMING IN SOL-20. A SOL-20 PROGRAM IS WRITTEN USING SOL-20 SYSTEM PROCEDURES WHICH IMPLEMENT SOL DECLARATIONS, EXPRESSIONS, RELATIONS AND STATEMENTS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 076 9/2
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING
LIST PROCESSING RESEARCH TECHNIQUES. (U)
DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 3, 15 DEC-14 APR 67.
SEP 67 198P CARR,J. W. , III;GRAY,H. J. I
REPT. NO. 68-03
CONTRACT: DA-28-043-AMC-02377(E)
PROJ: DA-1E0.20401.A327
TASK: 1E0.20401.A327.03
MONITOR: ECOM 02377-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 720.

DESCRIPTORS: (*COMPUTER STORAGE DEVICES, FEASIBILITY STUDIES), (*PROGRAMMING LANGUAGES, FEASIBILITY STUDIES), DATA PROCESSING SYSTEMS, RECURSIVE FUNCTIONS, FLOW CHARTING, SUBROUTINES, CODING (U)
IDENTIFIERS: SPRINT, LIST PROCESSING (U)

THIS IS THE THIRD REPORT OF AN INVESTIGATION ON THE FORMAL CHARACTERISTICS AND FEASIBILITY OF THE POTENTIAL AND UTILIZATION OF PUSH-DOWN TYPE COMPUTER MEMORIES. LIST PROCESSING LANGUAGE DEVELOPMENT IN THIS STUDY CONCERNS THE REFINEMENT OF THE SPRINT LANGUAGE, AN EXPERIMENTAL, HOPEFULLY USEFUL, AND SIMPLE LIST PROCESSING LANGUAGE. WORK HAS CONTINUED ON THE GROWING MACHINE, A CONTEXT-FREE DEFINITIONAL STRUCTURE, AND ITS DEVELOPMENT IS CONSIDERED TO BE A TEST-BED FOR LIST-PROCESSING DEVELOPMENT. PROGRESS HAS BEEN MADE IN THE FOLLOWING AREAS: (1) NEW SOFTWARE, (2) APPLICATIONS OF LIST MEMORIES, AND (3) APPLICATIONS OF SPRINT AND THE GROWING MACHINE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 259 9/2
RAND CORP SANTA MONICA CALIF
JOSS LANGUAGE. (U)
AUG 67 33P BRYAN,G. E. ;SMITH,J. W.
;
REPT. NO. RM-5377-PR
CONTRACT: F-44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), TIME SHARING, MAN-MACHINE SYSTEMS, PROBLEM SOLVING (U)
IDENTIFIERS: JOSS, ON-LINE SYSTEMS (U)

THIS IS A JOSS USER'S PORTFOLIO CONTAINING THREE BRIEF REFERENCE SUMMARIES OF THE ACTIONS THAT CAN BE REQUESTED OF JOSS AND OF THE LANGUAGE FOR REQUESTING THESE ACTIONS. THE SUMMARIES ARE PRESENTED IN VARYING FORMATS TO SUIT THE USER'S CONVENIENCE: A POCKET-SIZE BOOK FOR PERSONAL USE (POCKET PRECIS, 17 PP.), A LARGER AND MORE COMPLETE PIECE FOR DESK-TOP OR CONSOLE USE (APERCU AND PRECIS, 23 PP.), AND A POSTER-SIZE SUMMARY FOR THE BULLETIN BOARD (POSTER PRECIS, 1 P.). THE PRECIS DEMONSTRATE THAT THE LANGUAGE PROVIDED FOR JOSS IS TERSE, UNAMBIGUOUS, AND READABLE, STRESSING FAMILIAR ENGLISH TERMINOLOGY AND PUNCTUATION AND USE. THE SPEED AND EASE OF INTERACTION BETWEEN JOSS AND THE USER, THE SIMPLICITY OF THE LANGUAGE, THE USE OF FAMILIAR DECIMAL ARITHMETIC, AND JOSS'S PRECISE ERROR AND STATUS REPORTING COMBINE TO ALLOW MOST PROBLEMS TO BE SOLVED BY AN UNDERSTANDING OF THE PROBLEM AT HAND AND A LIST OF JOSS COMMANDS AND FUNCTIONS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 539 9/2
RAND CORP SANTA MONICA CALIF
JOSS: CENTRAL PROCESSING ROUTINES, (U)
AUG 67 188P SMITH, J. W. I
REPT. NO. RM-5270-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIME SHARING, DATA PROCESSING SYSTEMS), (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), SUBROUTINES, FLOW CHARTING, MAN-MACHINE SYSTEMS, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: JOSS, ON-LINE SYSTEMS (U)

THIS IS A REFERENCE GUIDE FOR JOSS USERS TO (1) THE LANGUAGE USED FOR COUCHING INSTRUCTIONS TO JOSS; (2) JOSS'S RESPONSES TO INSTRUCTIONS; (3) THE COLLECTION OF MACHINE-LANGUAGE ROUTINES (IN JOSS'S CENTRAL COMPUTER) RESPONSIBLE FOR INTERPRETING AND RESPONDING TO INSTRUCTIONS; AND (4) THE DETAILS AND DECISIONS THAT BILATERALLY INFLUENCED THE LANGUAGE AND THE DESIGN AND IMPLEMENTATION OF THE ROUTINES. THE MYRIAD DETAILS OF TOTAL SYSTEM DESIGN ARE GIVEN CONSTANT EXPOSURE, AND PARTICULAR EMPHASIS IS PLACED ON THE DELICATE BALANCE AND SYMBIOSIS THAT MUST EXIST AMONG SYSTEM, LANGUAGE, COMPUTER, AND ROUTINES AND ON THE PERVASIVE EFFECTS OF EACH COMPONENT ON THE OTHERS. THE MATERIAL IS PRESENTED IN A NARRATIVE FORM, AUGMENTED BY FLOW-CHART REPRESENTATIONS OF MOST OF THE PRINCIPAL ROUTINES, AND IS IN PART DESIGNED TO SERVE AS PROLEGOMENA TO THE ANNOTATED MACHINE-LANGUAGE LISTINGS OF THE ROUTINES (COPIES OF WHICH ARE OBTAINABLE FROM RAND). (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 591 9/2
RCA LABS PRINCETON N J
AN INTRODUCTION TO CDL1, A COMPUTER DESCRIPTION LANGUAGE, (U)
SEP 67 128P SRINIVASAN,CHITOOR V. 1
REPT. NO. SCIENTIFIC-1
CONTRACT: AF 19(628)-4789
PROJ: AF-5632
TASK: 563202
MONITOR: AFCRL 67-0565

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DESIGN), INFORMATION RETRIEVAL, DOCUMENTATION, SIMULATION, MAGNETIC CORE STORAGE, SYNTAX (U)
IDENTIFIERS: CDL1 (U)

THE OBJECTIVE OF THIS REPORT IS TO DEVELOP A FORMAL LANGUAGE TO DESCRIBE HARDWARE AND SOFTWARE COMPUTING SYSTEMS. THE LANGUAGE IS TO PROVIDE A LINGUISTIC BASIS TO CONSIDER MACHINE-AIDED SOLUTIONS OF A VARIETY OF DESIGN PROBLEMS; I.E., PROBLEMS CONCERNING DESIGN DOCUMENTATION, DATA RETRIEVAL SYSTEMS, SYSTEM SIMULATION, DIAGNOSIS, ANALYSIS AND SYNTHESIS. THIS REPORT DISCUSSES IN SOME DETAIL THE CONSIDERATIONS THAT WENT INTO THE DESIGN OF THE COMPUTER DESCRIPTION LANGUAGE, CALLED CDL1; IT POINTS OUT THE NEED FOR DEVELOPING SUCH A LANGUAGE AND BRIEFLY DISCUSSES THE KINDS OF APPLICATIONS SUCH A LANGUAGE MAY HAVE. THE REPORT POINTS OUT THE VARIOUS KINDS OF SYSTEM DESCRIPTIONS ONE MAY ENCOUNTER IN A DESIGN PROCESS AND RELATES THEM TO THE LANGUAGE FEATURES NECESSARY TO EXPRESS THEM; THE LANGUAGE ITSELF IS DESCRIBED INFORMALLY. EXAMPLES ARE PRESENTED TO ILLUSTRATE THE USE OF THE LANGUAGE. THE CONCEPTS ASSOCIATED WITH DESCRIPTIONS OF SYSTEMS AT VARIOUS STAGES OF DESIGN, AND THE CONSEQUENT HIERARCHICAL STRUCTURE SUCH DESCRIPTIONS ACQUIRE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 773 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
AUTOMATIC MONITORING OF THE CORRECT RECORDING OF ALGORITHMS IN THE ALGOL-60 LANGUAGE. (U)
JUN 67 33P VASILEV,V. A. ;
LOZINSKII,N. N. ;
REPT. NO. FTD-MT-67-78

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF ZHURNAL VYCHISLITELNOI MATEMATIKI I MATEMATICHESKOI FIZIKI (USSR) V6 N1 P130-43 1966.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, PROBLEM SOLVING), (*PROGRAMMING(COMPUTERS), ACCURACY), SEMANTICS, SYNTAX, CODING, ALGORITHMS, USSR (U)
IDENTIFIERS: ALGOL (U)

A SEMANTIC METHOD FOR CHECKING THE ACCURACY OF ALGOL ALGEBRAIC PROBLEMS IS PROPOSED. THE CONTENT AND ORGANIZATION OF THE SEMANTIC PROGRAM ARE DISCUSSED AS WELL AS VARIOUS ADDITIONAL PROBLEMS ASSOCIATED WITH FREEING THE INFORMATION FROM ERRORS. THE PROPOSED METHOD VERIFIES THE PROGRAM WITH RESPECT TO THE FOLLOWING POINTS: (1) THE RULES ESTABLISHED FOR DESCRIPTION OF THE PROGRAMS SHOULD BE OBSERVED; (2) THE QUANTITIES APPEARING IN THE PROGRAM SHOULD BE USED IN POSITIONS CORRESPONDING TO THEIR 'NATURE'; (3) THE ACTUAL PARAMETERS OF THE PROCEDURE OPERATOR AND THE FORMAL PARAMETERS FOR DESCRIPTION OF THIS PROCEDURE SHOULD CORRESPOND TO ONE ANOTHER IN THE SENSE THAT THE PROCEDURE FIELD, MODIFIED ACCORDING TO THE RULES FOR SYNTACTIC AND SEMANTIC SENSE, I.E. THESE THREE POINTS SHOULD BE FULFILLED IN THE OPERATOR. A GENERAL PROGRAM IS DESCRIBED FOR CARRYING OUT THIS CHECKING METHOD. THIS VERIFICATION SYSTEM IS SELF-CONTAINED WITH RESPECT TO THE TRANSLATOR AND MAY BE USED ON MACHINES WITH LESS COMPLEX CODING. SOME OF THE GENERAL LIMITATIONS OF THE SYSTEM ARE POINTED OUT. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 967 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SEMIANNUAL TECHNICAL SUMMARY REPORT TO THE DIRECTOR, ADVANCED RESEARCH PROJECTS AGENCY FOR THE PERIOD 1 JANUARY 1967 TO 30 JUNE 1967. (U)
JUN 67 52P
REPT. NO. TM-687/008/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-651 582.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, REVIEWS), (*DATA PROCESSING SYSTEMS, REVIEWS), INPUT-OUTPUT DEVICES, TIME SHARING, MAN-MACHINE SYSTEMS, LANGUAGE, LINGUISTICS, COMPILERS, NETWORKS (U)
IDENTIFIERS: LISP, ON-LINE SYSTEMS (U)

THE REPORT DESCRIBES WORK DONE IN THE ARPA INFORMATION PROCESSING TECHNIQUES RESEARCH AND LABORATORY PROGRAM AT SDC FROM 1 JANUARY 1967 TO 30 JUNE 1967. PROJECTS COVERED IN THIS REPORT INCLUDE: PROGRAMMING LANGUAGE DEVELOPMENT, MAN-MACHINE COMMUNICATION, LANGUAGE PROCESSING RESEARCH, AND COMPUTER PROGRAM MANAGEMENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 981 9/2 22/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SPECIFICATION OF SPL SPACE PROGRAMMING LANGUAGE, (U)
AUG 67 158P CAREY,LEVI J. IKROGER,AL
E. ISHAM,CHRISTOPHER J. I
REPT. NO. SDC-TM-3719/000/00
CONTRACT: F09695-67-C-0096
MONITOR: SAMSO TR-67-23

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), (*PROGRAMMING(COMPUTERS), *SPACECRAFT), SYNTAX, DATA PROCESSING SYSTEMS, COMPUTERS, TIME SHARING (U)
IDENTIFIERS: SPL (U)

THE DOCUMENT CONTAINS A COMPLETE SPECIFICATION OF THE SPACE PROGRAMMING LANGUAGE (SPL) IN BACKUS-NAUR FORM. A DESCRIPTION OF BASIC SPL AND EXTENSIONS IS GIVEN. SPL IS A SPACE APPLICATION LANGUAGE WITH A LARGE ARRAY OF CAPABILITIES. IT IS FURTHER AN EXTENDABLE LANGUAGE WITH PUNCTUATION RULES AND VOCABULARY DESIGNED FOR EASE OF LEARNING AND PROGRAMMING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-662 081 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 FOR THE IBM S/360. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
APR 67 4P WILLS,R.
REPT. NO. TM-3417/000/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH INFORMATION INTERNATIONAL, INC., LOS ANGELES.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), SEMANTICS, SYNTAX, DOCUMENTATION, STANDARDS (U)
IDENTIFIERS: LISP, IBM 360 (U)

THE DOCUMENT ESTABLISHES A DOCUMENT SERIES (TM-3417) FOR THE LISP 2 LANGUAGE AND PROCESSOR DESIGNED FOR THE IBM S/360 COMPUTER. THIS SERIES INCLUDES DOCUMENTS DESCRIBING THE SYNTAX AND SEMANTICS OF THE LISP 2 LANGUAGE, SYSTEM AND PROGRAM DESIGN SPECIFICATIONS, DOCUMENTATION STANDARDS AND CONVENTIONS, AND USER INFORMATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-662 880 9/2 12/1
STANFORD UNIV CALIF DEPT OF COMPUTER SCIENCE
CORRECTNESS OF A COMPILER FOR ARITHMETIC EXPRESSIONS.
DESCRIPTIVE NOTE: TECHNICAL REPT., (U)
APR 66 19P MCCARTHY,JOHN ;
PAINTER,JAMES ;
REPT. NO. CS-38, AI MEMO-40
CONTRACT: SD-183

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: A PREPRINT OF A PAPER PRESENTED AT THE SYMPOSIUM ON MATHEMATICAL ASPECTS OF COMPUTER SCIENCE OF THE AMERICAN MATHEMATICAL SOCIETY HELD APRIL 6-7 1966.

DESCRIPTORS: (*COMPILERS, PROBLEM SOLVING), (*PROGRAMMING(COMPUTERS), MATHEMATICS), ALGORITHMS, SYNTAX, SEMANTICS, THEOREMS (U)

THE PAPER CONTAINS A PROOF OF THE CORRECTNESS OF A SIMPLE COMPILING ALGORITHM FOR COMPILING ARITHMETIC EXPRESSIONS INTO MACHINE LANGUAGE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-662 895 9/2
RCA LABS PRINCETON N J
FORMAL DEFINITION OF CDL1, A COMPUTER DESCRIPTION LANGUAGE. (U)
OCT 67 106P SRINIVASAN,CHITOOR V. I
REPT. NO. SCIENTIFIC-2
CONTRACT: AF 19(628)-4789
PROJ: AF-5632
TASK: 563202
MONITOR: AFCRL 67-0588

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-661 591.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), SYNTAX, DOCUMENTATION, SEMANTICS (U)
IDENTIFIERS: CDL1 (U)

THIS IS A COMPANION REPORT TO SCIENTIFIC REPORT NO. 1, 'AN INTRODUCTION TO CDL1, A COMPUTER DESCRIPTION LANGUAGE' (AD 661 591). THIS GIVES A FORMAL DEFINITION OF CDL1. THE TWO REPORTS TOGETHER PROVIDE A COMPLETE DOCUMENTATION FOR THE LANGUAGE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-663 503 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
A CANONIC TRANSLATOR. (U)
DESCRIPTIVE NOTE: THESIS,
NOV 67 86P ALSOP,JOSEPH WRIGHT I
REPT. NO. MAC-TR-46
CONTRACT: NONR-4102(01)
PROJ: NR-048-189, RR-003-09-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DECODING), FLOW CHARTING, SYNTAX, THESES, ALGORITHMS, COMPUTER PROGRAMS, SET THEORY (U)
IDENTIFIERS: SNOBOL (U)

THE THESIS PRESENTS AN ALGORITHM TO RECOGNIZE AND TRANSLATE SETS OF CHARACTER STRINGS SPECIFIED BY CANONIC SYSTEMS. THE ABILITY OF CANONIC SYSTEMS TO DEFINE THE CONTEXT SENSITIVE FEATURES OF STRINGS AND TO SPECIFY THEIR TRANSLATION ALLOWS THE ALGORITHM TO RECOGNIZE AND TRANSLATE REAL COMPUTER LANGUAGES. IT IS ALSO APPLICABLE IN OTHER LANGUAGE SYSTEMS. CANONIC SYSTEMS ARE DISCUSSED, AND SEVERAL EXAMPLES OF THEIR USE ARE GIVEN. THE ALGORITHM IS DESCRIBED, AND EXAMPLES OF CANONIC TRANSLATION ARE PRESENTED USING A PROGRAM IMPLEMENTATION.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-464 128 9/2 12/1
HARRY DIAMOND LABS WASHINGTON D C
PROBLEM SOLVING BY DIGITAL-ANALOG SIMULATION. (U)
DESCRIPTIVE NOTE: MASTER'S THESIS.
OCT 67 74P BLOOM,HOWARD M. ;
REPT. NO. HDL-TR-1357
PROJ: HDL-39800

UNCLASSIFIED REPORT

DESCRIPTORS: (*ANALOG-DIGITAL COMPUTERS, *PROGRAMMING LANGUAGES), (*PROBLEM SOLVING, COMPUTER PROGRAMS), ANALOG COMPUTERS, DIGITAL COMPUTERS, ALGEBRA, LINEAR PROGRAMMING, SIMULATION, PARTIAL DIFFERENTIAL EQUATIONS, BOUNDARY VALUE PROBLEMS, OPTIMIZATION, LEAST SQUARES METHOD, POLYNOMIALS, THESES (U)
IDENTIFIERS: APACHE PROGRAMMING LANGUAGE, DSL/90 PROGRAMMING LANGUAGE, MIDAS PROGRAMMING LANGUAGE, MIMIC PROGRAMMING LANGUAGE (U)

AN EVALUATION OF FOUR SIMULATION LANGUAGES, MIDAS, APACHE, MIMIC, AND DSL/90, IS MADE TO DETERMINE THEIR RELATIVE MERITS. THE APPLICATION OF ANALOG COMPUTER TECHNIQUES TO DIGITAL-ANALOG SIMULATION IS CONSIDERED. THE PROBLEMS DISCUSSED ARE AS FOLLOWS: SOLUTION TO A SET OF LINEAR ALGEBRAIC EQUATIONS, LINEAR PROGRAMMING, HYBRID SIMULATION, PARTIAL DIFFERENTIAL EQUATIONS, BOUNDARY VALUE PROBLEMS, PARAMETER OPTIMIZATION USING A LEAST SQUARES ERROR CRITERION AND ROOTS OF POLYNOMIAL EQUATIONS. A MATHEMATICAL OUTLINE OF THE TECHNIQUE OR PROBLEM IS GIVEN AS WELL AS THE DIGITAL PROGRAM, WRITTEN IN DSL/90, WHICH IS USED TO REPRESENT THE PROBLEMS. POSSIBLE IMPROVEMENTS IN THE SIMULATION LANGUAGE ARE SHOWN. SOME OF THE SUGGESTIONS PRESENTED INCLUDE THE ABILITY TO DIMENSION VARIABLES, AND A MEANS OF USING AN INTERACTION TECHNIQUE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-664 221 9/2
HARVARD UNIV CAMBRIDGE MASS DIV OF ENGINEERING AND APPLIED PHYSICS
TWO CONVERSATIONAL LANGUAGES FOR CONTROL-THEORETICAL COMPUTATIONS IN THE TIME-SHARING MODE. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 67 53P NEWBOLD,P. M. AGRAWALA,A. K.
REPT. NO. TR-546
CONTRACT: N000014-67-A-0298
PROJ: NR-372-012

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIME SHARING, COMPUTER PROGRAMS), (*MATRIX ALGEBRA, PROBLEM SOLVING), (*PROGRAMMING LANGUAGES, TIME SHARING), INSTRUCTION MANUALS, PROGRAMMING(COMPUTERS), LINEAR SYSTEMS, SIMULATION, FLOW CHARTING, DIFFERENTIAL EQUATIONS (U)

THE PAPER PRESENTS IN THE FORM OF USERS' MANUALS, A DESCRIPTION OF TWO CONVERSATIONAL LANGUAGES FOR USE ON A DIRECT-ACCESS TIME-SHARING COMPUTER. THE LANGUAGES ARE DESIGNED FOR CONTROL-THEORETIC APPLICATIONS. THE FIRST LANGUAGE IS A MATRIX MANIPULATION LANGUAGE. THE SECOND IS DESIGNED TO SIMULATE LINEAR DYNAMIC SYSTEMS AND TO SOLVE THE ASSOCIATED RICCATI EQUATIONS. FURTHER APPLICATIONS ARE ALSO POSSIBLE. EACH MANUAL INCLUDES DETAILED EXAMPLES OF THE USAGE OF THE LANGUAGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-664 440 9/2 5/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
LANGUAGE STRUCTURE AND GRAPHICAL MAN-MACHINE COMMUNICATION. (U)
DESCRIPTIVE NOTE: MEETING SPEECH.
66 4P SUTHERLAND,WILLIAM R. I
REPT. NO. MS-1765
CONTRACT: AF 19(628)-5167, ARPA ORDER-691
MONITOR: ESD TR-67-373

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN PROCEEDINGS CONGRESS OF INFORMATION SYSTEM SCIENCE AND TECHNOLOGY (3RD) 29-31 NOV 1966.

DESCRIPTORS: (*INFORMATION RETRIEVAL, PROGRAMMING LANGUAGES), (*GRAPHICS, *PROGRAMMING LANGUAGES), SYNTAX, MAN-MACHINE SYSTEMS, COMPUTERS, SYSTEMS ENGINEERING, COMPILERS, PATTERN RECOGNITION, PICTURES, FLOW CHARTING (U)
IDENTIFIERS: COMPUTER GRAPHICS, GRAPHICAL LANGUAGES (U)

GRAPHICAL LANGUAGES INCLUDE PROGRAMMING LANGUAGES, INTERACTIVE CONTROL LANGUAGES, AND PICTURE LANGUAGES. UNDERSTANDING THE FORM OR SYNTAX OF EACH IS AN IMPORTANT STEP IN CREATING AN INTERACTIVE COMPUTER GRAPHICS SYSTEM. (AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-664 470 9/2
NAVAL WEAPONS LAB DAHLGREN VA
LIST-FORTRAN, A BASIC LIST-PROCESSING EXTENSION OF FORTRAN ON THE IBM 360. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 67 94P HUBER,HARTMUT G. H. 1
REPT. NO. NWL-TR-2122

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS), SUBROUTINES, DATA STORAGE SYSTEMS, AUTOMATIC, DIGITAL COMPUTERS, OPERATION, FUNCTIONS (U)
IDENTIFIERS: LISP PROGRAMMING LANGUAGE, IBM 360, LIST-FORTRAN PROGRAMMING LANGUAGE (U)

FORTRAN IS QUITE CONVENIENT FOR WRITING PROGRAMS THAT PROCESS DATA OF THE TYPE INTEGER, REAL, OR LOGICAL, OR ARRAYS OF SUCH BASIC DATA TYPES, THE LANGUAGE, HOWEVER, IS INADEQUATE FOR HANDLING DATA OF UNPREDICTABLE LENGTH AND INHOMOGENEOUS NATURE, NORMALLY REPRESENTED AS SEQUENCES OF EXPRESSIONS BUILT UP FROM VARIOUS BASIC CONSTITUENTS. LIST-FORTRAN IS AN EXTENSION OF FORTRAN SUCH THAT IN ADDITION TO REAL, AND INTEGER DATA, A NEW DATA TYPE LIST IS AVAILABLE AS AN OBJECT FOR COMPUTATION. A CONVENIENT SET OF OPERATIONS IS PROVIDED FOR MANIPULATING DATA THAT ARE LISTS. THEY ARE USED IN THE SAME WAY AS ANY OTHER FORTRAN SUBROUTINES OR FUNCTIONS. THE SYSTEM CONTAINS BOTH A SET OF GENERAL LIST-PROCESSING OPERATIONS AND AN EFFICIENT RATIONAL ARITHMETIC FOR ARBITRARY LONG NUMBERS REPRESENTED AS LISTS. ADMINISTRATION OF STORAGE IS BASED ON AUTOMATIC STORAGE ALLOCATION USING A TECHNIQUE KNOWN AS GARBAGE COLLECTION. IT IS IMPLEMENTED ON THE IBM 360 AND AVAILABLE WITHIN THE FORTRAN SYSTEM UNDER BPS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-665 341 9/2 12/1
WISCONSIN UNIV MADISON MATHEMATICS RESEARCH CENTER
COMPILER OF DIFFERENTIABLE EXPRESSIONS (CODEX) FOR
THE CDC 3600. (U)
DESCRIPTIVE NOTE: TECHNICAL SUMMARY REPT.,
DEC 67 62P REITER,ALLEN ;GRAY,JULIA
H. ;
REPT. NO. MRC-TSR-791
CONTRACT: DA-31-124-ARO(D)-462

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, *DATA PROCESSING
SYSTEMS), SUBROUTINE, PROGRAMMING LANGUAGES,
PROGRAMMING(COMPUTERS), FLOW CHARTING,
TRANSCENDENTAL FUNCTIONS, PROBLEM SOLVING (U)
IDENTIFIERS: CODEX COMPILER, FORTRAN (U)

IN DESIGNING GENERAL PROGRAMS FOR THE SOLUTION OF SYSTEMS OF NONLINEAR EQUATIONS, FOR NUMERICAL INTEGRATION, AND FOR MANY OTHER MATHEMATICAL PROCEDURES ONE IS CONFRONTED WITH THE NEED FOR A GENERALIZED DIFFERENTIATION ROUTINE. CODEX IS A PROGRAM FOR THE CDC 3600 DESIGNED TO MEET THIS NEED. THE PROGRAM READS THE FUNCTIONS IN FROM CARDS TRANSLATES THEM INTO CODE WHICH IS USED IN THE DIFFERENTIATION AND EVALUATION OF THE FUNCTIONS. LIKEWISE THE CODE RESULTING FROM DIFFERENTIATION OF A FUNCTION MAY BE USED IN FURTHER DIFFERENTIATION AND EVALUATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-666 370 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SOME TECHNIQUES FOR DESCRIBING PROGRAMMING LANGUAGES. (U)
DESCRIPTIVE NOTE: PROFESSIONAL PAPER,
JAN 68 22P PERSTEIN,MILLARD H. !
REPT. NO. SP-2916/000/01

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SPECIFICATIONS), PROGRAMMING(COMPUTERS), STANDARDS, SYNTAX, OPTIMIZATION (U)
IDENTIFIERS: JOVIAL (U)

THE PAPER EXAMINES SEVERAL TECHNIQUES FOR DESCRIBING A PROGRAMMING LANGUAGE, POINTS OUT DESIRABLE QUALITIES IN PROGRAMMING LANGUAGE DESCRIPTION, AND NOTES SOME INCOMPATIBILITIES AMONG THESE QUALITIES. MISCONCEPTIONS WITH REGARD TO THE APPROPRIATE ROLE OF COMPACT SYNTAX METALANGUAGES ARE POINTED OUT. REASONS ARE ADDUCED FOR PRODUCING A SINGLE DEFINITIVE DOCUMENT TO SPECIFY A GIVEN PROGRAMMING LANGUAGE FOR THE EDIFICATION OF ALL PROGRAMMERS SKILLED IN THE ART. A LEAN MIX OF COMPACT SYNTAX METALANGUAGE WITH NATURAL LANGUAGE IS RECOMMENDED FOR WRITING SUCH A DOCUMENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-666 407 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ANNUAL REPORT ON ALGORITHMIC LANGUAGES PROJECT. (U)
DESCRIPTIVE NOTE: ANNUAL REPT. 1 OCT 66-30 SEP 67.
NOV 67 12P GINSBURG,SEYMOUR I
REPT. NO. SDC-TM-3763
CONTRACT: F19628-67-C-0008, AF-AFOSR-1203-67
PROJ: AF-5632
TASK: 563205

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), SYNTAX, MATHEMATICAL MODELS, CONTEXT FREE GRAMMARS, DATA PROCESSING SYSTEMS, EFFICIENCY (U)
IDENTIFIERS: ALGOL PROGRAMMING LANGUAGE, COBOL, JOVIAL, ALGORITHMIC LANGUAGES (U)

THE PURPOSE OF THIS REPORT IS TO REVIEW AND SUMMARIZE THE RESULTS PRESENTED IN ELEVEN SCIENTIFIC REPORTS DURING THE CONTRACT PERIOD. REPORTS THE PURPOSE OF THE INVESTIGATION WAS TO ACCOMPLISH THE FOLLOWING: (1) CONDUCT RESEARCH DESIGNED TO DEVELOP A THEORY FOR ALGORITHMIC (PROGRAMMING LANGUAGES). (2) DEVELOP SUITABLE MATHEMATICAL MODELS OF CURRENTLY USED MATHEMATICAL LANGUAGE SUCH AS ALGOL, COBOL, AND JOVIAL. (3) USE THE MATHEMATICAL MODELS TO ANSWER QUESTIONS OF INTEREST ABOUT THESE LANGUAGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-667 209 9/2 9/7
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD MASS
THE UNSOLVABILITY OF THE EQUIVALENCE PROBLEM FOR LAMBDA-FREE NONDETERMINISTIC GENERALIZED MACHINES. (U)
DESCRIPTIVE NOTE: PHYSICAL SCIENCES RESEARCH PAPERS, NO. 345,
JAN 69 14P GRIFFITHS,T. V. I
REPT. NO. AFCRL-68-0012
PROJ: AF-5632
TASK: 563205

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, THEOREMS), ALGORITHMS, SET THEORY, MAPPING(TRANSFORMATIONS), DETERMINATION, ARTIFICIAL INTELLIGENCE, LINGUISTICS, LEARNING MACHINES, GROUPS(MATHEMATICS) (U)
IDENTIFIERS: *SEQUENTIAL MACHINES (U)

WE SHOW THAT THE EQUIVALENCE PROBLEM FOR LAMBDA-FREE NONDETERMINISTIC GENERALIZED MACHINES IS UNSOLVABLE AND OBSERVE THAT THIS RESULT IMPLIES THE UNSOLVABILITY OF THE EQUALITY PROBLEM FOR C-FINITE LANGUAGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-667 932 9/2
NATIONAL RESOURCE ANALYSIS CENTER WASHINGTON D C
EXEC 8 INPUT-OUTPUT INTERFACE FOR FORTRAN V. (U)
JAN 68 37P
REPT. NO. NRAC-TECHNICAL MANUAL-206

UNCLASSIFIED REPORT

DESCRIPTORS: (•DATA PROCESSING SYSTEMS, •PROGRAMMING LANGUAGES), (•INPUT-OUTPUT DEVICES, MAGNETIC RECORDING SYSTEMS), SUBROUTINES, MAGNETIC TAPE, SPECIFICATIONS, ERRORS, SEQUENCES, DIGITAL COMPUTERS, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: FORTRAN (U)

THIS REPORT IS A DESCRIPTION OF THE PRELIMINARY SPECIFICATIONS INCLUDING CALLING SEQUENCES FOR AN INPUT-OUTPUT ITEM HANDLING SYSTEM TO INTERFACE BETWEEN FORTRAN PROGRAMS AND THE 1108 EXEC 8 DATA HANDLING ROUTINES. IT IS INTENDED THAT THIS INTERFACE PROVIDE TO A FORTRAN PROGRAM ALL THE ITEM HANDLING CAPABILITIES THAT ARE AVAILABLE TO AN ASSEMBLY PROGRAM UNDER EXEC 8 CONTROL, WITH SOME ADDITIONAL PROGRAMMING CONVENIENCES INCORPORATED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-668 464 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA
FORMULA ALGOL MANUAL. (U)
JUN 67 131P EARLEY,JAY I
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 68-0856

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), COMPILERS, ALGORITHMS, SYNTAX, SEMANTICS, ALGEBRAS, FUNCTIONS, SEQUENCES, ERRORS (U)
IDENTIFIERS: ALGOL (U)

FORMULA ALGOL IS AN EXTENSION OF ALGOL 60 INCORPORATING FORMULA MANIPULATION AND LIST PROCESSING. THIS MANUAL DESCRIBES THE USE OF THE VERSION OF FORMULA ALGOL WHICH IS PRESENTLY RUNNING AT CARNEGIE-MELLON UNIVERSITY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-668 960 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
DESIGN AND IMPLEMENTATION OF A TABLE-DRIVEN COMPILER SYSTEM. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT. SEP 65-APR 67,
JUL 67 87P LIU,CHUNG L. |
CHANG,GABRIEL D. |MARKS,RICHARD E. |
REPT. NO. MAC-TR-42
CONTRACT: NONR-4102(01)
PROJ: NR-048-189, RR-003-09-01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJ. MAC.

DESCRIPTORS: (*COMPILERS, DESIGN), REAL TIME, SYNTAX, TIME SHARING, PROBLEM SOLVING, PROGRAMMING LANGUAGES, FLOW CHARTING, EFFICIENCY (U)
IDENTIFIERS: MAC PROJECT, ON-LINE SYSTEMS, SYNTAX-DIRECTED COMPILERS, TABLE-DRIVEN COMPILERS (U)

THE GOAL IS TO PROVIDE USERS OF THE TABLE-DRIVEN COMPILER SYSTEM WITH AN ENVIRONMENT WITHIN WHICH THEY CAN FREELY DESIGN AND PRODUCE COMPILERS. THE PRIMARY DESIGN CRITERION IS GENERALITY SO THAT THE USERS CAN DEFINE A LARGE CLASS OF INPUT LANGUAGES ORIENTED TOWARD ANY KIND OF PROBLEM-SOLVING PURPOSES, AND CAN ALSO DEFINE A LARGE CLASS OF OBJECT PROGRAMS TO BE EXECUTED ON DIFFERENT COMPUTER SYSTEMS. THEREFORE, THE SYSTEM IS NOT LIMITED TO SPECIFIC WAYS OF DOING SYNTACTIC ANALYSIS, OR DOING STORAGE ALLOCATION, OR PRODUCING BINARY PROGRAMS OF A SPECIFIC FORMAT FOR A PARTICULAR COMPUTER SYSTEM. WHAT IS PROVIDED ARE MECHANISMS THAT ARE GENERAL ENOUGH FOR WHICHEVER WAY A USER DESIRES TO BUILD HIS COMPILER. THE TABLE-DRIVEN COMPILER SYSTEM CONSISTS OF A BASE PROGRAM AND TWO FIXED HIGHER-LEVEL LANGUAGES--THE TABLE DECLARATION AND MANIPULATION LANGUAGE AND THE MACRO INTERPRETATION LANGUAGE--TOGETHER WITH CORRESPONDING TRANSLATORS TO GENERATE CONTROL TABLES ACCORDING TO USER SPECIFICATIONS. A THIRD HIGHER-LEVEL LANGUAGE--THE SYNTAX DEFINING LANGUAGE--AND ITS CORRESPONDING TRANSLATOR ARE ALSO NEEDED. FOR THE GENERALITY AND FLEXIBILITY ONE TRIES TO ATTAIN, LESS CONSIDERATION IS PLACED ON EFFICIENCY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-469 048 9/2 3/7
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING
EXPLICIT DEFINITIONS AND LINGUISTIC DOMINOES, (U)
67 44P GORN,SAUL I
CONTRACT: DA-[illegible]-98, NSF-GP-1476
PROJ: DA-20014501B14C
MONITOR: AROD 4166:8

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN SYSTEMS AND COMPUTER SCIENCE, P77-115 1967.
SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY PUBLIC HEALTH SERVICE.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), (*LINGUISTICS, MATHEMATICAL MODELS), SET THEORY, SYMBOLS, FLOW CHARTING, MATHEMATICAL LOGIC, MAPPING(TRANSFORMATIONS), THEOREMS (U)
IDENTIFIERS: PREFIX LANGUAGES, EXPLICIT DEFINITION, FORM LANGUAGES (U)

THE PAPER DISCUSSES THE EFFECT PRODUCED IN 'COMPLETE PREFIX LANGUAGES' UNDERGOING EXTENSION AT THE INTRODUCTION OF NEW CHARACTERS INTO THEIR ALPHABET BY A PROCESS OF 'EXPLICIT DEFINITION.' (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-669 438 9/2 15/7
GULTON SYSTEMS RESEARCH GROUP INC ARLINGTON VA
HANDBOOK FOR MILITRAN ANALYSTS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
APR 68 195P GIAMMO,THOMAS ;
CONTRACT: NONR-2936(00)
PROJ: NR-276-001, RR-003-11-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*OPERATIONS RESEARCH, *PROGRAMMING LANGUAGES), SIMULATION, MATHEMATICAL MODELS, HANDBOOKS, COMPILERS, COMPATIBILITY, PROGRAMMING(COMPUTERS), INPUT-OUTPUT DEVICES, WAR GAMES, BIBLIOGRAPHIES (U)
IDENTIFIERS: MILITRAN PROGRAMMING LANGUAGE (U)

THIS DOCUMENT IS A GUIDE FOR THOSE INVOLVED IN MILITARY OPERATIONS RESEARCH AND EMPHASIZES THE METHODS AND OBJECTIVES OF MILITRAN, AN ENGLISH-LIKE COMPILER LANGUAGE USED AS A TOOL IN THE DESIGN OF SIMULATION MODELS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-669 443 9/2
NAVAL ELECTRONICS LAB CENTER FOR COMMAND CONTROL AND COMMUNICATIONS SAN DIEGO CALIF
PROGRAMMING LANGUAGES FOR DIGITAL WEAPON SYSTEMS: EVALUATION. (U)
DESCRIPTIVE NOTE: EVALUATION REPT. NOV 66-APR 67,
DEC 67 83P TIERNAN,J. C. I
REPT. NO. NELC-1927
PROJ: S31-09
TASK: 11248(NELC N417)

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, WEAPON SYSTEMS), MAN-MACHINE SYSTEMS, DIGITAL COMPUTERS, SPECIAL PURPOSE COMPUTERS, COMMAND + CONTROL SYSTEMS, COMPILERS, SYNTAX, LEARNING, DIGITAL SYSTEMS (U)
IDENTIFIERS: ALGOL PROGRAMMING LANGUAGE, CS-1 PROGRAMMING LANGUAGE, SYCOL PROGRAMMING LANGUAGE, NELIAC PROGRAMMING LANGUAGE, COBOL, JOVIAL, FORTRAN (U)

THE REPORT CONSIDERS PROGRAMMING LANGUAGES FROM THE VIEWPOINT OF DIGITAL WEAPON SYSTEMS REQUIREMENTS. MACHINE-ORIENTED AND PROCEDURE-ORIENTED LANGUAGES ARE QUALITATIVELY COMPARED. ALSO, A QUALITATIVE EVALUATION IS MADE OF THE VARIOUS PROCEDURE-ORIENTED LANGUAGES AVAILABLE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-804 036 9/2
CARNEGIE INST OF TECH PITTSBURGH PA
A COMPUTER PROGRAM FOR DISCOVERING AND PROVING SEQUENTIAL RECOGNITION RULES FOR WELL-FORMED FORMULAS DEFINED BY A BACKUS NORMAL FORM GRAMMAR. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAY 64 93P LONDON,RALPH L.
CONTRACT: SD-146
MONITOR: AFOSR 67-0259

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DOCTORAL THESIS.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *COMPUTER PROGRAMS), ARTIFICIAL INTELLIGENCE, LANGUAGE, THESES, SYNTAX, CHARACTER RECOGNITION, GRAMMARS, MATHEMATICAL LOGIC, THEOREMS, MACHINE TRANSLATION (U)
IDENTIFIERS: ARTIFICIAL LANGUAGES, BNF(BACKUS NORMAL FORM) (U)

A REPORT IS PRESENTED BASED UPON A COMPUTER PROGRAM WHICH WILL DISCOVER RULES FOR THE RECOGNITION OF GRAMMATICAL STRINGS WHEN GIVEN A SIMPLE BACKUS NORMAL FORM GRAMMAR. THE PROGRAM ATTEMPTS TO PROVE THAT THESE RULES ARE BOTH NECESSARY AND SUFFICIENT TO CHARACTERIZE GRAMMATICAL STRINGS. THE MAIN MATHEMATICAL TECHNIQUES THAT ARE MECHANIZED ARE INDUCTION AND CASE ANALYSIS. IN ADDITION THE PROGRAM IS CAPABLE OF PRODUCING COUNTER-EXAMPLES. SINCE THE PROGRAM IS WRITING PROOFS, SEVERAL (META-)PROOFS ARE INCLUDED ASSERTING THE CORRECTNESS OF THE PRODUCED PROOFS. THE PROGRAM EXISTS FOR TWO REASONS. FIRST, IT WILL CONSTRUCT A RECOGNIZER FOR SOME BACKUS NORMAL FORM GRAMMARS AND PROVIDE A PROOF OF THE VALIDITY OF THE RECOGNIZER. SECOND, ITS DOMAIN IS A CONVENIENT ONE FOR PROVING THEOREMS BY MACHINES, ESPECIALLY THOSE WHOSE PROOFS MAY USE FAIRLY INVOLVED CASE ANALYSIS. THE OVERALL STRATEGY USED TO DISCOVER THE RULES AND TO PROVE THEM VALID IS DESCRIBED, FOLLOWED BY A DISCUSSION OF THE PROGRAM ORGANIZATION AND INTERNAL REPRESENTATIONS. LIMITATIONS AND POSSIBLE IMPROVEMENTS TO THE PRESENT PROGRAM ARE MENTIONED. AN ASSESSMENT IS MADE OF THE MATHEMATICAL ACCOMPLISHMENTS OF THE PROGRAM AND THE VALUE OF THE PROGRAM AS A MATHEMATICAL AID. AN APPENDIX PRESENTS THE OUTPUT OF FOUR EXAMPLES OF PROGRAM RUNS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-809 419 9/2 12/1
CARNEGIE INST OF TECH PITTSBURGH PA
SEQUENTIAL EQUIVALENTS OF PARALLEL PROCESSES. (U)
FEB 67 38P PARNAS,D. L. I
CONTRACT: SD-146
MONITOR: AFOSR 67-0755

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *PROGRAMMING(COMPUTERS)), ALGORITHMS, DATA PROCESSING SYSTEMS, NETWORKS, INPUT-OUTPUT DEVICES, PROBLEM SOLVING, SEQUENCES, INFORMATION RETRIEVAL (U)

THIS PAPER INTRODUCES THE PROBLEM OF FINDING A SEQUENTIAL PROCESS EQUIVALENT TO A SYSTEM OF INTERACTING DISCRETE PARALLEL PROCESSES. UNDER THE ASSUMPTION THAT THE SEQUENTIAL PROCESS IS TO BE COMPOSED EXCLUSIVELY OF EXECUTIONS OF THE INDIVIDUAL 'PARALLEL' PROCESSES IN A PREDETERMINED SEQUENCE, A METHOD OF DERIVING OPTIMAL SEQUENTIAL PROCESSES IS PRESENTED. APPLICATIONS TO THE DESIGN OF SIMULATION SYSTEMS AND PICTURE PROCESSING PROGRAMS ARE DISCUSSED. EXAMPLES ARE TAKEN FROM LOGIC DESIGN AND PICTURE PROCESSING. (AUTHOR) (U)

COMPUTER PROCESSING OF ANALOG DATA

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-270 238
STANFORD UNIV CALIF APPLIED MATHEMATICS AND STATISTICS LABS
VECTORCARDIOGRAPHIC DIAGNOSIS WITH THE AID OF ALGOL (U)
OCT 61 IV FORSYTHE,G.E.;VON DER GROEBEN,J.; TOOLE,J.G.;
REPT. NO. TR16
CONTRACT: NONR22637

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROCARDIOGRAPHY, *HEART, *MUSCLES, COMPUTERS, STATISTICAL ANALYSIS (U)

UNCLASSIFIED 000391

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-289 830
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
COMPUTER APPLICATIONS IN MEDICINE AND THE BIOLOGICAL SCIENCES BIBLIOGRAPHY (U)
NOV 62 IV EMPEY,SALLY L.
REPT. NO. SP 1028

UNCLASSIFIED REPORT

DESCRIPTORS: *BIBLIOGRAPHIES, *COMPUTERS, *MEDICINE, BIOLOGY, CYBERNETICS, DATA PROCESSING SYSTEMS, DIAGNOSIS, INFORMATION RETRIEVAL, MEDICAL EXAMINATION (U)

A LIST IS PRESENTED OF PUBLISHED DOCUMENTS CONTAINING MATERIAL RELATED TO COMPUTER APPLICATIONS IN MEDICINE AND THE BIOLOGICAL SCIENCES. SOME OF THE AREAS COVERED ARE: BIO-MEDICAL SYSTEMS, SIMULATION, COMPUTER-AIDED DIAGNOSIS, INFORMATION RETRIEVAL AND DATA ANALYSIS IN BIO-MEDICINE, AND COMPUTER-AIDED MEDICAL AND BIOLOGICAL RESEARCH. THE EMPHASIS HAS BEEN PLACED PRIMARILY ON RECENTLY PUBLISHED MATERIAL BECAUSE THE FIELD, ALTHOUGH RELATIVELY NEW, IS CHANGING SO RAPIDLY THAT THE INFORMATION BECOMES QUICKLY OUTDATED. AN EARLIER BIBLIOGRAPHY COVERS THE PERIOD FROM 1950 TO OCTOBER 1960. THIS DOCUMENT, FN- 1839/000/01-13, SEPTEMBER 1961, MAY BE OBTAIN D BY WRITING TO DOCUMENT DISTRIBUTION, SYSTEM DEVELOPMENT CORPORATION, 2500 COLORADO, SANTA MONICA, CALIFORNIA. MOST OF THE REFERENCE ITEMS INCLUDED IN THE PRESENT BIBLIOGRAPHY ARE MORE RECENT THAN OCTOBER 1960. A FEW OLDER ITEMS, NOT FOUND IN THE EARLIER BIBLIOGRAPHY, ARE, HOWEVER, INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-294 122
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
THE AUTOMATION OF PSYCHOTHERAPY (U)
DEC 62 IV MEANY,J.I
REPT. NO. SP 1050

UNCLASSIFIED REPORT

DESCRIPTORS: •NEUROLOGY, •PSYCHIATRY, AUTOMATION, COMPUTERS, PROGRAMMING (COMPUTERS), THEORY (U)

A STUDY OF THE IMPLICATIONS OF AUTOMATION FOR PSYCHOTHERAPY IS PRESENTED. THE GROWTH IN THE USE OF COMPUTERS, THEIR POWER AND CAPACITY, AS WELL AS SOME OF THEIR APPLICATIONS IN THE BEHAVIORAL SCIENCES, ARE INDICATED. A STUDY OF THE VARIOUS TECHNIQUES OF COMPUTER PROGRAMMING WHICH WOULD AFFECT THE MAN-MACHINE RELATIONSHIP IN AN AUTOMATED TYPE OF PSYCHOTHERAPY IS PRESENTED. THESE PROGRAMMING TECHNIQUES INCLUDE FIXED SEQUENCE PROGRAMS, ALTERNATIVE SEQUENCE PROGRAMS, AND VARIED SEQUENCE COMPUTER PROGRAMS. SOME OF THE RELATIONSHIPS BETWEEN COMPUTER PROGRAMMING TECHNIQUES AND DIFFERENT THEORETICAL POSITIONS IN PSYCHOLOGY ARE INDICATED. FOR EXAMPLE, THE SKINNER APPROACH SEEMS TO STRESS A FIXED SEQUENCE APPROACH TO PROGRAMMING WHILE A CLIENT-CENTERED THERAPY APPROACH WOULD SEEM TO NECESSITATE A VARIED SEQUENCE APPROACH WITH THE COMPUTER BEING PROGRAMMED TO BE RESPONSIVE TO THE NEEDS OF THE CLIENT. SOME OF THE EFFECTS OF USING INFORMATION RETRIEVAL EQUIPMENTS ON AUTOMATED PSYCHOTHERAPY ARE INDICATED. A BRIEF REVIEW OF THE RESEARCH ON STUDENT-ORIENTED TEACHING MACHINES ALONG WITH THE IMPLICATIONS OF THIS RESEARCH FOR PSYCHOTHERAPY MACHINES ARE PRESENTED. HOW A COMPUTER COULD BE ACTUALLY APPLIED TO PSYCHOTHERAPY IS DISCUSSED ALONG WITH THE PSYCHOLOGICAL THEORY UPON WHICH THIS APPLICATION IS BASED. SOME OF THE PROBLEMS, VALUES, AND SOCIAL CONSEQUENCES INVOLVED IN THE AUTOMATION OF PSYCHOTHERAPY ARE PRESENTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-411 481
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB OHIO
AN IMPEDANCE RESPIROMETER. (U)
DESCRIPTIVE NOTE: FINAL REPT., AUG 61-AUG 62,
JUN 63 8P MCCALLY,MICHAEL ;
BARNARD,GEORGE W.;ROBINS,KENNETH E.;
MARKO,ADOLF R.;
PROJ: 7222
TASK: 722203
MONITOR: TDR63 45 UNCLASSIFIED REPORT

UNCLASSIFIED REPORT

DESCRIPTORS: (•RESPIRATION, METER), MEASUREMENT, VOLUME, ELECTRICAL IMPEDANCE, TRANSITORS, TELEMETER SYSTEMS, MAN, ANALOG COMPUTERS, COMPUTERS, SPACE FLIGHT, SPACE MEDICINE, PHYSIOLOGY, RELIABILITY, ELECTRODES, INSTRUMENTATION. (U)
IDENTIFIERS: 1963, RESPIROMETER. (U)

WHEN A LOW-INTENSITY, HF (20-60 KC) CARRIER SIGNAL IS APPLIED TO A HUMAN SUBJECT BETWEEN BIAXILLARY ELECTRODES, A CHANGE IN IMPEDANCE CAN BE MEASURED BETWEEN THE ELECTRODES. THIS CHANGE IN IMPEDANCE CLOSELY PARALLELS THE SIMULTANEOUS CHANGES IN THE VOLUME OF RESPIRED AIR. THE DESIGN AND CIRCUITRY OF AN IMPEDANCE RESPIROMETER ARE PRESENTED. SIMULTANEOUS TRACINGS FROM THIS RESPIROMETER AND A WEDGE SPIROMETER WERE RECORDED FROM TEN SUBJECTS DURING QUIET SITTING, STANDING, WALKING, AND RUNNING IN PLACE THROUGH THE PHYSIOLOGICAL RANGE OF RESPIRATORY RATE (8-40 BREATHS/MIN) AND VOLUME (1/2-4 LITERS). THE OUTPUT OF THE IMPEDANCE RESPIROMETER CORRELATED WELL WITH THE OUTPUT OF THE WEDGE SPIROMETER IN THE QUIET, SEATED SUBJECT. THE PROBLEMS OF ELECTRODE CONFIGURATION, BODY TYPE, AND ELECTRODE ARTIFACT ARE DISCUSSED. THIS SYSTEM IS A RELIABLE AND UNENCUMBERING METHOD OF MONITOR-RESPIRATORY RATE AND, POTENTIALLY, RESPIRATORY VOLUME. HOWEVER, ITS USE IS SEVERELY LIMITED BY BASE LINE SHIFTS AND MOTION ARTIFACT DUE TO CHANGES IN ELECTRODE IMPEDANCE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-420 518
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
AUTOMATIC DETECTION OF PSYCHOLOGICAL DIMENSIONS IN PSYCHOTHERAPY TRANSCRIPTS BY MEANS OF CONTENT WORDS. (U)
14P FORD,JOHN D. ,JR.
REPT. NO. SP1220

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PSYCHIATRY, DATA PROCESSING SYSTEMS), (*DATA PROCESSING SYSTEMS, PSYCHIATRY), PROGRAMMING (LANGUAGES), VERBAL BEHAVIOR, DETECTION, PSYCHOLOGY (U)
IDENTIFIERS: SELF-EVALUATION, 1963 (U)

DESCRIBES AND EVALUATES TECHNIQUES FOR THE AUTOMATIC DETECTION OF STATEMENTS OF SELF-EVALUATION DURING PSYCHOTHERAPY SESSIONS. REPORTS THAT DATA CONSISTED OF A NINE-SESSION CASE, THAT A VERBATIM RECORD WAS PERFORMED USING COMPUTER PROGRAMS, AND THAT 83% OF THE 268 SENTENCES DETECTED WERE JUDGED RELEVANT TO SELF-EVALUATION. CLASSIFIES THE REASONS FOR SPURIOUS DETECTIONS AND FAILURES OF DETECTION, AND SUGGESTS METHOD OF ALLEVIATING THEM. REPORTS THAT THIS STUDY DEMONSTRATES THE POTENTIAL VALUE OF GROUPS OF CONTENT WORDS FOR THE DETECTION OF PSYCHOLOGICAL DIMENSIONS FROM TRANSCRIPTS OF INTERVIEW OR GROUP MEETINGS. STATES THAT WORK IS UNDERWAY FOR THE FORMULATION OF DETECTION FORMATS FOR OTHER PSYCHOLOGICAL DIMENSIONS OF TRANSCRIPTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-421 106
WASHINGTON UNIV SEATTLE
A RAPID METHOD AND SIMPLE COMPUTER FOR CALCULATING CARDIAC OUTPUT BY DYE SOLUTION, (U)
63 7P GRAESCH ,PATRICK J. ;
THEODORE N;
CONTRACT; DA49 193MD2231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE;

DESCRIPTORS; (•CARDIOGRAPHY, MATHEMATICAL ANALYSIS), (•MATHEMATICAL ANALYSIS, CARDIOGRAPHY), (•BLOOD CIRCULATION, DETERMINATION), ANALOG COMPUTERS, MEDICAL RESEARCH, ARMY RESEARCH, LABORATORY EQUIPMENT, EFFECTIVENESS, TEST METHODS, DYES, HEART, COMPUTERS, INTEGRATORS (U)
IDENTIFIERS; 1963, DYE DILUTION CURVES (U)

A METHOD IS DESCRIBED IN WHICH CARDIAC-OUTPUT CAN BE RAPIDLY AND ACCURATELY CALCULATED. THE METHOD IS ONE OF FINDING THE AREA UNDER THE DILUTION CURVE. RECIRCULATION ARTIFACT IS ELIMINATED BY SAMPLING THE SLOPE AND THE INSTANTANEOUS VALUE OF THE CURVE BEFORE RECIRCULATION. THE RATIO OF THE INSTANTANEOUS VALUE (E) TO THE EXPONENTIAL DOWNSLOPE YIELDS THE TIME CONSTANT. THE PRODUCT OF E AND THE TIME CONSTANT IS THE AREA UNDER THE EXPONENTIAL. THESE CHARACTERISTICS OF EXPONENTIAL CURVES ARE PROVEN RIGOROUSLY. THE AREA UNDER A RECORDED DILUTION CURVE MAY BE COMPUTED QUICKLY BY DRAWING A TANGENT TO THE CURVE AND CONSTRUCTING A RECTANGLE WHOSE SIDES ARE E AND THE TIME CONSTANT. USING THE SUM OF THE ORDINATES ALONG THE PATH OF THE CURVE AND THENCE ALONG THE TOP OF THE RECTANGLE YIELDS THE AREA. THE FUNCTIONAL BLOCK DIAGRAM OF A COMPUTER IS PRESENTED. THE COMPUTER PERFORMS THE ELECTRONIC ANALOG OF THE GRAPHICAL OPERATIONS DESCRIBED ABOVE. IT WAS CONSTRUCTED USING THREE OPERATIONAL AMPLIFIERS AND FOUR MERCURY RELAYS, COSTS LESS THAN $300, AND OPERATES ON ±12 VOLTS.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-421 107
WASHINGTON UNIV SEATTLE
THE USE OF AN ELECTRONIC INTEGRATOR AS A COMPUTER FOR DYE DILUTION CURVES, (U)
63 IV GRAESCH ,PATRICK J. IFINLEY ,THEODORE N. IWARD ,RICHARD J. IBONTEA I,JOHN J. I
CONTRACT: DA-49-193-MD-2231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*INTEGRATORS, PHYSIOLOGY), (*CARDIOGRAPHY, INTEGRATORS), (*BLOOD CIRCULATION, DETERMINATION), DYES, HEART, CARDIOVASCULAR SYSTEM, ELECTRONIC EQUIPMENT, COMPUTERS, MEDICAL RESEARCH, ARMY, ANALOG COMPUTERS (U)
IDENTIFIERS: 1963, DYE DILUTION CURVES (U)

A METHOD IS DESCRIBED IN WHICH THE DYE-DILUTION CURVE (INCLUDING RECIRCULATION) IS INTEGRATED ELECTRONICALLY. THE INTEGRAL IS RECORDED SEPARATELY AND SIMULTANEOUSLY WITH THE DYE-DILUTION CURVE. AS THE PRIMARY DILUTION CURVE EXPONENTIALLY APPROACHES ZERO, ITS INTEGRAL EXPONENTIALLY APPROACHES A FINAL VALUE. THIS FINAL VALUE OF THE INTEGRAL IS THE AREA UNDER THE DILUTION CURVE. WITH RECIRCULATION, THE INTEGRAL EXCEEDS THIS TRUE FINAL VALUE. BY SAMPLING THE DILUTION CURVE BEFORE RECIRCULATION, INFORMATION IS OBTAINED WHICH CAN BE USED TO GRAPHICALLY DETERMINE THE FINAL VALUE OF THE INTEGRAL CURVE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-425 733
NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
BALLISTOCARDIOGRAPHIC ANALYSIS UTILIZING A
MATHEMATICAL MODEL AND PHOTOELECTRIC ANALOG. (U)
24P MORSE,ROBERT L. I
MONITOR: NAVMED MR005 13 7004 10

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•BALLISTOCARDIOGRAPHY, MATHEMATICAL MODELS), CARDIOVASCULAR SYSTEM, ANALOG SYSTEMS, THEORY, BLOOD PRESSURE, BLOOD CIRCULATION, ANALYSIS, PHYSIOLOGY, ANALOG COMPUTERS (U)
IDENTIFIERS: 1963, PHOTOELECTRIC ANALOG (U)

BALLISTOCARDIOGRAPHIC ANALYSIS UTILIZING A MATHEMATICAL MODEL AND PHOTOELECTRIC ANALOG.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-431 207
MAYO CLINIC ROCHESTER MINN
USE OF THE HUMAN CENTRIFUGE TO STUDY CIRCULATORY, RESPIRATORY AND NEUROLOGIC PHYSIOLOGY IN NORMAL HUMAN BEINGS AND A DESCRIPTION OF AN ELECTRONIC DATA PROCESSING SYSTEM DESIGNED TO FACILITATE THESE STUDIES. (U)
DESCRIPTIVE NOTE: REPT. FOR 23 AUG 60-1 NOV 61.
DEC 63 26P WOOD,EARL H. ;
SUTTERER,WILLIAM F. ;MARSHALL,HIRAM W. ;
NOLAN,A. CLARK ;
CONTRACT: AF33 616 7594
PROJ: 7222
MONITOR: AMRL TDR63 108

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON BIOPHYSICS OF FLIGHT.

DESCRIPTORS: (*STRESS (PHYSIOLOGY), ACCELERATION), PHYSIOLOGY, DATA PROCESSING SYSTEM, CARDIOVASCULAR SYSTEM, BLOOD CIRCULATION, CENTRIFUGAL FIELDS, NEUROLOGY, RESPIRATORY SYSTEM, RESPIRATION, TOLERANCES (PHYSIOLOGY), BRAIN (U)
IDENTIFIERS: 1963, HUMAN CENTRIFUGE, PULMONARY CIRCULATION (U)

STUDY OF THE REACTIONS OF A SYSTEM TO TRANSIENT REPRODUCIBLE DEGREES OF STRESS IS A USEFUL MEANS OF ELUCIDATING THE MECHANISMS OF ACTION OF THE SYSTEM. EXPOSURES TO POSITIVE ACCELERATIONS CAN BE USED TO PRODUCE SUDDEN DECREASES IN ARTERIAL PRESSURE AT HEAD LEVEL OF ANY DESIRED DEGREE DOWN TO ZERO. STUDY OF THE REACTIONS OF THE CARDIOVASCULAR SYSTEM INDUCED IN THIS MANNER TO ELUCIDATE CIRCULATORY PHYSIOLOGY HAS BEEN ONLY PARTIALLY EXPLOITED. THESE SAME MANEUVERS CAN BE USED TO PRODUCE TEMPORARY REPRODUCIBLE DEGREES OF STAGNANT ANOXIA OF THE RETINA AND BRAIN OF CONSCIOUS NORMAL HUMAN BEINGS AND HENCE OFFER A POTENTIALLY FRUITFUL FIELD FOR STUDY OF THE INTERRELATIONSHIPS OF THE LEVEL OF CONSCIOUSNESS, ELECTRICAL ACTIVITY OF THE BRAIN AND RETINA, ARTERIAL PRESSURE AT HEAD LEVEL AND BLOOD FLOW TO THESE AREAS. THE HYDROSTATIC EFFECTS OF ACCELERATION CAUSE PROFOUND ALTERATAONS IN THE VENTILATION-PERFUSION RATIOS IN THE LUNGS WHICH ARE IN OPPOSITE DIRECTIONS IN THE DEPENDENT AND SUPERIOR PORTIONS OF THE THORAX. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-435 982
AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO
1963 BIONICS SYMPOSIUM 19-20-21 MARCH, INFORMATION PROCESSING BY LIVING ORGANISMS AND MACHINES. (U)
MAR 64 340P
REPT. NO. ASD-TDR-63-946

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BIONICS, SYMPOSIA), (*SYMPOSIA, BIONICS), (*ARTIFICIAL INTELLIGENCE, MEDICAL RESEARCH), NETWORK, MODELS (SIMULATIONS), NERVE CELLS, NERVOUS SYSTEM, MATHEMATICAL MODELS, COLOR VISION, AUDITORY PERCEPTION, LEARNING, DATA PROCESSING SYSTEMS, BEHAVIOR, TRAINING DEVICES, CYBERNETICS, COMPUTERS, COMMUNICATION THEORY, MATHEMATICAL LOGIC (U)
IDENTIFIERS: 1963 (U)

THIS REPORT COMPILES PAPERS PRESENTED IN THE INVITED SESSIONS AT THE BIONICS SYMPOSIUM 1963 HELD 19-21 MARCH 1963 AT DAYTON, OHIO. THESE SESSIONS ARE DEVOTED TO THE SUBJECT INFORMATION PROCESSING BY LIVING ORGANISMS AND MACHINES AND HAVE THE FOLLOWING TITLES: I. GENERAL SESSION; II. SIGNAL RECEPTION BY LIVING ORGANISMS; III. INFORMATION PROCESSING BY LIVING ORGANISMS; IV. PHYSICAL PRINCIPLES OF BIONICS; AND V. APPLICATION OF BIONIC CONCEPTS. BIOLOGICAL, MATHEMATICAL, AND ENGINEERING PAPERS ARE EQUALLY REPRESENTED ATTACKING THE PROBLEM OF UNDERSTANDING AND SIMULATING THE SOPHISTICATED INFORMATION PROCESSING CAPABILITIES OF LIVING ORGANISMS BY ARTIFICIAL MEANS. (AUTHOR)
(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-439 502
NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
SIGNIFICANT PHYSIOLOGICAL PARAMETERS OF THE
BALLISTOCARDIOGRAM AS ANALYZED BY A MATHEMATICAL
MODEL. (U)
JAN 64 22P MORSE,ROBERT L. I
MONITOR: NAVMED MR005 13 17004 11

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BALLISTOCARDIOGRAPHY, ANALYSIS),
COMPUTERS, MATHEMATICAL MODELS, HUMANS,
ARTERIES, BLOOD VESSELS, BLOOD PRESSURE,
HEART, DETERMINATION (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-443 843
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS
VECTORCARDIOGRAPHIC DIAGNOSIS UTILIZING ADAPTIVE PATTERN-RECOGNITION TECHNIQUES. (U)
JUN 64 84P SPECHT,DONALD F.
REPT. NO. SEL64 046 TR6783 1
CONTRACT: NONR22824
PROJ: NR373 3.0

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•CARDIOVASCULAR DISEASES, DIAGNOSIS), (•ELECTROCARDIOGRAPHY, PATTERN RECOGNITION), (•PATTERN RECOGNITION, ELECTROCARDIOGRAPHY), VECTOR ANALYSIS, ELECTRICAL PROPERTIES, ELECTRICAL EQUIPMENT, SEQUENTIAL ANALYSIS, MEDICAL RESEARCH, HEART, PATHOLOGY, COMPUTERS (U)

THE PURPOSE OF THIS RESEARCH WAS TO APPLY ADAPTIVE PATTERN-RECOGNITION TECHNIQUES TO THE DIAGNOSIS OF HEART DISEASE AS EVIDENCED IN VECTORCARDIOGRAMS. TWO METHODS BY WHICH ADAPTIVE PATTERNRECOGNITION TECHNIQUES CAN BE APPLIED TO THE ANALYSIS OF VECTORCARDIOGRAPHIC DATA WERE DEVELOPED AND TESTED. THE FIRST METHOD, THE POLYHEDRON APPROACH, CONSIDERS TRI-AXIAL SAMPLES TAKEN FROM THE VECTORCARDIOGRAM AT VARIOUS TIMES AS SEPARATE DATE POINTS IN THREE-DIMENSIONAL SPACE. THE SECOND METHOD, SEQUENTIAL ADAPTIVE PROCESSING, CONSIDERS ALL THE TIME SAMPLES FROM A GIVEN RECORD AS A SINGLE POINT IN N-DIMENSIONAL SPACE. IT WAS FOUND THAT SEQUENTIAL ADAPTIVE PROCESSING YIELDS BETTER RESULTS THAN THE POLYHEDRON APPROACH BECAUSE, FOR ADEQUATE TRAINING, THE LATTER REQUIRES MORE DATA SAMPLES THAN WERE AVAILABLE. MORE IMPORTANT, IT WAS FOUND THAT SEQUENTIAL ADAPTIVE PROCESSING YIELDS MUCH BETTER RESULTS THAN THE CLINICAL ANALYSIS OF ELECTROCARDIOGRAMS FOR DETECTION OF ABNORMALITIES, WITH ONLY A SLIGHT DECREASE IN ACCURACY IN THE DETECTION OF NORMAL WAVEFORMS. SOME RESEARCH WAS ALSO DONE IN DISTINGUISHING INDIVIDUAL ABNORMALITIES FROM ONE ANOTHER BY THE USE OF SEQUENTIAL ADAPTIVE PROCESSING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-457 349
AEROMEDICAL RESEARCH LAB (6571ST) HOLLOMAN AFB N MEX
DYNAMIC RESPONSE ANALYSIS OF +GX IMPACT ON MAN, (U)
NOV 64 45P FEDER,H. C. (ROOT,E. H.)
REPT. NO. ARL TR64 11
PROJ: 7231
TASK: 723106

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*STRESS (PHYSIOLOGY), DECELERATION), (*DECLERATION, MEASURING DEVICES (ELECTRICAL + ELECTRONIC)), REACTION (PSYCHOLOGY), BIOPHYSICS, TEST METHODS, TEST EQUIPMENT, ANATOMICAL MODELS, MODELS (SIMULATIONS), IMPACT SHOCK, ACCELEROMETERS, ANALOG SYSTEMS, ANALOG COMPUTERS, SPACE MEDICINE, HUMANS, THORAX (U)

AN ANALOG COMPUTER WAS USED TO COMPARE THE DYNAMIC RESPONSE OF AN ACCELEROMETER PLACED OVER THE STERNUM OF HUMAN TEST SUBJECTS DURING IMPACT IN +G SUB X DIRECTION WITH THE RESPONSE OF SECOND AND HIGHER ORDER SPRING-MASS SYSTEMS. IDENTITY OF THE RESPONSE MODES OF BOTH SYSTEMS, HUMAN AND MECHANICAL, WAS APPROXIMATED BY TRIAL AND ERROR MODIFICATION OF NATURAL FREQUENCY AND DAMPING COEFFICIENT OF THE COMPUTER MODEL USED, WITH RESTRICTION TO ONLY A FEW CASES INVESTIGATED AND TO THE PARTICULAR TEST CONDITIONS, BEST COMPLIANCE OF COMPLETE RESPONSE COVERAGE IS CONSIDERED TO RESULT FROM THE APPLICATION OF A SINGLE SPRING-MASS SYSTEM OF IRREGULARLY VARYING DAMPING COEFFICIENT. A PARAMETRIC ANALYSIS OF THE SINGLE SPRING-MASS SYSTEM IS PRESENTED TO AID THE USE OF STANDARDIZED IMPACT PROFILES. THE USEFULNESS OF THE METHOD OF RESPONSE APPROXIMATION HAS BEEN ESTABLISHED, BUT THE VALIDATION OF THE UNDERLYING CONCEPT OF RESPONSE PREDICTABILITY NEEDS FURTHER INVESTIGATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-467 733
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
THE PERSONALIZED TELEMETRY MEDICAL MONITORING AND PERFORMANCE DATA-GATHERING SYSTEM FOR THE 1962 SAM-MATS FATIGUE STUDY. (U)
DESCRIPTIVE NOTE: REPT. FOR JUN 60-JAN 62,
APR 65 29P SIMONS,DAVID G. ;
PRATHER,WESLEY ;COOMBS,FRANKLIN K. ;
REPT. NO. SAM-TR-65-17
PROJ: 7758 ,7751
TASK: 775506

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•DATA PROCESSING SYSTEMS, MEDICAL EXAMINATION), (•AVIATION MEDICINE, INSTRUMENTATION), TELEMETERING DATA, FLIGHT CREWS, RESPIRATION, ELECTROCARDIOGRAPHY, GALVANIC SKIN RESPONSE, TELEMETERING TRANSMITTERS, TELEMETER SYSTEMS (U)
IDENTIFIERS: BIOMEDICAL MONITORS, BIOSENSORS (U)

THIS REPORT DESCRIBES THE INSTRUMENTATION USED FOR GATHERING AND RECORDING DATA FOR THE 1962 USAF SAM-MATS, FATIGUE STUDY AT DOVER AFB, DEL. SIX BIOMEDICAL MEASURES AND SIX PERFORMANCE MEASURES WERE RECORDED CONTINUOUSLY WHILE 4 PILOTS ACCOMPLISHED AN AIRCRAFT SIMULATOR 'FLIGHT' OF 24 HOURS EACH. THE BIOMEDICAL MONITORING INSTRUMENTATION INCLUDED EEG, ECG, RESPIRATION, SKIN TEMPERATURE, BSR, AND GSR. A 6-CHANNEL PERSONALIZED BIOMEDICAL RADIO TELEMETRY SYSTEM WAS USED TO TRANSMIT THESE MEASURES. CONTINUOUSLY RECORDED PERFORMANCE MEASURES INCLUDED THREE PILOT-CONTROL FUNCTIONS AND THREE AIRCRAFT INSTRUMENT READINGS. THE CIRCUITRY AND FUNCTIONS OF THE PERSONALIZED TELEMETRY SYSTEM ARE DETAILED, INCLUDING TECHNICS DEVELOPED TO RESOLVE ALL MAJOR PROBLEMS ENCOUNTERED. MOST OF THE RECORDED DATA WERE SUITABLE FOR VISUAL PATTERN ANALYSIS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-600 580
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
ELECTRONIC DEVICE FOR SIMULATING THE ELECTRICAL ACTIVITY OF THE HEART. (U)
MAR 64 19P AKULINICHEV,I. T. IBABSKII,E. B. IGEL'SHTEIN,G. G. IPETROV,G. M. ISKACHKOVA,A. I. I
MONITOR: FTD ,TT TT63 11981 ,64 11686

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MEMO. ELEKTRONIKA V MEDITSINE ELECTRONICS IN MEDICINE MOSCOW/LENINGRAD, 1960, P. 312-326.

DESCRIPTORS: (*BIONICS, HEART), (*HEART, BIONICS), (*ELECTROCARDIOGRAPHY, CYBERNETICS), COMPUTERS, USSR, SIMULATION (U)

SIMULATION OF THE ELECTRICAL ACTIVITY OF THE HEART WAS USED FOR STUDYING THE CAUSES OF VARIOUS TYPES OF ELECTROCARDIOGRAMS. ELECTRONIC DEVICES WHICH SIMULATE THE ELECTRICAL ACTIVITY OF THE HEART CAN BE USED AS A VISUAL TRAINING AID IN THE STUDY OF ELECTROCARDIOGRAPHY. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-604 526
RAYTHEON CO WALTHAM MASS
SPEECH RECOGNITION BY FEATURE-ABSTRACTION TECHNIQUES. (U)
DESCRIPTIVE NOTE: INTERIM REPT., FOR MAY 63-JUN 64,
AUG 64 29P MARTIN,T. B. NELSON,A. L. ;
ZADELL,H. J. ;
CONTRACT: AF33 657 11535
PROJ: 4335
TASK: 433521
MONITOR: AL , TDR64 176

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*SPEECH RECOGNITION, COMPUTERS), (*SPACE COMMUNICATION SYSTEMS, SPEECH TRANSMISSION), BAND-PASS FILTERS, NETWORKS, CIRCUITS, NEUROLOGY, ELECTRONIC EQUIPMENT, VOICE COMMUNICATION SYSTEMS, ACOUSTICS, VOCABULARY, AUTOMATIC, NARROWBAND, SPECTRUM ANALYZERS (U)
IDENTIFIERS: DC NEURONS (U)

A SPEECH-ANALYSIS SYSTEM USING ANALOG-THRESHOLD LOGIC (ATL) FOR FEATURE ABSTRACTION HAS BEEN DEVELOPED TO RECOGNIZE CONSONANTS IN UTTERANCES OF CVC WORDS BY A NUMBER OF TALKERS. THE FEATURE-ABSTRACTION NETWORKS USE A SINGLE ATL ELEMENT FOR MOST OF THE LOGIC FUNCTIONS. THE ATL ELEMENT, ORIGINALLY MODELED AFTER THE BIOLOGICAL NEURON, HAS AN OUTPUT WHICH IS LINEARLY PROPORTIONAL TO THE NET SUM OF EXCITATORY AND INHIBITORY INPUTS, PROVIDED THAT THIS NET SUM IS GREATER THAN SOME ADJUSTABLE THRESHOLD. USING NETWORKS OF ATL ELEMENTS, BOTH THE PRESENCE AND MAGNITUDE OF SIGNIFICANT FEATURES CAN BE ABSTRACTED IN REAL TIME FROM THE SPEECH SIGNALS. THE RECOGNITION EQUIPMENT IS CAPABLE OF ABSTRACTING THESE FEATURES OVER A 60-DB DYNAMIC RANGE FROM THE LOGARITHMITIZED OUTPUTS OF 19 LOW-Q, BAND-PASS FILTERS. THE SPEECH-RECOGNITION EQUIPMENT CONTAINS MORE THAN 500 ATL ELEMENTS AND WAS DESIGNED TO OPERATE IN REAL TIME, TO UTILIZE PARALLEL PROCESSING IN THE FEATUREABSTRACTION NETWORKS AND NOT TO REQUIRE SEGMENTATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-604 567
NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
AN INSTRUMENT FOR ELECTROCARDIOGRAPHIC AREA MEASUREMENTS. (U)
DESCRIPTIVE NOTE: RESEARCH REPT.
MAY 64 23P ARNOLD,THOMAS G. ,JR.;
SMITH,RAPHAEL F. ;
PROJ: MR005 13 7004
TASK: 8
MONITOR: NSAM , RR;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*ANALOG COMPUTERS, ELECTROCARDIOGRAPHY), (*ELECTROCARDIOGRAPHY, ANALOG COMPUTERS), MEDICAL EQUIPMENT, HEART, EXERCISE, DEFLECTION (U)

AN INSTRUMENT WHICH WAS DEVELOPED TO MEASURE THE AREA OF ELECTROCARDIOGRAPHIC DEFLECTIONS IS DESCRIBED. BASICALLY, THE INSTRUMENT IS A SPECIAL PURPOSE ANALOG COMPUTER THAT PERFORMS THE MATHEMATICAL OPERATION OF INTEGRATION ON THREE INPUT SIGNALS. SYNCHRONIZING CIRCUITS HAVE BEEN ADDED TO START THE PERIOD OF INTEGRATION AT A PREDETERMINED TIME IN THE CARDIAC CYCLE. THIS INSTRUMENT IS AN ESSENTIAL COMPONENT IN A SYSTEM USED TO QUANTITATE THE ECG CHANGES THAT OCCUR AFTER EXERCISE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-610 589
LAFAYETTE CLINIC DETROIT MICH PSYCHOPHYSIOLOGY LAB
VALIDATION OF THE AEROSPACE MEDICAL RESEARCH
LABORATORIES 3-CHANNEL PERSONAL TELEMETRY SYSTEM. (U)
DESCRIPTIVE NOTE: FINAL REPT. FOR 24 MAY 62-28 MAR 64.

DEC 64 34P AX,ALBERT F. I
CONTRACT: AF33 657 9382
PROJ: 7222
MONITOR: AMRL , TR64 124

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•TELEMETER SYSTEMS, PHYSIOLOGY),
(•SPACE MEDICINE, TELEMETER SYSTEMS),
PSYCHOPHYSIOLOGY, ASTRONAUTS, TELEMETERING
TRANSMITTERS, DATA PROCESSING SYSTEMS, RESPIRATION,
ELECTROCARDIOGRAPHY, ELECTROENCEPHALOGRAPHY, GALVANIC
SKIN RESPONSE, BODY TEMPERATURE, STRESS (PHYSIOLOGY),
BIOPHYSICS, PULSE MODULATION, CIRCUITS (U)
IDENTIFIERS: PERSONAL TELEMETRY SYSTEMS,
ELECTROPHYSIOLOGY (U)

THE ART OF PHYSIOLOGICAL TELEMETRY IS BORDERLINE IN
THREE AREAS: (1) SENSORS, (2) TRANSMITTER,
(3) DATA PROCESSING. THIS STUDY ASSESSED THE
AMRL 3-CHANNEL PERSONAL TELEMETRY FROM ALL THREE
ASPECTS. ANALYSIS OF THE RECORDS TRANSMITTED FROM
MEN IN VARIOUS GRADED INTENSITIES OF PHYSICAL
ACTIVITY REVEALED THAT OF THE THREE PHYSIOLOGICAL
VARIABLES (RESPIRATION, EKG, AND TEMPERATURE),
RESPIRATION WAS THE LEAST VALID. TORSO
CIRCUMFERENCE CHANGES SENSED BY RUBBER TUBE STRAIN
GAGES PROVED SUPERIOR TO THE IMPEDANCE METHOD FOR
MEASURING RESPIRATION. SOME TENTATIVE FINDINGS ON
A STRESS INTERVIEW STUDY REVEAL THE TELEMETRY METHOD
TO HAVE PROMISE. IT WAS SHOWN THAT THE MAJOR
DIFFICULTY PREVENTING WIDESPREAD USE OF PHYSIOLOGICAL
TELEMETRY IN SIGNIFICANT FIELD SITUATIONS IS THE LACK
OF A PRACTICABLE HIGH-SPEED DATA PROCESSING SYSTEM
WHICH CAN DISTINGUISH AND UTILIZE THE OCCASIONALLY
VALID PHYSIOLOGICAL SIGNAL EMERSED IN ARTIFACT OR
NOISE PRODUCED BY MOVEMENTS AND CHANGING
ENVIRONMENTAL INFLUENCES. THE SOLUTION TO THE
ARTIFACT PROBLEM IS FIRST TO SENSE AND UTILIZE
MOVEMENT AND ENVIRONMENTAL INFLUENCES TO GATE OUT AND
TO CORRECT THE PHYSIOLOGICAL DATA AND SECOND TO
DEVELOP AUTOMATIC EDITING APPARATUS AND COMPUTER
PROGRAMS FOR RECOGNITION AND SELECTION OF THE VALID
SIGNAL PATTERNS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-610 733
OHIO STATE UNIV COLUMBUS SCHOOL OF OPTOMETRY
THE POSITIVE AFTERIMAGE AND MEASUREMENTS OF LIGHT AND DARK ADAPTATION. (U)
DESCRIPTIVE NOTE: REPT. FOR 1 SEP 62-31 OCT 64,
OCT 64 44P FRY,GLENN A. I
CONTRACT: AF33 657 9615
PROJ: 6301
TASK: 630103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RETINA, ADAPTATION (PHYSIOLOGY)), (*PHOTORECEPTORS, SIMULATORS), (*VISION, ADAPTATION (PHYSIOLOGY), (*AFTERIMAGES, ADAPTATION (PHYSIOLOGY), LIGHT, BIONICS, ANALOG COMPUTERS, OPHTALMOLOGY (U)
IDENTIFIERS: FOVEA (U)

IN MANY PRACTICAL SITUATIONS IT IS DESIRABLE TO KNOW THE EXTENT TO WHICH ADAPTATION AT THE CENTER OF THE FOVEA UNDERGOES CHANGE AND TO WHAT EXTENT THIS AFFECTS PERFORMANCE OF A GIVEN TASK. THIS PAPER DESCRIBES AN ATTEMPT TO SOLVE THIS PROBLEM BY CONSTRUCTING A SYSTEM WITH A SENSOR WHICH WILL SIMULATE THE CHANGES IN POSITION AND DIRECTION OF AN EYE AND PROVIDE A RUNNING RECORD OF CHANGES IN RETINAL ILLUMINANCE AT THE CENTER OF THE FOVEA. THE NEXT STEP IS TO BUILD AN ANALOG COMPUTER WHICH WILL COMPUTE CHANGES IN MECHANISMS OF ADAPTATION FOUND IN THE PHOTORECEPTORS. AN ANALOG COMPUTER WAS DESIGNED TO DO THIS AND TAKES INTO CONSIDERATION THE PRIMARY AND SECONDARY RESPONSES OF THE PHOTORECEPTORS. A STUDY OF THE POSITIVE AFTERIMAGE WAS CARRIED OUT WITH THE AIM OF MAKING ALLOWANCE FOR ITS EFFECT ON THE STATE OF ADAPTATION. THE PROBLEMS OF CHROMATIC ADAPTATION WERE CONSIDERED, BUT THE ANALOG COMPUTER DESCRIBED IN THIS REPORT IS BASICALLY A DEVICE FOR COMPUTING CHANGES IN BRIGHT AND DARK ADAPTATION. THE EQUATIONS AND CONSTANTS USED IN DESIGNING THE COMPUTER ARE BASED PRIMARILY ON RUSHTON'S MEASUREMENTS OF RETINAL BLEACHING AND WRIGHT'S SUBJECTIVE MEASUREMENTS OF BRIGHT AND DARK ADAPTATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-618 108
STANFORD MEDICAL CENTER PALO ALTO CALIF
METABOLIC EFFECTS OF BLOOD TRANSFUSION. (U)
DESCRIPTIVE NOTE: PROGRESS REPT. FOR 1 JUL 64-30 JUN 65.
JUN 65 8P BUNKER,JOHN P. ;
CONTRACT: DA49 193MD2135

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BLOOD TRANSFUSION, METABOLISM), HEART, PATHOLOGY, ACIDOSIS, BARBITURATES, CALCIUM, IONS, POTASSIUM, PHOSPHATES, SODIUM COMPOUNDS, CITRATES, CARDIAC GLYCOSIDES, BLOOD CIRCULATION, SHOCK(PATHOLOGY), TRANSPLANTATION, BALLISTOCARDIOGRAPHY, ANALOG COMPUTERS, DRUGS, PH, 0065
(U)

CONTENTS: EFFECT OF METABOLIC ACIDOSIS ON MYOCARDIAL CONTRACTILITY INTERACTION BETWEEN PENTOBARBITAL AND DECREASED CALCIUM ION ON GUINEA PIG ATRIA THE ULTRA-LOW FREQUENCY BALLISTOCARDIOGRAM IN DOGS AFTER AUTOTRANSPLANTATION OF THE HEART ESTIMATION OF STROKE VOLUME BY ANALOG COMPUTER SOLUTION OF THE STARR BALLISTIC FORMULA.
(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-618 111
STANFORD MEDICAL CENTER PALO ALTO CALIF
ESTIMATION OF STROKE VOLUME BY ANALOG COMPUTER SOLUTION OF THE STARR BALLISTIC FORMULA. (U)
63 14P SMITH,N. TY I
FLEISCHLI,GERALD J. ICORBASCIO,ALDO N.I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BALLISTOCARDIOGRAPHY, ANALOG COMPUTERS), HEART, MEDICAL EQUIPMENT, ELECTRONIC RECORDING SYSTEMS, BLOOD CIRCULATION, STIMULATION, DRUGS, ARRHYTHMIA, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: STROKE VOLUME(HEART) (U)

A PROGRAM FOR THE ANALOG COMPUTER SOLUTION OF THE STARR BCG FORMULA IS PRESENTED. THE MOST IMPORTANT CONTRIBUTION OF THIS METHOD IS THE USE OF RELAYS TO SELECT ANY WAVE OR SET OF WAVES OF THE BCG. IT THEREFORE HAS APPLICATIONS IN OTHER ANALYSES OF THE BCG. COMPARISONS WITH DYEDILUTION CARDIAC OUTPUTS IN DOGS UNDER VARIOUS CIRCULATORY CONDITIONS SHOWS FAITHFUL REPRODUCTION OF CHANGES IN STROKE VOLUME. THE ADVANTAGES AND DISADVANTAGES OF THE METHOD ARE DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-634 113 6/19 22/1 6/3
AEROSPACE TECHNOLOGY DIV LIBRARY OF CONGRESS WASHINGTON D C
SOVIET BIOTECHNOLOGY AND BIOASTRONAUTICS, DECEMBER 1964-JUNE 1965; COMPILATION OF ABSTRACTS. (U)
DESCRIPTIVE NOTE; REPT. NO. 2 ON ATD WORK ASSIGNMENT NO. 22,
FEB 66 234P DODGE,CHRISTOPHER M. ;
REPT. NO. ATD-66-14,
MONITOR; TT , 66-61467

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTES; BASED ON SOVIET-SATELLITE OPEN SOURCES PUB. 1962-65. REPT. ON SURVEYS OF SOVIET SCIENTIFIC AND TECHNICAL LITERATURE.

DESCRIPTORS; (•SPACE BIOLOGY, ABSTRACTS), (•SPACE MEDICINE, ABSTRACTS), VIBRATION, ACCELERATION TOLERANCE, DECELERATION, STRESS(PHYSIOLOGY), RADIOBIOLOGY, HYPOTHERMIA, DECOMPRESSION SICKNESS, HYPOXIA, LIFE SUPPORT, HUMAN ENGINEERING, ASTRONAUTS, TELEMETER SYSTEMS, DATA PROCESSING SYSTEMS, SPACE FLIGHT, GRAVITY(ARTIFICIAL), SPACE ENVIRONMENTAL CONDITIONS, MAN-MACHINE SYSTEMS, USSR (U)

THE COMPILATION OF ABSTRACTS IS BASED ON SOVIET-SATELLITE OPEN SOURCES PUBLISHED 1962-1965. IT REFLECTS SOVIET RESEARCH IN THE FIELDS OF SPACE BIOLOGY, BIOASTRONAUTICS, AND BIOTECHNOLOGY PUBLISHED FOR THE MOST PART DURING THE LAST QUARTER OF 1964 AND THE FIRST TWO QUARTERS OF 1965. THERE ARE 132 ENTRIES IN THE FORM OF INDICATIVE ABSTRACTS, EXPANDED ABSTRACTS, AND ANALYTICAL REVIEWS; THESE ENTRIES HAVE BEEN ARRANGED IN ELEVEN PARTS ACCORDING TO SUBJECT; PART I. EFFECTS OF ALTERED GRAVITY (15 ENTRIES); PART II. EFFECTS OF VIBRATION ON PHYSIOLOGICAL FUNCTION (5 ENTRIES); PART III. BIOLOGICAL EFFECTS OF RADIATION (12 ENTRIES); PART IV. EFFECTS OF HYPOTHERMIA ON MAMMALS (7 ENTRIES); PART V. EFFECTS OF ALTERED GAS ENVIRONMENTS (34 ENTRIES); VI. EFFECTS OF COMBINED STRESSES (12 ENTRIES); VII. BIOMEDICAL EFFECTS OF SPACE FLIGHT (6 ENTRIES); VIII. LIFE SUPPORT SYSTEMS (8 ENTRIES); IX. HUMAN ENGINEERING AND MAN-MACHINE FACTORS (1, ENTRIES); PART X. MONITORING, BIOTELEMETRY, AND DATA PROCESSING (16 ENTRIES); PART XI. MISCELLANEOUS; FUTURE FLIGHTS, EXOBIOLOGY, ECOPHYSIOLOGY (6 ENTRIES). THE FIRST PAGE OF (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-634 311 ,7/9 4/2
AIRBORNE INSTRUMENTS LAB DEER PARK N Y
PRECISION INTEGRATOR FOR METEOROLOGICAL ECHOES (PRIME). (U)
DESCRIPTIVE NOTE: FINAL REPT., APR 64-DEC 65,
DEC 65 90P HALL, SCOTT F. I
GREENBERG,DAVID L. I
REPT. NO. 3940-1,
CONTRACT: AF 19(628)-4163,
PROJ: AF-6672,
TASK: 667201,
MONITOR: AFCRL 66-158

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*METEOROLOGICAL RADAR, RADAR ECHO AREAS), (*INTEGRATORS(COMPUTERS), *RADAR ECHO AREAS), WEATHER FORECASTING, METEOROLOGICAL PARAMETERS, RADAR SCANNING, DATA PROCESSING SYSTEMS, ANALOG COMPUTERS, LOGARITHMIC AMPLIFIERS, RANGE GATING (U)
IDENTIFIERS: PRIME (U)

THE PRECISION INTEGRATOR FOR METEOROLOGICAL ECHOES (PRIME) IS A VERSATILE RANGE-GATED, ANALOG INTEGRATOR USED TO ESTIMATE THE MEAN REFLECTIVITY OF THE RADAR RETURNS FROM CLOUDS AND STORMS. A LOG-IF AMPLIFIER CONVERTS THE RETURNS AO THE LOGARITH OF THE SIGNAL AMPLITUDE. THE RANGE RESOLUTION IS SELECTABLE IN SEVEN STEPS FROM 0.05 TO 0.8 STATUTE MILE, WITH A VARIABLE START OF RANGE. CONTIGUOUS RANGE INTEGRATION IS ALSO INCLUDED IN THE SAME SEVEN STEPS. THE TIME OF INTEGRATION IN ALL RANGE ELEMENTS IS CONTINUOUSLY VARIABLE FROM 5 TO 500 MSEC BY A SINGLE CONTROL. IN ADDITION TO REFLECTIVITY, THE OUTPUT MAY REPRESENT OTHER SIGNIFICANT METEOROLOGICAL PARAMETERS AT THE OPERATOR'S CHOICE. THE PRIME EQUIPMENT HAS A DYNAMIC RANGE OF 80 DB. PRIME WILL OPERATE WITH ANY CONVENTIONAL RADAR HAVING PRF'S FROM 200 TO 5000 PPS AND PULSE WIDTHS FROM 0.5 TO 6 MICRO SEC. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-636 079 6/16 6/5
BRUSSELS UNIV (BELGIUM) INSTITUT SOLVAY DE PHYSIOLOGIE
COMPUTER ANALYSIS OF THE ELECTROCARDIOGRAM. (U)
61 33P RIJANT, PIERRE J
CONTRACT: AF-EOAR-61-10,

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN ELECTROPHYSIOLOGY OF THE HEART, P309-40 PROCEEDINGS OF A MEETING, 11-13 OCT 63, INSTITUTO DI CARDIOLOGIA SPERIMENTALE DEI SERVIZI SCIENTIFICI SIMES, MILAN, ITALY.
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, ANALOG COMPUTERS), (*HEART, ELECTROPHYSIOLOGY), DIPOLE MOMENTS, NETWORKS, RESISTORS, BELGIUM (U)

THE ISOMORPH OF A NON-EUCLIDIAN SPACE HAS BEEN SYSTEMATICALLY UTILIZED FOR THE LAST SIX YEARS, THE SUMMATION NETWORK FOR THE LAST TWO YEARS. THE EQUIVALENT DIPOLE HAS BEEN ESTABLISHED FOR SEVERAL THOUSAND SO-CALLED NORMAL INDIVIDUALS, MALE AND FEMALE AND OF DIFFERENT AGE GROUPS AND OF DIFFERENT SOCIAL OR PROFESSIONAL GROUPS. SEVERAL HUNDREDS OF PATIENTS HAVE ALSO HAD THEIR DIPOLE MOMENTS ESTABLISHED. THIS INFORMATION IS PERMANENTLY RECORDED ON MAGNETIC TAPE ON CLOSED LOOPS OF AN AVERAGE LENGTH OF 10 BEATS UNLESS EXTRASYSTOLIC ACTIVITY HAS BEEN LOOKED FOR. AT LEAST TWO AND FREQUENTLY MORE LOOPS HAVE BEEN RECORDED EITHER UNDER IDENTICAL CONDITIONS, OR AFTER EXERCISE OR IN DIFFERENT POSITIONS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-636 338 6/16 9/2
BRUSSELS UNIV (BELGIUM) INSTITUT SOLVAY DE PHYSIOLOGIE
COMPUTER ANALYSIS OF THE ELECTROCARDIOGRAM. (U)
DESCRIPTIVE NOTE: SEMIANNUAL REPT.
66 4P PIERRE, RIJLANT !
CONTRACT: AF-EOAR-61-10,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, MATHEMATICAL ANALYSIS), COMPUTERS, ANATOMICAL MODELS, BODY, HEART, DIPOLE MOMENTS, ELECTROPHYSIOLOGY, MAGNETIC TAPE, BELGIUM (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-637 452 9/2 6/5
IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
RESEARCH ON ADVANCED COMPUTER METHODS FOR BIOLOGICAL DATA PROCESSING. (U)
DESCRIPTIVE NOTE: FINAL REPT., 15 JUL 64-14 JUN 66.
APR 66 57P STREETER,D. N. IRAVIV,J. I
REPT. NO. RC-1513,
CONTRACT: AF 33(615)-2047,
PROJ: AF-7233,
TASK: 723305,
MONITOR: AMRL TR-66-24

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MEDICAL EXAMINATION, *DATA PROCESSING SYSTEMS), COMPUTERS, BIOLOGY, NERVOUS SYSTEM, ELECTROENCEPHALOGRAPHY (U)
IDENTIFIERS: LOEVE-KARHUNEN EXPANSION (U)

THE PURPOSE OF THE RESEARCH IS THE DEVELOPMENT OF MATHEMATICAL METHODS AND COMPUTER PROGRAMS FOR THE EXTRACTION OF MEANINGFUL INFORMATION FROM BIOLOGICAL, PRIMARILY NEUROPHYSIOLOGICAL, MEASUREMENTS. EMPHASIS WAS PLACED ON STATISTICAL METHODS SUITABLE FOR SEPARATING TWO OR MORE RANDOM SIGNALS AND WHICH PROVIDE INSIGHT INTO THE UNDERLYING MECHANISM BY WHICH THE SIGNALS ARE GENERATED. LOEVE-KARHUNEN EXPANSION AND DISCRIMINANT ANALYSIS METHODS ARE APPLIED TO THE PROBLEM OF TIME SIGNAL CLASSIFICATION. EXPERIMENTS ARE PERFORMED BOTH ON COMPUTER GENERATED TIME SIGNALS AND ON ELECTROENCEPHALOGRAMS. METHODS OF COPING WITH THE SINGULARITY PROBLEM ARISING FROM A SMALL SAMPLE SIZE ARE INVESTIGATED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-637 483 4/5
CLINICAL INVESTIGATION CENTER OAKLAND CALIF
BROAD-SPECTRUM COMPUTER ANALYSES OF
ELECTROENCEPHALOGRAMS IN BASIC PSYCHOPATHOLOGIC
DISORDERS. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.
JUL 66 10P KURLAND,HOWARD D. I
YEAGER,CHARLES L. I
REPT. NO. CIC-TR-27,
CONTRACT: NONR-222(51),NONR-2931(00)
PROJ: NR-105-156,
MONITOR: NAVMED MR005.12-2101.6

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN RECENT ADVANCES IN
BIOLOGICAL PSYCHIATRY V8 P213-9 1966.
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MENTAL DISORDERS,
*ELECTROENCEPHALOGRAPHY), (*PSYCHIATRY,
ELECTROENCEPHALOGRAPHY), DIAGNOSIS, COMPUTERS,
PSYCHOSES, NEUROSES, BEHAVIOR, FREQUENCY
ANALYZERS, STATISTICAL ANALYSIS (U)

THE PAPER DESCRIBES A STUDY TO ASSESS THE RELATIVE
CLINICAL VALUES OF VARIOUS METHODS OF INTERPRETING
THE ELECTROENCEPHALOGRAMS OF PATIENTS WITH
CONTRASTING FUNCTIONAL PSYCHIATRIC DISORDERS, BY
EVALUATING THE COMPLIMENTARY COMPUTER TECHNIQUES OF
FREQUENCY AND PERIOD ANALYSES, AND BY COMPARING THESE
METHODS OF INTERPRETATION WITH THAT OF VISUAL
EXAMINATION OF PEN-WRITTEN RECORDS. A PROBLEM IN
THE COMPUTER CIRCUITRY, UNDISCOVERED ON TEST RUNS,
RESULTED IN DATA WHICH APPEAR INVALID. THESE
RESULTS EMPHASIZE THE NECESSITY OF INCORPORATING
SYSTEMATIC EVALUATIONS TO REJECT SPURIOUS ANALYSES.
VISUAL EVALUATION OF PEN-WRITTEN
ELECTROENCEPHALOGRAMS CAN PROVIDE AN INVALUABLE
SOURCE OF INFORMATION FOR ESTIMATING THE VALIDITY OF
COMPUTER ANALYSES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-639 761 6/5 5/2 6/3 2/5
ARMY MEDICAL RESEARCH AND NUTRITION LAB DENVER COLO
USE OF THE ELECTRONIC COMPUTER IN RETRIEVAL OF
VETERINARY PATHOLOGIC DATA, (U)
DEC 64 6P CASTLEBERRY,M. W. ;
JENKINS,EDWARD D. ;THOMPSON,S. W. ,II.;

UNCLASSIFIED REPORT
AVAILABILITY; PUBLISHED IN THE AMERICAN JOURNAL
OF VETERINARY RESEARCH V27 N118 P824-9 MAY 1966.
SUPPLEMENTARY NOTE;

DESCRIPTORS; (•PATHOLOGY, •INFORMATION
RETRIEVAL), (•VETERINARY MEDICINE, INFORMATION
RETRIEVAL), COMPUTERS, LABORATORY ANIMALS,
PROGRAMMING(COMPUTERS) (U)

THE USE OF AN ELECTRONIC COMPUTER IN AN
EXPERIMENTAL PATHOLOGY LABORATORY TO RETRIEVE DATA ON
ACCESSIONS WAS STUDIED. SEPARATE LISTS OR CODES
WERE MADE FOR ANATOMICAL SITES, PATHOLOGIC CHANGES,
AND CASE IDENTIFYING DATA. INDIVIDUAL ENTRIES WERE
NUMERICALLY DESIGNATED WITH THE EXCEPTION OF THE
SENSING SYMBOL AND SEX, WHICH WERE ALPHABETICALLY
IDENTIFIED. A 21-DIGIT FORMAT WAS DEVELOPED TO
PROGRAM COMPUTER INPUT AND INTERROGATION. FOUR
HUNDRED CASE RECORDS (ACCESSIONS) WERE CODED; THE
INFORMATION WAS STORED IN A COMPUTER DATA RECORD; AND
THE MACHINE SUBSEQUENTLY WAS INTERROGATED WITH
QUESTIONS HAVING KNOWN ANSWERS. ANSWERS, IN THE
FORM OF CASE ACCESSION NUMBERS, WERE QUICKLY AND
ACCURATELY OBTAINED. IT IS BELIEVED THIS DATA
RETRIEVAL SYSTEM HAS APPLICABILITY TO LARGE,
LIFESCIENCE RESEARCH CENTERS OR GROUPS HAVING ACCESS
TO AN ELECTRONIC COMPUTER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-641 113 6/19 22/1
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
PHYSIOLOGICAL METHODS IN ASTRONAUTICS, (U)
AUG 66 303P BAEVSKII,R. M. ;
REPT. NO. FTD-MT-66-42,
MONITOR: TT 66-62515

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO. FIZIOLOGICHESKIE METODY V KOSMONAVTIKE, MOWCOW, 1965 299P.

DESCRIPTORS: (*SPACE MEDICINE, TELEMETER SYSTEMS), DATA TRANSMISSION SYSTEMS, SPACECRAFT, INFORMATION THEORY, ASTRONAUTICS, TRANSDUCERS, ELECTRODES, SPACE FLIGHT, MONITORS, COMPUTERS, ELECTROCARDIOGRAPHY, ASTRONAUTS, DATA STORAGE SYSTEMS, VESTIBULAR APPARATUS, GALVANIC SKIN RESPONSE, USSR (U)

CONTENTS: BRIEF HISTORICAL OUTLINE OF PHYSIOLOGICAL SPACE RESEARCH; TRANSMISSION OF PHYSIOLOGICAL INFORMATION FROM SPACECRAFT TO EARTH; CONTEMPORARY PHYSIOLOGICAL MEASUREMENT SYSTEMS ON SPACECRAFT; DESIGN PRINCIPLES OF PHYSIOLOGICAL MEASUREMENT AND INFORMATION SYSTEMS FOR USE ON LONG-TERM, LONG-RANGE SPACE FLIGHTS; ON-BOARD AUTOMATIC PHYSIOLOGICAL INFORMATION PROCESSING SYSTEMS; SOME PROBLEMS OF PHYSIOLOGICAL MEASUREMENT IN INTERPLANETARY FLIGHTS; CARDIOVASCULAR RESEARCH METHODS; RESEARCH ON THE EXTERNAL RESPIRATORY FUNCTION; METHODS FOR STUDYING THE NEUROMUSCULAR SYSTEM AND WORKING CAPACITY; METHODS FOR STUDYING THE VESTIBULAR APPARATUS; FUTURE TRENDS IN THE DEVELOPMENT OF PHYSIOLOGICAL RESEARCH IN ASTRONAUTICS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-642 126 6/4 6/16
MASSACHUSETTS INST OF TECH CAMBRIDGE
DYNAMICS OF THE SACCADIC EYE-MOVEMENT MECHANISM; AND NEUROLOGICAL SERVOMECHANISMS; SECTION I, THE CRAYFISH. (U)
DESCRIPTIVE NOTE; FINAL REPT.,
NOV 66 123P COOK,GERALD ;STARK,LAWRENCE
;
CONTRACT; AF 49(638)-1313
PROJ; AF-9777 ,DSR-75002
TASK; 977701
MONITOR; AFOSR 66-2640

UNCLASSIFIED REPORT

DESCRIPTORS; (*VISION, ELECTROPHYSIOLOGY), (*EYE, MOTION), (*CRUSTACEA, PHOTORECEPTORS), (*NEUROMUSCULAR TRANSMISSION, MATHEMATICAL MODELS), NUMERICAL METHODS AND PROCEDURES, COMPUTERS, BEHAVIOR, HUMANS, VISUAL SIGNALS, MUSCLES, NERVE IMPULSES, GANGLIA, NEUROLOGY, NERVOUS SYSTEM, PHYSIOLOGY, FUNCTIONS (U)
IDENTIFIERS; ELECTROMYOGRAPHY (U)

DYNAMICS OF SACCADIC EYE-MOVEMENT MECHANISM; AN ON-LINE COMPUTER WAS USED TO EXPERIMENTALLY MEASURE THE DYNAMIC PERFORMANCE OF HORIZONTAL EYE MOVEMENT SACCADES. A MATHEMATICAL MODEL BASED UPON PHYSIOLOGICAL MEASUREMENTS IN THE LITERATURE WAS ASSEMBLED FOR THE PLANT--EYEBALL AND EYE MUSCLES., AND THE CONTROLLER SIGNALS-EMG. SIMULATION OF THE MODEL WITH PARAMETER ADJUSTMENT LED TO REASONABLY CLOSE AGREEMENT BETWEEN MODEL AND EXPERIMENTAL OVERALL BEHAVIOR. IT WAS FOUND THAT ACTUAL MOVEMENTS REQUIRE ABOUT THREE TIMES AS LONG FOR COMPLETION AS WOULD BE NECESSARY IF THE SYSTEM OPERATED WITH A MINIMUM TIME POLICY. NEUROLOGICAL SERVOMECHANISMS; THE TRANSFER FUNCTION OF THE CRAYFISH PHOTORECEPTOR IS EXAMINED, AND SUCCESSIVE REFINEMENTS OF TECHNIQUE AND RECORDING IN THREE SERIES OF EXPERIMENTS ARE DESCRIBED. IN THE FIRST SERIES OF EXPERIMENTS GROSS RECORDINGS WERE MADE OF AVERAGED FREQUENCY RESPONSES TO SINUSOIDAL INPUTS AT SEVERAL DIFFERENT FREQUENCIES. THE INSTRUMENTATION OF THE FIRST EXPERIMENTAL SERIES WAS SUPPLEMENTED IN THE SECOND AND THIRD SERIES OF EXPERIMENTS BY A 'PULSE HEIGHT WINDOW' WHICH PERMITTED ONLY PULSES FROM FIBERS RESPONDING TO LIGHT INTENSITY TO BE RECORDED. IN ADDITION, MORE EXPERIMENTAL POINTS WERE RECORDED THAN IN THE FIRST SERIES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-642 674 6/5
BRUSSELS UNIV (BELGIUM) INSTITUT SOLVAY DE PHYSIOLOGIE
L'ANALYSE PAR UN CALCULATEUR ANALOGIQUE DES ELECTROCARDIOGRAMMES SCALAIRES ET VECTORIELS. VALEURS ABSOLUES ET COSINUS DIRECTEURS DES VECTEURS (ANALYSIS BY ANALOG COMPUTER OF SCALED AND VECTORED ELECTROCARDIOGRAMS. ABSOLUTE VALUES AND DIRECTIONAL COSINES AND THE VECTORS), (U)
62 31P RIJLANT,P. ;
CONTRACT: AF-EOAR-61-10

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN BULLETIN DE L'ACADEMIE ROYALE DE MEDECINE DE BELGIQUE V2 N5 P363-91 1962.
SUPPLEMENTARY NOTE: TEXT IN FRENCH.

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, ANALYSIS); BELGIUM, ANALOG COMPUTERS (U)

REPRINT: ANALYSIS BY ANALOG COMPUTER OF SCALED AND VECTORED ELECTROCARDIOGRAMS, ABSOLUTE VALUES AND DIRECTIONAL COSINES AND THE VECTORS.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-647 410 6/5
NAVAL AEROSPACE MEDICAL INST PENSACOLA FLA
A COMPUTER METHOD FOR STUDYING THE POSTEXERCISE BALLISTOCARDIOGRAM. (U)
SEP 66 20P JACKSON,DAVID M. I
MOLINA,EFRAIN A. I
REPT. NO. NAMI-976
MONITOR: NAVMED MR005.20-0052-13

UNCLASSIFIED REPORT

DESCRIPTORS: (*BALLISTOCARDIOGRAPHY, DATA PROCESSING SYSTEMS), EXERCISE, COMPUTERS, CARDIOVASCULAR DISEASES, ELECTROCARDIOGRAPHY, DIAGNOSIS (U)

THE POSTEXERCISE BALLISTOCARDIOGRAM HAS BEEN SHOWN TO BE A USEFUL DIAGNOSTIC TOOL BUT HAS ITS LIMITATIONS BECAUSE OF ARTIFACTS WHICH RESULT FROM MUSCLE TREMOR AND RESPIRATORY MOVEMENT, ESPECIALLY IF THE EXERCISE IS VIGOROUS. AN ELECTRONIC SYSTEM INCORPORATING A SMALL COMPUTER PREVIOUSLY SUGGESTED FOR CLEARING ELECTROCARDIOGRAPHIC RECORDS OF ARTIFACTS HAS BEEN APPLIED TO THE RECORDING OF LOW FREQUENCY BALLISTOCARDIOGRAMS OBTAINED BEFORE AND AFTER STANDARDIZED EXERCISE. EVALUATION OF THE POSTEXERCISE TRACINGS AS TO ACCURATE REPRODUCTION AND GOOD QUALITY SHOWS THIS SYSTEM TO BE FEASIBLE FOR USE IN A LARGE SCALE POSTEXERCISE BALLISTOCARDIOGRAPHIC STUDY. THE SYSTEM PRESENTED ALSO LACKS THE COMPLEXITY OF THE ONE USED WITH ELECTROCARDIOGRAMS. ANY DIFFICULTIES IN REPRODUCTION WERE FOUND TO BE THOSE INHERENT IN THE BALLISTOCARDIOGRAPHIC APPARATUS RATHER THAN IN THE SYSTEM ITSELF. LINES FOR FURTHER INVESTIGATION ARE POINTED OUT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-657 789 6/5
HERNER AND CO WASHINGTON D C
APPLICATION OF AUTOMATIC LITERATURE ANALYSIS TECHNIQUES TO PSYCHIATRIC INTERVIEWS. (U)
DEC 66 21P HERNER,SAUL ISEGAL,HENRY A. ILEYMAN,EDWARD I
CONTRACT: AF 49(638)-1424
PROJ: AF-9769
TASK: 976901
MONITOR: AFOSR 67-2019

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH WASHINGTON SCHOOL OF PSYCHIATRY, D. C.

DESCRIPTORS: (*PSYCHIATRY, DATA PROCESSING SYSTEMS), AUTOMATIC, ANALYSIS, DIAGNOSIS, DEFENSE MECHANISMS(PSYCHOLOGY), THERAPY (U)

THE REPORT DESCRIBES AN EXPERIMENT IN THE APPLICATION OF LUHN'S AUTOENCODING AND AUTOABSTRACTING TECHNIQUES TO THE ANALYSIS OF THE CONTENTS OF PSYCHIATRIC INTERVIEWS. UTILIZING MODIFICATION OF THE LUHN TECHNIQUES, APPLIED TO A TRANSCRIPTION OF A RECORDED INTERVIEW, THE EXPERIMENT PRODUCED A MATRIX OF WORDS RANKED BY FREQUENCY OF OCCURRENCE AND BY FREQUENCY OF COMBINATION WITH OTHER WORDS, AND AN EXTRACT CONSISTING OF RANKED SENTENCES CONTAINING THE MOST FREQUENTLY OCCURRING WORDS AND COMBINATIONS. A TENTATIVE EVALUATION BY A PANEL OF PSYCHIATRISTS INDICATES THAT THE MATRIX AND EXTRACTS, AS WELL AS THE SIMPLE WORD RANKINGS UPON WHICH THEY ARE BASED, CAN PRODUCE CLEAR INSIGHTS REGARDING RANGE OF AFFECT, MECHANISMS OF DEFENSE, OBJECT RELATIONS, SYMPTOMS, HISTORY, AND EXPECTATIONS FROM TREATMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-688 185 6/16 5/2
SAINT MARY'S HOSPITAL SAN FRANCISCO CALIF DEPT OF MEDICAL EDUCATION
PHYSICAL FITNESS AND HUMAN TOLERANCE TO ACUTE EXPOSURE TO LIFE AT HIGH ALTITUDE. EXPERIMENTAL DESIGN AND DATA PROCESSING METHODOLOGY FOR CLINICAL PHYSIOLOGICAL OBSERVATIONS. (U)
DESCRIPTIVE NOTE: PROGRESS REPT. 1967-1,
JAN 1. 35P FAVOUR,CUTTING B. I
CONTRACT: DA-49-193-MD-3069

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON ACCELERATION OF ACCLIMATIZATION TO HIGH ALTITUDE STUDIES CARRIED OUT AT SEA LEVEL, INTERMEDIATE AND HIGH ALTITUDES.

DESCRIPTORS: (*ACCLIMATIZATION, EXPERIMENTAL DESIGN), HIGH ALTITUDE, MEDICAL LABORATORIES, DATA PROCESSING SYSTEMS, COLLECTING METHODS, EXPERIMENTAL DATA, COMPUTERS, MEDICAL RESEARCH, DOCUMENTATION (U)

A DESCRIPTION IS GIVEN OF THE METHODS BY WHICH MEASUREMENTS OF VARIOUS PHYSIOLOGIC CHANGES DURING EXPOSURE TO ALTITUDE WERE COLLECTED. THE TYPE OF LOG BOOKS WHICH WERE KEPT ARE DESCRIBED IN DETAIL. THE DATA PROCESSING SYSTEM HAD FIVE STAGES: (1) CHRONOLOGICAL LOGGING OF RAW DATA IN SEPARATE LOG BOOKS; (2) PREPARATION OF EDITED INPUT DATA SHEETS AND DATA CARDS; (3) COMPUTER OUTPUT AND HUMAN EDITING OF DATA OUTPUT CARDS; (4) COMPUTER OUTPUT AND HUMAN EDITING OF SUMMARY OUTPUT CARDS; (5) COMPUTER OUTPUT AND FINAL HUMAN INTERPRETATION OF F AND P VALUES FOR SIGNIFICANCE OF THE RESULTS OBTAINED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-662 665 6/5 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
A SYSTEM FOR COMPUTER-AIDED DIAGNOSIS. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
SEP 67 256P GORRY, GEORGE ANTHONY ;
REPT. NO. MAC-TR-44
CONTRACT: NONR-4102(01);
PROJ: [illegible]R-048-189, RR-003-09-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIAGNOSIS, *COMPUTER PROGRAMS),
REAL TIME, TIME SHARING, COMPUTERS,
MODELS(SIMULATIONS), THESES, PROBABILITY,
PATTERN RECOGNITION (U)
IDENTIFIERS: ON-LINE SYSTEMS (U)

THE THESIS DESCRIBES A MODEL DIAGNOSTIC PROBLEM AND A COMPUTER PROGRAM DESIGNED TO DEAL WITH THIS PROBLEM. THE MODEL DIAGNOSTIC PROBLEM IS AN ABSTRACT PROBLEM. A MAJOR CONTENTION OF THIS THESIS, HOWEVER, IS THAT THIS PROBLEM SUBSUMES THE PRINCIPAL FEATURES OF A NUMBER OF OSTENSIBLY DIFFERENT REAL DIAGNOSTIC PROBLEMS INCLUDING CERTAIN PROBLEMS OF MEDICAL DIAGNOSIS AND THE DIAGNOSIS OF MACHINE FAILURES. A SECOND MAJOR CONTENTION OF THIS THESIS IS THAT STRATEGIES FOR THE SOLUTION OF THE MODEL DIAGNOSTIC PROBLEM CAN BE FORMULATED IN TERMS SUFFICIENTLY EXPLICIT TO PERMIT THEIR INCORPORATION IN A COMPUTER PROGRAM. THE DIAGNOSTIC PROGRAM WAS IMPLEMENTED ON THE TIME-SHARING SYSTEM AT PROJECT MAC. IT WAS APPLIED TO TWO MEDICAL PROBLEMS, THE DIAGNOSIS OF CONGENITAL HEART DISEASE, AND THE DIAGNOSIS OF PRIMARY BONE TUMORS. THE RESULTS OBTAINED HERE SUGGEST (1) THAT A COMPUTER PROGRAM CAN BE OF CONSIDERABLE VALUE AS A DIAGNOSTIC TOOL, AND (2) THAT IT IS QUITE ADVANTAGEOUS FOR SUCH A PROGRAM TO PERFORM SEQUENTIAL DIAGNOSIS AS IT INTERACTS WITH THE USER.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-662 767 2/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
ANALOG COMPUTER FOR PERFORMING CONFORMAL TRANSFORMATIONS, (U)
JUL 67 8P SUPRUN,A. N. I
REPT. NO. FTD-HT-23-832-67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF PATENT (USSR) 185 624, 25 AUG 62 2P.

DESCRIPTORS: (*ANALOG COMPUTERS, *CONFORMAL MAPPING), INPUT-OUTPUT DEVICES, CURVE FITTING, OSCILLOGRAPHS, POLYNOMIALS, TRANSFORMATIONS(MATHEMATICS), USSR (U)

A COMPUTER IS SUGGESTED WHICH WOULD REPRODUCE THE BOUNDARIES OF SINGLY- OR DOUBLY-CONNECTED REGIONS ON THE SCREEN OF A CRT. THE DISTINGUISHING CHARACTERISTIC OF THE CIRCUIT IS THE MEANS OF FORMING THE VOLTAGES (FOR THE DEFLECTING PLATES OF THE TUBE) CORRESPONDING TO THE COORDINATES OF THE FUNCTION AND FORMED BY SUMMATION OF SINUSOIDAL VOLTAGES, FOR SYNCHRONIZATION OF THE VOLTAGE FREQUENCIES. THE SUMMED SINUSOIDS ARE FORMED WITH THE AID OF FILTERS AND AMPLIFIERS WHOSE INPUTS RECEIVE THE OUTPUT VOLTAGE FROM A COMMON GENERATOR OF PERIODIC COMPLEX-FORM VOLTAGES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-654 209 6/12 6/19
NAVAL AEROSPACE MEDICAL INST PENSACOLA FLA
TWO DEVICES FOR ANALYSIS OF NYSTAGMUS, (U)
OCT 67 26P GUEDRY,FRED E. , JR.;
TURNIPSEED,GENE T. ;
REPT. NO. NAMI-1021
CONTRACT: NASA ORDER-R-93
PROJ: MR005.04-0021.153

UNCLASSIFIED REPORT

DESCRIPTORS: (*NYSTAGMUS, ANALYSIS), AUTOMATIC, ELECTRONIC RECORDING SYSTEMS, DATA PROCESSING SYSTEMS, DIGITAL SYSTEMS, ANALOG SYSTEMS, DISPLAY SYSTEMS (U)
IDENTIFIERS: ELECTRONYSTAGMOGRAPHY (U)

TWO DEVICES ARE DESCRIBED WHICH FACILITATE MEASUREMENT AND ANALYSIS OF NYSTAGMUS. ONE DEVICE REQUIRES MANUAL ALIGNMENT OF A CROSSHAIR WITH THE NYSTAGMUS SLOPE. THIS PROCESS IS MUCH FASTER THAN UNAIDED MANUAL SCORING BECAUSE (1) THE MECHANICAL AID IN SLOPE MEASUREMENT IS VERY EFFECTIVE, (2) TIME MEASUREMENT IS VIRTUALLY AUTOMATIC, AND (3) ALL STEPS AFTER THE CROSSHAIR ALIGNMENT, INCLUDING TABULATION OF DIGITAL INFORMATION AND PLOTTING OF ANALOG INFORMATION, ARE ACCOMPLISHED AUTOMATICALLY. THE SECOND DEVICE IS A STANDARD RECORDER WITH PLUG-IN UNITS FOR AREA-SUMMATION AND TIMED SWITCHING. IT IS LESS VERSATILE THAN THE FIRST DEVICE, AND IS NOT EQUIVALENT TO ADVANCED ELECTRONIC COMPUTATION, BUT IT DOES PROVIDE AN IMMEDIATE ANALOG DISPLAY AND (WITH A DIGITAL VOLTMETER-PRINTER) AN IMMEDIATE DIGITAL DISPLAY OF ANALYZED NYSTAGMUS. ADDITIONAL OPERATIONS PERFORMED ON THE OUTPUT OF THESE DEVICES CAN PROVIDE ESTIMATES OF THE PI/DELTA TIME CONSTANT AND OTHER PARAMETERS. TOPICS DISCUSSED INCLUDE SOURCES OF ERROR IN RAPID PROCESSING OF NYSTAGMUS AND ADVANTAGES OF RAPID PROCESSING FOR EXPERIMENTAL PURPOSES, FOR PILOT EVALUATION, AND FOR CLINICAL APPLICATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-666 379 6/19 14/2
NAVAL AEROSPACE MEDICAL INST PENSACOLA FLA
INSTRUMENTATION FOR THE CORIOLIS ACCELERATION PLATFORM. (U)
DESCRIPTIVE NOTE: JOINT REPT.,
NOV 67 18P HIXSON,W. CARROLL J
REPT. NO. NAMI-1022
CONTRACT: NASA ORDER-R-93
PROJ: NAVMED-MR005.04-0021
TASK: MR005.04-0021-154

UNCLASSIFIED REPORT

DESCRIPTORS: (*ACCELERATION TOLERANCE, TEST EQUIPMENT), SPACE MEDICINE, INSTRUMENTATION, ACCELERATION, VESTIBULAR APPARATUS, TRANSDUCERS, DISPLAY SYSTEMS, DATA PROCESSING SYSTEMS, SLIP RINGS, CONTROL PANELS, CIRCUITS, ACOUSTIC EQUIPMENT (U)
IDENTIFIERS: *BIOINSTRUMENTATION, *CORIOLIS ACCELERATION PLATFORM (U)

THE REPORT DESCRIBES A GENERAL-PURPOSE INSTRUMENTATION SYSTEM DEVELOPED FOR USE IN CONJUNCTION WITH THE CORIOLIS ACCELERATION PLATFORM, A COMBINED LINEAR AND ANGULAR MOTION DEVICE RECENTLY INSTALLED AT THE VESTIBULAR RESEARCH FACILITIES OF THIS ACTIVITY. THE SYSTEM, BASED ON THE USE OF STANDARD COMMERCIALLY AVAILABLE EQUIPMENT, PROVIDES THE BASIC TRANSDUCERS, SIGNAL-CONDITIONING CIRCUITRY, AND RECORDING INSTRUMENTS REQUIRED FOR THE ACQUISITION, DISPLAY, AND STORAGE OF A WIDE VARIETY OF COMMONLY COLLECTED BIOLOGICAL AND BIOENVIRONMENTAL MEASUREMENT DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-668 201 6/5
NAVAL HOSPITAL PHILADELPHIA PA
EVALUATION OF STANDARD ECG LEADS FOR MASS SCANNING, (U)
APR 68 2P SCHNEIDER,PAUL J. ;
BIRCH,ALEXANDER W. , JR;

UNCLASSIFIED REPORT
AVAILABILITY; PUBLISHED IN JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, V205 P149-50 APR 1968.

DESCRIPTORS; (•ELECTROCARDIOGRAPHY, •PUBLIC HEALTH), ACCURACY, MEDICAL EXAMINATION, CARDIOVASCULAR DISEASES, DIAGNOSIS, COMPUTERS, STATISTICAL ANALYSIS (U)

THE ACCURACY IN ANALYSIS OF THE SIX STANDARD ELECTROCARDIOGRAPHIC LEADS FOR MASS SCREENING WAS EVALUATED FROM 2,000 RANDOMLY SELECTED TRACINGS. THE ECGS WERE INTERPRETED AS NORMAL OR ABNORMAL BY GENERALLY ACCEPTED CRITERIA WITHOUT BENEFIT OF CLINICAL HISTORY. COMPARISON WITH THE FULL 12-LEAD ECG WAS MADE. TWELVE HUNDRED AND SIXTEEN (60.8%) WERE NORMAL AND 730 (36.5%) WERE ABNORMAL. TWENTY-SIX (3.44%) FALSE-NEGATIVE AND 28 (2.25%) FALSE-POSITIVE RESULTS OCCURRED. THE SENSITIVITY AND SPECIFICITY OF THE METHOD WERE 96.56% AND 97.75%, RESPECTIVELY. THE USE OF THE STANDARD ECG LEADS FOR MASS SCREENING IS FEASIBLE FOR THE FOLLOWING REASONS: (1) IT IS A RAPID TECHNIQUE NECESSITATING NO CHANGE IN PATTERN OR VECTOR APPROACHES TO INTERPRETATION. (2) THE PATIENT NEED NOT BE RECUMBENT OR UNDRESSED. (3) THE ACCURACY COMPARES FAVORABLY WITH THAT OF 12-LEAD ANALYSIS. (4) THE METHOD IS READILY ADAPTABLE TO COMPUTER INTERPRETATION. (AUTHOR) (U)

COMPUTER PROCESSING OF DIGITAL DATA

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-218 859
MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF ELECTRONICS
PROCESSING NEUROELECTRIC DATA (U)
JUL 59 14 SIEBERT,WILLIAM M.
REPT. NO. TR351
CONTRACT: DA36 039SC78108

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROENCEPHALOGRAPHY, *MATHEMATICAL COMPUTER DATA, COMPUTERS, DATA PROCESSING SYSTEMS, MATHEMATICAL ANALYSIS, NEUROLOGY, PROBABILITY, PSYCHIATRY (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-256 354
YALE UNIV NEW HAVEN CONN
NEUROLOGICAL MECHANISMS IN EPILEPSY AND BEHAVIOR (U)
APR 61 IV DELGADO,JOSE M.R.I
CONTRACT: NONR60908

UNCLASSIFIED REPORT

DESCRIPTORS: •EPILEPSY, •NEUROLOGY, •TRANQUILIZERS, BEHAVIOR, BRAIN, CANNULATION, CARDIOVASCULAR SYSTEM, CEREBRAL CORTEX, DIGITAL COMPUTERS, DRUGS, ELECTRODES, ELECTROENCEPHALOGRAPHY, EMOTIONS, PHYSIOLOGY, PRIMATES, STIMULATION, STOMACH (U)

METHODS FOR REMOTE CONTROLLED STIMULATION OF THE BRAIN DESCRIBED IN THE LITERATURE ARE UNRELIABLE, MAINLY BECAUSE INTENSITY OF STIMULATION CHANGES IF THE ORIENTATION OF THE RECEIVING ANTENNA IS MODIFIED BY ANIMAL MOVEMENTS. ALSO, THE MONITORING OF STIMULATION IS OFTEN DIFFICULT. THESE PROBLEMS, AS WELL AS OTHERS, SEEM TO BE SOLVED BY A NEW METHOD FOR RADIO-CONTROLLED ELECTRICAL STIMULATION OF THE BRAIN. A STUDY WAS BEGUN OF CEREBRAL-GASTROINTESTINAL CORRELATIONS. IN A GROUP OF SEVEN MONKEYS, CANNULAS WERE PERMANENTLY IMPLANTED IN THE STOMACH, AND MULTILEAD ELECTRODES PERMANENTLY IMPLANTED IN THE BRAIN. SOME OF THE CONTROL STUDIES, AS WELL AS THE REACTIONS AFTER HISTAMINE INJECTION SEEMED TO INDICATE THAT GASTROINTESTINAL FUNCTIONS IN THE MACACA MULATTA ARE SIMILAR TO THOSE IN HUMAN BEINGS, AND DIFFERENT FROM THOSE IN OTHER EXPERIMENTAL ANIMALS, SUCH AS CATS AND DOGS. THE STUDY OF AMINOPHENYLPYRIDONE WAS CONTINUED WITH A DERIVATIVE NAMED CARBOMETHOXY-AMINOPHENYLPYRIDONE, WHICH PRODUCES INT RESTING BEHAVIORAL DISASSOCIATION WITH SIMULTANEOUS DROWSINESS AND INCREASED AGGRESSIVENESS. CONSIDERABLE MODIFICATION OF THE ELECTRICAL ACTIVITY OF THE BRAIN WAS RECORDED OVER A WIDE AREA OF THE CEREBRAL CORTEX, WHILE THE ACTIVITY WAS ONLY SLIGHTLY MODIFIED IN SOME OF THE LIMBIC STRUCTURES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-259 526
PRINCETON UNIV N J DEPT OF PSYCHOLOGY
HUMAN MEMORY, A PARTIAL MODEL AND ITS IMPLICATIONS FOR RETROACTIVE PHENOMENA (U)
MAY 61 IV ROSS,JOHN]
CONTRACT: NONR-1858(15)
PROJ: NR-150-088

UNCLASSIFIED REPORT

DESCRIPTORS: •BEHAVIOR, •MATHEMATICAL PREDICTION, •MEMORY, •PSYCHOLOGY, COMPUTERS, CONDITIONED REFLEX, ERRORS, LEARNING, PSYCHIATRY, PSYCHOSES, SPEECH, STIMULATION, THEORY, TRAINING, VISION (U)

AFTER A CONSIDERATION OF EXPERIMENTAL AND OTHER EVIDENCE, ABOUT THE FUNCTIONING OF HUMAN MEMORY, FOUR FEATURES WERE SELECTED AS MOST SALIENT, AND A MODEL PROPOSED TO ACCOUNT FOR THEM. THE MODEL IS BASED UPON CERTAIN CONCEPTS BORROWED FROM THE COMPUTER FIELD AND A CONSIDERATION OF INFORMATION TRANSMISSION AND STORAGE. IT IS MEANT TO MAKE PSYCHOLOGICAL SENSE AND, AT THE SAME TIME, TO BE REALIZABLE IN A COMPUTER FOR A STUDY OF ITS PROPERTIES. THE MODEL LED TO DEDUCTIONS ABOUT PHENOMENA OF RETROACTION, AND FOUR EXPERIMENTS WERE CONDUCTED TO TEST THE DEDUCTIONS. THE FIRST EXPERIMENT INVOLVED COLORED GEOMETRICAL FORMS AND STUDIED THE DIFFERENTIAL EFFECTS OF INTERPOLATED CONDITIONS OF LOW AND HIGH CORRELATION BETWEEN COLOR AND FORM. THE SECOND EXPERIMENT STUDIED THE DIFFERENTIAL EFFECTS OF VARIATION IN A STRUCTURE OF LINKAGES BETWEEN FIGURES AND NAMES ON THE RECALL OF AN AMBIGUOUSLY STRUCTURED SIMILAR SITUATION. THE THIRD EXPERIMENT STUDIED THE TYPES OF ERRORS CAUSED IN THE RECALL OF A LIST OF WORD PAIRED ASSOCIATES BY TWO LISTS VARYING IN THE MEANINGFULNESS OF THE STIMULUS-RESPONSE PAIRINGS. THE FOURTH EXPERIMENT STUDIED THE EFFECTS OF TRAINING PROCEDURES ON THE RECALL OF DOUBLY STRUCTURED NUMBER MATRICES, AND THE DIFFERENTIAL EFFECTS OF INTERPOLATED TASKS, DEPENDING UPON TRAINING PROCEDURES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-283 793
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C
THE NATURAL HISTORY OF VENTRICULAR SEPTAL DEFECT (U)
JUN 62 IV WALKER,WELDON J.;HALL,ROBERT J.;
REPT. NO. MEDDH 288

UNCLASSIFIED REPORT

DESCRIPTORS: •DISEASES, •HEART, •STATISTICAL ANALYSIS, DATA PROCESSING SYSTEMS, DIAGNOSIS, HOSPITALS, MEDICAL EXAMINATION, MILITARY MEDICINE (U)

FIVE TEACHING HOSPITALS ARE POOLING THEIR MATERIAL TO CARRY OUT A COMPREHENSIVE FOLLOW-UP STUDY ON ALL CASES OF INTERVENTRICULAR SEPTAL DEFECT IN THEIR FILES PROVEN BY CARDIOCATHERIZATION PRIOR TO 1 JANUARY, 1960. THE FOLLOW-UP INCLUDES: PRESENT STATUS OF HEALTH, THE NUMBER WHO HAVE DIED FROM THEIR DISEASE AND THE AUTOPSY FINDINGS (WHERE AVAILABLE), THE NUMBER WHO HAVE HAD SURGICAL CORRECTION, THE NUMBER WHO HAVE DIED INCIDENT TO SURGERY, A DETERMINATION AS TO WHETHER ANY HAVE UNDERGONE SPONTANEOUS CLOSURE OF THEIR DEFECT, HEIGHT AND WEIGHT FOR PLOTTING GROWTH CURVES, A DETERMINATION OF CYANOSIS ETC. IT IS FELT THAT COMPILING THIS INFORMATION WILL ADD TO PRESENT KNOWLEDGE CONCERNING THE NATURAL COURSE OF THIS CONGENITAL DEFECT. THE CARDIOVASCULAR RESEARCH SECRETARY AT THE WALTER REED GENERAL HOSPITAL WILL COORDINATE TRACING THESE PATIENTS THROUGH MILITARY LOCATOR FACILITIES, FOLLOW-UP CONTACTS, CALLS AND CORRESPONDENCE, AND COMPILE THE OVER-ALL DATA. (AUTHOR (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-284 542
ARMY MEDICAL RESEARCH AND NUTRITION LAB DENVER COLO
ANNUAL PROGRESS REPT. FOR 1 JUL 61-30 JUNE 62 ON
INTERNAL MEDICINE AND BASIC RESEARCH IN LIFE
SCIENCES. (U)
JUN 62 1V KUHN,L.R.;MORSE,W.C.;
REPT. NO. MEDDH 288
PROJ: 6X60-01-001, 6X99-26-001

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL RESEARCH, *METABOLISM,
*MILITARY MEDICINE, *NUTRITION, ALGAE, AMINO ACIDS,
BIOLOGY, CALCIUM, CARBOHYDRATES, DATA PROCESSING
SYSTEMS, DIET, ENZYMES, EXERCISE, GLYCINES, IODINE,
ISONIAZID, KIDNEYS, LIPIDS, LUNGS, METALS, MIXTURES,
MYCOBACTERIUM TUBERCULOSIS, OXYGEN CONSUMPTION,
PATHOLOGY, STEROIDS, VITAMIN B COMPLEX, VITAMINS (U)

ANNUAL PROGRESS REPORT FROM ARMY MEDICAL RESEARCH AND
NUTRITION LAB, INTERNAL MEDICINE AND BASIC RESEARCH IN
LIFE SCIENCES, CARDIOPULMONARY-RENAL DISEASE, METABOLISM
AND NUTRITION, PHARMACOLOGY OF THE COMBAT
SOLDIER, BIOCHEMISTRY, AND PHYSIOLOGY.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-[illegible]
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
A DIGITAL READOUT TECHNIC APPLICABLE TO LAB ORATORY AND AEROSPACE MEDICAL MONITORING OF PHYSIOLOGIC DATA. (U)
FEB 63 14P
TASK: 793002
MONITOR: SAM TDR62139

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL EQUIPMENT, *SPACE MEDICINE, *MONITORS, RESPIRATION, BLOOD PRESSURE, HEART, BLOOD VOLUME, TELEMETER SYSTEMS, DIGITAL COMPUTERS, INSTRUMENTATION. (U)
IDENTIFIERS: AEROSPACE MEDICAL MONITORING. (U)

THIS REPORT DESCRIBES A TECHNIC FOR DIGITAL READ OUT OF SYSTOLIC AND DIASTOLIC BLOOD PRESSURE, HEART RATE, AND RESPIRATORY MINUTE VOLUME, APPLI CABLE TO WIRE TELEMETRY IN THE LABORATORY AS WELL AS WIRELESS TELEMETRY FROM AEROSPACE VEHICLES. GENERAL DESCRIPTION OF THE TECHNIC AND SPECIFIC CONSTRUCTION DETAILS ARE GIVEN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-411 494
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
CYBERNETICS IN THE CLINIC. (U)
JUN 63 3P MISYUK,N.I
MONITOR: FTD TT63 522

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM MEDITSINSKAYA GAZETA, P. 3, 22 FEB 63.

DESCRIPTORS: (*CYBERNETICS, SCIENTIFIC RESEARCH), (*BRAIN, MODEL (SIMULATIONS)), (*BIONICS, CYBERNETICS), (*COMPUTERS, DIAGNOSIS), NEOPLASMS, PATHOLOGY, DIAGNOSIS, NEUROLOGY, MEDICAL EQUIPMENT. (U)
IDENTIFIERS: 1963, USSR, URAL-1. (U)

CYBERNETICS IN THE CLINIC; URAL-1 COMPUTER USED TO DIAGNOSE DISEASES OF THE NERVOUS SYSTEM; TRANSLATION OF RUSSIAN NEWSPAPER ARTICLE.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-424 606
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
BULLETIN OF EXPERIMENTAL BIOLOGY AND MEDICINE. (U)
NOV 63 29P
MONITOR: FTD TT63 1013

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 4:8, PP. 11-13, 28-37, AND 116-120, 1963.

DESCRIPTORS: (*TASTE, SENSITIVITY), (*MOTION SICKNESS, PHYSIOLOGY), (*COMPUTERS, MEDICINE), (*ACCELERATION TOLERANCES, TIME), (*ROTATION, PHYSIOLOGY), OXYGEN, RESPIRATION (U)
IDENTIFIERS: 1963, CORIOLIS ACCELERATIONS (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 0003?0

AD-423 439
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
COMPUTER APPLICATIONS IN MEDICINE AND THE BIOLOGICAL SCIENCES BIBLIOGRAPHY - II. (U)
OCT 63 34P EMPEY,SALLY L. ;
REPT. NO. SP1025 001 00

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPUTERS, MEDICINE), (*MEDICINE, COMPUTERS), (*BIBLIOGRAPHIES, COMPUTERS), BIOLOGY, DIGITAL COMPUTERS, MEDICAL RESEARCH, DATA PROCESSING SYSTEMS, AUTOMATION, PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: APPLICATIONS, 1963 (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-424 816
RCA SERVICE CO CAMDEN N J
TECHNIQUES OF PHYSIOLOGICAL MONITORING. VOLUME II. COMPONENTS. (U)
NOV 63 IV ALNUTT,RICHARD J;
WEINBERG,PHILIP T.;BARBIERE,ED.BY ROBERT E.;
CONTRACT: AF33 657 9252
PROJ: 7222
TASK: 722203
MONITOR: AMRL TDR62 98, VOL. 2,

UNCLASSIFIED REPORT

DESCRIPTORS: (*MONITORS, PHYSIOLOGY), (*SPACE FLIGHT, MONITORS), DATA PROCESSING SYSTEM, THEORY, ELECTRONIC EQUIPMENT, TRANSDUCERS, ELECTRODES, AMPLIFIERS, RECORDING SYSTEMS, OSCILLOSCOPES, AMPLIFIERS, MULTIPLEX, MODULATION, DIGITAL COMPUTERS, ANALOG COMPUTERS, DISPLAY SYSTEMS, MAGNETIC TAPE, ANALYSIS, DATA, MAGNETIC CORES, PUNCHED CARDS, FREQENCY MODULATION, FREQUENCY CONVERTERS, TELEMETERING TRANSMITTERS, PULSE GENERATORS, DIFFERENTIATING CIRCUITS, GALVANIC SKIN RESPONSE, INTEGRATED CIRCUITS, TRIGGER CIRCUITS, CATHODE RAY TUBE SCREENS. (U)
IDENTIFIERS: MULTIPLEXING, SIGNAL MODIFIERS, 1963. (U)

THIS VOLUME SURVEYS THE COMPONENTS USED IN PHYSIOLOGICAL MONITORING SYSTEMS, PRIMARILY THOSE SUITABLE FOR AEROSPACE APPLICATIONS. DISCUSSION INCLUDES PERFORMANCE CHARACTERISTICS AND CAPABILITIES, PLUS SOME BACKGROUND THEORY, ON BASIC COMPONENTS SUCH AS ELECTRODES AND TRANSDUCERS, SIGNAL MODIFIERS, AND GRAPHIC RECORDING AND DISPLAY DEVICES; THE USE OF MAGNETIC TAPE RECORDERS IN INSTRUMENTATION IS DESCRIBED. WIRE AND RADIO TRANSMISSION EQUIPMENT IS DISCUSSED, PLUS VARIOUS SCHEMES OF MODULATION AND MULTIPLEXING. THE CAPABILITIES OF DIGITAL AND ANALOG COMPUTERS AND OTHER DATA PROCESSING EQUIPMENT ARE DESCRIBED, AND THE ANALYSIS OF PHYSIOLOGICAL DATA WITH SUCH EQUIPMENT IS BRIEFLY DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-428 600
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
METHODS OF THE MANUAL ANALYSIS OF MULTISOURCE, CONTINUOUSLY RECORDED BIOMEDICAL DATA, (U)
JUN 63 100P NANCE,J. WILSON
REPT. NO. TM1210 000 01
CONTRACT: AF19 628 1648

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MEDICINE, ANALYSIS), (*DIGITAL COMPUTERS, DIAGNOSIS), FEASIBILITY STUDIES, TEST METHODS, COMPUTER LOGIC, ELECTROCARDIOGRAPHY, BALLISTOCARDIOGRAPHY, ELECTROENCEPHALOGRAPHY, GALVANIC SKIN RESPONSE, MEASUREMENT, PHYSIOLOGY, TABLES, PATHOLOGY (U)
IDENTIFIERS: PHONOCARDIOGRAPH, ELECTRO-OCULOGRAPH, PNEUMOGRAPH, 1963, DIAGNOSTICIAN (U)

THIS DOCUMENT IS THE FIRST IN A SERIES THAT ATTEMPS TO DETERMINE THE FEASIBILITY OF APPLYING ELECTRONIC DIGITAL COMPUTERS TO THE SCREENING AND ANALYSIS OF BIOMEDICAL DATA BY EXAMINING AS CLOSELY AS POSSIBLE THE ANALYTIC LOGIC EMPLOYED BYTHE CLINICAL DIAGNOSTICIAN. IN MANY CASES IT HAS BEEN NECESSARY TO AVOID SPECIFIC VALUES, LIMITS, AND MAGNITUDES SINCE THESE FACTORS ARE DETERMINED ENTIRELY BY THE EQUIPMENT USED BY THE INVESTIGATOR AS WELL AS THE METHOD EMPLOYED IN THE USE OF THE EQUIPMENT. SPECIFIC NORMALS NEEDED FOR THE PREPARATION AND OPERATION OF PROGRAMS WOULD HAVE TO BE DETERMINED FOR THE SPECIFIC CASE AT HAND. THE FOLLOWING CLASSIFICATIONS OF PHYSIOLOGICAL MEASUREMENT AND THEIR RELATED MANUAL ANALYSIS METHODS INCLUDED IN THIS REPORT ARE: ELECTROCARDIOGRAPH, BALLISTOCARDIOGRAPH, PHONOCARDIOGRAPH, ELECTROENCEPHOLOGRAPH, ELECTRO-OCULOGRAPH, PNEUMOGRAPH, AND GALVANIC SKIN RESPONSE. THE REPORT STATES THAT THE PREPARATION OF SUITABLE COMPUTER PROGRAMS TO AID THE CLINICAL DIAGNOSTICIAN REQUIRES A BASIC KNOWLEDGE OF THE METHODS USED IN THE ANALYSIS OF BIOMEDICAL DATA. IT CONDENSES THE AVAILABLE INFORMATION ON THE ANALYSIS METHODS AND TECHNIQUES AND PROVIDES THE PROGRAMMER WITH AN OUTLINE OF THE MANUAL METHODS UTILIZED SO THAT HE MAY ATTEMPT FURTHER FEASIBILITY STUDIES ON THE USE OF THE COMPUTER IN THE SCREENING AND ANALYSIS OF BIOMEDICAL DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-430 944
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
PROBLEMS OF CYBERNETICS IN MEDICINE. (U)
DEC 63 29P VOSKRESENSKIY,A. D. ;
PROKHOROV,A. I. ;
MONITOR: FTD TT63 521

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM KIBERNETIKU NA SLUZHBU KOMMUNIZMU, SBORNIK STATEY GOSENERGOIZDAT, MOSKVA-LENINGRAD, VOL. 1, PP. 126-140, 1961.

DESCRIPTORS: (*CYBERNETICS, MEDICAL RESEARCH), PHYSIOLOGY, CONTROL SYSTEMS, DYNAMICS, THEORY, CARDIOVASCULAR SYSTEM, INSTRUMENTATION, COMPUTERS, DATA STORAGE SYSTEMS (U)
IDENTIFIERS: DIAGNOSTIC MACHINES, 1961 (U)

TRANSLATION OF FOREIGN RESEARCH ON PROBLEMS OF CYBERNETICS IN MEDICINE.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-471 880
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
MONITORING PSYCHOMOTOR RESPONSE TO STRESS BY EVOKED AUDITORY RESPONSES. (U)
MAY 65 11P FREEMAN,J. A.;
REPT. NO. SAM-TR-65-42
TASK: 793003

UNCLASSIFIED REPORT

DESCRIPTORS: (*CENTRAL NERVOUS SYSTEM, MONITORS), (*PSYCHOMOTOR TESTS, AVIATION MEDICINE), (*PILOTS, PSYCHOMOTOR TESTS), ELECTROENCEPHALOGRAPHY, STRESS(PHYSIOLOGY), PERFORMANCE(HUMAN), HYPOXIA, ACCELERATION, SOUND SIGNALS, AUDITORY SIGNALS, REACTION(PSYCHOLOGY), DIGITAL SYSTEMS, DATA STORAGE SYSTEMS, DIGITAL COMPUTERS, PERFORMANCE(ENGINEERING) (U)
IDENTIFIERS: BIOSENSORS (U)

A SENSITIVE CENTRAL NERVOUS SYSTEM (CNS) MONITORING TECHNIC THAT CAN BE CORRELATED WITH BEHAVIOR AND WITH CHANGES IN THE SURROUNDING ENVIRONMENT DURING AEROSPACE FLIGHT IS DESIRABLE TO THE FLIGHT SURGEON INTERESTED IN THE EARLY DETECTION OF POSSIBLE ADVERSE EFFECTS OF THE FLIGHT ON THE SUBJECT, TO THE NEUROPHYSIOLOGIST CONCERNED WITH BASIC CEREBRAL MECHANISMS OCCURRING DURING THE UNIQUE CONDITIONS OF SPACE FLIGHT, AND TO THE SYSTEMS ENGINEER INTERESTED IN ANY REDUNDANT INDIRECT MEASUREMENT OF ENVIRONMENTAL PARAMETERS WHICH SERVE TO ENHANCE THE TOTAL SYSTEM RELIABILITY. IN THIS STUDY, A SPECIAL-PURPOSE DIGITAL COMPUTER WAS USED TO OBTAIN AVERAGE EEG RESPONSES EVOKED FROM HUMAN SUBJECTS BY REPETITIVE, NONDISTRACTING CLICKS DURING SEDENTARY ACTIVITY, MILDLY SYMPTOMATIC HYPERVENTILATION, HYPOXIA, AND 2.5 +G ACCELEARTION ON THE SAM HUMAN CENTRIFUGE AND IN AN NF-100 AIRCRAFT. THE WAVEFORMS OBTAINED WERE QUALITATIVELY DISTINCT FOR EACH GROUP. NO APPRECIABLE ALTERATION OF THE RELATIVE AMPLITUDES OR LATENCIES OF THE INDIVIDUAL RESPONSE COMPONENTS WAS CAUSED BY DISTRACTION, HABITUATION, OR VARIATIONS IN AMBIENT NOISE. NO SIGNIFICANT EFFECTS WERE DETECTABLE IN THE CORRESPONDING EEG'S. THIS PRELIMINARY INVESTIGATION SUGGESTS THAT AVERAGE EVOKED RESPONSES MAY BE USEFUL AND SENSITIVE INDICATORS OF CNS ACTIVITY DURING AEROSPACE FLIGHT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-600 903
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
A CONSULTATION WITH THE URAL 2. (U)
MAR 64 6P AKKURATOVA,T. I
MONITOR: FTD ,TT TT64 175, ,44-11723

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. FROM TRUD MOSCOW (USSR) 1963, 24 MAR. P. 4.

DESCRIPTORS: (*DIAGNOSIS, COMPUTERS), (*CYBERNETICS, DIAGNOSIS), MEDICINE, PUNCHED CARDS, USSR (U)

MEDICAL DIAGNOSIS USING THE URAL-2 COMPUTER.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-601 801
MISSOURI UNIV KANSAS CITY SCHOOL OF DENTISTRY
EVALUATION OF CLINICAL PROCEDURES IN DENTISTRY. (U)
DESCRIPTIVE NOTE: ANNUAL PROGRESS REP., 1 JAN-31 MAY 64,
JUN 64 18P ROBINSON,HAMILTON B. G. ;
STEWART,JACK L. ;
CONTRACT: DA49 193MD2361

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DENTISTRY, MEDICAL RESEARCH), (*TIME STUDIES), DENTAL PERSONNEL, MEDICAL EXAMINATION, TEETH, ULTRASONIC RADIATION, EFFECTIVENESS, COMPUTERS, RECORDING SYSTEMS, RECORDS, X-RAY PHOTOGRAPHY, RADIOGRAPHY, AUTOMATION, INFRARED RADIATION, DATA STORAGE SYSTEMS, READING MACHINES (U)
IDENTIFIERS: IBM 1231 (U)

PROGRESS ON A COMPARATIVE STUDY BETWEEN THE USE OF CONVENTIONAL DENTAL PROCEDURES AND NEWER OR MODIFIED TECHNIQUES IS REPORTED. THE AIM OF THIS PROJECT IS TO DETERMINE THE MOST EFFECTIVE UTILIZATION OF THE ARMY'S DENTAL MANPOWER. DATA COLLECTED ON THE RELATIVE VALUE OF ULTRASONICS AND THE CONVENTIONAL METHOD FOR SCALING TEETH IS BEING ANALYZED BY COMPUTERS TO ESTABLISH THE EFFECTIVENESS AS A FUNCTION OF TIME. PRELIMINARY DATA ON A STUDY USING DICTATING AND TRANSCRIBING EQUIPMENT FOR CLINICAL EXAMINATION CHARTING SHOWS THAT THE PRESENT METHODS USED BY THE ARMY ARE FASTER. THE USE OF THE PANORAMIC RADIOGRAPHIC METHOD FOR X-RAY EXAMINATION SHOWS AN 87% SAVING OF TIME. EXPERIMENTS ARE BEING CONDUCTED WITH VARIOUS FORMS OF RADIANT ENERGY AS A MEANS OF HEATING DENTAL ALLOYS. AN EXAMINATION AND TREATMENT CHART WAS DESIGNED FOR AUTOMATION OF THE ORAL HEALTH RECORDS. THIS IS AN 8 BY 11 INCH MARK SENSE SOURCE DOCUMENT TO BE USED WITH THE 1231 (IBM) OPTICAL MARK PAGE READER. FURTHER DEVELOPMENT OF THIS CHART WHICH WAS FOUND NECESSARY IS IN PROGRESS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000397

AD-602 649
AND CORP SANTA MONICA CALIF
ON THE CONSTRUCTION OF A SIMULATION OF THE INITIAL PSYCHIATRIC INTERVIEW. (U)
JUL 64 57P BELLMAN,RICHARD (FRIEND,M. B. (KURLAND,LEONARD)
CONTRACT: PHS GM09608 03

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PSYCHIATRY, PROGRAMMING (COMPUTERS)), (*DYNAMIC PROGRAMMING, PSYCHIATRY), SIMULATION, DIGITAL COMPUTERS, EDUCATION, ATTITUDES, VERBAL BEHAVIOR, DECISION MAKING, REACTION (PSYCHOLOGY), COMMUNICATION THEORY, DIAGNOSIS, MEDICAL PERSONNEL, MEDICAL EXAMINATION (U)

THE CONSTRUCTION OF A SIMULATION OF AN INITIAL PSYCHIATRIC INTERVIEW, WHICH CAN BE REGARDED AS AN EXAMPLE OF AN ADAPTIVE, MULTISTAGE DECISION PROCESS IS DESCRIBED IN ORDER TO AUGMENT CURRENT METHODS OF TEACHING PSYCHIATRIC INTERVIEWING AND TO PROVIDE AN ADDITIONAL TOOL FOR EXPLORING BASIC PROBLEMS OF TWO-PERSON COMMUNICATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-602 976
RAND CORP SANTA MONICA CALIF
CONSTRUCTION OF A SIMULATION PROCESS FOR INITIAL PSYCHIATRIC INTERVIEWING. (U)
JUN 64 14P GILBREATH,N. L. ;BELLMAN,R. E. ; FRIEND,M. B. ;KURLAND,LEONARD ;
REPT. NO. 2933
CONTRACT: NIH GM09608 03

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PAPER WAS PRESENTED AT THE ANNUAL SYMPOSIUM (2ND) ON BIOMATHEMATICS AND COMPUTER SCIENCES IN THE LIFE SCIENCES, HOUSTON, TEXAS, MAY 64.

DESCRIPTORS: (*PSYCHIATRY, TRAINING DEVICES), (*BIONICS, PSYCHIATRY), (*MEDICAL EQUIPMENT, COMPUTERS), (*VERBAL BEHAVIOR, DIAGNOSIS), DECISION MAKING, MEDICAL EXAMINATION, SIMULATION, FEEDBACK, PROGRAMMING (COMPUTERS) (U)

A DESCRIPTION IS GIVEN OF THE APPLICATION OF A COMPUTER IN SIMULATING A THERAPIST IN A PATIENT-THERAPIST RELATIONSHIP DURING INITIAL PSYCHIATRIC INTERVIEWING. THE USE OF THIS TECHNIQUE IS SUGGESTED FOR TRAINING PURPOSES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-604 861
DAYTON UNIV OHIO RESEARCH INST
AN AUTOMATIC LOGGING SYSTEM FOR BIOMEDICAL TEST DATA. (U)
JUN 64 26P HOVEY,WILLIAM J. ;
GILMORE,JESSE E. ;KISSEN,ABOT T.;
CONTRACT: AF33 657 8521
PROJ: 7164
TASK: 716409
MONITOR: AMRL TDR64 30

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, MEDICAL RESEARCH), (*MEDICAL RESEARCH, DATA PROCESSING SYSTEMS), DIGITAL COMPUTERS, PROGRAMMING (COMPUTERS), INSTRUMENTATION, INPUT-OUTPUT DEVICES, CONTROL SYSTEMS, HEAT TOLERANCE, SPACE MEDICINE (U)
IDENTIFIERS: IBM 7094 (U)

AN AUTOMATIC DATA ACQUISITION SYSTEM WAS DESIGNED TO MINIMIZE THE DATA REDUCTION OF BIOMEDICAL TEST DATA. THE OVERALL SYSTEM CONSISTS OF TWO MAIN PARTS: A HARDWARE GROUP, WHICH DIGITIZES AND RECORDS THE RAW DATA, AND A COMPUTER PROGRAM, WHICH REDUCES THE DATA AND PRESENTS IT IN TABULAR FORM FOR READY ANALYSIS. THE SYSTEM IS CAPABLE OF SIMULTANEOUSLY RECORDING UP TO 27 THERMOCOUPLE, 27 THERMISTOR, AND 24 MISCELLANEOUS DATA CHANNELS DURING ANY GIVEN EXPERIMENT. THE SAMPLING SPEED IS SUCH THAT IT TAKES APPROXIMATELY 6 SECONDS TO RECORD ALL 78 CHANNELS. MAJOR DESIGN CONSIDERATIONS WERE EASE OF USE, UTILITY, FLEXIBILITY, AND RELIABILITY. ALL SCALE FACTORS AND CALIBRATIONS, BOTH LINEAR AND NONLINEAR, WILL BE EFFECTED BY THE COMPUTER PROGRAM; THE RECORDING HARDWARE ONLY DIGITIZES AND RECORDS VOLTAGE LEVELS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-606 408
RAND CORP SANTA MONICA CALIF
SYSTEM CONSIDERATIONS IN REGIONAL INFORMATION EXCHANGE. (U)
NOV 62 11P HEARLE,EDWARD F. R. I
REPT. NO. P-2662

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE NEW ENGLAND CONFERENCE ON COMMUNITY HEALTH RECORDS MANAGEMENT, BOSTON, MASS., 16 NOV 62.

DESCRIPTORS: (*SYMPOSIA, PUBLIC HEALTH), (*PUBLIC HEALTH, DATA PROCESSING SYSTEMS), MEDICAL RESEARCH, SOCIAL SCIENCES, DATA STORAGE SYSTEMS, INFORMATION RETRIEVAL, STATISTICAL DATA, INPUT-OUTPUT DEVICES, SYSTEMS ENGINEERING, POPULATION (U)

THE WIDESPREAD INTEREST IN IMPROVED SYSTEMS FOR REGIONAL EXCHANGE OF HEALTH, MEDICAL AND WELFARE INFORMATION ARISES FROM TWO MAJOR REASONS. FIRST IT APPEARS THAT SUBSTANTIAL ADVANCES IN BOTH RESEARCH AND PATIENT CARE MIGHT BE ACHIEVED IF THE VOLUMES OF VALUABLE DATA BURIED IN FILES OF HEALTH, MEDICAL, AND WELFARE AGENCIES WERE MORE ACCESSIBLE. SECOND, ELECTRONIC DEVICES OFFER REAL PROMISE OF MAKING BETTER ACCESS TO SUCH DATA TECHNOLOGICALLY FEASIBLE. THIS PAPER EXPANDS ON BOTH OF THESE REASONS AND EXPLORES SOME OF THE CONSIDERATIONS IN DESIGNING SYSTEMS FOR REGIONAL INFORMATION EXCHANGE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-609 846
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD MASS
APPLICATIONS OF LASERS. (U)
DESCRIPTIVE NOTE: SPECIAL REPORTS,
NOV 64 43P STICKLEY,C. MARTIN I
PROJ: 4649
MONITOR: AFCRL ,AFCRL 64 9141 ,SR19

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: A SHORTER VERSION OF A PAPER PREPARED FOR A SEMINAR ON LASERS HELD IN AUGUST 1964 AT NEW YORK CITY UNDER THE SPONSORSHIP OF THE EDUCATION AND RESEARCH ASSOCIATION.

DESCRIPTORS: (*LASERS, SYMPOSIA), INSTRUMENTATION, COMMUNICATION SYSTEMS, SPACE COMMUNICATION SYSTEMS, METALLURGY, MACHINING, MEDICAL RESEARCH, BIOLOGY, RETINA, RUBY, TRACKING, ACOUSTICS, RAMAN SPECTROSCOPY, ELECTRON OPTICS, COMPUTERS, PHOTOGRAPHY, DEFENSE SYSTEMS (U)

FUNDAMENTALLY THIS ARTICLE IS A SURVEY OF APPLICATIONS OF LASERS. THE APPLICATIONS ARE DIVIDED INTO SIX MAJOR AREAS: PRECISION MEASUREMENTS, COMMUNICATIONS, BIOLOGICAL AND MEDICAL, OTHER SCIENTIFIC AREAS, METALWORKING, AND MISCELLANEOUS. A TABLE OF THE BASIC CHARACTERISTICS OF THE MAJOR TYPES OF LASERS IS PROVIDED SO THAT THE USER CAN BE MADE AWARE OF THE LIMITATIONS AND CAPABILITIES OF LASERS. GOOD EXAMPLES OF APPLICATIONS IN EACH OF THESE AREAS ARE DESCRIBED IN SOME DETAIL TO ILLUSTRATE WHICH MAJOR PROPERTIES OF LASER RADIATION ARE USEFUL IN THAT PARTICULAR AREA. MOST OF THE DISCUSSION PERTAINS TO PRESENT-DAY APPLICATIONS BUT IN SOME INSTANCES WHAT APPEAR TO BE GOOD FUTURE APPLICATIONS ARE ALSO DESCRIBED. SEVENTY-TWO REFERENCES TO THE TECHNICAL LITERATURE THAT RELATE TO APPLICATIONS ARE PROVIDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-610 282
RAND CORP SANTA MONICA CALIF
MATHEMATICAL DOWSERS AND DIGITAL DIVINERS, (U)
JAN 65 7P BELLMAN,RICHARD E
REPT. NO. P-3049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DIGITAL COMPUTERS, MATHEMATICAL PREDICTION), (*MATHEMATICAL PREDICTION, DIGITAL COMPUTERS), MATHEMATICS, PHYSICS, MEDICAL RESEARCH, ECONOMICS, COMPUTERS (U)

THE ROLE OF THE DIGITAL COMPUTER IN SCIENTIFIC RESEARCH IS STUDIED. STRESSED ARE PROBLEMS OF PREDITION AND OF SYSTEM IDENTIFICATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-614 216
LOCKHEED MISSILES AND SPACE CO SUNNYVALE CALIF
AN INTEGRATED APPROACH TO EVALUATING THE PERFORMANCE CAPABILITIES AND PHYSIOLOGICAL STATE OF SPACECRAFT CREWS. (U)
APR 65 26P LINCOLN,R. S. MANGELSDORF,J. F.

REPT. NO. 6-65-65-15

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: A PAPER PRESENTED AT THE SYMPOSIUM ON HUMAN PHYSIOLOGICAL AND PERFORMANCE DETERMINANTS OF MANNED SPACE SYSTEMS DESIGN, HELD AT SAN FERNANDO VALLEY STATE COLLEGE 14 APR 65.

DESCRIPTORS: (*SPACE CREWS, PHYSIOLOGY), (*ASTRONAUTS, PERFORMANCE TESTS), (*SPACE MEDICINE, TELEMETER SYSTEMS), PERFORMANCE(HUMAN), MANNED SPACECRAFT, SPACE FLIGHT, MONITORS, DISPLAY SYSTEMS, DATA PROCESSING SYSTEMS, DIGITAL COMPUTERS, ELECTROCARDIOGRAPHY, SYMPOSIA (U)

RECOGNIZING THE NEED FOR A COMPREHENSIVE CREWMONITORING PROGRAM, THE LOCKHEED MISSILES AND SPACE COMPANY HAS INITIATED AN INDEPENDENT DEVELOPMENT PROJECT CONCERNED WITH ALL MAJOR ASPECTS OF CREW MONITORINGFROM THE DEVELOPMENT OF MEASUREMENT TECHNIQUES TO THE INTERPRETATION OF PROCESSED DATA. THE OBJECTIVES OF THE PROJECT ARE: (1) TO DEVELOP AN AUTOMATIC SYSTEM TO ASSIST IN MONITORING CREW PERFORMANCE CAPABILITIES AND PHYSIOLOGICAL STATE, AND (2) TO DEVELOP DIGITAL TECHNIQUES FOR PROCESSING, DISPLAYING, AND ANALYZING OBTAINED DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-616 362
GEORGIA INST OF TECH ATLANTA
AN INVESTIGATION OF EDP APPLICATIONS IN USAF HOSPITALS. (U)
DESCRIPTIVE NOTE: SPECIAL PROBLEM REPT.,
JUN 65 47P THOMPSON,ROBERT I. ,JR.)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (*HOSPITALS, DATA PROCESSING SYSTEMS), (*AIR FORCE, HOSPITALS), (*MILITARY MEDICINE, DATA PROCESSING SYSTEMS), STATISTICAL ANALYSIS, DIAGNOSIS, DATA STORAGE SYSTEMS, MEDICAL PERSONNEL, TABLES (U)

THE PRIMARY PURPOSE OF THIS STUDY IS TO INVESTIGATE CURRENT APPLICATIONS OF EDP IN HOSPITALS WITH PARTICULAR EMPHASIS ON USES BEING MADE BY USAF HOSPITALS. A SECONDARY PURPOSE IS TO SUGGEST OR DEVELOP PROPOSALS FOR AREAS OF FUTURE APPLICATIONS IN USAF HOSPITALS. THE RESULTS OF THIS STUDY WILL ALSO PROVIDE A FOUNDATION UPON WHICH FURTHER AND MORE DETAILED INVESTIGATIONS MAY BE BASED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-619 284
REPUBLIC AVIATION CORP FARMINGDALE N Y
COLLECTION AND ANALYSIS PROCEDURES FOR PHYSIOLOGICAL DATA: METHODOLOGY AND APPARATUS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAY 65 29P PETERS,J. M. ;AXELROD,IRVING ;
ALBRIGHT,G. A. ;
CONTRACT: N61339 1444
PROJ: 7709
MONITOR: NAVTRADEVCEN , 1444-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF REQUESTED BY USERS OF DDC. COPY IS AVAILABLE FOR PUBLIC SALE.

DESCRIPTORS: (*PHYSIOLOGY, ELECTRONIC RECORDING SYSTEMS), (*PSYCHOPHYSIOLOGY, ELECTRONIC RECORDING SYSTEMS), MEASUREMENT, DATA, ANALYSIS, COMPUTERS, PSYCHOLOGY, PSYCHOMOTOR TESTS, ELECTROCARDIOGRAPHY, GALVANIC SKIN RESPONSE, RESPIRATION (U)
IDENTIFIERS: ELECTROMYOGRAPHY, ELECTROPHYSIOLOGY (U)

A TECHNIQUE FOR COLLECTING, STORING AND ANALYZING PHYSIOLOGICAL DATA IS PRESENTED WITH A DISCUSSION OF THE APPARATUS INVOLVED. THE TECHNIQUE PERMITS STRAIGHTFORWARD CORRELATION OF PSYCHOMOTOR WITH PHYSIOLOGICAL DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-620 292
NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
A DATA PROCESSING SYSTEM FOR THE BALLISTOCARDIOGRAM, (U)
FEB 65 57P MORSE,ROBERT L. ;
REPT. NO. NSAM-915
MONITOR: NAVMED , MR005.13-7004.6-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BALLISTOCARDIOGRAPHY, MATHEMATICAL MODELS), (*DATA PROCESSING SYSTEMS, BALLISTOCARDIOGRAPHY), ANALOG-TO-DIGITAL CONVERTERS, PULSE RATE, ARTERIES, CARDIOVASCULAR SYSTEM, DIGITAL COMPUTERS, ELASTICITY, MEDICAL EQUIPMENT, VELOCITY, ACCELERATION, PUNCHED CARDS (U)

THE BALLISTOCARDIOGRAM (BCG) IS A MEASUREMENT OF CARDIOVASCULAR FUNCTION, YET THE INTERPRETATION OF THE BALLISTOCARDIOGRAPHIC TRACING IN TERMS OF MEANINGFUL PHYSIOLOGICAL PARAMETERS HAS BEEN DIFFICULT. HOWEVER, THE USE OF DATA PROCESSING FACILITIES WITH A MATHEMATICAL MODEL OF THE BCG PROVIDES JUST SUCH AN INTERPRETATION. APPROPRIATE PROCESSING OF THE BCG PROVIDES AN ESTIMATE OF ARTERIAL ELASTICITY, PULSE WAVE VELOCITY, INTRA-ARTERIAL PULSE WAVE FORM, AND CORRECT ORDINATES OF THE ACCELERATION, VELOCITY, AND DISPLACEMENT BALLISTOCARDIOGRAM. FURTHERMORE, IMPROVEMENT IN THE ACCURACY OF THESE MEASUREMENTS IS LIKELY WITH FURTHER DEVELOPMENT OF THE BCG MODEL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-621 277
MASSACHUSETTS GENERAL HOSPITAL BOSTON STANLEY COBB LABS FOR PSYCHIATRIC RESEARCH
RESEARCH ON INFORMATION PROCESSING IN THE CENTRAL NERVOUS SYSTEM. (U)
DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
JUL 65 26P ERVIN,FRANK R. ;
REPT. NO. SR-1
CONTRACT: AF19 628 408
PROJ: 5632
TASK: 563208
MONITOR: AFCRL , 65-580

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF REQUESTED BY USERS OF DDC. COPY IS AVAILABLE FOR PUBLIC SALE.

DESCRIPTORS: (*CENTRAL NERVOUS SYSTEMS, DATA PROCESSING SYSTEMS), (*CEREBRAL CORTEX, VISION), VISUAL PERCEPTION, VISUAL SIGNALS, DIGITAL COMPUTERS, CATHODE RAY TUBES, STATISTICAL ANALYSIS, CATS, STIMULATION, NERVE CELLS (U)
IDENTIFIERS: HISTOGRAMS (U)

A SYSTEM OF AUTOMATIC RECEPTIVE FIELD MAPPING FOR VISUAL CORTICAL NEURONS BY A DIGITAL COMPUTER. IT CONSISTS OF (1) STIMULUS DISPLAY BY A DIGITAL CRT, SIMULTANEOUS DATA SAMPLING AND ON-LINE DATA PROCESSING INTO A POST-STIMULUS TIME HISTOGRAM AND AN AVERAGED EVOKED POTENTIAL, AND (2) OFFLINE READOUT OF NUMERICAL VALUES AND TABULATION. SEVERAL PROBLEMS LYING BETWEEN THE NEUROPHYSIOLOGICAL OR STATISTICAL NATURE OF THE RESPONSE AND DATA PROCESSING TECHNIQUES ARE ALSO DESCRIBED AND DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-622 212
NAVAL MEDICAL RESEARCH LAB NEW LONDON CONN
DESIGN OF A METHOD FOR RECORDING MEDICAL DATA SIGNIFICANT IN MEDICAL EXAMINATIONS FOR SUBMARINE SCHOOL CANDIDATES IN ORDER TO PERMIT RAPID ANALYSIS BY PUNCH CARD TECHNIQUES. (U)
DESCRIPTIVE NOTE: PROGRESS REPT. NO. 2,
OCT 44 5P WILLMON,T. L. ;BARTLETT,N. R. ;
REPT. NO. MRL-47
PROJ: X247

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MEDICAL EXAMINATION, DATA STORAGE SYSTEMS), (*PUNCHED CARDS, DATA PROCESSING SYSTEMS), (*INFORMATION RETRIEVAL, PERSONNEL MANAGEMENT), (*SUBMARINE PERSONNEL, PERSONNEL MANAGEMENT), STUDENTS, PSYCHOMETRICS, SELECTION, DESIGN, ANALYSIS, NAVAL PERSONNEL, VISION, HEARING (U)

SOME TRENDS IN THE PHYSICAL AND PSYCHOLOGICAL CHARACTERISTICS OF ENLISTED CANDIDATES FOR THE SUBMARINE SCHOOL, NEW LONDON, CONNECTICUT ARE REPORTED. THESE TRENDS ARE REVEALED BY ANALYSES OF INTERNATIONAL BUSINESS MACHINE CARDS PUNCHED IN ACCORDANCE WITH THE TECHNIQUE OUTLINED IN AD-622 216. A MARKED IMPROVEMENT IN CERTAIN PSYCHOLOGICAL CHARACTERISTICS IS NOTED. THERE WAS AN INCREASE IN THE NUMBER OF MEN FAILING STANDARDS FOR VISUAL AND AUDITORY SENSITIVITY. MOTIVATION AND PHYSICAL EXAMINATION DATA (EXCLUSIVE OF AUDITORY AND VISUAL FUNCTION) SHOW NO SIGNIFICANT TREND. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-622 214
NAVAL MEDICAL RESEARCH LAB NEW LONDON CONN
DESIGN OF A METHOD FOR RECORDING MEDICAL DATA SIGNIFICANT IN MEDICAL EXAMINATIONS FOR SUBMARINE SCHOOL CANDIDATES IN ORDER TO PERMIT RAPID ANALYSIS BY PUNCH-CARD TECHNIQUES. (U)
MAY 44 13P WILLMON,T. L. (BARTLETT,N. R. I
REPT. NO. MRL-40
PROJ: X247

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MEDICAL EXAMINATION, DATA STORAGE SYSTEMS), (*PUNCHED CARDS, DATA PROCESSING SYSTEMS), (*INFORMATION RETRIEVAL, PERSONNEL MANAGEMENT), (*SUBMARINE PERSONNEL, PERSONNEL MANAGEMENT), STUDENTS, NAVAL PERSONNEL, DESIGN, RECORDS, SELECTION, ANALYSIS, PSYCHOMETRICS (U)

A DESIGN PUNCH-CARD PERSONNEL ACCOUNTING SYSTEM TO FURNISH INFORMATION FOR MEDICAL AND PERSONNEL SELECTION OFFICERS IS DESCRIBED. THE SYSTEM WAS DEVELOPED TO SUIT THE NEEDS OF A PARTICULAR SERVICE SCHOOL SITUATION; THE REPORT WAS PREPARED IN ORDER TO DEMONSTRATE ONE APPROACH FOR DEALING WITH PERSONNEL DATA, AND IT IS EMPHASIZED THAT OTHER SITUATIONS MAY REQUIRE A COMPLETELY DIFFERENT DESIGN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-623 126
SYSTEMS RESEARCH LABS INC DAYTON OHIO
INTEGRATED DATA COLLECTION, MONITORING, CONVERSION, AND ANALYSIS SYSTEM FOR PSYCHOPHYSIOLOGICAL STRESS RESEARCH. (U)
DESCRIPTIVE NOTE: FINAL REPT. FOR 1 JUL 61-31 DEC 63,
JUN 65 108P BRAND,D. H. ;LINHART,R. M. ;
BURNS,C. A. ;
CONTRACT: AF33 657 9810
PROJ: 7222
TASK: 722201
MONITOR: AMRL , TDR-64-64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*STRESS(PHYSIOLOGY), DATA PROCESSING SYSTEMS), (*STRESS(PHYCHOLOGY), DATA PROCESSING SYSTEMS), (*DATA PROCESSING SYSTEMS, PSYCHOPHYSIOLOGY), PHYSIOLOGY, MEDICAL EXAMINATION, BIOCHEMISTRY, BLOOD CHEMISTRY, ADAPTATION(PHYSIOLOGY), REACTION(PSYCHOLOGY), PSYCHOMETRICS, PROGRAMMING(COMPUTERS), PROGRAMMING LANGUAGES, ANALOG-TODIGITAL CONVERTERS, FACTOR ANALYSIS, STATISTICAL ANALYSIS (U)
IDENTIFIERS: FLOW CHARTS (U)

THE DETAILS INVOLVED IN DESIGNING AND EXECUTING A LARGE-SCALE PSYCHOPHYSIOLOGICAL STRESS EXPERIMENT ARE SUMMARIZED. DESIGN CRITERIA AND CHANGES IN EXPERIMENTAL PROCESSES NECESSITATED BY PRELIMINARY, CONCURRENT STUDIES AS WELL AS INSTRUMENTATION AND DATA CONVERSION PROBLEMS ARE ALSO PRESENTED. EMPHASIS IS PLACED ON DESCRIPTION OF THE DATA PROCESSING ROUTES, EACH OF WHICH CONSISTED OF ANALOG TAPE FORMATING, ANALOG TO DIGITAL CONVERSION, DATA REDUCTION AND EDITING, AND DATA ANALYSIS TECHNIQUES. FLOW DIAGRAMS, COMPUTER PROGRAM WRITEUPS, AND EXAMPLES OF PICTORIAL OUTPUT FORMATS FOR GENERAL, AUTOMATIC, BIOLOGICAL DATA HANDLING UTILITY ARE APPENDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-623 631
UNIVERSIDAD DE LA REPUBLICA MONTEVIDEO (URUGUAY)
INSTITUTO DE NEUROLOGIA
EFFECTS OF PSYCHOPHARMACOLOGIC DRUGS UPON SENSORY INFLOW IN NORMAL SUBJECTS, PSYCHIATRIC PATIENTS AND IN ANIMALS. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. FOR 1 OCT 64-30 SEP 65,
SEP 65 16P AUSTI.ELIO GARCIA ;
CONTRACT: DA ARO49 092 64G40
PROJ: DA2V0145018710

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PSYCHOTROPIC AGENTS, SENSORY PERCEPTION), (*PSYCHOSES, PSYCHOTROPIC AGENTS), BARBITURATES, LYSERGIC ACIDS, NEUROSES, NEUROLOGY, PHYSIOLOGY, PSYCHIATRY, DRUGS, ELECTROENCEPHALOGRAPHY, VISUAL PERCEPTION, DATA PROCESSING SYSTEMS, RATS, GUINEA PIGS, CATS (U,
IDENTIFIERS: SCHIZOPHRENIA, URUGUAY (U)

THE OBJECTIVES OF THE RESEARCH WERE: (1) TO ESTABLISH CHANGES OBSERVED IN SENSORY EVOKED POTENTIAL IN NORMAL SUBJECTS BY BARBITURATES, LYSERGIC ACID, OTHER PSYCHOTROPIC DRUGS IN DIFFERENT ATTENTIONAL LEVELS AND DURING HABITUATION AND CONDITIONING. (2) TO DETERMINE THE CHANGES EVOKED IN PSYCHOTIC PATIENTS, ESPECIALLY SCHIZOPHRENICS. (3) TO OBSERVE THE EFFECT OF THESE DRUGS ON ATTENTION, HABITUATION, AND CONDITIONING IN RAT, GUINEA PIG, AND CAT. IN THE FIRST YEAR A BEGINNING WAS MADE ON OBJECTIVES 1 AND 2 ADDING SENSORY INFORMATION ON COMATOSE AND STUPOROUS PATIENTS. THE CAT COMPUTER SYSTEM WAS MODIFIED TO AUTOMATE RECORDING PROCEDURES ALLOWING ACCUMULATION FOR PRESENT TIME, READOUT, ERASE AND RESET WITHOUT OPERATOR ACTION. STUDY OF DRUG ACTION WAS BEGUN WITH LSD-25 ON VISUAL SENSORY INFLOW. RESULTS: (1) MULTIPLICATION OF WAVES, PARTICULARLY FIRST COMPONENTS, (2) INCREASE IN AMPLITUDE, PARTICULARLY LAST COMPONENTS. EXPERIMENTS WITH DRUGS ON NEUROTIC AND PSYCHOTIC PATIENTS ARE NOT YET DEFINITIVE. CHANGES OF VER I. COMA PATTERN OF RESPONSE ARE SIMILAR TO THAT OF NEWBORN INFANT; IN STUPOROUS SUBJECT CHANGES WERE OBSERVED INDICATIVE OF CHANGE IN LEVEL OF AWARENESS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-639 194 6/5 5/2
TULANE UNIV NEW ORLEANS LA DIV OF MEDICAL COMPUTING SCIENCES
FINAL REPORT OF INFORMATION PROCESSING RESEARCH. (U)
MAY 66 9P
CONTRACT: AF 41(609)-2032.
PROJ: 8F-7755.
TASK: 775501.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: FINAL REPT. ON BASIC REPT TITLED: CLINICAL RECORD INFORMATION PROCESSING IN AN OPERATIONAL ENVIRONMENT, DATED 15 JUL 65.

DESCRIPTORS: (*HOSPITALS, DATA PROCESSING SYSTEMS), MEDICINE, DIAGNOSIS, SURGERY, THERAPY, MEDICAL PERSONNEL, INFORMATION RETRIEVAL (U)

THE PROJECT ON CLINICAL INFORMATION PROCESSING CENTERED PRIMARILY IN THE ORTHOPEDIC OUTPATIENT CLINIC AND ENCOMPASSED: DATA GATHERING; INFORMATION RETRIEVAL; REPORT DESIGN; AND PATIENT INFORMATION. UPON DEVELOPMENT OF THE CHANGE OF STATUS FORM, DATA PROCESSING WAS EXPANDED TO THE INPATIENT ORTHOPEDIC SERVICE. OPERATING PROCEDURES WERE DEVISED AND TESTED FOR GATHERING PATIENT INFORMATION WITHOUT THE REQUIREMENT FOR PROFESSIONAL PERSONNEL TO RECORD INFORMATION IN DUPLICATE. GATHERING OF INFORMATION BY PERSONNEL WHO WERE VITALLY CONCERNED OR INTERESTED IN THE SUCCESS OF THE PROGRAM VIRTUALLY ELIMINATED THE RECORDING OF INACCURATE INFORMATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-641 278 6/3 9/2
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
MANIPULATING DATES AND TIME LAPSES IN A COMPUTERIZED RECORDS SYSTEM. (U)
SEP 66 17P HUGHES,HARRY M. ;
REPT. NO. SAM-TR-66-77.
PROJ: AF-6319.
TASK: 631503.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BIOMETRY, PROGRAMMING(COMPUTERS)), INFORMATION RETRIEVAL, RECORDING SYSTEMS, NUMBER THEORY, DATA PROCESSING SYSTEMS, HOSPITALS, MEDICAL RESEARCH (U)

A TECHNIC FOR HANDLING DATES WITHIN A COMPUTER AS CONSECUTIVE INTEGERS IS DEFINED AND ILLUSTRATED. VARIOUS POSSIBLE APPLICATIONS ARE SUGGESTED, WITH AN EXAMPLE DEMONSTRATING CONVERSION IN, CONVERSION OUT, TIME BETWEEN DATES, NUMBER OF WEEKDAYS BETWEEN DATES, AND IDENTIFICATION OF A BIWEEKLY REPORT DATE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000?90

AD-643 ?72 6/16 5/2 7/5
ARMY NATICK LABS MASS CLOTHING AND ORGANIC MATERIALS DIV
PUNCH-CARD INFORMATION RETRIEVAL SYSTEMS FOR FLASHBLINDNESS PROTECTION RESEARCH. I. PHOTOCHROMIC MATERIALS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT., JAN 65-JAN ?6,
NOV 66 41P MACNAIR,RICHARD N. ;
REPT. NO. C/CM-24
PROJ: DA-1C024401A349
MONITOR: USA-NLABS TR-67-14-CM

UNCLASSIFIED REPORT

DESCRIPTORS: (*FLASHBLINDNESS, INFORMATION RETRIEVAL), (*PHOTOCHROMISM, FLASHBLINDNESS), PUNCHED CARDS, PROGRAMMING(COMPUTERS), INPUT-OUTPUT DEVICES, PHYSIOLOGY, DATA PROCESSING SYSTEMS, ORGANIC COMPOUNDS, BLINDNESS (U)

THE INFORMATION RETRIEVAL SYSTEM DESCRIBED WAS SET UP TO INCLUDE PHOTOCHROMIC MATERIALS, ORGANIC SEMICONDUCTORS, IMAGE CONVERTER DEVICES, AND OTHER PROTECTIVE SYSTEMS. TWO TYPES OF DATA ARE CODED IN THE SYSTEM: (1) GENERAL INFORMATION! INCLUDING AUTHORS, PUBLICATIONS, DATES, AND COMMENTS. (2) SPECIFIC DATA FOR INDIVIDUAL COMPOUNDS AND SUBJECTS. THE SPECIFIC DATA DESCRIBED IN THIS REPORT PERTAIN TO PHOTOCHROMIC MATERIALS, THE AREA OF PRESENT IN-HOUSE RESEARCH AT THE U. S. ARMY NATICK LABORATORIES (NLABS). SUBJECT AND COMPOUND CODES FOR OTHER AREAS WILL BE PREPARED AND REPORTED SEPARATELY WHEN NEEDED. METHODS FOR CODING THE DATA ON 9 X 8-INCH, DOUBLE-ROW HAND PUNCH CARDS ARE PRESENTED. INFORMATION IS RETRIEVED IN ANY ORDER BY SORTING THE CODED CARDS FOR SUBJECTS, AUTHORS, DATES, AND PUBLICATIONS, THUS PROVIDING A VERSATILE SYSTEM FOR OBTAINING ANY INFORMATION PREVIOUSLY CODED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-648 490 6/19 9/6
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
BIO-TELEMETRY PROBLEMS DURING PROLONGED SPACE MISSIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL TRANS.,
67 14P AKULINICHEV,I. T. ;
ZAGANOV,A. M. ;POPOV,I. I. ;
REPT. NO. SAM-TT-R-814-1166
MONITOR: TT 67-61273

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PROBLEMY BIOTELEMETRII V DLITELNYKH KOSMICHESKIKH POLETAKH, TRANS. OF RUSSIAN PAPER PRESENTED AT INTERNATIONAL ASTRONAUTICAL CONGRESS (17TH), MADRID (SPAIN), 9-15 OCT 1966.

DESCRIPTORS: (*SPACE MEDICINE, TELEMETER SYSTEMS), SPACE FLIGHT, ASTRONAUTS, MEDICAL EXAMINATION, DATA TRANSMISSION SYSTEMS, RADIO TRANSMISSION, SENSORS, ELECTRODES, DIGITAL COMPUTERS, USSR (U)

IN THE FUTURE, SPACECRAFT WILL UNDERGO STRUCTURAL CHANGES (WELDING PROCESSES AND PARTITIONING OR DISTRIBUTION OF WEIGHT AND EQUIPMENT), AND THE CREWMEMBERS WILL PERFORM MORE AND MORE EXTRAVEHICULAR ACTIVITIES; THEREFORE, THE MEDICAL CONTROL SYSTEMS WILL ALSO HAVE TO BE CHANGED ACCORDINGLY. RADIO COMMUNICATION CHANNELS AND INSTRUMENTS WILL ALSO HAVE TO CONFORM WITH THE DIFFERENT OPERATIONAL TASKS. AT PRESENT, SHORT-RANGE (ON-BOARD AND NEAR SPACECRAFT) BIO-TELEMETRY SYSTEMS PRESENT A RELATIVELY LARGE NUMBER OF PROBLEMS. IN FACT, THOSE INVOLVING IMPORTANT TECHNICAL AND EXPERIMENTAL CONSTRUCTION PRINCIPLES AND SOME OF THE BASIC PARAMETERS HAVE NOT BEEN SOLVED AS YET. THE REPORT DISCUSSES THE NEED FOR FUTURE THEORETICAL AND EXPERIMENTAL RESEARCH OF RADIO WAVES PROPAGATION IN SOLID, CLOSED SPACES AND FOR THE IMPLEMENTATION OF RADIO CHANNELS OFFERING A HIGHLY RELIABLE TRANSMISSION OF BIO-TELEMETRY DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-650 002 6/3 9/6
ARMY RESEARCH INST OF ENVIRONMENTAL MEDICINE NATICK MASS
A DIGITAL TELEMETRY SYSTEM FOR PHYSIOLOGICAL VARIABLES. (U)
JUL 66 4P BOTSCH,FRANCIS W. I

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN IEEE TRANSACTIONS ON COMMUNICATIONS TECHNOLOGY VCOM-14 N6 P833-8 DEC 1966.
SUPPLEMENTARY NOTE: PRESENTED AT THE NATIONAL TELEMETERING CONFERENCE (1966), BOSTON, MASS.

DESCRIPTORS: (*MILITARY MEDICINE, *TELEMETER SYSTEMS), MEDICAL EXAMINATION, DATA TRANSMISSION SYSTEMS, DIGITAL SYSTEMS, PUNCHED TAPE, DATA PROCESSING SYSTEMS, PACKAGING (U)

A RADIO TELEMETRY SYSTEM IS DESCRIBED WHICH SATISFIES THE DATA ACQUISITION REQUIREMENTS FOR RESEARCH IN THE FIELD OF MILITARY ENVIRONMENTAL MEDICINE. THE ADOPTION OF DIGITAL ENCODING, TRANSMITTING, AND RECORDING TECHNIQUES, AND THE DEVELOPMENT OF A METHODOLOGY WHICH FEATURES SERIAL INTERROGATION BY A PORTABLE DATA RECORDING STATION, HAVE RESULTED IN THE CONSTRUCTION OF A 100-SUBCHANNEL FACILITY CAPABLE OF PRECISE MEASUREMENT AND RECORDING OF A VARIETY OF PHYSIOLOGICAL MEASURANDS DURING FIELD MANEUVERS. THE BASIC EQUIPMENT CONFIGURATION INCLUDES A DATA RECORDING STATION WHICH GENERATES THE TIME BASE FOR INTERROGATION AND PRODUCES A PUNCHED PAPER TAPE SUITABLE FOR DIRECT COMPUTER ENTRY AND FIVE ASSOCIATED DATA ACQUISITION STATIONS CARRIED BY TEST SUBJECTS PERFORMING MILITARY TASKS IN ENVIRONMENTAL EXTREMES. ALL UNITS ARE SELFCONTAINED, BATTERY-POWERED, SOLID-STATE PACKAGES COMPATIBLE WITH STANDARD ARMY LOAD CARRYING SYSTEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-652 005 9/2 13/2
NORTHWESTERN UNIV EVANSTON ILL DEPT OF GEOGRAPHY
SPATIAL DATA SYSTEMS: ORGANIZATION OF SPATIAL DATA. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 66 69P DUEKER,KENNETH J.
REPT. NO. TR-4
CONTRACT: NONR-1228(37)
TASK: 389-143

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 006 AND AD-652 007.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, INFORMATION RETRIEVAL), (*URBAN PLANNING, MODELS(SIMULATIONS)), GEOGRAPHY, STATISTICAL ANALYSIS, TRAFFIC, DISPLAY SYSTEMS (U)
IDENTIFIERS: SPATIAL DATA SYSTEMS (U)

THIS REPORT PROVIDES A LIMITED EXPLICATION OF CURRENT NEEDS FOR CLASSIFYING AND ORGANIZING SPATIAL DATA FOR USE IN URBAN AND TRANSPORTATION PLANNING. IN ADDITION, REQUIREMENTS AND METHODS FOR HANDLING SPATIAL DATA ARE EXPLORED. THE REPORT EMPHASIZES THE DUAL NEED FOR DATA ORGANIZATION METHODS AND DATA HANDLING CAPABILITIES, AS A REQUISITE FOR UTILIZATION OF DATA ACQUIRED FROM REMOTE SENSORS MOUNTED ON EARTH ORBITAL PLATFORMS. THIS WORK PROVIDES A BASIS FOR EXAMINATION OF SOME PROBLEMS OF INTEGRATING REMOTE SENSORS INTO A VIABLE GEOGRAPHIC INFORMATION SYSTEM.(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-652 006 9/2 13/2
NORTHWESTERN UNIV EVANSTON ILL DEPT OF GEOGRAPHY
SPATIAL DATA SYSTEMS: SYSTEMS CONSIDERATIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 66 80P DUEKER,KENNETH J. ;
REPT. NO. TR-5
CONTRACT: NONR-1228(37)
TASK: 389-143

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 005 AND AD-652 007.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, INFORMATION RETRIEVAL), (*URBAN PLANNING, MODELS(SIMULATIONS)), GEOGRAPHY, STATISTICAL ANALYSIS, TRAFFIC, DISPLAY SYSTEMS, PROGRAMMING(COMPUTERS), PROGRAMMING LANGUAGES (U)
IDENTIFIERS: SPATIAL DATA SYSTEMS, QUEST (U)

THIS REPORT PROVIDES A LIMITED EXPLICATION OF CURRENT NEEDS FOR CLASSIFYING AND ORGANIZING SPATIAL DATA FOR USE IN URBAN AND TRANSPORTATION PLANNING. IN ADDITION, REQUIREMENTS AND METHODS FOR HANDLING SPATIAL DATA ARE EXPLORED. THE REPORT EMPHASIZES THE DUAL NEED FOR DATA ORGANIZATION METHODS AND DATA HANDLING CAPABILITIES, AS A REQUISITE FOR UTILIZATION OF DATA ACQUIRED FROM REMOTE SENSORS MOUNTED ON EARTH ORBITAL PLATFORMS. THIS WORK PROVIDES A BASIS FOR EXAMINATION OF SOME PROBLEMS OF INTEGRATING REMOTE SENSORS INTO A VIABLE GEOGRAPHIC INFORMATION SYSTEM.(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-652 007 9/2 13/2
NORTHWESTERN UNIV EVANSTON ILL DEPT OF GEOGRAPHY
SPATIAL DATA SYSTEMS: SPECIAL TOPICS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 66 67P DUEKER,KENNETH J. I
REPT. NO. TR-6
CONTRACT: NONR-1228(37)
TASK: 389-149

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 005 AND AD-652 006.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, INFORMATION RETRIEVAL), (*URBAN PLANNING, MODELS(SIMULATIONS)), GEOGRAPHY, STATISTICAL ANALYSIS, TRAFFIC, DISPLAY SYSTEMS, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: SPATIAL DATA SYSTEMS, LIST PROCESSING (U)

THIS REPORT PROVIDES A LIMITED EXPLICATION OF CURRENT NEEDS FOR CLASSIFYING AND ORGANIZING SPATIAL DATA FOR USE IN URBAN AND TRANSPORTATION PLANNING. IN ADDITION, REQUIREMENTS AND METHODS FOR HANDLING SPATIAL DATA ARE EXPLORED. THE REPORT EMPHASIZES THE DUAL NEED FOR DATA ORGANIZATION METHODS AND DATA HANDLING CAPABILITIES, AS A REQUISITE FOR UTILIZATION OF DATA ACQUIRED FROM REMOTE SENSORS MOUNTED ON EARTH ORBITAL PLATFORMS. THIS WORK PROVIDES A BASIS FOR EXAMINATION OF SOME PROBLEMS OF INTEGRATING REMOTE SENSORS INTO A VIABLE GEOGRAPHIC INFORMATION SYSTEM.(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-652 241 6/5 9/2
TECHNOLOGY INC SAN ANTONIO TEX
VECTAN: A DIGITAL COMPUTER PROGRAM FOR THE ANALYSIS OF VECTORCARDIOGRAM DATA. (U)
DESCRIPTIVE NOTE: REPT. FOR 1 DEC 64-1 DEC 66.
FEB 67 129P ARMENT,BRIAN E. ;
HIGGINS,LAWRENCE S. ;
REPT. NO. TI-00110-67-10
CONTRACT: AF 41(609)-2267

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, *COMPUTER PROGRAMS), DIGITAL COMPUTERS, ANALYSIS, MEDICAL EXAMINATION, HARMONIC ANALYSIS (U)
IDENTIFIERS: VECTAN (U)

THE REPORT COVERS THE RESULTS OF AN INVESTIGATION OF FILTERING TECHNIQUES FOR THE SPATIAL VECTOR VELOCITY FUNCTION OF VECTORCARDIOGRAM DATA. THE OPERATION OF A COMPUTER PROGRAM TO PERFORM AN INTERVAL-MEASUREMENT ANALYSIS OF THE FUNCTION, AND A QUALITATIVE DISCUSSION OF THE RESULTS. A SECOND REPORT DESCRIBES AN ELECTRONIC DATA ACQUISITION, CALIBRATION, AND IDENTIFICATION SYSTEM FOR VECTORCARDIOGRAMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-688 237 9/2 6/4 12/1
PURDUE UNIV LAFAYETTE IND SCHOOL OF ELECTRICAL ENGINEERING
CYBERNETIC PREDICTING DEVICES. (U)
APR 66 29GP IVAKHNENKO,A. G. ILAPA,V.
34 6
REPT. NO. TR-EE66-5
MONITOR: TT 67-62166

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. KIBERNETICHESKIE PREDSKAZIVAIUSHCHIE USTROISTVA, KIEV, 1965 N.P.

DESCRIPTORS: (*CYBERNETICS, *COMPUTERS), STOCHASTIC PROCESSES, WEATHER FORECASTING, MATHEMATICAL ANALYSIS, EARTHQUAKES, INSECTS, MEDICINE, PROBABILITY, METEOROLOGICAL PHENOMENA, ACCURACY, PROBABILITY, ERRORS, TABLES, EQUATIONS, OCEAN WAVES, PATTERN RECOGNITION, ALGORITHMS, FEEDBACK, AMPLITUDE MODULATION, USSR (U)

PREDICTING PROGRAMS DESIGNED FOR LARGE GENERAL-PURPOSE COMPUTERS CONSTITUTE AN IMPORTANT NEW TOOL IN THE CONTROL OF PRODUCTION AND ECONOMICS. NEVERTHELESS, SMALL PREDICTING FILTERS HAVE THEIR OWN DOMAIN OF APPLICATION. THEY CAN BE REALIZED NOT ONLY AS PROGRAMS FOR GENERAL-PURPOSE COMPUTERS, BUT ALSO AS SIMPLE ANALOG DEVICES WITH VERY FAST RESPONSE. THE AUTHORS DISCUSS THREE PRINCIPAL METHODS OF PREDICTION IN ADDITION TO SOME OTHERS. PREDICTION OF DETERMINISTIC PROCESSES, I.E. EXTRAPOLATION AND INTERPOLATION. PREDICTION OF STOCHASTIC PROCESSES, BASED ON STATISTICAL PREDICTION THEORY. PREDICTION BASED ON ADAPTATION OR LEARNING OF THE PREDICTING FILTERS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 287 6/16 9/10
WASHINGTON SCHOOL OF PSYCHIATRY D C
SOMATIC CORRELATES OF PSYCHOLOGICAL REACTION. (U)
DESCRIPTIVE NOTE: FINAL REPT. 15 OCT 57-30 JUN 64,
JUN 67 25P BURNHAM,DONALD L. I
CONTRACT: DA-49-007-MD-902

UNCLASSIFIED REPORT

DESCRIPTORS: (*PSYCHOPHYSIOLOGY, *CARDIOVASCULAR SYSTEM), STRESS(PSYCHOLOGY), CENTRAL NERVOUS SYSTEM, AUTONOMIC NERVOUS SYSTEM, PHYSIOLOGY, NERVOUS SYSTEM, ENDOCRINE GLANDS, MENTAL DISORDERS, PSYCHOSES, EMOTIONS, HYPNOSIS, RESPONSES, CONDITIONED REFLEX, CARDIOVASCULAR DISEASES, REACTION(PSYCHOLOGY), PSYCHIATRY, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: PSYCHOSOMATIC DISORDERS, SCHIZOPHRENIA (U)

A NUMBER OF EXPLORATORY LONGITUDINAL STUDIES WERE CONDUCTED ON CORRELATIONS BETWEEN CARDIOVASCULAR REACTIVITY IN SEVERAL PARAMETERS AND CHANGING PSYCHOLOGICAL STATES IN HEALTHY AND PATIENT POPULATIONS. THESE STUDIES WERE EXPANDED TO INCLUDE LONGITUDINAL ANALYSES OF CHANGES IN PSYCHOENDOCRINE PATTERNS IN 'NORMAL' HUMAN SUBJECTS, ACUTE SCHIZOPHRENIC PATIENTS AND ANIMALS. ANOTHER EXTENSION OF THESE STUDIES INCLUDED AUTONOMIC CONDITIONING IN HUMANS AND ANIMALS IN WHICH OPERANT TECHNIQUES WERE UTILIZED. RELATED INTRACRANIAL STIMULATION EXPERIMENTS WERE PERFORMED ON ANIMALS AND TENTATIVE ATTEMPTS WERE MADE FOR ITS UTILIZATION IN THE ALLEVIATION OF INTRACTIBLE PAIN IN TERMINAL CANCER PATIENTS. SEVERAL TECHNICAL DEVELOPMENTS WERE MADE IN TRANSDUCERS AND AN AUTOMATIC MULTIPLE CHANNEL GENERAL PURPOSE DATA PROCESSING SYSTEM FOR PHYSIOLOGICAL VARIABLES WAS DESIGNED AND BUILT WHICH IS NOW IN OPERATION IN RELATED EXPERIMENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 511 6/5 5/2 5/9
URS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION BASIC STUDY, FOR THE STUDY OF A METHOD FOR INTEGRATION OF MEDICAL ACCOUNTING, REPORTING, SUPPLY, AND REGULATING OF THE ARMY IN THE FIELD INTO ADSAF PROGRAM. (U)
OCT 65 131P
CONTRACT: DA-04-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 511.

DESCRIPTORS: (*MILITARY MEDICINE, DOCUMENTATION), (*MEDICAL PERSONNEL, MILITARY MEDICINE), MODELS(SIMULATIONS), COST EFFECTIVENESS, REPORTS, MEDICAL SUPPLIES, MILITARY INTELLIGENCE, DATA PROCESSING SYSTEMS, FEASIBILITY STUDIES, EVACUATION, MILITARY ORGANIZATIONS, COMMUNICATION SYSTEMS, LOGISTICS, MANAGEMENT ENGINEERING, HOSPITALS, JOB ANALYSIS (U)

THE PURPOSE OF THIS DOCUMENT IS TO ACCOMPLISH THE FOLLOWING OBJECTIVES: (1) TO PROVIDE THE TECHNICAL RATIONALE USED IN DEVELOPING THE DOCUMENTATION FOR SPECIFIED FUNCTIONAL AREAS. (2) TO PROVIDE INFORMATION CONCERNING THE ORGANIZATION AND FUNCTION OF MILITARY STAFFS AND GENERAL CONCEPTS OF MILITARY ORGANIZATION AND OPERATIONS TO THE READER WHO IS NOT AS KNOWLEDGEABLE IN SUCH AREAS AS THE EXPERIENCED MILITARY OFFICER. (3) TO SHOW THE RELATIONSHIP OF THE DUTIES AND RESPONSIBILITIES OF THE MEDICAL SERVICE STAFF OFFICER TO OTHER STAFF FUNCTIONS WITHIN A MILITARY STAFF. (4) TO DEFINE THE FUNCTION OF MEDICAL UNITS IN A THEATER OF OPERATIONS. (5) TO PROVIDE FUNCTIONAL AREA DESCRIPTIONS FOR THE SPECIFIED FUNCTIONAL AREAS IN SUFFICIENT DETAIL TO PROVIDE A BASIS FOR DESIGNING SIMULATION MODELS TO BE USED IN THE COST-EFFECTIVENESS ANALYSIS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 511 6/5 5/2 5/9
URS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION PATIENT ACCOUNTING ANNEX
A, FOR THE STUDY OF A METHOD FOR INTEGRATION OF
MEDICAL ACCOUNTING, REPORTING, SUPPLY, AND REGULATING
OF THE ARMY IN THE FIELD INTO THE ADSAF PROGRAM. (U)
OCT 65 121P
CONTRACT: DA-04-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 510.

DESCRIPTORS: (*MILITARY MEDICINE, DOCUMENTATION), (*CASUALTIES, MILITARY MEDICINE), MEDICAL PERSONNEL, MODELS(SIMULATIONS), COST EFFECTIVENESS, REPORTS, MEDICAL SUPPLIES, MILITARY INTELLIGENCE, DATA PROCESSING SYSTEMS, FEASIBILITY STUDIES, EVACUATION, MILITARY ORGANIZATIONS, COMMUNICATION SYSTEMS, LOGISTICS, MANAGEMENT ENGINEERING, HOSPITALS, JOB ANALYSIS (U)

THE PATIENTS ACCOUNTING FUNCTIONAL AREA IS THAT PROCESS WHICH PROVIDES FOR THE COLLECTION, RECORDING, SUMMARIZING, AND REPORTING OF DATA REGARDING PATIENTS HOSPITALIZED AND/OR EVACUATED IN THE ARMY IN THE FIELD. IT INCLUDES THE RESPONSIBILITY FOR SATISFYING THOSE ESSENTIAL PATIENT DATA REQUIREMENTS OF ELEMENTS OR AGENCIES SUPERIOR TO, OR IN SUPPORT OF, MEDICAL TREATMENT FACILITIES IN A THEATER OF OPERATIONS. THIS DOCUMENT DESCRIBES THE CURRENT PATIENTS ACCOUNTING SYSTEM IN ONE DIVISION, ONE CORPS, ONE FIELD ARMY, AND ONE THEATER ARMY COMMAND. IT IS ASSUMED THAT THESE OPERATIONS WILL BE APPLICABLE IN ALL SIMILAR ORGANIZATIONS, I.E. ONE DIVISION OPERATION TYPIFIES ALL DIVISIONS, ONE CORPS TYPIFIES ALL CORPS, ETC. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-695 512 6/5 5/2 5/9
JRS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION MEDICAL REGULATING ANNEX
B, FOR THE STUDY OF A METHOD FOR INTEGRATION OF
MEDICAL ACCOUNTING, REPORTING, SUPPLY, AND REGULATING
OF THE ARMY IN THE FIELD INTO THE ADSAF PROGRAM (U)
OCT 65 66P
CONTRACT: DA-04-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-695 511.

DESCRIPTORS: (*MILITARY MEDICINE, DOCUMENTATION), (*CASUALTIES, MILITARY MEDICINE), MEDICAL PERSONNEL, COST EFFECTIVENESS, REPORTS, MEDICAL SUPPLIES, MILITARY INTELLIGENCE, DATA PROCESSING SYSTEMS, FEASIBILITY STUDIES, MODELS(SIMULATIONS), EVACUATION, HOSPITALS, MILITARY ORGANIZATIONS, COMMUNICATION SYSTEMS, LOGISTICS, MANAGEMENT ENGINEERING, JOB ANALYSIS (U)

MEDICAL REGULATING IS THAT PART OF THE OVERALL SPHERE OF MEDICAL OPERATIONS WHICH COORDINATES AND CONTROLS THE MOVEMENT OF PATIENTS TO THE MEDICAL FACILITIES WHICH ARE BEST ABLE TO PROVIDE CARE AT THAT TIME. MANY FACTORS ARE CONSIDERED IN CONTROLLING THE MOVEMENT OF PATIENTS THROUGH THE HOSPITALIZATION AND EVACUATION SYSTEM. SOME OF THESE FACTORS ARE CURRENT BED STATUS OF TREATMENT FACILITIES (I.E., BEDS OCCUPIED, NOT OCCUPIED); SURGICAL BACKLOG IN HOURS; LOCATION OF FACILITIES WITH SPECIALTY CAPABILITIES; NUMBER AND LOCATION OF PATIENTS BY DIAGNOSTIC CATEGORY; TACTICAL SITUATION IN THE COMBAT ZONE; LOCATION OF AIRFIELDS AND RAILHEADS; MEDICAL RESOURCES AVAILABLE AT EACH TREATMENT FACILITY; AND AVAILABILITY OF TRANSPORTATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 513 6/5 5/2 6/13 5/9
URS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION MEDICAL SUPPLY ANNEX C,
FOR THE STUDY OF A METHOD FOR INTEGRATION OF MEDICAL
ACCOUNTING, REPORTING, SUPPLY, AND REGULATING OF THE
ARMY IN THE FIELD INTO THE ADSAF PROGRAM. (U)
OCT 65 128P
CONTRACT: DA-04-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 512.

DESCRIPTORS: (*MILITARY MEDICINE, DOCUMENTATION), (*MEDICAL SUPPLIES, MILITARY MEDICINE), CASUALTIES, MEDICAL PERSONNEL, COST EFFECTIVENESS, REPORTS, MILITARY INTELLIGENCE, DATA PROCESSING SYSTEMS, FEASIBILITY STUDIES, MODELS(SIMULATIONS), EVACUATION, HOSPITALS, INVENTORY CONTROL, LOGISTICS, MILITARY ORGANIZATIONS, COMMUNICATION SYSTEMS, MANAGEMENT ENGINEERING, JOB ANALYSIS (U)

THE OPERATIONAL OBJECTIVES OF MEDICAL SUPPLY ARE (1) TO PROVIDE AN ADEQUATE, TIMELY, AND CONSTANT SUPPLY OF ALL ITEMS NECESSARY TO GIVE COMPLETE MEDICAL SERVICE TO EVERY SICK OR INJURED INDIVIDUAL IN THE COMMAND; (2) TO PROVIDE MAINTENANCE OF ALL ITEMS OF MEDICAL EQUIPMENT; AND (3) TO PROVIDE SPECTACLE FABRICATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 514 6/5 5/2 5/9
UNS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION MEDICAL REPORTING ANNEX E, FOR THE STUDY OF A METHOD FOR INTEGRATION OF MEDICAL ACCOUNTING, REPORTING, SUPPLY, AND REGULATING OF THE ARMY IN THE FIELD INTO THE ADSAF PROGRAM. (U)
OCT 65 111P
CONTRACT: DA-04-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 514.

DESCRIPTORS: (*MILITARY MEDICINE, DOCUMENTATION), CASUALTIES, HOSPITALS, REPORTS, MEDICAL PERSONNEL, MEDICAL SUPPLIES, STATISTICAL ANALYSIS, COST EFFECTIVENESS, DATA PROCESSING SYSTEMS, FEASIBILITY STUDIES, EVACUATION, MANAGEMENT ENGINEERING, JOB ANALYSIS (U)

MEDICAL REPORTING IS DEFINED AS THE EXTRACTION OF CERTAIN INFORMATION FROM THE PATIENTS' HEALTH AND CLINICAL RECORDS BY THE ATTENDING MEDICAL FACILITIES AND THE SUBSEQUENT SUMMARIZATIONS OF THIS INFORMATION INTO STATISTICAL REPORTS. THESE DATA ARE UTILIZED BY THOSE WHO ARE DIRECTLY ADMINISTERING MEDICAL AND NURSING CARE - SURGEONS AND STAFF AT COMMAND LEVELS - AND THE OFFICE OF THE SURGEON GENERAL (OTSG). THE DESCRIPTION OF HEALTH AND CLINICAL RECORDS IS INCLUDED PRIMARILY TO PROVIDE THE CONSIDERATION OF SUCH RECORDS AS POTENTIAL SOURCES OF INFORMATION FOR MEDICAL REPORTING. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-656 868 20/9 9/4 9/2 17/2
9/3 9/7 9/10 14/2

MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF ELECTRONICS
RESEARCH LABORATORY OF ELECTRONICS QUARTERLY PROGRESS REPORT NO. 86, JULY 15, 1967, (U)
JUL 67 40PP ZIMMERMANN,H. J. ;
HARVEY,G. G. ;MASON,S. J. ;
CONTRACT: DA-28-043-AMC-02536(E), NONR-1841(42)

UNCLASSIFIED REPORT

DESCRIPTORS: (*PHYSICS, SCIENTIFIC RESEARCH), (*ELECTRONICS LABORATORIES, REPORTS), (*PLASMA PHYSICS, SCIENTIFIC RESEARCH), (*INFORMATION THEORY, SCIENTIFIC RESEARCH), MOLECULAR BEAMS, SPECTROSCOPY, RADIO ASTRONOMY, UPPER ATMOSPHERE, ELECTRONICS, DATA PROCESSING SYSTEMS, DATA TRANSMISSION SYSTEMS, SPEECH, LINGUISTICS, NERVOUS SYSTEM, PSYCHIATRY (U)

CONTENTS: MOLECULAR BEAMS; MOLECULAR ENERGY TRANSFER AND SPECTROSCOPY; MICROWAVE SPECTROSCOPY; ATOMIC RESONANCE AND SCATTERING; RADIO ASTRONOMY; OPTICAL AND INFRARED SPECTROSCOPY; GEOPHYSICAL RESEARCH; MAGNETIC RESONANCE; PHYSICAL ELECTRONICS AND SURFACE PHYSICS; PHYSICAL ACOUSTICS; ELECTRODYNAMICS OF MEDIA; PHYSICAL OPTICS OF INVERTEBRATE EYES; PLASMA PHYSICS; GASEOUS ELECTRONICS; PLASMAS AND CONTROLLED NUCLEAR FUSION; ENERGY CONVERSION RESEARCH; SPONTANEOUS RADIOFREQUENCY EMISSION FROM HOT-ELECTRON PLASMAS; INTERACTION OF LASER RADIATION WITH PLASMAS AND NONADIABATIC MOTION OF PARTICLES IN MAGNETIC FIELDS; STATISTICAL COMMUNICATION THEORY; PROCESSING AND TRANSMISSION OF INFORMATION; DETECTION AND ESTIMATION THEORY; SPEECH COMMUNICATION; LINGUISTICS; COGNITIVE INFORMATION PROCESSING; COMMUNICATIONS BIOPHYSICS; NEUROPHYSIOLOGY; COMPUTATION RESEARCH. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-660 942 6/19 6/11 6/3
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV
SPACE BIOLOGY AND MEDICINE, VOL. I, A NEW SOVIET JOURNAL 1967. (U)
DESCRIPTIVE NOTE: SPECIAL REPT.,
NOV 67 62P PARIN,V. V. IGORBOV,F. D. ;
REPT. NO. ATD-67-37

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ABSTRACT TRANS. OF KOSMICHESKAYA BIOLOGIYA I MEDITSINA (USSR) V1 N1 P7-82 1967. THE ABOVE JOURNAL IS ALSO TRANSLATED COVER-TO-COVER. REPT. ON SURVEYS OF FOREIGN SCIENTIFIC AND TECHNICAL LITERATURE.

DESCRIPTORS: (*SPACE MEDICINE, REPORTS), (*SPACE BIOLOGY, REPORTS), (*LIFE SUPPORT, REPORTS), ASTRONAUTS, SPACECRAFT, COMPUTERS, GASTROINTESTINAL SYSTEM, DIGESTIVE SYSTEM DISEASES, WEIGHTLESSNESS, ACCELERATION TOLERANCE, RADIATION EFFECTS, PLANTS(BOTANY), HYPOXIA, CARDIOVASCULAR SYSTEM, PROTEINS, BIOSYNTHESIS, HEMATOLOGY, VESTIBULAR APPARATUS, VISION, NERVE CELLS, ABSTRACTS, PERIODICALS, STATE-OF-THE-ART REVIEWS, USSR (U)

THE REPORT IS A COLLECTION OF ABSTRACTS COVERING THE FIRST ISSUE OF THE NEW SOVIET JOURNAL, KOSMICHESKAYA BIOLOGIYA I MEDITSINA (SPACE BIOLOGY AND MEDICINE). THE NEW JOURNAL IS A BIMONTHLY PERIODICAL PUBLISHED BY THE MINISTRY OF HEALTH USSR UNDER THE GENERAL EDITORSHIP OF ACADEMICIAN V. V. PARIN. ARTICLES ON BIOASTRONAUTICS, WHICH HAVE HITHERTO BEEN SCATTERED THROUGH A GREAT VARIETY OF SOVIET SCIENTIFIC AND TECHNICAL PUBLICATIONS, WILL PRESUMABLY BE MORE CONVENIENTLY GATHERED BETWEEN THE COVERS OF THE NEW JOURNAL, WHICH IS THE FIRST TO BE DEVOTED SPECIFICALLY TO THE PROBLEMS OF SPACE BIOLOGY AND MEDICINE. SINCE IT WILL BE SOME TIME BEFORE ANY TRANSLATION BECOMES AVAILABLE, IT WAS DECIDED THAT PUBLICATION OF ABSTRACTS OF ALL OF THE 14 SCIENTIFIC ARTICLES IN THE FIRST ISSUE OF KOSMICHESKAYA BIOLOGIYA I MEDITSINA AS A SINGLE UNIT WOULD RENDER A DISTINCT SERVICE TO THE U. S. BIOASTRONAUTICS COMMUNITY. HALF OF THE ARTICLES IN THE FIRST ISSUE ARE REPORTS OF ORIGINAL RESEARCH, WHICH HAVE BEEN ABSTRACTED IN THE USUAL WAY. THE OTHER HALF ARE REVIEW PAPERS DESCRIBING THE STATE-OF-THE-ART IN ONE(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-666 017 6/5
RAND CORP SANTA MONICA CALIF
PROBLEMS OF DISEASE CLASSIFICATION IN MACHINE PROCESSABLE FORMAT.
FEB 68 10P LINCOLN,THOMAS L. I (U)
REPT. NO. P-3799

UNCLASSIFIED REPORT

DESCRIPTORS: (*DISEASES, CLASSIFICATION), DIAGNOSIS, DECISION MAKING, MEDICAL PERSONNEL, DATA PROCESSING SYSTEMS, SEARCH THEORY, MEDICINE, THERAPY (U)

THE MEDICAL DILEMMA WITH RESPECT TO MODERN INFORMATION HANDLING IS DISCUSSED. THIS DILEMMA RESULTS FROM PROFESSIONAL PHILOSOPHIES WHICH ARE IN PART OUTMODED AND IN PART OUTSCALED BY THE PRESENT DEMAND FOR INFORMATION. THE EFFECTIVE MANAGEMENT OF MEDICAL AND HEALTH DATA, WHICH WILL COME TO DEPEND ON A VISIBLE PROCESS OF PROBLEM DEFINITION AND THERAPEUTIC DECISION-MAKING, WILL DEMAND REBLOCKING AND RESORTING OF INFORMATION. ULTIMATELY, HOWEVER, THE WAYS IN WHICH DISEASES ARE CATEGORIZED AND THE ELEMENTS CHOSEN FOR CLINICAL THINKING WILL BE ALTERED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-666 411 5/9 5/8 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
EXPLORATORY STUDY OF INFORMATION-PROCESSING PROCEDURES AND COMPUTER-BASED TECHNOLOGY IN VOCATIONAL COUNSELING. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
OCT 67 249P COGSWELL,JOHN F. ;
ESTAVAN,DONALD P. ;DONANCE,CLYDE P. , JR.;
ROSENQUIST,BARBARA A. ;
REPT. NO. TM-3718

UNCLASSIFIED REPORT

DESCRIPTORS: (*EDUCATION, PROGRAMMING(COMPUTERS)), DATA PROCESSING SYSTEMS, STUDENTS, DECISION MAKING, MAN-MACHINE SYSTEMS, INSTRUCTORS, DESIGN, ADJUSTMENT(PSYCHOLOGY), PSYCHOMETRICS, COMPUTER PROGRAMS, INFORMATION RETRIEVAL (U)
IDENTIFIERS: *COUNSELING (U)

THE PURPOSE OF THIS PHASE OF THE WORK WAS TO DESIGN A MAN-MACHINE COUNSELING SYSTEM. BEFORE THE DESIGN WORK BEGAN, THE COUNSELING AND GUIDANCE OPERATIONS WERE SURVEYED IN THE THIRTEEN SCHOOLS DISTRIBUTED OVER SEVEN STATES IN ORDER TO STUDY THE VARIATION IN COUNSELING PRACTICE AMONG SCHOOLS. THIS VARIATION COULD THEN BE CONSIDERED IN SYSTEM DEVELOPMENT WORK WITH THE SCHOOLS SELECTED FOR THE MAN-MACHINE STUDY. AFTER THE SURVEY, AN EXPERIMENTATION FIELD SITE WAS SELECTED. THE FOCUS OF SYSTEM DEVELOPMENT AND EXPERIMENTATION IS A LARGE SCHOOL COMPLEX IN THE LOS ANGELES SCHOOL DISTRICT. DETAILED SYSTEM ANALYSIS WAS PERFORMED OF ALL THE COUNSELING PROCEDURES EMPLOYED IN THIS SCHOOL COMPLEX AND WORKSHOPS ON INFORMATION PROCESSING TECHNOLOGY WERE CONDUCTED FOR THE COUNSELORS. TWO DESIGN TEAMS WERE THEN FORMED TO SPECIFY MODEL I OF THE MAN-MACHINE SYSTEM. ONE TEAM CONSISTED OF THE SDC RESEARCHERS AND THE HIGH SCHOOL COUNSELORS; THE OTHER, OF THE RESEARCHERS AND THE JUNIOR HIGH SCHOOL COUNSELORS. SOME OF THE MAJOR IDEAS WHICH EMERGED FROM THE DESIGN SESSIONS ARE: (1) AN INFORMATION RETRIEVAL SYSTEM FOR STUDENT INFORMATION. (2) A TRACKING AND MONITORING SYSTEM WHICH WILL AUTOMATICALLY ALERT THE COUNSELOR WHEN CRITICAL SITUATIONS OCCUR. (3) AUTOMATED REPORT GENERATION FOR PREPARING CUMULATIVE RECORDS, REPORT CARDS, AND OTHER REPORTS OR LISTS. (AUTHOR) (U)

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-668 180 15/7 5/10
CALIFORNIA UNIV LOS ANGELES BIOTECHNOLOGY LAB
UNDERWATER WORK MEASUREMENT TECHNIQUES: INITIAL STUDIES. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 68 105P WELTMAN,GERSHON ;
EGSTROM,GLEN H. ;ELLIOTT,ROBERT E. ;
STEVENSON,HERBERT S. ;
REPT. NO. TR-44, 68-11
CONTRACT: N0OO14-67-A-0111
PROJ: NR-196-069

UNCLASSIFIED REPORT

DESCRIPTORS: (*PERFORMANCE(HUMAN), UNDERWATER), (*DIVING, PERFORMANCE(HUMAN)), BIOMETRY, DATA PROCESSING SYSTEMS, EFFECTIVENESS, CONSTRUCTION, MODELS(SIMULATIONS), RESEARCH PROGRAM ADMINISTRATION, TEST METHODS, CLASSIFICATION, CLOSED CIRCUIT TELEVISION, RECORDING SYSTEMS, ARMS, LEGS, STRESS(PHYSIOLOGY), RESPIRATION, ELECTROCARDIOGRAPHY, SPACE ENVIRONMENTAL CONDITIONS, STRESS(PSYCHOLOGY), OCEAN BOTTOM, TABLES (U)
IDENTIFIERS: WORK MEASUREMENT(UNDERWATER), GRAPHS(CHARTS) (U)

THE REPORT REVIEWS INITIAL PROGRESS IN AN ONGOING STUDY OF UNDERWATER WORK MEASUREMENT. THE OBJECTIVE OF THE STUDY IS TO DETERMINE NEW WAYS OF DEFINING AND MEASURING DIVER WORK EFFECTIVENESS, AND TO DEVELOP MEASUREMENT TECHNIQUES FOR GENERAL APPLICATION IN RESEARCH AND OPERATIONAL PROGRAMS. EXAMINATION OF MEASUREMENT TECHNIQUES WAS DIVIDED INTO THREE MAIN AREAS: PROCEDURAL, PHYSIOLOGICAL AND PSYCHOLOGICAL. THE REPORT DESCRIBES THE DEVELOPMENT OF A PIPE CONSTRUCTION TASK AND A LABORATORY BIOINSTRUMENTATION SYSTEM. IN ADDITION, IT PRESENTS THE RESULTS OF A SERIES OF SUB-STUDIES DEALING WITH WORK METHODOLOGY AND PHYSIOLOGICAL RESPONSE UNDERWATER. THE STUDIES WERE CONDUCTED IN THE DIVING TANK OF THE UCLA UNDERWATER RESEARCH FACILITY. A SUMMARY OF FINDINGS AND RECOMMENDATIONS IS INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-668 308 9/2 20/1
ILLINOIS UNIV URBANA BIOLOGICAL COMPUTER LAB
A DIGITAL COMPUTER FOR THE ELECTRONIC MUSIC STUDIO. (U)
JAN 67 10P FREEDMAN,M. DAVID I
REPT. NO. PUBL-143
CONTRACT: AF-AFOSR-7-66
PROJ: AF-9769
TASK: 976904
MONITOR: AFOSR 68-0776

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN JOURNAL OF THE AUDIO ENGINEERING SOCIETY, V15 N1 JAN 1967.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH BENDIX RESEARCH LABS., SOUTHFIELD, MICH.

DESCRIPTORS: (*MUSIC, *DIGITAL COMPUTERS), DATA PROCESSING SYSTEMS, DATA STORAGE SYSTEMS, INPUT-OUTPUT DEVICES, MAGNETIC TAPE, ANALOG-TO-DIGITAL CONVERTERS, SOUND, SYNTHESIS, REAL TIME, ACOUSTICS (U)

RECENT ADVANCES IN COMPUTER TECHNOLOGY HAVE MADE IT FEASIBLE TO USE DIGITAL COMPUTERS AS MUSICAL INSTRUMENTS. THIS PAPER PRESENTS A SET OF SPECIFICATIONS FOR A DIGITAL COMPUTER SYSTEM WHICH CAN BE USED FOR THE ANALYSIS, SYNTHESIS AND EDITING OF MUSIC. DETAILS ARE PRESENTED FOR SEVERAL MUSIC SYNTHESIS SCHEMES, AND THE POSSIBILITY OF REALIZING THESE SCHEMES IN REAL TIME IS INVESTIGATED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-668 626 6/3 9/2
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB OHIO
REAL-TIME DIGITAL ANALYSIS SYSTEM FOR BIOLOGICAL DATA. (U)
66 6P MUNDIE,J. RYLAND ;
OESTREICHER,H. L. ;VON GIERKE,H. E. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN IEEE SPECTRUM. P116-21 OCT 1966.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, BIOLOGY), DIGITAL COMPUTERS, BIOLOGICAL LABORATORIES, REAL TIME, REMOTE CONTROL SYSTEMS, DISPLAY SYSTEMS, ANALOG-TO-DIGITAL CONVERTERS, MULTIPLEX, NERVOUS SYSTEM, NERVE CELLS (U)
IDENTIFIERS: ON-LINE SYSTEMS (U)

IN THE SYSTEM DESCRIBED, A MEDIUM-SIZE DIGITAL COMPUTER HAS BEEN BROUGHT INTO THE LABORATORY AND MADE AN INTEGRAL PART OF THE EXPERIMENT TO PROVIDE A MEASUREMENT TOOL WITH UNIQUE CAPABILITIES. ALTHOUGH THE SYSTEM WAS DESIGNED FOR USE IN A BIOLOGICAL LABORATORY, IT IS EQUALLY FEASIBLE FOR A LABORATORY OF ANY DISCIPLINE. THE EASE OF CONTROL, COUPLED WITH A VISUAL DISPLAY OF THE COMPUTED RESULTS, HAVE LED TO THE APPELLATION, A 'THIRD GENERATION' OSCILLOSCOPE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-668 627 6/3 12/1
RAND CORP SANTA MONICA CALIF
MATHEMATICAL EXPERIMENTATION AND BIOLOGICAL RESEARCH, (U)
MAY 61 15P BELLMAN,RICHARD E
REPT. NO. P-2300

UNCLASSIFIED REPORT
AVAILABILITY: TO BE PUBLISHED IN THE PROCEEDINGS OF THE ATLANTIC CITY SYMPOSIUM ON MATHEMATICAL METHODS IN BIOLOGY AND MEDICINE.

DESCRIPTORS: (*BIOLOGY, MATHEMATICAL MODELS), (*MEDICAL RESEARCH, MATHEMATICAL MODELS), PROBLEM SOLVING, MATHEMATICAL ANALYSIS, DIGITAL COMPUTERS, THEORY, CHEMOTHERAPY, EXPERIMENTAL DESIGN (U)

THE POSSIBILITY OF THE APPLICATION OF MATHEMATICAL TECHNIQUES TO THE BIOMEDICAL RESEARCH FIELD IS DISCUSSED. A GREAT DEAL HAS BEEN GAINED FROM THIS IN THE PAST AND THE INTRODUCTION OF THE DIGITAL COMPUTER GREATLY INCREASES THE PROMISE OF THE FUTURE. ONE OF THE FUNCTIONS OF THE MATHEMATICIAN INTERESTED IN THE AREAS OF BIOLOGY AND MEDICINE IS TO PROVE THAT THERE ARE SIGNIFICANT AND INTRIGUING MATHEMATICAL QUESTIONS IN THESE NEW FIELDS AND BY EXAMPLE TO SHOW THE BIOLOGIST AND MEDICAL RESEARCHER THAT HE CAN CONTRIBUTE TO THEIR PROBLEMS.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-669 073 6/1
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB OHIO
AUTOMATED TRIHYDROXYINDOLE PROCEDURE FOR ANALYSIS OF EPINEPHRINE AND NOREPINEPHRINE. (U)
DESCRIPTIVE NOTE: FINAL REPT. JUN 65-FEB 67,
DEC 67 24P SAMPSON,PLUMMER A. , JR
REPT. NO. AMRL-TR-67-96
PROJ: AF-7222

UNCLASSIFIED REPORT

DESCRIPTORS: (*AMINES, CHEMICAL ANALYSIS), EPINEPHRINE, LEVARTERENOL, INSTRUMENTATION, AUTOMATION, EXCRETION, URINE, PUBLIC HEALTH, MEDICAL EXAMINATION, FLUOROMETERS, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: TRIHYDROXYINDOLE (U)

A TRIHYDROXYINDOLE PROCEDURE FOR THE FLUOROMETRIC ANALYSIS OF EPINEPHRINE AND NOREPINEPHRINE IN URINE HAS BEEN ADAPTED TO THE TECHNICON AUTOANALYZER. MODIFICATIONS OF THE ORIGINAL METHOD OF ROBINSON AND WATTS INCLUDE: (1) THE USE OF AN ALKALINE SODIUM ACETATE BUFFER IN THE COLUMN WASH; AND (2) SUBSTITUTION OF 0.1N SODIUM ACETATE PH 6.0 IN THE DILUENT STREAM OF THE AUTOANALYZER. TWENTY-FOUR HR URINE SPECIMENS FROM 10 NORMAL SUBJECTS WERE ANALYZED, GIVING VALUES OF NOREPINEPHRINE 29.4 MICROGRAMS PLUS OR MINUS 8.1 (STANDARD DEVIATION) 24 HRS; EPINEPHRINE 6.6 PLUS OR MINUS 3.8 AND TOTAL CATECHOLAMINES 36 PLUS OR MINUS 10.7. REPEATIBILITY OF 10 ALIQUOTS OF A SINGLE SPECIMEN WAS 32.8 PLUS OR MINUS 1.7 STANDARD DEVIATIONS (PLUS OR MINUS 5%) FOR NOREPINEPHRINE, 9.3 PLUS OR MINUS 0.7 STANDARD DEVIATIONS (PLUS OR MINUS 7%) FOR EPINEPHRINE AND 42.1 PLUS OR MINUS 1.6 (PLUS OR MINUS 4%) FOR THE TOTAL CATECHOLAMINES. REPRODUCIBILITIES OF DUPLICATE ALIQUOTS OF A SINGLE SPECIMEN ANALYZED ON 3 DIFFERENT DAYS WERE 26.1 MICROGRAMS PLUS OR MINUS 2.3 (PLUS OR MINUS 9%) FOR NOREPINEPHRINE AND 6.9 PLUS OR MINUS 0.9 (PLUS OR MINUS 11%) FOR EPINEPHRINE AND 33.6 PLUS OR MINUS 1.5 (PLUS OR MINUS 4%) FOR THE TOTAL CATECHOLAMINES. INTERFERENCE BETWEEN LARGE AND SMALL KNOWN SAMPLES RUN SEQUENTIALLY IN THE ANALYZER WAS NOT SEEN. RECOVERIES OF COLUMNED ALIQUOTS WAS 97 PLUS OR MINUS 5.4% FOR NOREPINEPHRINE, 75 PLUS OR MINUS 5% FOR EPINEPHRINE AND 79 PLUS OR MINUS 4.6% FOR THE TOTAL CATECHOLAMINES. AUTOMATION OF THE ANALYSIS AND DIGITAL COMPUTER COMPUTATION OF THE (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-800 414 6/5
STANFORD MEDICAL CENTER PALO ALTO CALIF
METABOLIC EFFECTS OF BLOOD TRANSFUSION. (U)
DESCRIPTIVE NOTE: PROGRESS REPT. 1 JUL 65-30 JUN 66,
JUN 66 64P BUNKER,JOHN P. ;
CONTRACT: DA-49-193-MD-2139

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DISTRIBUTION: NO FOREIGN WITHOUT APPROVAL OF ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND, WASHINGTON, D. C. 20315. ATTN: MEDDH/RS.

DESCRIPTORS: (*BLOOD TRANSFUSIONS, METABOLISM), SYMPATHOLYTIC AGENTS, DOGS, ACIDOSIS, DRUGS, BLOOD CIRCULATION, PARENTERAL INFUSIONS, CITRATES, DIGITAL COMPUTERS, SPECTRUM ANALYZERS, ELECTROCARDIOGRAPHY, CORRELATION TECHNIQUES, HUMANS (U)

THE COMPENSATORY MECHANISMS INVOLVED IN CITRATE-INDUCED HYPOCALCEMIA WERE EXAMINED IN DOGY. BETA-ADRENERGIC BLOCKADE PRODUCED A MARKED SENSITIVITY TO CHELATION OF CALCIUM ION, WHILE ALPHA-ADRENERGIC BLOCK DID NOT AFFECT THE RESPONSE TO CITRATE INFUSION. IN ADDITION, TWO OUT OF FIVE DOGS SHOWED INCREASED SENSITIVITY TO CITRATE INFUSION 7-10 DAYS FOLLOWING CARDIAC AUTOTRANSPLANTATION. THE RESULT MAY BE EXPLAINED BY 1) DECREASED RENAL EXCRETION OF CITRATE OR 2) MYOCARDIAL CATECHOLAMINE DEPLETION. IN THE ISOLATED GUINEA PIG ATRIUM (ISOTONIC CONTRACTIONS) WE HAVE DEMONSTRATED THAT PENTOBARBITAL AND INCREASED POTASSIUM ACT ANTAGONISTICALLY. BY USING THREE DIMENSIONAL ISOBOLOGRAMS, WE HAVE SHOWN THAT EDTA, POTASSIUM, AND PENTOBARBITAL ACT SYNERGISTICALLY TO DEPRESS THE MYOCARDIUM. THE MYOCARDIAL RESISTANCE TO METABOLIC ACIDOSIS, PREVIOUSLY NOTED IN DOGS, HAS BEEN CONFIRMED IN ISOLATED GUINEA PIG ATRIA. THE ANALOG COMPUTER SOLUTION OF THE STARR BALLISTIC FORMULA FOR STROKE VOLUME HAS BECOME OPERATIONAL. AN ADDITIONAL PROGRAM FOR SIMULTANEOUSLY COMPUTING HEART RATE, CARDIAC OUTPUT, LEFT VENTRICULAR MINUTE WORK, AND TOTAL PERIPHERAL RESISTANCE HAS BEEN ADDED. WE HAVE BEGUN TO STUDY IN CONSCIOUS VOLUNTEER SUBJECTS, DRUGS WHICH ARE EMPLOYED DURING SHOCK AND MASSIVE TRANSFUSIONS. THE DRUGS INVESTIGATED INITIALLY WERE METHOXAMINE, MEPHENTERMINE, AND ATROPINE. STRIKING DELETERIOUS CHANGES WERE NOTED WITH METHOXAMINE, CHANGES WHICH WOULD HAVE BEEN MISSED WITH ORDINARY METHODS OF DETERMINING CARDIAC OUTPUT. (AUTHOR) (U)

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13. ABSTRACT

This Unclassified and Unlimited bibliography compiles references dealing specifically with the role of computers in information sciences.

Volume II contains 239 references grouped under three major headings: Artificial and Programming Languages, Computer Processing of Analog Data, and Computer Processing of Digital Data.

The references are arranged in accession number (AD number) sequence within each heading. Four indexes, AD-Numeric, Corporate Author/Monitoring Agency, Personal Author, and Contract, are appended to facilitate access to references.

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