

Systems Reference Library

Catalog of Programs for IBM 1240-1401 1420-1440 and 1460 Data Processing Systems December 1966

This Catalog contains a complete listing of all programs available for the IBM 1240, 1401, 1420, 1440 and 1460 Data Processing Systems. It obsoletes the previous edition of this Catalog, Form No. C20-1601-4 and its Supplement Form No. N20-0013-8

Instructions for ordering magnetic tape programs are contained in the section of the Introduction entitled, "How to Order Programs".

This Catalog contains the following sections:

1. Introduction and instructions on how to use the catalogs and how to order the programs.
2. A list of corrections and revisions to announced programs (if applicable).
3. A Keyword-in-Context (KWIC) Index.
4. Abstracts of all available programs.
5. A list of deletions (if applicable).

All programs listed in this Catalog should be ordered through your local IBM Branch Office.

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INTRODUCTION

The Catalogs for the systems listed below, with their form numbers, are currently available from IBM Branch Offices. Individually updated supplemental issues of all Catalogs will be published under the form numbers indicated and can be obtained from IBM Branch Offices as they are published.

<u>Title</u>	<u>Catalog Form No.</u>	<u>Supplement Form No.</u>
Catalog of Programs for IBM 305 and 650 Data Processing Systems	C20-1600	N20-0012
Catalog of Programs for IBM 1240, 1401, 1420, 1440, and 1460 Data Processing Systems	C20-1601	N20-0013
Catalog of Programs for IBM 705, 1410, 7010, 7070, 7072, 7074, 7080, 7740 and 7750 Data Processing Systems	C20-1602	N20-0014
Catalog of Programs for IBM 1620 and 1710 Data Processing Systems	C20-1603	N20-0015
Catalog of Programs for IBM 704, 709, 7040, 7044, 7090 and 7094 Data Processing Systems	C20-1604	N20-0016
Catalog of Programs for IBM System/360	C20-1619	N20-0030
Catalog of Programs for IBM 1130 Computer System and IBM 1800 Data Acquisition and Control System	C20-1630	N20-0031

This Catalog contains a complete listing of all programs available for the IBM 1240, 1401, 1420, 1440 and 1460 Data Processing Systems. It obsoletes the previous edition of this Catalog and its Supplements.

To assist you in using this Catalog, the abstracts are listed by file number in numeric and alphabetical sequence.

TYPES OF PROGRAMS

Type I

Programming Systems are conceived and developed by IBM as integral parts of the data processing system for which they are written.

Type II

Application Programs are carefully selected solutions by IBM of data processing problems. They are supported by well-planned documentation and tested procedures.

Both types of programs are maintained by IBM and modifications will be supplied automatically to all users of specific programs by the Program Information Department. Abstracts for Type I and Type II programs are contained in the "IBM Programs" Section of this Catalog.

Type III

IBM-Contributed Programs are contributed voluntarily by IBM employees to aid the programming and system community.

Type IV

Customer-Contributed Programs are valuable aids to the programming and systems community supplied by members of customer organizations and individual users of IBM Data Processing Systems.

IBM serves solely as the distribution agent for Type III and Type IV programs. Abstracts for Type III and Type IV programs are contained in the "Contributed Programs" Section of this Catalog.

STANDARDS FOR TYPE IV (CUSTOMER CONTRIBUTED) PROGRAMS

Programs written by customer personnel must conform to established standards and procedures. These criteria differ according to the machine system for which the program is written. Copies of standards and procedures for Type IV (Customer Contributed) Programs are available through your local IBM Branch Office.

HOW TO ORDER PROGRAMS

Domestic Customers

All Programs listed in this Catalog should be ordered through your local IBM Branch Office.

Magnetic tapes will be duplicated at 556 characters per inch unless a different density is specified by the requestor. A full reel of tape, containing 2400 feet, should be submitted. Be sure to check the abstract for the exact number of tapes required when requesting a magnetic tape program.

The Program Information Department's objective is to complete the in-house processing of a program request within ten (10) working days of its receipt by the department.

IBM World Trade Users

World Trade users should order programs by contacting their IBM representative.

ally by the keywords in the program titles. There is an index entry for each significant keyword in the title. Certain words are not accepted as indexing words but will be printed as part of the title.

This KWIC Index was prepared by highlighting each keyword of the title in the context of words on either side of it and aligning the keywords of all titles alphabetically in a vertical column. The following example will illustrate the operation:

Notice that the # sign always precedes the first word of the title. A title that is longer than 59 characters will show only the characters that fall on either side of the keyword being highlighted, up to the limits of one line. The complete title may be found in the Abstract section. The slash (/) is used in place of parentheses. The # placed two spaces in front of the first word indicates that the entry is the second part of a two-line title.

KEYWORD-IN-CONTEXT INDEX

The Keyword-in-Context Index lists available programs arranged alphabetic-

TITLE	SYSTEM	FILE NO.	PAGE
LYSIS, BCB CIRCULAR A-54	#LEASE VS. ANA	1401 14.C.014	C74
STORAGE ON TAPE TO ABRIDGE CARC-KEEPING	#STACK -	1401 01.4.107	C44
SYNTRAN AN INDEXING ABSTRACTING AND RETRIEVAL SYSTEM	#	1401 10.3.045	C69
NG SYSTEM ASSEMBLY #ACCELERATOR PACK - SYMBOLIC 4K PROGRAMMI		1401 01.1.016	C33
ILE #DIRECT ACCESS STORAGE DEVICE INDEX SEQUENTIAL F		1401 01.4.215	052
#MORTGAGE LOAN ACCOUNTING		1440 FB-04X	C21
#DEMAND DEPOSIT ACCOUNTING		1440 FB-03X	C21
#ON-LINE SAVINGS ACCOUNTING		1440 FB-C7X	C22
#SAVINGS ACCOUNTING		1440 FB-C5X	C21
TOR FREIGHT REVENUE ACCOUNTING	#MO	1440 ST-02X	C27
#INSTALLMENT LOAN ACCOUNTING		1440 10.2.C03	C79
#HOSPITAL ACCOUNTS PAYABLE		1440 UH-C3X	C28
#RETAIL ACCOUNTS RECEIVABLE		1440 DR-02X	C2C
#ACCOUNTS RECEIVABLE FOR HOSPITALS		1440 UH-C2X	C28
EREST AND PRINCIPAL ACCUMULATION	#MONTHLY INVESTMENT INT	1401 10.2.005	C64
TING SYSTEM LIBRARY ACTIVITY DATA STATISTICAL	#HISTORY REPOR	1401 10.3.C62	C71
ORE DUMP ROUTINE IN ACTUAL FORM	#C	1440 02.7.003	C78
CURVE SMOOTHING FOR ACTUARIAL	#ORTHOGONAL POLYNOMIAL	1401 06.0.017	C62
#GENERALIZED TAPE ADD AND FILE SEARCH		1401 01.4.C44	C40
SSOR STRUCTURE FILE ADDRESS	#BILL OF MATERIAL PROCE	1440 12.3.C01	C8C
RUCTIONS TO A GIVEN ADDRESS	#CORE SEARCH FOR BRANCH INST	1401 01.4.162	C48
ND RADIX PROGRAMMED ADDRESS CONVERSION TECHNIQUES#DIVISION A		1401 01.4.C81	C43
UTOMATIC PROGRAMMED ADDRESS CONVERSION#GENERAL APPROACH TO A		1401 01.4.C34	C40
#NAME AND ADDRESS FILE MAINTENANCE PROGRAM		1440 02.9.C01	C78
M #RANDOM ADDRESS TRANSFORMATION EVALUATION PROGRA		1401 01.4.C98	C43
#1401/1311 DISK ADDRESS UTILITY		1401 01.4.176	C49
#1440/1311 DISK ADDRESS UTILITY		1440 02.1.C02	C76
ETHOD I#TRADING-DAY ADJUSTMENT FOR 1401 VERSIONS OF CENSUS M		1401 06.0.C18	C63
#SEASONAL ADJUSTMENT OF MONTHLY TIME SERIES		1401 06.0.C01	C61
, 4K, #SEASONAL ADJUSTMENT-CENSUS METHOD II, X-9 VERSION		1401 06.0.C09	C62
N, 4K, #SEASONAL ADJUSTMENT, CENSUS METHOD II, X-9 VERSIO		1401 06.0.C10	C62

PROGRAM CLASSIFICATION CODES

Included below is a complete listing of classification codes for all types of programs and for each system included in this Catalog. The Programming Systems (Type I) and Application Programs (Type II) abstracts appear in the "IBM Programs" Section of this Catalog; the IBM-Contributed Programs (Type III) and Customer-Contributed Programs (Type IV) appear in the "Contributed Programs" Section of this Catalog.

In addition to assisting you in locating the abstract of each program, this list should prove useful in classifying programs written by IBM or customer personnel and contributed to the program libraries.

Programming Systems Type I

/AD/	Autochart
/AS/	Assembly Systems
/AT/	Automatic Test
/AU/	Autocoder
/CB/	COBOL - Common Bus. Oriented Language
/CT/	Commercial Translator
/CV/	Conversion Programs
/DN/	Diagnostic Programs
/FO/	FORTRAN - Formula Translation
/IO/	Input/Output
/LM/	Library Material
/MI/	Miscellaneous
/PR/	Processor - Includes AU, CB, I/O, etc.
/RG/	Report Generators
/SI/	Simulator Programs
/SM/	Sort/Merge
/SP/	Symbolic Assembly Programs
/SV/	Supervisory Systems
/UT/	Utility Programs

Application Programs Type II

Distribution

/DP/	Publishing
/DR/	Retail
/DW/	Wholesale

Fabrication and Assembly

/CN/	Numerical Control Applications
/CX/	Other
/EE/	Electrical Engineering
/EO/	Optics
/EX/	Other
/ME/	Electrical and Machinery

Process

/MP/	Petroleum and Industrial Chemicals
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/MT/	Textiles and Paper
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Service Industries

Finance

/FB/	Banking
/FI/	Brokerage and Investment

Information Retrieval

/CR/	Information Retrieval
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Insurance

/IF/	Fire and Casualty
/IL/	Life

State and Local Government

/UG/	Government, State and Local
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Transportation

/ST/	Transportation
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Utilities

/SU/	Utilities
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Federal Region

/GF/	Government, Federal
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Scientific Industries

Aerospace

/MA/	Aerospace
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Education

/US/	Secondary Schools
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Medical

/UH/	Hospital and Medical
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Scientific Marketing

/CA/	Statistical Applications
/CO/	Operations Research
/CP/	Critical Path Scheduling
/CM/	Mathematical Applications
/EC/	Civil Engineering
/MF/	Fabrication and Primary Metals

Cross Industry

Communications

/SC/	Communications
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Simulators

/CS/ Simulators

Systems Engineering Techniques

/SE/ Systems Engineering

Type III and Type IV Programs

IBM 1401, 1420 and 1460 Data Processing Systems

Utility Programs 1.0

- 1.1 Assembly
- 1.2 Sorting - Merging
- 1.3 Report Generating
- 1.4 Miscellaneous General Purpose
- 1.5 Input/Output
- 1.6 Data Transmission

Programming Systems 2.0

Mathematical Subroutines 3.0

Differential & Integral Equations 4.0

Matrix Programs 5.0

Statistical Programs 6.0

Mathematical Routines 7.0

Physical Sciences 8.0

- 8.1 General Physics
- 8.2 Nuclear Physics
- 8.3 Geology and Geophysics
- 8.4 Other

Engineering Applications 9.0

- 9.1 Aeronautical
- 9.2 Civil
- 9.3 Chemical
- 9.4 Electrical
- 9.5 Mechanical
- 9.6 Petroleum
- 9.7 Other

Management Science 10.0

- 10.1 Linear Programming
- 10.2 Simulation
- 10.3 Other

Demonstration Programs 11.0

Guide 12.0

- 12.1 Utility
- 12.2 Assembly
- 12.3 Simulation
- 12.4 Other

Share 13.0

- 13.1 Utility
- 13.2 Assembly
- 13.3 Simulation
- 13.4 Other

Unclassified 14.0

IBM 1440 Data Processing System

Programming Systems 1.0

- 1.0 Preprocessing, Editing
- 1.1 Monitoring or Supervisory
- 1.2 Assembly
- 1.3 Compiling
- 1.4 IOCS
- 1.5 Report Generators
- 1.6 Sorting, Merging
- 1.7 File Organization
- 1.8 Data Transmission
- 1.9 Other

Utility Programs 2.0

- 2.1 Disk
- 2.2 Tape
- 2.3 Duplicators and Listers
- 2.4 Input-Output
- 2.5 Internal Information Transfer
- 2.6 Data Manipulation-Handling
- 2.7 Debugging Aids
- 2.8 Housekeeping, Documentation, Programming Aids
- 2.9 Other

Simulators, Translators, & Interpreters 3.0

- 3.1 Unit Record Simulation
- 3.2 Computer Simulation
- 3.3 Translators
- 3.4 Interpreters
- 3.9 Other

Differential & Integral Equations 4.0

Matrix Programs 5.0

Statistical Analysis & Probability 6.0

- 6.1 Basic Statistics
- 6.2 Time Series Analysis
- 6.3 Correlation
- 6.4 Regression Analysis
- 6.5 Analysis of Variance
- 6.6 Tests
- 6.9 Other

Mathematical Routines 7.0

- 7.1 Functional Subroutines
- 7.2 Floating Point Arithmetic
- 7.3 Interpolation & Curve Fitting

7.4 Polynomial Solutions
7.9 Other

Social & Physical Sciences, Engineering
Applications 8.0

Management Information 9.0

9.1 Inventory Control
9.2 Scheduling
9.3 Information Classification &
Retrieval
9.4 Simulators
9.5 Linear Programming
9.6 General Problem Solvers
9.9 Other

Commercial Industries Applications 10.0

10.1 Distribution
10.2 Finance
10.3 Insurance
10.9 Other

Public Service Industries
Applications 11.0

11.1 Business Services
11.2 Communications
11.3 Education
11.4 Government
11.5 Medical
11.6 Transportation
11.7 Utilities
11.9 Other

Manufacturing Industries
Applications 12.0

12.1 Aerospace
12.2 Control Systems
12.3 Fabrication and Assembly
12.4 Numerical Control
12.5 Process
12.6 Other

Demonstrations 13.0

Systems Engineering 14.0

Unclassified 15.0

USING THE CATALOG

To locate a program begin by thinking of the significant words describing the desired program. Then look in the KWIC, Keyword-in-Context, Index for the keyword entry. The page number adjacent to the file number will then direct you to the corresponding program abstract. The reference code is set up as follows:

System	File No.
1440	CX-07X
1401	06.0.010

The number of the IBM system for which the program is written.

The IBM Library code for filing and ordering a program.

Now refer back to the illustration in the section entitled, "Keyword-in-Context Index". As you can see, there are two kinds of file numbers: The first consists of an alphabetical and numeric reference; the second is completely numeric in a Dewey Decimal sequence.

Type I and II program abstracts are located in the "IBM Programs" section of this Catalog; Type III and IV program abstracts are located in the "Contributed Programs" section.

The page number listed at the end of the KWIC entry line will direct you to the program abstract. Each abstract describes the relevant program in enough detail to help you determine if the program will meet your requirements.

LIST OF NEW PROGRAMS

This section consists of a list of new Programs added since the last supplement to the Catalog and a list of all programs added since the last edition of the Catalog.

PROGRAM CORRECTIONS AND REVISIONS

There are two kinds of revisions to programs listed in this Catalog:

1. Changes in the program abstract
2. Functional changes in the program documentation and/or changes in the card decks and tapes.

Abstract changes for all Types of programs are noted in this Catalog and in the Supplement. The following codes appear at the extreme right-end of the title line for each abstract that is new or has been revised in this edition:

- *N - This symbol indicates a new program
- *M - This symbol indicates that the title of the program has been modified when it appears only at the extreme right end of the title line.
- *M - This symbol indicates that the text of the abstract has been modified when an additional *M or * alone appears, at the extreme right end of each line

of the abstract that has been modified.

*R - This symbol indicates that the entire text of the abstract has been revised.

Functional changes in program documentation and/or decks or tapes for Type III (IBM Contributed) and Type IV (Customer Contributed) programs are listed in a special table preceding the KWIC Index. This data is listed under three headings: program number; machine system area; and the date the correction was effective. If a user has received the program data prior to the date indicated and would like to receive the correction, he must reorder the program. See the section entitled, "How to Order Programs".

Information concerning functional changes in program documentation and/or decks or tapes for Type I (Programming Systems) and Type II (Application Programs) can be obtained through your IBM Branch Office.

DELETED PROGRAMS

This section consists of a list of programs deleted since the last Supplement to the Catalog and a list of all programs deleted since the last edition of this Catalog.

Included is an alphabetical heading "Reason for Removal". Each letter refers to a key that indicates the specific

reasons for removing the program from the Catalog.

Alphabetical Key to Reason for Removal

- A - This Program has been deleted because of low usage.
- C - This program has been deleted because of limited usefulness.
- D - This program is obsoleted and replaced by file number _____.
- F - This program has been withdrawn by the author.

Programs deleted by the letter "D" are followed by a file number code. This code is the file number of the program that replaces the deleted program.

An abstract for the replacement program may be found in the "Abstracts of Available Programs" Sections in this Catalog.

LIST OF PROGRAM CORRECTIONS & REVISIONS

PROGRAM NUMBER	MACHINE AREA	DATE
C1.1.C51	14C1	11-15-66
C1.4.145	14C1	C8-C2-66
C3.C.C45	14C1	11-11-66
1C.3.C47	14C1	C9-C1-66
C1.C.C01	144C	C7-25-66
C1.3.C02	144C	C8-10-66

LIST OF NEW PROGRAMS

IBM PROGRAMS

FILE NUMBER	TITLE	PAGE
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1401 NEW ENTRIES

1401-LM-012	1401/1460 TIMING PROGRAM FOR SYSTEM/360 DISK AND TAPE OPERATING SYSTEMS TAPE SORT/MERGE PROGRAMS	10
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CONTRIBUTED PROGRAMS

FILE NUMBER	TITLE	PAGE
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1401 NEW ENTRIES

01.4.225	UTILITY PRINT PROGRAM	53
03.0.046	CALOG, IBM 1401 CALOG SUBROUTINE	60
10.3.063	FAST - FULLY AUTOMATIC SCORING TECHNIQUE - PHASE 1 PROGRAM PACKAGE	72

1440 NEW ENTRIES

02.3.004	OBJECT DECK LISTING PROGRAM	77
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WORDS PREVENTED FROM INDEXING

For the purpose of this index the following words are considered to be too general to be useful for retrieval purposes and are therefore prevented from indexing. This list may be modified

as needed to make the index more useful. Note that hyphenated words are treated as one index word, with only the first word being significant.

A	BEFORE	EIGHT	IT	PROGRAMS	THOUGHTS
ABOUT	BEING	EITHER	ITS	PUT	THREE
ABOVE	BELONG	ENG	ITSELF	Q	THROUGH
ACCOMPANYING	BELCH	ET	IV	R	THRU
ACCORDING	BEST	ETC	J	RECENT	TC
ACHIEVED	BETTER	EXPLANATION	K	REGARDING	TOGETHER
ACHIEVEMENTS	BETWEEN	EXTREMELY	KEPT	RELATED	TOTAL
ACHIEVES	BEYOND	F	L	RELATING	TOTALY
ACQUIRED	BIG	FAR	LARGE	RELATION	TOWARD
ACROSS	BOTH	FAST	LARGER	RELATIONSHIP	TOWARDS
ADAPTATION	BRIEF	FEW	LIKE	RELATIONSHIPS	TRI
ADDITIONAL	BRIEFLY	FEWER	LIKELY	RELATIVE	TWO
ADVANTAGE	BRING	FIFTH	LONG	REQUIRE	U
ADVANTAGES	BUT	FINAL	LOCK	REQUIRED	UNDER
AFFECT	BY	FIRST	LOW	REQUIRES	UNTIL
AFFECTED	C	FIVE	LOWER	REQUIRING	UP
AFFECTING	CALLED	FOR	LTD	RESULTING	UPON
AFFORDING	CAN	FOUR	M	RESULTS	USAGE
AFTER	CAPABILITIES	FOURTEEN	MADE	ROUTINE	USE
AGAIN	CAPABILITY	FOURTH	MAKE	S	USED
AGAINST	CAPABLE	FROM	MAKES	SCHEME	USEFUL
Aimed	CAUSE	FT	MAKING	SCHEMES	USEFULNESS
ALL	CAUSED	FULL	MANY	SEC	USER
ALLEGED	CAUSES	FULLY	MEANS	SECONDARY	USERS
ALLCH	CAUSING	FUNDAMENTALS	MET	SEE	USES
ALLCWD	CERTAIN	FURTHER	METHOD	SEEMS	USING
ALLCWIN	CHALLENGE	G	METHODS	SEEN	UTILIZATION
ALLCWS	CHIEF	GAVE	MORE	SELF	UTILIZE
ALMST	CC	GENERAL	MOST	SEVEN	UTILIZING
ALCNE	CCME	GENERALLY	MPH	SEVENTH	V
ALCNG	CCMING	GIVE	MULTIPLE	SEVERAL	VARIOUS
ALSC	COMPANIES	GIVEN	MY	SHORT	VARYING
AMONG	COMPANY	GIVES	N	SHORTER	VERSUS
AN	COMPLETE	GIVING	NEAR	SIGNIFICANCE	VERY
ANALYSES	COMPLETED	GOOD	NEARLY	SIGNIFICANT	VI
ANALYSIS	COMPLETELY	GREAT	NECESSARY	SIMILAR	VIA
ANALYZING	COMPRISING	GREATLY	NEED	SIMPLE	VII
AND	CONCERNED	GUIDE	NEEDED	SIMPLER	VIII
AND/OR	CONCERNING	H	NEEDS	SIMPLY	VS
ANOTHER	CONSIDERATION	HAC	NEW	SINCE	W
ANY	CONSIDERATIONS	HAS	NEWER	SINGLE	WAS
APART	CONSIDERED	HAVE	NEWLY	SIX	WHAT
APPARENT	CONSIDERING	HAVING	NEXT	SIXTH	WHEN
APPARENTLY	CONSISTING	HE	NINE	SLOW	WHERE
APPEAR	CONVENIENT	HIGH	NO	SLOWLY	WHEREBY
APPEARING	CORP	HIGHER	NCT	SMALL	WHICH
APPLICABILITY	CORPORATION	HIGHLY	NOW	SMALLER	WHILE
APPLICABLE	COULD	HIS	O	SMALLEST	WHO
APPLICATION	CPS	HOW	OBSERVED	SC	WHOSE
APPLICATIONS	C	I	OBTAINABLE	SOME	WHY
APPLIED	CATA	IBM	OBTAINED	SPECIAL	WILL
APPLY	CE	IF	OBTAINING	SUBROUTINE	WITH
APPLYING	DEG	II	OCCURRING	SUCH	WITHIN
APPRECIABLE	DEPARTMENT	III	CF	SUGGESTED	WITHOUT
APPROACH	DEPARTMENTS	IMPLICATIONS	OFF	SUGGESTIONS	WOULD
APPROACHES	DEPENDING	IMPORTANCE	ON	SUITABLE	X
APPROACHING	DEPT	IMPORTANT	CNE	SUMMARY	XI
ARE	DETERMINATION	IMPROVED	CNLY	SURVEY	XII
ARISE	DETERMINE	IMPROVEMENT	CNTC	SYSTEM	XIII
ARISING	DETERMINED	IMPROVEMENTS	CR	SYSTEMS	Y
AROUND	DETERMINING	IMPROVING	COTHER	T	YET
AS	CI	IN	CUR	TAKE	YOUR
ASCERTAIN	CID	INC	CUT	TAKEN	Z
ASPECT	DISCUSSION	INCLUDE	OVER	TAKING	2K
ASPECTS	DO	INCLUDED	P	TECHNIQUE	4K
AT	DOES	INCLUDING	PARTICULAR	TECHNIQUES	8K
ATTAIN	DOING	INCORPORATING	PER	TEN	1CK
ATTAINED	DONE	INCREASE	PCOR	THAN	12K
ATTEMPT	DOUBLE	INCREASED	POSSIBILITY	THAT	14K
ATTEMPTED	DOUBLE	INCREASES	POSSIBLE	THE	16K
ATTEMPTS	DOWN	INCREASING	PRACTICAL	THEIR	C
AVAILABILITY	DR	INFLUENCE	PRELIMINARY	THEM	1
AVAILABLE	DUE	INFLUENCED	PRESENCE	THEORETICAL	2
AVOIDING	DURING	INFLUENCING	PRESENT	THERE	3
AWAY	E	INNER	PRIMARY	THEREFROM	4
B	EACH	INSIDE	PRINCIPLE	THEREON	5
BAD	EARLIER	INSTEAD	PRINCIPLES	THESE	6
BASED	EARLY	INTERESTING	PROCEDURE	THEY	7
BASIC	EASE	INTC	PROCEDURES	THIRD	8
BE	EASILY	INVOLVING	PROGRAM	THIS	9
BECAUSE	EASY	IS	PROGRAMMING	THOSE	
BEEN					

Keyword-in-Context (KWIC) Index

TITLE	SYSTEM FILE NO.	PAGE	TITLE	SYSTEM FILE NO.	PAGE
LYSIS, BCB CIRCULAR A-54	#LEASE VS. ANA	1401 14.0.C14	440/1460 RESEQUENCE	AUTCCODER SOURCE PROGRAMS - RASP #1401/1	1401 01.4.185
STORAGE ON TAPE TO AERIDGE CARE-KEEPING	#STACK -	1401 01.4.107	0 CHECK DIGITS	#AUTCCODER SUBROUTINE TO VERIFY MCDULLS 1	1401 12.1.C03
SYNTRAN AN INDEXING ABSTRACTING AND RETRIEVAL SYSTEM	#1401 10.3.C45	C65	1 CHECK DIGITS	#AUTCCODER SUBROUTINE TO VERIFY MCDULLS 1	1401 12.1.C04
NG SYSTEM ASSEMBLY #ACCELERATOR PACK - SYMBOLIC 4K PROGRAMMI	#1401 01.1.C16	C33		#AUTCCODER SYMBOLIC CORE DUMP ROUTINE	1440 02.7.C01
ILE	#DIRECT ACCESS STORAGE DEVICE INDEX SEQUENTIAL F	1401 01.4.215		# FOR A TAPE AUTCCODER SYSTEM	1401 01.4.210
#MORTGAGE LCAAN ACCOUNTING	1440 FB-C4X	C21	PATCH GENERATOR FOR AUTCCODER TESTING	#	1401 01.1.C045
#DEMAND DEPOSIT ACCOUNTING	1440 FB-C3X	C21	#BASIC AUTCCODER 2K		1401 AL-C05
#CN-LINE SAVINGS ACCOUNTING	1440 FB-C7X	C22	#BASIC AUTCCODER 2K		1440 AL-C06
#SAVINGS ACCOUNTING	1440 FB-05X	C21	# AUTCCODER 2K		1460 SV-C01
ICR FREIGHT REVENUE ACCOUNTING	1440 ST-C2X	C27	RAMS FROM OBJECT TO AUTCCODER DISASSEMBLER CF 1401/1460 PROG		1401 02.0.C35
#INSTALLMENT LCAAN ACCOUNTING	#MC	1440 10.2.C03		#AUTCCODER RELCERAM AND CRSSCORRELGRAM	1401 01.5.C08
#HOSPITAL ACCOUNTS PAYABLE	1440 UH-C3X	C28	GRAMS	#AUTCCODER 1401 EDIT FOR 1410 AUTCCODER PR	1401 01.1.C14
#RETAIL ACCOUNTS RECEIVABLE	1440 DR-C2X	C20	CATION CF RUNNING	#AUTCCODER EDITING AND LINE LENGTH MODIFI	1401 01.4.C016
#ACCOUNTS RECEIVABLE FOR HOSPITALS	1440 UH-C2X	C28		#AUTCCODER FLOW CHART TECHNIQUE	1401 02.0.C19
EREST AND PRINCIPAL ACCUMULATION	#MONTHLY INVESTMENT INT	1401 10.2.C05		#BINARY AUTCCODER MULTIPLE SUBROUTINE /BAMS/	1401 03.0.C22
TING SYSTEM LIBRARY ACTIVITY DATA STATISTICAL HISTORY REPR	1401 10.3.C62	C71	LTIPLY ROUTINE WITH AUTCCODER PATCH LINKAGE	#FARGO ML	1401 02.0.C15
CRE DUMP ROUTINE IN ACTUAL FORM	1440 02.7.C15	C78	RAM /FOURTEEN-CONE AUTCCODER PLOTTER I/	#F A P 1 PROC	1401 14.0.C05
CLURVE SMOOTHING FOR ACTUARIAL	#ORTHOGONAL POLYNOMIAL	1401 01.4.C17	N MAKING LABORATORY AUTCCODER PLETTING	#MANAGEMENT DECISIO	1401 01.2.C07
#GENERALIZED TAPE ADD AND FILE SEARCH	1401 01.4.C44	C40	GENERAL APPROACH TO AUTCCODER PROGRAMMED ADDRESS CONVERSION	#	1401 01.4.C34
SSOR STRUCTURE FILE ADDRESS	#BILL CF MATERIAL PRCE	1440 12.3.C01	NSING	#AUTCC - AUTCCODER PROGRAMMING, TESTING AND CNCE	1401 01.4.C94
RUCTIONS TO A GIVEN ADDRESS	#CORE SEARCH FOR BRANCH INST	1401 01.4.162	RGO /FOURTEEN-CONE AUTCCODER REPERT GENERATING OPERATION#FA		1401 RG-045
ND RADIX PROGRAMMED ADDRESS CONVERSION TECHNIQUES#DIVISION A	1401 01.4.C81	C43	#FAST - FULLY AUTCCODER SCORING TECHNIQUE		1401 10.3.C41
UTOPATIC PROGRAMMED ADDRESS CONVERSION#GENERAL APPROACH TO A	1401 01.4.C91	C40	CGRAM #FAST - FULLY AUTCCODER SCORING TECHNIQUE - PHASE 1 PR		1401 01.3.C03
#NAME AND	1440 02.5.C01	C78		#AUTCCAC II	1401 01.4.C172
#RANDOM ADDRESS TRANSFORMATION EVALUATION PROGRA	1401 01.4.C16	C43		#AUTCCPRPS II NUMERICAL CONTROL PROGRAM	1401 CN-C3X
#1401/1311 DISK ADDRESS UTILITY	1401 01.4.176	C49		#7040/44 - 1401 AUXILIARY PROGRAMS	1401 UT-183
#1401/1311 DISK ADDRESS UTILITY	1440 02.1.C02	C76	#MEMCRY-DUMP IN BANCs CF 100 POS. /2C CARDS/	#BCND T	1401 01.4.C03
ETHOD I#TRACING-DAY ADJUSTMENT FOR 1401 VERSIONS OF CENSUS V	1401 06.0.C18	C63	RADE ANALYSIS FOR A BANK		1401 FB-C5X
#SEASONAL ADJUSTMENT CF MONTHLY TIME SERIES	1401 06.0.C01	C61	#SOLUTION CF BANK COST ALLOCATION BETWEEN DEPARTMENTS		1401 05.0.C06
#ADJUSTMENT-CENSUS METHOD II, X-S VERSION	1401 06.0.C05	C62	#BANK DOCUMENT SORT PROGRAM	1240 SM-C3C	C01
#SEASONAL ADJUSTMENT-CENSUS METHOD II, X-S VERSIO	1401 06.0.C10	C62	#BANK DOCUMENT SIMULATOR	1401 06.0.C02	C04
N, 4K,	#ADMINISTRATIVE TERMINAL SYSTEM	1460 CX-C8X	#BANK SORT PROGRAM		1401 FB-C04
#ADMINISTRATIVE TERMINAL SYSTEM	1401 01.4.144	C47	#1401/1440/1460 BCC-BCC CONVERSION SUBROUTINE		1401 01.4.213
#AIC /AUTCCODER INPUT DEFINER/ /CARD/	1401 01.4.144	C47	#BCCIC/EBCCIC/BCDIC CHARACTER TRANSLATION		1401 01.4.C25
G AND DOCUMENTATION AIC PROGRAM	#FLCWCARTIN	1401 02.0.C24	PROGRAM	#1440/1311 BILL CF MATERIAL PRCESSOR	1440 ME-C2X
TIMING CALCULATION AIC PROGRAM	#1401/360	1401 14.0.C15	E ADDRESS	#BILL CF MATERIAL PRCESSOR STRUCTURE FIL	1440 12.3.C01
TEM ERROR-DETECTION AICS	#CARD SYS	1401 AT-C17	CHAIN AND WHOLESALE BILLING	#	1440 DW-C1X
OCUMENT AND TESTING AICS FOR CCECL THROUGH A LOGIC TRACE	#1401 14.0.C23	C53	#HOSPITAL PATIENT BILLING	#	1440 UH-C1X
#IBM DOCUMENTATION AICS SYSTEM	1401 01.4.121	C13	MS/	#BINARY AUTCCODER MULTIPLE SUBROUTINE /BA	1401 03.0.C22
UTION CF BANK COST ALLOCATION BETWEEN DEPARTMENTS	#SC	1401 05.0.C06	#AUTCCODER SERCH BINARY SEARCH MACRO		1401 03.0.C36
440 PROGRAM FOR THE ALLOCATION CF RESOURCES FOR	#1401/1	1401 FB-14X	#LOCK-UP - BINARY TABLE LOCK-UP MACRO		1401 03.0.C39
440 PROGRAM FOR THE ALLOCATION CF RESOURCES FOR	#1401/1	1440 FB-13X	X REGISTERS CA	#BINARY TABLE SEARCH TECHNIQUE USING INCE	1401 03.0.C34
PRODUCE AND/OR EDIT ALPHANUMERIC /12-9/,	#REPRG-RE	1401 01.4.118		#BINARY TAPE DUMP	1401 01.4.C08
ECK A FILE CF CARDS ALPHANUMERICALLY	#SEQR TO SEQUENCE CH	1401 01.2.C05		#SYMBOLIC BLOCK DIAGRAMMING SYSTEM	1401 01.4.C97
#STANDARD NAME ALTERATION PROGRAM	1401 14.0.C15	C75	LEASE VS. ANALYSIS	#	1401 14.0.C14
#MORTGAGE AMORTIZATION SCHEDULE	1401 01.4.100	C44		#BCND TRADE ANALYSIS FOR A BANK	1401 01.4.C03
#TAPE ANALYZE PROGRAM, EK VERSION	1401 01.4.100	C44		#TIMING PROGRAM FOR BPS S/360 SORT/MERGE PROGRAM #1401/1460	1401 10.3.C07
#TC 1410 SYMBOLIC ANALYZER	1401 01.4.100	C44		#CORE SEARCH FOR BRANCH INSTRUCTIONS TO A GIVEN ADDRESS	1401 01.4.162
#ANALYZER CASDISFA	1401 01.4.215	C52	RINTER PROGRAM WITH BRANCH CN	#ONE CARD 80-80 CARD TC P	1440 02.3.C02
#MEMCRY ANNOTATION, PCST-TEST	1401 01.4.150	C50	#THE GAME BRIDGE IT CN THE 1401		1401 01.4.C10
#ANTIC A LIST CF CENSENSED CARDS	1401 01.4.150	C50	NUMERIC ENCODING CF BUSINESS, COMPANY AND	#CCRP CODE-	1401 01.4.115
ND CENSUSING	#APTCG AUTCCODER PROGRAMMING, TESTING A	1401 01.4.C94	ROUTINE /TCALC/CALCULATE NUM OF DAYS BETWEEN TWO DATES		1401 03.0.C11
DULING PROGRAM WITH ARBITRARY NCE	#CRITICAL PATH SCHE	1401 10.3.C02	FEETLESS SYSTEM CF CALCULATING AND PRINTING	#ESCAPE /E	1401 03.0.C19
ATH SCHEDULING WITH ARBITRARY NCE NUMBERING	#CRITICAL P	1401 10.3.C02	#1401/360 TIMING CALCULATION AIC PROGRAM		1401 14.0.C15
#1401 ASAP	1401 10.3.C14	C66	ELF-CHECKING NUMBER CALCULATION MCDULLS 11	#S	1401 07.0.C02
#ASK II	1401 10.3.C14	C66	ELF-CHECKING NUMBER CALCULATION MCDULLS 10	#S	1401 01.4.121
E 1401	1401 10.3.C14	C66	DISPLACEMENT METER CALCULATIONS	#FLANGE TAP-OFFICE AND	1401 05.0.C01
#SPS SINGLE PASS ASSEMBLER	1401 01.1.C55	C35	TIME FOR MCDULLS 11 CALCULATIONS FOR A	#1401/1460 SUBRCL	1401 07.0.C05
#LCAL AND GC ASSEMBLER	1401 01.1.C55	C35	#CALCG, IBM 1401 CALCG SUBROUTINE		1401 03.0.C06
#BASIC ASSEMBLER	1401 01.1.C55	C35	#CALCG, IBM 1401 CALCG SUBROUTINE		1401 03.0.C06
TC SYSTEM/360 BASIC ASSEMBLER LANGUAGE TRANSLATOR #1401 SPS	1401 01.1.C55	C35	D REPORT	#HOSPITAL CANCERS CERVICAL CASEFINDING SUMMATION AN	1440 03.0.C06
#SYSTEM/360 BASIC ASSEMBLER PROGRAM	1401 01.1.C55	C35	ALUATION AND	#CAPERSIM - COMPUTER ASSISTED PROJECT EV	1401 02.0.C11
#SIMPLE METHOD CF ASSEMBLING REPORTS FROM TAPE OR CARDS	1401 01.1.C16	C33	#CAPITAL INVESTMENT ANALYSIS /8K/		1401 10.3.C16
PROGRAMMING SYSTEM ASSEMBLY #ACCELERATOR PACK - SYMBOLIC 4K	1401 01.1.C16	C33	#CARD AND TAPE SELECTIVE LISTER		1401 01.4.C05
#TMC-TAPE AUTCCODER ASSEMBLY FOR THE 1401.	1401 01.1.C18	C33	#CARD AUTCCODER PROGRAMMING SYSTEM /CAUTC		1401 02.0.C13
MC TAPE MINNEAPOLIS ASSEMBLY CF SPS TMC	1401 01.1.C13	C33	#CARD COLLATER SIMULATOR		1401 01.4.212
1401	1401 SP-123	C15	#GENERAL PURPOSE CARD EDIT ROUTINE		1401 01.4.C55
#RAPIC ASSEMBLY PROGRAM NC, 14043	1401 01.1.C17	C33	#CARD FILE LIST		1401 10.3.C06
#1401/7740 ASSEMBLY PROGRAM USING THE IBM 1401	1401 SP-126	C16	SYSTEM	#INVERTED CARD FILE-IBM 1401 INFORMATION RETRIEVAL	1401 01.4.131
#SEQUENTIAL NUMBER ASSIGNER FOR FOURTEEN-CONE USERS /SNAFL	1401 01.4.C60	C41	FORMAT TO AUTCCODER CARD	#CCONVERT SPS CARD	1401 01.4.131
ING SYSTEM COMPUTER ASSISTED	#1401/1460-1026 OPERAT	1401 CS-C52	#CONVERT SPS CARD	FORMAT TO AUTCCODER CARD	1401 01.4.131
ING SYSTEM COMPUTER ASSISTED INSTRUCTION COLSEWRITER#CPERAT	1440 CS-C50	C24	#GENERALIZED CARD	IMAGE UPDATE PROGRAM	1401 01.4.C26
ING SYSTEM COMPUTER ASSISTED INSTRUCTION	#1440-1026 OPERAT	1440 CS-C51	#CNE CARD	INVALID CHARACTER DETECTION PROGRAM	1401 02.4.C01
APERTSIM - COMPUTER ASSISTED PROJECT EVALUATION AND	#C	1401 10.2.C11	#SHARE ORDER CARD LIST	#CNCH	1401 13.1.C25
#SAVINGS AND LCAAN ASSOCIATIONS	1401 FB-14X	C66	#SHARE ORDER CARD LIST	#CNCH	1401 13.1.C25
#SAVINGS AND LCAAN ASSOCIATIONS	1440 FB-13X	C62	#SINGLE CARD LIST WITH SKIP		1401 01.4.C04
#ATTENDANCE RECORDING FOR SECONDARY SCHCC	1440 US-C4X	C25	#CARD MERGE		1401 01.2.C18
NSCED OBJECT CHECK TC	AL-C08	1401 01.4.224	#VARIABLE CARD REPRCDLER FOR 1440/1311		1440 02.3.C01
IES	#ALTC RATING FOR FIRE AND CASUALTY COMPAN	1401 IF-C1X	#CARD SORTER		1401 01.2.C13
	#ALTC-LCDDR 8K, 12K, 16K	1401 01.2.C07	#CARD SPS TO AUTCCODER FOR 1401/1460		1401 01.4.205
	#ALTC-TEST	1401 AT-C72	# 1401 CARD SYSTEM		1401 10.3.C26
#1401/1311	ALTC-TEST 16K	1401 AT-C02	TAL CANCEP CERVICAL CASEFINDING SUMMATION AND REPORT	#HCSPI	1401 01.5.C11
	ALTC-TEST 16K	1440 AT-C40	#CARD SYSTEM SUBROUTINES		1401 10.3.C07
#1401/1311	ALTC-TEST 8K	1401 AT-C01	#CARD SYSTEM UTILITY PROGRAMS		1401 LT-C01
	ALTC-TEST 8K	1440 AT-C61	REPRODUCE WITH LAST CARD TEST	#CNE CF ONE - 8CX8C	1401 01.4.188
	#ALTCBLCCK II	1401 02.0.C17	#CNE CARD 80-80 CARD TC PRINTER PROGRAM WITH BRANCH CN		1440 02.3.C02
	#ALTCCHART	1401 02.0.C31	AGE II /EXPANDED 4K CARD 1401 VERSION/	#FARGO ST	1401 02.0.C05
#BASIC AUTCCODER	1440 AL-C01	C18	BRANCH CN	#CNE CARD 80-80 CARD TC PRINTER PROGRAM WITH	1440 02.3.C02
#BASIC AUTCCODER	1440 SV-C51	C27		#CNE CARD 80-80 CARD TC PRINTER PROGRAM WITH	1401 01.3.C11
RENCE PHASE CF 1401 AUTCCODER	#CRSS-REFE	1401 01.1.C54	CN TAPE TO AERIDGE CARE-KEEPING	#STACK - STORAGE	1401 01.4.107
MACRO FOR THE 1401 AUTCCODER	#SCANX	1401 01.4.160	#1401/1311 CARD-TC-DISK CONSECUTIVE LOAD PROGRAM		1401 01.4.195
CONVERSION CF SPS TC AUTCCODER	#C	1401 01.4.160	#1440/1311 CARD-TC-DISK CONSECUTIVE LOAD PROGRAM		1440 02.1.C01
1401/1440/1460 DISK AUTCCODER	#TYPEWRITER MACRCS FOR	1440 02.0.C40	#CARD-TC-TAPE FOR THE SHARE LIBRARY		1401 13.1.C26
CF 1401 SPS TC 1440 AUTCCODER /AUTOC/	#SOURCE REGENERATION	1440 02.0.C02	#CARD-TC-TAPE UTILITY PROGRAM		1401 LT-C27
#1401/1440/1460 AUTCCODER /CN DISK/	1401 AL-CVC	C02	#UNPACK CENSENSED CARDS		1401 01.4.C67
#AUTCCODER /CN DISK/	1440 SV-C50	C27	A LIST CF CENSENSED CARDS	#ANTIC	1401 01.4.158
CN MENICR FOR 1401 AUTCCODER	#1460-1070 PROCESS COMMUNICATI	1401 01.1.C18	EPORCS FROM TAPE OR CARDS	#SIMPLE METHOD CF ASSEMBLING R	1401 01.3.C13
SPS CARD FORMAT TC AUTCCODER CARD FORMAT	#CCONVERT	1401 01.4.131	NCE CHECK A FILE CF CARDS ALPHANUMERICALLY	#SEQR IO SEQL	1401 01.2.C05
#PROGRAM TC LCAD AUTCCODER CENSENSED PROGRAM	1401 01.4.134	C46	/360 PROGRAM SOURCE CARDS CN AN IBM	#LISTING OF IBM SYSTEM	1401 01.4.218
#SPS TC AUTCCODER CONVERSION PROGRAM	1440 02.3.C01	C75	#CLOCK-CLT CARDS.		1401 10.3.C03
CPHISTICATED SPS TC AUTCCODER CONVERTER	#S	1401 01.4.165	NDS CF 100 POS. /2C CARDS/	#MEMORY-CLMP IN BA	1401 01.4.C63
#CARD SPS TC AUTCCODER DECISION TABLE TRANSLATOR	1401 03.0.C45	C60	Y-DUMP IN MCRS /18 CARDS/	#MEMCR	1401 01.4.C64
#CARD SPS TC AUTCCODER FOR 1401/1460	1401 03.0.C45	C60	TAL CANCEP CERVICAL CASEFINDING SUMMATION AND REPORT	#HCSPI	1401 01.5.C11
#AUTCCODER MULTIPLE-DEVICE MACRO	1401 03.0.C25	C55	RCOF OF DEPOSIT AND CASE LETTER WRITING	#124C/1440 P	1440 10.0.C02
ZZA TC CONVERT 1401 AUTCCODER CFS TC 1440 OPS CN 1401	#CV	1401 01.4.205	RATING FOR FIRE AND CASUALTY COMPANIES		1401 IF-C1X
CCA TC CONVERT 1401 AUTCCODER CFS TC 1440 OPS CN 1440	#CV	1440 02.5.C02	RATING/	#FIRE AND CASUALTY INSURANCE PROGRAMS /HOMEOWNERS	1440 IF-08X
	#AUTCCODER PRE-LIST	1401 01.1.C43	TRIBUTION/	#FIRE AND CASUALTY INSURANCE PROGRAMS /GENERAL DIS	1440 IF-C5X
	#AUTCCODER PRE-LIST DIAGNOSTIC	1401 01.1.C26	CF 1401 VERSIONS CF CENSUS METHOD I#TRACING-DAY ADJUSTMENT F		1401 IF-C7X
#1401/1410 AUTCCODER PROGRAM LOGIC DIAGRAMMER	1401 AL-C37	C02	EASONAL ADJUSTMENT, CENSUS METHOD II, X-S VERSION, 4K,	#S	1401 06.0.C18
#CARD AUTCCODER PROGRAMMING SYSTEM /CAUTC/	1401 02.0.C126	C54	CONVERT DCLLARS AND CENTS DIGITS TO	#SUBROUTINE TC	1401 14.0.C08
-1401 EDIT FOR 1410 AUTCCODER PROGRAMS	#AUTCCIT	1401 01.1.C14	T	#HOSPITAL CANCER CERVICAL CASEFINDING SUMMATION AND REPR	1440 11.5.C01
RANSMISSION	#BASIC AUTCCODER REVISED FOR USE CN 1974 DATA T	1440 01.2.C03	NARY/	#THE 62 CFC PROGRAM /CONSOLIDATED FUNCTIONS CREI	1401 IL-C1X
	#AUTCCODER SEQUENCE CHECKING PROGRAM	1401 01.4.132	HE 1440/DIRECT DATA CHANNEL	#COMMUNICATIONS ICCS FOR T	1440 10-C11
	#AUTCCODER SERCH BINARY SEARCH MACRO	1401 02.0.C36	Y PROGRAMS WITH 12C CHARACTER	#1401 AND 1460 TAPE UTILITY	1401 LT-C25
#PRE-LIST FOR AUTCCODER SOURCE DECK	1401 01.1.C25	C34			
REASSEMBLY TEST FOR AUTCCODER SOURCE DECKS	#P	1401 01.1.C41			

TITLE	SYSTEM	FILE NO.	PAGE	TITLE	SYSTEM	FILE NO.	PAGE
#CNE CARD INVALID CHARACTER DETECTION PROGRAM	144C	02.4.CC1	C77	T OF SYSTEM/360	#CCNVERTER TC EBCDIC OF HEXADECIMAL CLTPL	14C1	02.6.C33
#BCDIC/EBCCIC/BCDIC CHARACTER TRANSLATION PROGRAM	14C1	02.0.C25	C56	#CCPY 1311 DISK FILE TO 1E0F		14C1	01.4.182
IST ALL THE SPECIAL CHARACTERS	#LATCH L	14C1	01.4.2C3	#SYMBOLIC CCRRE DUMP		14C1	01.4.141
GEN - IBM 1401 FLCH CHART GENERATOR	#FLC	14C1	02.0.C22	#CCRE DUMP		144C	02.7.CC4
#AUTOMATIC FLCH CHART TECHNIQUE		14C1	02.0.C19	#SELF-LOADING CCRRE DUMP		144C	02.7.CC6
#SYSTEMS FLCH CHARTER		14C1	02.0.C35	#CCRE DUMP		14C1	01.4.C71
WRITE AND READ TAPE CHECK	#	14C1	01.4.136	#AUTCCCDER SYMBOLIC CCRRE DUMP		144C	02.7.CC1
#SEGER TO SEQUENCE CHECK A FILE OF CARDS ALPHANUMERICALLY	#14C1/146	14C1	01.2.C05	#CCRE DUMP ROUTINE IN ACTUAL FORM		144C	02.7.CC3
O PACE PRE-ASSEMBLY CHECK AND EDIT	#14C1/146	14C1	01.1.C51	#PUNCH CCRRE IN PROGRAM LOAD FORMAT		144C	02.5.CC3
PAGE - PRE-ASSEMBLY CHECK AND EDIT LISTING	#	144C	01.0.CC1	#CCRE PRINT		144C	02.7.CC2
G VERIFY MCULUS 10 CHECK DIGITS	#AUTCCCDER SUBROUTINE T	14C1	12.1.C03	#CCRE SEARCH FOR BRANCH INSTRUCTIONS TO A		14C1	01.4.162
C VERIFY MCULUS 11 CHECK DIGITS	#AUTCCCDER SUBROUTINE T	14C1	12.1.C04	#CCRE TC-CARD DUMP		14C1	01.4.148
CGRAM FOR IBM	#CHECK POINT SUBROUTINE AND RESTARTING PR	14C1	01.4.171	#CCRETCAD CCONVERTER		14C1	01.4.224
#LEFT ZERC CHECK PROGRAM		144C	02.6.CC2	ICN	#	144C	02.7.CC1
#CHECK-FCRM WORDS		14C1	14.0.CC8	#CCRPDATE NAMES		14C1	01.4.115
#LABEL CHECKES /SPS/		14C1	01.1.C46	#GENERAL TAPE CCRRECTION PROGRAM		14C1	01.4.113
E IBM 1311 IC LABEL CHECKING MACROS FOR 14C1/144C/146C#SIMPL		14C1	01.5.C2C	EEN VARIABLE SIMPLE CCRRELATION	#CCRL-8 THIR	14C1	06.0.CC6
ATE AND/OR SEQUENCE CHECKING PROGRAM	#GENERALIZED TABLL	14C1	01.4.C56	ESSION ANALYSIS AND CCRRELATION CCEFFICIENTS#REGAN - 4K REGR		14C1	06.0.CC8
#AUTCCCDER SEQUENCE CHECKING PROGRAM		14C1	01.4.132	ERMINED	#MULTIPLE CCRRELATION- VARIABLES CF IMPORTANCE DET	14C1	06.0.CC5
#SYMBOLIC LABEL CHECKING, ANY MACHINE S-P.S.		14C1	01.1.C3C	#HEURISTIC CCRRELATION SCHELLING PROGRAM		14C1	01.4.2C0
#CHECKPOINT AND RESTART PROCEDURE		14C1	01.4.142	#SOLUTION CF BANK CEST ALLOCATION BETWEEN DEPARTMENTS		14C1	06.4.CC6
#CHRISTMAS CLUB PROGRAMMING PACKAGE		14C1	01.4.192	LEARNING CURVE	#CCST CURVE ESTIPATICA AND PROJECTION BY	14C1	01.0.C11
E VS. ANALYSIS, BCB CIRCULAR A-5/	#LEAS	14C1	14.0.C14	RDOLCE, GANG-PUNCH, COUNT & PRINT	#RCEP - REP	14C1	13.1.C05
# FOR LIBRARY CIRCULATION CTRL		144C	13.0.CC1	SISTED INSTRUCTION CCRSEWRITER#OPERATING SYSTEM CCMPLER A		144C	03.0.C50
#CIRCULATION SYSTEM		14C1	10.3.C60	EXTRACT PROGRAM FOR CREDIT UNIONS	#INDIVIDUAL LEDGER	14C1	10.3.C55
TIVE LIST WITH FOUR CLASSES OF TOTAL AND HEADINGS	#SELEC	14C1	01.4.161	UPDATE PROGRAM FOR CREDIT UNIONS	#INDIVIDUAL LEDGER	14C1	10.3.C56
#DECK CLEANER J	#CLASSIFICATION USING RATING FORM DATA	14C1	14.0.C23	SIS	#CRITICAL PATH LISTING AND RESOURCE ANALY	14C1	10.3.C28
#CLOCK-CUT CARDS.		14C1	01.4.142	#CRITICAL PATH MANAGEMENT GAME		14C1	10.3.C55
#TLU01 TABLE LOCKUP CLCSED SUBROUTINE		14C1	01.4.1C5	#CRITICAL PATH SCHEDULLER /BASIC 14C1/		14C1	10.3.C13
ICN CF QUADRATIC #A CLCSED SUBROUTINE FOR THE COMPLETE SCLUT		14C1	03.0.C16	#CRITICAL PATH SCHEDULLING WITH ARBITRARY		14C1	10.3.C02
ENAL DISTRIBUTION CLCSED SUBROUTINES IN MACRO FORM	#G	14C1	01.4.21C	BITRARY NCDE	#CRITICAL PATH SCHEDULLING PROGRAM WITH AR	14C1	10.3.C2C
#CHRISTMAS CLUB PROGRAMMING PACKAGE		14C1	01.4.192	#1401/141C	CRSS REFERENCE LISTING PROGRAM	14C1	01.1.040
#1401 CBLCL		14C1	01.0.C7C	# AND DATA-NAME	CRSS REFERENCE LIST	14C1	01.4.223
#SYSTEM/360 CBLCL EDIT		14C1	01.0.C13	#AUTCCCDERPROGRAM AND CCRSSCCRRELPROGRAM		14C1	01.5.CC8
#CCBLCL EXPANDED PROGRAM		14C1	02.0.C41	JECTIC BY LEARNING	CLCK TC AU-COB	14C1	10.3.C01
#CCBLCL FOR IBM 144C/1401/1460		144C	01.0.C73	ING CURVE	#CCST CURVE ESTIMATION AND PROJECTION BY LEARN	14C1	10.3.C11
#CCBLCL LANGUAGE CONVERSION PROGRAM		14C1	01.0.C7C	D DEGREE CRTHCGGNAL CURVE FIT	#FIRST AND SECCN	14C1	06.0.C16
ND TESTING AIDS FOR CCBLCL THROUGH A LOGIC TRACE	#CCDOCUMENT A	14C1	01.4.223	CASTING #POLYNOMIAL CURVE FIT FOR ECONOMIC ANALYSIS AND FCRE		14C1	07.0.C03
DECK TO AU-COB	#CCDAC - 14C1/1440/146C CCNDCNSED OBJECT	14C1	01.4.224	THCGGNAL POLYNOMIAL CURVE SMOOTING FOR ACTUARIAL	#CR	14C1	06.0.C17
NY AND	#CCCP	14C1	01.4.115	AP INCLUDING SPIRAL CURVES	#GEOMETRIC COMPUTATION PRGR	14C1	05.2.C17
COER - MATHEMATICAL	CLCE-NUMERIC ENCCDING CF BUSINESS, CCMPA	144C	01.3.CC1	440 OPS CN 1440	#CCVCA TC CCONVERT 14C1 AUTCCCDER CPS TC 1	144C	02.5.CC2
SIS AND CORRELATION	COEFFICIENTS#REGAN - 4K REGRESSION ANALY	144C	01.3.CC1	440 OPS CN 14C1	#CCVZA TC CCONVERT 14C1 AUTCCCDER CPS TC 1	14C1	01.4.2C5
#CARD CELLATOR SIMULATOR		14C1	01.4.212	ICNS ORDINARY DAILY CYCLE PROGRAMS	#CCNSOLIDATED FUNCT	14C1	10.2.CX
#TWC COLUMN ANALYSIS		14C1	01.4.214	FUNCTICS CRINARY DAILY CYCLE PROGRAMS	#CCNSOLIDATED	14C1	10.2.CX
REDUCE ONLY CERTAIN COLUMNS ON THE IBM 14C1	#REP	14C1	01.4.221	# ANALYZER DASCISFA		14C1	01.4.215
USING NABAC MODEL	#CCMERCIAL AND SAVINGS TELLER SIMULATION	144C	10.2.C1C	# AND DATA-NAME CRSS REFERENCE LIST		14C1	01.4.223
#1440-1070 PROCESS	CCMUNICATION MCNITER FOR 14C1/14C/6C	144C	10.2.C1C	#LESS AND DATE CONVERSION PROGRAM		14C1	10.3.C03
#1440-1070 PROCESS	CCMUNICATION MCNITER FOR 1440 BASIC	144C	10.2.C1C	CF DAYS BETWEEN TWO DATES SUBROUTINE /TCALC#CALCULATE NUM.		14C1	03.0.C11
#1440-1070 PROCESS	CCMUNICATION MCNITER FOR 14C1 AUTCCCDER	14C1	10.2.C1C	DIV. CONVERSION CF	#GENERAL PURPOSE MACROS FOR	14C1	03.0.C22
#1460-1070 PROCESS	CCMUNICATION MCNITER FOR 14C1 BASIC	144C	10.2.C1C	GCALCULATE NUM. CF DAYS BETWEEN TWO DATES SUBROUTINE /TCALC		14C1	03.0.C11
401/1460	#CCMUNICATIONS ICOS /1026/DDC/ FOR THE 1	14C1	10.2.C1C	# JULIAN DAYS, SIMPLE READ/WRITE TAPE ICOS		14C1	01.4.C62
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40	#CCMUNICATIONS ICOS 1026/DDC/ FOR THE 14	14C1	10.2.C1C	#DEBIT INSURANCE PROGRAM		144C	10.5.CX
#146C/1401	CCMUNICATIONS ICOS /144E/DDC/	146C	10.2.C1C	#DECISION LOGIC TRANSLATOR PROGRAM		14C1	10.5.CX
#DATA CCMUNICATIONS UTILITY PROGRAM -IBM 10C5		14C1	10.2.C1C	TTING #MANAGEMENT DECISION MAKING LABRATORY AUTCPATIC PLC		14C1	10.2.CC2
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TAPE DUPLICATION CR	CCMPARE FOR 8K 1401B	14C1	01.4.C77	#AUTCCCDER DECISION TABLE TRANSLATOR		14C1	03.0.C45
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#GENERALIZED KWIC	CCMPLE AND GC INDEX SYSTEM 4K TAPE	14C1	01.3.C22	#MANAGEMENT DECISION-MAKING LABRATORY		14C1	03.0.CX
#COMPILED FORTRAN	CCMPILER	14C1	02.0.C32	CR AUTCCCDER SOURCE DECK	#PRE-LIST F	14C1	01.1.C35
1401/1440/146C TYPE	CCCOMPOSITION PROGRAM	14C1	01.4.C18	#DECK CLEANER I		14C1	01.4.145
YES	#GEOMETRIC CONVERSION PROGRAM INCLUDING SPIRAL CUR	14C1	05.2.C17	60 CONDENSED OBJECT DECK TC AU-COB	#CCDAC - 14C1/144C/14	144C	02.3.CC4
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ER#OPERATING SYSTEM	CCMPUTER ASSISTED INSTRUCTION COURSEWRIT	144C	05.2.C17	#DELETE-PERGE FOR THE SHARE LIBRARY		14C1	13.1.C27
26 OPERATING SYSTEM	CCMPUTER ASSISTED INSTRUCTION	144C	05.2.C17	#DEMAN DEPOSIT ACCUMULATING		144C	08.0.CX
#CAPERSIM -	CCMPUTER ASSISTED PROJECT EVALUATION AND	14C1	10.2.C1C	#DEMAN DEPOSIT CONVERSION PROGRAM		144C	08.0.CX
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RAMMING SUPERVISORY MONITOR #1440-1026-1070 MULTIPROG	1440 01.1.003	075	ODE #CRITICAL PATH SCHEDULING PROGRAM WITH ARBITRARY N	1401 10.3.020	067
#1401/1311 MONITOR FOR PROGRAMS ON DISK PACKS	1401 02.0.021	055	ERING- #CRITICAL PATH SCHEDULING WITH ARBITRARY NODE NUMB	1401 12.3.015	067
OCESS COMMUNICATION MONITOR FOR 1401 AUTOCODER #1460-1070 PR	1460 SV-090	031	#HOSPITAL PATIENT BILLING	1440 UH-01X	028
OCESS COMMUNICATION MONITOR FOR 1401 BASIC #1460-1070 PR	1460 SV-091	031	#HOSPITAL ACCOUNTS PAYABLE	1440 UH-03X	028
OCESS COMMUNICATION MONITOR FOR 1401/40/60 #1440-1070 PR	1440 SV-090	027	#HOSPITAL PAYROLL	1440 UH-06X	028
OCESS COMMUNICATION MONITOR FOR 1440 BASIC #1440-1070 PR	1440 SV-091	027	#PIECEWORK-TIMEWORK PAYROLL	1401 10.3.015	066
40/1460 JOB CONTROL MONITOR ON DISK #1401/14	1401 01.4.220	052	#DETERMINATION OF PAYROLL HOURS FROM 357 JOB-IN AND	1401 10.3.043	069
TEM #MONITOR SYSTEM FOR TAPE	1401 01.0.039	040	#PERIODICAL CONTROL SYSTEM	1401 10.3.057	071
L ACCUMULATION #MONITOR SYSTEM FOR 8K, 12K, 16K TAPE SYS	1401 01.4.175	049	#PERIPHERAL INTEGRATED PROCESSING SYSTEM	1401 09.0.025	074
SONAL ADJUSTMENT OF MONTHLY INVESTMENT INTEREST AND PRINCIPA	1401 02.0.025	064	#7090/94 - 1401 PERIPHERAL OUTPUT PROGRAM	1401 UT-158	018
RAM #1401/1440 MONTHLY TIME SERIES #SEA	1401 06.0.001	061	#7040/7044 - 1401 PERIPHERAL UTILITY PROGRAM	1401 UT-157	018
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#MORTGAGE AMORTIZATION SCHEDULE	1401 10.2.006	064	#PERT	1401 10.3.007	065
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#MOTOR FREIGHT REVENUE ACCOUNTING	1440 ST-02X	027	#PERT NETWORK RANKING PROGRAM	1401 10.3.032	068
#MULTI PURPOSE EXTRACT AND SELECT	1401 01.5.010	053	#CROSS-REFERENCE PHASE OF 1401 AUTOCODER #PROJ	1401 01.1.054	035
#MULTI-PURPOSE 80-80 REPRODUCING	1401 01.4.190	050	# PHASE ONLY/ /REVISED/	1401 10.3.001	065
#MULTIPLY AND DIVIDE MACROS	1401 01.4.151	047	SCORING TECHNIQUE - PHASE 1 PROGRAM #FAST - FULLY AUTOMATIC	1401 10.3.063	072
1/1460 SIMULTANEOUS MULTIPLY DIVIDE SUB-ROUTINE #140	1401 03.0.041	060	#PIECEWORK-TIMEWORK PAYROLL	1401 10.3.015	066
NKAGE #NEPCO MULTIPLY ROUTINE /CARD/	1401 03.0.008	058	#FLOOD PLAIN ANALYSIS PROGRAM	1401 09.2.022	063
X 9 TEN MILLISECOND MULTIPLY SUBROUTINE #9	1401 03.0.001	057	#PLOT IA /REVISED/	1401 14.0.001	073
#BINARY AUTOMATIC MULTIPLY SUBROUTINE /BAMS/	1401 03.0.022	059	#GENERALIZED PLOT PROGRAM	1401 14.0.002	074
HIGH ELIMINATES THE MULTIPLY-DIVIDE #FORTRAN MODIFICATION W	1401 03.0.028	059	EEN-O-ONE AUTOMATIC PLOTTER I/ #F A P I PROGRAM /FOUR	1401 10.3.007	064
#FARGO MULTIPLY-DIVIDE II	1401 02.0.020	055	ABORATORY AUTOMATIC PLOTTING #MANAGEMENT DECISION MAKING L	1401 10.2.007	064
#AUTOCODER MULTIPLY-DIVIDE MACRO	1401 03.0.029	059	O3 #PLOTTING SUBROUTINE FOR THE IBM 1401/ 14	1401 14.0.013	074
#1440-1026-1070 MULTIPROGRAM SUPERVISORY MONITOR	1401 02.0.020	055	FOR IBM #FIXED POINT SQUARE ROOT SUBROUTINE	1401 03.0.020	059
TER #MUSIC - MUSIC SIMULATION ON A 1401 COMPU	1401 11.0.012	072	#CHECK POINT SUBROUTINE AND RESTARTING PROGRAM	1401 01.4.171	049
ER SIMULATION USING NABAC MODEL #COMMERCIAL AND SAVINGS TELL	1401 11.0.010	072	#FLOATING POINT SUBROUTINES /NORMALIZED/	1401 03.0.004	058
M #STANDARD NAME ALTERATION PROGRAM	1401 14.0.019	075	X SUBROUTINE /FIXED POINT/ #E TO THE X AND E TO THE -	1401 03.0.013	058
#NAME AND ADDRESS FILE MAINTENANCE PROGRA	1440 02.9.001	078	IS AND FORECASTING #POLYNOMIAL CURVE FIT FOR ECONOMIC ANALYS	1401 06.0.017	062
# CORPORATE NAMES	1401 01.4.115	045	#ORTHOGONAL POLYNOMIAL CURVE SMOOTHING FOR ACTUARIAL	1401 06.0.017	062
#PERT NETWORK RANKING PROGRAM	1401 03.0.008	058	UMP IN BANDS OF 100 POS. /20 CARDS/ #MEMORY-D	1401 FI-04X	006
GRAM WITH ARBITRARY NODE #CRITICAL PATH SCHEDULING PRO	1401 10.3.020	067	PLY SUBROUTINE /130 POSITION/ #MULTI	1401 03.0.028	059
NE HUNDRED THOUSAND NODE LESS PROGRAM FOR THE 4K IBM #0	1401 10.3.026	067	#MEMORY ANNOTATION, POST-TEST	1401 01.4.050	040
#NODE NUMBERING	1401 10.3.031	068	ARIANCE, 2 TO THE N POWER FACTORIAL DESIGN #ANALYSIS OF V	1401 06.0.012	062
#LESS NODE NUMBERING PROGRAM	1401 10.3.027	068	SYMBOLIC A STORED POWER SUBROUTINE	1401 01.4.051	035
LINE WITH ARBITRARY NODE NUMBERING- #CRITICAL PATH SCHEDU	1401 10.3.019	067	#1401/1460 PACE PRE-ASSEMBLY CHECK AND EDIT	1440 01.0.001	075
FOR THE 1401 USING NORMAL #A SQUARE ROOT SUBROUTINE	1401 03.0.019	059	/PAPER/ #1401/1410 PRE-ASSEMBLY PROGRAM EDIT AND REFERENCE	1401 01.1.033	034
E /DTCALC/CALCULATE NUM. OF DAYS BETWEEN TWO DATES SUBROUTIN	1401 07.0.005	063	T PROGRAM GENERATOR PRE-EDIT #REPOR	1401 01.3.005	037
# 9 DIGIT NUMBER	1401 07.0.005	063	#LESS PRE-EDIT	1401 10.3.012	066
/SNAFU/#SEQUENTIAL NUMBER ASSIGNER FOR FOURTEEN-O-ONE USERS	1401 01.4.060	041	#SPS PRE-LIST	1401 01.1.045	034
#SELF-CHECKING NUMBER CALCULATION MODULUS 11	1401 07.0.002	063	#AUTOCODER PRE-LIST	1401 01.1.042	034
#SELF-CHECKING NUMBER CALCULATION- MODULUS 10	1401 01.4.121	045	#AUTOCODER PRE-LIST DIAGNOSTIC	1401 01.0.026	033
#NODE NUMBERING	1401 10.3.031	068	#PRE-LIST FOR AUTOCODER SOURCE DECK	1401 01.1.039	034
#LESS NODE NUMBERING PROGRAM	1401 10.3.027	068	CKS #PREASSEMBLY TEST FOR AUTOCODER SOURCE DE	1401 01.1.041	034
NUMBERING 8K	1401 10.3.027	068	EM/360 MODEL 20 RPG PRELISTER RUN ON THE IBM 1401/1460 #SYST	1401 01.3.020	038
WITH ARBITRARY NODE NUMBERING- #CRITICAL PATH SCHEDULING	1401 10.3.019	067	#THESAURUS PREPARATION FOR INFORMATION RETRIEVAL	1401 03.0.054	071
MERIC70-9/ONLY, AND NUMERIC ZONE/12-11/ONLY # NU	1401 01.4.118	045	#FORTRAN PREPROCESSOR, DDT /AN L201/ /CARD/	1401 13.2.002	073
/ONLY #NUMERIC70-9/ONLY, AND NUMERIC ZONE/12-11	1401 01.4.118	045	STMENT INTEREST IN PRINCIPAL ACCUMULATION #MONTHLY INVE	1401 10.2.005	064
#AUTOPROPS II NUMERICAL CONTROL PROGRAM	1401 CN-03X	003	#UNIVERSAL MEMORY PRINT	1401 01.4.096	043
# AND/OR NUMERICALLY	1401 01.2.009	036	GANG-PUNCH, COUNT & PRINT #RGCP - REPRODUCE,	1401 13.1.009	072
1440/1460 CONDENSED OBJECT DECK TO AU-08 #CODAC - 1401/	1440 02.3.004	077	#CORE PRINT	1440 02.7.002	078
/1460 PROGRAMS FROM OBJECT TO AUTOCODER/DISASSEMBLER OF 1401	1401 01.4.224	053	#PRINT DECISION TABLES	1401 01.4.126	045
OT SUBROUTINE USING ODD INTEGER METHOD #SQUARE RO	1401 03.0.014	058	#1401-1311 DISK PRINT PROGRAM	1401 01.4.211	052
#FOURTEEN O ONE OFFSET REPRODUCING AND GANGPUNCHING OR	1401 14.0.004	074	#UTILITY PRINT PROGRAM	1401 01.4.225	053
#ON-LINE SAVINGS ACCOUNTING	1440 FB-07X	022	#SYLVANIA PRINT ROUTINE	1401 01.4.082	043
#OND INVENTORY OR VALUATION	1401 10.3.040	069	#TAPE COMPARE ERROR PRINT/DUPPLICATE	1401 01.4.123	045
#FARGO ONE-SIXTY-X	1401 02.0.018	055	#EXACT TAPE TO PRINTER /CARD/	1401 01.4.027	039
# PHASE ONLY/ /REVISED/	1401 06.0.014	062	CARD 80-80 TAPE TO PRINTER PROGRAM WITH BRANCH ON	1440 02.3.002	077
#1401/1460-1026 OPERATING SYSTEM COMPUTER ASSISTED	1401 05.0.092	011	OF CALCULATING AND PRINTING #ESCAPE /EFFORTLESS SYSTEM	1401 01.4.010	039
UCTION COURSEWRITER/OPERATING SYSTEM COMPUTER ASSISTED INSTR	1440 05.0.090	024	#ZIP /INSTANT PRINTING/	1401 01.4.009	039
UCTION #1440-1026 OPERATING SYSTEM COMPUTER ASSISTED INSTR	1440 05.0.091	025	IME SCALE GRAPHICAL PRINTOUT #LOG SCALE VERSUS T	1401 06.0.019	063
OGRAM FOR IBM BASIC OPERATING SYSTEM/360/1401/1460 TIMING PR	1401 LM-011	010	1311 TRANSPORTATION PROBLEM #1401/	1401 10.3.050	070
MS # OPERATING SYSTEMS TAPE SORT/MERGE PROGRA	1401 LM-012	010	FOR MACRO-ORIENTED #MODULAR PROGRAMMING CONCEPT	1401 01.3.061	041
OPERATION	1401 01.4.094	043	O/60 #1440-1070 PROCESS COMMUNICATION MONITOR FOR 1401/4	1440 SV-090	027
R REPORT GENERATING OPERATION#CONDENSING AFTE	1401 02.0.012	054	ASIC #1440-1070 PROCESS COMMUNICATION MONITOR FOR 1440 B	1440 SV-091	027
C REPORT GENERATING OPERATION#FARGO /FOURTEEN-O-ONE AUTOMATI	1401 RG-045	012	UTOCODER #1460-1070 PROCESS COMMUNICATION MONITOR FOR 1401 A	1460 SV-090	031
#OPTRAIN -- OPERATOR TRAINING ON THE 1401	1401 13.4.002	073	ASIC #1460-1070 PROCESS COMMUNICATION MONITOR FOR 1401 B	1460 SV-091	031
TOCODER OPS TO 1440 OPS ON 1401 #CVZZA TO CONVERT 1401 AU	1401 01.4.209	051	#TOCP WITHOUT PROCESS OVERLAP	1420 10.0.010	019
TOCODER OPS TO 1440 OPS ON 1440 #CVQDO TO CONVERT 1401 AU	1440 02.5.002	077	RIPHERAL INTEGRATED PROCESSING SYSTEM	1401 PR-925	012
VERT 1401 AUTOCODER OPS TO 1440 OPS ON 1401 #CVZZA TO CON	1401 01.4.209	051	R THE IBM 1401 DATA PROCESSING SYSTEM #SDI 3 FO	1401 01.3.004	065
VERT 1401 AUTOCODER OPS TO 1440 OPS ON 1440 #CVQDO TO CON	1440 02.5.002	077	11 BILL OF MATERIAL PROCESSOR #1440/13	1440 ME-026	044
O WITH THE IBM 1285 OPTIMUM READER # 1401/1440/146	1401 10.0.077	010	#THREE TAPE SORT PROCESSOR	1401 01.2.011	036
#SORAL - SIMPLE OPTIMUM REPRODUCING ALL	1401 01.4.153	047	#PROCESSOR	1440 01.2.003	075
#OPTRAIN -- OPERATOR TRAINING ON THE 1401	1401 13.4.002	073	#BILL OF MATERIAL PROCESSOR STRUCTURE FILE ADDRESS	1440 12.3.001	080
#SHARE ORDER CARD LIST AND PUNCH	1401 13.1.029	071	#PROGRAM TO PRODUCE MULTIPLE INDEXES	1401 10.3.037	069
#ORDER RECEIVING SYSTEM	1401 10.3.058	071	# TAPE SORT /MERGE PROG. /FOR THE 2415/	1401 LM-080	011
SOLIDATED FUNCTIONS ORDINARY DAILY CYCLE PROGRAMS #CON	1401 1L-02X	008	# TAPE SORT /MERGE PROG. /2401 THROUGH 2404/	1401 LM-078	011
SOLIDATED FUNCTIONS ORDINARY VALUATION PROGRAM #CON	1401 1L-03X	009	RT 13 AND 14 TIMING PROG. FOR 1401/1460. #SO	1401 LM-077	011
SOLIDATED FUNCTIONS ORDINARY VALUATION PROGRAM #CON	1401 1L-01X	008	RAM FOR S/360 BASIC PROG. SUPPORT #1401/1460 TIMING PROG	1401 LM-078	011
1401/1311 DISK FILE ORGANIZATION ROUTINES #RADIO -	1401 UT-052	017	RAM FOR S/360 BASIC PROG. SUPPORT #1401/1460 TIMING PROG	1401 LM-080	011
#FILE ORGANIZATION ROUTINES	1401 UT-057	017	UTILITY MAINTENANCE PROGRAM/ #STUMP /SPECIAL TAP	1401 01.4.069	042
#DISK FILE ORGANIZATION ROUTINES	1401 UT-040	029	PROACH TO AUTOMATIC PROGRAMMED ADDRESS CONVERSION#GENERAL AP	1401 01.4.034	040
T AND SECOND DEGREE ORTHOGONAL CURVE FIT #FIRS	1401 06.0.016	062	#DIVISION AND RADIX PROGRAMMED ADDRESS CONVERSION TECHNIQUES	1401 01.4.081	043
R ACTUARIAL #ORTHOGONAL POLYNOMIAL CURVE SMOOTHING FO	1401 06.0.017	062	#INSTALLATION PROGRESS REPORT FOR SMALL 1400 COMPUTER	1401 01.3.021	038
COIC OF HEXADECIMAL OUTPUT OF SYSTEM/360 #CONVERTER TO EB	1401 02.0.033	057	#PROJECT PROGRESS REPORT PHASE I	1401 10.3.044	024
4 - 1401 PERIPHERAL OUTPUT SUBROUTINE #7090/9	1401 UT-158	018	- COMPUTER ASSISTED PROJECT EVALUATION AND #CAPERTSIM	1401 10.2.011	065
RANDOM DISK INPUT/ OUTPUT SUBROUTINE #RADIO -	1401 01.4.001	076	#PROJECT PROGRESS REPORT PHASE I	1401 10.3.044	069
#INPUT OUTPUT TAPE CONTROL SYSTEM /REVISED/	1401 01.4.111	039	URVE ESTIMATION AND PROJECTION BY LEARNING CURVE #COST C	1401 10.3.011	066
#CARD LIST OVERFLOW	1401 01.4.030	046	ORDER CARD LIST AND PUNCH #THE IBM 1012 TAPE	1440 13.1.029	073
#OVERFLOW	1440 02.3.002	077	#PUNCH CORE IN A TAPE READER	1401 01.0.021	075
OCP WITHOUT PROCESS OVERLAP	1420 10.0.010	019	#PUNCH CORE IN A TAPE READER	1440 02.9.003	078
#OVERLAP IOCP	1420 10.0.011	019	TIVE REPRODUCE/GANG PUNCH FOR THE 1401 #SELEC	1401 01.4.051	041
ERVISOR FOR PROGRAM OVERLAYS	1401 01.4.078	042	#TUB FILE GANG PUNCH PROGRAM	1401 01.4.167	049
NG #PACE - PRE-ASSEMBLY CHECK AND EDIT LISTI	1401 01.0.001	035	#TAPE PUNCH ROUTINES FOR THE 1401-1012	1401 10.0.74	010
#1401/1460 PACE PRE-ASSEMBLY CHECK AND EDIT	1401 01.1.051	035	#REPRODUCE GANG PUNCH SIMULATOR	1440 03.1.001	079
SEMBLY #ACCELERATOR PACE - SYMBOLIC 4K PROGRAMMING SYSTEM AS	1401 01.1.016	033	CONVERSION OF OTHER PUNCHES/ #SCODP I AND II /SIMPLIFIED	1401 01.4.012	039
AND DEPOSIT PROGRAM PACKAGE #DEM	1401 FB-01X	005	R THE IBM 1401 DATA PROCESSING SYSTEM #SDI 3 FO	1401 01.4.038	040
LIC LANGUAGE INSERT PACKAGE #SLIP III SYMBO	1401 01.3.008	037	#GENERAL PURPOSE CARD EDIT ROUTINE	1401 01.4.099	044
AS CLUB PROGRAMMING PACKAGE #CHRISM	1401 01.4.192	050	#MULTI PURPOSE EXTRACT AND SELECT	1401 01.5.010	053
1440-1311 DISK SORT PACKAGE #	1401 10.3.063	072	TES TO #GENERAL PURPOSE MACROS FOR DIV. CONVERSION OF DA	1401 01.4.062	041
R 7090/7094 SUPPORT PACKAGE/ FOR IBM #INPUT PROGRAM FO	1401 UT-938	018	HE IBM #GENERAL PURPOSE PROGRAMS FOR DATA REDUCTION ON T	1401 01.3.016	038
LIC LANGUAGE INSERT PACKAGE/ /CARD/ #SLIP /SYMB	1401 01.3.004	037	#GENERAL PURPOSE SIMULATOR -GPSS-2	1401 10.2.008	064
OR PROGRAMS ON DISK PACKS #1401/1311 MONITOR F	1401 02.0.021	055	#GENERAL PURPOSE TAB-BACK PROGRAM	1401 01.3.003	037
			#GENERAL PURPOSE TAPE DUMP	1401 01.4.158	048
			OMLETE SOLUTION OF QUADRATIC #A CLOSED SUBROUTINE FOR THE C	1401 09.2.007	063
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#SELF-CENTERING QUICK REPORT-QUICKIE	1401 01.3.018	038	#A SQUARE ROOT SUBROUTINE FOR THE 1401 USING NORMA	1401 03.0.019	059	
TIME #RADIO - RANDOM DISK INPUT/ OUTPUT SUBROUTINE	1401 01.4.001	076	#SQUARE ROOT SUBROUTINE USING ODD INTEGER METHOD	1401 03.0.014	058	
NIGUES#DIVISION AND RADIX PROGRAMMED ADDRESS CONVERSION TECH	1401 01.4.081	043	#FILE ORGANIZATION ROUTINES	1401 01.4.057	017	
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#PERT NETWORK RANKING PROGRAM	1401 10.3.032	068	SYSTEM/360 MODEL 20 RPG PRELISTER RUN ON THE IBM 1401/1460	# 1401 01.3.020	038	
#RAPID ASSEMBLY PROGRAM NO. 14043	1401 01.1.017	033	#IBM 1400 RPG TO SYSTEM/360 TRANSLATOR	1401 01.4.029	039	
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R SOURCE PROGRAMS - RASP #1401/1440/1460 RESEQUENCE AUTOCODE	1401 01.4.189	050	EL 20 RPG PRELISTER RUN ON THE IBM 1401/1460	#SYSTEM/360 MOD 1401 01.3.020	038	
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LASSIFICATION USING RATING FORM DATA	1401 14.0.023	075	TIMING PROGRAM FOR S/360 BASIC PROG. SUPPORT	#1401/1460 1401 01.4.008	031	
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#VENDOR ANALYSIS RATING SYSTEM	1401 14.0.023	075	ING PROGRAM FOR BPS S/360 SORT/MERGE PROGRAM	#1401/1460 TIM 1401 10.3.039	069	
ANCE PROGRAMS /AUTO RATING/ #FIRE AND CASUALTY INSUR	1401 14.0.023	075	#THE TRAVELING SALESMAN	#ON-LINE SAVINGS ACCOUNTING 1440 FB-07X	021	
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E, EMIT, ELIMINATE, RE-ARRANGE/ #REER /REPRODUCE	1401 14.0.023	075	#SAVINGS AND LOAN ASSOCIATIONS	1401 14.0.023	022	
RD/ #REACTION TIMING PROGRAM FOR IBM 1401 JCA	1401 14.0.023	075	#SAVINGS AND LOAN ASSOCIATIONS	1401 14.0.023	022	
MS #1231 READ MACRO FOR 1401/1440/1460 DISK SYSTEM	1401 14.0.023	075	DEL #COMMERCIAL AND SAVINGS TELLER SIMULATION USING NABAC MO	#LO 1401 06.0.019	063	
JULIAN DAYS, SIMPLE READ/WRITE TAPE IOCS	1401 14.0.023	075	G SCALE VERSUS TIME SCALE GRAPHICAL PRINTOUT	#LO 1401 06.0.019	063	
PE PUNCH AS A TAPE READER	1401 14.0.023	075	UT #LOG SCALE VERSUS TIME SCALE GRAPHICAL PRINTOUT	#LO 1401 06.0.019	063	
HE IBM 1285 OPTICAL READER	1401 14.0.023	075	#SCANX MACRO FOR THE 1401 AUTOCODER	#MO 1401 10.2.006	064	
#TAPE READING WRITING SUBROUTINES	1401 14.0.023	075	RTGAGE AMORTIZATION SCHEDULE	#MO 1401 10.2.006	064	
#RECAP	1401 14.0.023	075	ECRITICAL PATH SCHEDULING /BASIC 1401/	#TARS/ TALLY ANALYS 1401 01.3.001	065	
#RETAIL ACCOUNTS RECEIVABLE	1401 14.0.023	075	I REGISTRATION AND SCHEDULING /4K-SCHEDULING/LESS --- LEAST-	1401 01.4.200	051	
#ACCOUNTS RECEIVABLE FOR HOSPITALS	1401 14.0.023	075	COST ESTIMATING AND SCHEDULING /4K-SCHEDULING/LESS --- LEAST-	1401 01.4.200	051	
#ORDER RECEIVING SYSTEM	1401 14.0.023	075	EURISTIC CORRUGATOR SCHEDULING PROGRAM	#H 1401 01.4.200	051	
#REPAIR DISK RECORD	1401 14.0.023	075	#CRITICAL PATH SCHEDULING PROGRAM WITH ARBITRARY NODE	1401 01.4.200	051	
#1311 DISK RECORD FINDER	1401 14.0.023	075	#ENGINEERING SCHEDULING SYSTEM	1401 01.4.200	051	
#METHOD OF RECORDING COMPUTER UTILIZATION AND 3 140	1401 14.0.023	075	ECRITICAL PATH SCHEDULING WITH ARBITRARY NODE NUMBERING	1401 01.3.019	067	
#ATTENDANCE RECORDING FOR SECONDARY SCHOOLS	1401 14.0.023	075	L PROGRAMS /STUDENT SCHEDULING/ #SECONDARY SCHO	1440 US-01X	029	
CS FOR FIXED LENGTH RECORDS	1401 14.0.023	075	COST ESTIMATING AND SCHEDULING /8K, 12K, AND 16K/LESS /LEAST-	1401 01.3.002	065	
E PROGRAMS FOR DATA REDUCTION ON THE IBM	1401 14.0.023	075	#SECONDARY SCHOOL PROGRAMS /GRADE REPORTING/	1440 US-02X	029	
IES ANALYSIS & DATA REDUCTION PROGRAM	1401 14.0.023	075	#SECONDARY SCHOOL PROGRAMS /PAYROLL AND PERSONNEL/	1440 US-03X	029	
#DATA ANALYSIS AND REDUCTION SYSTEM	1401 14.0.023	075	#SECONDARY SCHOOL PROGRAMS /STUDENT SCHEDULING/	1440 US-01X	029	
#DISTRIBUTION TAPE REEL FOR SHARE	1401 14.0.023	075	ROING FOR SECONDARY SCHOOLS	#ATTENDANCE RECO 1440 US-04X	029	
ANGE/ #REER /REPRODUCE, EMIT, ELIMINATE, RE-ARR	1401 14.0.023	075	OTHER PUNCHES/ #SCCOP 1 AND II /SIMPLIFIED CONVERSION OF	1401 01.4.012	039	
LY PROGRAM EDIT AND REFERENCE /PAPER/ #1401/1410 PRE-ASSEMB	1401 14.0.023	075	T - FULLY AUTOMATIC SCHEDULING TECHNIQUE	#FAS 1401 10.3.041	069	
AND DATA-NAME CROSS REFERENCE LIST	1401 14.0.023	075	T - FULLY AUTOMATIC SCHEDULING TECHNIQUE - PHASE 1 PROGRAM	#FAS 1401 10.3.041	069	
#1401/1410 CROSS REFERENCE LISTING PROGRAM	1401 14.0.023	075	SYSTEM	#SDI 3 FOR THE IBM 1401 DATA PROCESSING S	1401 01.3.004	065
LATION COEFFICIENTS#REGAN - 4K REGRESSION ANALYSIS AND CORRE	1401 14.0.023	075	D TAPE ADD AND FILE SEARCH	#GENERALIZE 1401 01.4.044	040	
ER /AUTOC/ #SOURCE REGENERATION OF 1401 SPS TO 1440 AUTOCOD	1401 14.0.023	075	ENERAL UTILITY TAPE SEARCH	#GUTS-1401 G 1401 01.4.070	042	
CHNIQUE USING INDEX REGISTERS ON #BINARY TABLE SEARCH TE	1401 14.0.023	075	N ADDRESS	#CORE SEARCH FOR BRANCH INSTRUCTIONS TO A GIVE	1401 01.4.062	048
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#LINEAR REGRESSION ANALYSIS	1401 14.0.023	075	ES	9 VERSION, 4K, #SEASONAL ADJUSTMENT OF MONTHLY TIME SERI	1401 06.0.001	061
#REGRESSION ANALYSIS COMPUTER PROGRAM	1401 14.0.023	075	9 VERSION, 4K, #SEASONAL ADJUSTMENT-CENSUS METHOD II, X-	1401 06.0.009	062	
FICIENTS#REGAN - 4K REGRESSION ANALYSIS AND CORRELATION COEF	1401 14.0.023	075	PURPOSE EXTRACT AND SELECT	#MULTI 1401 01.4.145	047	
#MULTIPLE REGRESSION PROGRAM	1401 14.0.023	075	#SELECT DATA RETRIEVAL SYSTEM	1401 01.4.145	047	
#RELOCATABLE TRACE PROGRAM	1401 14.0.023	075	ANAGEMENT SIMULATOR SELECTION PROGRAM	#INVENTORY M 1401 01.3.030	068	
#REORGANIZATION MAINTENANCE PROGRAM	1401 14.0.023	075	SYSTEM	#SELECTIVE DISSEMINATION OF INFORMATION S	1401 01.4.036	040
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NDING SUMMATION AND REPORT #HOSPITAL CANCER CERVICAL CASEFI	1401 14.0.023	075	401	#CARD AND TAPE SELECTIVE LISTER	1401 01.4.045	040
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EEN-ONE AUTOMATIC REPORT GENERATING OPERATION#FARGO /FOUR	1401 14.0.023	075	#RAPID SELECTIVE TRACE	1401 01.4.207	051	
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#ODDGO LOAD AND GC REPORT GENERATOR	1401 14.0.023	075	#UNRESTRICTED SELECTIVE TRACE ROUTINE	1440 02.7.007	078	
#PROJECT PROGRESS REPORT PHASE I	1401 14.0.023	075	S 10	#SELF-CENTERING QUICK REPORT-QUICKIE	1401 01.3.018	038
#1440/1311 STERLING REPORT PROGRAM DEVELOPMENT	1401 14.0.023	075	11	#SELF-CHECKING NUMBER CALCULATION- MODULU	1401 01.4.121	045
#1401/1460 BASIC REPORT PROGRAM GENERATOR 4K	1401 14.0.023	075	ALPHANUMERICALLY	#SELF-CHECKING NUMBER CALCULATION MODULUS	1440 02.7.006	078
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#REPORT PROGRAM GENERATOR	1401 14.0.023	075	ENT OF MONTHLY TIME SERIES	#SEASONAL ADJUSTM 1401 06.0.001	061	
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#SELECTIVE REPRODUCE/GANG PUNCH FOR THE 1401	1401 14.0.023	075	ARD-TO TAPE FOR THE SHARE LIBRARY	#C 1401 13.1.026	073	
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AL - SIMPLE OPTIMUM REPRODUCING ALL	1401 14.0.023	075	TION PROGRAM#TELLER SIMULATION DATA CONVERSION AND SUMMARIZA	1401 10.2.009	065	
URTEEN O ONE OFFSET REPRODUCING AND GANGPUNCHING OR	1401 14.0.023	075	#MUSIC - MUSIC SIMULATION ON A 1401 COMPUTER	1401 11.0.012	072	
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#SORT 54 DISK RESIDENT	1401 14.0.023	075	#BANK MANAGEMENT SIMULATOR	1401 01.4.150	047	
AL PATH LISTING AND RESOURCE ANALYSIS	1401 14.0.023	075	#IMPACT SIMULATOR	1401 01.4.135	046	
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ION FOR INFORMATION RETRIEVAL	1401 14.0.023	075	NVENTORY MANAGEMENT SIMULATOR 12K	#1401/1620 MODULAR I 1401 05.0.005	061	
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N #BASIC AUTOCODER REVISED SIMPLEX METHOD	1401 14.0.023	075	DEPARTMENTS	#SOLUTION OF BANK COST ALLOCATION BETWEEN	1401 05.0.006	061
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#SOMR- SPUR OF THE MOMENT REPORTING	1401 01.3.022	039	#SYSTEM/360 COBOL EDIT	1401 SE-13X	014
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#BANK DOCUMENT SORT PROGRAM	1240 SM-030	001	TERS ON #BINARY TABLE SEARCH TECHNIQUE USING INDEX REGIS	1401 03.0.034	059
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#IBM 1460 SORT 14	1401 LM-077	011	#1401/60 FORTRAN IV TAPE	1401 09.6.001	064
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#SORT 53	1440 SM-033	026	# FOR A TAPE AUTOCODER SYSTEM	1401 01.4.210	051
#SORT 54	1440 SM-034	026	#WRITE AND READ TAPE CHECK	1401 01.4.136	046
#SORT 54 DISK RESIDENT	1440 01.6.001	076	#TAPE COMPARE ERROR PRINT/DUPLICATE	1401 01.4.123	045
#SORT 6	1401 SM-062	014	#GENERALIZED TAPE COMPARE MARK III.	1401 01.4.199	051
#SORT 61	1401 SM-067	015	#INPUT OUTPUT TAPE CONTROL SYSTEM /REVISED/	1401 01.4.011	039
#SORT 62	1401 SM-066	015	#GENERAL TAPE CORRECTION PROGRAM	1401 01.4.113	045
#SORT 63	1401 SM-065	015	#BINARY TAPE DUMP	1401 01.4.008	039
#SORT 64	1401 SM-066	015	#GENERAL PURPOSE TAPE DUMP	1401 01.4.158	048
#SORT 7	1401 SM-060	014	#TAPE DUPLICATION	1401 01.4.108	044
#SORT 7 TIMING PROGRAM FOR 1401/1460	1401 LM-060	011	#TAPE DUPLICATION OR COMPARE FOR 8K 1401B	1401 01.4.077	042
APABILITY #SORT 71 SORT 7 WITH THREE TAPE UNBALANCED SORT C	1401 01.2.019	036	#TAPE DUPLICATION OR COMPARE	1401 13.1.001	072
ED SORT CAPABILITY	1401 01.2.019	036	#TAPE EXECUTIVE PROGRAM	1401 01.4.015	039
# TAPE SORT/MERGE PROG. /2401 THROUGH 2404/	1401 LM-079	011	#PROGRAM TAPE EXECUTIVE ROUTINE	1401 01.4.052	041
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# DISK SORT/MERGE PROGRAM /16K/	1401 LM-011	010	FOR THE 1401	#TAPE INPUT/OUTPUT MACROS AND SUBROUTINES	1401 01.4.194
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SYSTEM/360 PROGRAM SOURCE CARDS ON AN IBM #LISTING OF IBM	1401 01.4.218	052	#TAPE MACROS	1401 01.4.029	039
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ESEQUENCE AUTOCODER SOURCE PROGRAMS - RASP #1401/1440/1460 R	1401 01.4.189	050	MBLING REPORTS FROM TAPE OR CARDS #SIMPLE METHOD OF ASSE	1401 01.4.021	075
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N PROGRAM INCLUDING SPIRAL CURVES	#GEOMETRIC COMPUTATIO 1401 09.2.017	063	#TAPE PUNCH ROUTINES FOR THE 1401-1012	1401 10-074	010
#CGNVERT SPS CARD FORMAT TO AUTOCODER CARD FORMAT	1401 01.4.131	046	012 TAPE PUNCH AS A TAPE READER	#THE IBM 1	1401 14.0.021
#SPS PRE-LIST	1401 01.1.045	034	#DISTRIBUTION TAPE REEL FOR SHARE	1401 10-040	009
#SPS SINGLE PASS ASSEMBLER	1401 01.1.050	035	#TAPE READING WRITING SUBROUTINES	1401 13.1.032	073
#CONVERSION OF SPS TO AUTOCODER	1401 01.1.160	048	#GENERAL UTILITY TAPE SEARCH	#GUTS-1	1401 01.4.070
#SOPHISTICATED SPS TO AUTOCODER CONVERTER	1401 01.4.165	048	#CARD AND TAPE SELECTIVE LISTER	1401 01.4.058	041
#SPS TO AUTOCODER CONVERSION PROGRAM	1440 03.3.001	079	#TTSRT - TWO TAPE SORT	1401 12.0.012	036
#CARD SPS TO AUTOCODER FOR 1401/1460	1401 01.4.205	051	RAM FOR THE TCS/360 TAPE SORT	#IBM 1401/60 TIMING PROG	1401 LM-010
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EGENERATION OF 1401 SPS TO 1440 AUTOCODER /AUTOC/ #SOURCE R	1440 02.9.002	078	#8K THREE TAPE SORT MERGE	1401 01.2.022	037
EAPOLEIS ASSEMBLY OF SPS TWO	1401 01.1.013	033	#THREE TAPE SORT PROCESSOR	1401 01.2.011	036
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FULL MINNEAPOLIS OF SPS-2/ /REVISED/	1401 01.1.036	034	OPERATING SYSTEMS TAPE SORT/MERGE PROGRAMS	#	1401 LM-012
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#SOMR- SPUR OF THE MOMENT REPORTING	1401 01.3.022	039	ROGRAM FOR IBM 1401 TAPE SYSTEM	#MULTIPLE UTILITY P	1401 UT-039
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#SQUARE ROOT SUBROUTINE	1401 03.0.010	058	# 1401 TAPE SYSTEM	1401 01.4.171	049
#SQUARE ROOT SUBROUTINE USING ODD INTEGER	1401 03.0.014	058	EN FOR 8K 16K, 1401 TAPE SYSTEM	#MONITOR SYST	1401 01.4.175
METHOD #A SQUARE ROOT SUBROUTINE FOR THE 1401 USIN	1401 03.0.019	059	TAXES FOR IBM 1401 TAPE SYSTEM	#STATE AND LOCAL INCOME	1401 01.4.012
G NORMAL #FIXED POINT SQUARE ROOT SUBROUTINE	1401 03.0.020	059	#TAPE SYSTEM LOADER	1401 01.1.035	034
KEEPING #SQUARE ROOT SUBROUTINE	1401 03.0.027	059	#TAPE TEST PROGRAM, 4K	1401 01.4.139	046
#STACK - STORAGE ON TAPE TO ABRIDGE CARD-	1401 01.4.107	044	#TAPE TESTING ROUTINE FOR 1401	1401 01.4.164	048
#FARGO STAGE II /EXPANDED 4K CARD 1401 VERSION/	1401 02.0.009	054	#STACK - STORAGE ON TAPE TO ABRIDGE CARD-KEEPING	1401 01.4.107	044
#STANDARD NAME ALTERATION PROGRAM	1401 14.0.019	075	#EXACT TAPE TO PRINTER /CARD/	1401 01.4.027	039
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1 TAPE SYSTEM #STATE AND LOCAL INCOME TAXES FOR IBM 140	1401 01.0.012	074	#TAPE UPDATE UTILITY PROGRAM /CARD/	1401 01.4.022	039
BINARY ACTIVITY DATA STATISTICAL #HISTORY REPORTING SYSTEM LI	1401 10.3.062	071	#STUMP /SPECIAL TAPE UTILITY MAINTENANCE PROGRAM/	1401 01.4.069	042
GRAMS TO FACILITATE STATISTICAL ANALYSIS	#PR 1401 06.0.011	062	L/ #MULTIPLE TAPE UTILITY PROGRAM /120 CHARACTER LABE	1401 UT-019	016
#1440 STERLING BASIC REPORT PROGRAM GENERATOR	1440 RG-721	026	#1401 AND 1460 TAPE UTILITY PROGRAMS WITH 120 CHARACTER	1401 UT-025	016
#1440 STERLING MACRO INSTRUCTIONS	1440 MI-702	024	#TAPE UTILITY PROGRAMS	1401 UT-069	018
#1440/1311 STERLING REPORT PROGRAM DEVELOPMENT	1440 RG-720	026	UTION PROGRAM FOR A TAPE 1401	#GENERAL DISTRIB	1401 1F-03X
#STERLING SUBROUTINES	1440 MI-701	024	#TAPE TO-CARD FOR THE SHARE LIBRARY	1401 13.1.028	073
#INFORMATION STORAGE AND RETRIEVAL PROGRAM	1401 10.3.047	070	#TAPE TO-CARD UTILITY PROGRAM	1401 UT-028	016
#DIRECT ACCESS STORAGE DEVICE INDEX SEQUENTIAL FILE	1401 01.4.215	052	#TAPE TO-PRINTER UTILITY PROGRAM	1401 UT-026	016
#STACK - STORAGE ON TAPE TO ABRIDGE CARD-KEEPING	1401 01.4.107	044	#TAPE TO-TAPE FOR THE SHARE LIBRARY	1401 13.1.025	073
#STORAGE PUNCHOUT PROGRAM	1401 01.4.038	040	# /CON TAPE/	1460 SV-090	031
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405 STAR-SYSTEM FOR STORING, MAINTAINING AND RETRIEVING #1	1401 02.0.008	054	TE AND LOCAL INCOME TAXES FOR IBM 1401 TAPE SYSTEM	#STA	1401 14.0.012
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OUS MULTIPLY DIVIDE SUB-ROUTINE	#1401/1460 SIMULANE 1401 10.2.009	065	#ADMINISTRATIVE TERMINAL SYSTEM	1401 01.4.188	050
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ERVICAL CASEFINDING SUMMATION AND REPORT #HOSPITAL CANCER C	1440 01.1.003	075	#PREASSEMBLY TEST FOR AUTOCODER SOURCE DECKS	# DEPRE	1401 06.0.017
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#AUTOCODER SYMBOLIC CORE DUMP ROUTINE	1440 02.0.001	077	#LOG SCALE VERSUS TIME SCALE GRAPHICAL PRINTOUT	1401 06.0.019	063
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#MACBADA 8K FORTRAN	1440 SV-091	027
01 AUTOCODER OPS TO 1440 OPS ON 1401 #CVZZA TO CNVERT 14	1440 01-3.002	076
01 AUTOCODER OPS TO 1440 OPS ON 1440 #CVOOA TO CNVERT 14	1401 01-4-209	051
#IBM 1440 SORT 13	1440 02-5.002	077
#IBM 1440 SORT 13	1440 SM-036	027
ATOR #1440 STERLING BASIC REPORT PROGRAM GENER	1440 SM-037	027
#1440 STERLING MACRO INSTRUCTIONS	1440 RG-721	026
STED INSTRUCTION #1440-1026 OPERATING SYSTEM COMPUTER ASSI	1440 MI-702	024
ORY MONITOR #1440-1026-1070 MULTIPROGRAMMING SUPERVIS	1440 05-091	025
FOR 1401/40/60 #1440-1070 PROCESS COMMUNICATION MONITOR	1440 01-1.003	075
FOR 1440 BASIC #1440-1070 PROCESS COMMUNICATION MONITOR	1440 SV-090	027
#1440-1311 DISK SORT PACKAGE	1440 SV-091	027
CARD REPRODUCER FOR 1440/1311 #VARIABLE	1440 02-1.003	076
THE USE OF THE IBM 1440/1311 #A PROGRAM TO DEMONSTRATE	1440 02-3.001	077
PROGRAM #1440/1311 BILL OF MATERIAL PROCESSOR	1440 13-0.001	080
#1440/1311 CARD-TO-DISK CONSECUTIVE LOAD	1440 ME-02X	024
#1440/1311 DISK ADDRESS UTILITY	1440 02-1.001	076
#1440/1311 REPORT PROGRAM GENERATOR	1440 02-1.002	076
PMENT #1440/1311 STERLING REPORT PROGRAM DEVELO	1440 RG-020	025
#1440/1311 80-80 REPRODUCE PROGRAM	1440 RG-720	026
#COBOL FOR IBM 1440/1401/1460	1440 02-3.003	077
ATIONS IOCS FCR THE 1448/DIRECT DATA CHANNEL #COMMUNIC	1440 CB-073	019
#IBM 1460 SORT 14	1440 10-011	023
#IBM 1460 SORT 14	1460 SM-068	031
ACTER #1401 AND 1460 TAPE UTILITY PROGRAMS WITH 12C CHAR	1460 SM-069	031
FOR-1401 AUTOCODER #1460-1070 PROCESS COMMUNICATION MONITOR	1401 UT-025	016
FOR 1401 BASIC #1460-1070 PROCESS COMMUNICATION MONITOR	1460 SV-090	031
#1460/1401 COMMUNICATIONS IOCS /1448-DDC/	1460 SV-091	031
ULING/ 8K, 12K, AND 16#LESS /LEAST-COST ESTIMATING AND SCHED	1460 10-011	030
REVISED FOR USE ON 1974 DATA TRANSMISSION #BASIC AUTOCODER	1401 10-3.002	065
SYSTEM/360 RPG MODEL 20 CONVERSION PROGRAM #1401 FARGO TO S	1440 01-2.003	075
O #SYSTEM/360 MODEL 20 RPG PRELISTER RUN ON THE IBM 1401/146	1401 02-0.036	057
PROG. /2401 THROUGH 2404/ # TAPE SORT/MERGE	1401 01-3.020	038
ERGE PROG. /FOR THE 2415/ # TAPE SGR T /M	1401 LM-078	011
PAYROLL HOURS FROM 357 JOB-IN AND #DETERMINATION OF	1401 LM-080	011
#SORT 51	1401 10-3.043	069
#SORT 52	1440 SM-035	026
#SORT 53	1440 SM-032	026
#SORT 54	1440 SM-033	026
#SORT 54 DISK RESIDENT	1440 SM-034	026
#SORT 61	1440 01-6.001	076
#SORT 62	1401 SM-067	015
RDINARY/ #THE 62 CFO PROGRAM /CONSOLIDATED FUNCTIONS O	1401 SM-064	015
#SORT 63	1401 IL-01X	008
#SORT 64	1401 SM-065	015
TO LABEL SYSTEM/360 7-TRACK TAPES #1401/1460 PROGRAM	1401 SM-066	015
#7040/44 - 1401 AUXILIARY PROGRAMS	1401 01-4-222	053
RAM #7040/44 - 1401 INPUT/OUTPUT CONTROL PRCG	1401 UT-153	018
RAM #7040/7044 - 1401 PERIPHERAL UTILITY PRCG	1401 10-152	010
#INPUT PROGRAM FOR 7090/7094 SUPPORT PACKAGE FOR IBM	1401 UT-157	018
#7090/994 - 1401 PERIPHERAL OUTPUT PROGRAM	1401 UT-938	018
RT CAPABILITY #SORT 71- SORT 7 WITH THREE TAPE UNBALANCED SC	1401 UT-158	018
REE DISK SORT -SORT 72 #TH	1401 01-2.019	036
LITY SYSTEM FOR THE 7710 #TAPE LTI	1401 01-2.021	037
SSEMBLY PROGRAM FOR 7750 USING THE IBM 1401 #A	1401 UT-069	018
# THE 8K-16K 1401	1401 SP-133	015
H ON #ONE CARD 80-80 CARD TO PRINTER PROGRAM WITH BRANC	1401 03-0.034	059
#ONE CARD 80-80 LIST	1440 02-3.002	077
#ONE CARD 80-80 LIST	1401 01-3.011	038
#1440/1311 80-80 REPRODUCE PROGRAM	1401 01-4.040	040
#MULTI-PURPOSE 80-80 REPRODUCING	1440 02-3.003	077
#ONE OF ONE - 80X80 REPRODUCE WITH LAST CARD TEST	1401 01-4.190	050
	1401 01-4.188	050

IBM Programs

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1240-FB-12X DEMAND DEPOSIT CONVERSION PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1240-FB-12X

THE IBM 1240 DEMAND DEPOSIT CONVERSION PROGRAM /1240-FB-12X/ IS DESIGNED TO CONVERT MICR PAPER DOCUMENTS TO DISK PACK RECORDS IN THE FORMAT REQUIRED BY THE 1440 DEMAND DEPOSIT APPLICATION PROGRAM. THE PROGRAM IS USED IN CONJUNCTION WITH THE 1440 DEMAND DEPOSIT PROGRAM TO DO THE COMPLETE DEMAND DEPOSIT APPLICATION ON THE 1240 SYSTEM.

FEATURES- IT ALLOWS SORTING OF PAPER DOCUMENTS BASED ON AN ACCOUNT NUMBER LIMITS TABLE PREPARED BY THE USER. OTHER FUNCTIONS ARE IDENTICAL TO THE 1440 DEMAND DEPOSIT CONVERSION RUN.

USE- THIS PROGRAM IS USED IN PLACE OF THE 1440 DEMAND DEPOSIT CONVERSION RUN ON THE 1240 SYSTEM. IT MAY BE USED WITHOUT MODIFICATION OR MAY BE EASILY MODIFIED IF USER REQUIREMENTS DICTATE. TWO PROGRAMS ARE FURNISHED WHICH ALLOW THE USE OF A BUFFERED OR AN UNBUFFERED 1443 PRINTER.

PROGRAM REQUIREMENT- DEMAND DEPOSIT ACCOUNTING FOR THE IBM 1440 DATA PROCESSING SYSTEM /1440-FB-03X/.

MINIMUM SYSTEM REQUIREMENTS-

A 1241 PROCESSING UNIT MODEL A4., 1442 CARD READ PUNCH MODEL 1., 1443 PRINTER WITH ADDITIONAL PRINT POSITIONS., 1447 CONSOLE WITH SENSE SWITCHES., TWO 1311 DISK STORAGE DRIVES, MODELS 1 AND 2.

BASIC PROGRAM MATERIAL -

DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.

CARD DECKS - SOURCE AND PROGRAM CARDS.

1240-SM-030 BANK DOCUMENT SORT PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1240-SM-030

THE IBM 1240 BANK DOCUMENT SORT PROGRAM, NO. 1240-SM-030, PROVIDES A SORTING GENERAL PURPOSE SORTING PROGRAM FOR FINE SORTING OF DOCUMENTS, WHICH IS AN INTEGRAL PART OF DEMAND DEPOSIT ACCOUNTING PROCEDURES. THE PROGRAM IS SPECIFICALLY DESIGNED FOR THIS PURPOSE. DOCUMENTS CAN BE SORTED OVER ANY VALID MICR FIELD OF FROM ONE TO TEN DIGITS. THE USER SPECIFIES THE FIELD AND THE DIGITS IN THE FIELD TO BE SORTED IN A CONTROL CARD. THE PROGRAM CAN SEQUENCE CHECK COLUMNS PREVIOUSLY SORTED. THE USER MAY SPECIFY IN THE CONTROL CARD MODULUS 10 OR MODULUS 11 CHECKING WHEN DESIRED. TO HANDLE SPECIAL APPLICATIONS, UP TO THREE USER ROUTINES MAY BE INCLUDED- /1/ A SPECIALIZED SORT ROUTINE, /2/ A CHECKSUM ROUTINE TO HANDLE CHECK DIGITS DERIVED BY A METHOD OTHER THAN MODULUS 10 OR 11, /3/ A REJECT ROUTINE. THE USER ROUTINES ARE SPECIFIED BY INCLUDING ACTUAL ADDRESSES OF THE ROUTINES IN THE CONTROL CARD.

MINIMUM SYSTEM REQUIREMENTS-

AN 8K 1240 SYSTEM WITH... ONE 1442 CARD READ PUNCH OR 1442 CARD READER. THE PROGRAM UTILIZES THE DASH TRANSMISSION FEATURES WHERE THEY ARE INSTALLED. NOTE- FOR AUTOCODER ASSEMBLY OF USER ROUTINES, A 1443 PRINTER AND CARD PUNCHING FACILITY /1442 OR 1444/ ARE REQUIRED.

BASIC PROGRAM MATERIAL-

DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS AND OPERATING PROCEDURES.

CARD DECKS - BANK DOCUMENT SORT PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL- FLOWCHARTS AND PROGRAM LISTING.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401

1401-AT-017 CARD SYSTEM ERROR-DETECTION AIDS

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-AT-017

TO PROVIDE A SIMPLE 1401 SYSTEM FOR CHECKING OUT PROGRAMS. EQUIPMENT SPECIFICATIONS NO SPECIAL FEATURES REQUIRED. THE PROGRAMS WILL PROVIDE A CONTROL CARD METHOD FOR /PATCHING/ A 1401 PROGRAM WITH INSTRUCTIONS THAT WILL EITHER REWIND THE PROGRAM AT SELECTED TIMES, 2- PRINT SELECTED AREAS OF STORAGE AT SELECTED TIMES, MEANS FOR CONVENIENTLY REMOVING THE PATCHES ARE ALSO PROVIDED.

BASIC PROGRAM MATERIAL -

DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS... OPERATING PROCEDURES.

CARD DECK - CONDENSED PROGRAM DECK.

1401-AT-072 AUTO-TEST

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-AT-072

AUTO-TEST IS A TESTING PROGRAM FOR THE IBM 1401 DATA PROCESSING SYSTEM. IT EFFECTIVELY USES THE POWER OF THE 1401 SYSTEM TO AID IN THE TESTING OF AUTOCODER, SPS, AND FARGO PROGRAMS. AUTO-TEST PROVIDES THE ABILITY TO STACK PROGRAMS AND PRODUCES, WITH A MINIMUM OF OPERATOR INTERVENTION, THE NECESSARY DOCUMENTATION TO EVALUATE THE TESTING PROGRAMS. 1 1401 PROCESSING UNIT /ANY MODEL WITH 1 1401 PROCESSING UNIT / ANY MODEL WITH 4000 OR MORE STORAGE POSITIONS/, ADVANCE PROGRAMMING FEATURE, HIGH LOW EQUAL COMPARE FEATURE, SENSE SWITCHES, 1 1402 CARD READ-PUNCH, 1 1403 PRINTER /MODEL 2/, 1 TAPE UNIT /2 TAPE UNITS IF THE RAMAC FILE TRACE AND/OR SNAPSHOT FEATURES ARE UTILIZED/ THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -

DOCUMENTATION - PROGRAM WRITE-UP, FLOWCHARTS, OPERATING INSTRUCTIONS, GENERAL INFORMATION MANUAL.

MACHINE READABLE - ONE TAPE CONTAINING THE AUTO-TEST SYSTEM DECK AND AUTOCODER LISTING WITH SELECT LOADING PROGRAM.

1401-AT-081 1401/1311 AUTO-TEST 8K ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-AT-081

AN INTEGRATED SET OF UTILITY PROGRAMS...

AUTO-TEST IS DESIGNED TO PROVIDE DOCUMENTATION FOR PROGRAM EVALUATION DURING A PROGRAM TESTING RUN. IT CAN BE USED ON AN IBM 1401/1311 OR 1460/1311 SYSTEM TO TEST PROGRAMS ASSEMBLED BY THE IBM 1401/1311 AUTOCODER PROGRAM. BECAUSE TEST RUNS CAN BE PLANNED TO PROCEED WITH A MINIMUM OF OPERATOR INTERVENTION, AUTO-TEST IS A USEFUL TOOL FOR REMOTE TESTING. AUTO-TEST 16K PERMITS TESTING OF LARGER PROGRAMS THAN DOES ITS COMPANION 8K SYSTEM.

FUNCTIONS CAN BE SELECTIVELY SPECIFIED...

THE AUTO-TEST SYSTEM RESIDES IN DISK STORAGE DURING TESTING. IT CONTROLS PROGRAM TESTS IN WHICH THE FOLLOWING FUNCTIONS CAN BE SELECTIVELY SPECIFIED-

- CLEAR SELECTED AREAS OF DISK STORAGE
- LOAD PROGRAM DATA FROM CARDS INTO DISK STORAGE
- PRINT SELECTED AREAS OF DISK STORAGE
- CREATE TAPE FILES PRIOR TO THE TEST OF EACH INDIVIDUAL PROGRAM
- PRINT FIXED - OR VARIABLE-LENGTH, BLOCKED OR UNBLOCKED TAPE RECORDS
- CREATE AND MAINTAIN IBM STANDARD TAPE LABELS /120-CHARACTER/
- MAINTAIN DISK LABELS ON THE LABEL TRACK OF A DISK PACK
- LOAD THE PROGRAM TO BE TESTED FROM CARDS
- PRINT DATA READ FROM OR WRITTEN IN DISK STORAGE DURING PROGRAM EXECUTION
- PRINT DATA FROM SELECTED AREAS OF CORE STORAGE AT SPECIFIC TIMES DURING PROGRAM EXECUTION
- PRINT CORE STORAGE WHEN PROGRAM EXECUTION TERMINATES
- LIST PUNCHED CARD INPUT BEFORE TEST AND OUTPUT FOLLOWING TEST

SEVERAL PROGRAMS MAY BE STACKED FOR TESTING IN A SINGLE RUN. A CONVENIENT CARD FORMAT FOR PATCHING PROGRAM DECKS BEING TESTED IS PROVIDED TO FACILITATE RETESTING OF ANY PROGRAM.

MINIMUM SYSTEM REQUIREMENTS -

AN 8K OR 16K 1401 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 2 OR 1404 PRINTER... ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE OR AN 8K OR 16K 1460 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE... IBM 1402 CARD READ PUNCH... ONE IBM 1403 PRINTER... INDEXING AND STORE ADDRESS REGISTER.

BASIC PROGRAM MATERIAL -

DOCUMENTATION - PROGRAM WRITE-UP... SYSTEM LISTINGS... SPECIFICATIONS AND OPERATING PROCEDURES.

CARD DECKS - BUILD AUTO-TEST SYSTEM DISK PACK /DECK A/... INITIATE PROGRAM TESTING /DECK B/... RESTART /DECK C/... SAMPLE PROGRAM TEST DECK.

OPTIONAL PROGRAM MATERIAL -

SYSTEM FLOWCHARTS

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-AT-082 1401/1311 AUTO-TEST 16K ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-AT-082

AN INTEGRATED SET OF UTILITY PROGRAMS...

AUTO-TEST IS DESIGNED TO PROVIDE DOCUMENTATION FOR PROGRAM EVALUATION DURING A PROGRAM TESTING RUN. IT CAN BE USED ON AN IBM 1401/1311 OR 1460/1311 SYSTEM TO TEST PROGRAMS ASSEMBLED BY THE IBM 1401/1311 AUTOCODER PROGRAM. BECAUSE TEST RUNS CAN BE PLANNED TO PROCEED WITH A MINIMUM OF OPERATOR INTERVENTION, AUTO-TEST IS A USEFUL TOOL FOR REMOTE TESTING. AUTO-TEST 16K PERMITS TESTING OF LARGER PROGRAMS THAN DOES ITS COMPANION 8K SYSTEM.

FUNCTIONS CAN BE SELECTIVELY SPECIFIED...

THE AUTO-TEST SYSTEM RESIDES IN DISK STORAGE DURING TESTING. IT CONTROLS PROGRAM TESTS IN WHICH THE FOLLOWING FUNCTIONS CAN BE SELECTIVELY SPECIFIED-

- CLEAR SELECTED AREAS OF DISK STORAGE
- LOAD PROGRAM DATA FROM CARDS INTO DISK STORAGE
- PRINT SELECTED AREAS OF DISK STORAGE
- CREATE TAPE FILES PRIOR TO THE TEST OF EACH INDIVIDUAL PROGRAM
- PRINT FIXED / OR VARIABLE-LENGTH, BLOCKED OR UNBLOCKED TAPE RECORDS
- CREATE AND MAINTAIN IBM STANDARD TAPE LABELS /120-CHARACTER/
- MAINTAIN DISK LABELS ON THE LABEL TRACK OF A DISK PACK
- LOAD THE PROGRAM TO BE TESTED FROM CARDS
- PRINT DATA READ FROM OR WRITTEN IN DISK STORAGE DURING PROGRAM EXECUTION
- PRINT DATA FROM SELECTED AREAS OF CORE STORAGE AT SPECIFIC TIMES DURING PROGRAM EXECUTION
- PRINT CORE STORAGE WHEN PROGRAM EXECUTION TERMINATES
- LIST PUNCHED CARD INPUT BEFORE TEST AND OUTPUT FOLLOWING TEST

SEVERAL PROGRAMS MAY BE STACKED FOR TESTING IN A SINGLE RUN. A CONVENIENT CARD FORMAT FOR PATCHING PROGRAM DECKS BEING TESTED IS PROVIDED TO FACILITATE RETESTING OF ANY PROGRAM.

MINIMUM SYSTEM REQUIREMENTS...

AN 8K OR 16K 1401 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 2 OR 1404 PRINTER... ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE OR AN 8K OR 16K 1460 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE... IBM 1402 CARD READ PUNCH... ONE IBM 1403 PRINTER... INDEXING AND STORE ADDRESS REGISTER.

BASIC PROGRAM MATERIAL -

DOCUMENTATION - PROGRAM WRITE-UP... SYSTEM LISTINGS... SPECIFICATIONS AND OPERATING PROCEDURES.

CARD DECKS - BUILD AUTO-TEST SYSTEM DISK PACK /DECK A/... INITIATE PROGRAM TESTING /DECK B/... RESTART /DECK C/... SAMPLE PROGRAM TEST DECK.

OPTIONAL PROGRAM MATERIAL -

SYSTEM FLOWCHARTS

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-AU-005 BASIC AUTOCODER 2K ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-AU-005

THE 1401 BASIC AUTOCODER 2K PROCESSOR ACCEPTS SOURCE STATEMENTS WRITTEN IN BASIC AUTOCODER 2K LANGUAGE AND PRODUCES MACHINE LANGUAGE OBJECT PROGRAMS. BASIC AUTOCODER 2K IS A 2-PASS SYSTEM. THE SOURCE PROGRAM IS PROCESSED AND THE RESULTING OBJECT PROGRAM IS CONVERTED BY ONE OF TWO SPECIAL CONDENSING

IBM Programs

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CONTINUED FROM PRIOR PAGE--
ROUTINES FROM CNE-INSTRUCTION-PER-CARD TO CONDENSED CARD FORMAT.
MINIMUM SYSTEM REQUIREMENTS
A 2K 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES.
CARD DECKS - PROCESSOR DECK... PRE-LIST ROUTINE DECK... POST-LIST
ROUTINE DECK... CONDENSING ROUTINES DECKS 1 AND 2... SAMPLE
PROBLEM DECK.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS... PROGRAM LISTINGS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-AU-008
DISK/

1401/1440/1460 AUTOCODER /ON

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ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-AU-008

THE 1401/1440/1460 AUTOCODER /ON DISK/, 1401-AU-008, SYSTEM...
/1/ ENABLES A PROGRAM WRITTEN IN 1401/1440/1460 AUTOCODER
/ON DISK/ LANGUAGE TO BE ASSEMBLED ON A 1401, 1440 OR 1460
SYSTEM... /2/ OUTPUT IS USED TO EXECUTE THE PROGRAM...
/3/ OFFERS ASSEMBLY SPEEDS UP TO TWO-AND-ONE HALF TIMES FASTER
THAN EXISTING 1401-1440/1311 AUTOCODERS ON SYSTEMS WITH MORE THAN
4K STORAGE.
THE SOURCE PROGRAM IN THE 1401/1440/1460 AUTOCODER LANGUAGE,
PUNCHED IN CARDS OR AS CARD IMAGES ON DISK STORAGE, IS ASSEMBLED
ON A 1401, 1440, OR 1460 SYSTEM. INPUT IN 1440 BASIC AUTOCODER
FORMAT CAN BE USED. THE OUTPUT OBJECT PROGRAM IS THE 1401, 1440,
OR 1460 MACHINE LANGUAGE EQUIVALENT. THE OBJECT PROGRAM MAY BE IN
CONDENSED CARDS, OR IF ,,LOAD-AND-GO,, IS DESIRED, THE OBJECT
PROGRAM MAY BE DIRECTLY LOADED FROM DISK STORAGE FOR IMMEDIATE
EXECUTION. PROGRAM DOCUMENTATION AND DIAGNOSTIC OUTPUT ARE
PRINTED BY THE 1403 OR 1443 PRINTER. A STACK OF SEVERAL SOURCE
PROGRAMS MAY BE ASSEMBLED AT ONE TIME.
IN ADDITION TO THE ASSEMBLY FUNCTION THERE ARE FOUR OTHER
SEPARATE OPTIONS--
- A LIBRARY OPTION TO ADD, DELETE, OR MODIFY LIBRARY ROUTINES
- A LISTING OPTION TO OBTAIN A LISTING OF SPECIFIED LIBRARY
ROUTINES, OR OF THE ENTIRE LIBRARY ROUTINES, OR OF THE ENTIRE
LIBRARY, OR A LIST OF THE LIBRARY ROUTINE NAMES
- A SYSTEM OPTION TO CREATE OR MODIFY THE AUTOCODER PROGRAM CN
THE SYSTEM DISK PACK
- A LIBRARY OPTION TO RELOCATE THE LIBRARY
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM
REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE
TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... AUTOCODER LANGUAGE
SPECIFICATIONS... LISTING OF SAMPLE SOURCE PROGRAM...
SPECIFICATIONS... OPERATING PROCEDURES.
CARD DECKS-- AUTOCODER SYSTEM DECK... IBM-SUPPLIED MACROS...
SAMPLE SOURCE PROGRAM DECK.
MAGNETIC TAPE - ONE REEL IS REQUIRED IF USER DESIRES PROGRAM
ON TAPE IN CARD IMAGE FORM.
*SEE OPTIONAL MATERIAL.

OPTIONAL PROGRAM MATERIAL-- FLOWCHARTS... LISTINGS.
*** ONE OF THE FOLLOWING PROGRAMS SHOULD BE OBTAINED TO
PREPARE DISK STORAGE TO STORE THE AUTOCODER SYSTEM...
/1/ 1401/1460 DISK UTILITY PROGRAM 1401-UT-053.
/2/ 1440 DISK UTILITY PROGRAMS 1440-UT-041.

1401-AU-037

AUTOCODER PROGRAM

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ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-AU-037

PURPOSE TO PROVIDE MORE POWERFUL TOOLS FOR PROGRAMMERS TO
ENABLE THEM TO CONCENTRATE THEIR EFFORTS ON THE PROBLEMS OF
PROGRAM LOGIC RATHER THAN CODING. IN ADDITION, TO PROVIDE
AN EXTREMELY FAST ASSEMBLY SYSTEM. EQUIPMENT
SPECIFICATIONS 4000 CORE-STORAGE POSITIONS 4 /FOUR/ 729 II
OR IV TAPE UNITS 1403 PRINTER MODEL 3 1402 CARD READ-PUNCH
ADVANCED PROGRAMMING FEATURES HIGH-LOW-EQUAL COMPARE
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM
REPRESENTATIVE OR ORDERED FOR EACH ITEM THAT IS ORDERED. THE
TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP, OPERATING PROCEDURES.
MACHINE READABLE - ONE TAPE /SYSTEM TAPE AND LISTINGS/.

1401-CA-04X
SYSTEM

DATA ANALYSIS AND REDUCTION

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ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CA-04X

DARS IS A SET OF PROGRAMS UNDER ITS OWN MONITOR CONTROL WHICH
CAN BE USED TO-- SELECTIVELY EXTRACT RECORDS FROM A FILE BASE
ON A VARIETY OF CONDITIONS, PRODUCE STATISTICAL ANALYSIS AND
SINGLE AND MULTI-COLUMN /MATRIX/ TABULAR REPORTS, REARRANGE
RECORDS TO ANY DESIRED FORMAT AND MAKE CONDITIONAL OR
UNCONDITIONAL INSERTIONS INTO RECORDS. ALL OF THESE FUNCTIONS
ARE OBTAINABLE IN ANY SEQUENCE BY USING SIMPLE CONTROL CARDS.
FEATURES--
- ACCEPTS CARD OR MAGNETIC TAPE INPUT
- ONE OR MORE STATISTICAL ANALYSES OR TABULAR REPORTS MAY BE
PRODUCED FROM THE SAME INPUT DATA
- REPORTS ARE PRODUCED IMMEDIATELY ON THE 1403 PRINTER
- THE SYSTEM IS USER-EXPANDABLE AND MAY BE TAILORED TO MEET
SPECIFIC NEEDS BY PROGRAM CHANGES, ADDITIONS, AND DELETIONS
USE-- THE DATA ANALYSIS AND REDUCTION SYSTEM, WRITTEN IN 1401
AUTOCODER LANGUAGE /1401-AU-037/, THE USER SELECTS THE
PROGRAMS TO BE RUN AND SPECIFIES THE ACTION TO BE TAKEN BY EACH
THROUGH THE USE OF CONTROL CARDS.
MINIMUM MACHINE REQUIREMENTS-- AN 8K 1401 SYSTEM WITH, THREE
MAGNETIC TAPE UNITS, 1402 CARD READ PUNCH, 1403 PRINTER, MODEL 2,
AND HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, MULTIPLY-
DIVIDE AND SENSE SWITCHES TO USE VARIABLE INPUT CONTROL
PROGRAM. A FOURTH TAPE UNIT IS NEEDED IF SORTING IS NECESSARY.

THE NUMBER OF TAPES INDICATED MAY BE SUPPLIED OR ORDERED FROM
YOUR IBM REPRESENTATIVE. THE TAPES PROVIDED MUST BE 2400 FEET
IN LENGTH.

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BASIC PROGRAM MATERIAL -
DOCUMENTATION - APPLICATION DIRECTORY... SAMPLE PROBLEM
OUTPUT LISTING... APPLICATION DESCRIPTION H20-0207...
PROGRAMMERS AND OPERATORS MANUAL H20-0214.
MACHINE READABLE - A DTR CONTAINING THE OBJECT PROGRAM
AND SAMPLE PROBLEM IN CARD IMAGE FORM.

OPTIONAL PROGRAM MATERIAL - SYSTEM MANUAL... A FULL 2400 FOOT
REEL OF MAGNETIC TAPE CONTAINING THE SOURCE PROGRAM, AND THE
MIXED AUTOCODER OUTPUT CONSISTING OF THE ASSEMBLY LISTINGS
AND OBJECT PROGRAM CARDS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.
THE DTR /DISTRIBUTION TAPE REEL/ WILL BE SUPPLIED BY PID.

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1401-CB-070

1401 COBOL

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ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CB-070

1401 COBOL IS A COMPILER SYSTEM FOR THE IBM 1401 DATA PROCESSING
SYSTEMS.
USE OF PROGRAM-- 1401 COBOL IS USED IN CONJUNCTION WITH 1401
AUTOCODER. THEREFORE, A CURRENT VERSION OF AUTOCODER CONTAINING
A LIBRARY UPDATED WITH THE COBOL SUBROUTINES IS REQUIRED TO
OBTAIN A VALID ASSEMBLY AFTER THE COBOL RUN HAS BEEN COMPLETED.
IOCS ONE-FOR-ONE INSTRUCTIONS NORMALLY WILL BE GENERATED BY THE
COBOL PROCESSOR /WHICH REQUIRES LESS TIME FOR THE GENERATION/
HOWEVER, THE USER DOES HAVE THE OPTION OF THE COBOL PROCESSOR
OUTPUTTING IOCS MACROS. A PRE-SCAN DIAGNOSTIC RUN IS AVAILABLE
FOR THE PURPOSE OF DIAGNOSING NAME-ASSOCIATED ERRORS AND FOR
ANALYZING THE SENTENCE STRUCTURE OF THE SOURCE PROGRAM. THESE
DIAGNOSTICS ARE FAR SUPERIOR TO THOSE CONTAINED IN THE SYSTEM
ITSELF AND USE OF THE PRE-SCAN RUN IS STRONGLY RECOMMENDED. A
MINIMUM OF 8K STORAGE IS REQUIRED IF THIS OPTION IS USED. MACHINE
CONFIGURATION - 1401 WITH 4K STORAGE...4 MAGNETIC TAPES...1402
CARD-READ-PUNCH...1403 MOD.2 OR 1443 PRINTER...ADVANCED
PROGRAMMING FEATURE...SENSE SWITCHES.
THE 1401 SYSTEM USED AS THE OBJECT MACHINE MUST HAVE AT LEAST-
4,000 POSITIONS OF CORE STORAGE
INPUT-OUTPUT UNITS AS REQUIRED BY THE SOURCE PROGRAM.
ADVANCED PROGRAMMING FEATURE
HIGH-LOW-EQUAL COMPARE FEATURE
ANY FEATURES CLEARLY IMPLIED BY THE SOURCE PROGRAM
MULTIPLY-DIVIDE FEATURE IF EITHER THE MULTIPLY OR DIVIDE VERB IS
USED IN THE SOURCE PROGRAM-- OR IF THE OPERATOR *GR/OR** IS
USED IN AN ARITHMETIC EXPRESSION.
NOTE-- THE NEED TO USE THESE VERBS OR OPERATORS MAY BE ELIMINATED
BY THE USE OF THE ENTER AUTOCODER STATEMENT, WITH THE USER
SUPPLYING THE APPROPRIATE SUBROUTINE.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM
REPRESENTATIVE OR SUPPLIED. THE TAPES PROVIDED MUST BE 2400 FEET
IN LENGTH.

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BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS...
OPERATING PROCEDURES.
MAG. TAPE - ONE REEL - /TRANSMITTAL TAPE/.

OPTIONAL PROGRAM MATERIAL - OBJECT TIME SUBROUTINE FLOW DIAGRAM.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

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1401-CB-701

COBOL LANGUAGE CONVERSION

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PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CB-701

IT AIDS IN THE TRANSITION TO SYSTEM/360 BY CONVERTING
ACCEPTABLE CURRENT COBOL LANGUAGES TO EITHER SYSTEM/360
LEVEL E COBOL OR LEVEL F COBOL.
ACCEPTABLE LANGUAGES -- THE COBOL LCP WILL ACCEPT AS INPUT--
1401/1440/1460 COBOL 7070/7074 COBOL
7070/7074 FGS COBOL
1410/7010 COBOL 705/7080 COBOL
7040/7044 COBOL 7090/7094 COBOL
FEATURES--
- CARD OR TAPE INPUT -- BOTH THE LCP AND THE COBOL SOURCE
PROGRAMS CAN BE READ FROM EITHER CARDS OR TAPE.
- SINGLE OR STACKED PROGRAM CONVERSION -- A SINGLE SOURCE
PROGRAM CAN BE PRESSED FROM ONE OF THE THREE TAPE UNITS
NEEDED IN A MINIMUM CONFIGURATION. STACKED PROGRAMS CAN BE
PROCESSED IF MORE THAN THREE TAPE UNITS ARE USED.
- REPLACING THE ENVIRONMENT DIVISION -- A CONTROL CARD OPTION
ALLOWS THE USER TO REPLACE THE ORIGINAL ENVIRONMENT DIVISION
WITH A NEW CUSTOMER-WRITTEN SYSTEM/360 ENVIRONMENT DIVISION.
- CARD-CODE CONVERSION FOR DUAL BCD CHARACTERS -- A CONTROL
CARD OPTION PROVIDES AUTOMATIC CONVERSION FROM BCD INPUT CODE
TO EBCDIC OUTPUT CODE, OR VICE VERSA. IN THIS WAY, THE LCP
CAN CONVERT THE DUAL BCD CHARACTERS, FOR EXAMPLE, TWO
CHARACTERS WITH THE SAME CARD CODE, INTO THE PROPER SYSTEM/360
CARD CODES.
- DOCUMENTED LISTING -- THE LCP PROVIDES A LISTING OF THE
SOURCE AND CONVERTED PROGRAMS. THIS LISTING CONTAINS NUMERIC
CODES THAT DOCUMENT CONVERSION ACTIONS AND FACILITATE ANALYSIS
OF THE CONVERTED PROGRAM.
- OPTIONAL CARD OUTPUT -- WHEN SPECIFIED, THE LCP PRODUCES A
PUNCHED-CARD DECK THAT CONTAINS THE CONVERTED PROGRAM.
- OPTIONAL OUTPUT ON TAPE -- THE USER CAN SPECIFY THAT PRINTED
AND/OR PUNCHED OUTPUT ARE TO BE RECORDED ON TAPE.
CONVERSION SAVINGS-- THE COBOL LCP WILL REDUCE THE AMOUNT
OF REPROGRAMMING NECESSARY TO CONVERT CURRENT COBOL PROGRAMS
INTO SYSTEM/360 COBOL PROGRAMS. USE OF THE LCP WILL REDUCE TIME
AND MONEY SPENT ON RECODING, CLERICAL ACTIVITIES, AND PROGRAM
DEBUGGING. ALTHOUGH THE SAVINGS TO BE REALIZED WILL VARY FOR
THE INDIVIDUAL SOURCE PROGRAMS, THE TYPICAL SAVINGS WILL BE
50 PER CENT OF THE TOTAL COBOL PROGRAM CONVERSION EFFORT
CONSISTING OF STATEMENT CONVERSION, COMPILATION, AND DEBUGGING.
MINIMUM SYSTEM REQUIREMENTS-- AN 8K 1401 SYSTEM WITH ... A
1402 CARD READ PUNCH ... 1403 PRINTER MODEL 2 ... THREE TAPE
UNITS ... THE ADVANCED PROGRAMMING FEATURE ... THE
HIGH-LOW-EQUAL COMPARE FEATURE /OR AN IBM SYSTEM/360 WITH
1401 COMPATIBILITY AND CORRESPONDING FEATURES AND I/O DEVICES/.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...PROGRAM MATERIAL LIST...
COBOL TRANSITION AIDS MANUAL.
MACHINE READABLE - ONE REEL OF TAPE CONTAINING THE COBOL
LANGUAGE CONVERSION OBJECT DECK.

IBM Programs

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OPTIONAL PROGRAM MATERIAL - ONE REEL OF TAPE CONTAINING THE
CARD LANGUAGE CONVERSION SOURCE DECKS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.
THE NUMBER OF TAPES NECESSARY TO OBTAIN THE PROGRAM MATERIAL
MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE.
THE TAPES SHOULD BE 2400 FEET IN LENGTH.

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OPTIONAL PROGRAM MATERIAL - SYSTEMS MANUAL...4K-8K SOURCE
PROGRAM /OVER 5000 CARDS/.

1401-CN-02X AUTOPROPS II NUMERICAL

CONTROL PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CN-03X

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1401-CR-01X SELECTIVE DISSEMINATION OF INFORMATION SYSTEM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CR-01X

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AUTOPROPS II IS A 1401 COMPUTER PROGRAM FOR X-Y AXIS N/C
MACHINE TOOLS TO COMPUTE POINTS AND POINT ARRAYS USED IN
DRILLING, BORING, TAPPING, STAMPING, RIVETING, ETC.
AUTOPROPS II IS EXPANDED TO GIVE FOUR DECIMAL OUTPUT
ACCURACY FOR MACHINE TOOLS SUCH AS JIG GRINDERS AND
JIG BORERS. ANYONE HAVING TWO AXES POINT-TO-POINT N/C
MACHINE TOOLS SHOULD BE INTERESTED IN THE AUTOPROPS II
PROGRAM TO REDUCE LEAD TIMES, TOOLING COSTS, AND EASY
MODIFICATION RESULTING FROM ENGINEERING DESIGN CHANGES.
NO NEW LANGUAGE IS NECESSARY TO PROGRAM A PART WITH
AUTOPROPS II BECAUSE THE SOURCE STATEMENTS REQUIRE ONLY
SIMPLE ARITHMETICAL DESCRIPTIONS FAMILIAR TO EVERYONE.
AS MANY AS 999 POSITIONS IN A PATTERN, SUCH AS A BOLT CIRCLE
OR MATRIX, CAN BE PROGRAMMED WITH A SINGLE INPUT STATEMENT.
SMALL PARTS OFTEN LOADED IN A MULTIPLE STATION LOADING
FIXTURE CAN BE PROGRAMMED AS A MATRIX AND PROGRAMMING
TIME IS REDUCED IN MANY CASES OVER HAND METHODS. A TEST
PROGRAM AND A PLOT PROGRAM GIVE THE PROGRAMMER AN
OPPORTUNITY TO VERIFY HIS RESULTS BEFORE MACHINING A PART,
THEREBY REDUCING TIME AND ERRORS TO A MINIMUM. MINIMUM
REQUIREMENTS ARE A 1401 WITH 4K STORAGE, CARD INPUT/OUTPUT
AND 1403 PRINTER MDL 2.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL LISTINGS.
MACHINE READABLE - OBJECT PROGRAM DECK... SAMPLE PROBLEM DECK.

OPTIONAL PROGRAM MATERIAL - SOURCE DECK
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-CN-13X 1400-1311 LINEAR PROGRAMMING

SYSTEM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CN-13X

LINEAR PROGRAMMING IS A MATHEMATICAL PROGRAMMING TECHNIQUE FOR
DETERMINING THE SOLUTION TO A SYSTEM OF LINEAR
INEQUALITIES. THIS SOLUTION MAY BE AN OPTIMUM ALLOCATION OF
RESOURCES /CAPITAL, RAW MATERIALS, MANPOWER, ETC./ TO SPECIFIED
ACTIVITIES /INVESTMENTS, PRODUCTS, JOBS/ IN ORDER TO OBTAIN A
PARTICULAR OBJECTIVE /MINIMUM EXPENSE, MAXIMUM PROFIT/ WHEN THERE
ARE ALTERNATE USES FOR THESE RESOURCES. LINEAR PROGRAMMING PLAYS
AN IMPORTANT ROLE IN MATERIAL ALLOCATION, INGREDIENT BLENDING
/FEED, FLOUR, GASOLINE ETC./, PRODUCTION SCHEDULING, AND
DISTRIBUTION AND SHIPPING. THE SYSTEM IS COMPOSED OF A NUMBER OF
PROGRAMS STORED ON DISK. THE PROGRAMS ARE CALLED BY PROCEDURE
CONTROL CARDS KNOWN AS AGENDUM CARDS. THE SEQUENCE OF AGENDUM
CARDS DEFINES THE SOLUTION PROCEDURE BY CALLING THE PROCESSING
AGENCY FOR AN APPLICATION. THE SOURCE LANGUAGE IS IBM 1401/1440/
1460 AUTOCODER ON DISK.

FEATURES ARE-

DATA ORIGINATES FROM CARDS IN SHARE STANDARD FORMAT.
ALTERNATE OBJECTIVE FUNCTIONS AND RIGHT-HAND SIDES ARE
SPECIFIED BY NAME FOR OPTIMIZATION.
A MODIFIED SIMPLEX ALGORITHM WITH BOUNDED VARIABLES IS USED TO
MAXIMIZE OR MINIMIZE THE OBJECTIVE FUNCTION.
FULL ECONOMIC ANALYSIS OF THE PRICE-ACTIVITY-COST RELATIONSHIPS
FOR STRUCTURES AND OF THE ACTIVITY-COST RELATIONSHIP
FOR ROW CONSTRAINTS IS PROVIDED.
SOLUTION CAN BE INTERRUPTED TO PROCESS HIGHER PRIORITY JOBS,
AND CONTINUED FROM THE POINT OF INTERRUPTION.
STORING PROGRAMS ON DISK ENABLES THE SYSTEM TO PROVIDE
COMPREHENSIVE SOLUTION PROCEDURES AND POST-OPTIMAL ANALYSIS.
OPTIONAL FEATURES CAN BE USED TO INCREASE SOLUTION SPEED.

THE BOUNDED VARIABLES ALGORITHM REDUCES THE MATRIX SIZE OF MANY
LP PROBLEMS. UPPER AND LOWER BOUNDS ON VARIABLES ARE HANDLED
EXPLICITLY SO THAT NO ,BOUND ROWS, ARE NEEDED. ROWS MAY HAVE
BOTH HIGH AND LOW LIMITS, FURTHER REDUCING THE NUMBER OF ROWS
REQUIRED TO SPECIFY THE PROBLEM. THE PROBLEM MATRIX SIZE MAY
HAVE UP TO 47 ROWS AND 900 COLUMNS ON A 4K SYSTEM AND UP TO 97
ROWS AND 900 COLUMNS ON AN 8K OR LARGER SYSTEM. THE NUMBER OF
ROWS AND COLUMNS INCLUDES OBJECTIVE FUNCTIONS AND RIGHT-HAND
SIDES.

MINIMUM SYSTEM REQUIREMENTS-

1401 -- 4K, HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING,
1402 CARD READ PUNCH, 1403 PRINTER, ONE 1311 DISK
STORAGE DRIVE, OR
1440 -- 4K, INDEXING AND STORE ADDRESS REGISTERS, 1442 CARD READ
PUNCH, 1443 PRINTER, ONE 1311 DISK STORAGE DRIVE, OR
1460 -- 8K, INDEXING AND STORE ADDRESS REGISTERS, 1402 CARD READ
PUNCH, 1403 PRINTER, ONE 1311 DISK STORAGE DRIVE.
OPTIONAL FEATURES- ADDITIONAL 4K OF CORE STORAGE INCREASES
PROBLEM CAPACITY TO 97 ROWS. MULTIPLY-DIVIDE AND DIRECT SEEK
FEATURES CAN BE USED, IF AVAILABLE, TO REDUCE SOLUTION TIME.
SENSE SWITCHES ALLOW THE USE OF THE SOLUTION INTERRUPT FEATURE
AND PROVIDE A MEANS OF IN-LINE CORRECTION OF INPUT DATA. PROGRAM
DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES.
ONLY ONE REEL IS REQUIRED IF ONE OR MORE 1401/1440 PROGRAMS ARE
ORDERED AT THE SAME TIME.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.
THE NUMBER OF TAPES INDICATED MUST BE SUPPLIED FOR EACH ITEM THAT
IS ORDERED. THE TAPES SUPPLIED SHOULD BE 2400 FEET IN LENGTH AND
TESTED AT 556 EPI.

BASIC PROGRAM MATERIAL -

DOCUMENTATION - PROGRAM WRITE-UP...APPLICATION DESCRIPTION...
USERS MANUAL...OPERATORS MANUAL.
MACHINE READABLE - SAMPLE PROBLEM...OPTION A- OBJECT DECK FOR
8K OR LARGER 1401,1440 OR 1460...OPTION B- OBJECT DECK
FOR 4K 1401 OR 1440.

THE IBM 1401 SELECTIVE DISSEMINATION OF INFORMATION
SYSTEM ACTS AS AN ELECTRONIC SCREENING AND DISTRIBUTION
AGENCY FOR INFORMATION. FROM THE FLOOD OF REPORTS, ARTICLES,
AND BOOKS RECEIVED BY AN ORGANIZATION, THE NEW SYSTEM
SELECTS AND ROUTES INFORMATION TO PEOPLE ACCORDING
TO THEIR SPECIFIC INTERESTS AND NEEDS.
DESCRIPTION- THE 1401 SDI CONSISTS OF A SERIES OF PROGRAMS AND A
COMPREHENSIVE SYSTEM DESCRIPTION TO PERMIT A CUSTOMER TO OPERATE
A CURRENT-AWARENESS PROGRAM. USERS EXPRESS THEIR INTERESTS BY
LISTS OF KEYWORDS CALLED PROFILES. ABSTRACTS OF MATERIAL TO
BE DISSEMINATED /INCLUDING THE AUTHOR, TITLE, AND SOURCE AND
COMMENTS/ ARE TYPED ON THE IBM 826 TYPEWRITER CARD PUNCH. THE
AUTO-INDEXING PROGRAM DEVELOPS INDEX KEYWORDS FROM THE ABSTRACT
TEXT. THE PROFILES ARE COMPARED WITH THE KEYWORDS OF THE
ABSTRACTS. WHEN A SUFFICIENT NUMBER OF WORDS MATCH BETWEEN
A PROFILE AND AN ABSTRACT, THE ABSTRACT IS PRINTED ON THE 1403
AND ADDRESSED TO THE USER.

FEATURES-
- ALLOWS THE SDI USER FULL CONTROL OVER HIS INTEREST PROFILE.
- ALLOWS A WIDE COMBINATION OF LOGICAL COMPARISONS, INCLUDING
,,WEIGHTED,, WORDS AND MULTIPLE PROFILES FOR EACH USER.
- PERFORMS MANY STATISTICAL CONTROL REPORTS FOR
OPERATING CONTROL AND FOR IMPROVING THE USER/S
INTEREST PROFILE.
- A NEW MATCH AND PRINT PROGRAM /SDI 8/ WHICH IS SIMILAR TO RUN 3
EXCEPT THAT IT WILL TAKE ADVANTAGE OF 16K MEMORY AND PRINT
STORAGE, IF AVAILABLE, TO OVERLAP PRINT BUFFER TIME WITH
PROCESSING TO PRODUCE FAR GREATER THROUGHPUT.
- THE ABILITY TO USE FOUR LINE ADDRESSES FOR ABSTRACT NOTICES
WHEN SUBSCRIBERS ARE AT REMOTE LOCATIONS.
- THE ABILITY TO INDEX ABSTRACTS ON MULTIPLE WORD ENTRIES WITHOUT
THE NEED FOR MANUAL INDEXING.
- LENDS ITSELF TO DAILY PROCESSING WITH MINIMUM EFFORT.
- A FACILITY FOR CREATING INPUT TO KWIC /KEYWORD-IN-CONTEXT/
INDEXING.
- THE MODIFICATION OF SDI 6 TO PERMIT MORE USER CONTROL OF THE
ABSTRACT MERGE.
- SDI 5 NOW ALLOWS PROCESSING OF CARDS THAT ARE BLANK IN COLUMNS
1 THROUGH 60.
- PROGRAMS SDI 8 AND 23 THROUGH 29 HAVE BEEN ADDED.

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USE- THE PROGRAM WILL ACCEPT ABSTRACTS PUNCHED IN ACCORDANCE
WITH THE FORMAT OUTLINED IN THE GI MANUAL. ,KEYWORD-IN-CONTEXT
/KWIC/ INDEXING. WHEN THE ABSTRACTS ARE PLACED
ON AN ABSTRACT HISTORY TAPE WHICH MAY BE USED FOR
RETROSPECTIVE SEARCHING. ANY SELECTED GROUP OF ABSTRACTS
UP TO A LIMIT OF 100 MAY BE SELECTED FROM THE HISTORY
TAPE FOR THE SDI NOTICE PRINTING RUN.

SOME SDI APPLICATION AREAS ARE-

- CURRENT-AWARENESS PROGRAM FOR RESEARCH, ENGINEERING,
MANAGEMENT, PERSONNEL IN INDUSTRY, GOVERNMENT,
BANKING, UNIVERSITIES, PUBLISHING, BROKERAGE, TRADE
ASSOCIATIONS, PROFESSIONAL SOCIETIES, ETC.
- SELECTIVE UPDATING SERVICE FOR ENCYCLOPEDIAS, JOURNALS,
LAW BOOKS, ETC.
- SELECTIVE COMMUNICATION SYSTEM TO BIND THE CENTRAL OFFICE
OF A LARGE CHAIN WITH LOCAL MANAGERS.
- POLICE MODUS OPERANDI FILES TO MATCH DETAILS OF THE
CRIME WITH THE MODUS OPERANDI FILE.
- EMPLOYMENT AGENCIES TO MATCH SKILLS AVAILABLE WITH
EMPLOYMENT REQUESTS.

PROGRAM REQUIREMENTS- USERS OF THIS PROGRAM SHOULD OBTAIN
THE IBM SORT 7, 1401-SM-060.

MINIMUM SYSTEM REQUIREMENTS- AN 8K 1401 SYSTEM WITH...
HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, AND
SENSE SWITCHES... 1402 CARD READ PUNCH... 1403 PRINTER,
MODEL 2... 4 MAGNETIC TAPE UNITS.

THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM
REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE
TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL-

DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION MANUAL... USERS
MANUAL... OPERATORS MANUAL... SYSTEMS MANUAL.
MACHINE READABLE - TWO REELS OF MAGNETIC TAPE CONTAINING -
PROGRAM LISTING... SOURCE PROGRAM CARDS... OBJECT PROGRAM
CARDS... SAMPLE PROBLEM CARDS, ALL IN CARD IMAGE.

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1401-CR-02X KEYWORD-IN-CONTEXT /KWIC/ KEYWORD-OUT-OF-CONTEXT /KWOC/ ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-CR-02X

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THIS PROGRAM WILL PRODUCE TWO BASIC KWIC OR PERMUTED TITLE
INDEXES. THE CONVENTIONAL FORMAT IS ILLUSTRATED BY THE INDEX
TO THE CATALOG OF PROGRAMS. THE KWOC FORMAT PROVIDES FULL
TITLE PRINTOUT WITH NO FRAGMENTATION. EACH NEW KEYWORD IS
PRINTED IN THE LEFT HAND MARGIN, FOLLOWED BY TITLES
CONTAINING THAT KEYWORD. KEYWORDS MAY BE BOLD-FACED, IN BOTH
HEADING AND TITLE, UTILIZING THE 1403 OVER-PRINTING
CAPABILITY. THE USER ENJOYS THE OPTION OF HAVING THE PROGRAM
AUTOMATICALLY SELECT KEYWORDS ON THE BASIS OF A COMPARE OR A
NO-COMPARE WITH A PRE-ASSIGNED LIST OF WORDS. INDEXING MAY BE
ENRICHED WITH THE ADDITION OF MANUALLY INSERTED DESCRIPTORS
AND SEE ALSO REFERENCES. A STATISTICAL COUNT IS MAINTAINED ON
ALL KEYWORDS INDEXED AND ALL WORDS PREVENTED FROM BEING INDEXED.
A NEW TYPE OF WRAP-AROUND IS EMPLOYED IN THE KEYWORD ENTRIES
WHICH SAVES THE MAXIMUM AMOUNT OF CONTEXT ADJACENT TO
THE KEYWORD AND ELIMINATES UNDESIRABLE WORD FRAGMENTS FOR
INCREASED EASE IN READING. THIS PROGRAM CAN BE USED TO
PREPARE INDEXES OF PUBLISHED ARTICLES, INTERNAL REPORTS,
SPECIAL COLLECTIONS/E.G., PHOTOGRAPHS, PAINTINGS,
PARTS LISTS/, PROCEDURE MANUALS, BIBLIOGRAPHIES,
CORRESPONDENCE FILES. KWIC INDEXES HAVE BEEN USED ON FOREIGN
LANGUAGE MATERIAL TO PREPARE INDEXES AND CONCORDANCES. ALL THAT
IS INVOLVED IN THE PREPARATION OF INPUT TO THE PROGRAM
IS THE KEYPUNCHING OF CARDS CONTAINING THE TITLE TO THE INDEX.
IF THE USER DESIRES, THE AUTHORS NAME AND SOURCE OF
PUBLICATION MAY ALSO BE KEYPUNCHED AND WOULD BE
AUTOMATICALLY INDEXED. THESE CARDS CAN BE PUNCHED AT THE RATE
OF 900-1200 PER DAY. THE PROGRAM ALSO PROVIDES FOR TAPE INPUT
OF 80 CHARACTERS CARD FORMAT RECORDS. THIS PROGRAM CAN BE USED

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CONTINUED FROM PRIOR PAGE--

TO PRODUCE KWIC INDEXES FROM INFORMATION PLACED ON TAPES FROM THE SDI PROGRAM, 1401-CR-01X. MINIMUM MACHINE REQUIREMENTS ARE A 4K 1401 SYSTEM WITH... 4 MAGNETIC TAPE UNITS IF SORTING IS DONE ON THE 1401/IF NOT, 2 UNITS ARE REQUIRED FOR THE BASIC PACKAGE... AND ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, SENSE SWITCHES, AND READ RELEASE FEATURES. THE 2-TAPE CONFIGURATION WILL BE OF PARTICULAR INTEREST AT INSTALLATIONS WHERE THE 1401 IS USED AS A PERIPHERAL EQUIPMENT FOR A LARGER MACHINE ON WHICH SORTING CAN BE DONE. IF ONLY 2 TAPES ARE ATTACHED TO THE 1401, AND A LARGER MACHINE IS NOT AVAILABLE, SORTING CAN BE DONE AT ANY OTHER AVAILABLE INSTALLATION.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...REFERENCE MANUAL.
MACHINE READABLE - A MAGNETIC TAPE CONTAINING SIX SOURCE PROGRAMS, SIX OBJECT PROGRAMS, AND THE SAMPLE PROBLEM.
THE NUMBER OF TAPES NECESSARY TO OBTAIN THE PROGRAM MATERIAL MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE. THE TAPES SHOULD BE 2400 FEET IN LENGTH.

1401-CS-02X MANAGEMENT DECISION-MAKING
LABORATORY
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CS-02X

THE MANAGEMENT DECISION-MAKING LABORATORY, OFTEN REFERRED TO AS THE MANAGEMENT GAME, IS A SIMULATION OF A GENERAL BUSINESS ECONOMY REQUIRING COMPETITIVE DECISIONS ON THE PART OF THE PARTICIPANTS. IT IS DESIGNED TO PROVIDE, IN A SHORT PERIOD OF TIME, PLANNING AND DECISION-MAKING SIMILAR TO THAT NORMALLY EXPERIENCED OVER A PERIOD OF SEVERAL YEARS IN ACTUAL BUSINESS PRACTICE. THE MATHEMATICAL MODEL IS INCORPORATED IN A PROGRAM EXECUTED ON A 1401 DATA PROCESSING SYSTEM. THE ADMINISTRATOR OF THE LABORATORY BRIEFS THE PARTICIPANTS ON FEATURES OF THE MODEL. THE PARTICIPANTS DECISIONS ARE THEN PROCESSED BY THE 1401 SYSTEM, PERIOD BY PERIOD, PRODUCING OUTPUT ON THE 1403 PRINTER /OR ON MAGNETIC TAPE/ TO BE USED IN THE NEXT DECISION PERIOD. A 4K 1401 SYSTEM WITH, 1402 CARD READ PUNCH, 1403 PRINTER MDL 2, THREE MAGNETIC TAPE UNITS /FOUR IF MAGNETIC TAPE OUTPUT IS DESIRED/, CARD PUNCH, PREFERABLY 26 PRINTING CARD PUNCH, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE AND MULTIPLY-DIVIDE SPECIAL FEATURES. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR ORDERED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM MATERIAL LIST...OPERATION, REFERENCE AND PARTICIPANTS MANUALS.
MACHINE READABLE - MAGNETIC TAPE CONTAINING THE OBJECT PROGRAM SAMPLE DATA WHICH MAY BE USED TO GENERATE EQUAL STARTING REPORTS, AUTOCODED ASSEMBLY LISTING AND OUTPUT.

OPTIONAL PROGRAM MATERIAL - SOURCE PROGRAMS ON ONE REEL OF MAGNETIC TAPE, 80 CHARACTER RECORDS, UNBLOCKED.

1401-CS-03X 1401/1620 MODULAR INVENTORY
MANAGEMENT SIMULATOR 12K 1401 VERSION
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CS-03X

A MODULAR INVENTORY MANAGEMENT SIMULATOR TO PROVIDE PRE-TESTING OF INVENTORY CONTROL SYSTEM. WRITTEN IN FORTRAN DESIGNED FOR USE OF UNDERSTANDING, USE OF MODIFICATION. SIMULATOR INCLUDES FIRST, SECOND, AND THIRD ORDER EXPONENTIAL SMOOTHING. APPROXIMATELY 9,500 POSITIONS ON 12K-16K 1401 12KOR 16K CARD 1401. THAT WILL ACCEPT FORTRAN, HI-LO-EQUAL COMPARE MULTIPLY-DIVIDE-ADVANCED PROGRAMMING, LANG-FORTRAN, RUNNING TIME-2 SECONDS PER DEMAND TRANSACTION.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
MACHINE READABLE - CONDENSED DECK.

1401-CX-03X AUTO PLOTTER PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-CX-03X

THE 1401 AUTO PLOTTER PROGRAM, 1401-CX-03X, USES THE IBM 1627 PLOTTER ATTACHED TO A 1401 SYSTEM TO PRODUCE A VARIETY OF PLOTTED FORMATS FROM NUMERICAL DATA.

- FEATURES--
- EXISTING DATA MAY BE PLOTTED-BY PUNCHING A SMALL NUMBER OF AUTO PLOTTER CONTROL CARDS.
- EXISTING PROGRAMS MAY BE EASILY MODIFIED TO GENERATE CONTROL CARDS AND DATA FOR APPLICATIONS WHERE DATA WILL ALWAYS NEED TO BE PLOTTED.
- GRAPHS MAY BE IN THE FOLLOWING FORMS OR COMBINATIONS- POINT PLOTS--GIVEN DATA PLOTTED AS ANY ALPHAMERIC CHARACTER OR A PLUS SIGN. LINE PLOTS--DATA POINTS CONNECTED WITH STRAIGHT LINES. LINE PLOTS--DATA POINTS CONNECTED WITH SECOND ORDER POLYNOMIAL CURVES. HISTOGRAM--DRAWN TO X AXIS OR TO A REFERENCE AXIS, VERTICAL BAR GRAPH.
- SIMPLE GRAPHS MAY BE DRAWN WITH ANY NUMBER OF CURVES AGAINST ONE X SCALE AND ONE OR TWO Y SCALES.
- STACKED GRAPHS--UP TO THREE X AND ASSOCIATED Y SCALES LOCATED SUCH THAT THERE ARE SIMPLE GRAPHS ONE ABOVE ANOTHER.
- MULTIPLE COPIES OF A PLOT MAY BE GENERATED WITHOUT REPROCESSING THE DATA.
- SCALES MAY BE GIVEN OR AUTOMATICALLY DETERMINED BY THE PROGRAM SO THAT DATA WILL PROPERLY FIT ON PLOT.
- MULTIPLE CURVES AND MULTIPLE SETS OF DATA MAY BE PLOTTED ON A SINGLE GRAPH.
- MULTIPLE GRAPHS MAY BE PLOTTED FROM A SET OR SETS OF DATA.
- GIVEN POINTS ON ANY LINE PLOT MAY BE PLOTTED AS PLUS /&/.
- DISTINGUISHING ALPHAMERIC TAGS MAY BE PLACED ON LINE PLOTS.
- INPUT DATA MAY BE IN A VARIETY OF FORMS.
- REFERENCE LINES MAY BE DRAWN ON ANY AXIS, SUCH AS A LINE AT THE ZERO POSITION.
- LABELS MAY RANGE IN LETTER SIZE FROM .08 INCH TO 7.92 INCHES.
- SCALES AND SCALE LABELS ARE AUTOMATICALLY SUPPLIED OR SUPPRESSED.

USE- IBM 1401 AUTO PLOTTER IS A MULTI-PHASE SYSTEM WRITTEN IN THE AUTOCODED LANGUAGE. THE SYSTEM TAPE, AFTER THE INITIAL TAPE LOAD, CONTROLS, THROUGH THE USE OF A SMALL MONITOR PACKAGE, THE LOADING AND PROCESSING OF DATA AND THE LOADING AND TRANSFER OF

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CONTINUED FROM PRIOR COLUMN--

CONTROL TO SUBSEQUENT PHASES. INPUTS TO THE SYSTEM ARE GRAPH CONTROL RECORDS AND DATA. OUTPUTS ARE A LISTING OF INITIAL INPUT, ERROR DIAGNOSTICS, AND THE PLOTTER DRAWINGS.
AN OPTION PROVIDES FOR PREPARATION OF A PLOTTING OUTPUT TAPE ON A LARGER SYSTEM WITHOUT A PLOTTER, FOR SUBSEQUENT PLOTTING ON A MINIMUM 1401 SYSTEM.
MINIMUM SYSTEM REQUIREMENTS- AN 8K 1401 SYSTEM WITH ADVANCED PROGRAMMING... HIGH-LOW-EQUAL COMPARE... MULTIPLY-DIVIDE... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 1 OR 2... 1407 CONSOLE INQUIRY STATION /WITH RPQ W01372 OR EQUIVALENT/... 1627 PLOTTER... AND FOUR MAGNETIC TAPE UNITS. RPQ W01372, OR AN EQUIVALENT RPQ, ALLOWS ATTACHMENT OF THE 1627 PLOTTER TO THE 1407 CONSOLE INQUIRY STATION.
PLOTTING FROM A TAPE PREPARED ON THE 8K 1401 OR LARGER SYSTEM MAY BE DONE ON A 1.4K 1401 SYSTEM WITH 1407 CONSOLE INQUIRY STATION /WITH RPQ, SEE ABOVE/... 1627 PLOTTER... AND ONE MAGNETIC TAPE UNIT.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DIRECTOR... APPLICATION DESCRIPTION... PROGRAMMERS MANUAL... OPERATORS MANUAL.
MACHINE READABLE - ONE MAGNETIC TAPE CONTAINING- OBJECT AND SOURCE DECKS FOR ALL PHASES... SAMPLE PROBLEM DATA... PROGRAM LISTINGS... LIBRARY MONITOR... SYSTEMS MONITOR.

OPTIONAL PROGRAM MATERIAL - SYSTEMS MANUAL INCLUDING FLOWCHARTS AND NARRATIVES.

1401-DW-02X 1405 WHOLESALE IMPACT
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-DW-02X

THE IBM RAMAC 1401 IMPACT PROVIDES THE WAREHOUSE DISTRIBUTOR WITH THE INFORMATION OF WHEN AND HOW MUCH TO BUY FOR EACH ITEM OF INVENTORY. IT DOES THIS BY USE OF PROBABILITY SCIENCE AND CONSIDERS SPECIFICALLY THE LEAD TIME, LEAD TIME VARIATION, FORECAST DEMAND, FORECAST ERROR, SHORTAGE CONDITIONS, INVENTORY CARRYING COSTS, PURCHASING/RECEIVING COSTS, FIXED STORAGE COSTS, DISCOUNT STRUCTURES, CARLOAD AND PALLET REQUIREMENTS, VENDOR MINIMUMS, VENDOR MAXIMUMS, ITEM MINIMUMS AND/OR MAXIMUMS, ETC. THE WHEN AND HOW MUCH ANSWERS WILL MINIMIZE THE TOTAL COST OF STOCKOUTS, AND CARRYING AND PURCHASING INVENTORY.

THE SYSTEM INCLUDES THE FOLLOWING SIGNIFICANT FEATURES--
EDIT ALL INPUT FOR ACCURACY AND FORMAT.
- DETERMINE THE FORECAST MODEL--HORIZONTAL, SEASONAL, TREND OR TREND SEASONAL.
- DETERMINE THE ORDERING STRATEGY THAT SHOULD BE USED AND CALCULATE THE ORDER QUANTITY FOR THE INDEPENDENT ITEMS AND THE ORDER FREQUENCY FOR THE JOINT ITEMS.
- SELECT THE PREFERRED DISCOUNT BREAKPOINT.
- CALCULATE THE SAFETY FACTOR REQUIRED FOR A PRESCRIBED LEVEL OF CUSTOMER SERVICE.
- CALCULATE INITIALIZING VALUES FOR SINGLE AND DOUBLE SMOOTHING.
AFTER IMPLEMENTATION, THE PROGRAMS SERVE--
- TO PROVIDE INFORMATION FOR MONITORING THE PERFORMANCE OF THE IMPACT SYSTEM.
- AS A GUIDE TO MANAGEMENT DECISIONS ON SUCH THINGS AS CAPITAL COST VERSUS INVENTORY LEVEL, FREQUENCY OF PURCHASING, SERVICE LEVEL VERSUS INVENTORY LEVEL.
- TO RECOMMEND THE PRODUCT MIX WHEN ORDERING MANY ITEMS FROM ONE VENDOR.

THE IMPACT COMPUTER PROGRAM LIBRARY IS WRITTEN IN AUTOCODED AND PERFORMS IN THE FOLLOWING FUNCTIONAL AREAS-- EDITING, FILE INITIALIZATION, INVENTORY ESTIMATING AND JOINT REPLENISHMENT OPERATIONS. THE LATTER PROGRAMS ARE ALSO SUPPLIED FOR USE WITH A 1401 CARD SYSTEM MINIMUM REQUIREMENTS ARE-- AN IBM 1401 RAMAC SYSTEM, MODEL F3, WITH 4K STORAGE, A 1405 MODEL 1, A 1402 READER PUNCH, AND A 1403 PRINTER, MODEL 2. THE CARD SYSTEM PROGRAMS REQUIRE A 4K 1401, 1402, AND A 1403, MODEL 2.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP.
MACHINE READABLE - CONDENSED OBJECT DECKS...
SAMPLE PROBLEM DATA DECKS.

OPTIONAL PROGRAM MATERIAL - AUTOCODED PROGRAM LISTING. ONE REEL OF MAGNETIC TAPE CONTAINING SOURCE CARD DECK IN CARD IMAGE, BCD, UNBLOCKED. NO DUMP PROGRAM IS PROVIDED. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL MUST BE ITEMIZED ON THE ORDER CARD.

1401-DW-03X 1311 WHOLESALE IMPACT
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-DW-03X

THE IBM IMPACT /INVENTORY MANAGEMENT PROGRAM AND CONTROL TECHNIQUES/ SYSTEM OF SCIENTIFIC INVENTORY MANAGEMENT PROVIDES THE WAREHOUSE DISTRIBUTOR /OR ANY ORGANIZATION WITH THE SAME INVENTORY CONTROL CHARACTERISTICS/ WITH THE INFORMATION OF ,,WHEN,, AND ,,HOW MUCH,, TO BUY FOR EACH INVENTORY ITEM CONTROLLED BY THE SYSTEM. IT DOES THIS THROUGH THE MEANS OF PROBABILITY SCIENCE IN CONJUNCTION WITH THE MANY FACTORS INFLUENCING THE DISTRIBUTORS INVENTORY CONTROL DECISIONS. FACTORS CONSIDERED INCLUDE- LEAD TIME, LEAD TIME VARIABILITY, FORECAST DEMAND, FORECAST ERROR, SERVICE DESIRED, INVENTORY, CARRYING COSTS, PURCHASING/RECEIVING COSTS, DISCOUNT STRUCTURES, MINIMUMS, MAXIMUMS, SHELF LIFE, AND PACK SIZES. THE ,,WHEN,, AND ,,HOW MUCH,, ANSWERS ARE DESIGNED TO FIND THE MOST EFFICIENT BALANCE BETWEEN COST OF CARRYING INVENTORY, COST OF PURCHASING AND RECEIVING, DISCOUNTS REALIZED, AND CUSTOMER SERVICE REQUIREMENTS. THE 1311 IMPACT COMPUTER PROGRAM LIBRARY IS DESIGNED TO PROVIDE THE DISTRIBUTOR WHO HAS AN IBM 1401/1460-1311 SYSTEM WITH THE MEANS TO SUCCESSFULLY IMPLEMENT AN IMPACT. INVENTORY MANAGEMENT SYSTEM WITH A MINIMUM OF EFFORT AND EXPENSE. PROGRAMS ARE INCLUDED THAT PERFORM IN THE FOLLOWING FUNCTIONAL AREAS-- EDITING, FILE INITIALIZATION, ESTIMATING, AND THE CONTROL OF INDEPENDENT AND JOINT REPLENISHMENT ORDERING. FEATURES--
THE 1311 PROGRAM LIBRARY PERFORMS IN THE SAME FUNCTIONAL AREAS AS THE EXISTING 1401-1405 IMPACT COMPUTER PROGRAM LIBRARY--
- EDIT ALL INPUT FOR FORMAT.
- DETERMINE THE FORECAST MODEL /HORIZONTAL, TREND,

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CONTINUED FROM PRIOR PAGE--

- HORIZONTAL-SEASONAL, OR TREND-SEASONAL/.
- DETERMINE THE ORDERING STRATEGY TO BE USED AND CALCULATE ORDER QUANTITY OR ORDER FREQUENCY AS APPROPRIATE FOR STRATEGY SELECTED.
- CALCULATE THE SAFETY FACTOR REQUIRED FOR A PRESCRIBED LEVEL OF CUSTOMER SERVICE.
- CALCULATE INITIALIZING VALUES REQUIRED FOR FORECAST AND ORDER MODELS SELECTED.
- ESTIMATE RESULTS TO BE EXPECTED FROM APPLYING THE RULES AND VALUES DEVELOPED.
- DETERMINE WHEN TO ORDER ITEM GROUPS TO MEET SERVICE OBJECTIVES AFTER THE SYSTEM IS OPERATIONAL.
- CALCULATE THE PRODUCT MIX TO BE ORDERED WITHIN AN ITEM GROUP THAT WILL MEET BOTH SERVICE OBJECTIVES AND LIMITATIONS ON TOTAL SIZE OF ORDER.

IN ADDITION, THE 1311 PROGRAMS INCORPORATE IMPROVEMENTS OVER EXISTING PROGRAMS INCLUDING--

- WORK FLOW AND RECORD FORMATS STREAMLINED.
- HISTORICAL DEMANDS SCREENED FOR PROMOTIONS.
- BASE INDEX TECHNIQUE USED FOR FORECASTING SEASONAL ITEMS.
- ITEM DISCOUNTS CONSIDERED, IN ADDITION TO VENDOR DISCOUNTS, IN DETERMINING ORDERING STRATEGIES AND ORDER QUANTITIES.
- DIFFERENT LEAD TIME MAY BE SPECIFIED FOR EACH VENDOR BREAKPOINT.
- SERVICE MAY BE SPECIFIED BY ITEM FOR BOTH INDEPENDENT AND JOINT VENDORS.
- SEASONALITY CONSIDERED IN ORDERING BOTH INDEPENDENT AND JOINT VENDORS.
- A SERVICE POINT AND ALLOCATION PROGRAM /SVA/ THAT WILL TAKE ADVANTAGE OF 8K MEMORY TO PRODUCE GREATER THROUGHPUT.
- AN OPTION TO FORCE A PREDETERMINED ORDER QUANTITY FOR ANY ITEM THROUGH THE SVA PROGRAM.
- THE FACILITY FOR EXPRESSING A CONVERSION FACTOR OF 1.0 TO THE SVA PROGRAM.
- PRINTING OF THE SLOPE AND INTERCEPT OF THE LEAST SQUARES LINES HAS BEEN INCLUDED IN THE MADP PROGRAM.
- PUNCHING OF THE COST STRATEGY RECORDS IN THE OQCL PROGRAM HAS BEEN ELIMINATED.
- PROVIDES SAFETY FACTOR /K/ BASED ON A LEAD TIME PLUS REVIEW TIME FOR ITEMS IN A POINT VENDOR. WHEN THE PEAK POINT OPTION IS NOT SATISFIED.

USE-- THE PROGRAM LIBRARY INCLUDES BOTH INITIALIZING PROGRAMS AND OPERATING PROGRAMS. INITIALIZING PROGRAMS ARE DESIGNED TO BE USED ONCE TO SET UP AN IMPACT SYSTEM, THEN PERIODICALLY /AT LEAST ONCE A YEAR/ OR AS REQUIRED TO MEET CHANGING CONDITIONS. A COMPLETE SET OF PROGRAMS IS PROVIDED TO PERFORM NECESSARY INITIALIZING FUNCTIONS. OPERATING PROGRAMS ARE USED IN THE DAY-TO-DAY CONTROL OF THE IMPACT SYSTEM /FORECASTING AND ORDERING/. LIBRARY PROGRAMS ARE PROVIDED TO CONTROL THE ORDERING OF BOTH INDEPENDENT AND JOINT VENDORS. INSTRUCTION AND BLOCK DIAGRAMS ARE AVAILABLE TO HELP THE USER IN PROGRAMMING THE REMAINING OPERATING PROGRAMS WITH A MINIMUM OF EFFORT /IMPLEMENTATION REFERENCE MANUAL/.

PROGRAMMING SYSTEMS-- PROGRAMS IN THE IMPACT COMPUTER PROGRAM LIBRARY ARE WRITTEN IN 1311 AUTOCODER AND 1311 IOCS. SYSTEM REQUIREMENTS-- 1401--4K 1401 SYSTEM WITH 1402 CARD READ PUNCH MODEL 1... 1403 PRINTER MODEL 2... TWO 1311 DISK STORAGE DRIVES... ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE. TWO 1316 DISK PACKS MUST BE FULLY AVAILABLE DURING THE OPERATION OF 1311 LIBRARY PROGRAMS. 1460--8K 1460 SYSTEM WITH 1447 CONSOLE MODEL 1... 1402 CARD READ PUNCH MODEL 3... 1403 PRINTER MODEL 2... TWO 1311 DISK STORAGE DRIVES... INDEXING AND STORE ADDRESS REGISTERS. TWO 1316 DISK PACKS MUST BE FULLY AVAILABLE DURING THE OPERATION OF 1311 LIBRARY PROGRAMS.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... USERS MANUAL... OPERATORS MANUAL.

CARD DECK - OBJECT DECK... SAMPLE PROBLEM DECK.
OPTIONAL PROGRAM MATERIAL - SYSTEMS MANUAL WHICH CONTAINS THE ASSEMBLY LISTINGS OF ALL THE 1401/1460-1311 IMPACT PROGRAMS. OPTIONAL MATERIAL MUST BE ITEMIZED ON THE ORDER CARD.

1401-EX-01X ENGINEERING SCHEDULING SYSTEM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-EX-01X

THE SYSTEM CONTAINS A SERIES OF FOURTEEN 1401 PROGRAMS WRITTEN IN AUTOCODER/IOCS LANGUAGE TO AUTOMATICALLY PERFORM THE DATING, LOADING, AND PERFORMANCE EVALUATION FUNCTIONS OF SCHEDULING. IT IS DEVELOPED PRIMARILY FOR HIGH VOLUME, SHORT-CYCLE OPERATIONS AS FOUND IN A CUSTOM ENGINEERING ENVIRONMENT. TECHNIQUES WILL ALSO BE APPLICABLE TO MANY OTHER TYPES OF PROJECT PLANNING AND CONTROL. THE SYSTEM EMPHASIZES SIMPLIFIED INPUT REQUIREMENTS AND PRESENTS WORK-LOAD INFORMATION IN FORMATS DESIGNED TO BE MOST USEFUL TO INDIVIDUAL SUPERVISORS. MAJOR OUTPUTS, UNDER SELECTIVE CONTROL OF THE USER, INCLUDE--

- FACILITY LOAD BY TIME PERIOD
- ORDER STATUS LISTINGS /FULL, OR BY EXCEPTION/
- ORDER LISTING IN CUSTOMER NAME SEQUENCE
- PERFORMANCE EVALUATION BY FACILITY
- ORDER HISTORY REPORT
- PREPUNCHED TURN-AROUND DOCUMENTS FOR WORK REPORTING

FEATURES OF THE SYSTEM ARE--

- SKELETON FILE FOR RETRIEVAL OF COMMON WORK ROUTINGS
- AUTOMATIC CALENDAR ALLOWS USER COMMUNICATION USING GREGORIAN DATES
- AUTOMATIC START-DATE CALCULATION ALLOWS USE OF EXTERNAL CONSTRAINT DATES
- DATA ENTRY LOGS AND ERRATA LISTINGS
- SYSTEM HANDLES UP TO 1,000 EVENTS PER PROJECT, UP TO 260 COMMON ROUTINGS
- FLEXIBILITY IN ORGANIZATION OF WORK FORCE
- MONITOR CONTROL AND A SPECIAL THREE-TAPE SORT MINIMIZE OPERATOR INTERVENTION

COMMON ROUTINGS ARE DEFINED AND USED TO PREPARE A SKELETON FILE. A NEW ORDER CAN THEN BE ENTERED INTO THE WORK-IN-PROCESS FILE WITH ONLY ONE CARD. DURING THE SYSTEM RUN, ALL WORK IS RESCHEDULED TO REFLECT DEVELOPMENTS SINCE THE PRECEDING RUN. OUTPUT REPORTS THEN PRESENT THE WORK LOAD TO FACILITY SUPERVISORS IN CLEAR, CONCISE FORM FOR DECISIONS IN WORK DISPATCHING. A 16K 1401 SYSTEM WITH ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, SENSE SWITCHES, AND ADDITIONAL PRINT CONTROL... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2... AND FOUR MAGNETIC TAPE UNITS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

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CONTINUED FROM PRIOR COLUMN--

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DIRECTORY... APPLICATION DESCRIPTION... PROGRAMMER MANUAL... OPERATOR MANUAL... SAMPLE PROBLEM MANUAL.
MACHINE READABLE - ONE MAG. TAPE CONTAINING /1/SOURCE DECK /2/OBJECT DECK /3/SAMPLE PROBLEM & /4/ASSEMBLY LISTINGS.

OPTIONAL PROGRAM MATERIAL - SYSTEM MANUAL... ONE MAG. TAPE CONTAINING AUTOCHART BLOCK DIAGRAMS

1401-FB-01X DEMAND DEPOSIT PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FB-01X

THE APPLICATION PROGRAM CONTAINS A SERIES OF PROGRAMS FOR PERFORMING THE ENTIRE DEMAND DEPOSIT APPLICATION. SOME OF THE RUNS HAVE OPTIONS WHICH MAY BE SELECTED BY THE USER TO FIT HIS PARTICULAR NEEDS AND IN A VERY FEW SECTIONS SUCH AS SERVICE CHARGE CALCULATIONS, THE USER MUST ENTER HIS OWN PARTICULAR SUB-ROUTINE. THE FOLLOWING RUNS ARE PROGRAMMED. EDIT AND CONVERSION RUN, VALID ITEM RELEASE RUN, TRANSACTION SORT, TRANSACTION MERGE, POSTING RUN, POSTED DETAIL MERGE, SHORT STATEMENT RUN, DETAILED STATEMENT RUN, NSF RUN. THE PURPOSE OF THIS APPLICATION PROGRAM IS TO ASSIST THE USER IN SYSTEMATICALLY DEFINING THE PROBLEM. ALLOW THE USER TO USE THE VAST MAJORITY OF THE PROGRAMS WHICH ARE COMMON TO MANY BANKS BUT STILL MAINTAIN THE ABILITY TO TAILOR-MAKE HIS PROGRAM BY EASILY SUBSTITUTING SECTIONS TAILOR-MADE TO HIS OWN SPECIFICATIONS. THE PROGRAM REQUIRES A 1401 MODEL C-3, 1402, 1403, 1412 AND FOUR TAPE UNITS, EITHER 729 II S OR 7330 S. SPECIAL DEVICES REQUIRED INCLUDE ADVANCED PROGRAMMING PRINT STORAGE, HIGH-LOW-EQUAL, SERIAL I/O ADAPTER, ADDITIONAL PRINT CONTROL AND READ PUNCH RELEASE.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR ORDERED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS. MACHINE READABLE - SYSTEM TAPE.

1401-FB-02X BANK MANAGEMENT SIMULATOR

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FB-02X

THE BANK MANAGEMENT SIMULATOR IS AN EXERCISE WHICH SIMULATES THE EFFECTS OF MANAGEMENT DECISIONS IN A \$50 MILLION COMMERCIAL BANK. EACH TEAMS OBJECTIVE IS TO MAKE DECISIONS IN THE MOST PROFITABLE USE OF ITS ASSETS. IN ONE DAY, THE PLAYERS MAKE DECISIONS SIMILAR TO THOSE WHICH WOULD BE MADE OVER A PERIOD OF SEVERAL YEARS. THIS EXERCISE WAS DESIGNED BECAUSE OF THE DIFFICULTY OF EXPOSING OFFICERS TO ASSET MANAGEMENT DECISIONS IN ANY OTHER WAY. THE COMPUTER APPLIES THE DECISIONS AGAINST A MATHEMATICAL MODEL OF THE BANK, CALCULATES THEIR EFFECT BASED ON THE STATE OF THE ECONOMY AT THE TIME, AND CALCULATES CHANGES IN THE ECONOMY THAT MIGHT TAKE PLACE DURING THE PARTICULATE QUARTER OF PLAY. THE RESULTS ARE PRESENTED TO THE PARTICIPANTS SO THEY MAY SEE THE INTERACTION OF THEIR VARIOUS DECISIONS. ONE TO NINE TEAMS MAY PARTICIPATE AT ONE TIME. TEAMS DO NOT COMPETE AGAINST EACH OTHER, BUT RATHER AGAINST THE ECONOMIC CLIMATE ESTABLISHED IN THE GAME. A 4K 1401 SYSTEM WITH, THREE TAPE DRIVES, CARD INPUT/OUTPUT, HIGH-LOW-EQUAL, ADVANCED PROGRAMMING AND MULTIPLE-DRIVE SPECIAL FEATURES.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR ORDERED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... OPERATORS GUIDE... PLAYERS AND EXAMINER INSTRUCTIONS.
CARD DECKS - INITIALIZER PHASE OBJECT PROGRAM DECK... INITIALIZER DATA DECK... SAMPLE PROBLEM DECK.
ONE MAGNETIC TAPE - CALCULATIONS PHASE OBJECT PROGRAM.

OPTIONAL PROGRAM MATERIAL - ONE MAGNETIC TAPE - ASSEMBLY LISTINGS.

1401-FB-06X BANK SORT PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FB-06X

THE IBM 1401 BANK SORT PROGRAM IS A SPECIAL-PURPOSE MAGNETIC TAPE SORT DEVELOPED FOR SORTING DEMAND DEPOSIT ACCOUNTING INPUT TRANSACTIONS ON AN IBM 1401 SYSTEM. IT IS DESIGNED TO INCREASE THE SPEED OF SORTING INPUT DATA ENTERED ON MAGNETIC TAPE FROM MICR-ENCODED CHECKS, OTHER ENCODED DOCUMENTS, AND IBM CARDS BY-- USING PROCESSING TIME AVAILABLE DURING DOCUMENT CONVERSION TO PERFORM A PORTION OF THE SORT BY USING PROCESSING TIME AVAILABLE DURING TAPE OPERATIONS TO INCREASE PROCESSING SPEED BY PROVIDING SPECIFICALLY FOR A SHORT VARIABLE LENGTH RECORD BY MAKING USE OF OTHER TIME-SAVING TECHNIQUES. THE BANK SORT PROGRAM DECK, PUNCHED IN AUTOCODER LANGUAGE, IS DIVIDED INTO THREE PHASES-- /1/ AN ADDRESS SEQUENCING SUBROUTINE WHICH MAY BE INCLUDED IN A 1419/1401 CONVERSION PROGRAM BY A USER TO DETERMINE THE SEQUENCE OF RECORDS AS THEY ARE READ. /2/ A RECORD SEQUENCING PROGRAM WHICH ARRANGES RECORDS INTO SEQUENCES ON MAGNETIC TAPE BASED ON THE ADDRESS SEQUENCES DEVELOPED BY THE PREVIOUS SUBROUTINE. THE USER MAY ADD PROGRAM STEPS, WRITTEN IN AUTOCODER, TO EDIT AND COMPRESS THE DATA RECORDS. /3/ A MERGE PROGRAM WHICH MERGES SEQUENCES OF RECORDS REPETITIVELY UNTIL JUST ONE SEQUENCE CONTAINING ALL OF THE DATA RECORDS IS DEVELOPED.

MINIMUM SYSTEM REQUIREMENTS -
8K 1401 SYSTEM WITH-- 1402 CARD-READ PUNCH... 1403 PRINTER ...1419 MAGNETIC CHARACTER READER...FOUR IBM 729 MODEL II, IV OR V OR 7330 MAGNETIC TAPE UNITS...HIGH-LOW-EQUAL COMPARE, SENSE SWITCHES, ADVANCED PROGRAMMING AND PROCESS OVERLAP SPECIAL FEATURES.

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BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS.
MACHINE READABLE - AUTOCODER SOURCE LANGUAGE DECK... SAMPLE
PROBLEM DECK.

1401-FB-09X BOND TRADE ANALYSIS FOR A
BANK
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FB-09X

THE BOND TRADE ANALYSIS IS A MANAGEMENT TOOL DESIGNED ESPECIALLY FOR BANKS. THE ANALYSIS COMPUTES THE NET EFFECT, AFTER TAX, OF A PROPOSED BOND TRADE IN THE BANK'S OWN PORTFOLIO. THE ANALYSIS PROGRAM COMPUTES TIME FACTORS, COUPON INTEREST INCOME, PREMIUM AMORTIZATIONS, CAPITAL GAINS, ORDINARY AND CAPITAL GAIN TAXES OR TAX SAVINGS, AND SALE PROCEEDS APPLICABLE TO THE BONDS BEING CONSIDERED. VARIOUS LOGICAL DECISIONS ARE ALSO MADE IN THE PROGRAM WHICH ARE RELATED TO SUCH ITEMS AS THE TYPE OF TAX YEAR BEING EXPERIENCED BY THE BANK, THE TYPE OF BONDS BEING CONSIDERED, AND WHETHER OR NOT A CALL DATE IS INVOLVED. THE RESULT OF THESE COMPUTATIONS AND DECISIONS IS SET FORTH IN TERMS OF DOLLAR RETURN WHICH MAY BE EASILY INTERPRETED BY THE BANKER. THIS PROGRAM IS DESIGNED TO PROVIDE A COMPREHENSIVE VARIETY OF RESULTS WHICH WILL PERMIT THE BANKER TO SEE THE EFFECT OF ALTERNATE COURSES OF ACTION, AND ENABLE THE BANKER TO AVOID COMMON ERRORS IN BOND INVESTMENT PLANNING AND EXECUTION. THE SPEED AND PRECISION OF COMPUTATION, THE DEPTH OF ANALYSIS, AND THE NUMBER OF ALTERNATIVES PROVIDED BY THE PROGRAM ARE NOT AVAILABLE TO THE BANKER TODAY. THIS OMISSION RESTRICTS HIS TRADING AND THEREBY HIS PROFITS.

THE BOND TRADE ANALYSIS IS DESIGNED TO HELP THE BANKER IN THE FOLLOWING AREAS--

- IMPROVING THE OVERALL YIELD OF THE SECURITY PORTFOLIO.
- UTILIZING TAX PROVISIONS DESIGNED ESPECIALLY FOR BANKS.
- REINVESTING FUNDS OF NEAR MATURITIES.
- CONVERTING PRESENT COUPON INCOME TO FUTURE CAPITAL GAINS.
- CONVERTING FUTURE CAPITAL GAINS TO PRESENT COUPON INCOME.
- COMPARING ALTERNATE TRADE POSSIBILITIES.
- REALIGNING THE MATURITIES OF THE SECURITY PORTFOLIO.
- AVOIDING CAPITAL GAIN AND CAPITAL LOSS OFF-SETS.
- PREVENTING INADVERTENT SHORT-TERM SALES.
- ACCOUNTING FOR SECURITY TRADES.

USE--THE INPUT TO EFFECT A SINGLE ANALYSIS IS TWO CARDS CONTAINING DATA RELEVANT TO A BOND PRESENTLY OWNED BY THE BANK, WHICH THE BANK ANTICIPATES SELLING, AND ONE CARD CONTAINING THE PERTINENT DATA CONCERNING THE BOND THE BANK CONTEMPLATES PURCHASING. MULTIPLE PRESENTLY OWNED BONDS MAY BE ANALYZED AGAINST FROM ONE TO TEN CONTEMPLATED PURCHASES IN A SINGLE UNINTERRUPTED PROCESSING. EACH INDIVIDUAL ANALYSIS REQUIRES FROM 2 TO 3 SECONDS OF MACHINE PROCESSING AND PRINTING TIME. AT THE END OF A SEQUENCE OF ANALYSES, A RECAP OF THE VARIOUS ANALYSES MAY BE PRINTED IF DESIRED. IT IS SIGNIFICANT TO NOTE THAT THE CARDS REPRESENTING BONDS PRESENTLY OWNED BY THE BANK WOULD ORDINARILY BE AVAILABLE IN THE FORM OF THE BANKS SECURITY INVENTORY AND CONTROL PROGRAM. THEREFORE, ONLY THE CARD REPRESENTING THE CONTEMPLATED PURCHASE MAY HAVE TO BE PREPARED. IN ADDITION TO USING THE BOND TRADE ANALYSIS PROGRAM ON THE BANKS OWN PORTFOLIO, APPLICATION MAY BE FOUND IN THE MANAGEMENT OF LARGE BANK TRADING ACCOUNTS AND AS A SALES DEVICE FOR ADDITIONAL AND NEW SERVICES TO CORRESPONDENT BANKS. MINIMUM MACHINE REQUIREMENTS--AN 8K 1401 WITH...ADVANCE PROGRAMMING, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE...1402 CARD READ PUNCH... 1403 PRINTER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING INSTRUCTIONS...
REFERENCE MANUAL... LISTINGS.
CARD DECK - OBJECT DECK... SOURCE PROGRAM DECK... SAMPLE PROBLEM DECK.

1401-FB-14X 1401/1440 PROGRAM FOR THE
ALLOCATION OF RESOURCES FOR SAVINGS AND LOAN ASSOCIATIONS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FB-14X

THE 1401/1440 PROGRAM FOR THE ALLOCATION OF RESOURCES FOR SAVINGS AND LOAN ASSOCIATIONS, 1401-FB-14X HELPS SAVING AND LOAN MANAGEMENT MAKE DECISIONS WHICH DETERMINE PROFITABLE LEVELS FOR THE ASSOCIATION'S ASSETS AND LIABILITIES. INPUT DATA DESCRIBE THE PRESENT FINANCIAL STATUS, LEGAL REQUIREMENTS, INDIVIDUAL ASSOCIATION POLICIES, AND CASH FLOW REQUIREMENTS OF THE ASSOCIATION AND ARE TRANSLATED BY THE PROGRAM INTO A SET OF CONCISE MATHEMATICAL EQUATIONS REFLECTING THE ECONOMIC ENVIRONMENT WITHIN WHICH THE ASSOCIATION MUST OPERATE. LINEAR PROGRAMMING, A MATHEMATICAL TECHNIQUE USED TO MAXIMIZE PROFIT, CALCULATES THE SOLUTION TO THESE EQUATIONS. THIS MATHEMATICAL SOLUTION IS THEN TRANSLATED INTO OUTPUT REPORTS WITH THE FOLLOWING INFORMATION--

- SHORT-TERM RECOMMENDATIONS PERTAINING TO CHANGES IN THE ASSOCIATION'S ASSETS AND LIABILITIES.
- PROJECTIONS PERTAINING TO EXPECTED LONGER TERM CHANGES IN THE ASSOCIATION'S ASSETS AND LIABILITIES.
- THE POSITION OF THE ASSOCIATION WITH RESPECT TO LEGAL REQUIREMENTS, REGULATIONS, AND SELF-IMPOSED RESTRICTIONS.
- ASSETS AND LIABILITIES WHICH HAVE A CONSTRAINING EFFECT ON PROFIT.
- THE EXPECTED RESERVE POSITION AS OF ONE YEAR AFTER THE PROGRAM IS RUN.

PROGRAMMING SYSTEMS-- THE PROGRAM IS WRITTEN IN THE AUTOCODER SOURCE LANGUAGE FOR THE 1401 AND 1440. 1401 MINIMUM SYSTEM REQUIREMENTS-- A 4K 1401 SYSTEM WITH HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, MULTIPLY-DIVIDE /OPTIONAL/, 11 DISK STORAGE DRIVE... 1316 DISK PACK... 1402 CARD READ PUNCH MCL 1... 1403 PRINTER MCL 2. THE MULTIPLY-DIVIDE FEATURE WILL EFFECTIVELY REDUCE PROCESSING TIME.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DIRECTORY...
REFERENCE MANUAL... OPERATORS MANUAL.
MACHINE READABLE - OBJECT PROGRAM DECK... SAMPLE PROBLEM DECK *M
OPTICAL PROGRAM MATERIAL-- SYSTEMS MANUAL... AUTOCODER SOURCE PROGRAM DECKS.
OPTICAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. *M

1401-FI-04X PORTFOLIO SELECTION PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FI-04X

THE 1401 PORTFOLIO SELECTION PROGRAM /1401-FI-04X/ IS VALUABLE TO BANKS, MUTUAL FUNDS, TRUST AND INSURANCE COMPANIES, ESTATES, AND INVESTMENT DEPARTMENTS OF INSTITUTIONS BOTH PUBLIC AND PRIVATE. DESCRIPTION-- THE PROGRAM DETERMINES OPTIMALLY DIVERSIFIED PORTFOLIOS FROM A GIVEN GROUP OF SECURITIES. THESE OPTIMAL PORTFOLIOS MINIMIZE RISK FOR GIVEN LEVELS OF RETURN. THE PROGRAM USES A MATHEMATICAL TECHNIQUE CALLED QUADRATIC PROGRAMMING TO MINIMIZE THE RISK FOR ANY LEVEL OF RETURN ASSOCIATED WITH A SECURITY PORTFOLIO. IT SELECTS OPTIMALLY DIVERSIFIED PORTFOLIOS FROM GROUPS OF UP TO 750 SECURITIES, INCLUDING CASH INVESTMENTS. CONSTRAINTS, SUCH AS A MAXIMUM HOLDING OR A FIXED HOLDING, MAY BE APPLIED TO ANY OR ALL OF THE SECURITIES BEING CONSIDERED. OUTPUT CONSISTS OF-- 1/ A SET OF PORTFOLIOS -- EACH WITH MINIMUM RISK FOR ITS LEVEL OF RETURN -- FOR AS MANY LEVELS OF RETURN AS THE USER REQUESTS, 2/ THE INDIVIDUAL SECURITY PARAMETERS -- SUCH AS RETURN AND RISK -- THAT WERE USED IN THE COMPUTATION, AND 3/ THE EXPECTED RETURN AND ASSOCIATED RISK FOR A PORTFOLIO CONSISTING OF CURRENT HOLDINGS.

FEATURES--

- USES THE INDEX OR LINEAR MODEL, WHICH ASSUMES A LINEAR RELATIONSHIP BETWEEN RETURN AND SOME SINGLE ECONOMIC INDICATOR.
- ELIMINATES THE NEED FOR THE USER TO PROVIDE ESTIMATES OF COVARIANCE OR CORRELATION BETWEEN PAIRS OF SECURITIES. USING THE INDEX MODEL, THESE CORRELATIONS ARE DERIVED IMPLICITLY BY THE PROGRAM FROM THE GIVEN INPUT DATA AND ARE USED BY THE PROGRAM TO MINIMIZE RISK THROUGH THE PRINCIPLE OF DIVERSIFICATION.
- INCLUDES A SPECIAL SUBPROGRAM CALLED DATA TRANSFORMATION PROGRAM, WHICH ALLOWS THE USER TO SPECIFY ANY LINEAR FUNCTION RELATING SECURITY RETURN TO THE CHOSEN INDEX.
- INCLUDES A STANDARD LEAST-SQUARES TECHNIQUE FOR FITTING A LINEAR FUNCTION THROUGH NINE PRICE ESTIMATES FOR EACH SECURITY.
- FURNISHES ALL OF THE INDIVIDUAL SECURITY PARAMETERS NECESSARY FOR THE QUADRATIC PROGRAMMING PORTION OF THE PROGRAM.

USE-- A SELF-LOADING PROGRAM TAPE IS PROVIDED. THE USER PROVIDES THE DATA ON PUNCHED CARDS IN THE SPECIFIED FORMATS, AND ALL REPORTS ARE AUTOMATICALLY PRODUCED. PROGRAMMING SYSTEM-- THE SOURCE LANGUAGE USED IS 1401 AUTOCODER. MINIMUM SYSTEM REQUIREMENTS-- AN 8K 1401 WITH ADVANCED PROGRAMMING, SENSE SWITCHES, MULTIPLY-DIVIDE /OPTIONAL/... 1402 CARD READ PUNCH MCL 1... 1403 PRINTER MCL 1... FOUR MAGNETIC TAPE UNITS. THE USE OF THE MULTIPLY-DIVIDE FEATURE WILL REDUCE CONSIDERABLY PROCESSING TIME. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DIRECTORY...
REFERENCE MANUAL... SYSTEM MANUAL.
MAG. TAPE - ONE REEL CONTAINING... SELF-LOADING OBJECT PROGRAM... SOURCE PROGRAM... ASSEMBLY LISTING... CARD DECK... THE SOURCE AND OBJECT PROGRAM FOR THE AUXILIARY PROGRAM DTP MAINTENANCE PROCEDURE. SAMPLE PROBLEM CARD DECK.

1401-FI-05X FINANCIAL ANALYSIS PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FI-05X

THE FINANCIAL ANALYSIS PROGRAM CONSISTS OF A SERIES OF PROGRAMS WHICH GIVE THE PROFESSIONAL FINANCIAL ANALYST EASILY ACCESSIBLE, DETAILED, AND ANALYTICAL INFORMATION ABOUT INDUSTRIAL CORPORATIONS. THE PROGRAM UTILIZES THE INFORMATION HANDLING AND COMPUTATIONAL ABILITY OF THE IBM 1401 TO PROVIDE THE PROFESSIONAL FINANCIAL ANALYST WITH TOOLS TO HELP HIM IN SCREENING AND APPRAISING INDUSTRIAL COMMON STOCKS. THE MAIN INPUT FOR THE PROGRAM IS A MAGNETIC TAPE CONTAINING HISTORICAL BALANCE SHEET, INCOME STATEMENT, AND MARKET DATA FOR A LARGE NUMBER OF INDUSTRIAL COMPANIES. THIS TAPE MAY BE PREPARED BY THE USER OR OBTAINED FROM THE ORGANIZATION WHICH MAKES IT COMMERCIALY AVAILABLE /STANDARD & PCORS CORPORATION/. BY USING THE PROGRAM, THE ANALYST MAY OBTAIN REPORTS PROVIDING HIM WITH:

- 1/ A LIST OF COMPANIES MEETING CERTAIN STANDARDS SPECIFIED BY THE ANALYST.
- 2/ PAST FINANCIAL DATA AND RATIOS.
- 3/ COMPARISONS BETWEEN A COMPANY'S SALES AND EARNINGS AND GNP FRB INDEX OF INDUSTRIAL PRODUCTION.
- 4/ COMPOUND GROWTH RATES AND STABILITY MEASURES.
- 5/ COMPARISONS BETWEEN INDIVIDUAL COMPANIES AND INDUSTRY PERFORMANCE.
- 6/ FINANCIAL AND MARKET INFORMATION FOR UP TO FIVE COMPANIES ON A SINGLE REPORT.

FEATURES--

- PROVIDES THE ANALYST WITH TIMELY INFORMATION THAT HAS PREVIOUSLY BEEN IMPRACTICAL TO OBTAIN CONSISTENTLY.
- FREES THE MORE CREATIVE TASKS BY ELIMINATING MUCH OF THE CLERICAL WORK HE MUST NOW PERFORM.
- ALLOWS AN ANALYST TO FOLLOW CLOSELY MORE COMPANIES THAN IS NOW PRACTICAL.
- SELECTS COMPANIES WHICH ARE WORTHY OF FURTHER STUDY BASED ON THE SPECIFIED CRITERIA.
- SEPARATE PROGRAMS ALLOW THE ANALYST TO EXAMINE ONLY THOSE REPORTS WHICH INTEREST HIM.

USE-- THE FINANCIAL ANALYSIS PROGRAM CONSISTS OF SEVEN SEPARATE 1401 AUTOCODER PROGRAMS, SIX OF WHICH MAY BE RUN INDEPENDENTLY AND ARE UNDER THE CONTROL OF ONE EXECUTIVE PROGRAM. CONTROL CARDS INDICATE THE PROGRAM REQUESTED AND THE COMPANIES AND INDUSTRIES TO BE ANALYZED. AS MANY COMPANIES AS DESIRED MAY BE PROCESSED IN A SINGLE RUN. MINIMUM SYSTEM REQUIREMENTS-- AN 8K 1401 WITH FOUR MAGNETIC TAPE UNITS... 1402 CARD READ PUNCH... 1403 PRINTER... ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, SENSE SWITCHES, ADDITIONAL PRINT CONTROL.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTICAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD. THE TAPE SUPPLIED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DESCRIPTION MANUAL... OPERATION MANUAL.
MACHINE READABLE - ONE REEL OF MAGNETIC TAPE WHICH CONTAINS THE OBJECT DECKS, THE SOURCE DECKS, AND THE ASSEMBLY LISTINGS.

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1401-F0-050 FORTRAN
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-F0-050

PURPOSE 1401 FORTRAN MAKES AVAILABLE TO 1401 OPS INSTALLATIONS THE ESTABLISHED FORTRAN PROGRAMMING LANGUAGE, THE PRINCIPAL USE OF WHICH IS TO DESCRIBE SOLUTIONS TO SCIENTIFIC AND ENGINEERING PROBLEMS. THE FORTRAN COMPILER TRANSLATES SUCH DESCRIPTIONS, OR SOURCE PROGRAMS, INTO 1401 MACHINE LANGUAGE. USE OF THE FORTRAN SYSTEM WILL PRODUCE HIGHER PROGRAM WRITING EFFICIENCY I. E., MORE RELIABLE PROGRAMS PRODUCED MORE QUICKLY. IN ADDITION, BECAUSE OF THE MACHINE-INDEPENDENCE OF THE FORTRAN LANGUAGE, PROGRAMS WRITTEN IN FORTRAN AND TESTED ON THE 1401 CAN BE APPLIED DIRECTLY AND QUICKLY TO ANY OTHER MACHINE FOR WHICH A FORTRAN SYSTEM IS AVAILABLE. 1401 FORTRAN FEATURES ARE 1. FAST COMPILING SPEED, 2. OPERABILITY ON A 1401 CARD SYSTEM /NO TAPE REQUIRED/, AND 3. /LOAD-AND-GO/ SYSTEM ORGANIZATION, 4. VARIABLE PRECISION ARITHMETIC AND 5. EXTENSIVE DIAGNOSTIC ABILITY. USE OF PROGRAM THE USER'S FORTRAN PROGRAM STATEMENTS, PUNCHED ON CARDS, ARE ENTERED INTO THE 1401 OPS, FOLLOWED BY THE FORTRAN COMPILER, WHICH MAY BE ON CARDS OR TAPE. THE SOURCE PROGRAM IS TRANSLATED BY THE COMPILER INTO THE EQUIVALENT 1401 MACHINE LANGUAGE PROGRAM IN CORE STORAGE, READY FOR EXECUTION. THE PROGRAM MAY BE PUNCHED OUT IN CONDENSED FORM PRIOR TO EXECUTION. A LISTING IS PROVIDED DURING THE COMPILATION WHICH INCLUDES THE SOURCE PROGRAM STATEMENTS, DIAGNOSTIC INFORMATION RELATING TO THE INTELLIGIBILITY AND CONSISTENCY OF THE SOURCE PROGRAM, AND OTHER USEFUL INFORMATION COMPRISING A RECORD OF THE COMPILATION. MACHINE CONFIGURATION FOR COMPILATION OF SOURCE PROGRAMS 1 8000 OR MORE CORE STORAGE POSITIONS ADVANCED PROGRAMMING FEATURE HIGH-LOW-EQUAL COMPARE FEATURE MULTIPLY-DIVIDE FEATURE 1 1402 CARD READ-PUNCH 1 1403 PRINTER /MODEL 1 OR 2/ ONE TAPE UNIT MAY BE USED IF INSTALLED. FOR INPUT AND LOAD THE 1401 FORTRAN COMPILER. FOR A 1403 LISTING OF THE OBJECT PROGRAM DURING VARIOUS STAGES OF THE COMPILATION SENSE SWITCHES MAY BE USED, IF INSTALLED. FOR EXECUTION OF COMPILED PROGRAMS 1 8000 CORE STORAGE POSITIONS ADVANCED PROGRAMMING FEATURE HIGH-LOW-EQUAL COMPARE FEATURE MULTIPLY-DIVIDE FEATURE 1 1402 CARD READ-PUNCH 1 /403 PRINTER/ MODEL 1 OR 2* TAPE UNITS ONLY AS REQUIRED FOR INPUT AND OUTPUT DATA SENSE SWITCHES - MAY BE USED IF INSTALLED. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL - PROGRAM WRITE-UP... DOCUMENTATION OF 1401 FORTRAN... OPERATING INSTRUCTIONS. ONE MAGNETIC TAPE - CONSISTING OF COMPILER DECK... SAMPLE PROBLEM DECK... UTILITY DECK 1 - FOR PREPARING A COMPILER TAPE... UTILITY DECK 2 - FOR ADDING LIBRARY FUNCTIONS TO THE SYSTEM WHERE AUTOCODER IS REQUIRED... FORTRAN SYSTEM SYMBOLIC LISTINGS.

OPTIONAL PROGRAM MATERIAL - CARD DECKS - CONTAINS EVERYTHING AVAILABLE ON TAPE /MENTIONED ABOVE/ IN CARD FORM.

1401-F0-051 1401/40/60 FORTRAN IV DISK
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-F0-051

FORTRAN IV FOR IBM 1401, 1440 AND 1460, BROADENS IBMS FORTRAN LANGUAGE. IT PROVIDES A FORTRAN IV LEVEL LANGUAGE FOR THE 1401/1460 AND THE FIRST FORTRAN SYSTEM FOR THE 1440 USER. WITH THE POWERFUL FORTRAN IV, 1401, 1440 AND 1460 USERS CAN EASILY COMBINE BOTH BUSINESS AND SCIENTIFIC DATA PROCESSING IN ONE LOW-COST SYSTEM. AVAILABLE AS A SEPARATE PROGRAM IS A TAPE RESIDENT SYSTEM /NO. 1401-F0-051/ FOR 1401/60 SYSTEM. MINIMUM SYSTEM REQUIREMENTS - 12K 1401... ONE 1311 DISK STORAGE DRIVE... ONE 1402 CARD READ PUNCH... ONE 1403 PRINTER MODEL 2... ADVANCED PROGRAMMING FEATURE. OR A 12K 1440... ONE 1301 DISK STORAGE, OR ONE 1311 DISK STORAGE DRIVE... ONE 1442 CARD READER... ONE 1443 PRINTER... INDEXING AND STORE ADDRESS REGISTER FEATURE. OR A 12K 1460... ONE 1301 DISK STORAGE, OR ONE 1311 DISK STORAGE DRIVE... ONE 1402 CARD READ PUNCH... ONE 1403 PRINTER MODEL 2... INDEXING AND STORE ADDRESS REGISTER FEATURE.

BASIC PROGRAM MATERIAL - DOCUMENTATION - PROGRAM WRITE-UP... LANGUAGE SPECIFICATIONS, PROGRAM SPECIFICATION, AND OPERATING PROCEDURES MANUAL. MACHINE READABLE - A CARD DECK CONTAINING THE SYSTEM CONTROL PROGRAM, FORTRAN COMPILER, THE RELOCATABLE LOADER, FORTRAN SUBROUTINE LIBRARY, CARD BOOTSTRAPS, SAMPLE SOURCE PROGRAM AND VARIOUS SYSTEM GENERATION UTILITIES NEEDED TO BUILD AND OPERATE A DISK-RESIDENT SYSTEM.

OPTIONAL PROGRAM MATERIAL - SOURCE LISTINGS. THE OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-F0-052 1401/60 FORTRAN IV TAPE
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-F0-052

FORTRAN IV FOR IBM 1401, 1440 AND 1460, BROADENS IBMS FORTRAN LANGUAGE. IT PROVIDES A FORTRAN IV LEVEL LANGUAGE FOR THE 1401/1460 AND THE FIRST FORTRAN SYSTEM FOR THE 1440 USER. WITH THE POWERFUL FORTRAN IV, 1401, 1440 AND 1460 USERS CAN EASILY COMBINE BOTH BUSINESS AND SCIENTIFIC DATA PROCESSING IN ONE LOW-COST SYSTEM. AVAILABLE AS A SEPARATE PROGRAM IS A DISK RESIDENT SYSTEM /NO. 1401-F0-051/ FOR 1401/40/60 SYSTEMS. MINIMUM SYSTEM REQUIREMENTS - A 12K 1401 OR 1460 SYSTEM WITH... 1402 CARD-READ-PUNCH... 1403 PRINTER MODEL 2... FOUR /330 OR 725 MAGNETIC TAPE UNITS. ON THE 1401 - HIGH-LOW-EQUAL AND ADVANCED PROGRAMMING... ON THE 1460 - INDEXING AND STORE ADDRESS REGISTER. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL - DOCUMENTATION - PROGRAM WRITE-UP... LANGUAGE SPECIFICATIONS, PROGRAM SPECIFICATIONS, AND OPERATING PROCEDURES MANUAL. MACHINE READABLE - A CTR CONTAINING A TAPE LOADABLE

CONTINUED FROM PRIOR COLUMN--

PROGRAM WHICH WILL PUNCH THE SAMPLE PROGRAM DECK. THE CARD BOOT DECK, THE SYSTEM CONTROL, FORTRAN COMPILER, THE FORTRAN LOADER DECKS AND THE FORTRAN SUBROUTINE LIBRARY DECKS. OPTIONAL PROGRAM MATERIAL - SOURCE LISTINGS.

1401-F0-702 FORTRAN II LANGUAGE
CONVERSION PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-F0-702

THE FORTRAN II LANGUAGE CONVERSION PROGRAM AIDS IN THE TRANSITION TO SYSTEM/360 BY CONVERTING ACCEPTABLE CURRENT FORTRAN SOURCE PROGRAMS INTO FORTRAN IV SOURCE PROGRAMS FOR THE SYSTEM/360. THE FORTRAN II LCP ACCEPTS AS INPUT-

1401 FORTRAN,
1410 FORTRAN II,
1620 GOTRAN,
1620 FORTRAN II,
1620 FORTRAN WITH FORMAT,
1620 MONITOR I FORTRAN II-D,
1620 MONITOR II FORTRAN II,
1620 FORTRAN II FOR AUTOMATIC FLOATING POINT,
7070 SERIES FORTRAN /BASIC AND FULL/,
7070 FOS FORTRAN,
0705 FORTRAN,
7080 PROCESSOR FORTRAN AND
7090/7094 FORTRAN II
THE SOURCE PROGRAM CAN BE CONVERTED TO ANY OF THE FOLLOWING LEVELS OF SYSTEM/360 FORTRAN
OPERATING SYSTEM/360 FORTRAN IV /LEVEL H/,
OPERATING SYSTEM/360 FORTRAN IV /E LEVEL SUBSET/ AND
SYSTEM/360 BASIC PROGRAMMING SUPPORT FORTRAN IV /TAPE/
SYSTEM/360 BASIC PROGRAMMING SUPPORT FORTRAN IV /CARD/
BASIC OPERATING SYSTEM/360 WITH DQS/360
BASIC OPERATING SYSTEM/360 WITH TOS/360

FEATURES -- THE FORTRAN LCP HAS--
- CARD OR TAPE INPUT -- BOTH THE LCP AND THE FORTRAN II SOURCE PROGRAMS CAN BE READ FROM EITHER CARDS OR TAPE.
- SINGLE OR STACKED PROGRAM CONVERSION -- A SINGLE SOURCE PRG. CAN BE PROCESSED FROM ONE OF THE THREE TAPE UNITS NEEDED IN A MINIMUM CONFIGURATION. STACKED PROGRAMS CAN BE PROCESSED IF MORE THAN THREE TAPE UNITS ARE USED.
- CARD-CODE CONVERSION FOR DUAL BCD CHARACTERS -- A CONTROL CARD OPTION PROVIDES AUTOMATIC CONVERSION FROM BCD INPUT CODE TO EBCDIC OUTPUT CODE, OR VICE VERSA. IN THIS WAY, THE LCP CAN CONVERT THE DUAL BCD CHARACTERS, I.E., TWO CHARACTERS WITH THE SAME CARD CODE, INTO THE PROPER SYSTEM/360 CARD CODES. THE DUAL CHARACTERS ARE: PLUS AND AMPERSAND... EQUAL SIGN AND POUND SIGN... APOSTROPHE AND THE COMMERCIAL AT SIGN... LEFT PARENTHESIS AND PERCENT SIGN... RIGHT PARENTHESIS AND THE LOZENGE.
- DOCUMENTED LISTING -- THE LCP PROVIDES A LISTING OF THE CONVERTED PROGRAM. THIS LISTING CONTAINS MESSAGE CODES AND TABLES THAT DOCUMENT CONVERSION ACTIONS AND FACILITATE ANALYSIS OF THE CONVERTED PROGRAM. A LISTING OF THE SOURCE PROGRAM IS OPTIONAL.
- OPTIONAL CARD OUTPUT -- WHEN SPECIFIED, THE LCP PRODUCES A PUNCHED-CARD DECK THAT CONTAINS THE CONVERTED PROGRAM.
- OPTIONAL OUTPUT ON TAPE -- THE USER CAN SPECIFY THAT PRINTED AND/OR PUNCHED OUTPUT ARE TO BE RECORDED ON TAPE.
- REPLACEMENT OF TAPE REFER. -- THE USER CAN SPECIFY THAT TAPE CONSTANTS IN INPUT/OUTPUT STATEMENTS ARE TO BE REPLACED BY A VARIABLE NAME OR ANOTHER TAPE CONSTANT.
- RESOLUTION OF COMMON-EQUIVALENCE INTERACTION -- THE USER CAN SPECIFY THAT VARIABLES IN COMMON STATEMENTS ARE TO BE REORDERED SO THAT A SYSTEM/360 COMPILER WILL ALLOCATE COMMON STORAGE AND ESTABLISH EQUIVALENCIES IN THE SAME MANNER AS THE CURRENT FORTRAN II COMPILER.

THE FORTRAN II LCP WILL REDUCE THE AMOUNT OF REPROGRAMMING NECESSARY TO CONVERT CURRENT FORTRAN II PROGRAMS INTO SYSTEM/360 FORTRAN IV PROGRAMS. USE OF THE LCP WILL REDUCE TIME AND MONEY SPENT ON RECODING, CLERICAL ACTIVITIES, AND PROGRAM DEBUGGING. ALTHOUGH THE SAVINGS TO BE REALIZED FOR A SINGLE PROGRAM MAY BE AS GREAT AS 65 PER CENT, THE OVERALL SAVINGS TO A CUSTOMER MUST BE DETERMINED ON AN INDIVIDUAL BASIS.

MINIMUM SYSTEM REQUIREMENTS-- AN 8K 1401 SYSTEM WITH... A 1402 CARD READ PUNCH... A 1403 PRINTER MODEL 2... THREE TAPE UNITS... THE ADVANCED PROGRAMMING FEATURE... THE HIGH-LOW-EQUAL COMPARE FEATURE /OR AN IBM SYSTEM/360 WITH 1401 COMPATIBILITY AND CORRESPONDING FEATURES AND I/O DEVICES/.

BASIC PROGRAM MATERIAL - DOCUMENTATION - PROGRAM MATERIAL LIST... FORTRAN II LANGUAGE CONVERSION MANUAL. MACHINE READABLE - CTR CONTAINING LCP OBJECT DECK.

OPTIONAL PROGRAM MATERIAL - LCP SOURCE DECKS ON ONE REEL OF MAGNETIC TAPE. OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. THE NUMBER OF TAPES NECESSARY TO OBTAIN THE PROGRAM MATERIAL MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE. THE TAPES SHOULD BE 2400 FEET IN LENGTH.

1401-IF-01X AUTO RATING FOR FIRE AND
CASUALTY COMPANIES
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IF-01X

THE AUTO RATING PROGRAM IS A SERIES OF SUBROUTINES DESIGNED TO PERFORM THE RATING CALCULATIONS INVOLVED IN ISSUING A POLICY COVERING PRIVATE PASSENGER AUTOMOBILES AND PICKUP TRUCKS. PROVISION IS MADE FOR CALCULATING SUCH COVERAGES WITH THE LIMITS OF LIABILITY AND DEDUCTIBLES AS THE PUBLISHED BY THE NATIONAL RATING ORGANIZATIONS. BY USING A MODULAR PROGRAMMING TECHNIQUE, IT IS EASILY ADAPTED TO INDIVIDUAL REQUIREMENTS. BASE RATES AND FACTORS ARE UTILIZED, WHICH REDUCES CORE STORAGE REQUIREMENTS. USE OF TABLES AND A SPECIAL TABLE LOOKUP TECHNIQUE MAKES MAINTENANCE, CAUSED BY RATE CHANGES, MUCH SIMPLER. THE USER SELECTS THE ROUTINES FOR THE DESIRED COVERAGES, DISCOUNTS, DEVIATIONS, ETC., COMBINES THESE WITH HIS OWN INPUT/OUTPUT ROUTINES- ADDS THE DESIRED BASE RATE TABLES- AND PROCESSES, USING EITHER SPS OR AUTOCODER, TO PRODUCE AN OBJECT DECK. NORMALLY, A SEPARATE PROGRAM IS PRODUCED FOR EACH STATE, ALTHOUGH USUALLY THE ONLY CHANGE IS THE BASE RATE TABLES. ROUTINES ARE SUPPLIED FOR THE STATES THAT VARY FROM STANDARD FORMULAS. MINIMUM REQUIREMENTS FOR THE AUTO RATING PROGRAM ARE A 4K 1401 SYSTEM WITH ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE FEATURES-

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1402 AND 1403 MDL 1. STORAGE REQUIREMENTS VARY WITH SYSTEMS CONSIDERATIONS SUCH AS-- COVERAGES, SIZE OF STATE TABLES, USERS DEVIATIONS, AND INPUT/OUTPUT REQUIREMENTS. THE NORMAL REQUIREMENT FOR RATING, POLICY ISSUE, AND STATISTICAL CODING IS 8000 POSITIONS OF CORE STORAGE.

BASIC PROGRAM MATERIAL --
DOCUMENTATION - PRELIMINARY REFERENCE MANUAL... PROGRAM WRITE-UP...
... PROGRAM LISTINGS.
CARD DECKS - SPS SOURCE PROGRAM DECK... OBJECT PROGRAM DECK...
SAMPLE PROBLEM DECK.

1401-IF-02X GENERAL DISTRIBUTION PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IF-02X

THE GENERAL DISTRIBUTION PROGRAM FOR A CARD 1401 DATA PROCESSING SYSTEM ACCOMPLISHES SUMMARY REPORTING WITHOUT RESEQUENCING AN INPUT CARD FILE-- THE 1401 GENERAL DISTRIBUTION PROGRAM FULFILLS ITS PURPOSE BY BUILDING A TABLE OF EXTRACTED CONTROL FIELDS AND RESPECTIVE ALGEBRAICALLY ADDED AMOUNTS. SPECIFIED FIELDS ON SPECIFIED CARDS CAN BE SUMMARIZED FOR SELECTIVE REPORT WRITING. WHEN AN INPUT FILE HAS BEEN EXHAUSTED, OUTPUT CARDS ARE PUNCHED REFLECTING THE DATA AMASSED IN THE TABLE. OUTPUT CARDS ARE THEN USED FOR SUMMARY REPORT WRITING EITHER IN THE SEQUENCE PRODUCED OR ANY OTHER SORTED SEQUENCE DESIRED. IF TABLE SPACE IS EXHAUSTED BEFORE THE END OF INPUT FILE, AN EXTRACTED ITEM TABLE IS PUNCHED OUT. OVERFLOW ITEMS ARE PROCESSED UPON COMPLETION OF THE INITIAL RUN.

IN ADDITION TO PROPERTY AND CASUALTY INSURANCE FOR WHICH THE PROGRAM WAS DEVELOPED, THERE ARE NUMEROUS IMAGINATIVE USES FOR THE GENERAL DISTRIBUTION PROGRAM INCLUDING MULTIPLE SUMMARIZATION AND SELECTIVE FILE SEARCHING. A SIGNIFICANT FLEXIBILITY IS BUILT INTO THIS PROGRAM GIVING THE USER MULTIPLE CONTROL FIELD DESIGNATION WITH A RANGE FROM 1 TO 72 ACCUMULATORS FOR EACH CONTROL FIELD IN THE TABLE. REPORT WRITING BECOMES A RELATIVELY SIMPLE USE OF SORTED OUTPUT WITH NO ALTERATION TO INPUT FILE SEQUENCE.

MINIMUM SYSTEM REQUIREMENTS--
A 4K, 8K, OR 16K 1401 WITH HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, A 1402 CARD READ PUNCH, AND A 1403 PRINTER.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL
INCLUDING PROGRAM LISTINGS.
CARD DECKS - PROGRAM DECK... SAMPLE PROBLEM DECK.

1401-IF-03X GENERAL DISTRIBUTION PROGRAM
FOR A TAPE 1401
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IF-03X

THE GENERAL DISTRIBUTION PROGRAM FOR A TAPE 1401 DATA PROCESSING SYSTEM /1401-IF-03X/ SUMMARY AND FILE SEARCHING ABILITY FROM A TAPE FILE WITHOUT PRE-SORTING. IT IS A LOAD AND GO, TYPE PROGRAM WHICH IS ACTIVATED BY SIMPLE CONTROL CARDS. FOR MOST JOBS ONLY FOUR CONTROL CARDS NEED TO BE PUNCHED. THUS, FROM RANDOM TAPE RECORDS, EITHER BLOCKED OR SINGLE, IT WILL EXTRACT CONTROL FIELDS AND AMOUNT FIELDS, SUMMARIZE, SEQUENCE, AND WRITE OUT THESE EXTRACTED SUMMARIZED RECORDS. THE PROGRAM WAS DEVELOPED ESPECIALLY FOR THE PROPERTY AND CASUALTY INDUSTRY, BUT IT WILL HAVE WIDE APPLICATION IN ALL INDUSTRIES. THE PROGRAM EMPLOYS THE TECHNIQUES OF BUILDING TABLES IN CORE STORAGE, DOING AN INTERNAL SORT, AND A 3 TAPE MERGE. DETAILED INSTRUCTIONS FOR PUNCHING THE CONTROL CARDS ARE GIVEN IN THE REFERENCE MANUAL. THESE CARDS ARE PLACED BEHIND THE PROGRAM DECK, THE INPUT REEL MOUNTED ON A TAPE DRIVE, AND THE JOB IS READY TO RUN.

MINIMUM SYSTEM REQUIREMENTS--
4K, 8K, OR 16K 1401 WITH HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, AND SENSE SWITCHES. A 1402 CARD READ PUNCH, 1403 PRINTER, AND 3 TAPE DRIVES.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MATERIAL...
FLOWCHARTS... PROGRAM LISTINGS.
MAGNETIC TAPE - ONE REEL CONTAINING SAMPLE PROBLEM INPUT...
SOURCE DECK IN CARD IMAGE... OBJECT DECK IN CARD IMAGE.

1401-IF-05X HOMEOWNERS RATING PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IF-05X

THE IBM 1401 HOMEOWNERS RATING PROGRAM IS A SERIES OF SUBROUTINES WHICH PROVIDES A VALUABLE TOOL TO INSURANCE COMPANIES THAT DESIRE TO RATE NEW OR RENEWAL POLICIES. IT REQUIRES AS INPUT THOSE FACTORS FROM WHICH AN UNDERWRITER WOULD RATE THE POLICY. THE PROGRAM HAS PROVISION FOR ALLOWING CREDIT FOR EXISTING INSURANCE, INCREASED OR DECREASED LIMITS, NON-STANDARD COVERAGE AMOUNTS /INTERPOLATION/, AND RATING OF MANY STANDARD ENDORSEMENTS.

FEATURES--
- REDUCES CLERICAL EFFORT IN THE RATING, CODING, AND POLICY TYPING AREAS.
- FLEXIBLE, MODULAR PROGRAM ALLOWING MODIFICATIONS AND EASE OF ADAPTION.
- PROVIDES AN IMPORTANT STEP IN THE IMPLEMENTATION OF AN INSURANCE INFORMATION SYSTEM.

MINIMUM SYSTEM REQUIREMENTS--
AN 8K 1401 /SOME STATES REQUIRE 12K/ WITH ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE FEATURES. INPUT/OUTPUT DEVICES ARE DETERMINED BY USERS REQUIREMENTS. USE OF RANDOM ACCESS /ACS OR 1311/ CAN REDUCE STORAGE REQUIREMENTS TO 4K. RATING IN FORM SEQUENCE CAN ALSO APPRECIABLY REDUCE CORE STORAGE REQUIREMENTS.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL
/INCLUDES TABLES AND PROGRAM LISTINGS/.
CARD DECKS - SOURCE DECK... OBJECT DECK... SAMPLE PROBLEM DECK.

1401-IL-01X THE 62 CFO PROGRAM
/CONSOLIDATED FUNCTIONS ORDINARY/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IL-01X

CONTINUED FROM PRIOR COLUMN--

THIS SERIES OF FOURTEEN PROGRAMS IS DESIGNED TO COMPUTE NET PREMIUMS AND TERMINAL RESERVES FOR MOST PLANS OF INSURANCE. COMPUTE ADJUSTED PREMIUMS AND MINIMUM CASH VALUES FOR THOSE PLANS REQUIRING SUCH VALUES. STORE COMPUTED RESULTS ON MASTER RATE TAPES FOR USE IN THE COMPUTATION OF LEGAL RESERVES OR NON-FORFEITURE BENEFITS. PRINT THE COMPUTED RESULTS IN REPORT FORM FOR VISUAL REFERENCE AND OTHER PURPOSES. MINIMUM INPUT IS REQUIRED FOR MOST PLANS OF INSURANCE. /A WHOLE LIFE PLAN REQUIRES TWENTY-SIX COLUMNS OF DATA/. 62 CFO TERMINAL RESERVE, NET PREMIUMS, AND MINIMUM CASH VALUE PROGRAMS PROVIDE EXTREME FLEXIBILITY IN THE CALCULATION OF TERMINAL RESERVES AND MINIMUM CASH VALUES. THEY HAVE BEEN USED TO DUPLICATE CORRECTLY THE VALUES FOR HUNDREDS OF PLANS OR INSURANCE USING A WIDE VARIETY OF BENEFITS, MORTALITY TABLES, INTEREST RATES, AND METHODS OF VALUATION. USE OF THESE PROGRAMS WILL PROVIDE AN ECONOMIC MEANS OF PREPARING CONSOLIDATED FILES FOR CONVERSION TO 62 CFO DAILY CYCLE WHICH WILL BE AVAILABLE IN THE THIRD QUARTER OF 1963. EACH PLAN OF INSURANCE MUST BE DESCRIBED USING STANDARD FORMS. THE INPUT DATA IS PUNCHED FROM THESE FORMS AND PROCESSED THROUGH THE APPROPRIATE CFO PROGRAMS. INITIAL OUTPUT IS IN THE FORM OF MAGNETIC TAPE CONTAINING THE STRUCTURE OF THE PLAN, THE PREMIUMS, AND RELATED POLICY VALUES. A PRINT PROGRAM IS PROVIDED WHICH GENERATES DESCRIPTIVE INFORMATION AND PREPARES A COMPLETE REPORT ON EACH PLAN OF INSURANCE. THIS SERIES OF PROGRAMS WAS WRITTEN AND ASSEMBLED USING 1401 SPS. 12K 1401 CARD SYSTEM WITH 1402 CARD READ PUNCH MDL 1, 1403 PRINTER MDL 2, FOUR TAPE DRIVES, ADVANCED PROGRAMMING, EXPANDED PRINT EDIT, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, PRINT CONTROL ADDITIONAL, AND SENSE SWITCHES SPECIAL FEATURES.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR ORDERED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... 62 CFO VOLUMES I AND II.
ONE MAGNETIC TAPE - CONTAINS PROGRAM CARDS... MORTALITY TABLES...
SELECTED TWENTY-PAY LIFE PREMIUMS... SELECTED ADJUSTED LIFE PREMIUMS.
CARD DECKS - TAPE-TO-CARD PROGRAM DECK... SAMPLE PROBLEM DECK.

1401-IL-02X CONSOLIDATED FUNCTIONS
ORDINARY DAILY CYCLE PROGRAMS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IL-02X

THE /62 CFO DAILY CYCLE PROGRAMS, 1401-IL-02X, ARE 31 PROGRAMS WITH ACCOMPANYING ACTUARIAL TABLES DESIGNED TO MEET DATA PROCESSING REQUIREMENTS FOR ORDINARY LIFE INSURANCE COMPANIES IN THE FOLLOWING AREAS- /1/ INPUT PREPARATION TO THE DAILY CYCLE /BALANCE, SORT, EDIT... /2/ DAILY CYCLE PROCESSING FOR ALL POLICIES CONTAINED IN THE MASTER FILE /FILE MAINTENANCE, ACCOUNTING, COMMISSION, BITCHING, LOAN OR NON-FORFEITURE CALCULATIONS AND TERMINATIONS/. ... /3/ PREPARATION OF DAILY ACCOUNTING JOURNALS... AND /4/ PERIODIC FILE UPDATING RUNS /DIVIDENDS, CASH VALUES, AND RENEWABLE TERM PREMIUMS/. THE TOTAL SYSTEM PROVIDES FOR AUTOMATIC PROCESSING OF ALL SCHEDULED TRANSACTIONS AND FOR REQUESTED PROCESSING OF ALL NON-SCHEDULED TRANSACTIONS INVOLVING ORDINARY LIFE CONTRACTS. EXCEPTIONS WILL OCCUR ONLY WHEN THE POLICY IS ISSUED UNDER EXTREMELY UNUSUAL ARRANGEMENTS. THE SYSTEM IS BASED UPON CONSOLIDATION OF ALL POLICY INFORMATION INTO A SINGLE MAGNETIC TAPE RECORD AND INTEGRATES ALL PROCESSING FUNCTIONS WITHIN A SINGLE COMPUTER SYSTEM. PROCESSING COMMENCES WITH THE FIRST PREMIUM PAYMENT AND CONTINUES THROUGH MATURITY, EXPIRY, OR ANY OTHER FORM OF TERMINATION. ACCOUNTING AND COMMISSION RECORDS AS WELL AS POLICY EXPIRATION TRANSACTIONS ARE GENERATED AUTOMATICALLY AND BROUGHT FORWARD UNDER PROGRAM CONTROL FOR MONTH-END PROCESSING OR FOR VALUATION PURPOSES.

FEATURES--
/62 CFO DAILY CYCLE PROGRAMS WILL PROVIDE LIFE INSURANCE COMPANIES USING THIS SYSTEM WITH EXCEPTIONAL OPERATIONAL EFFICIENCY. THE MAJOR FEATURES OF THIS SYSTEM ARE- /1/ DAILY ANALYSIS OF ALL POLICY RECORDS FOR ANY FORM OF ACTIVITY... /2/ CONTINUOUS CONTROL OF POLICY MASTER FILE... /3/ POLICY INFORMATION FOR ACCOUNTING JOURNALS, COMMISSION STATEMENTS, NOTIFICATION, POLICYHOLDER SERVICE AND VALUATION REPORTS FROM A SINGLE SOURCE... AND /4/ ORGANIZATION OF OUTPUT FROM THE SYSTEM INTO MEANINGFUL PRINTED REPORTS.

USE--
/62 CFO DAILY CYCLE ASSUMES THE DEVELOPMENT OF A COMPLETE POLICY MASTER FILE BY EACH USER. TO HELP IN THE DATA GATHERING NECESSARY FOR A CONSOLIDATED FILE, PROGRAMS ARE AVAILABLE /1401-IL-01X/ TO GENERATE RESERVE, NET PREMIUM AND MINIMUM CASH VALUE RATE TAPES. RATE TAPE PHILOSOPHY HAS BEEN INCORPORATED INTO THE OVERALL SYSTEM TO FACILITATE THE HANDLING OF ANY TYPE OF UPDATING REQUIRED AND IN MANY CASES ELIMINATE THE NECESSITY FOR DATA GATHERING.

RESPONSIBILITY INCLUDES THE FOLLOWING MAJOR AREAS- /1/ GATHERING ALL DATA NECESSARY TO ESTABLISH A POLICY MASTER RECORD ... /2/ PREPARATION OF CONVERSION PROGRAMS WHICH WILL CONVERT GATHERED DATA INTO AN ACCEPTABLE FORMAT... /3/ PREPARATION OF NEW BUSINESS PROGRAMS WHICH WILL CONVERT NEW ISSUE DATA INTO AN ACCEPTABLE FORMAT... /4/ PREPARATION OF A PRINT PROGRAM FOR PREMIUM AND ANNIVERSARY NOTICES... AND /5/ PREPARATION OF CASH VALUE AND DIVIDEND RATE TAPES, RENEWABLE TERM PREMIUM RATE CARDS, AGENTS CONTROL RECORDS, AND COMMISSION TABLES. DAILY CYCLE PROGRAMS MAY BE USED AS THEY ARE OR WITH SLIGHT MODIFICATION TO FACILITATE AUDITING NEWLY CONVERTED POLICY RECORDS. DIVIDEND, CASH VALUE AND RENEWABLE TERM UPDATING PROGRAMS CAN ALSO BE USED AS CONVERSION PROGRAMS. DAILY CYCLE PROGRAMS WILL OPERATE UPON ANY PROPERLY CONVERTED BLOCK OF POLICIES ON EITHER A DAILY OR PERIODIC SCHEDULE.

MINIMUM SYSTEM REQUIREMENT--
12K 1401 SYSTEM WITH 1402 CARD READ PUNCH MDL 1... 1403 PRINTER MDL 2... FIVE TAPE DRIVES... ADVANCED PROGRAMMING, EXPANDED PRINT EDIT, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, PRINT CONTROL ADDITIONAL, AND SENSE SWITCHES SPECIAL FEATURES.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR ORDERED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... /62 CFO POLICY MASTER RECORD CODE BOOK /VOLUME 0/ AND VOLUMES 3 THROUGH 11.
CARD DECKS - OBJECT DECK DESIGNED TO ADD OR TO ALTER PROGRAMS ON THE 62 CFO PROGRAM TAPE.
MAGNETIC TAPE - ONE REEL CONTAINING ALL DECKS IN SOURCE

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CONTINUED FROM PRIOR PAGE--
PROGRAM CARD FORM... AND MORTALITY TABLES.

CONTINUED FROM PRIOR COLUMN--
1026 TRANSMISSION CONTROL UNITS /ONE FOR EACH COMMUNICATION
LINE/... I/O UNITS /AS REQUIRED/.

1401-IL-03X CONSOLIDATED FUNCTIONS ORDINARY VALUATION PROGRAM ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-IL-03X

THE 62 CFO /CONSOLIDATED FUNCTIONS ORDINARY/ VALUATION PROGRAMS, 1401-IL-03X, ARE A SERIES OF 15 PROGRAMS DESIGNED TO OPERATE EXCLUSIVELY IN THE AREA OF VALUATION AND IN THE PREPARATION OF THE POLICY EXHIBIT FOR ORDINARY LIFE INSURANCE COMPANIES. ALL OF THE PROGRAMS IN THIS SERIES ASSUME A STANDARD 62 CFO RECORD FORMAT. PROCESSING MAY BE PERFORMED ON A STANDARD ANNUAL BASIS OR AT ANY MORE FREQUENTLY DESIRED CYCLE SUCH AS SEMIANNUALLY, QUARTERLY, OR MONTHLY. ALL INFORMATION FURNISHED BY THESE PROGRAMS COMES EXCLUSIVELY FROM PAID FOR BUSINESS IN THE FILE ON THE VALUATION DATE AND DOES NOT PERTAIN IN ANY WAY TO SUPPLEMENTARY FILES. POLICY EXHIBIT AND RESERVES RELEASED ARE BASED ON ACTIVITY TO THE POLICY MASTER FILE DURING THE REPORTING PERIOD.

FEATURES- THE VALUATION PROCEDURES WERE DESIGNED TO CONFORM TO STANDARD VALUATION PRACTICES AND TO FURNISH THE MAXIMUM AMOUNT OF INFORMATION AVAILABLE FROM A CURRENT CONSOLIDATED POLICY MASTER FILE. ALL RESERVES AND NET PREMIUMS ARE STORED ON MACHINE-GENERATED RATE TAPES AND ARE ASSOCIATED WITH EACH POLICY RECORD ONLY AT THE TIME OF VALUATION, THUS ELIMINATING THE NEED TO STORE EXCESSIVE VALUATION INFORMATION AS A PART OF EACH POLICY RECORD. THE MAJOR FEATURES OF THE OVERALL APPROACH ARE-

- /1/ USING THE DAILY CYCLE PROGRAMS /1401-IL-02X/, CONTROL OF THE POLICY MASTER FILE IS MAINTAINED ON A CURRENT DAILY BASIS FOR THE NUMBER OF POLICIES, IMPAIRMENTS, ALL FORMS OF DEPOSITS, AND SUSPENSE ITEMS, THUS ELIMINATING THE NEED FOR PREPARATORY WORK PRIOR TO THE BEGINNING OF A VALUATION.
- /2/ ALL ELEMENTS OTHER THAN LEGAL RESERVES ARE CARRIED AS LEDGER ITEMS. EACH DETAIL ITEM NEEDED FOR A VALUATION IS EXTRACTED FROM THE POLICY MASTER FILE ON AN INDIVIDUAL BASIS FOR REPORTING PURPOSES, ALLOWING COMPLETE FLEXIBILITY IN REPORTING TECHNIQUE.
- /3/ RESERVES ARE COMPUTED FOR PREMIUM PAYING POLICIES, ALL FORMS OF PAID-UP POLICIES, AND FOR EACH OF THE VARIOUS TYPES OF SUPPLEMENTAL BENEFITS AND EXTRA LIFE PREMIUMS.
- /4/ DEFERRER AND UNCOLLECTED PREMIUMS ARE COMPUTED ON BOTH A GROSS AND NET BASIS. IN ADDITION, GROSS ADVANCE PREMIUMS ARE CALCULATED.
- /5/ IN-FORCE AMOUNTS OF THE ENTIRE MASTER POLICY FILE ARE COMPUTED, MAINTAINED, AND REPORTED AS A PART OF THE VALUATION PROCEDURE.
- /6/ REPORTS ARE AVAILABLE AS A DETAIL LISTING OF EACH ITEM, BY VALUATION DATE, BY PLAN, AND BY METHOD OF VALUATION, MORTALITY TABLE, AND INTEREST RATE.

USE- EACH VALUATION MAY BE TAKEN ON EITHER A PARTIAL BASIS OR A COMPLETE BASIS AS OF ANY MONTH END. MINIMUM RESULTS WILL INVOLVE- /1/ LOAN BALANCES WITH EITHER ACCRUED OR UNEARNED INTEREST ADJUSTMENTS... /2/ AMOUNTS ON DEPOSIT WITH ACCRUED INTEREST... /3/ SUSPENSE TOTALS OF UNAPPLIED CASH OR RETURNED ITEMS... /4/ LIFE RESERVES AND CORRESPONDING PREMIUM ADJUSTMENTS... /5/ POLICY EXHIBIT CHANGES WITHIN THE REPORTING PERIOD... AND /6/ SUMMARY REPORTS OF EACH OF THE ABOVE ITEMS.

ADDITIONAL RESULTS FROM A FULL VALUATION WILL INCLUDE ALL OF THE ABOVE AS WELL AS- /1/ DEFICIENT RESERVES... /2/ TOTALS FOR ANNUAL STATEMENT PAGE 15 AND STATE POLICY EXHIBITS, AND A DETAIL LISTING OF CHANGES... /3/ RESERVES RELEASED AND TABULAR NET PREMIUM ADJUSTMENTS... AND /4/ EITHER SUMMARY OR DETAIL REPORTS OF ALL VALUATION ITEMS.

MINIMUM SYSTEM REQUIREMENTS-

12K 1401 SYSTEM WITH... 1402 CARD READ PUNCH MDL 1... 1403 PRINTER MDL 2... FIVE TAPE DRIVES... ADVANCED TAPING, EXPANDED PRINT EDIT, HIGH-LOW-EQUAL COMPARE, MULTIPLY, DIVIDE, PRINT CONTROL ADDITIONAL, AND SENSE SWITCHES SPECIAL FEATURES. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIER FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL--

DOCUMENTATION - PROGRAM WRITE-UP... /62 CFO VOLUMES 12 THROUGH 16.

CARD DECK - OBJECT DECK DESIGNED TO ADD OR ALTER PROGRAMS ON THE 62 CFO PROGRAM TAPE.

MAGNETIC TAPE - ONE REEL CONTAINING SOURCE PROGRAM CARDS FOR THE 15 COMPONENT PROGRAMS.

1401-IO-012 COMMUNICATIONS IOCS /1026/DDC/ FOR THE 1401/1460 ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-IO-012

THIS IOCS FACILITATES THE GENERATION OF PROGRAMS TO CONTROL 1026 COMMUNICATION WITH 1030, 1050, AND 1060. IT IS COMPATIBLE WITH THE 1401/1460-1440 COMMUNICATIONS IOCS FOR THE 1448, THUS REQUIRING A MINIMUM OF RE-PROGRAMMING FOR GROWTH FROM 1026 TRANSMISSION CONTROL UNITS TO A 1448. APPLICATIONS CAN RANGE FROM SINGLE INQUIRIES TO SOPHISTICATED REAL-TIME DATA OPERATIONS. ITS FUNCTIONS ARE-

- CONTROL OF THE 1447 CONSOLE
- USER CONTROL OF POLLING, ADDRESSING AND RECEIVING
- ERROR DETECTION
- OPERATION WITH EXISTING IBM PROGRAMS FOR DDC

- TIME OF DAY RECORDING WITH THE 1032 DIGITAL TIME UNIT
THE 1401/1460 COMMUNICATIONS IOCS /1026/DDC/ WILL OPERATE WITH POINT-TO-POINT OR MULTI-POINT COMMON CARRIER LEASED OR CUSTOMER-OWNED COMMUNICATION LINES. IN ADDITION, THE PROGRAMS WILL SUPPORT THE AUTOMATIC ANSWERING FEATURE AND THE AUTOMATIC CALLING FEATURE.

COMMUNICATIONS IOCS /1026/DDC/ CONSIST OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR IN AN AUTOCODER SOURCE PROGRAM BY MACRO INSTRUCTIONS, ARE SELECTED, TAILORED, AND INCLUDED IN THE OBJECT PROGRAM. THE ROUTINES PERFORM THE FUNCTIONS NECESSARY TO HANDLE BASIC INPUT/OUTPUT FILES, TO TRANSMIT INFORMATION TO AND RECEIVE INFORMATION FROM REMOTE LOCATIONS AND REMOTE PROCESSORS, AND TO PROVIDE LINKAGE TO USERS/ PROGRAMS. THE SPECIFIC ROUTINES GENERATED AT ASSEMBLY TIME DEPEND LARGELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USER'S/ SOURCE PROGRAMS.

THE LIBRARY ROUTINES FOR THIS IOCS IS TO BE PLACED IN THE AUTOCODER SYSTEM THROUGH A LIBRARY RUN, USING AUTOCODER /ON DISK/ FOR 1401, 1440, AND 1460, NO. 1401-AU-008.
SYSTEM REQUIREMENTS FOR PROGRAM ASSEMBLY- SAME AS THOSE FOR THE ASSEMBLY OF ANY PROGRAM USING 1401/1440/1460 AUTOCODER /ON DISK/ PROGRAM. THE AUTOCODER /ON DISK/ PROGRAM SHOULD BE ORDERED CONCURRENTLY UNLESS OTHERWISE AVAILABLE.
FOR OBJECT PROGRAMS- A 4K 1401 WITH... ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE FEATURES... 1409 CONSOLE AUXILIARY MDL 2... 1026 TRANSMISSION CONTROL UNIT ATTACHMENT FEATURE...

OR
AN 8K 1460 WITH... INDEXING AND STORE ADDRESS REGISTER FEATURE... 1447 CONSOLE MDL 1... 1026 TRANSMISSION CONTROL UNIT ATTACHMENT FEATURE... 1026 TRANSMISSION CONTROL UNITS /ONE FOR EACH COMMUNICATION LINE/... I/O UNITS /AS REQUIRED/.

IN ADDITION- DIRECT DATA CHANNEL FEATURE... INTERRUPT... 1447 CONSOLE MDL 2 FOR 1440 AND 1460, MDL 3 FOR 1401... 1032 DIGITAL TIME UNIT MAY BE PRESENT, AS DESIRED. NOTE- USE OF DDC WITH 1026 SHOULD SPECIFY THE INTERRUPT FEATURE /AVAILABLE ON 1401 ONLY AS RPQ/ FOR OPTIMUM PERFORMANCE.
PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE 1440, 1401/1311 PROGRAMS ARE ORDERED AT THE SAME TIME.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - WRITE-UP... OPERATIONS INSTRUCTIONS.
CARD DECKS - LIBRARY DECK OF MACROS.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS.

1401-IO-040 TAPE READING WRITING SUBROUTINES ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-IO-040

PURPOSE TO PROVIDE 1401 USERS WITH CLOSED SUBROUTINES WHICH ARE CONSISTENT WITH THE APPLIED PROGRAMMING TAPE STANDARDS FOR TAPE READING AND WRITING. THE SUBROUTINES CONSIST OF A TAPE READ/WRITE ROUTINE, A READ ROUTINE AND A WRITE ROUTINE. INCLUDED ARE 1. ERROR CHECKING PROCEDURES 2. NOISE RECORD PROCEDURES 3. DUMPING OF UNREADABLE RECORDS 4. STATISTICS CONCERNING RETRIES. EQUIPMENT SPECIFICATIONS ARE FOR 4K TAPE SYSTEM /ADVANCED PROGRAMMING FEATURES /NECESSARY ONLY WITH 1401 READ/WRITE TAPE ROUTINE/

BASIC PROGRAM MATERIAL -
DOCUMENTATION - LISTINGS... FLOWCHARTS... PROGRAM WRITE-UP.
CARD DECK - CONDENSED DECK.

1401-IO-065 INPUT/OUTPUT CONTROL SYSTEM ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-IO-065

PURPOSE THE 1401 IOCS CONSISTS OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR IN A 1401 AUTOCODER SOURCE PROGRAM BY MACRO INSTRUCTIONS, ARE SELECTED AND TAILORED AND INCLUDED IN THE OBJECT PROGRAM. THESE ROUTINES PERFORM I/O FUNCTIONS AND PROVIDE LINKAGE TO THE USER'S OBJECT PROGRAM. THE SPECIFIC STATEMENTS GENERATED AT ASSEMBLY TIME DEPEND COMPLETELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USER'S SOURCE PROGRAM. USE OF PROGRAM THE 1401 IOCS LIBRARY ROUTINES ARE TO BE PLACED IN THE 1401 AUTOCODER SYSTEM /VERSION 9 OR LATER VERSION/ THROUGH A LIBRARY RUN. MACHINE CONFIGURATION OF THE 1401 IOCS WILL PERFORM THE I/O FUNCTIONS AND ASSOCIATED HOUSEKEEPING FOR TAPE, CARD READER, CARD PUNCH AND PRINTER. THE OBJECT MACHINE MUST HAVE, IN ADDITION TO ANY OF THE ABOVE I/O UNITS, ADVANCED PROGRAMMING FEATURES AND THE HIGH-LOW-EQUAL COMPARE FEATURE. THE AMOUNT OF CORE STORAGE REQUIRED VARIES WIDELY FROM PROGRAM TO PROGRAM AND MUST BE DETERMINED AT ASSEMBLY TIME.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR ORDERED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... DOCUMENTATION OF THE 1401 IOCS SYSTEM INCLUDING LANGUAGE SPECIFICATIONS... FLOWCHARTS... SAMPLE PROGRAM.
ONE MAGNETIC TAPE - 1401 MODEL STATEMENTS IN CARD IMAGE FORM.

1401-IO-068 IBM 1401/1460 IOCS /ON DISK/ ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-IO-068

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THE IBM 1401/1460 IOCS, /ON DISK/, VERSION 2, NO. 1401-IC-068, /PREVIOUSLY NAMED 1401/1311 IOCS/ IS AVAILABLE TO BE USED ON 1401 AND 1460 SYSTEMS WITH 1401/1440/1460 AUTOCODER /ON DISK/, NO. 1401-AU-008.

THE NEW VERSION CONSISTS OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR BY MACRO INSTRUCTIONS ARE SELECTED, TAILORED AND INCLUDED IN THE OBJECT PROGRAM. FOR 1401 AND 1460 SYSTEMS, THESE ROUTINES PERFORM I/O FUNCTIONS AND HOUSEKEEPING ASSOCIATED WITH 1311 DISK STORAGE, 1301 DISK STORAGE, MAGNETIC TAPE, CARD READER, CARD PUNCH, AND PRINTER. THEY ALSO PROVIDE LINKAGE TO THE USER'S OBJECT PROGRAM. THE SPECIFIC STATEMENTS GENERATED AT ASSEMBLY TIME DEPEND COMPLETELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USER'S SOURCE PROGRAM. THE 1401/1460 IOCS LIBRARY ROUTINES ARE TO BE PLACED IN THE 1401/1440/1460 AUTOCODER /ON DISK/ SYSTEM THRU A LIBRARY RUN. SYSTEM REQUIREMENTS-

FOR ASSEMBLY -- PROGRAMS INCORPORATING I/O MACRO INSTRUCTIONS FOR 1401 AND 1460 SYSTEMS MAY BE ASSEMBLED ON- A 4K 1401 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2 OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE

OR
AN 8K 1460 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE OR ONE 1301 DISK STORAGE ARRAY... 1402 CARD READ PUNCH... ONE 1403 PRINTER

OR
A 4K 1440 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE OR ONE 1301 DISK STORAGE ARRAY... 1402 CARD READ PUNCH MDL 1 OR 2 OR 1442 CARD READER MDL 4 AND 1444 CARD PUNCH... 1443 PRINTER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LIBRARY LISTINGS... OPERATING PROCEDURES.
CARD DECKS - LIBRARY CARD DECK... CARD DECK OF SAMPLE SOURCE PROGRAM FOR TEST PURPOSES...

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS.

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

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CONTINUED FROM PRIOR COLUMN--

1401-10-074 TAPE PUNCH ROUTINES FOR THE

1401-1012
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-10-074

THE PROPER USE OF THESE ROUTINES WILL RELIEVE THE USER OF THE RESPONSIBILITY OF CODING THE NECESSARY INSTRUCTIONS TO CONTROL 1401-1012 TAPE PUNCHING, ERROR CHECKING, AND ERROR CORRECTION. THE ROUTINES ARE DESIGNED TO BE USED AS A PART OF THE 1401 AUTOCODER LIBRARY. ONCE PART OF THIS LIBRARY, THEY MAY BE INCLUDED IN ANY OBJECT PROGRAM THROUGH THE USE OF THE APPROPRIATE MACRO-INSTRUCTION. FOR ASSEMBLY OF SOURCE PROGRAMS - 1401 PROCESSING UNIT / ANY MODEL WITH 4000 OR MORE CORE STORAGE POSITIONS / FOUR IBM 729 II, 729 IV, OR 7330 MAGNETIC TAPE UNITS 1403 PRINTER, MODEL 2 1402 CARD READ-PUNCH ADVANCED PROGRAMMING FEATURE HIGH-LOW-EQUAL COMPARE FEATURE SENSE SWITCHES FOR EXECUTION OF OBJECT PROGRAMS - IBM 1401 PROCESSING UNIT, IBM 1012 TAPE PUNCH, TAPE UNITS-ONLY AS REQUIRED FOR OTHER INPUT OR OUTPUT DATA, IBM 1402 CARD READ-PUNCH-ONLY AS REQUIRED FOR OTHER INPUT OR OUTPUT DATA.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... 1401-1012 TAPE PUNCH ROUTINES
... D.P. PROCESSING SYSTEM BULLETIN.
CARD DECK - TAPE PUNCH ROUTINES DECK /CONDENSED/.

1401-10-077 IBM INPUT/OUTPUT CONTROL
PROGRAM /IOCP/ FOR IBM 1401/1440/1460 WITH THE IBM 1285 OPTICAL READER
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-10-077

PROVIDES SUPPORT FOR SOURCE DOCUMENT ENTRY APPLICATIONS THAT USE ONE 1285 OPTICAL READER ATTACHED TO A 1401, 1440, OR 1460. THESE SUBROUTINES ARE DESIGNED TO ELIMINATE THE USER'S NEED TO PROGRAM LOGICAL DETAILS ASSOCIATED WITH 1285 JOURNAL ROLL PROCESSING. RECORD MARK AND WORD MARK DEFINITION OF THE RECORDS IN CORE ALLOWS THE USER TO EASILY TRANSFER THEM TO AN OUTPUT DEVICE. IOCP PERFORMS THESE FUNCTIONS -- READS HEADER INFORMATION ENTERED FROM THE KEYBOARD... READS LINES OF DATA FROM A JOURNAL ROLL INTO A SPECIFIC AREA OF CORE... TESTS FOR PARTY ERRORS IN READING INTO CORE STORAGE... TESTS FOR VALID DATA LINE LENGTH... MAKES THE NECESSARY BRANCHES TO THE USER'S ROUTINES FOR PROCESSING AND PROVIDING OUTPUT. THE 1401/1440/1460 - 1285 IOCP CONSISTS OF THE FOLLOWING COMPONENTS- AUTOCODER SYMBOLIC DECK... BASIC AUTOCODER SYMBOLIC DECK. THE USER DECIDES WHICH OF THESE TWO DECKS HE DESIRES TO USE. THE DECK WHICH IS CHOSEN AND THE USER PROVIDED PROBLEM PROGRAM, ONCE ASSEMBLED, ARE LOADED INTO MAIN STORAGE FROM CARDS. THIS COMBINED DECK /1285 IOCP AND THE USER'S PROBLEM PROGRAM/ ALLOWS THE PROCESSING OF DATA READ FROM THE JOURNAL ROLL AND EFFECTS THE READING AND WRITING OF OTHER INPUT/OUTPUT DEVICES WHICH THE USER MAY REQUIRE IN HIS 1285 APPLICATIONS. IN A 1285 OPTICAL READER CONFIGURATION, THROUGHPUT WILL VARY WITH USER PROCESSING TIME REQUIREMENTS AND OTHER INPUT/OUTPUT OPERATIONS. HOWEVER, THE IOCP IS DESIGNED TO MAKE POSSIBLE THE MAXIMUM 1285 OPTICAL READER THROUGHPUT. STORAGE CONSIDERATIONS BY THE USER SHOULD INCLUDE 1.2K POSITIONS FOR THE IOCP. FOR EACH SYSTEM /1401, 1440, AND 1460/ THE MINIMUM MACHINE REQUIREMENTS FOR ASSEMBLING AN AUTOCODER OR BASIC AUTOCODER PROGRAM THAT USES IOCP MAY BE FOUND IN THE APPROPRIATE AUTOCODER OR BASIC AUTOCODER SPECIFICATION PUBLICATION. FOR EXECUTION -- A 4K 1401, 1440, OR AN 8K 1460 WITH ONE 1402 OR 1442 CARD READ PUNCH... ONE 1285 OPTICAL READER... SERIAL INPUT/OUTPUT ADAPTER... OUTPUT DEVICES SPECIFIED BY THE USER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM MATERIAL LIST...LISTINGS OF AUTOCODER AND BASIC AUTOCODER SYMBOLIC DECKS...FLOWCHARTS...
INPUT/OUTPUT CONTROL PROGRAM SPECIFICATIONS AND OPERATING PROCEDURES. IBM 1401/1440/1460 WITH IBM 1285 OPTICAL READER REFERENCE PUBLICATION.
MACHINE READABLE - AUTOCODER SYMBOLIC DECK...BASIC AUTOCODER SYMBOLIC DECK.

1401-10-152 7040/44 - 1401 INPUT/OUTPUT
CONTROL PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-10-152

THIS 1401 PROGRAM PERMITS THE INPUT/OUTPUT DEVICES ON A 1401 ON CHANNEL A OF A 7040/7044 TO BE USED AS IF THEY WERE ON THE 7040/7044. THIS PROGRAM ACCEPTS CONTROL INFORMATION AND DATA FROM THE 7040/7044 8K OR 16/32K. OPERATING SYSTEMS AND PERFORMS ON-LINE TAPE, BASIC CARD READ-PUNCH, AND PRINTER FUNCTIONS. THIS PROGRAM IS READ INTO THE 1401 BY ITS 1402 CARD READER AND OPERATES IN CONJUNCTION WITH THE 7040/7044 8K OR 16/32K IOCS. MACHINE REQUIREMENTS- A 1401 DATA PROCESSING SYSTEM USED WITH THE 7040/7044-1401 INPUT/OUTPUT CONTROL PROGRAM MUST BE EQUIPPED WITH THE SERIAL INPUT/OUTPUT ADAPTER /FEATURE CODE NO. 7080/ AND THE 7040/7044 MUST LIKEWISE HAVE A 1401 ADAPTER NO. 1034. THE 1401 MUST HAVE AT LEAST 4000 POSITIONS OF CORE STORAGE, THE COLUMN BINARY FEATURE NO. 1990, A 1402 CARD READ-PUNCH, AND THE ADVANCED PROGRAMMING FEATURE. *** DISTRIBUTION OF THIS PROGRAM IS RESTRICTED TO USERS OF THE 7040/7044 OPERATING SYSTEM, FILE NUMBER 7040-PR-150

BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP... FLOW CHARTS.
CARD DECKS -- OBJECT PROGRAM DECK... SYMBOLIC INPUT DECK.

1401-LM-007 CARD SYSTEM SUBROUTINES
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-007

PURPOSE TO PROVIDE A FEW FREQUENTLY-USED ARITHMETIC SUBROUTINES. THIS 1401 PROGRAM PROVIDES MULTIPLY I /FOR STORAGE SPACE ECONOMY/ MULTIPLY II /FOR SPEED ECONOMY/ DIVIDE DOZENS-TO-UNITS CONVERSION UNITS-TO-DOZENS CONVERSION NOTE CLOSED SUBROUTINE LINKAGE INSTRUCTIONS PROVIDED.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED DECK.

1401-LM-010 IBM 1401/60 TIMING PROGRAM
FOR THE TOS/360 TAPE SORT MERGE PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-010

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THE 1401/1460 TIMING PROGRAM FOR THE TOS/360 TAPE SORT/MERGE PROGRAM, PROVIDES TIMING ESTIMATES FOR THE TOS/360 TAPE SORT/MERGE PROGRAM WHEN OPERATING ON A SYSTEM/360 MODEL 2030 OR MODEL 2040 WITH A MAXIMUM OF 256K BYTES OF MAIN STORAGE, A CHANNEL CONFIGURATION OF EITHER ONE MULTIPLEXER OR CHANNEL, ONE SELECTOR CHANNEL, OR TWO SELECTOR CHANNELS, CONNECTED TO A 2404 MAGNETIC TAPE UNIT AND CONTROL, A 2804 TAPE CONTROL, OR A 2816 SWITCHING UNIT, AND USING 2401, 2402, 2403, OR 2404 TAPE DRIVES. TIMING ESTIMATES FOR THE MODEL 2030 ASSUME A 1.5 MICROSECOND CYCLE TIME. THE PROGRAM WILL PROVIDE ONE MULTIPLEXER, ONE SELECTOR OR TWO SELECTOR CHANNEL SORT TIMING ESTIMATES FOR SORTING FIXED LENGTH RECORDS WITH A SINGLE CONTROL FIELD. TIMINGS CAN BE OBTAINED FOR MANY RECORD VOLUMES DESIGNATED BY THE USER, OR FOR A SPREAD OF RECORD VOLUMES PREDETERMINED BY THE TIMING PROGRAM. IN ADDITION, MAIN STORAGE UTILIZATION AND MAXIMUM FILE SIZE ARE INCLUDED IN THE PROGRAM OUTPUT. CONTROL CARDS ARE USED TO SUPPLY A DESCRIPTION OF THE SYSTEM AND RECORD/FILE CONFIGURATION FOR WHICH ESTIMATES ARE REQUIRED. MULTIPLE RECORD/FILE CARDS MAY BE USED WITH ONE RECORD/FILE CARD TO ESTIMATE TIMES FOR MANY FILE CONFIGURATIONS ON THE SAME SYSTEM. OR, MANY SYSTEMS CARDS MAY BE USED WITH ONE RECORD/FILE CARD TO ESTIMATE THE TIME FOR SORTING ONE FILE ON SEVERAL DIFFERENT SYSTEMS. MULTIPLE CONTROL CARD SETS CAN BE STACKED TO PROVIDE MULTIPLE ESTIMATES AT THE SAME TIME. MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH... ONE 1402 CARD READ PUNCH MODEL 1... ONE 1403 MODEL 2 OR 1404 PRINTER... HIGH-LOW/EQUAL COMPARE FEATURE... MULTIPLY/DIVIDE FEATURE... SENSE SWITCHES... ADVANCED PROGRAMMING FEATURE. OR
A 16K 1460 SYSTEM WITH... ONE 1402 CARD READ PUNCH MODEL 3... ONE 1403 PRINTER MODEL 2... MULTIPLY-DIVIDE FEATURE... INDEXING AND STORE ADDRESS REGISTER FEATURE... SENSE SWITCHES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM MATERIAL LIST... 1401/60 TIMING PROGRAM FOR BASIC OPERATING SYSTEM/360 TAPE SORT/MERGE PROGRAM /16K/ MANUAL C24-3439... TAPE SORT/MERGE /16K/ SPECIFICATIONS MANUAL C24-3438.
MACHINE READABLE - OBJECT DECK

1401-LM-011 1401/1460 TIMING PROGRAM FOR
IBM BASIC OPERATING SYSTEM/360 DISK SORT/MERGE PROGRAM /16K/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-011

THE IBM 1401/1460 TIMING PROGRAM PROVIDES TIMING ESTIMATES FOR THE DISK SORT/MERGE PROGRAM FOR THE DISK SORT/MERGE PROGRAM /16K DISK/ WHEN OPERATING ON A SYSTEM/360 MODEL 2030 OR MODEL 2040 WITH A MAXIMUM OF 256K BYTES OF MAIN STORAGE, A CHANNEL CONFIGURATION OF ONE MULTIPLEXER OR SELECTOR CHANNEL AND UP TO 8 IBM 2311 DISK STORAGE DRIVES. TIMING ESTIMATES FOR THE MODEL 2030 ASSUME A 1.5 MICROSECOND CYCLE TIME. THIS PROGRAM WILL PROVIDE SORT TIMING ESTIMATES FOR SORTING FIXED LENGTH RECORDS WITH A SINGLE CONTROL FIELD. TIMINGS CAN BE OBTAINED FOR SPECIFIC RECORD VOLUMES DESIGNATED BY THE USER, OR FOR A SPREAD OF RECORD VOLUMES PREDETERMINED BY THE TIMING PROGRAM. IN ADDITION, MAIN STORAGE UTILIZATION AND MAXIMUM FILE SIZE ARE INCLUDED IN THE PROGRAM OUTPUT. CONTROL CARDS ARE USED TO SUPPLY A DESCRIPTION OF THE COMPUTING SYSTEM, FILE CONFIGURATION AND RECORD DEFINITION FOR WHICH ESTIMATES ARE REQUIRED. MULTIPLE RECORD/FILE CARDS MAY BE USED WITH ONE SYSTEM DEFINER CARD TO ESTIMATE TIMES FOR MANY FILE CONFIGURATIONS ON THE SAME SYSTEM. ALSO, MANY SYSTEM DEFINER CARDS MAY BE USED WITH ONE RECORD/FILE CARD TO ESTIMATE THE TIME FOR SORTING ONE FILE ON SEVERAL DIFFERENT SYSTEMS. MULTIPLE CONTROL CARD SETS CAN BE STACKED TO PROVIDE MULTIPLE ESTIMATES AT THE SAME TIME. MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH... A 1402 CARD READ PUNCH MODEL 1... A 1403 MODEL 2, OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE FEATURE... ADVANCED PROGRAMMING FEATURE... MULTIPLY-DIVIDE FEATURE... SENSE SWITCHES... OR
A 16K 1460 SYSTEM WITH... A 1402 CARD READ PUNCH MODEL 3... A 1403 MODEL 2 PRINTER... MULTIPLY-DIVIDE FEATURE... INDEXING AND STORE ADDRESS REGISTER FEATURES... SENSE SWITCHES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM MATERIAL LIST... TIMING PROGRAM MANUAL C24-3445... DISK OPERATING SYSTEM SORT/MERGE MANUAL C24-3444.
MACHINE READABLE - OBJECT DECK.

1401-LM-012 1401/1460 TIMING PROGRAM FOR
SYSTEM/360 DISK AND TAPE OPERATING SYSTEMS TAPE SORT/MERGE PROGRAMS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-012

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1401/1460 TIMING PROGRAM FOR SYSTEM/360 DISK AND TAPE OPERATING SYSTEMS TAPE SORT/MERGE PROGRAMS PROVIDES TIMING ESTIMATES FOR TOS/360 SORT/MERGE PROGRAMS USING 2415 TAPE DRIVES WITH EITHER 800 OR 1600 BYTES PER INCH DENSITY ON SYSTEM/360 MODELS 30 AND 40 WITH A MAXIMUM OF 256K MAIN STORAGE, THE MULTIPLEXER CHANNEL, AND EITHER ONE OR TWO SELECTOR CHANNELS. THIS PROGRAM PROVIDES TIMES FOR SORTING FIXED-LENGTH RECORDS WITH A SINGLE TEN CHARACTER CONTROL FIELD IN FIXED-LENGTH BLOCKS. TIMINGS CAN BE OBTAINED FOR SPECIFIC RECORD VOLUMES DESIGNATED BY THE USER OR FOR A SPREAD OF RECORD VOLUMES. CONTROL CARDS SUPPLY A DESCRIPTION OF THE SYSTEM AND OF THE FILES TO BE SORTED. TIMING ESTIMATES ARE WITHIN 15 PER CENT OF ACTUAL SORTING TIMES.

MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH ONE 1402 CARD READ PUNCH MODEL 1, ONE 1403 MODEL 2 OR 1404 PRINTER, HIGH-LOW-EQUAL COMPARE FEATURE, MULTIPLY-DIVIDE FEATURE, SENSE SWITCHES, AND ADVANCED PROGRAMMING FEATURE. OR A 16K 1460 SYSTEM WITH ONE 1402 CARD READ PUNCH MODEL 3, ONE 1403 PRINTER MODEL 2, MULTIPLY-DIVIDE FEATURE, INDEXING AND STORE ADDRESS REGISTER FEATURE, AND SENSE SWITCHES.

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BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM MATERIAL LIST... TIMING PROGRAM
MANUAL, C24-3439.
MACHINE READABLE - OBJECT DECK IN CARD FORM.

1401-LM-060 SORT 7 TIMING PROGRAM FOR
1401/1460
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-060

THE SORT 7 TIMING PROGRAM /NO. 1401-LM-060/ IS A GENERALIZED PROGRAM USED TO OBTAIN TIMING ESTIMATES FOR RECORD FILES TO BE SORTED USING 1401 SORT 7 /NO. 1401-SM-060/ ON 1401 OR 1460 SYSTEMS. THE TIMING PROGRAM RUNS ON A 16K 1401 OR 1460. FEATURES- THIS PROGRAM WILL GIVE TIMING ESTIMATES FOR FIXED LENGTH RECORDS WITH ONE CONTROL FIELD. TIMINGS CAN BE OBTAINED EITHER FOR PARTICULAR RECORD VOLUMES SPECIFIED BY THE USER, OR FOR A SPREAD OF RECORD VOLUMES PREDETERMINED IN THE TIMING PROGRAM. CONTROL CARDS SUPPLY THE SORT 7 TIMING PROGRAM WITH A DESCRIPTION OF THE FILE/S/ FOR WHICH ESTIMATES ARE REQUIRED. MORE THAN ONE SET OF CONTROL CARDS CAN BE PLACED IN THE PROGRAM DECK IF ADDITIONAL ESTIMATES ARE DESIRED. MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2 OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, AND MULTIPLY-DIVIDE FEATURES, OR
A 16K 1460 SYSTEM WITH... 1402 CARD READ PUNCH... ONE 1403 PRINTER... MULTIPLY-DIVIDE AND INDEXING AND STORE ADDRESS REGISTER FEATURES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... 80X80 LISTING OF THE
SORT 7 CARD DECK... SPECIFICATIONS... OPERATING
PROCEDURES.
CARD DECKS - SORT 7 TIMING DECK.

1401-LM-062 1401/1460 SORT 5 AND 6
TIMING PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-002

THE SORT 5 AND 6 TIMING PROGRAM, 1401-LM-062, IS AN OBJECT PROGRAM FOR USE ON AN IBM 1401/1460 WITH 16K CORE STORAGE. THIS PROGRAM GIVES TIMING ESTIMATES FOR FIXED LENGTH RECORDS WITH UP TO TEN CONTROL DATA FIELDS TO BE SORTED BY THE SORT 5 AND 6 PROGRAMS. TIMINGS CAN EITHER BE REQUIRED FOR A SPECIFIC RECORD VOLUME, OR CAN BE CALCULATED FOR A PREDETERMINED SET OF RECORD VOLUMES. CONTROL CARDS SUPPLY THE SORT 5 AND 6 TIMING PROGRAM WITH A DESCRIPTION OF THE FILE/S/ TO BE SORTED. MINIMUM SYSTEM REQUIREMENTS-
A 16K 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2 OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, AND MULTIPLY-DIVIDE FEATURES, OR
A 16K 1460 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2... INDEX AND STORE ADDRESS REGISTER AND MULTIPLY-DIVIDE FEATURES.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... 80 X 80 LISTING OF THE
SORT 5 AND 6 TIMING PROGRAM CARD DECK...
SPECIFICATIONS... OPERATING PROCEDURES.
CARD DECKS - PROGRAM DECK.

1401-LM-077 SORT 13 AND 14 TIMING PROG.
FOR 1401/1460.
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-077

THE 1401/1460 SORT 13 AND 14 TIMING PROGRAM /NO. 1401-LM-077/ GIVES TIMING ESTIMATES FOR SORTING FIXED LENGTH RECORDS WITH UP TO TEN CONTROL DATA FIELDS USING THE SORT 13 OR SORT 14 PROGRAMS. THE TIMING PROGRAM RUNS ON A 16K 1401 OR 1460. FEATURES- TIMING CAN BE OBTAINED EITHER FOR A SPECIFIC RECORD VOLUME, OR FOR A PREDETERMINED SET OF RECORD VOLUMES. CONTROL CARDS SUPPLY THE SORT 13 AND 14 TIMING PROGRAM WITH A DESCRIPTION OF THE FILE/S/ FOR WHICH ESTIMATES ARE REQUIRED. THE TIMING PROGRAM CAN BE LOADED THROUGH THE CARD READER OR A MAGNETIC TAPE UNIT. MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2 OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, MULTIPLY-DIVIDE, AND SENSE SWITCHES FEATURES, OR
A 16K 1460 SYSTEM WITH... 1402 CARD READ PUNCH... ONE 1403 PRINTER MDL 2... INDEXING AND STORE ADDRESS REGISTER, MULTIPLY-DIVIDE, AND SENSE SWITCHES FEATURES.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... 80X80 LISTING OF SORT 13
AND SORT 14 CARD DECK... SPECIFICATIONS... OPERATING
PROCEDURES.
CARD DECKS - SORT 13 AND SORT 14 CARD DECK.

OPTIONAL PROGRAM MATERIAL - ONE REEL OF MAGNETIC TAPE CONTAINING PROGRAM DECK IN CARD IMAGE.

1401-LM-078 1401/1460 TIMING PROGRAM FOR
S/360 BASIC PROG. SUPPORT TAPE SORT/MERGE PROG. /2401 THROUGH 2404/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-078

THIS PROGRAM PROVIDES TIMING INFORMATION FOR ONE AND TWO CHANNEL SYSTEM/360 MODEL 30 /1.5 MICROSECOND/ AND 40 CONFIGURATIONS. THIS PROGRAM IS USED WITH 2401, 2402, 2403 OR 2404 MAGNETIC TAPE UNITS.

THESE PROGRAMS PROVIDE MULTIPLEX, ONE SELECTOR OR TWO SELECTOR CHANNEL SORT TIMING ESTIMATES FOR SYSTEM/360 MODEL 30 AND 40 CONFIGURATIONS FOR SORTING FIXED LENGTH RECORDS WITH A SINGLE CONTROL FIELD OF TEN CHARACTERS. TIMINGS CAN BE OBTAINED FOR SPECIFIC RECORD VOLUMES DESIGNATED BY THE USER, OR FOR A SPREAD OF RECORD VOLUMES PREDETERMINED BY THE TIMING PROGRAM. IN ADDITION, MAIN STORAGE UTILIZATION AND MAXIMUM FILE

CONTINUED FROM PRIOR COLUMN--

SIZE ARE INCLUDED IN THE PROGRAM OUTPUT.
CONTROL CARDS ARE USED TO SUPPLY A DESCRIPTION OF THE MACHINE AND RECORD FILE CONFIGURATION FOR WHICH ESTIMATES ARE REQUIRED. SEPARATE MACHINE AND CONFIGURATION CARDS ARE USED TO ENABLE MULTIPLE RECORD FILE CONFIGURATION CARDS TO BE COMBINED WITH A SINGLE MACHINE CONFIGURATION CARD OR VICE VERSA. MULTIPLE CONTROL CARD SETS CAN BE RUN AT THE SAME TIME TO PROVIDE ADDITIONAL ESTIMATES AS DESIRED.
MINIMUM SYSTEM REQUIREMENTS- A 16K, 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 2 OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, MULTIPLY-DIVIDE, AND SENSE SWITCH FEATURES, OR
A 16K, 1460 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 2... MULTIPLY DIVIDE, INDEXING AND STORE ADDRESS REGISTER, AND SENSE SWITCH FEATURES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... SPECS. AND OPERATING
INSTRUCTIONS.
MACHINE READABLE - TIMING PROGRAM OBJECT DECK.

1401-LM-079 1401/1460 TIMING PROGRAM FOR
BPS S/360 SORT/MERGE PROGRAM 8K DISK
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-079

THE PROGRAM PROVIDES TIMING ESTIMATES FOR THE IBM BOS 360 SORT/MERGE /8K DISK/ WHEN OPERATING ON A SYSTEM/360 MODEL 2030 OR ON A MODEL 2040 WITH A MAXIMUM OF 65536 BYTES OF MAIN STORAGE, A CHANNEL CONFIGURATION OF ONE MULTIPLEXOR OR SELECTOR CHANNEL WITH UP TO 8 2311 DISK STORAGE DRIVES.
THE PROGRAM PROVIDES SORT TIMING ESTIMATES FOR SORTING FIXED LENGTH RECORDS WITH A SINGLE CONTROL FIELD. TIMINGS CAN BE OBTAINED FOR SPECIFIC RECORD VOLUMES DESIGNATED BY THE USER, OR FOR A SPREAD OF RECORD VOLUMES PREDETERMINED BY THE TIMING PROGRAM. IN ADDITION, MAIN STORAGE UTILIZATION AND MAXIMUM FILE SIZE ARE INCLUDED IN THE PROGRAM OUTPUT. CONTROL CARDS ARE USED TO SUPPLY A DESCRIPTION OF THE COMPUTING SYSTEM, FILE CONFIGURATION AND RECORD DEFINITION FOR WHICH ESTIMATES ARE REQUIRED. MULTIPLE RECORD FILE CARDS MAY BE USED WITH ONE SYSTEM DEFINER CARD TO ESTIMATE TIMES FOR MANY FILE CONFIGURATIONS ON THE SAME SYSTEM. OR, MANY SYSTEM DEFINER CARDS MAY BE USED WITH ONE RECORD/FILE CARD TO ESTIMATE THE TIME FOR SORTING ONE FILE ON SEVERAL DIFFERENT SYSTEMS. MULTIPLE CONTROL CARDS SETS CAN BE STACKED TO PROVIDE MULTIPLE ESTIMATES AT THE SAME TIME.

MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH... ONE 1402 CARD READ PUNCH... ONE 1403 MODEL 2, OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, MULTIPLY-DIVIDE, AND SENSE SWITCHES FEATURES...
OR
A 16K 1460 WITH ONE 1402 CARD READ PUNCH... ONE 1403 PRINTER MODEL 2... MULTIPLY-DIVIDE, INDEXING AND STORE ADDRESS REGISTER AND SENSE SWITCHES FEATURES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM MATERIAL LIST... PROGRAM WRITE-UP...
SPECIFICATIONS MANUAL... OPERATING SPECIFICATIONS MANUAL.
MACHINE READABLE - OBJECT DECK.

1401-LM-080 1401/1460 TIMING PROGRAM FOR
S/360 BASIC PROG. SUPPORT TAPE SORT /MERGE PROG. /FOR THE 2415/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-080

THIS PROGRAM PROVIDES TIMING INFORMATION FOR ONE AND TWO CHANNEL SYSTEM/360 MODEL 30 /1.5 MICROSECOND/ AND 40 CONFIGURATIONS. THIS PROGRAM IS USED WITH 2415 MAGNETIC TAPE UNITS.

THESE PROGRAMS PROVIDE MULTIPLEX, ONE SELECTOR OR TWO SELECTOR CHANNEL SORT TIMING ESTIMATES FOR SYSTEM/360 MODEL 30 AND 40 CONFIGURATIONS FOR SORTING FIXED LENGTH RECORDS WITH A SINGLE CONTROL FIELD OF TEN CHARACTERS. TIMINGS CAN BE OBTAINED FOR SPECIFIC RECORD VOLUMES DESIGNATED BY THE USER, OR FOR A SPREAD OF RECORD VOLUMES PREDETERMINED BY THE TIMING PROGRAM. IN ADDITION, MAIN STORAGE UTILIZATION AND MAXIMUM FILE SIZE ARE INCLUDED IN THE PROGRAM OUTPUT. CONTROL CARDS ARE USED TO SUPPLY A DESCRIPTION OF THE MACHINE AND RECORD FILE CONFIGURATION FOR WHICH ESTIMATES ARE REQUIRED. SEPARATE MACHINE AND CONFIGURATION CARDS ARE USED TO ENABLE MULTIPLE RECORD FILE CONFIGURATION CARDS TO BE COMBINED WITH A SINGLE MACHINE CONFIGURATION CARD OR VICE VERSA. MULTIPLE CONTROL CARD SETS CAN BE RUN AT THE SAME TIME TO PROVIDE ADDITIONAL ESTIMATES AS DESIRED. MINIMUM SYSTEM REQUIREMENTS- A 16K, 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 2 OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, MULTIPLY-DIVIDE, AND SENSE SWITCH FEATURES, OR
A 16K, 1460 SYSTEM ...1402 CARD READ PUNCH ...1403 PRINTER MCD. 2... MULTIPLY DIVIDE, INDEXING AND STORE ADDRESS REGISTER, AND SENSE SWITCH FEATURES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... SPECS. AND OPERATING
INSTRUCTIONS.
MACHINE READABLE - TIMING PROGRAM OBJECT DECK.

1401-OS-092 1401/1460-1026 OPERATING
SYSTEM COMPUTER ASSISTED INSTRUCTION
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-OS-092

THE COURSEWRITER LANGUAGE IS A SPECIAL USER LANGUAGE WITH WHICH A TEACHER /I.E., ,AUTHOR,/ CAN PREPARE HIS COURSE MATERIALS TO ACCOMMODATE THE RANGE OF STUDENT ABILITIES. THE OPERATING SYSTEM CONSISTS OF-
A MONITOR TO SUPERVISE WRITING AND INSTRUCTING SIMULTANEOUSLY.
AN ASSEMBLER WHICH ENABLES THE COURSE AUTHOR TO COMMUNICATE WITH THE COMPUTER WHEN WRITING AND REVISING COURSES.
UTILITIES FOR PREPARING STUDENT AND COURSE REPORTS.

IT PROVIDES THE ABILITY-
FOR AUTHORS TO WRITE AND CORRECT COURSE MATERIAL WHILE STUDENTS ARE TAKING COURSES.
FOR A ,PROCTOR,, WHO OPERATES THE SYSTEM, TO UNDERTAKE ESSENTIAL ADMINISTRATIVE ROUTINES.
TO COLLECT DATA ON STUDENT RESPONSES FOR LATER ANALYSIS.

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FOR AUTHORS OR PROGRAMMERS TO ADD NEW FUNCTIONAL CAPABILITY TO THE COURSEWRITER.
TO OPERATE SIMULTANEOUSLY UP TO FIVE COURSES PER 1316 DISK PACK.
TO SERVICE UP TO TWELVE 1050 POINT-TO-POINT LINES WITH A 1448 CR UP TO FOUR LINES WITH FOUR 1026 TRANSMISSION CONTROL UNITS.

THE WORD ASSISTED IN THE TERM COMPUTER ASSISTED INSTRUCTION IS IMPORTANT. THIS NEW METHODOLOGY IS NOT INTENDED TO REPLACE THE IMPORTANT ROLE OF THE TEACHER IN THE EDUCATIONAL PROCESS. INSTEAD, IT IS A NEW SCIENCE FOR ASSISTING THE TEACHER IN ADMINISTERING COURSE MATERIAL AND TAKING FULLEST ADVANTAGE OF THE BENEFITS OF CAI.

MINIMUM 1401/1026 CONFIGURATION- A 12K 1401 MODELS 8,C, OR E WITH DISK STORAGE ADAPTER, HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, BIT TEST, CONSOLE AUXILIARY ADAPTER, SENSE SWITCHES... 1402 CARD READ PUNCH MODEL 1... 1403 PRINTER MODEL 1... 1406 STORAGE MODEL 2... 1409 CONSOLE AUXILIARY MODEL 2... 1311 DISK STORAGE DRIVE MODELS 2 AND 4 WITH DIRECT SEEK... 1026 TRANSMISSION CONTROL UNIT -- UP TO 4 MODEL 1. MAXIMUM. THE FIRST 1026 MUST HAVE THE EXPANDED LINE FEATURE AND AS MANY AS THREE ADDITIONAL 1026 MODEL 1, EACH WITH THE ADDITIONAL LINE FEATURE. ONE MUST SPECIFY TEXT TIME-OUT SUPPRESSION TO DISABLE THE TIMER FROM OPERATING AT THE NORMAL 9-18 SECOND DISCONNECT. THIS FEATURE IS TO BE USED WITH THE TEXT TIME-OUT SUPPRESSION ON THE 1051 CONTROL UNIT -- 1050 DATA COMMUNICATION SYSTEM -- AS MANY AS FOUR SYSTEMS MAXIMUM, EACH CONSISTING OF A 1051 CONTROL UNIT MODEL 2 AND A 1052 PRINTER-KEYBOARD WITH THE 1ST PRINTER FEATURE. WHEN THE TEXT TIME-OUT SUPPRESSION IS SPECIFIED ON THE 1026 COMPONENTS, IT MUST ALSO BE ORDERED ON THE 1051.

MINIMUM 1460/1026 CONFIGURATION- 1441 PROCESSING UNIT MODEL B5 WITH DISK STORAGE CONTROL, DIRECT SEEK, INDEXING AND STORE ADDRESS REGISTER, BIT TEST, TRANSMISSION CONTROL UNIT ATTACHMENT... 1447 MODEL 1 WITH SENSE SWITCHES... 1461 MODEL 1... 1402 MODEL 3... 1403 MODEL 2... 1311 MODELS 1 AND 2 WITH DIRECT SEEK... 1026 -- AS MANY AS FOUR MODEL 1. THE FIRST 1026 TRANSMISSION CONTROL UNIT MUST HAVE THE EXPANDED LINE FEATURE AND AS MANY AS THREE ADDITIONAL 1026 MODEL 1 EACH WITH THE ADDITIONAL LINE FEATURE. ONE MUST SPECIFY TEXT TIME-OUT SUPPRESSION TO DISABLE THE TIMER FROM OPERATING AT THE NORMAL 9-18 SECOND DISCONNECT. THIS FEATURE IS TO BE USED WITH THE TEXT TIME-OUT SUPPRESSION ON THE 1051 CONTROL UNIT... 1050 DATA COMMUNICATION SYSTEM -- AS MANY AS FOUR SYSTEMS EACH CONSISTING OF A 1051 CONTROL UNIT MODEL 2 AND A 1052 PRINTER-KEYBOARD WITH THE 1ST PRINTER FEATURE. WHEN THE TEXT TIME-OUT SUPPRESSION IS SPECIFIED ON THE 1026 COMPONENTS, IT MUST ALSO BE ORDERED ON THE 1051.

THE PROGRAM DECKS MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE PROGRAMS ARE ORDERED AT THE SAME TIME.
THE TAPES SUPPLIED SHOULD BE 2400 FEET IN LENGTH AND TESTED AT 556 BPI.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP...AUTHOR AND PROCTOR MANUAL
STUDENT MANUAL...COURSEWRITER DESCRIPTION MANUAL.
MACHINE READABLE - SYSTEM CONTROL PROGRAM...INSTRUCTION FUNCTION DECK...INITIAL LOAD DECK...UTILITY PROGRAMS DECK.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS...PROGRAM LISTINGS.

1401-PR-925 PERIPHERAL INTEGRATED PROCESSING SYSTEM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-PR-925

THIS SYSTEM IS PRIMARILY INTENDED FOR THE PROCESSING OF I-LANGUAGE OUTPUT ON A 1401. TWO PERIPHERAL PROCESSORS ARE SUBJECT TO A MONITOR WHICH CONTROLS THE OPERATION. THE SYSTEM MAY BE MODIFIED BY THE LIBRARIAN SEGMENT, WHICH CAN ADD AND DELETE SECTIONS FROM THE SYSTEM TAPE. 1401 WITH 4, 8, 12, OR 16K STORAGE... 1403 PRINTER...1402 CARD READ/PUNCH... 3 TAPE UNITS... ADVANCED PROGRAMMING... EXPANDED PRINT EDIT... HIGH-LOW-EQUAL COMPARE... AND PRINT STORAGE. IT IS ALSO NECESSARY THAT THE USER INDICATE THE STORAGE CAPACITY OF THE 1401, EITHER 4, 8, 12, OR 16K. SYSTEM TAPE, LISTING OF PERIPHERAL MONITOR AND LIBRARIAN LISTING OF PRINT ONLY D-PROGRAM, LISTING OF PRINT/PUNCH D-PROGRAM, SPECIFICATIONS AND OPERATING PROCEDURE THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS AND OPERATING PROCEDURES.

FOUR MAGNETIC TAPES - ONE TAPE /SYSTEM TAPE/... ONE TAPE - /LISTINGS OF PERIPHERAL MONITOR LIBRARIAN/... ONE TAPE - /LISTING OF PRINT ONLY D-PROGRAM/... ONE TAPE - /LISTING OF PRINT/PUNCH D-PROGRAM/.

1401-RG-022 1401/1460 BASIC REPORT PROGRAM GENERATOR 4K

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-RG-022

IBM 1401 BASIC REPORT PROGRAM GENERATOR 4K ENABLES A PROGRAM WRITTEN IN 1401/1460 BASIC RPG LANGUAGE TO BE COMPILED ON EITHER A 1401 OR 1460 SYSTEM. THE INPUT IS USED TO EXECUTE THE APPLICATION ON A 1401 OR 1460 SYSTEM. THE SOURCE PROGRAM IN THE 1401/1460 BASIC RPG LANGUAGE, PUNCHED IN CARDS, IS COMPILED ON EITHER A 1401 OR 1460 SYSTEM. THE OUTPUT OBJECT PROGRAM IS IN THE 1401/1460 MACHINE LANGUAGE. THE SOURCE PROGRAM MAY BE COMPILED DIRECTLY TO CONDENSED CARD OUTPUT, AND/OR IF LOAD-AND-GO IS DESIRED, IT MAY BE DIRECTLY EXECUTED. ADDITIONAL FEATURES INCLUDED IN THIS PROGRAM ARE AUTOMATIC DECIMAL ALIGNMENT AND EXTENSIVE DIAGNOSTIC OUTPUT ARE RECORDED BY THE PRINTER.
MINIMUM SYSTEM REQUIREMENTS-
A 4K 1401 OR 8K 1460 SYSTEM WITH... 1402 CARD READ PUNCH... ONE 1403 PRINTER.

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BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS... OPERATING PROCEDURES.
CARD DECKS - PROGRAM DECKS... SAMPLE PROBLEM SOURCE PROGRAM AND DATA DECKS.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS... LISTINGS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-RG-032 1401/1311 REPORT PROGRAM GENERATOR /ON DISK/ 1401/1460 ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-RG-032

IBM 1401/1460 REPORT PROGRAM GENERATOR /ON DISK/, 1401-RG-032, ENABLES THE RPG PROCESSOR TO HAVE 1301 DISK STORAGE SYSTEM RESIDENCE AT COMPILE TIME AND PROVIDES FOR INPUT, OUTPUT, OR FOR FILES ON A 1301 DISK STORAGE MODULE AT OBJECT TIME. VERSION 1, CALLED 1401/1311 RPG, WILL NOT BE AVAILABLE SINCE ITS FUNCTIONS ARE INCLUDED IN THE NEW VERSION. VERSION 2 INCREASES THE POWER OF THE RPG LANGUAGE THROUGH THE IMPLEMENTATION OF A DISK UPDATE FUNCTION. INCLUDED WITH 1401/1460 RPG /ON DISK/ IS A 1401 RPG TRANSLATOR PROGRAM ENABLING A PROGRAM WRITTEN FOR THE 1401 RPG PROGRAM TO BE PUNCHED IN A FORM THAT CAN BE COMPILED ON A 1401/1311 SYSTEM, A 1460/1311 SYSTEM, OR A 1460/1301 SYSTEM. THIS SYSTEM ENABLES A PROGRAM WRITTEN IN 1401/1440/1460 RPG LANGUAGE TO BE COMPILED AND ASSEMBLED ON A 1401/1311, 1460/1311 OR 1460/1301 SYSTEM. THE OUTPUT IS USED TO EXECUTE THE APPLICATION ON A 1401 OR 1460 SYSTEM. OBJECT PROGRAM INPUT IS A CARD FILE, MAGNETIC TAPE FILE, OR DISK STORAGE FILE. THE OUTPUT REPORT CAN BE PRINTED AND/OR PUNCHED INTO CARDS AND/OR WRITTEN ON EITHER MAGNETIC TAPE OR DISK STORAGE. THE SOURCE PROGRAM IN THE 1401/1440/1460 RPG LANGUAGE PUNCHED IN CARDS IS COMPILED AND ASSEMBLED ON A 1401 OR 1460 SYSTEM. THE OUTPUT OBJECT PROGRAM IS EITHER THE MACHINE LANGUAGE EQUIVALENT PROGRAM OR THE AUTOCODE /ON DISK/ LANGUAGE EQUIVALENT PROGRAM. THE MACHINE LANGUAGE EQUIVALENT OBJECT PROGRAM CAN BE IN THE FORM OF CONDENSED CARDS, OR IF /LOAD-AND-GO/ IS DESIRED, THE OBJECT PROGRAM CAN BE DIRECTLY LOADED FROM THE SYSTEM PACK OR MODULE. THE PROGRAM LISTING, DOCUMENTATION, AND DIAGNOSTIC OUTPUT ARE RECORDED ON THE PRINTER.
MINIMUM SYSTEM REQUIREMENTS-
A 4K 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2... ONE 1311 DISK STORAGE DRIVE... HIGH-LOW-EQUAL COMPARE FEATURE.

OR
AN 8K 1460 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER... ONE 1311 DISK STORAGE DRIVE OR ONE 1301 DISK STORAGE MODULE.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES.
CARD DECKS - SYSTEM DECK... SAMPLE DECK... 1401 RPG TRANSLATOR PROGRAM.

OPTIONAL PROGRAM MATERIAL-- FLOW CHARTS... LISTINGS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-RG-033 REPORT PROGRAM GENERATOR 2K ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-RG-033

THE 1401 REPORT PROGRAM GENERATOR 2K SYSTEM ENABLES A PROGRAM WRITTEN IN 1401 RPG 2K LANGUAGE TO BE COMPILED ON A 1401. THE OUTPUT IS USED TO EXECUTE THE APPLICATION ON A 1401 SYSTEM. THE SOURCE PROGRAM IN THE 1401 RPG 2K LANGUAGE, PUNCHED IN CARDS, IS COMPILED ON A 1401 SYSTEM. THE OUTPUT OBJECT PROGRAM IS ON CONDENSED CARDS IN 1401 MACHINE LANGUAGE. THE PROGRAM LISTING, DOCUMENTATION, AND DIAGNOSTIC OUTPUT ARE RECORDED BY THE PRINTER.
MINIMUM SYSTEM REQUIREMENTS-
A 2K 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER. ALTHOUGH THE HIGH-LOW-EQUAL COMPARE FEATURE IS NOT NEEDED, RPG 2K CAN USE IT TO ADVANTAGE IF IT IS INSTALLED. THE 1401 2K SYSTEM WILL TAKE ADVANTAGE OF AN ADDITIONAL 2K CORE STORAGE.

BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES.
CARD DECKS - PROGRAM DECK... SAMPLE PROBLEM SOURCE PROGRAM DECK... SAMPLE PROBLEM DATA DECK.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS... PROGRAM LISTINGS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-RG-045 FARGO /FOURTEEN-D-ONE AUTOMATIC REPORT GENERATING OPERATION/ ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1401-RG-045

PURPOSE TO PROVIDE A SIMPLE-TO-LEARN, EASY-TO-USE METHOD OF CONVERTING ACCOUNTING REPORTS FROM UNIT RECORD EQUIPMENT /602A - 402 - 514 - 604 - 407 - 519 TYPES/ TO AN IBM 1401 DATA PROCESSING SYSTEM. PROGRAMMING LANGUAGE 1401 SYMBOLIC PROGRAMMING SYSTEM METHOD LOAD & GO, WHICH MEANS THERE IS NO INTERMEDIATE SYMBOLIC ASSEMBLY OPERATIONS. THIS MEANS THAT THE FARGO CONDENSED PROGRAM DECKS WITH THE INSERTED CONTROL CARDS CONTAINING THE REPORT SPECIFICATIONS ARE READ INTO THE 1401 FOLLOWED BY THE REPORT DATA CARDS, AND THE REPORT IS BEGUN WHEN THE FIRST DETAIL CARD IS READ. 1. LIST OR TABULATE WITH OR WITHOUT SUMMARY PUNCHING. 2. PRINT ONE FULL LINE OF REPORT HEADING ON THE 1ST LINE OF EACH PAGE OF THE REPORT. 3. PRINT 1 OR 2 FULL LINES OF COLUMNAR OR FIELD HEADINGS ON EACH PAGE. 4. CONTROL ON A MAXIMUM OF FOUR FIELDS OF ANY LENGTH. 5. GROUP INDICATE A MAXIMUM OF FOUR FIELDS ON THE FIRST LINE OF EACH MINOR CONTROL GROUP. 6. RECOGNIZE UP TO 10 TYPES OF DETAIL CARDS BY ANY SINGLE COLUMN CHARACTER. IF MORE THAN ONE CARD COLUMN MUST BE TESTED TO IDENTIFY A GIVEN TYPE OF CARD, A PATCH IS REQUIRED. NOTE EACH OF THE 10 TYPES MAY BE IN SEPARATE CARD COLUMNS 7. ADD, SUBTRACT, MULTIPLY*, DIVIDE* OPERATIONS MAY BE PERFORMED ON DETAIL OR TOTAL LINES. *THESE OPERATIONS REQUIRE MULTIPLY/DIVIDE FEATURE. 8. PRINT MULTIPLE LINES FROM ONE CARD /MLP/.

BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS.
CARD DECK - CONDENSED SYSTEM DECK.

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1401-RG-048 REPORT PROGRAM GENERATOR
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-RG-048

PURPOSE 1401 RPG IS A PROGRAMMING SYSTEM WHICH GENERATES REPORT WRITING PROGRAMS WHICH ARE SPECIFIED BY THE USER IN THE RPG LANGUAGE ESTABLISHED FOR IBM 1400-SERIES MACHINES. THE GENERATED REPORT PROGRAM WILL ACCEPT SOURCE DATA CONTAINED IN EITHER A CARD FILE, MAGNETIC TAPE FILE OR DISK STORAGE FILE. THE LANGUAGE FACILITATES SPECIFYING THE CLASSIC REPORT WRITING FUNCTIONS OF HEADING AND DETAIL LINES, TOTAL LINES CONTROLLED BY CONTROL FIELD BREAKS, OFFSET TOTAL PRINTING, SUMMARY PUNCHING, CROSS-FOOTING AND CALCULATION, PAGE AND SERIAL NUMBERING, ETC. THE OUTPUT REPORT CAN BE OBTAINED AT THE PRINTER, ON CARDS, ON TAPE, OR ON ANY COMBINATION OF THE THREE. USE OF PROGRAM REPORT SPECIFICATIONS, PUNCHED ON CARDS, ARE ENTERED INTO THE 1401 DPS TOGETHER WITH THE RPG SYSTEM DECK. THE OUTPUT IS A PUNCHED DECK CONTAINING THE GENERATED REPORT PROGRAM IN SYMBOLIC /1401 SPS/ LANGUAGE. THIS DECK IS FURTHER PROCESSED BY ONE OF THE 1401 ASSEMBLY SYSTEMS /SPS-1, SPS-2, OR AUTOCODER/ TO OBTAIN THE MACHINE LANGUAGE REPORT WRITING PROGRAM READY FOR LOADING. MACHINE CONFIGURATION FOR REPORT PROGRAM GENERATION 1 4000 CORE STORAGE POSITIONS/ 1 1402 CARD READ PUNCH 1 1403 PRINTER FOR REPORT PROGRAM EXECUTION 1 1401 PROCESSING UNIT /ANY MODEL-CORE STORAGE SIZE REQUIRED DEPENDS UPON COMPLEXITY OF REPORT/ 1 1402 CARD READ PUNCH TAPE UNITS /MODEL 729 II, 729 IV, 729 V, 729 VI, OR 7330/. 1403 PRINTER /MODEL 1 OR 2/, 1405 DISK STORAGE UNIT - ONLY AS REQUIRED FOR INPUT DATA FILE AND OUTPUT REPORT MEDIA. MULTIPLY-DIVIDE SPECIAL FEATURE - MAY BE USED IF INSTALLED. SENSE SWITCHES SPECIAL FEATURE - MAY BE USED IF INSTALLED

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

1401-RG-700 IBM 1400 RPG TO SYSTEM/360
TRANSLATOR
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-RG-700

THIS PROGRAM OPERATES ON A 1401 OR 1460 DATA PROCESSING SYSTEM.

THE TRANSLATOR CONVERTS SOURCE PROGRAMS WRITTEN FOR ANY OF THE PROCESSORS LISTED BELOW TO SIMILAR SOURCE PROGRAMS ACCEPTABLE TO SYSTEM/360 MODEL 20 RPG, SYSTEM/360 BASIC PROGRAMMING SUPPORT RPG, BASIC OPERATING SYSTEM/360 RPG, OR OPERATING SYSTEM/360 RPG. 1400 RPG PROCESSORS TO BE TRANSLATED INCLUDE-

1. 1401 RPG /2K/
2. 1401 BASIC RPG /4K/
3. 1401 RPG
4. 1401/1460 RPG /ON DISK/
5. 1440 RPG /2K/
6. 1440 BASIC RPG /4K/
7. 1440 RPG /ON DISK/
8. 1440 STERLING BASIC RPG /4K/
9. 1440 STERLING RPG /1311/

THE 1401 RPG PROCESSOR WILL BE HANDLED AFTER THE PROGRAM HAS FIRST BEEN TRANSLATED TO 1401/1460 RPG /ON DISK/ USING THE 1401 RPG TRANSLATOR PROGRAM. PROGRAM INPUT IS 1400 SERIES RPG SOURCE PROGRAM CARDS. OUTPUT IS SYSTEM/360 RPG SOURCE PROGRAM CARDS FOR INPUT, CALCULATION, AND OUTPUT SPECIFICATIONS. NON-TRANSLATABLE CONDITIONS WILL BE FLAGGED AS THEY ARE DETECTED BY THE TRANSLATOR. MINIMUM SYSTEM REQUIREMENTS- AN 8K 1401 OR 1460 WITH 1402 CARD READ PUNCH... 1403 PRINTER, MODEL 2 OR MODEL 3 /ON 1460/... THREE 7330 OR 729 TAPE UNITS OR ONE 1311 DISK STORAGE DRIVE OR ONE 1301 DISK STORAGE UNIT /ON 1460/... ADVANCED PROGRAMMING... HIGH-LOW-EQUAL COMPARE SPECIAL FEATURES /ON 1401/ OR INDEXING AND STORE ADDRESS REGISTER FEATURE /ON 1460/.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...PROGRAM MATERIAL LIST...
-ANALOG PROGRAM TRANSLATION LISTING...SYSTEM/360 RPG TRANSLATOR MANUAL... LOGIC MANUAL.
MACHINE READABLE - CARD DECKS FOR TRANSLATOR OBJECT PROGRAM, SAMPLE PROGRAM 1400/RPG SOURCE, SAMPLE PROGRAM SYSTEM/360 RPG SOURCE.
OPTIONAL PROGRAM MATERIAL - ONE REEL OF MAGNETIC TAPE CONTAINING THE TRANSLATOR SOURCE PROGRAM.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. THE NUMBER OF TAPES NECESSARY TO OBTAIN THE PROGRAM MATERIAL MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE. THE TAPES SHOULD BE 2400 FEET IN LENGTH.

1401-SE-05X DECISION LOGIC TRANSLATOR
PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SE-05X

THE DECISION LOGIC TRANSLATOR PROGRAM IS VALUABLE IN THE IMPLEMENTATION OF AUTOMATED DESIGN ENGINEERING SYSTEMS, AS WELL AS OTHER AREAS IN WHICH PROGRAM LOGIC CAN BE EFFECTIVELY EXPRESSED IN TABULAR FORM. THE TABULAR APPROACH TO SOLUTION OF COMPLICATED LOGICAL PROBLEMS FACILITATES THE BREAKUP OF A PROBLEM INTO SMALL, DISCRETE, READILY UNDERSTOOD UNITS OF CONDITIONS AND ACTIONS. THIS APPROACH FOSTERS MODULARITY OF PROGRAM DESIGN WHICH WILL BE OF INCREASING IMPORTANCE WITH THE MORE WIDESPREAD USE OF DIRECT-ACCESS STORAGE. SITUATIONS NOT YET ANTICIPATED CAN BE INTRODUCED INTO EXISTING PROGRAMS WITH A MINIMUM OF EFFORT THROUGH CONSTRUCTION OF ADDITIONAL TABLES. EXISTING CONDITION-ACTION TABLES CAN BE EASILY ALTERED, EITHER AS OPERATIONAL PROCEDURES CHANGE OR TO STUDY THE EFFECT SUCH CHANGES WOULD HAVE ON A BUSINESS ENVIRONMENT. AREAS OF APPLICATION OF DECISION TABLES AND 1401 DECISION LOGIC TRANSLATOR INCLUDE-

- ALL TYPES MANUFACTURING OPERATIONS WHICH PRODUCE A WIDE VARIETY OF PRODUCTS FROM A RELATIVELY SMALL POOL OF COMPONENTS INCLUDING ELECTRICAL PARTS, MOTORS, TURBINES, ASSEMBLIES AND SUB-ASSEMBLIES.
- INVENTORY CONTROL PROGRAMS
- FINANCIAL ANALYSIS AND CONTROL APPLICATIONS
- SPECIAL PURPOSE SIMULATION MODELS
- QUALITY CONTROL PLANNING
- COST DETERMINATION
- PRODUCTION CONTROL AND PLANNING
- REAL-TIME APPLICATIONS OF INFORMATION RETRIEVAL AND DECISION MAKING.

CONTINUED FROM PRIOR COLUMN--

THE 1401 DECISION LOGIC TRANSLATOR ACCEPTS AS INPUT DECISION TABLES WRITTEN IN A FORTRAN-ORIENTED LANGUAGE. THE TRANSLATOR PROGRAM SORTS THE RULES TO PRODUCE AS OUTPUT AN EFFICIENT FORTRAN II SOURCE PROGRAM. THE USE OF THIS PROGRAM CAN RESULT IN SAVINGS OF UP TO 50 PERCENT IN IMPLEMENTATION TIME AND SUBSTANTIAL REDUCTION IN COST IN INSTALLATION OF APPLICATIONS THAT EXHIBIT COMPLEX CONDITION-ACTION RELATIONSHIPS. MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, AND ADVANCED PROGRAMMING... A 1402 CARD READ PUNCH... 1403 PRINTER... 2 TAPE UNITS. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL.
CARD DECKS - SAMPLE PROBLEM... PROGRAM CARDS.

OPTIONAL PROGRAM MATERIAL -
TRANSLATOR SOURCE TAPE. /ONE REEL/ SYSTEMS MANUAL.

1401-SE-12X IBM DOCUMENTATION AIDS
SYSTEM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SE-12X

THE DA SYSTEM PROVIDES MACHINE-GENERATED DOCUMENTATION AIDS TO USERS WHO PROGRAM IN THE IBM SUPPORTED ASSEMBLY LANGUAGES LISTED BELOW. IT PROVIDES AN ACCURATE, EFFICIENT, AND INEXPENSIVE COMPUTER PROCESS FOR PRODUCING AND MAINTAINING UP-TO-DATE PROGRAM DOCUMENTATION. THE DA SYSTEM CONSISTS OF FOUR PROGRAMS AND A SYSTEM CONTROLLER. THEY ARE HIGHLY MODULAR AND ARE INTEGRATED INTO A TOTAL SYSTEM SO THAT EACH PROGRAM PERFORMS CERTAIN FUNCTIONS WHICH MAY BE REQUIRED BY OTHER PROGRAMS OPERATING WITHIN THE SYSTEM.

THE DA SYSTEM PROCESSES PROGRAMS WRITTEN IN SYSTEM/360 ASSEMBLER LANGUAGE, SYMBOLIC PROGRAMMING SYSTEM /SPS/, AUTOCODER, MACRO ASSEMBLY PROGRAM /MAP/, FORTRAN ASSEMBLY PROGRAM /FAP/, OR SYMBOLIC FLOWCHART LANGUAGE /SFL/ FOR THE SYSTEM/360, 1401/1440/1460, 1620, 1410/7010, 7040/7044, 7070/7072/7074, 705/7080, AND 7090/7094. THE SOURCE LANGUAGE USED IN THE IMPLEMENTATION OF ALL DA SYSTEM PROGRAMS IS 1401 AUTOCODER. THE DA SYSTEM OBJECTIVES ARE TO ASSIST AN INSTALLATION IN CONVERTING EXISTING PROGRAMS TO SYSTEM/360... TO ENCOURAGE THE USER TO REPROGRAM IN HIGHER LEVEL LANGUAGE, E.G., FORTRAN, COBOL, AND PL/I... TO ALLOW THE COMPUTER TO ASSUME MANY CLERICAL AND ROUTINE FUNCTIONS ASSOCIATED WITH DOCUMENTATION AND CONVERSION... TO IMPROVE AND UPDATE THE DOCUMENTATION OF EXISTING PROGRAMS, THEREBY REDUCING MAINTENANCE EFFORTS... TO IMPROVE PROGRAMMING EFFICIENCY BY THE STANDARDIZATION OF DOCUMENTATION TECHNIQUES.

FEATURES-

- THE DA SYSTEM OPERATES DIRECTLY UPON ASSEMBLY LANGUAGE SOURCE STATEMENTS. NO MODIFICATION IS REQUIRED BY THE USER BEFORE USING DA SYSTEM PROGRAMS.
- THROUGH SCANNING, THE NUMEROUS SYMBOLIC LANGUAGES ARE CONVERTED TO A STANDARD DA SYSTEM RECORD FORMAT. PROCESSING OF THE DA FORMATTED TAPE IS THUS LARGELY LANGUAGE-INDEPENDENT.
- EACH PROGRAM WITHIN THE SYSTEM HAS ITS OWN CONTROL CARDS AND IS PROCESSED IN SEQUENCE FROM THE DA SYSTEM TAPE, PROVIDING ADVANTAGES NORMALLY FOUND IN A MONITOR SYSTEM.
- THE SYSTEMS CONCEPT ENABLES THE USER TO SUBMIT A SOURCE PROGRAM DECK TO THE DA SYSTEM AND RECEIVE ANY OR ALL OF THE SOURCE OUTPUTS OF THE SYSTEM IN ONE PROCESSING RUN.
- SOURCE PROGRAMS CAN BE SEQUENCE CHECKED, RESEQUENCE NUMBERED AND UPDATED. CORRESPONDING LISTINGS CAN BE PRODUCED.
- CROSS-REFERENCING LISTINGS, BOTH IN PROGRAM AND IN LABEL TABLE SEQUENCE, AS WELL AS ANALYSIS OF OPERATION TYPE, INDEXING AND OPERATION CODE USAGE, ARE PROVIDED BY THE SYSTEM.
- A STORAGE MAP OF AN OBJECT PROGRAM USEFUL IN DETECTING DIFFERENCES BETWEEN THE SOURCE AND OBJECT PROGRAMS IS AVAILABLE. OVERLAY PATCHES ARE IDENTIFIED AND LISTED IMMEDIATELY AFTER THE INSTRUCTION THAT THEY MODIFY.
- THE FLOWCHART PRODUCED IS A DETAILED LOGIC FLOW OF THE SOURCE PROGRAM. FLOWCHART SYMBOLS CONFORM TO THE IBM CORPORATE STANDARD AND THE PROPOSED AMERICAN STANDARD ASSOCIATION STANDARDS ON FLOWCHART SYMBOLS FOR INFORMATION PROCESSING.

THE SYMBOLIC FLOWCHART LANGUAGE PROVIDES A MACHINE INDEPENDENT, EASY-TO-USE LANGUAGE WHICH MAY BE USED IN APPLICATION DESIGN AND DOCUMENTATION OF NEW AND EXISTING PROGRAMS. IMPLEMENTATION OF THE DA SYSTEM ON THE 1401 GIVES THE USER THE OPPORTUNITY TO DOCUMENT ASSEMBLY PROGRAMS FOR ANY CURRENT LARGE-SCALE SYSTEM WITHOUT TYING-UP THAT SYSTEM. THE FUNCTION OF THE SYSTEM CONTROLLER IS TO START AND END ALL DA RUNS AS WELL AS PROVIDE MAINTENANCE CAPABILITY FOR THE DA SYSTEM PROGRAMS. AFTER IDENTIFYING THE MACHINE TYPE AND LANGUAGE TO BE PROCESSED, THE CONTROLLER CALLS IN THE FOLLOWING PROGRAMS IN THE SEQUENCE LISTED- AN UPDATE PROGRAM WHICH ALLOWS INSERTION, DELETION, AND REPLACEMENT OF ASSEMBLY LANGUAGE STATEMENTS TO BRING THE SOURCE PROGRAM UP TO DATE., AN ANALYSIS PROGRAM WHICH SCANS ASSEMBLY LANGUAGE PROGRAMS AND PRODUCES PERTINENT INFORMATION ABOUT THE PROGRAM SCANNED, INCLUDING CROSS REFERENCES., A FLOWCHART PROGRAM WHICH SCANS ASSEMBLY LANGUAGE PROGRAMS AND PRODUCES FLOWCHARTS OF PROGRAM LOGIC OF DESIGNATED AREAS., A VERIFICATION PROGRAM WHICH PRODUCES A STORAGE MAP OF AN OBJECT DECK, NOTING OVERLAY PATCH AREAS. EACH PROGRAM IN TURN PROCEEDS AS REQUESTED BY DA SYSTEM CONTROL CARDS, TRANSFERRING CONTROL THROUGH THE SYSTEM AND PROCESSING THE DATA UNTIL ALL DA SYSTEM CONTROL CARDS HAVE BEEN PROCESSED.

MINIMUM SYSTEM REQUIREMENTS- AN 8K 1401 OR 1460 SYSTEM WITH FOUR 729 OR 7330 MAGNETIC TAPE UNITS (SEE SALES MANUAL FOR TAPE INTERMIX)... ADVANCED PROGRAMMING... HIGH-LOW-EQUAL COMPARE... 1402 CARD READ PUNCH MODEL 1... 1403 PRINTER MODEL 2 OR 3 WITH 132 PRINT POSITIONS. A 1410, 7010, OR SYSTEM/360 MODEL 30 OR 40 CAN BE USED WHEN OPERATING IN 1401 COMPATIBILITY MODE. THE NUMBER OF TAPES NECESSARY TO OBTAIN THE PROGRAM MATERIAL MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE. THE TAPES SHOULD BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - APPLICATION DIRECTORY...PROGRAM REFERENCE MANUAL, H20-0177.
MACHINE READABLE - SYSTEMS TAPE.

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1401-SE-13X SYSTEM/360 COBOL EDIT
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SE-13X

COBOL EDIT OPERATES ON A 1401 AND WILL DIAGNOSE SYSTEM/360 COBOL STATEMENTS FOR SYNTACTICAL ERRORS. THIS WILL REDUCE SYSTEM/360 TEST TIME BY ALLOWING DEBUGGING ON THE CURRENT SYSTEM.

THE SYSTEM/360 COBOL EDIT WILL ACCEPT AS INPUT S/360 COBOL D OR E SOURCE PROGRAMS IN EBCDIC ON CARDS OR ON 7-TRACK TAPE IN CARD IMAGE. IT PRINTS A LISTING OF THE SOURCE PROGRAM AND IDENTIFIES SEQUENCE ERRORS, GROUP MARKS AND RECORD MARKS. IT ALSO FLAGS INPUT CHARACTERS PUNCHED IN CODES HAVING DUAL REPRESENTATION IN CURRENT SYSTEMS.

A DICTIONARY OF NAMES IS PREPARED AND PRINTED. IT WILL INDICATE ANY NAMES THAT ARE MULTI-DEFINED, ANY COBOL RESERVED WORDS INCORRECTLY USED AS NAMES AND ANY UNDEFINED NAMES. THE PROGRAM WILL SCAN THE STATEMENTS FOR SYNTAX ERRORS AND PRINT DIAGNOSTIC MESSAGES IF ANY SENTENCE STRUCTURE ERRORS ARE FOUND. EDITING IS FOR SYNTAX ONLY., DATA ATTRIBUTES ARE NOT CHECKED.

FEATURES-

- GIVES THE USER THE ABILITY TO PRE-EDIT SYSTEM/360 COBOL SOURCE PROGRAMS ON THE IBM 1401 AT HIS OWN INSTALLATION. THUS PROVIDING HIM WITH BETTER UTILIZATION OF HIS S/360 TEST TIME.
- INPUT PROGRAMS CAN BE STACKED BY THE ADDITION OF AN END CARD BETWEEN PROGRAMS.
- MAY BE USED IN CONJUNCTION WITH THE IBM S/360 COBOL LANGUAGE CONVERSION PROGRAM /1401-CB-701/. THE OUTPUT OF LCP WILL BE ACCEPTED AS INPUT.

MINIMUM SYSTEM REQUIREMENTS- 8K 1401, 3 TAPE UNITS, 1402 CARD READ PUNCH, 1403 PRINTER WITH 132 PRINT POSITIONS, HIGH-LOW-EQUAL COMPARE, SENSE SWITCHES AND ADVANCED PROGRAMMING. ADDITIONAL CORE WILL BE UTILIZED BY THE PROGRAM. IF A FOURTH TAPE DRIVE IS AVAILABLE, INPUT CAN BE ON TAPE.

PROGRAMMING TO OBTAIN LISTINGS OR CARDS FROM THE TAPE, THE FOLLOWING UTILITIES WILL BE REQUIRED -- IBM 1401 TAPE-TO-PRINTER UTILITY /1401-UT-026/... IBM 1401 MULTIPLE UTILITY /1401-UT-039/. OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. THE TAPE NECESSARY TO OBTAIN THE OPTIONAL PROGRAM MATERIAL MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE. THE TAPE SHOULD BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - APPLICATION DIRECTORY... PROGRAM REFERENCE MANUAL H20-0217.

MACHINE READABLE - OBJECT DECKS AND SAMPLE PROGRAM ON A DTR WHICH WILL BE SUPPLIED BY THE PROGRAM INFORMATION DEPARTMENT.

OPTIONAL PROGRAM MATERIAL - ONE REEL OF MAGNETIC TAPE CONTAINING THE SOURCE DECKS AND PROGRAM LISTINGS.

1401-SM-029 SORT 1
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-029

PURPOSE TO PROVIDE A GENERALIZED 2-WAY SORT PROGRAM FOR 1401 USERS. THE PROGRAM INTERNALLY SORTS INPUT RECORDS AND MERGES THE SORTED BLOCKS INTO SEQUENCED OUTPUT RECORDS. SORT 1 MAY ALSO BE USED AS A MERGE PROGRAM IF INPUT TAPES ARE ALREADY ORDERED. EQUIPMENT SPECIFICATIONS 4000 POSITIONS OF STORAGE HIGH-LOW-EQUAL COMPARE MINIMUM OF FOUR 4K TAPE DRIVES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS. CARD DECK - CONDENSED PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL -
SYMBOLIC CARD DECKS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-SM-046 SORT 3 PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-046

SORT 3 IS A GENERALIZED SORT PROGRAM WHICH PROVIDES THE FACILITY TO SORT RECORDS ON 1401-1405 SYSTEMS WITHOUT THE USE OF MAGNETIC TAPE UNITS. THE INPUT FILE MAY BE ON MAGNETIC TAPE OR IN DISK STORAGE. THE USER MAY SPECIFY SORTING INTO EITHER ASCENDING OR DESCENDING SEQUENCE, AND MAY SPECIFY EITHER MAGNETIC TAPE OR DISK STORAGE FOR THE SORTED OUTPUT FILE. THE PROGRAM SORTS FIXED LENGTH BLOCKED OR UNBLOCKED RECORDS UP TO 1000 CHARACTERS IN LENGTH AND HAVING UP TO 10 CONTROL DATA FIELDS CONTAINING A TOTAL OF UP TO 193 CHARACTERS OF CONTROL INFORMATION. PROGRAM INTERRUPTION AND CHECKPOINT RESTART FEATURES ARE AVAILABLE UNDER SENSE SWITCH CONTROL. 4K 1401 SYSTEM WITH 1405 DISK STORAGE, 1402 CARD READ PUNCH, 1403 PRINTER MODEL 2, HIGH-LOW-EQUAL COMPARE AND SENSE SWITCHES SPECIAL FEATURES. AT LEAST ONE MAGNETIC TAPE UNIT /729 II, IV, OR V, OR 7330/ IS REQUIRED IF TAPE INPUT OR OUTPUT IS DESIRED.

THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... FLOWCHARTS... PROGRAM LISTINGS ... OPERATING PROCEDURES.
CARD DECK - CONDENSED PROGRAM DECK.
OPTIONAL PROGRAM MATERIAL - ONE REEL OF MAGNETIC TAPE CONTAINING THE SOURCE DECK.

1401-SM-047 SORT 4
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-047

SORT 4 IS A TWO- OR THREE-WAY BALANCED MERGE, TAPE SORTING PROGRAM USING THE PROCESSING OVERLAP SPECIAL FEATURE. THE PROGRAM WILL SORT FIXED OR VARIABLE LENGTH DATA RECORDS WRITTEN ON MAGNETIC TAPE INTO EITHER ASCENDING OR DESCENDING SEQUENCE. THE PROGRAM SORTS EITHER FIXED LENGTH OR VARIABLE LENGTH, BLOCKED OR UNBLOCKED RECORDS HAVING UP TO TEN CONTROL DATA FIELDS CONTAINING A TOTAL OF UP TO 999 CHARACTERS OF CONTROL

CONTINUED FROM PRIOR COLUMN--

INFORMATION. THE ABILITY TO PERFORM FULL IOCS TYPE TAPE LABEL HANDLING PROCEDURES FOR 80-CHARACTER LABELS IS INCORPORATED. PADDING RECORDS MAY OR MAY NOT CONTAIN RECORD MARKS, AS SPECIFIED BY THE USER, AND FULL BLOCKS OF PADDING WILL BE DELETED FROM THE FINAL OUTPUT. FULL CHECKPOINT AND RESTART CAPABILITY IN ALL PASSES OF PHASE 2 IS INCLUDED, AS ARE PROGRAM EXITS TO ALLOW USER MODIFICATION.

MINIMUM MACHINE REQUIREMENTS -- AN 8K 1401 SYSTEM WITH...FOUR IBM MAGNETIC TAPE UNITS /729 II, IV, OR 7330/... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 2 /OR 1404 PRINTER/... ADVANCE PROGRAMMING, HIGH-LOW-EQUAL COMPARE, PROCESSING OVERLAP, AND SENSE SWITCHES.

THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... PRELIMINARY SPECIFICATIONS... FLOWCHARTS... OPERATING PROCEDURES.
ONE MAGNETIC TAPE - SYMBOLIC LISTINGS AND SYSTEM CARD DECK.

1401-SM-060 SORT 7
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-060

SORT 7 IS A GENERALIZED TAPE SORTING PROGRAM DESIGNED FOR USE ON AN IBM 1401 TAPE SYSTEM WITH AT LEAST 8,000 POSITIONS OF CORE STORAGE. THIS PROGRAM PROVIDES LABEL PROCESSING CAPABILITIES FOR THE IBM STANDARD TAPE LABEL /120 CHARACTER/. A TAPE-LOADABLE OPTION IS AVAILABLE AND WHEN USED 100 POSITION OF STORAGE ARE USED. THIS PROGRAM SORTS FIXED LENGTH OR VARIABLE LENGTH, BLOCKED OR UNBLOCKED RECORDS INTO EITHER ASCENDING OR DESCENDING SEQUENCE. SORTING CAN BE CONTROLLED BY AS MANY AS TEN CONTROL DATA FIELDS OF TOTAL LENGTH UP TO 999 CHARACTERS. FOR FOUR-TAPE SYSTEMS ON WHICH FIXED LENGTH RECORDS ARE BEING SORTED, SORT 7 PROVIDES AN ADDITIONAL CAPABILITY IN THE FORM OF A MULTIPHASE TECHNIQUE IN THE MERGING PORTION OF THE PROGRAM. WHEN OPERATING WITH THE MULTIPHASE PROCEDURE, 15 TO 25 PERCENT OVERALL TIME SAVING MAY BE REALIZED AS COMPARED WITH THE BALANCE MERGING TECHNIQUE. INTERRUPT AND RESTART CAPABILITIES ARE PROVIDED IN THE PROGRAM.

MINIMUM SYSTEM REQUIREMENTS- AN 8K 1401 OR 1460 TAPE SYSTEM...AT LEAST FOUR IBM MAGNETIC TAPE UNITS /729 II, IV, OR V, OR 7330/... 1402 CARD PUNCH...1403 PRINTER MODEL 2 /OR 1404 PRINTER- 1401 ONLY/ HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING AND SENSE SWITCHES. AN ADDITIONAL TAPE UNIT IS NEEDED IF THE TAPE-LOADABLE OPTION IS USED. THE 1460 REQUIRES, INDEXING AND STORE ADDRESS REGISTER AND THE SENSE SWITCH FEATURE.

SORT 7 CAN ALSO BE USED, IF AVAILABLE, FIVE OR SIX TAPE UNITS AND 12K OR 16K CORE STORAGE CAPACITY.

THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITEUP...SPECS. AND OPERATING PROCEDURES...FLOWCHARTS.
ONE MAG. TAPE CONTAINING OBJECT DECKS AND ASSEMBLY LISTING FOR BOTH TAPE LOAD AND SORT PROGRAMS.
OPTIONAL MATERIAL - ONE MAGNETIC TAPE - SYMBOLIC PROGRAM DECKS.

1401-SM-061 MERGE 7
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-061

MERGE 7 IS A GENERALIZED TAPE MERGING PROGRAM DESIGNED FOR USE ON IBM 1401 TAPE SYSTEMS WITH AT LEAST 8,000 POSITIONS OF CORE STORAGE. THE INPUT MERGING INPUT FILES IN EITHER ASCENDING OR DESCENDING ORDER TO AN OUTPUT FILE OF THE SAME ORDER. THE PROGRAM PROVIDES LABEL PROCESSING CAPABILITIES FOR THE IBM STANDARD TAPE LABEL /120 CHARACTER/. THE PROGRAM WILL MERGE FIXED LENGTH AND VARIABLE LENGTH BLOCKED OR UNBLOCKED RECORDS. MERGING CAN BE CONTROLLED BY UP TO TEN CONTROL DATA FIELDS OF TOTAL LENGTH AS LARGE AS 999 CHARACTERS. MERGE 7 ALSO PROVIDES THE ADDITIONAL FEATURES OF REBLOCKING SINGLE FILES AND PERFORMING A SEQUENCE CHECK ON A SINGLE FILE OR ON THE OUTPUT FILE OF A NORMAL MERGE OPERATION. THE PROGRAM PROVIDES A WRONG LENGTH RECORD CHECK FOR UNBLOCKED FIXED LENGTH, BLOCKED FIXED LENGTH, AND BLOCKED VARIABLE LENGTH RECORDS.

PROGRAM REQUIRES AN 8K 1401 OR 1460 TAPE SYSTEM...1402 CARD READ-PUNCH...1403 PRINTER...1404 PRINTER...1401 ONLY/ PLUS. FOR 1401- HIGH-LOW-EQUAL COMPARE AND ADVANCED PROGRAMMING.

FOR 1460- - INDEXING AND STORE ADDRESS REGISTER.

MERGE 7 REQUIRES FROM THREE TO SIX TAPE UNITS AND WILL USE 12K OR 16K CORE STORAGE CAPACITY, IF AVAILABLE.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITEUP...SPECS. AND OPERATING PROCEDURES... FLOWCHARTS.
MACHINE READABLE - A DTR CONTAINING THE MERGE 7 OBJECT DECK AND THE MERGE 7 PROGRAM LISTING.

THE DTR WILL BE SUPPLIED BY THE PROGRAM INFORMATION DEPARTMENT - NO TAPE SUBMITTAL IS REQUIRED.

1401-SM-062 SORT 6
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-062

SORT 6 IS A GENERATIVE SORT PROGRAM DESIGNED FOR GENERATION AND USE ON AN IBM 1401 OR 1460 WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE, AND A MINIMUM OF 4000 POSITIONS OF CORE STORAGE /8000 FOR 1460/. SORT 6 OBJECT PROGRAMS WILL SORT FIXED LENGTH, BLOCKED OR UNBLOCKED, RECORDS IN MOVE MODE INTO EITHER ASCENDING OR DESCENDING SEQUENCE. SORTING CAN BE CONTROLLED BY AS MANY AS TEN CONTROL DATA FIELDS OF TOTAL LENGTH UP TO A MAXIMUM OF 194 CHARACTERS. SORT 6 CAN GENERATE AN OBJECT PROGRAM THROUGH USE OF THE AUTOCODER MACRO AND PARAMETER CARDS. IT IS FURTHER CLASSIFIED AS A GENERALIZED PROGRAM BECAUSE IT CAN MODIFY ITSELF AT OBJECT RUN TIME ACCORDING TO INFORMATION PUNCHED IN CONTROL CARDS BY THE USER.

MINIMUM MACHINE REQUIREMENTS-
GENERATION AND OBJECT TIME USE OF THE 1401 SORT 6 ARE- 4K 1401 OR 8K 1460 SYSTEM...ONE 1311 DISK STORAGE DRIVE...1402 CARD READ PUNCH...ONE 1403 PRINTER MODEL 2, OR 1404 PRINTER /1401 ONLY/...

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HIGH-LOW-EQUAL COMPARE FEATURE /1401 ONLY/. THE OBJECT PROGRAM CAN USE, IF AVAILABLE, UP TO 5 DISK STORAGE DRIVES AND 8K, 12K, OR 16K CORE STORAGE CAPACITY. THE FOLLOWING PROGRAMS ARE REQUIRED TO IMPLEMENT 1401 SORT 6--
1401/1440/1460 AUTOCODER /ON DISK/ #1401-AU-008.
1401/1460 IOCS VERSION 2 #1401-ID-068
1401/1311 DISK UTILITY PROGRAMS, #1401-UT-053

BASIC PROGRAM MATERIAL -
DOCUMENTATION - SORT 6 SPECIFICATIONS... OPERATING PROCEDURES...
FLOWCHARTS... LISTING FOR LIBRARY PROGRAM... LISTING FOR
PREPHASE PROGRAM.
MACHINE READABLE - LIBRARY ROUTINE DECKS... PREPHASE DECKS. *

1401-SM-063 MERGE 6
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-063

IBM 1401 MERGE 6, #1401-SM-063, IS A GENERATIVE PROGRAM FOR 1401/1311 OR 1460/1311 SYSTEMS. USED WITH 1401/1311 AUTOCODER AND IOCS, MERGE 6 WILL GENERATE SPECIFIC OBJECT PROGRAMS THAT ARE FITTED TO THE USERS PARTICULAR MERGING APPLICATIONS. THE OBJECT PROGRAMS GENERATED BY MERGE 6 ARE GENERALIZED IN THAT THEY CAN BE MODIFIED ACCORDING TO INFORMATION SUPPLIED BY THE USER IN CONTROL CARDS. WITH OBJECT PROGRAMS THE USER CAN MERGE PRE-SORTED, FIXED LENGTH, BLOCKED OR UNBLOCKED RECORDS IN THE MOVE MODE INTO EITHER ASCENDING OR DESCENDING SEQUENCE. THE INPUT AND OUTPUT CAN BE ON EITHER DISK OR TAPE. A ONE-, TWO-, THREE-, OR FOUR-WAY MERGE CAN BE PERFORMED. IF SPECIFIED BY THE USER AT GENERATION TIME, OPTIONS SUCH AS LABEL CHECKING, ADDITIONS FROM CARDS, SEQUENCE CHECK AND HASH TOTAL, DELETIONS OR SELECTIONS BY CLASS CAN BE INCORPORATED INTO THE OBJECT PROGRAM.
MINIMUM SYSTEM REQUIREMENTS--
OBJECT PROGRAM GENERATION- SAME AS FOR 1401/1311 AUTOCODER ON 1401 OR 1460 SYSTEMS.
OBJECT PROGRAM EXECUTION- A 4K 1401 SYSTEM OR A 8K 1460 SYSTEM, EACH WITH SUFFICIENT CORE STORAGE TO UTILIZE THE OBJECT PROGRAM OPTIONS... A 1402 CARD READ PUNCH... AND, DEPENDING UPON THE OBJECT PROGRAM REQUIREMENTS, A 1403 PRINTER OR 1404 PRINTER /1401 ONLY/ OR 1407 CONSOLE INQUIRY STATION /1401 ONLY/ OR A 1447 CONSOLE M0L 2 /1460/ OR 3 /1401/... ONE TO FIVE 1311 DISK STORAGE DRIVES AND/OR ONE TO SIX MAGNETIC TAPE UNITS /7330 OR 729 II, IV, OR V/ IN COMBINATION TO PROVIDE A MINIMUM OF TWO INPUT FILES AND ONE OUTPUT FILE... HIGH-LOW-EQUAL COMPARE /1401 ONLY/.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS... OPERATING
PROCEDURES... FLOW CHARTS... LIBRARY LISTING...PREPHASE
ASSEMBLY LISTING.
CARD DECKS - LIBRARY PROGRAM DECK... PREPHASE DECK.

1401-SM-064 SORT 62
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-064

THE IBM 1401 SORT 62, /1401-SM-064/ IS A GENERALIZED SORT PROGRAM DESIGNED FOR USE ON AN IBM 1401 OR 1460 EQUIPPED WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE AND A MINIMUM OF 8,000 POSITIONS OF CORE STORAGE.
THIS PROGRAM SORTS FIXED LENGTH RECORDS IN THE MOVE MODE. THE MAXIMUM RECORD LENGTH THAT MAY BE SORTED VARIES FROM 1,200 CHARACTERS FOR AN 8K SYSTEM UP TO 3,000 CHARACTERS FOR A 16K SYSTEM. THE SORTING CAN BE ACCOMPLISHED IN EITHER ASCENDING OR DESCENDING SEQUENCE BASED UPON UP TO 10 CONTROL DATA FIELDS AND 189 CHARACTERS OF CONTROL DATA CONTAINED IN THESE FIELDS.
THE MINIMUM MACHINE REQUIREMENTS FOR USE OF SORT 62 ARE- 8K 1401 OR 1460, ONE 1311 DISK STORAGE DRIVE, 1403 PRINTER, 1402 CARD READ-PUNCH AND HIGH-LOW-EQUAL COMPARE SPECIAL FEATURE /1401 ONLY/.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OBJECT PROGRAM LISTING...
SPECIFICATION MANUAL... OPERATING PROCEDURES.
CARD DECKS - OBJECT PROGRAM DECK. /THIS DECK CAN BE
OBTAINED ON ONE REEL OF MAGNETIC TAPE/.

1401-SM-065 SORT 63
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-065

THE IBM 1401 SORT 63, /1401-SM-065/ IS A GENERALIZED SORT PROGRAM DESIGNED FOR USE ON AN IBM 1401 EQUIPPED WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE, A MINIMUM OF 4,000 POSITIONS OF CORE STORAGE AND THE DIRECT SEEK FEATURE.
THIS PROGRAM SORTS FIXED LENGTH RECORDS IN THE MOVE MODE. THE MAXIMUM RECORD LENGTH THAT MAY BE SORTED IS 400 CHARACTERS. THE SORTING CAN BE ACCOMPLISHED IN EITHER ASCENDING OR DESCENDING SEQUENCE BASED UPON UP TO 10 CONTROL DATA FIELDS AND 189 CHARACTERS OF CONTROL DATA CONTAINED IN THESE FIELDS.
THE MINIMUM MACHINE REQUIREMENTS FOR USE OF SORT 63 ARE- 4K 1401, ONE 1311 DISK STORAGE DRIVE, 1403 PRINTER, 1402 CARD READ PUNCH, HIGH-LOW-EQUAL COMPARE SPECIAL FEATURE, AND THE DIRECT SEEK SPECIAL FEATURE.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OBJECT PROGRAM LISTING...
SPECIFICATIONS MANUAL... OPERATING PROCEDURES.
CARD DECKS - OBJECT PROGRAM DECK. /THIS DECK CAN BE
OBTAINED ON ONE REEL OF MAGNETIC TAPE/.

1401-SM-066 SORT 64
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-066

THIS PROGRAM SORTS FIXED LENGTH RECORDS IN THE MOVE MODE. THE MAXIMUM LENGTH RECORD THAT MAY BE SORTED VARIES FROM 1,200 CHARACTERS FOR AN 8K SYSTEM UP TO 3,000 CHARACTERS FOR A 16K SYSTEM. THE SORTING CAN BE ACCOMPLISHED IN EITHER ASCENDING OR DESCENDING SEQUENCE BASED UPON UP TO 10 CONTROL DATA FIELDS AND 189 CHARACTERS OF CONTROL DATA CONTAINED IN THESE FIELDS.

CONTINUED FROM PRIOR COLUMN--

THE MINIMUM MACHINE REQUIREMENTS FOR USE OF SORT 64 ARE- 8K IBM 1401 OR 1460 EQUIPPED WITH ONE IBM 1311 DISK STORAGE DRIVE, AN IBM 1403 PRINTER, AN IBM 1402 CARD READ PUNCH, HIGH-LOW-EQUAL COMPARE SPECIAL FEATURE /1401 ONLY/, AND THE DIRECT SEEK SPECIAL FEATURE.
THIS PROGRAM HAS BEEN GENERATED FROM THE 1401 SORT 6 LIBRARY, PROGRAM #1401-SM-062, USING THE FOLLOWING PARAMETER CARDS--
CARD LABEL OPERANDS
INPUTMEDIA CARD, TAPE, DISK
OUTPUTMEDIA TAPE, DISK
SELECTDLET SELDELCCLASS, CONTROLDATA
ADDITIONS CARD
CHECKS SEQHASH
DSKLABLOUT ALL
TAPE UNLOADIN, UNLOADOUT, SCAN
TAPLABLIN STANDARD, ALL, B
TAPLABOUT STANDARD, ALL, B
SYSTEMSPEC DIRECT
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAM LISTING...
SPECIFICATIONS MANUAL... OPERATING PROCEDURES MANUAL.
CARD DECKS - OBJECT PROGRAM DECK. /THIS DECK CAN BE
OBTAINED ON ONE REEL OF MAGNETIC TAPE/.

1401-SM-067 SORT 61
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SM-067

THE IBM 1401 SORT 61, /1401-SM-067/ IS A GENERALIZED SORT PROGRAM DESIGNED FOR USE ON AN IBM 1401 EQUIPPED WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE AND A MINIMUM OF 4,000 POSITIONS OF CORE STORAGE.
THIS PROGRAM SORTS FIXED LENGTH RECORDS IN THE MOVE MODE. THE MAXIMUM RECORD LENGTH THAT MAY BE SORTED IS 400 CHARACTERS. THE SORTING CAN BE ACCOMPLISHED IN EITHER ASCENDING OR DESCENDING SEQUENCE BASED UPON UP TO 10 CONTROL DATA FIELDS AND 189 CHARACTERS OF CONTROL DATA CONTAINED IN THESE FIELDS.
THE MINIMUM MACHINE REQUIREMENTS FOR USE OF SORT 61 ARE- 4K 1401, ONE 1311 DISK STORAGE DRIVE, 1403 PRINTER, 1402 CARD READ PUNCH AND HIGH-LOW-EQUAL COMPARE SPECIAL FEATURE.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OBJECT PROGRAM LISTING...
SPECIFICATIONS-MANUAL... OPERATING PROCEDURES.
CARD DECKS - OBJECT PROGRAM DECK. /THIS DECK CAN BE OBTAINED
ON ONE REEL OF MAGNETIC TAPE/.

1401-SP-021 SYMBOLIC PROGRAMMING SYSTEM
1 /SPS-1/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SP-021

PURPOSE TO PROVIDE A BASIC SYMBOLIC PROGRAMMING LANGUAGE AND PROCESSOR FOR THE IBM 1401. EQUIPMENT SPECIFICATIONS 1400 POSITIONS OF STORAGE 1402 READER-PUNCH 1403 PRINTER MODEL 1.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS...
OPERATING PROCEDURES.
CARD DECKS - CONDENSED PROGRAM DECK.

1401-SP-030 SYMBOLIC PROGRAMMING SYSTEM
2 /SPS-2/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SP-030

PURPOSE TO PROVIDE A SYMBOLIC LANGUAGE PROCESSOR FOR MACHINES WITH GREATER THAN 4000 POSITIONS OF CORE STORAGE. EQUIPMENT SPECIFICATIONS 4000 POSITIONS OF STORAGE 1402 READER-PUNCH 1403 PRINTER, MODEL 1.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS...
OPERATING PROCEDURES.
CARD DECK - CONDENSED PROGRAM DECK.

1401-SP-133 ASSEMBLY PROGRAM FOR 7750
USING THE IBM 1401
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SP-133

THIS PROGRAM ASSEMBLES 7750 SOURCE LANGUAGE STATEMENTS AND PRODUCES AS OUTPUT A CARD DECK OR A TAPE SUITABLE FOR LOADING INTO THE 7750 THROUGH THE IBM 1410 OR 7000 SERIES DATA PROCESSING SYSTEMS. THE PROGRAM IS PROVIDED ON TAPE. INPUT TO THE ASSEMBLY PROGRAM IS TO BE SUPPLIED ON CARDS. THE USER MAY REQUEST CARD OUTPUT, TAPE OUTPUT, OR BOTH FROM THE ASSEMBLY PROGRAM. THE 1401 SYSTEM USED MUST HAVE THE FOLLOWING MINIMUM CONFIGURATION 4000 POSITIONS OF CORE STORAGE, THREE IBM /29 II, 729 IV, OR 7330 MAGNETIC TAPE UNITS, ADVANCED PROGRAMMING FEATURES, HIGH-LOW-EQUAL COMPARE FEATURE, IBM 1403 PRINTER, MODEL 2, IBM 1402 CARD READ-PUNCH.

THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

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*M
*M
*M

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAMMING MANUAL.
ONE MAGNETIC TAPE - 7750 ASSEMBLY PROGRAM USING THE 1401.

OPTIONAL PROGRAM MATERIAL -
ONE MAGNETIC TAPE - LISTING TAPE OF 7750 ASSEMBLY PROGRAM USING THE 1401.

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1401-SP-156 1401/7740 ASSEMBLY PROGRAM
USING THE IBM 1401
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-SP-156

THE ASSEMBLED PROGRAM, IF CREATED ON A 1311 DISK STORAGE DRIVE, CAN BE LOADED DIRECTLY INTO THE 7740 FOR EXECUTION. IF THE PROGRAM IS PRODUCED ON TAPE OR IN CARDS, IT CAN BE LOADED INTO THE 7740 FROM 1410 OR ANY 7000 SERIES SYSTEM EXCEPT THE 7072. FEATURES-- OPERATES ON 1401 OR 1410 IN 1401 MODE. CONVERTS 7740 SOURCE PROGRAMS WRITTEN IN SYMBOLIC LANGUAGE TO OBJECT PROGRAMS IN MACHINE LANGUAGE. ACCEPTS INPUT FROM EITHER TAPE OR CARDS. PRODUCES THE OBJECT PROGRAM AS OUTPUT ON AN 1311 DISK STORAGE DRIVE, TAPE, OR IN CARDS. PROVIDES THE USER WITH AN ASSEMBLY LISTING ON THE 1402 PRINTER. PROVIDES ALTERNATE UPPER OR LOWER MEMORY DISK AND HOST LOAD PROGRAMS FOR USE ON AN 8K OR 16K 7740. THE UPPER MEMORY LOADERS ON AN 8K FACILITY THE USE OF ADDITIONAL CORE STORAGE FOR OBJECT PROGRAMS. THE LOADERS WILL NOT BE DESTROYED BY ANY RESERVE BLOCK AND CHAIN STATEMENTS. CORRECTS PROGRAM ACTION IN THE USE OF RBC DECLARATIVE STATEMENT. MINIMUM MACHINE REQUIREMENTS--A 4K 1401 OR 1410 SYSTEM WITH...1402 CARD READ PUNCH...1403 PRINTER MODEL 2...FOUR 729 OR 7330 MAGNETIC TAPE UNITS...ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE FEATURES. AN IBM 1311 DISK STORAGE DRIVE IS ALSO REQUIRED IF THE OBJECT PROGRAM IS TO BE LOADED DIRECTLY INTO A 7740 OPERATING INDEPENDENTLY OF ANOTHER IBM COMPUTER. THE PROGRAM ALSO--

- PROVIDES NOTIFICATION WHEN TO REPLACE THE INPUT TAPE IF THE INPUT IS TAPE.
- ASSIGNS AN 8K STORAGE LIMIT IF THE CONTROL CARD IS MISSING.
- ASSURES THAT THE NINES PADDING OF ASSEMBLY WORK BLOCKS IS CORRECT
- ALLOWS THE CONTINUANCE OF THE ASSEMBLY IF THE 1311 FILE IS NOT IN A -READY CONDITION--
- PROVIDES UPPER-MEMORY ASSEMBLY PRODUCED LOADERS FOR 16K SYSTEMS.
- PROVIDES AN IMPROVED CORRECTIVE ACTION FOR READ ERRORS.

THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... SAMPLE PROBLEM LISTING...
PROGRAM MATERIAL LIST... LISTINGS OF LOAD PROGRAMS.
CARD DECKS - PROGRAM ASSEMBLY... SAMPLE PROBLEM DECKS.
OPTIONAL PROGRAM MATERIAL - ONE REEL OF TAPE CONTAINING FLOWCHARTS AND PROGRAM LISTING.

1401-UT-001 CARD SYSTEM UTILITY PROGRAMS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-001

PURPOSE UTILITY PROGRAMS TO LOAD OR TO OUTPUT PROGRAMS AND DATA. REMARKS PROGRAMS PROVIDED CLEAR STORAGE CARD LOADER PRINT STORAGE PUNCH STORAGE PUNCH-LIST-SEQUENCE CHECK EQUIPMENT SPECIFICATIONS NO SPECIAL FEATURES REQUIRED.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

1401-UT-019 MULTIPLE TAPE UTILITY
PROGRAM /120-CHARACTER LABEL/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-019

THE MULTIPLE TAPE UTILITY PROGRAM /120-CHARACTER LABEL/ FOR IBM 1401 AND 1460 SYSTEMS, 1401-UT-019, HAS THE FACILITY TO HAVE ANY ONE, TWO, OR ALL THREE UTILITY FUNCTIONS /CARD-TO-TAPE, TAPE-TO-CARD, TAPE-TO-PRINTER/ OCCUR CONCURRENTLY, IN A MANNER SIMILAR TO THAT OF THE 1401 MULTIPLE UTILITY PROGRAM. TWO FUNCTIONS AVAILABLE WITH THIS PROGRAM THAT DO NOT EXIST IN THE 1401 MULTIPLE UTILITY PROGRAM ARE--

THE ABILITY TO CREATE AND/OR PROCESS THE IBM STANDARD TAPE LABEL /120-CHARACTER/, USING PROCEDURES SIMILAR TO THOSE AVAILABLE FROM IOCS.

THE FACILITY TO ACCOMMODATE BLOCKED RECORDS IN THE CARD-TO-TAPE AND TAPE-TO-CARD FUNCTIONS.

THIS IS A GENERALIZED UTILITY PROGRAM SUPPLIED AS A CONDENSED CARD OBJECT DECK. THE PROGRAM IS CONTROLLED FOR APPROPRIATE APPLICATION BY THE USE OF SENSE SWITCHES. ADDITIONAL INFORMATION IS PROVIDED BY A CONTROL CARD.

MINIMUM SYSTEM REQUIREMENTS--
AN 8K 1401 OR 1460 SYSTEM WITH... 1402 CARD READ PUNCH... ONE 1403 PRINTER MCL 2 OR 3 /1460/ OR 1404 PRINTER /1401/... 729 OR 7330 MAGNETIC TAPE UNIT /ONE TAPE UNIT IS REQUIRED FOR EACH TAPE OPERATION PERFORMED CONCURRENTLY/... HIGH-LOW-EQUAL COMPARE AND ADVANCED PROGRAMMING /1401/ OR INDEXING AND STORE ADDRESS REGISTER FEATURE /1460/... COLUMN BINARY /1401/ OR BIT TEST AND BINARY TRANSFER FEATURES /1460/, NEEDED ONLY IF BINARY FILES ARE TO BE ACCOMMODATED... SENSE SWITCHES /1401/... READ PUNCH RELEASE FEATURE.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAM LISTINGS...
MULTIPLE TAPE UTILITY PROGRAM SPECIFICATIONS.
CARD DECKS - PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL-- PROGRAM FLOWCHARTS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-025 1401 AND 1460 TAPE UTILITY
PROGRAMS WITH 120 CHARACTER LABEL CAPABILITY
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-025

THESE THREE PROGRAMS, FOR 1401 AND 1460 TAPE SYSTEMS, TRANSFER DATA FILES FROM CARD TO TAPE, FROM TAPE TO CARD, AND FROM TAPE TO PRINTER. OUTPUT FORMAT FLEXIBILITY IS PROVIDED THROUGH FIELD-SELECTION AND EXCEPTION-RECORD PROCEDURES. THE PROGRAMS HAVE THE CAPABILITY OF PROCESSING THE IBM STANDARD TAPE LABEL /120/, USING PROCEDURES SIMILAR TO THE AVAILABLE FROM IOCS. THESE ARE GENERALIZED UTILITY PROGRAMS, SUPPLIED BY IBM AS CONDENSED CARD OBJECT DECKS. THE PROGRAMS MODIFY

CONTINUED FROM PRIOR COLUMN--

THEMSELVES TO FIT A SPECIFIC APPLICATION THROUGH THE USE OF CONTROL CARDS. MINIMUM SYSTEM REQUIREMENTS-- 4K 1401 /R 8K 1460 SYSTEM...1402 CARD READ PUNCH...ONE 1403 PRINTER, MODEL 2 CR 3, OR 1404 PRINTER...ONE 729 OR 7330 MAGNETIC TAPE UNIT...SENSE SWITCHES FEATURE /1401 ONLY/. IF BINARY TAPE RECORDS OR COLUMN BINARY CARDS ARE TO BE PROCESSED, THE COLUMN BINARY TRANSFER FEATURE /1460/ IS REQUIRED.

BASIC PROGRAM MATERIAL--
DOCUMENTATION-- PROGRAM WRITE-UP... LISTINGS...
PROGRAM SPECIFICATIONS... OPERATING PROCEDURES.
CARD DECKS-- CARD TO TAPE DECK... TAPE TO CARD DECK...
TAPE TO PRINTER PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL--
FLOWCHARTS.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-026 TAPE-TO-PRINTER UTILITY
PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-026

PURPOSE 1. TO ENABLE THE PRINTING OF VARIOUS TAPE CONFIGURATIONS IN MANY PRINT CONFIGURATIONS WITHOUT THE NEED FOR SPECIFIC PROGRAMS. 2. TO SIMULATE THE 717, 720 AND 730 OFF-LINE PRINTERS FOR TAPES PREPARED ON 700-7000 SERIES COMPUTERS. EQUIPMENT SPECIFICATIONS /1401 MODEL C3 1403 MODEL 2 PRINTER 1 /ONE/ 729 MODEL II OR IV /1402 CARD READ PUNCH HIGH-LOW-EQUAL COMPARE /MAY RUN ON MODEL D3 IF SYSTEM TAPE PRODUCED ON MODEL C3. TIMING VARIES ACCORDING TO RECORD TYPES /I-E. FIXED LENGTH OR VARIABLE LENGTH/, AND ACCORDING TO SPACING AND SKIPPING REQUIREMENTS. FIXED LENGTH RECORDS WHICH ARE SINGLE SPACED OBTAIN MAXIMUM SPEED /600 LINES/MINUTE/. 1. MAXIMUM BLOCK SIZE ALLOWABLE IS 1496 CHARACTERS WITHOUT EDITING 1279 WITH EDITING. 2. MULTI-REEL FILES AND MULTI-FILE REELS MAY BE HANDLED. 3. SEQUENCE CHECKING AND EXCEPTION TESTING ARE PROVIDED.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL -
CARD DECK - SYMBOLIC CARDS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-027 CARD-TO-TAPE UTILITY PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-027

THE CARD-TO-TAPE PROGRAM PROVIDES FOR WRITING INFORMATION CONTAINED IN PUNCHED CARDS ONTO MAGNETIC TAPE. EQUIPMENT SPECIFICATIONS - 1401 MODEL C3, HIGH-LOW-EQUAL COMPARE, 1402 MODEL I CARD READER-PUNCH, ONE 729 MODEL II OR IV 1403 MODEL 2 PRINTER ADDITIONAL REMARKS 1. INPUT RECORD IN FROM 1 TO 99 CARDS. 2. REARRANGEMENT OF INPUT PRIOR TO OUTPUT IS ALLOWED. 3. UP TO 16 FIELDS MAY BE SELECTED FOR OUTPUT. 4. BLOCKING OF 1499 CHARACTERS OF BCD RECORDS AND 1599 CHARACTERS FOR COLUMN BINARY RECORDS. 5. SEQUENCE CHECKING OF CARDS AND RECORDS CAN BE PERFORMED. 6. AN EXCEPTION RECORD PROCEDURE IS PROVIDED. 7. HEADER AND TRAILER LABELS MAY BE INSERTED. 8. COLUMN BINARY RECORDS AND INTERMIXED COLUMN BINARY AND BCD RECORDS CAN BE WRITTEN ON TAPE IF THE 1401 SYSTEM BEING USED HAS THE COLUMN BINARY DEVICE. 9. A COUNT OF THE NUMBER OF DATA CARDS READ AND OF THE RECORDS WRITTEN, EXCLUSIVE OF HEADER AND TRAILER CARDS AND RECORDS, IS PRINTED OUT AT THE END OF EACH FILE.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL -
CARD DECK - SYMBOLIC CARDS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-028 TAPE-TO-CARD UTILITY PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-028

PURPOSE TO TRANSFER INFORMATION RECORDED ON MAGNETIC TAPE INTO PUNCHED CARDS, WITH A VARIETY OF OUTPUT COLUMN DESIGNATIONS. EQUIPMENT SPECIFICATIONS 1401 MODEL C3 1403 MODEL 2 PRINTER 729 MODEL 2 OR 4 TAPE DRIVE 1402 CARD READER-PUNCH HIGH-LOW-EQUAL COMPARE ADDITIONAL REMARKS TIMING VARIES FROM 200 TO 250 C.P.M., DEPENDING UPON THE NUMBER OF OPTIONS DESIRED BY THE USER. 1. MAXIMUM BLOCK SIZE ALLOWABLE 1197 CHARACTERS. 2. ADDITIONAL INFORMATION NOT CONTAINED WITHIN THE RECORD MAY BE PUNCHED. 3. FIELD SEQUENCE CHECKING AND FIELD SELECTION IS PERMITTED. 4. MULTIPLE FILE REELS ARE PROCESSED ACCORDING TO THE USERS SPECIFICATION. 5. EXCEPTION RECORD PROCESSING AND CARD SEQUENCE NUMBERING IS ALLOWED. 6. HEADER AND TRAILER LABELS ARE OPTIONALLY TREATED.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL -
CARD DECK - SYMBOLIC CARDS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-039 MULTIPLE UTILITY PROGRAM FOR
IBM 1401 TAPE SYSTEM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-039

PURPOSE TO SIMULATE CURRENT OFF-LINE PROCESSING BY 700 SERIES EQUIPMENT, AND ALLOW ANY COMBINATION OF TAPE-TO-CARD, TAPE-TO-PRINTER AND CARD-TO-TAPE OPERATIONS TO BE PERFORMED AT THE SAME TIME. EQUIPMENT SPECIFICATIONS 1401 MODEL C3 1402 READER-PUNCH 1403 MODEL 2 PRINTER 729

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MODEL 2 OR 4 TAPE UNIT /AS MANY AS USER DESIRES FOR 1, 2, OR 2 SIMULTANEOUS OPERATIONS/ HIGH-LOW-EQUAL COMPARE ADVANCED PROGRAMMING FEATURES COLUMN BINARY FEATURE /IF USER DESIRES/ ADDITIONAL REMARKS TIMING MAXIMUM SPEED WILL BE EFFECTED WHEN ANY ONE SINGLE OPERATION IS BEING PERFORMED. TAPE-TO-PRINTER 600 IPM, CARD-TO-TAPE 800 C/PM, TAPE-TO-CARD 250 C/PM. WHEN MORE THAN ONE OPERATION IS DESIRED SIMULTANEOUSLY, THE FOLLOWING TIME SPEEDS ARE APPLICABLE CARD-TO-TAPE - TAPE-TO-PRINTER, SINGLE SPACE PRINTING 510 C61/PM. CARD-TO-TAPE - TAPE-TO-PRINTER, 1ST CHARACTER FORMS CONTROL 400 C61/PM. CARD-TO-TAPE - TAPE-TO-CARD, 310 CARD READ, 160 CARD PUNCH/PM. TAPE-TO-PRINTER - TAPE-TO-CARD, 325 1/PM, 160 C/PM. CARD-TO-TAPE - TAPE-TO-PRINTER, TAPE-TO-CARD 275 1/PM, 275 CARD READ, 140 CARD PUNCH/PM. 1. HIGH AND LOW DENSITIES MAY BE INTERMIXED ON THE SEVERAL TAPE DRIVES WHILE RUNNING SIMULTANEOUS OPERATIONS. 2. BINARY AND BCD OPERATIONS MAY BE PROCESSED AT THE SAME TIME EXCEPT THAT THE SAME OPERATION /I.E., TAPE-TO-CARD BCD AS OPERATION #1, AND TAPE-TO-CARD BINARY AS OPERATION #2* IS NOT PERMITTED. 3. ANY COMBINATION OF THE FOLLOWING MAY BE PROCESSED AT THE SAME TIME CONSIDERING THE RESTRICTIONS STATED IN 2 ABOVE TAPE-TO-CARD BCD, TAPE-TO-CARD BINARY, CARD-TO-TAPE, BCD, CARD-TO-TAPE BINARY, CARD-TO-TAPE PROCESSING FILES CONTAINING BOTH BINARY AND BCD RECORDS, AND TAPE-TO-PRINTER. ONLY TAPE-TO-PRINTER MAY BE BLOCKED AND A MAXIMUM OF 1000 CHARACTERS. 4. INTERRUPT /SWITCH E/ ALLOWS INTERRUPTION OF PROCESSING TO DELETE OR ACTIVATE ADDITIONAL FUNCTIONS AFTER WHICH THE PROGRAM CONTINUES GOVERNED BY THE NEW SENSE SWITCH SETTINGS.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL -
CARD DECK - SYMBOLIC CARDS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-051 FILE UTILITIES

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-051

PURPOSE THIS IS A SET OF SIX INDEPENDENT PROGRAMS TO PERFORM MANY COMMON TASKS ASSOCIATED WITH THE 1405 DISK STORAGE. THE PROGRAMS ARE CLEAR DISK, DISK TO PRINTER, TAPE TO DISK, DISK TO TAPE, CARD TO DISK, AND DISK TO CARD. USE CONTROL CARDS ARE USED TO SPECIFY THE AFFECTED PORTIONS OF THE DISK FILE. RESTRICTIONS THE TAPE TO DISK AND DISK TO DISK ARE COMPANION PROGRAMS TO THE DISK TO TAPE AND DISK TO CARD PROGRAMS, AND ARE DESIGNED TO LOAD THE DATA GENERATED BY THESE PROGRAMS. MEMORY REQUIREMENTS ARE FROM 2K TO 4K, DEPENDING UPON WHICH PROGRAM IS USED. EQUIPMENT SPECIFICATIONS 1401 MODEL F, 1402, 1403, 1405, TAPE DRIVES AS REQUIRED FOR PROGRAMS.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

1401-UT-052 1401/1311 DISK FILE

ORGANIZATION ROUTINES 1401/1460
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-052

1401-UT-052, SUPPORTS 1301 AND 1311 DISK STORAGES AND THE 1401/1460/5 CONSOLE PRINTER. THE PACKAGE INCORPORATES THE ADDITIONAL CAPABILITIES 1301 DISK STORAGE AND CONSOLE PRINTER CAPABILITIES, REQUIRED 1401/1440/1460 AUTOCODER /ON DISK/ FOR GENERATION OF OBJECT PROGRAMS, AND PROVIDES TWO COMPLETE SETS OF ROUTINES. ONE SET GENERATES OBJECT PROGRAMS FOR A RANDOM FILE., THE OTHER, OBJECT PROGRAMS FOR A CONTROL SEQUENTIAL FILE- RANDCM FILE- THE OBJECT PROGRAMS FOR LOADING AND MAINTAINING A RANDOM FILE USE THE CHAINING METHOD TO LOAD RECORDS INTO DISK LOCATIONS DETERMINED BY CONTROL FIELDS WITHIN THE RECORDS. RECORDS WHOSE CONTROL DATA CONVERT TO THE SAME ADDRESS ARE LINKED TOGETHER BY A CHAIN OF ADDRESSES. OBJECT PROGRAMS CAN BE GENERATED BY THE ROUTINES TO ADD RECORDS OR DELETE THEM. CONTROL SEQUENTIAL FILE USE A SEQUENCE LINK TO ADD RECORDS TO THE FILE OR DELETE THEM, WITHOUT DESTROYING THE SEQUENCE. A DISTRIBUTION INDEX BUILT BY THE PROGRAMS MAKES POSSIBLE QUICK ACCESS TO ANY RECORD. IN BOTH TECHNIQUES, RECORDS MAY BE LOADED FROM OR UNLOADED TO CARDS, TAPE, OR DISK. THE USER'S FILE ORGANIZATION ROUTINES ARE GENERATED BY 1401/1440/1460 AUTOCODER /ON DISK/ FROM A SERIES OF 1401/1460 IOCS /ON DISK/ VERSION 2 LIBRARY ROUTINES AND THE DISK FILE ORGANIZATION LIBRARY ROUTINES. BY CONTROL CARDS, THE USER SUPPLIES THE APPROPRIATE PARAMETERS FOR GENERATION.
MINIMUM SYSTEM REQUIREMENTS-
REQUIREMENTS FOR GENERATION OF THE USER'S FILE ORGANIZATION OBJECT PROGRAMS ARE THE SAME AS THOSE FOR 1401/1440/1460 AUTOCODER /ON DISK/, AND 1401/1460 IOCS /ON DISK/, VERSION 2. EXECUTION REQUIREMENTS- 4K 1401 SYSTEM FOR 1311 USAGE OR 8K 1460 SYSTEM FOR 1311 OR 1301 USAGE WITH... 1402 CARD READ PUNCH... 1311 DISK STORAGE DRIVE OR 1301 DISK STORAGE ARRAY... 1403 PRINTER OF /1460/ 1477 CONSOLE MDL 2 OR 4 OR /1401/ 1407 CONSOLE INQUIRY STATION OR 1477 CONSOLE MDL 3 /IF A LOG IS TO BE KEPT DURING FILE LOADING, ADDITIONS, OR DELETIONS, THE 1403 PRINTER IS REQUIRED., IN THAT CASE, A CONSOLE WITH PRINTER IS NOT REQUIRED/... MAGNETIC TAPE UNIT /REQUIRED ONLY IF TAPE I/O IS USED/.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAM LISTING...
DISK FILE ORGANIZATION ROUTINES... OPERATING PROCEDURES.
CARD DECKS - ONE OF THREE GROUPS MUST BE SPECIFIED.
GROUP A - COMMON AND RANDOM... GROUP B - COMMON AND CONTROL SEQUENTIAL... GROUP C - COMMON, RANDOM AND CONTROL SEQUENTIAL...

OPTIONAL PROGRAM MATERIAL-- FLOW CHARTS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-053 UTILITY PROGRAMS FOR THE

1401-1311 DISK
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-053

CONTINUED FROM PRIOR COLUMN--

THIS SYSTEM IS DESIGNED TO PERFORM CERTAIN FREQUENTLY REQUIRED OPERATIONS WITHOUT PROGRAMMING EFFORT ON THE PART OF THE USER. THE SYSTEM CONSISTS OF-

CLEAR-DISK-STORAGE PROGRAM, DISK-TO-TAPE PROGRAM, TAPE-TO-DISK PROGRAM, DISK-TO-CARD PROGRAM, CARD-TO-DISK PROGRAM, COPY-DISK PROGRAM, PRINT-DISK PROGRAM, DISK-RECORD-LOAD PROGRAM, AND DISK-LABEL PROGRAM.

EACH OF THE PROGRAMS IS GENERALIZED, MODIFYING ITSELF TO PERFORM SPECIFIC OPERATIONS BY INFORMATION RECEIVED THROUGH CONTROL CARDS. EACH OF THE PROGRAMS INCLUDES AN OPTIONAL DISK LABEL CHECKING ROUTINE. THE PROGRAMS ARE DESIGNED FOR USE ON 4K OR LARGER SYSTEMS- 8K OR GREATER IS NECESSARY WHEN PROCESSING DISK DATA FOR WHICH THE TRACK RECORD SPECIAL FEATURE IS REQUIRED. THESE PROGRAMS PERFORM SUCH FUNCTIONS AS CLEAR DISK AND GENERATE ADDRESSES, SUPPLY OUTPUT FOR FILE PROTECTION PURPOSES, DISPLAY DISK STORAGE ON THE PRINTER, CHANGE DATA OR ADDRESSES IN DISK STORAGE, CREATE THE LABEL TRACK OR REMOVE THE LABEL TRACK, AND ENTER, DELETE, CHANGE, DISPLAY, AND PUNCH DISK LABELS.

MINIMUM MACHINE REQUIREMENTS -- A 4K 1401 SYSTEM /8K REQUIRED IF TRACK RECORD FORMAT IS USED/ WITH...1402 CARD READ PUNCH...1403 PRINTER MODEL 1 OR 2...ONE 1311 DISK STORAGE DRIVE...AND ONE IBM MAGNETIC TAPE UNIT /729 II, IV, OR V, OR 7330/ REQUIRED FOR TAPE PROGRAMS ONLY.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES...
PRELIMINARY SPECIFICATIONS.
CARD DECKS - NINE CARD DECKS /DECKS LABELED ABOVE/.

OPTIONAL PROGRAM MATERIAL -
LISTINGS... FLOWCHARTS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-057 FILE ORGANIZATION ROUTINES

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-057

PURPOSE THE CHAINING METHOD OF FILE ORGANIZATION IS AN EFFICIENT METHOD OF HANDLING THE PROBLEM OF DUPLICATE FILE ADDRESSES, WHEN CONTROL DATA /ITEM NUMBER, MAN NUMBER, ETC./ ARE CONVERTED TO DISK STORAGE ADDRESSES. THE 1401-1405 FILE ORGANIZATION PROGRAM WILL EFFICIENTLY LOAD AND MAINTAIN A CHAINED DISK FILE SO AS TO MINIMIZE THE AMOUNT OF UNUSED STORAGE, AS WELL AS THE RETRIEVAL TIME FOR EACH RECORD. 1401 FILE ORGANIZATION FEATURES ARE 1* AN EDIT PROGRAM WHICH WILL EDIT A SYMBOLIC VERSION OF THE PROGRAM SO AS TO PROVIDE THE MOST EFFICIENT PROGRAM FOR ANY SIZE 1401, 2* ABILITY TO MAKE ADDITIONS AND DELETIONS TO A CHAINED FILE, 3* LOAD AND ADD TRAILER RECORDS TO A FILE, 4* UNLOAD A FILE ONTO CARDS OR TAPE FOR REORGANIZATION, 5* AN AUDIT LIST CONSISTING OF THE CONTROL DATA OF RECORDS BEING LOADED AND THEIR ADDRESSES, 6* INPUT DATA RECORDS MAY BE ON CARD OR TAPE. USE OF PROGRAM THE LOAD AND ADDITIONS PROGRAMS ARE USED IN CONJUNCTION WITH THE EDIT PROGRAM. THE USER PROVIDES THE SPECIFICATIONS OF HIS FILE AND MACHINE IN A CONTROL CARD WHICH IS EXAMINED BY THE EDIT PROGRAM TO CREATE A SYMBOLIC VERSION OF THE LOAD AND ADDITIONS PROGRAMS WHICH MEET THOSE SPECIFICATIONS. THE EDITED PROGRAM AND THE USERS CONVERSION ROUTINE /ROUTINE TO CONVERT CONTROL DATA TO DISK ADDRESS/ ARE ASSEMBLED WITH EITHER SPS OR AUTOCODER. THE ASSEMBLED PROGRAM WILL THEN LOAD THE USERS DATA FILE /ON CARD OR TAPE/ WITH A GIVEN FORMAT ONTO THE DISK FILE IN THE DESIRED AREA. THE PROGRAM WILL CREATE THE NECESSARY CHAIN LINKAGES. THE REMAINING PROGRAMS ARE NOT EDITED, BUT MUST BE ASSEMBLED WITH THE USERS CONVERSION ROUTINE. THE CONTROL CARD IS EXAMINED AT OBJECT TIME AND THE USERS DATA IS OPERATED UPON ACCORDING TO THE SPECIFICATIONS IN THE CONTROL CARD. ALL OF THE PROGRAMS PROVIDE FOR ALL I/O ERROR CHECKING. THE PROGRAMS UTILIZE ONE OR TWO ACCESS ARMS DEPENDING UPON THE NUMBER AVAILABLE. IF THERE ARE TWO ARMS, AND ONE FAILS, THE PROGRAM WILL CONTINUE TO OPERATE WITH ONE ARM. MACHINE CONFIGURATION 1 4000 CORE STORAGE POSITIONS 1 1402 CARD READ-PUNCH 1 1403 PRINTER /MODEL 1 OR 2/ 1 1405 DISK STORAGE UNIT /MODEL 1 OR 2/ 1 OR 2 TAPE UNITS /MODEL 729 II, 729 IX, 729 V, OR 7330/ MAY BE USED IF DATA IS ON TAPE.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
CARD DECKS - CONDENSED PROGRAM DECK... SAMPLE PROBLEM DECK.

1401-UT-066 UTILITY PROGRAMS FOR THE

1401-1009
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-066

PURPOSE THE 1401-1009 UTILITY TRANSMITS DATA TO OR RECEIVES DATA FROM ANOTHER TERMINAL ON EITHER CARDS OR MAGNETIC TAPE. USE OF PROGRAM THE FOUR USES ARE 1. TRANSMIT DATA FROM CARDS - BLOCKED OR UNBLOCKED. 2. TRANSMIT DATA FROM MAGNETIC TAPE. 3. RECEIVE BLOCKED OR UNBLOCKED DATA ON CARDS. 4. RECEIVE DATA ON TAPE. MACHINE CONFIGURATION 1 4000 CORE STORAGE POSITIONS SENSE SWITCHES 1 1402 CARD READ PUNCH 1 1009 DATA TRANSMISSION UNIT SERIAL I/O ADAPTER 1 TAPE UNIT IS OPTIONAL.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UPS... LISTING... FLOWCHARTS.
CARD DECK - CONDENSED PROGRAM DECK.

1401-UT-067 HYPERTAPE UTILITY PROGRAMS

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-067

THE 1401 HYPERTAPE UTILITY PROGRAMS, NO. 1401-UT-067, PERFORM CERTAIN FREQUENTLY REQUIRED OPERATIONS ON 1401 AND 1460 SYSTEMS WITHOUT PROGRAMMING EFFORT. THE PROGRAMS INCLUDED ARE- CARD-TO-HYPERTAPE, HYPERTAPE-TO-CARD, 1/2 INCH TAPE-TO-HYPERTAPE, HYPERTAPE-TO-1/2 INCH TAPE, HYPERTAPE-TO-PRINTER. USE- EACH PROGRAM IS GENERALIZED, MODIFYING ITSELF TO PERFORM SPECIFIC OPERATIONS THROUGH PARAMETERS CONTAINED ON CONTROL CARDS. EACH PROGRAM ALSO INCLUDES TAPE LABEL CHECKING OPTICS. THE PROGRAMS PERFORM SUCH FUNCTIONS AS PREPARING TAPE FILES FOR 7074, 7080, AND 7090 HYPERTAPE SYSTEMS FROM CARD FILES OR 729 /1/2 INCH/ TAPE FILES, CREATING CARD FILES OR 729 /1/2 INCH/ TAPE FILES FROM A HYPERTAPE FILE, AND THE PRINTING OF FILES FROM

*M

*M

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A HYPERTAPE FILE.
MINIMUM SYSTEM REQUIREMENTS... A 4K 1401 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2 OR 1404 PRINTER... ONE 7340 HYPERTAPE DRIVE... ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, BIT TEST, AND SENSE SWITCHES FEATURES... ONE 729 OR 7330 MAGNETIC TAPE UNIT /IF 1/2 INCH TAPE IS TO BE READ OR WRITTEN/... COLUMN BINARY FEATURE /IF COLUMN BINARY CARDS ARE TO BE READ OR PUNCHED/.

OR
AN 8K 1460 SYSTEM WITH... 1402 CARD READ PUNCH... 1403 PRINTER... ONE 7340 HYPERTAPE DRIVE... INDEXING AND STORE ADDRESS REGISTER, AND BIT TEST FEATURES... ONE 729 OR 7330 MAGNETIC TAPE UNIT /IF 1/2 INCH TAPE IS TO BE READ OR WRITTEN/... BINARY TRANSFER FEATURE /IF COLUMN BINARY CARDS ARE TO BE READ OR PUNCHED/.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... PROGRAMMING LISTINGS... HYPERTAPE UTILITY PROGRAMS OPERATING PROCEDURES.
CARD DECKS -- FIVE INDIVIDUAL CARD DECKS.

OPTIONAL PROGRAM MATERIAL -- FLOWCHARTS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. *M

1401-UT-069 TAPE UTILITY SYSTEM FOR THE 7710

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-069

THIS SYSTEM IS DESIGNED TO CONTROL THE MOVEMENT OF DATA BETWEEN THE IBM 1401 WITH 7710 DATA COMMUNICATION UNIT AND A REMOTE TERMINAL. THE REMOTE TERMINAL MAY BE ANY ONE OF THE FOLLOWING-- 1401-7710, 1401-1009, 7701, 7702, 1013. THE PROGRAMS INCLUDED IN THE SYSTEM ARE--

IBM 1401-7710 TAPE TRANSMIT UTILITY PROGRAM
IBM 1401-7710 TAPE RECEIVE UTILITY PROGRAM
IBM 1401-7710 TRANSMIT-RECEIVE UTILITY PROGRAM

EACH OF THE PROGRAMS PROVIDES FOR TAPE DATA INPUT-OUTPUT OPERATIONS AND FOR HANDLING OF MIXED PARITY TAPES. A 4K 1401 SYSTEM WITH... 7710 DATA COMMUNICATION UNIT... 1402 CARD READ PUNCH... 729 II, IV, V, OR 7330 MAGNETIC TAPE UNIT... SERIAL I/O ADAPTER FEATURE. FOR THE IBM 1401-7710 TRANSMIT-RECEIVE UTILITY PROGRAM, THE 1401 SYSTEM MUST HAVE THE ABOVE REQUIREMENTS PLUS ADVANCE PROGRAMMING AND SENSE SWITCH FEATURES.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- AUTOCODER LISTING... FLOWCHARTS... INSTRUCTIONS TO SEPARATE CARD DECKS... UTILITY PROGRAMS FOR THE 1401 MANUAL.
CARD DECKS -- OBJECT PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL --
AUTOCODER SOURCE DECKS... S.P.S. SOURCE DECKS... LISTINGS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-UT-076 DATA COMMUNICATIONS UTILITY PROGRAM - IBM 1009

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-076

THE DATA COMMUNICATIONS UTILITY PROGRAM, NO. 1401-UT-076, CONSISTING OF SEVEN INDEPENDENT PROGRAMS, BRINGS TO 1401, 1440, AND 1460 USERS A MEANS TO EASILY ACCOMPLISH LINE SPEED DATA FILE COMMUNICATION WITH A BUFFERED 1009 DATA TRANSMISSION UNIT. THE PACKAGE OF SEVEN PROGRAMS INCLUDES--

CARD FILE TRANSMISSION 1311 DISK FILE RECEPTION
1311 DISK FILE TRANSMISSION MAGNETIC TAPE FILE RECEPTION
MAGNETIC TAPE FILE TRANSMISSION 1403 AND 1443 PRINTER RECEPTION
CARD FILE RECEPTION

EACH PROGRAM PROVIDES PROGRAMMED CONTROL OF THE DIRECTION OF DATA FLOW ON THE COMMUNICATION LINE, END OF FILE SIGNALING AND RECOGNITION, PERFORMANCE OF FIELD SELECTION AND EXPANSION WITHIN INDIVIDUAL RECORDS, PROCESSING OF STANDARD HEADER AND TRAILER LABELS AND TRANSMISSION OF BLOCKED AND UNBLOCKED DATA. IN TAPE AND DISK TRANSMIT AND RECEIVE, DATA TRANSMISSION TIMES CAN BE OVERLAPPED WITH THE PERFORMANCE OF A DATA PROCESSING OPERATION. A TAPE TO PRINTER ROUTINE IS PROVIDED. HOWEVER, THE USER MAY ELECT TO SUPPLY A ROUTINE OF HIS OWN CHOOSING SUBJECT TO THE TIMING REQUIREMENTS PUBLISHED IN THE PROGRAM SPECIFICATIONS. AUTOMATIC ANSWER AND AUTOMATIC DISCONNECT SERVICE IS AN OPTION PROVIDED IN ALL RECEIVE PROGRAMS. PROCESSING OF SINGLE OR MULTI-REEL MAGNETIC TAPE FILE RECORDS CAN BE PERFORMED IN BINARY, BCD, OR MIXED BINARY/BCD MODE.

MINIMUM SYSTEM REQUIREMENTS--
A 4K 1401 OR 8K 1460 SYSTEM WITH... ONE 1402 CARD READ PUNCH... ONE 1403 PRINTER MDL 2 OR 1404 PRINTER /1401 ONLY/... ONE 729 II, IV, V, OR 7330 MAGNETIC TAPE UNIT /TAPE PROGRAMS ONLY/... ONE 1311 DISK STORAGE DRIVE /DISK PROGRAMS ONLY/... ONE 1009 DATA TRANSMISSION UNIT WITH BUFFER FEATURE... SERIAL INPUT/OUTPUT ADAPTER FEATURE... HIGH-LOW-EQUAL COMPARE FEATURE /1401 ONLY/.

OR
A 4K 1440 SYSTEM WITH... ONE 1442 CARD READ PUNCH MDL 1 OR 2, OR A 1442 CARD READER MDL... WITH A 1444 CARD PUNCH... ONE 1443 PRINTER... ONE 7335 MAGNETIC TAPE UNIT /TAPE PROGRAMS ONLY/... ONE 1311 DISK STORAGE DRIVE /DISK PROGRAMS ONLY/... ONE 1009 DATA TRANSMISSION UNIT WITH BUFFER FEATURE... SERIAL INPUT/OUTPUT ADAPTER FEATURE.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT DOCUMENTATION -- PROGRAM WRITE-UP... SPECIFICATIONS MANUAL... OPERATING PROCEDURES.

CARD DECKS-- SEVEN DECKS IN OBJECT DECK FORM... TAPE TO PRINT OBJECT DECK... 1401 4K AND 8K LOADER DECKS... 1440 4K AND 8K LOADER DECKS.

OPTIONAL PROGRAM MATERIAL-- FLOWCHARTS... LISTINGS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. *M

1401-UT-153 7040/44 - 1401 AUXILIARY PROGRAMS

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-153

THE 7040/7044--1401 AUXILIARY PROGRAM, 1401-UT-153, SUPPORTS THE 7040/7044 OPERATING SYSTEM /16/32K/, 7040-PR-150. MAINTENANCE OF THE SYMBOLIC MASTER TAPES WITH THE 7040/7044-1401 MAP SYMBOLIC UPDATING PROGRAM REQUIRES THAT A 7040 UPDATE RUN FIRST BE MADE TO REDUCE THE BLOCKING FACTOR FROM NINE TO A MAXIMUM OF FIVE.

*** DISTRIBUTION OF THIS PROGRAM IS RESTRICTED TO USERS OF THE

CONTINUED FROM PRIOR COLUMN--

7040/7044 OPERATING SYSTEM, FILE NUMBER 7040-PR-150

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED.

BASIC PROGRAM MATERIAL --
DOCUMENTATION--PROGRAM WRITE-UP... PROGRAMMERS GUIDE... OPERATORS GUIDE... SYSTEM PROGRAMMERS GUIDE.
MAGNETIC TAPE -- /ONE REEL/ -- SYMBOLIC DECK...
OBJECT DECK... AUTOCART LISTING.

1401-UT-157 7040/7044 - 1401 PERIPHERAL UTILITY PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-157

THE 1401 PERIPHERAL UTILITY PROGRAM, USING INFORMATION SUPPLIED BY A SINGLE CONTROL CARD AND THE SENSE SWITCHES, PERFORMS, ON AN OFF-LINE 1401 DATA PROCESSING SYSTEM, THE BASIC PERIPHERAL OPERATIONS ASSOCIATED WITH THE 7040/7044 8K OPERATING SYSTEM, THEREBY SAVING 7040/7044 MACHINE TIME. *** DISTRIBUTION OF THIS PROGRAM IS RESTRICTED TO USERS OF THE 7040/7044 8K OPERATING SYSTEM, FILE NUMBER 7040-PR-154

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... PROGRAM LISTING.
CARD DECKS -- OBJECT DECK... SYMBOLIC DECK.

1401-UT-158 7090/94 - 1401 PERIPHERAL OUTPUT PROGRAM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-158

THE 1401 PERIPHERAL OUTPUT PROGRAM IS A COMBINED TAPE-TO-PRINTER/PUNCH ROUTINE UTILIZING THE IBM 1401 DATA PROCESSING SYSTEM. THIS PROGRAM READS THE SYSTEM OUTPUT TAPE AND PRODUCES A LISTING ON THE IBM 1403 PRINTER OR A DECK OF COLUMN-BINARY CARDS ON THE IBM 1402 CARD READ PUNCH. IF A DECK OF COLUMN-BINARY CARDS IS PUNCHED, IT IS NOT NECESSARY THAT THE CONTROL CARDS HAVE A 7, 9 PUNCH IN COLUMN 1. SELECT 3 IS USED FOR OUTPUT FROM THIS PROGRAM.

THIS PROGRAM ACTS ON DATA OF THE FOLLOWING TYPES--
/1/ PRINT-LINE IMAGES /ON MAGNETIC TAPE/ IN EVEN-PARITY MODE, BLOCKED BY A RECORD MARK IN THE LAST CHARACTER POSITION OF EACH PRINT-LINE, OR COLUMN-BINARY CARD IMAGES IN ODD-PARITY MODE, BLOCKED WITH A RECORD MARK OR UNBLOCKED.
/2/ OUTPUT FROM THE IJOB PROCESSOR CONSISTING OF EITHER OF THE FOLLOWING-- /A/ PRINT-LINES /WITH A MAXIMUM OF 132 CHARACTERS INCLUDING THE CARRIAGE-CONTROL CHARACTER/ WITH CHARACTERS TRANSLATED BY THE 1401 DATA PROCESSING SYSTEM INTO CHARACTERS ACCEPTED BY THE 1403 PRINTER. /B/ COLUMN-BINARY CARD IMAGES. THE DISTINCTION BETWEEN THESE TYPES OF DATA IS CONCERNED WITH THE PRESENCE OR ABSENCE OF THE BLOCK CONTROL WORD. IF THE BLOCK CONTROL WORD IS PRESENT, LOGICAL CONTROL WORDS ARE WRITTEN, IF THE BLOCK CONTROL WORD IS NOT PRESENT, THE MODE IS RECORDED ON TAPE.

MINIMUM MACHINE CONFIGURATION-- 4,000 POSITIONS OF CORE STORAGE, ONE 729 OR 7330 MAGNETIC TAPE UNIT, ADVANCED PROGRAMMING FEATURE, HIGH-LOW-EQUAL COMPARE FEATURE, SENSE SWITCH FEATURE, ONE IBM 1402 CARD READ PUNCH WITH COLUMN BINARY FEATURE, ONE IBM 1403 PRINTER WITH 132 PRINT POSITIONS AND THE PRINT CONTROL FEATURE. THE DISTRIBUTION OF THIS PROGRAM IS RESTRICTED TO USERS OF THE 7090/7094 IBSYS PROCESSOR, FILE NUMBER, 7090-PR-130. *M

BASIC PROGRAM MATERIAL--
DOCUMENTATION -- PROGRAM WRITE-UP...
CARD DECKS -- PRINT/PUNCH OBJECT DECK... CARD-TO-TAPE OBJECT DECK... PRINT/PUNCH SYMBOLIC DECK... CARD-TO-TAPE SYMBOLIC DECK.

1401-UT-938 INPUT PROGRAM FOR 7090/7094 SUPPORT PACKAGE FOR IBM SYSTEM/360

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-UT-938

THE 1401 INPUT PROGRAM IS USED TO READ CARD DECKS IN ONE FORM AND THEN PREPARE AN INPUT TAPE FOR USE BY THE 7090/7094 SUPPORT PACKAGE. THE TAPE WILL CONSIST OF CARD-IMAGE RECORDS.. SOME OF THESE WILL BE IN BINARY CODED DECIMAL /BCD/ REPRESENTATION, OTHERS IN BINARY MODE.

*** DISTRIBUTION OF THIS PROGRAM IS RESTRICTED TO USERS OF THE 7090/7094 SUPPORT PACKAGE FOR THE IBM SYSTEM/360 FILE NUMBER 7090-SI-162.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP.
MACHINE READABLE -- INPUT PROGRAM OBJECT DECK. *M *M

1420

1420-AU-001 BASIC AUTOCODER

ORDER THROUGH LOCAL IBM BRANCH OFFICE

SPECIFY FILE NUMBER 1420-AU-001

THIS SYSTEM IS DESIGNED TO ENABLE A PROGRAM WRITTEN IN 1420 BASIC AUTOCODER LANGUAGE TO BE ASSEMBLED ON A 1420 SYSTEM. THE OUTPUT IS USED TO EXECUTE THE APPLICATION ON A 1420 SYSTEM. USE... THE SOURCE PROGRAM IN 1420 BASIC AUTOCODER LANGUAGE PUNCHED IN CARDS IS ASSEMBLED ON A 1420 SYSTEM. THE OUTPUT OBJECT PROGRAM IS PUNCHED IN 1420 MACHINE LANGUAGE. PROGRAM DOCUMENTATION AND DIAGNOSTIC OUTPUT IS PRINTED ON THE 1403 PRINTER. MINIMUM SYSTEM REQUIREMENTS... A 4K 1420 SYSTEM WITH... ONE 1442 CARD READ PUNCH... 1403 PRINTER.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... OPERATING INSTRUCTIONS... SPECIFICATIONS.
CARD DECKS -- BASIC AUTOCODER SYSTEM DECK... SAMPLE SOURCE DECK FOR TEST ASSEMBLY.

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OPTIONAL PROGRAM MATERIAL -
SYSTEM FLOW CHARTS... LISTING OF SYSTEM PHASES.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1420-IO-010 IOCP WITHOUT PROCESS OVERLAP ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1420-IO-010

THE IBM 1420 IOCP WITHOUT PROCESS OVERLAP, PROGRAM /1420-IO-010/
IS DESIGNED TO CONTROL THE READING OF DATA FROM PAPER DOCUMENTS
AND TO QUEUE THE PRINTING OF THIS DATA AFTER IT HAS BEEN
PROCESSED.

USE -
- READING OF AMOUNT AND TRANSIT/ROUTING FIELDS FROM PAPER
DOCUMENTS
- PLACING THIS DATA IN A QUEUE
- USER EXIT TO STACKER SELECT DECISION ROUTINE
- USER EXIT TO DOCUMENT ERROR ROUTINES
- USER EXIT TO DOCUMENT PROCESSING ROUTINES
- USER EXIT TO DOCUMENT PRINTING ROUTINE.

MACHINE CONFIGURATION -
4,000 POSITIONS OF CORE STORAGE...
1 IBM 1442 CARD READ-PUNCH, MODEL 1 OR 2...
1 IBM 1403 PRINTER, MODEL 1 OR 2 /SELECTIVE TAPE
LISTER AND NUMERIC CHAIN CAN BE USED WITH THE 1403/...

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAM LISTING...
FLOWCHARTS... SAMPLE PROBLEM PROGRAM LISTING...
SPECIFICATIONS... OPERATING PROCEDURES.
CARD DECKS - PROGRAM DECKS IN /1/ 1440/1311 AUTOCODER
FORMAT... /2/ 1420 BASIC AUTOCODER FORMAT... SAMPLE
PROBLEM DECK... OBJECT PROGRAM EXECUTION OUTPUT.

1420-IO-011 OVERLAP IOCP ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1420-IO-011

THE IBM 1420 OVERLAP IOCP, #1420-IO-011, CONTROLS THE READING
OF DATA FROM PAPER DOCUMENTS AND QUEUES THE PRINTING OF THIS
DATA AFTER IT HAS BEEN PROCESSED.
THE PROGRAM HAS THESE FUNCTIONS--
READING OF AMOUNT AND TRANSIT/ROUTING FIELDS OR ALL FIELDS FROM
PAPER DOCUMENTS.
USER EXIT TO STACKER SELECT DECISION ROUTINE.
USER EXIT TO DOCUMENT PROCESSING ROUTINES.
USER EXIT TO DOCUMENT PRINTING ROUTINE.
USER DOCUMENT ERROR ROUTINES.
MINIMUM SYSTEM REQUIREMENTS--
A 4K SYSTEM WITH... ONE 1442 CARD READ PUNCH... 1403 PRINTER
/SELECTIVE TAPE LISTING FEATURE AND NUMERIC PRINT CHAIN CAN BE
USED WITH THE 1403/... PROCESSING OVERLAP FEATURE.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAM LISTINGS... PROGRAM
FLOWCHARTS... SAMPLE PROBLEM LISTINGS... SPECIFICATIONS...
OPERATING PROCEDURES.
CARD DECKS - OVERLAP IOCP CARD DECK IN 1440/1311 AUTOCODER FORMAT
AND... 1420 BASIC AUTOCODER FORMAT... SAMPLE PROBLEM SOURCE
DECKS AND... OBJECT DECK... OBJECT PROGRAM EXECUTION OUTPUT.

1440

1440-AT-060 AUTO-TEST 16K ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-AT-060

AUTO-TEST IS AN INTEGRATED SET OF UTILITY PROGRAMS DESIGNED TO
PROVIDE DOCUMENTATION FOR PROGRAM EVALUATION DURING A PROGRAM
TESTING RUN. IT CAN BE USED TO TEST PROGRAMS ASSEMBLED BY THE
1440 AUTOCODER PROGRAM FOR ANY IBM 1440 SYSTEM. BECAUSE TEST
RUNS CAN BE PLANNED TO PROCEED WITH A MINIMUM OF OPERATOR
INTERVENTION, AUTO-TEST IS A USEFUL TOOL FOR REMOTE TESTING. THE
AUTO-TEST SYSTEM RESIDES IN DISK STORAGE DURING TESTING. IT
CONTROLS PROGRAM TESTS IN WHICH THE FOLLOWING FUNCTIONS CAN BE
SELECTIVELY SPECIFIED--

1. CLEAR SELECTED AREAS OF DISK STORAGE
2. LOAD PROGRAM DATA FROM CARDS TO DISK STORAGE
3. PRINT SELECTED AREAS OF DISK STORAGE
4. LOAD THE PROGRAM TO BE TESTED FROM CARDS
5. PRINT DATA FROM SELECTED AREAS OF CORE STORAGE AT SPECIFIC
TIMES DURING PROGRAM EXECUTION
6. PRINT DATA READ FROM OR WRITTEN ON DISK STORAGE DURING PROGRAM
EXECUTION
7. PRINT CORE STORAGE WHEN PROGRAM EXECUTION TERMINATES

SEVERAL PROGRAMS MAY BE STACKED FOR TESTING IN A SINGLE RUN. A
CONVENIENT CARD FORMAT FOR PATCHING PROGRAM DECKS BEING TESTED IS
PROVIDED TO FACILITATE RETESTING OF ANY PROGRAM. MINIMUM MACHINE
REQUIREMENTS-- THE MINIMUM SYSTEM REQUIREMENTS ARE THE
FOLLOWING-- 8K 1440 SYSTEM /AUTO-TEST 8K/ OR 16K 1440 SYSTEM
/AUTO-TEST 16K/...ONE 1442 CARD READ PUNCH...1443 PRINTER...ONE
1311 DISK STORAGE DRIVE...INDEXING AND STORE ADDRESS REGISTER
SPECIAL FEATURE.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM
THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON
THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...LISTINGS...SPECIFICATIONS
AND OPERATING PROCEDURES.
CARD DECKS - /DECK A/ BUILD AUTO-TEST SYSTEM DISK PACK...
/DECK B/ INITIATE PROGRAM TESTING.../DECK C/ USED TO
RESTART...SAMPLE PROBLEM TEST DECK AND LISTINGS.

OPTIONAL PROGRAM MATERIAL -
CNE MAGNETIC TAPE - CONTAINING CARD IMAGES.
FLOWCHARTS.

1440-AT-061 AUTO-TEST 8K ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-AT-061

AN 8K VERSION IS ALSO AVAILABLE TO FACILITATE AUTOMATIC PROGRAM
TESTING AT 8 AND 12K 1440 INSTALLATIONS. HOWEVER, ALTHOUGH THE
FEATURES OFFERED BY EACH SYSTEM ARE IDENTICAL, 16K INSTALLATIONS
SHOULD USE THE 16K VERSION WHICH PERMITS TESTING OF LARGER
PROGRAMS THAN DOES ITS COMPANION 8K VERSION.

AUTO-TEST IS AN INTEGRATED SET OF UTILITY PROGRAMS DESIGNED TO
PROVIDE DOCUMENTATION FOR PROGRAM EVALUATION DURING A PROGRAM
TESTING RUN. IT CAN BE USED TO TEST PROGRAMS ASSEMBLED BY THE
1440 AUTOCODER PROGRAM FOR ANY IBM 1440 SYSTEM. BECAUSE TEST
RUNS CAN BE PLANNED TO PROCEED WITH A MINIMUM OF OPERATOR
INTERVENTION, AUTO-TEST IS A USEFUL TOOL FOR REMOTE TESTING. THE
AUTO-TEST SYSTEM RESIDES IN DISK STORAGE DURING TESTING. IT
CONTROLS PROGRAM TESTS IN WHICH THE FOLLOWING FUNCTIONS CAN BE
SELECTIVELY SPECIFIED--

1. CLEAR SELECTED AREAS OF DISK STORAGE
2. LOAD PROGRAM DATA FROM CARDS TO DISK STORAGE
3. PRINT SELECTED AREAS OF DISK STORAGE
4. LOAD THE PROGRAM TO BE TESTED FROM CARDS
5. PRINT DATA FROM SELECTED AREAS OF CORE STORAGE AT SPECIFIC
TIMES DURING PROGRAM EXECUTION
6. PRINT DATA READ FROM OR WRITTEN ON DISK STORAGE DURING PROGRAM
EXECUTION
7. PRINT CORE STORAGE WHEN PROGRAM EXECUTION TERMINATES

SEVERAL PROGRAMS MAY BE STACKED FOR TESTING IN A SINGLE RUN. A
CONVENIENT CARD FORMAT FOR PATCHING PROGRAM DECKS BEING TESTED IS
PROVIDED TO FACILITATE RETESTING OF ANY PROGRAM. MINIMUM MACHINE
REQUIREMENTS-- THE MINIMUM SYSTEM REQUIREMENTS ARE THE
FOLLOWING-- 8K 1440 SYSTEM /AUTO-TEST 8K/ OR 16K 1440 SYSTEM
/AUTO-TEST 16K/...ONE 1442 CARD READ PUNCH...1443 PRINTER...ONE
1311 DISK STORAGE DRIVE...INDEXING AND STORE ADDRESS REGISTER
SPECIAL FEATURE.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM
THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON
THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...LISTINGS...SPECIFICATIONS
AND OPERATING PROCEDURES.
CARD DECKS - /DECK A/ BUILD AUTO-TEST SYSTEM DISK PACK...
/DECK B/ INITIATE PROGRAM TESTING.../DECK C/ USED TO
RESTART PROGRAM...SAMPLE PROBLEM TEST DECK AND LISTINGS.

OPTIONAL PROGRAM MATERIAL -
CNE MAGNETIC TAPE - CONTAINING CARD IMAGES.
FLOWCHARTS.

1440-AU-001 BASIC AUTOCODER ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-AU-001

THIS SYSTEM IS DESIGNED TO ENABLE A PROGRAM WRITTEN IN 1440
BASIC AUTOCODER LANGUAGE TO BE ASSEMBLED ON A 1440 SYSTEM. THE
OUTPUT IS USED TO EXECUTE THE PROGRAM ON A 1440 SYSTEM. THE
SOURCE PROGRAM IN 1440 BASIC AUTOCODER LANGUAGE, PUNCHED IN
CARDS, IS ASSEMBLED IN A 1440 SYSTEM. THE OUTPUT OBJECT PROGRAM,
IN 1440 MACHINE LANGUAGE, IS PUNCHED ONE INSTRUCTION PER CARD IN
THE SOURCE PROGRAM DECK. A PROGRAM LOAD ROUTINE IS PUNCHED WITH
EACH OBJECT PROGRAM DECK. PROGRAM DOCUMENTATION AND DIAGNOSTIC
OUTPUT ARE PRINTED ON THE 1443 PRINTER. MINIMUM MACHINE
REQUIREMENTS--4K 1440 SYSTEM WITH...ONE 1442 CARD READ PUNCH...
1443 PRINTER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... PRELIMINARY SPECIFICATIONS...
OPERATING PROCEDURES.
CARD DECKS - BASIC AUTOCODER SYSTEM DECK... SAMPLE SOURCE PROGRAM
FOR REASSEMBLY.

OPTIONAL PROGRAM MATERIAL -
SYSTEM FLOWCHARTS.
SYSTEM LISTINGS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-AU-006 BASIC AUTOCODER 2K ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-AU-006

THE IBM 1440 BASIC AUTOCODER 2K PROGRAM ACCEPTS SOURCE
STATEMENTS WRITTEN IN BASIC AUTOCODER 2K LANGUAGE AND
PRODUCES MACHINE LANGUAGE OBJECT PROGRAMS. BASIC AUTOCODER 2K
IS A 2-PASS SYSTEM. THE SOURCE PROGRAM IS PROCESSED AND THE
RESULTING OBJECT PROGRAM IS CONVERTED BY ONE OF TWO SPECIAL
CONDENSING ROUTINES FROM ONE-INSTRUCTION-PER-CARD TO
CONDENSED CARD FORMAT.
MINIMUM SYSTEM REQUIREMENTS--
A 2K 1440 SYSTEM WITH... 1442 CARD READER MODEL 4 /NOTE- A 1442
MODEL 1 OR 2 MAY BE USED AS THE READER IN LIEU OF THE 1442
MODEL 4/... 1444 CARD PUNCH... 1443 PRINTER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES.
CARD DECKS - PROCESSOR DECK... PRE-LIST ROUTINE DECK... PCST-LIST
ROUTINE DECK... CONDENSING ROUTINES DECKS 1 AND 2... SAMPLE
PROBLEM DECK.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS... PROGRAM LISTINGS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-CB-073 COBOL FOR IBM 1440/1401/1460 ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-CB-073

THE DISK RESIDENT COBOL FOR IBM 1440, 1401 AND 1460 COMPILES
COBOL /COMMON BUSINESS ORIENTED LANGUAGE/ PROGRAMS FOR 1440,
1401 AND 1460 CARD, TAPE, AND DISK SYSTEMS.
USE--
SYMBOLIC PROGRAMS ARE AUTOMATICALLY COMPILED FROM SOURCE PROGRAMS
WRITTEN IN THE COBOL LANGUAGE, WHICH USES ENGLISH WORDS AND
SPECIAL STANDARD NOTATIONS. THESE SYMBOLIC PROGRAMS ARE THEN
TRANSLATED TO MACHINE LANGUAGE OBJECT PROGRAMS BY AN AUTOCODER
PROCESSOR. THIS PROGRAM OPERATES UNDER THE DIRECTION OF A
GENERAL SYSTEM CONTROL PROGRAM WHICH ALLOWS THE USE OF
AVAILABLE I/O DEVICES ASSIGNED BY THE USER. THE USER SPECIFIES
THE CONFIGURATION OF THE PROCESSING MACHINE WITH CONTROL CARDS.
THE SYSTEM CONTROL PROGRAM INTERPRETS THE INFORMATION AND
SELECTS THE APPROPRIATE I/O ROUTINE TO HANDLE THE INPUT AND

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OUTPUT DURING COMPILATION.
THE REQUIREMENTS FOR COMPILING THE COBOL PROGRAMS ARE-- A 4K 1401 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE WITH A 1316 DISK PACK... 1402 CARD READ PUNCH... 1403 PRINTER MODEL 2... ADVANCED PROGRAMMING FEATURE... HIGH-LOW-EQUAL COMPARE FEATURE, OR A 4K 1440 SYSTEM WITH... ONE IBM 1311 DISK STORAGE DRIVE WITH A 1316 DISK PACK... ONE 1442 CARD READ PUNCH... 1443 PRINTER... INDEXING AND STORE ADDRESS REGISTER FEATURE, OR AN 8K 1460 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE WITH A 1316 DISK PACK... 1402 CARD READ PUNCH... ONE 1403 PRINTER... INDEXING AND STORE ADDRESS REGISTER, 7A 1301 DISK STORAGE ARRAY MAY BE USED IN LIEU OF THE 1311-1316... OR AN 8K 1440 SYSTEM WITH... ONE 1301 DISK STORAGE ARRAY... ONE 1442 CARD READ PUNCH... 1443 PRINTER... INDEXING AND STORE ADDRESS REGISTER FEATURE.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS MANUAL... *M
OPERATING PROCEDURES. *M
MACHINE READABLE - COBOL PROGRAM DECK WHICH INCLUDES- *M
MARKETING PROGRAMMING DECK, MACROS DECK, WRITE *M
FILE-PROTECT ADDRESS DECK, SYSTEM CONTROL CARD *M
MODIFICATIONS DECK, UPDATE DECK AND SAMPLE PROGRAMS. *M

OPTIONAL PROGRAM MATERIAL - SYSTEMS LISTINGS... FLOW CHARTS...
ALL CARD DECKS ARE AVAILABLE ON ONE REEL OF MAGNETIC TAPE.

1440-CX-07X ADMINISTRATIVE TERMINAL SYSTEM

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ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-CX-07X

THE PRIMARY CONCEPT OF THIS SYSTEM IS TO SUPPORT A TYPEWRITER-LIKE TERMINAL FOR TEXT PROCESSING. INFORMATION IS ENTERED FROM THE TERMINALS IN EITHER FREE OR FIXED FORM. IT CAN BE CORRECTED, MODIFIED, OR REARRANGED. OUTPUT FORMATS ARE FLEXIBLE AND MAY BE SPECIFIED FROM THE TERMINAL. OUTPUT MAY BE TRANSMITTED TO ANY TERMINAL, STORED ON DISK OR TAPE, PRINTED BY AN ON-LINE PRINTER, WRITTEN AS CARD IMAGES ON TAPE, OR PUNCHED. STORED INFORMATION MAY BE RECALLED FOR FURTHER PROCESSING.

FEATURES-

- DATA CORRECTION, MODIFICATION, AND REARRANGEMENT BY- BACKSPACING AND RETYPING DURING ENTRY... RETYPING BEGINNING WITH A PARTICULAR WORD... REPLACING A WORD OR PHRASE... ADDING TO A LINE OR TEXT UNIT... DELETING A LINE OR OTHER TEXT UNIT... MOVING OF GROUPS OF LINES OR TEXT UNITS... GATHERING OF STORED DATA IN ANY SEQUENCE... COPYING OF INFORMATION BY TRANSMISSION TO THE ORIGINATING TERMINAL.
- STORAGE AND RETRIEVAL OF DATA FROM DISK FILES OR TAPE.
- TRANSMISSION OF DATA TO ANY TERMINAL.
- OUTPUT FORMAT CONTROLLED FROM THE TERMINAL BY- LIMITING FREE-FORM TEXT LINE LENGTH... JUSTIFICATION OF RIGHT-HAND MARGIN... INTERMIX OF FREE-FORM TEXT WITH FIXED FORMAT INFORMATION... PLACING SPECIFIED HEADING AND FOOTING LINES ON ALL PAGES OF A DOCUMENT... AUTOMATIC PAGE NUMBERING... CONTROLLED VERTICAL SPACING... HALTING TO ALLOW OPERATOR INTERVENTION FOR TEXT OR CHANGE OF PRINT ELEMENTS.
- DESK CALCULATOR FUNCTIONS- ADDITION... SUBTRACTION... MULTIPLICATION... DIVISION... ROOTS... POWERS... FACTORIALS... EVALUATION OF SIMPLE ALGEBRAIC EXPRESSIONS.
- USERS MAY ADD PROGRAMS TO DO SIMULTANEOUS PERIPHERAL OPERATIONS SUCH AS SIMPLE TAPE-TO-PRINTER AND CARD-TO-TAPE FUNCTIONS.
- AN IMPROVED DISK STORAGE ORGANIZATION SCHEME WILL GIVE IMPROVED TERMINAL RESPONSE ON REQUESTS INVOLVING PERMANENT DISK STORAGE.
- 1301 DISK FILE IMPLEMENTATION SIGNIFICANTLY INCREASES PERMANENT STORAGE CAPACITY.
- IMPROVED STORAGE REPORTING FACILITIES.

PRINCIPAL APPLICATION AREAS OF THE ADMINISTRATIVE TERMINAL SYSTEM ARE TECHNICAL MANUAL PREPARATION, PROPOSAL WRITING, TEST REPORT PREPARATION, FINANCIAL CREDIT REPORTING, STATISTICAL TYPING, AND SIMILAR AREAS. THE SYSTEM MAY ALSO BE USED FOR SOURCE DATA ENTRY, CAPTURING DATA DIRECTLY FROM A TYPEWRITER KEYBOARD. THIS HAS PARTICULAR SIGNIFICANCE IN THE COMPUTER PROGRAMMING AREA WHERE PROGRAM DECK CONTROL CARDS AND TEST DECKS MAY BE SELECTED, MODIFIED, COMBINED AND MADE AVAILABLE FOR RUNNING DIRECTLY FROM A TERMINAL.

THE SYSTEM, WHEN PROPERLY INSTRUCTED, CAN SAVE EVERY KEYSTROKE MADE BY THE OPERATOR. TO ALTER THE TEXT, THE OPERATOR DIRECTS THE SYSTEM TO LOCATE THE CHARACTERS TO BE CHANGED AND INSTRUCTS IT IN WHAT MANNER THESE ARE TO BE ALTERED. IF A COPY OF A DOCUMENT IS REQUESTED, THE SYSTEM WILL PRODUCE AND TRANSMIT IT TO THE TERMINAL. THE SOURCE PROGRAM LANGUAGE IS 1401/1440/1460 AUTOCODER /ON DISK/.

MINIMUM 1440 SYSTEM REQUIREMENTS- A 16K 1440 WITH- BIT TEST, CONSOLE ATTACHMENT, DIRECT SEEK, DISK STORAGE CONTROL, INDEXING AND STORE ADDRESS REGISTER, TRANSMISSION CONTROL UNIT ATTACHMENT ON THE 1441 PROCESSING UNIT MODEL A6... ONE 1311 DISK STORAGE DRIVE MODEL 1 OR 2 OR A 1442 CARD READER 1447 CONSOLE MODEL 1 WITH SENSE SWITCHES... 1447 CONSOLE MODEL 4... 1448 TRANSMISSION CONTROL UNIT WITH 1050/1060 ATTACHMENT AND RPQ E38485 AND, AS REQUIRED, COMMON CARRIER ADAPTER SETS OR LINE ADAPTER SETS... EITHER A 1442 CARD READ PUNCH MODEL 1 OR 2 OR A 1442 CARD READER MODEL 4 IS REQUIRED UNLESS ANOTHER 1401/1440/1460 SYSTEM IS AVAILABLE TO LOAD THE PROGRAM ON A 1316 DISK PACK.

OPTIONAL 1440 SYSTEM REQUIREMENTS- TRANSLATE FEATURE ON THE 1441 PROCESSING UNIT... ONE TO FOUR 1311 DISK STORAGE DRIVES MODEL 2 WITH DIRECT SEEK AND SEEK OVERLAP FEATURES /AT LEAST ONE 1311 MODEL 2 IS STRONGLY RECOMMENDED/... ONE TO FIVE MODULES OF 1301 DISK STORAGE /ONE 1311 MODEL 2 IS REQUIRED/... EITHER A 1442 CARD READ PUNCH MODEL 1 OR 2 OR A 1442 CARD READER MODEL 4 AND/OR A 1444 CARD PUNCH MODEL 1... EITHER A 1443 PRINTER MODEL 1 OR 2 WITH 24 ADDITIONAL PRINT POSITIONS, PRINTER CONTROL, AND PRINT STORAGE OR A 1403 PRINTER MODELS 2, 3, OR 5 WITH A 1446 PRINTER CONTROL... 7335 MAGNETIC TAPE UNIT MODEL 1 OR 2... LINE GROUP FEATURES AND RPQ 811390, AS REQUIRED, TO ATTACH MORE THAN 10 LINES TO THE 1448 TRANSMISSION CONTROL UNIT. IF UPPERCASE AND LOWERCASE PRINTING WITH 120 CHARACTERS OF COURIER TYPE /MATCHING THE COURIER 72 PRINTING ELEMENT ON THE TERMINALS/ IS DESIRED USING A 1403 PRINTER MODEL 2, ADD- RPQ/S 813148 AND 818029 ON THE 1446 PRINTER CONTROL... RPQ/S 812033, 812034, 898058,

CONTINUED FROM PRIOR COLUMN--

33 EACH OF RPQ E33255, AND PART 82338C /THE CHAIN/ ON THE 1403 MODEL 2... RPQ 818019 ON THE 1441 PROCESSING UNIT.

TERMINAL REQUIREMENTS- 2741 COMMUNICATION TERMINALS /UP TO 40/, WITH COURIER 72 STANDARD ELECTRIC PRINTING ELEMENTS, AND LINE ADAPTERS IF REQUIRED. SUPPORTS ONLY THE COURIER SPENDENCE CODE 2741 TERMINALS WITHOUT THE INTERRUPT FEATURE.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - APPLICATION DIRECTORY... APPLICATION DESCRIPTION, H20-0129... TERMINAL OPERATORS MANUAL, H20-0185... PROGRAMMERS MANUAL, H20-0228... CONSOLE OPERATORS MANUAL, H20-0229... MACHINE READABLE - PROGRAM DECKS.

OPTIONAL PROGRAM MATERIAL -
DOCUMENTATION - SYSTEMS MANUAL /PROGRAM FLOW CHARTS/. MACHINE READABLE - 1401/1440/1460 AUTOCODER /ON DISK/ OUTPUT FILE ON TWO 1316 DISK PACKS FROM WHICH SOURCE DECKS AND PROGRAM LISTINGS CAN BE CREATED USING 1401/1440/1460 AUTOCODER /ON DISK/ /1401-AU-008/.

NOTE- WHEN ORDERING THE OPTIONAL MATERIAL THE REQUESTOR MUST SUBMIT TWO 1316 DISK PACKS.

1440-DR-02X RETAIL ACCOUNTS RECEIVABLE ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-DR-02X

THIS PROGRAM IS A SYSTEM OF SIXTEEN 1440 RUNS DESIGNED TO AUTOMATICALLY PERFORM RECEIVABLES MAINTENANCE AND BILLING IN MEDIUM-SIZED DEPARTMENT OR SPECIALTY STORES. THE PROGRAM HAS BEEN DESIGNED AS A SERIES OF ROUTINES WHICH PERFORM SPECIFIC FUNCTIONS, BY SELECTING AND COMBINING THESE ROUTINES, SPECIALIZED PROGRAMS FOR A PARTICULAR STORE ARE DEVELOPED. MODIFICATIONS AND REFINEMENTS TO PARAMETERS OF THESE ROUTINES CAN BE MADE TO HAVE THEM APPLY TO A SPECIFIC STORE. THE SYSTEM IS DESIGNED TO ACCOMMODATE FOUR TYPES OF CHARGE ACCOUNTS. THESE ARE- /1/ 30-DAY CHARGE ACCOUNT... /2/ FLEXIBLE REVOLVING ACCOUNT--A MONTHLY PAYMENT BASED ON A PERCENTAGE OF THE BALANCE. /3/ FIXED REVOLVING ACCOUNT--A FIXED MONTHLY PAYMENT BASED ON THE CREDIT LIMIT OF THE ACCOUNT... /4/ CONTRACT ACCOUNT, OR DEFERRED PAYMENT ACCOUNT--A ONE TIME PURCHASE WITH FIXED MONTHLY PAYMENTS. ANY GIVEN STORE WILL PROBABLY NOT HAVE ALL FOUR TYPES OF ACCOUNTS. HOWEVER, RUNS CAN BE MODIFIED TO DELETE THOSE TYPES OF ACCOUNTS WHICH ARE NOT NEEDED. TRANSACTIONS ARE ENTERED INTO THE SYSTEM IN THE FORM OF PUNCHED CARD, EDIT AND ACCOUNTING CONTROL FUNCTIONS ARE PERFORMED, AND THE FOLLOWING MAJOR OUTPUTS ARE PRODUCED BY THE SYSTEM. ADJUSTMENTS LISTING, SERVICE CHARGE ADJUSTMENTS LISTING, CHARGE-OFFS LISTING, CREDITS LISTING, CASH BATCH BALANCE LISTING, TRANSACTION REGISTER, SIGNAL MESSAGES, CUSTOMER STATEMENTS, DELINQUENT ACCOUNT LISTING, AGED TRIAL BALANCE /ATB/, AND CREDIT BALANCE LISTING.

FEATURES

- DIAGNOSTIC AGED TRIAL BALANCE DESIGNED SPECIFICALLY FOR AUTHORIZATION PURPOSES.
- DELINQUENT LISTING TO AUTOMATICALLY SELECT FOR REVIEW AND FOLLOW-UP THOSE ACCOUNTS REQUIRING CREDIT ACTION.
- UP TO 20,000 MASTER ACCOUNTS CAN BE STORED ON EACH DISK PACK.
- SIGNAL MESSAGES PREPARED AS A BY-PRODUCT OF FILE MAINTENANCE AND SPECIAL ACTION AS REQUIRED ON AN ACCOUNT.
- AUTOMATIC AGING OF CUSTOMER ACCOUNTS TO 150 DAYS.
- AUTOMATIC POSTING OF TRANSACTIONS.
- OPERABLE WITH EITHER INTERNAL OR EXTERNAL ACCOUNT NUMBERS.
- IBM PUNCHED CARD CUSTOMER STATEMENTS PRINTED TWO UP.
- AUTOMATIC RE-ENTRY OF CASH PAYMENTS THROUGH PREPUNCHING OF THE CUSTOMER STATEMENT SUB.
- PREPARATION OF LABELS FOR PROMOTIONAL MAILINGS ON A SELECTIVE BASIS.
- COMPLETE AND AUTOMATIC CONTROLS.

MINIMUM SYSTEM REQUIREMENTS--A 4K 1440 SYSTEM WITH... 1442 CARD READ PUNCH... 1443 PRINTER... 1311 DISK STORAGE DRIVE... INDEXING AND STORE ADDRESS REGISTER, SELECTIVE STACKER, 24 ADDITIONAL PRINT POSITIONS, SELECTIVE CHARACTER SET, 39 CHARACTER SET.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING LISTINGS.
CARD DECKS - OBJECT PROGRAM DECKS... SAMPLE PROBLEM DECKS.

OPTIONAL PROGRAM MATERIAL -
ONE MAGNETIC TAPE - CONTAINING ALL CARD DECKS.

1440-DW-01X CHAIN AND WHOLESALE BILLING ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-DW-01X

THE 1440 CHAIN AND WHOLESALE BILLING PROGRAM USES EITHER THE IBM CARD ORDER PLAN OR THE PERMANENT ITEM CODE PLAN FOR PLACING ORDERS. THREE PHASES OF THE BILLING PROGRAM RESULT IN A CUSTOMER INVOICE. PHASE 1 SETS UP ORDER QUANTITIES, WAREHOUSE NUMBERS, AND DISK PACK ADDRESSES. PHASE 2 SORTS ITEMS INTO WAREHOUSE LOCATION SEQUENCE. PHASE 3 PRINTS CUSTOMERS NAME AND ADDRESS, ANALYZES AND UPDATES STOCK AVAILABILITY, PRICES ITEMS ACCORDING TO PRICE ZONES, ETC., PRINTS ITEM LINES, AND STORES DESIRED ANALYSIS DATA FOR SUBSEQUENT USE. INTERMEDIATE TOTALS ARE PRINTED WHERE NECESSARY. SALES ANALYSIS AND BACK-UP RECORDS ARE PROVIDED AS A BY-PRODUCT OF THE BILLING ROUTINE. ALTHOUGH THE PROGRAM WAS DEVELOPED FOR THE GROCERY DISTRIBUTOR, IT IS EQUALLY APPLICABLE /IN TOTAL OR IN SEGMENTS- PURPOSELY DESIGNED THIS WAY/ FOR OTHER DISTRIBUTORS, I.E., DRUG, HARDWARE, RACK JOBBER, LIQUOR, AUTO PARTS, ETC.

THE CHAIN AND WHOLESALE BILLING PROGRAM IS DESIGNED TO HELP INSTALL 1440 SYSTEMS BY PROVIDING CONCEPTS ON WHICH A SYSTEM MAY BE DESIGNED AND BY PROVIDING CERTAIN PROGRAMS WHICH MAY BE MODIFIED AND USED IN THAT SYSTEM AS A WHOLE OR IN PART. THIS PROGRAM PROVIDES A MAIN LINE BILLING ROUTINE PLUS 6 SUPPORTING ROUTINES FOR EACH TYPE OF INPUT /PAGE AND LINE OR PERMANENT ITEM CODE/. THE BILLING PORTION OF THE PROGRAM IS BROKEN INTO THREE PHASES. MINIMUM SYSTEM REQUIREMENTS 4K 1440 SYSTEM WITH... 1447 CONSOLE MODEL 2... 1442 CARD READ PUNCH... 1443 PRINTER... TWO 1311 DISK STORAGE DRIVES... INDEXING AND STORE ADDRESS REGISTERS, SELECTIVE CHARACTER SET AND SENSE SWITCHES FEATURES /CARD IMAGE AND BIT TEST FEATURES ARE OPTIONAL WITH CARD ORDER PLAN INPUT/.

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BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL.
MACHINE READABLE - SOURCE PROGRAM DECK.

1440-DW-04X 1311 WHOLESALE IMPACT
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-DW-04X

THE IBM IMPACT /INVENTORY MANAGEMENT PROGRAM AND CONTROL TECHNIQUES/ SYSTEM OF SCIENTIFIC INVENTORY MANAGEMENT PROVIDES THE WAREHOUSE DISTRIBUTOR /OR ANY ORGANIZATION WITH THE SAME INVENTORY CONTROL CHARACTERISTICS/ WITH THE INFORMATION OF WHEN, HOW MUCH, TO BUY FOR EACH INVENTORY ITEM CONTROLLED BY THE SYSTEM. IT DOES THIS THROUGH THE MEANS OF PROBABILITY SCIENCE IN CONJUNCTION WITH THE MANY FACTORS INFLUENCING THE DISTRIBUTORS INVENTORY CONTROL DECISIONS. FACTORS CONSIDERED INCLUDE- LEAD TIME, LEAD TIME VARIABILITY, FORECAST DEMAND, FORECAST ERROR, SERVICE DESIRED, INVENTORY CARRYING COSTS, PURCHASING/RECEIVING COSTS, DISCOUNT STRUCTURES, MINIMUMS, MAXIMUMS, SHELF LIFE, AND PACK SIZES. THE WHEN, AND HOW MUCH, ANSWERS ARE DESIGNED TO FIND THE MOST EFFICIENT BALANCE BETWEEN THE COST OF CARRYING INVENTORY, COST OF PURCHASING AND RECEIVING, DISCOUNTS REALIZED, AND CUSTOMER SERVICE REQUIREMENTS. THE 1311 IMPACT COMPUTER PROGRAM LIBRARY IS DESIGNED TO PROVIDE THE DISTRIBUTOR WHO HAS AN IBM 1440-1311 DATA PROCESSING SYSTEM WITH THE MEANS TO SUCCESSFULLY IMPLEMENT AN INVENTORY MANAGEMENT SYSTEM WITH A MINIMUM OF EFFORT AND EXPENSE. PROGRAMS ARE INCLUDED THAT PERFORM IN THE FOLLOWING FUNCTIONAL AREAS- EDITING, FILE INITIALIZATION, ESTIMATING, AND THE CONTROL OF INDEPENDENT AND JOINT REPLENISHMENT ORDERING. FEATURES- THE 1311 PROGRAM LIBRARY PERFORMS IN THE SAME FUNCTIONAL AREAS AS THE EXISTING 1401-1405 IMPACT COMPUTER PROGRAM LIBRARY-

- EDIT ALL INPUT FOR FORMAT.
 - DETERMINE THE FORECAST MODEL /HORIZONTAL, TREND, HORIZONTAL-SEASONAL, OR TREND-SEASONAL/.
 - DETERMINE THE ORDERING STRATEGY TO BE USED AND CALCULATE ORDER QUANTITY OR ORDER FREQUENCY AS APPROPRIATE FOR STRATEGY SELECTED.
 - CALCULATE THE SAFETY FACTOR REQUIRED FOR A PRESCRIBED LEVEL OF CUSTOMER SERVICE.
 - CALCULATE INITIALIZING VALUES REQUIRED FOR FORECAST AND ORDER MODELS SELECTED.
 - ESTIMATE RESULTS TO BE EXPECTED FROM APPLYING THE RULES AND VALUES DEVELOPED.
 - DETERMINE WHEN TO ORDER ITEM GROUPS TO MEET SERVICE OBJECTIVES AFTER THE SYSTEM IS OPERATIONAL.
 - CALCULATE MIX TO BE ORDERED WITHIN AN ITEM GROUP THAT WILL MEET BOTH SERVICE OBJECTIVES AND LIMITATIONS ON TOTAL SIZE OF ORDER.
- IN ADDITION, THE 1311 PROGRAMS INCORPORATE IMPROVEMENTS OVER EXISTING PROGRAMS INCLUDING-
- WORK FLOW AND RECORD FORMATS STREAMLINED.
 - HISTORICAL DEMANDS SCREENED FOR PROMOTIONS.
 - BASE INDEXING TECHNIQUE USED FOR FORECASTING SEASONAL ITEMS.
 - ITEM DISCOUNTS CONSIDERED, IN ADDITION TO VENDOR DISCOUNTS, IN DETERMINING ORDERING STRATEGIES AND ORDER QUANTITIES.
 - DIFFERENT LEAD TIME MAY BE SPECIFIED FOR EACH VENDOR BREAKPOINT.
 - SERVICE MAY BE SPECIFIED BY ITEM FOR BOTH INDEPENDENT JOINT VENDORS.
 - SEASONALITY CONSIDERED IN ORDERING BOTH INDEPENDENT AND JOINT VENDORS.
 - A SERVICE POINT AND ALLOCATION PROGRAM /SVA/ THAT WILL TAKE ADVANTAGE OF 8K MEMORY TO PRODUCE GREATER THROUGHPUT.
 - AN OPTION TO FORCE A PREDETERMINED ORDER QUANTITY FOR ANY ITEM THROUGH THE SVA PROGRAM.
 - THE FACILITY FOR EXPRESSING A CONVERSION FACTOR OF 2.0 TO THE SVA PROGRAM.
 - PRINTING OF THE SLOPE AND INTERCEPT OF THE LEAST SQUARES LINES HAS BEEN INCLUDED IN THE MADP PROGRAM.
 - PUNCHING OF THE COST STRATEGY RECORDS IN THE OQCL PROGRAM HAS BEEN ELIMINATED.
 - PROVIDES SAFETY FACTOR /K/ BASED ON A LEAD TIME PLUS REVIEW TIME FOR ITEMS IN A JOINT VENDOR. WHEN THE PEAK POINT OPTION IS NOT SATISFIED.

USE- THE PROGRAM LIBRARY INCLUDES BOTH INITIALIZING PROGRAMS AND OPERATING PROGRAMS. INITIALIZING PROGRAMS ARE DESIGNED TO BE USED ONCE TO SET UP AN IMPACT SYSTEM, THEN PERIODICALLY /AT LEAST ONCE A YEAR/ OR AS REQUIRED TO MEET CHANGING CONDITIONS. A COMPLETE SET OF PROGRAMS IS PROVIDED TO PERFORM NECESSARY INITIALIZING FUNCTIONS. OPERATING PROGRAMS ARE USED IN THE DAY-TO-DAY CONTROL OF THE IMPACT SYSTEM /FORECASTING AND ORDERING/. LIBRARY PROGRAMS ARE PROVIDED TO CONTROL THE ORDERING OF BOTH INDEPENDENT AND JOINT VENDORS. INSTRUCTION AND BLOCK DIAGRAMS ARE AVAILABLE TO HELP THE USER IN PROGRAMMING THE REMAINING OPERATING PROGRAMS WITH A MINIMUM OF EFFORT /IMPLEMENTATION REFERENCE MANUAL/. PROGRAMMING SYSTEMS- PROGRAMS IN THE IMPACT COMPUTER PROGRAM LIBRARY ARE WRITTEN IN 1311 AUTOCODER AND 1311 LOGS. SYSTEM REQUIREMENTS- 1440-4K 1440 SYSTEM WITH 1447 CONSOLE MODEL 1... 1442 CARD READ PUNCH... 1443 PRINTER... TWO 1311 DISK STORAGE DRIVES... INDEXING AND STORE ADDRESS REGISTER. TWO 1316 DISK PACKS MUST BE FULLY AVAILABLE DURING THE OPERATION OF LIBRARY PROGRAMS.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... USERS MANUAL... OPERATORS MANUAL.
CARD DECKS- OBJECT DECK... SAMPLE PROBLEM.
OPTIONAL PROGRAM MATERIAL - SYSTEMS MANUAL WHICH CONTAINS THE ASSEMBLY LISTINGS OF ALL THE 1440-1311 IMPACT PROGRAMS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-FB-03X DEMAND DEPOSIT ACCOUNTING
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-FB-03X

THIS APPLICATION PROGRAM IS DESIGNED TO ACCOMPLISH THE DEMAND DEPOSIT ACCOUNTING FUNCTION IN A COMMERCIAL BANK. THE APPLICATION IS DIVIDED INTO THE FOLLOWING PROGRAM RUNS- CONVERSIONS, IBM 1440 SORT 5 STOP PAY AND HOLD EDIT, SHORT LIST AND LEDGER CONTROL, TRANSACTION JOURNAL, POSTING, STATEMENTS, EXCEPTION STATEMENTS AND EXCEPTION REPORTS. FEATURES- THE USER HAS THE OPTION OF PRODUCING A SEPARATE TRAIL BALANCE NON-SUFFICIENT FUND NOTICES ARE PREPARED AUTOMATICALLY INPUT CAN BE MAGNETICALLY ENCODED CHECKS AND DEPOSIT SLIPS AND/OR PUNCHED CARDS. SUMMARY AS WELL AS DETAILED STATEMENTS CAN BE PROVIDED DETAIL STATEMENTS MAY BE PRINTED EITHER SINGLY OR TWO-UP

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CONTINUED FROM PRIOR COLUMN--

MICR CHECKS AND DEPOSIT SLIPS AND/OR PUNCHED CARDS ARE TRANSACTION INPUT TO THE SYSTEM. MASTER RECORDS, 1000 CHARACTERS IN LENGTH, ARE POSTED DAILY WITH ALL ITEMS AFFECTING ACCOUNT BALANCES FROM A TRANSACTION FILE WHICH IS UNDER LEDGER CONTROL. A PUNCHED CARD FILE IS MAINTAINED TO SATISFY STOP-PAY ORDERS AND HOLD REQUESTS. STATEMENT WRITING MAY BE CYCLED. ALL ACCOUNTS WITHIN ANY SEQUENTIAL RANGE OF LEDGER NUMBERS ARE PRINTED. USERS WILL WRITE THE FOLLOWING FOR INSERTION TO THE APPROPRIATE RUN- SERVICE CHARGE ROUTINES FOR THE POSTING RUN- A LEDGER CONTROL TABLE FOR THE CONVERSION RUN- A UTILITY PROGRAM TO CREATE THE MASTER FILE /AN IBM CARD TO DISK UTILITY PROGRAM CAN BE USED/. PROGRAM REQUIREMENTS USERS OF THIS PROGRAM SHOULD OBTAIN THE IBM 1440 SORT 5 PROGRAM /1440-SM-030/ WHICH CONSTITUTES RUN 03 OF SUBJECT PROGRAM. MINIMUM MACHINE REQUIREMENTS- 8K 1440 SYSTEM WITH... INDEXING AND STORE ADDRESS ...TWO 1311 STORAGE DRIVES...A 1442 CARD READ PUNCH...A 1443 PRINTER WITH 24 ADDITIONAL PRINT POSITIONS...A 1447 CONSOLE WITH SENSE SWITCHES. IF MAGNETICALLY ENCODED CHECKS AND/OR DEPOSIT SLIPS ARE USED, A 1412 MAGNETIC CHARACTER READER WITH SERIAL I/O ADAPTER 7080 FOR MICR CONVERSION IS REQUIRED. PRINT STORAGE AND SELECTIVE CHARACTER SET FEATURES, ALTHOUGH NOT REQUIRED, WILL IMPROVE DATA THROUGHPUT.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... SAMPLE PROBLEM LISTINGS.
MACHINE READABLE - OBJECT PROGRAM DECK... SAMPLE PROBLEM DECK

OPTIONAL PROGRAM MATERIAL -
SOURCE DECKS.
ALL CARD DECKS MAY BE OBTAINED IN CARD IMAGE FORM ON ONE REEL OF MAGNETIC TAPE. THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-FB-04X MORTGAGE LOAN ACCOUNTING
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-FB-04X

1. DAILY PROCESSING- FILE MAINTENANCE PROCESSES AND LISTS NEW LOANS, CHANGES AND DELETIONS. PROOF LISTING IS PRODUCED FROM DEBIT AND CREDIT TRANSACTION CARDS CREATED FROM PAYMENT COUPONS, JOURNALS AND ADVICES. POSTING OF TRANSACTION CARDS TO THE MASTER ACCOUNT BALANCE FILE IS PERFORMED AND SPECIAL CONDITIONS ARE RECORDED ON A REPORT FILE. REPORTS OF TRANSACTION AND LEDGER RECAP, UNPROCESSED ITEMS, PAYOFFS /FINAL PAYMENTS/, EXCEPTIONS AND EXCESS ITEMS ARE PRODUCED.
2. DELINQUENCY PROCESSING- LATE NOTICES, DELINQUENCY NOTICES AND DELINQUENCY REPORTS ARE PRODUCED MONTHLY OR AS OFTEN AS DESIRED.
3. PERIODIC REPORTING- TRIAL BALANCE REFLECTING INDICATIVE INFORMATION, DATE OF LAST TRANSACTION, PAID-THROUGH DATE, TOTAL PAYMENT AMOUNT, PRINCIPAL, ESCROW, LATE CHARGE, AND MORTGAGE LIFE BALANCE FOR EACH MORTGAGE IS MADE. STATEMENTS ARE PRODUCED SEMI-ANNUALLY FROM THE OLD BALANCE FILE AND EXCESS ITEM CARDS PRODUCED BY THE DAILY REPORT RUN. COUPON BOOKS ARE PRODUCED FROM PAYMENT CHANGES, NEW ACCOUNT CARDS, AND THE MASTER BALANCE FILE. INVESTOR REPORTING PRODUCES COLLECTION, PAST DUE, PREPAID, VARIATION, AND PAID-OFF LOAN REPORTS ON THOSE INVESTORS SPECIFIED BY THE USER.
4. ESCROW PROCESSING- ENCOMPASSES PERIODIC ESCROW FILE MAINTENANCE, ESCROW ANALYSIS AND CUSTOMER ADVICE NOTIFYING CUSTOMER OF ANY MONTHLY PAYMENT CHANGE RESULTING FROM ESCROW ANALYSIS.

THE PROGRAM PROVIDES THE USER WITH- EFFECTIVE CONTROL... DELINQUENT ACCOUNT INFORMATION... EFFICIENT DAILY PROCESSING... ESCROW ANALYSIS... COMPLETE DETAIL ON DAILY ACTIVITY... LOAN SERVICING REPORTS.
MACHINE REQUIREMENTS- A 4K 1441 PROCESSING UNIT, MODEL A3 WITH- INDEXING AND STORE ADDRESS REGISTER, SERIAL READER ATTACHMENT, DISK STORAGE CONTROL... 1442 CARD READ PUNCH, MODEL 1, CARD READ PUNCH ADAPTER... 1443 PRINTER, MODEL 1, PRINTER CONTROL, SELECTIVE CHARACTER SET, 13-CHARACTER PRINT BAR, 52-CHARACTER PRINT BAR... 1447 CONSOLE, MODEL 1, SENSE SWITCHES... 1311 DISK STORAGE DRIVE, MODEL 1... 1311 DISK STORAGE DRIVE, MODEL 2.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL... LISTINGS.
CARD DECKS - OBJECT PROGRAM DECKS... SAMPLE PROBLEM DECK.

OPTIONAL PROGRAM MATERIAL -
SOURCE CARD DECKS.
ONE MAGNETIC TAPE - ALL PROGRAM DECKS MAY BE OBTAINED ON THIS TAPE.

1440-FB-05X SAVINGS ACCOUNTING
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-FB-05X

IBM NOW OFFERS FINANCIAL INSTITUTIONS A COMPREHENSIVE 1440 SAVINGS ACCOUNTING PROGRAM. SAVINGS ACCOUNTING FUNCTIONS ARE ACCOMPLISHED THROUGH THE USE OF TWELVE 1440 PROCESSING RUNS. MASTER ACCOUNT BALANCE RECORDS ON ALL SAVINGS ACCOUNTS ARE STORED AND MAINTAINED DAILY IN DISK PACKS. MASTER RECORDS CONTAIN BALANCE DATA, DIVIDEND DATA, AND OTHER SIGNIFICANT DATA ON EACH SAVINGS ACCOUNT. DAILY TRANSACTIONS-DEPOSITS, WITHDRAWALS, AND SHARE LOANS /PASSBOOK LOANS/-ARE POSTED TO THE BALANCE RECORD, AND A DAILY TRANSACTION REGISTER IS PRODUCED. REPORTS ON ZERO BALANCE ACCOUNTS, PASSBOOK DIFFERENCES, AND UNPROCESSED TRANSACTIONS ARE PREPARED DAILY. A TRIAL BALANCE IS ALSO PREPARED DAILY. AT THE END OF A DIVIDEND PERIOD, DIVIDENDS ARE CALCULATED, A DIVIDEND PERIOD ACTIVITY REPORT IS PREPARED, MAIL DIVIDEND CHECKS ARE PREPARED FOR SELECTED ACCOUNTS, AND STATEMENTS ARE PRINTED. AT THE END OF THE YEAR, DIVIDEND REPORTING IS ACCOMPLISHED. IN ADDITION TO THE MASTER ACCOUNT BALANCE FILE, A NAME AND ADDRESS MASTER FILE IS MAINTAINED. THIS FILE IS USED IN THE PREPARATION OF MAIL DIVIDEND CHECKS, STATEMENTS, AND ANNUAL DIVIDEND REPORTING.

- FEATURES-
- PREPARATION OF TRANSACTION CARDS BY CONVERSION OF PAPER TAPE FROM WINDOW MACHINES OR BY KEY-PUNCHING FROM SOURCE.
 - ABILITY TO CONDENSE MASTER ACCOUNT INFORMATION AND STORE UP TO 75,000 ACCOUNTS PER DISK PACK.
 - VERIFICATION OF ACCOUNT BALANCES TO LEDGER CONTROL TOTALS.
 - PROVISION FOR PRINTING UNCOLLECTED FUNDS, THUS PRESENTING AN

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CONTINUED FROM PRIOR PAGE--

- AVAILABLE FUNDS BALANCE FOR REFERENCE.
- DETAILED SAVINGS JOURNAL INCLUDING PREVIOUS AND NEW ACCOUNT BALANCES AND ANTICIPATED DIVIDEND.
- EXCEPTION REPORT INDICATING ACTIVITY ON DORMANT ACCOUNTS, PASSBOOK DIFFERENCES, ZERO BALANCE ACCOUNTS, ETC.
- PRINT FOUR ACCOUNTS TO A LINE ON DAILY TRIAL BALANCE.
- PERIOD-BY-PERIOD ITEMIZATION OF UNREPORTED INTEREST ON DIVIDENDS FOR TELLER WINDOW POSTING TO PASSBOOKS.
- COMPREHENSIVE DIVIDEND PERIOD ACTIVITY REPORT.
- AUTOMATIC PREPARATION OF READY-TO-MAIL DIVIDEND CHECKS.
- CUSTOMER STATEMENT OF ACTIVITY ECONOMICALLY PREPARED, WHICH DETAILS AS WELL AS SUMMARIZES ACTIVITY OF THE PERIOD.

MACHINE REQUIREMENTS-- A 4K 1441 PROCESSING UNIT, MODEL A3 WITH... INDEXING AND STORE ADDRESS REGISTER FEATURE, PRINTER ATTACHMENT FEATURE, DISK STORAGE CONTROL FEATURE... 1442 CARD READ PUNCH, MODEL 1, CARD READ PUNCH ADAPTER FEATURE... 1443 PRINTER, MODEL 1, PRINTER CONTROL FEATURE, SELECTIVE CHARACTER SET FEATURE, 13-CHARACTER PRINT BAR, 52-CHARACTER PRINT BAR... 1447 CONSOLE, MODEL 1, SENSE SWITCHES... 1311 DISK STORAGE DRIVE, MODEL 1... 1311 DISK STORAGE DRIVE, MODEL 2.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL... LISTINGS.
CARD DECKS - OBJECT PROGRAM DECKS... SAMPLE PROBLEM DECK.

OPTIONAL PROGRAM MATERIAL --
SOURCE CARD DECKS.
CNE MAGNETIC TAPE - ALL PROGRAM DECKS MAY BE OBTAINED ON THIS TAPE.

1440-FB-07X ON-LINE SAVINGS ACCOUNTING
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-FB-07X

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THE PROGRAM OFFERS TO SAVINGS BANKS, COMMERCIAL BANKS, AND SAVINGS AND LOAN ASSOCIATIONS A REAL-TIME SYSTEM FOR USE WITH THE 1062 TELLER TERMINAL.

THE PROGRAM PROVIDES THE USER WITH AN ON-LINE TELLER SYSTEM. IT HAS A CAPACITY, WITH MINOR MODIFICATION, FOR THIRTY-FOUR 1062 TERMINALS ON SEVENTEEN LINES, ONE 1052 SYSTEM TERMINAL PER LINE, OR COMBINATIONS OF BOTH., AND THE MAXIMUM MACHINE CAPABILITY OF FIVE 1311 DISK DRIVES. FIVE DRIVES WILL TYPICALLY STORE MORE THAN 400,000 ACCOUNT RECORDS. THE PROGRAM, AS CURRENTLY ASSEMBLED, PROVIDES FOR SEVEN LINES AND FOURTEEN TERMINALS. SOME FEATURES ARE A UNIQUE PROGRAMMING TECHNIQUE WHICH DEVELOPS AN 80 PER CENT INCREASE IN RATED DISK FILE CAPACITY...A DESIGN WHICH PERMITS ONE OR TWO 1062 TERMINALS OR ONE 1050 SYSTEM TERMINAL PER LINE...MAXIMUM FILE PACKING FROM THE USE OF A VARIABLE LENGTH FORMAT /OR UNPOSTED AND MEMORANDUM RECORDS/...AN EFFICIENT MODEL AND MACHINE-ORIENTED FILE ORGANIZATION WHICH KEEPS 1311 ACTIVITY AND 1441 PROCESSING AT A MINIMUM...A DISK RECORD STRUCTURE AND FILE ARRANGEMENT WHICH USUALLY ALLOWS MORE THAN 100,000 ACCOUNT RECORDS TO A 1311 PACK...A COMPLETELY PROGRAMMED ANALYSIS OF DISK DRIVE USAGE RELIEVING THE CUSTOMER OF THE NEED TO GIVE ATTENTION TO EITHER THE QUANTITY OF DRIVES OR THE PLACEMENT OF A PACK ON A SPECIFIC DRIVE...THE OPTION OF CONTINUING TO OPERATE ON LINE AT REDUCED EFFICIENCY WITHOUT THE IMMEDIATE ACCESS PACK /,DEGRADED SERVICE/,/. TO FACILITATE UNDERSTANDING, IT IS POSSIBLE TO DIVIDE THE PROGRAM INTO THESE PARTS --

LINE CONTROL /MULTIPLEXING/ FOR TERMINAL SERVICE...LINES AND TERMINALS DEMAND CORE...USERS WHO REQUIRE FEWER THAN THE MAXIMUM NUMBER OF TERMINALS HAVE A PROPORTIONATE SHARE OF CORE RELEASED FOR ADDITIONAL PROGRAMMING OR STORAGE.

FILE CONTROL...THIS SERVICE SUPPLIES THE USUAL I/O INSTRUCTIONS PLUS THE FEATURES OF FLEXIBILITY NOTED ABOVE. RECORD PROTECTION...DATA FROM TRANSACTIONS AFFECT ACCOUNT RECORDS...IN ADDITION, THEY ARE THE SOURCES FOR MESSAGES TO THE TERMINALS.

AS A SUPPLEMENT TO THE ON-LINE ROUTINES, THE PACKAGE INCLUDES PROGRAMS TO HELP THE USER IN HIS ORIGINAL CONVERSION AND IN SUBSEQUENT REORGANIZATIONS. SYSTEM REQUIREMENTS ARE A 16K 1440 SYSTEM CONFIGURATION AS FOLLOWS --

1441 PROCESSING UNIT MODEL A6 WITH DISK STORAGE CONTROL, EXPANDED PRINT EDIT, INDEXING AND STORE ADDRESS REGISTER, CONSOLE ATTACHMENT, TRANSMISSION CONTROL UNIT ATTACHMENT, DIRECT SEEK, BIT TEST.

1447 CONSOLE MODEL 4.
1311 DISK STORAGE DRIVE MODEL 1 FOR FIRST DRIVE, MODEL 2 FOR SECOND DRIVE /ADDITIONAL MODEL 2S AS REQUIRED/.

1448 TRANSMISSION CONTROL UNIT MODEL 1 WITH ATTACHMENT FEATURE, FIXED TIME-OUT, AND AS REQUIRED, LINE GROUP, LINE ADAPTER SET, COMMON CARRIER ADAPTER SET.

1061 CONTROL UNITS, MODEL 1 OR 2 WITH LINE ADAPTER, OFF-LINE FEATURE.

1062 TELLER TERMINAL, MODEL 1 OR 2.
1442 CARD READ PUNCH MODEL 1 WITH CARD READ PUNCH ADAPTER.

RECOMMENDATIONS FOR POTENTIAL PRINTING NEEDS--
PRINTER ATTACHMENT ON 1441 PROCESSING UNIT.

1443 PRINTER MODEL 1 OR 2 WITH PRINT STORAGE AND PRINTER CONTROL. TO IMPROVE THE TIME REQUIREMENTS FOR THE OFF-LINE RUNS -- PRINT POSITIONS /24 ADDITIONAL/ AND SELECTIVE CHARACTER SET /13 CHARACTER SET, 39 CHARACTER SET/.

1446 PRINTER CONTROL UNIT WITH THE APPROPRIATE ATTACHMENT FEATURE NUMBER 1325, 1326, 1327, OR 1328.

1403 PRINTER MODEL 2/3/5, OR 6.
IF A 1403 MODEL 3 IS SELECTED, A 1416 INTERCHANGEABLE TRAIN CARTRIDGE IS AN ADDITIONAL REQUIREMENT.

THE PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH. ONE REEL OF TAPE IS REQUIRED IF ONE OR MORE 1440 PROGRAMS ARE ORDERED AT THE SAME TIME.

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BASIC PROGRAM MATERIAL --
DOCUMENTATION - PROGRAM WRITE-UP...APPLICATION DIRECTORY...
APPLICATION DESCRIPTION...USERS MANUAL...OPERATORS MANUAL AND SYSTEMS MANUAL.
MACHINE READABLE SOURCE AND OBJECT CARD DECKS... SAMPLE PROBLEM DECKS.

1440-FB-13X 1401/1440 PROGRAM FOR THE
ALLOCATION OF RESOURCES FOR SAVINGS AND LOAN ASSOCIATIONS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-FB-13X

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CONTINUED FROM PRIOR COLUMN--

THE 1401/1440 PROGRAM FOR THE ALLOCATION OF RESOURCES FOR SAVINGS AND LOAN ASSOCIATIONS, 1440-FB-13X, HELPS SAVING AND LOAN MANAGEMENT MAKE DECISIONS WHICH DETERMINE PROFITABLE LEVELS FOR THE ASSOCIATION/S ASSETS AND LIABILITIES.

INPUT DATA DESCRIBE THE PRESENT FINANCIAL STATUS, LEGAL REQUIREMENTS, INDIVIDUAL ASSOCIATION POLICIES, AND CASH FLOW REQUIREMENTS OF THE ASSOCIATION AND ARE TRANSLATED BY THE PROGRAM INTO A SET OF CONCISE MATHEMATICAL EQUATIONS REFLECTING THE ECONOMIC ENVIRONMENT WITHIN WHICH THE ASSOCIATION MUST OPERATE. LINEAR PROGRAMMING, A MATHEMATICAL TECHNIQUE USED TO MAXIMIZE PROFIT, CALCULATES THE SOLUTION TO THESE EQUATIONS. THIS MATHEMATICAL SOLUTION IS THEN TRANSLATED INTO OUTPUT REPORTS WITH THE FOLLOWING INFORMATION--

- SHORT-TERM RECOMMENDATIONS PERTAINING TO CHANGES IN THE ASSOCIATION/S ASSETS AND LIABILITIES.
- PROJECTIONS PERTAINING TO EXPECTED LONGER TERM CHANGES IN THE ASSOCIATION/S ASSETS AND LIABILITIES.
- THE POSITION OF THE ASSOCIATION WITH RESPECT TO LEGAL REQUIREMENTS, REGULATIONS, AND SELF-IMPOSED RESTRICTIONS.
- ASSETS AND LIABILITIES WHICH HAVE A CONSTRAINING EFFECT ON PROFIT.
- THE EXPECTED RESERVE POSITION AS OF ONE YEAR AFTER THE PROGRAM IS RUN.

PROGRAMMING SYSTEMS-- THE PROGRAM IS WRITTEN IN THE AUTOCODER SOURCE LANGUAGE FOR THE 1401 AND 1440.

1440 MINIMUM SYSTEM REQUIREMENTS-- A 4K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS REGISTER, MULTIPLY-DIVIDE /OPTIONAL/, ADDITIONAL PRINT POSITIONS... 1311 DISK STORAGE DRIVE... 1316 DISK PACK... 1442 CARD READ PUNCH... 1443 PRINTER /144 PRINT POSITIONS/.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DIRECTORY...
REFERENCE MANUAL... OPERATORS MANUAL.
CARD DECKS - OBJECT PROGRAM DECK... SAMPLE PROBLEM DECK.

OPTIONAL PROGRAM MATERIAL-- SYSTEMS MANUAL... AUTOCODER SOURCE PROGRAM DECK.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

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1440-IF-07X FIRE AND CASUALTY INSURANCE
PROGRAMS /AUTO RATING/

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-IF-07X

THE 1440 AUTO RATING PROGRAM CONSISTS OF A SERIES OF SUBROUTINES TO RATE PRIVATE-PASSENGER AUTOMOBILES AND PICKUP TRUCKS FOR LIABILITY, BOTH BODILY INJURY AND PROPERTY DAMAGE, MEDICAL PAYMENTS, UNDESIRABLE MOTORIST, ACCIDENTAL DEATH AND DISABILITY, COLLISION, COMPREHENSIVE, FIRE, FIRE AND THEFT, COMBINED ADDITIONAL COVERAGE, RIOT AND CIVIL COMOTION, THUNDERSTORM, FLOOD AND TOWING. THERE ARE ALSO ROUTINES TO CHECK FOR VALID COMBINATIONS OF COVERAGES AND TO PROVIDE DISCOUNTS FOR SECOND CAR, COMPACT CAR, DRIVER-TRAINING AND SAFE-DRIVER PLANS. THE USER IS ALLOWED COMPLETE FREEDOM IN DESIGNING HIS OWN INPUT OR OUTPUT ROUTINE. ALL WORK IS DONE IN A PREDESIGNATED WORK AREA AND THE USER CAN WRITE THE PROGRAM NECESSARY TO FILL AND EMPTY THIS AREA USING CARD INPUT AND OUTPUT, TAPE INPUT OR OUTPUT, DISK INPUT AND OUTPUT, OR A COMBINATION OF ALL THREE. THE ROUTINES CAN BE ASSEMBLED IN ANY SEQUENCE DESIRED BY THE USER, EXCEPT FOR THE MEDICAL PAYMENT AND THE MATERIAL DAMAGE ROUTINES. MACHINE REQUIREMENTS--1440 AUTO RATING--AN 8K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS...1442 CARD READ PUNCH...1443 PRINTER.

BASIC PROGRAM MATERIAL--
DOCUMENTATION-- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.
CARD DECKS-- SOURCE DECK... SAMPLE PROBLEM DECKS.

1440-IF-08X FIRE AND CASUALTY INSURANCE

PROGRAMS /HOMEOWNERS RATING/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-IF-08X

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THE 1440 HOMEOWNERS RATING PROGRAM IS DESIGNED TO RATE THREE YEAR COVERAGES FOR SECONDARY LOCATIONS FOR FORMS 1, 2, 3 WITH 4, 4, AND 5. THE TABLES USED IN THE PROGRAM FOLLOW THESE IN THE HOMEOWNERS MANUALS WHICH ARE ISSUED BY THE VARIOUS STATE FIRE BUREAUS. THESE TABLES MUST BE CHANGED BY THE USER ACCORDING TO THE STATE WHICH HE IS RATING. SUBROUTINES ARE USED THROUGHOUT THE PROGRAM TO ALLOW THE USER THE ABILITY TO ASSEMBLE VARIOUS PROGRAM COMBINATIONS ACCORDING TO HIS REQUIREMENTS. MACHINE REQUIREMENTS--1440 HOMEOWNERS RATING--AN 8K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS...1442 CARD READ PUNCH...1443 PRINTER.../THIS PROGRAM WILL ALSO RUN ON A 4K 1440 SYSTEM WITH A 1311 DISK STORAGE DRIVE/.

BASIC PROGRAM MATERIAL--
DOCUMENTATION-- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.
MACHINE READABLE - OBJECT PROGRAM DECK... SOURCE CARD DECK...
SAMPLE PROBLEM DECK.

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1440-IF-09X FIRE AND CASUALTY INSURANCE

PROGRAMS /GENERAL DISTRIBUTION/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-IF-09X

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1440 GENERAL DISTRIBUTION PROGRAM--IN ALMOST EVERY INDUSTRY THERE IS A NEED FOR REPORTS MADE UP OF SUMMARY TOTALS IN CERTAIN PREDETERMINED SEQUENCES. SINCE NORMALLY ONLY A SMALL PART OF EACH RECORD IS NEEDED FOR A SUMMARY TYPE REPORT, A NEW APPROACH HAS BEEN DEVISED. IN GENERAL, THIS PROGRAM ACCEPTS RECORDS IN ANY SEQUENCE, EXTRACTS CONTROL FIELDS AND AMOUNT FIELDS, SUMMARIZES AND SORTS THESE INTERNALLY. AFTER THE INPUT FILE HAS BEEN READ, A TABLE IS WRITTEN IN SEQUENCE ON ANOTHER SECTION OF THE DISK PACK, AND FROM THIS, REPORTS ARE PRINTED AS DESIRED. FOUR TYPES OF CONTROL CARDS ARE USED TO DESCRIBE THE INPUT FILE TO THE PROGRAM. OUTPUT FORMAT IS AT THE USER'S DISCRETION. RESULTS OF SUMMARIZATION EXIST IN A SPECIFIC KNOWN FORMAT ON THE DISK PACK. CONTROLS ARE INCLUDED IN THE PROGRAM FOR RECORD COUNT, NUMBER OF RECORDS DISTRIBUTED, TOTAL OF ALL AMOUNT FIELDS AS THEY ARE ADDED, NUMBER OF ITEMS CONSTRUCTED, NUMBER OF ITEMS PRINTED AND THE STARTING ADDRESS OF THE OUTPUT. MACHINE REQUIREMENTS--1440 GENERAL DISTRIBUTION--A 4K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS...1442 CARD READ PUNCH... 1443 PRINTER...1311 DISK STORAGE DRIVE.

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BASIC PROGRAM MATERIAL--
DOCUMENTATION-- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING
PROGRAM LISTINGS...
MACHINE READABLE-- OBJECT PROGRAM DECK... SOURCE CARD DECK... *
SAMPLE PROBLEM DECK. *

1440-IL-05X DEBIT INSURANCE PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-IL-05X

THE IBM 1440 DEBIT INSURANCE PROGRAM CONSISTS OF MANY RUNS DESIGNED TO PERFORM GENERAL REQUIREMENTS OF AN INSURANCE COMPANY WRITING COMBINATION BUSINESS IN THE AREAS OF UNDERWRITING, POLICY ISSUE, COMBINED LIFE AND LAPSE REGISTER, AGENT PRODUCTION STATUS, AND RESERVE CALCULATIONS. UNDERWRITING AND POLICY ISSUE CONSIST OF INDUSTRIAL, ACCIDENT, FAMILY LIFE, AND FAMILY HOSPITAL ROUTINES WHICH ARE MODIFIABLE TO SUIT INDIVIDUAL COMPANY REQUIREMENTS. COMBINED REGISTER OPERATIONS ARE ACCOMPLISHED BY WEEKLY, MONTHLY, AND REGULAR ORDINARY ROUTINES. MONTHLY AND QUARTERLY VALUATION CONSISTS OF A MAIN UPDATE PROGRAM, A COPY PROGRAM, PLUS ASSOCIATED SUPPORT PROGRAMS. DATA ENTERS THE SYSTEM IN THE FORM OF PUNCHED CARDS, KEYPUNCHED FROM POLICY APPLICATIONS. TESTS ARE AUTOMATICALLY PERFORMED ON POLICY DATA BEFORE POLICIES ARE APPROVED. REJECTION NOTICES ARE PRODUCED WHEN ERRORS ARE INDICATED. AGENT REGISTERS ARE WRITTEN AS THE MASTER AGENT RECORD FILE IS UPDATED IN DISK STORAGE. VALUATION FILES ARE UPDATED MONTHLY USING ISSUES, REVIVALS, AND LAPSES. AT THE END OF EACH QUARTER, A QUARTERLY VALUATION LISTING IS PRODUCED WHICH LISTS THE RESERVE CALCULATION FOR EACH VALUATION CELL. CONTROL AND AUDIT TOTALS ARE TAKEN ON EACH RUN TO ASSURE BALANCE WITH PREDETERMINED TOTALS. WITHIN EACH RUN CROSSFOOT CHECKS AND BALANCES ARE TAKEN TO ASSURE PROPER PERFORMANCE. MINIMUM MACHINE REQUIREMENTS-- A 4K 1441 PROCESSING UNIT, MODEL A3 WITH-- INDEXING AND STORE ADDRESS REGISTER... 1447 CONSOLE, MODEL 1, WITH SENSE SWITCHES... 1442 CARD READ PUNCH... 1443 PRINTER... 1311 DISK STORAGE DRIVE, MODEL 1.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... APPLICATION DESCRIPTION
MANUAL... USERS MANUAL... OPERATORS MANUAL... SYSTEM MANUAL.
CARD DECKS -- OBJECT PROGRAM DECKS... SAMPLE PROBLEM DECKS.

OPTIONAL PROGRAM MATERIAL --
SOURCE CARD DECKS.
ONE MAGNETIC TAPE -- CONTAINS ALL CARD DECKS IN CARD IMAGE FORM.

1440-10-010 INPUT/OUTPUT CONTROL SYSTEM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-10-010

THE IBM 1440 ICSS, 1440-10-010 /PREVIOUSLY NAMED 1440/1311 ICSS/ IS TO BE USED ON 1440 SYSTEMS WITH THE NEW 1401/1440/1460 AUTOCODER /ON DISK/, 1401-AU-008. 1440 ICSS CONSISTS OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR BY MACRO INSTRUCTIONS IN A 1401/1440/1460 AUTOCODER /ON DISK/ SOURCE PROGRAM, ARE SELECTED, TAILORED AND INCLUDED IN THE OBJECT PROGRAM. FOR 1440 SYSTEMS, THESE ROUTINES PERFORM I/O FUNCTIONS AND HOUSEKEEPING ASSOCIATED WITH 1311 DISK STORAGE, 1301 DISK STORAGE, 7335 MAGNETIC TAPE, 1442 CARD READ PUNCH, 1442 CARD READER, 1444 CARD PUNCH, AND 1443 PRINTER. THEY ALSO PROVIDE LINKAGE TO THE USER'S OBJECT PROGRAM. THE SPECIFIC STATEMENTS GENERATED AT ASSEMBLY TIME DEPEND COMPLETELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USER'S SOURCE PROGRAM. THE PREVIOUSLY ANNOUNCED 1440-1301 ICSS /P63-129/ WILL NOT BE MADE AVAILABLE SINCE ITS FUNCTIONS ARE INCLUDED IN THIS 1440 ICSS.

THE 1440 ICSS LIBRARY ROUTINES ARE TO BE PLACED IN THE 1401/1440/1460 AUTOCODER /ON DISK/ SYSTEM THROUGH A LIBRARY RUN. MINIMUM SYSTEM REQUIREMENTS--
FOR ASSEMBLY -- PROGRAMS INCORPORATING I/O MACRO INSTRUCTIONS FOR 1440 SYSTEMS MAY BE ASSEMBLED ON-- A 4K 1440 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE OR ONE 1301 DISK STORAGE ARRAY... 1442 CARD READ PUNCH, MDL 1 OR 2 OR 1442 CARD READER MDL 4 AND 1444 CARD PUNCH... 1443 PRINTER,

OR
A 4K 1401 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE... 1402 CARD READ PUNCH... 1403 PRINTER MDL 2 OR 1404 PRINTER... HIGH-LOW-EQUAL COMPARE FEATURE,

OR
AN 8K 1460 SYSTEM WITH... ONE 1311 DISK STORAGE DRIVE OR ONE 1301 DISK STORAGE ARRAY... 1402 CARD READ PUNCH... ONE 1403 PRINTER. FOR EXECUTION -- THE 1440 OBJECT MACHINE MUST HAVE ANY I/O UNITS REQUIRED BY THE USER'S PROGRAM. THE AMOUNT OF CORE STORAGE REQUIRED VARIES WIDELY FROM PROGRAM TO PROGRAM, AND MUST BE DETERMINED WHEN IT IS ASSEMBLED.

BASIC PROGRAM MATERIAL--
DOCUMENTATION-- PROGRAM WRITE-UP... LIBRARY LISTINGS...
OPERATING PROCEDURES.
CARD DECKS-- LIBRARY CARD DECK... SAMPLE SOURCE PROGRAM
DECK FOR TEST PURPOSES... I/O CONTROL SYSTEM.

OPTIONAL PROGRAM MATERIAL-- FLOWCHARTS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1440-10-011 COMMUNICATIONS ICSS
FOR THE 1448/DIRECT DATA CHANNEL
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-10-011

THE 1440 COMMUNICATIONS ICSS /1448/7740/DDC/ CONSISTS OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR IN AN AUTOCODER /ON DISK/ SOURCE PROGRAM BY MACRO INSTRUCTIONS, ARE SELECTED, TAILORED, AND INCLUDED IN THE OBJECT PROGRAM. THESE ROUTINES PERFORM THE FUNCTIONS NECESSARY TO HANDLE 1442, 1443, AND 1311 INPUT/OUTPUT FILES, TO TRANSMIT INFORMATION TO AND RECEIVE INFORMATION FROM REMOTE LOCATIONS AND REMOTE PROCESSORS, AND TO PROVIDE LINKAGE TO THE USER'S PROGRAMS. THE SPECIFIC ROUTINES GENERATED AT ASSEMBLY TIME DEPEND LARGELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USER'S SOURCE PROGRAM. THE NEW VERSION FACILITATES THE GENERATION OF PROGRAMS TO CONTROL 1448 COMMUNICATIONS WITH 1030 DATA COMMUNICATIONS SYSTEMS OVER COMMON CARRIER LEASED COMMUNICATION LINES USING AUTOMATIC DIALING AND AUTOMATIC ANSWERING FEATURES, AND OVER CUSTOMER-OWNED

CONTINUED FROM PRIOR COLUMN--

COMMUNICATION LINES, WITH THE 1030 DATA COLLECTION SYSTEM, THE 1032 DIGITAL TIME UNIT, THE 357 DATA COLLECTION SYSTEM /VIA THE 1408 TRANSMISSION UNIT/, THE 1060 DATA COMMUNICATION SYSTEM, AND AT&T TYPE 8382 AND WESTERN UNION TYPE 115A TELEGRAPH TERMINALS /UTILIZING THE TELEGRAPH ATTACHMENT FEATURE/.

USING THE EARLY WARNING PROGRAM OPTION, THE USER CAN TRANSMIT LARGE MESSAGES WITHOUT ASSIGNING EQUALLY LARGE BLOCKS OF CORE STORAGE TO HOLD THESE MESSAGES DURING TRANSMISSION. THE USER CAN ALSO GENERATE PROGRAMS TO CONTROL THE TRANSFER OF INFORMATION FROM A 1440 TO ANOTHER 1440, TO A 1401 OR 1460 VIA THE DIRECT DATA CHANNEL, OR FROM A 1440 TO EITHER A 1410 OR 7010 VIA THE EXPANDED SERIAL INPUT/OUTPUT ADAPTER CHANNEL. TWO UTILITY PROGRAMS /ESIOA LOADER AND ESIOA DUMP/ ARE AVAILABLE TO LOAD AND DUMP 1440 CORE STORAGE VIA THE 1410 OR A 7010.

THE LIBRARY ROUTINES FOR THIS ICSS ARE PLACED IN THE AUTOCODER SYSTEM THROUGH A LIBRARY RUN, USING AUTOCODER /CN DISK/ FOR 1401, 1440, AND 1460, VERSION 1, NO. 1401-AU-008. MINIMUM SYSTEM REQUIREMENTS FOR PROGRAM ASSEMBLY ARE THE SAME AS THOSE FOR THE ASSEMBLY OF ANY PROGRAM USING THE IBM 1401/1440/1460 AUTOCODER /ON DISK/ PROGRAM.

FOR OBJECT PROGRAM EXECUTION THE MACHINE CONFIGURATION DEPENDS UPON PROCESSING REQUIREMENTS. FOR COMMUNICATION BETWEEN REMOTE LOCATIONS, ICSS REQUIRES-- AN 8K 1440 SYSTEM WITH... INDEXING AND STORE ADDRESS REGISTER FEATURE... 1448 TRANSMISSION CONTROL UNIT... 1447 CONSOLE MDL 4... 1442 CARD READ PUNCH... OTHER I/O UNITS AS REQUIRED.

FOR COMMUNICATION BETWEEN A 1440 AND ANOTHER 1440, A 1401 OR A 1460, ICSS REQUIRES-- A 4K 1440 SYSTEM WITH... INDEXING AND STORE ADDRESS REGISTER FEATURE... SERIAL INPUT/OUTPUT ADAPTER FEATURE... DIRECT DATA CHANNEL FEATURE... 1442 CARD READ PUNCH... OTHER I/O UNITS AS REQUIRED.

FOR COMMUNICATION BETWEEN REMOTE LOCATIONS AND BETWEEN A 1440 AND EITHER A 1410 OR 7010, ICSS REQUIRES-- AN 8K 1440 SYSTEM WITH... INDEXING AND STORE ADDRESS REGISTER FEATURE... 1448 TRANSMISSION CONTROL UNIT... 1447 CONSOLE MDL 4... 1442 CARD READ PUNCH... OTHER I/O UNITS AS REQUIRED.

TOTAL CORE STORAGE REQUIREMENTS DEPEND ON THE SPECIFIED FUNCTIONS TO BE PERFORMED BY THE PROGRAM. TO HANDLE BASIC INPUT/OUTPUT FILES, ICSS REQUIRES ONLY THOSE I/O UNITS WHICH ARE SPECIFIED FOR PROGRAM HANDLING. ALTHOUGH PROGRAMS CAN BE ASSEMBLED TO HANDLE 1311, 1442, 1443 FILES ONLY, THIS ICSS SHOULD NOT BE USED EXCLUSIVELY FOR THAT PURPOSE. NOTE THAT FOR COMMUNICATION BETWEEN PROCESSORS, THERE ARE TWO PROCESSING SYSTEMS, EACH HAVING SEPARATE REQUIREMENTS.

THE PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... LIBRARY LISTINGS...
OPERATING PROCEDURES.
CARD DECKS -- LIBRARY CARD DECK OF MACROS.

OPTIONAL PROGRAM MATERIAL -- ESIOA LOADER AND ESIOA DUMP PROGRAM DECKS.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-10-012 COMMUNICATIONS ICSS
1026/DDC/ FOR THE 1440

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-10-012

THIS ICSS FACILITATES THE GENERATION OF PROGRAMS TO CONTROL 1026 COMMUNICATION WITH 1030, 1050, AND 1060. IT IS COMPATIBLE WITH THE 1401/1460-1440 COMMUNICATIONS ICSS FOR THE 1448, THUS REQUIRING A MINIMUM OF RE-PROGRAMMING FOR GROWTH FROM 1026 TRANSMISSION CONTROL UNITS TO A 1448. APPLICATIONS CAN RANGE FROM SINGLE INQUIRIES TO SOPHISTICATED REAL-TIME DATA OPERATIONS. ITS FUNCTIONS ARE--

- CONTROL OF THE 1447 CONSOLE
- USER CONTROL OF POLLING, ADDRESSING AND RECEIVING
- ERROR DETECTION
- OPERATION WITH EXISTING IBM PROGRAMS FOR DDC
- TIME OF DAY RECORDING WITH THE 1032 DIGITAL TIME UNIT

THE 1440 COMMUNICATIONS ICSS /1026/DDC/ WILL OPERATE WITH POINT-TO-POINT OR MULTI-POINT COMMON CARRIER LEASED OR CUSTOMER-OWNED COMMUNICATION LINES. IN ADDITION, THE PROGRAMS WILL SUPPORT THE AUTOMATIC ANSWERING FEATURE AND THE AUTOMATIC CALLING FEATURE.

COMMUNICATIONS ICSS /1026/DDC/ CONSIST OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR IN AN AUTOCODER SOURCE PROGRAM BY MACRO INSTRUCTIONS, ARE SELECTED, TAILORED, AND INCLUDED IN THE OBJECT PROGRAM. THE ROUTINES PERFORM THE FUNCTIONS NECESSARY TO HANDLE BASIC INPUT/OUTPUT FILES, TO TRANSMIT INFORMATION TO AND RECEIVE INFORMATION FROM REMOTE LOCATIONS AND REMOTE PROCESSORS, AND TO PROVIDE LINKAGE TO USER'S PROGRAMS. THE SPECIFIC ROUTINES GENERATED AT ASSEMBLY TIME DEPEND LARGELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USER'S SOURCE PROGRAMS.

THE LIBRARY ROUTINES FOR THIS ICSS IS TO BE PLACED IN THE AUTOCODER SYSTEM THROUGH A LIBRARY RUN, USING AUTOCODER /ON DISK/ FOR 1401, 1440, AND 1460, NO. 1401-AU-C08. MINIMUM SYSTEM REQUIREMENTS FOR PROGRAM ASSEMBLY-- SAME AS THOSE FOR THE ASSEMBLY OF ANY PROGRAM USING 1401/1440/1460 AUTOCODER /CN DISK/ PROGRAM. THE AUTOCODER /ON DISK/ PROGRAM SHOULD BE ORDERED CONCURRENTLY UNLESS OTHERWISE AVAILABLE.

FOR OBJECT PROGRAMS A 4K 1440 WITH... INDEXING AND STORE REGISTER FEATURE... 1026 TRANSMISSION CONTROL UNIT ATTACHMENT FEATURE... 1447 CONSOLE MDL 1... 1026 TRANSMISSION CONTROL UNITS /CNE FOR EACH COMMUNICATION LINE... I/O UNITS /AS REQUIRED/. IN ADDITION-- DIRECT DATA CHANNEL FEATURE... INTERRUPT... 1447 CONSOLE MDL 2 FOR 1440 AND 1460, MDL 3 FOR 1401... 1032 DIGITAL TIME UNIT MAY BE PRESENT, AS DESIRED. NOTE-- USE OF DDC WITH 1026 SHOULD SPECIFY THE INTERRUPT FEATURE /AVAILABLE ON 1401 ONLY AS RPL/ FOR OPTIMUM PERFORMANCE.

PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE 1440, 1401/1311 PROGRAMS ARE ORDERED AT THE SAME TIME. THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... OPERATING INSTRUCTIONS.
CARD DECKS -- LIBRARY DECK OF MACROS.

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OPTIONAL PROGRAM MATERIAL - FLOWCHARTS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS.
CARD DECKS - SYMBOLIC STATEMENTS /17 DECKS/. THESE CARD DECKS MAY
BE REQUESTED ON ONE REEL OF MAGNETIC TAPE.

1440-ME-02X 1440/1311 BILL OF MATERIAL
PROCESSOR
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-ME-02X

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MOST FABRICATION AND ASSEMBLY MANUFACTURING ORGANIZATIONS
ARE REQUIRED TO MAINTAIN LARGE VOLUMES OF RECORDS THAT DESCRIBE
THE STRUCTURE OR MAKEUP OF THEIR PRODUCTS. PRODUCT STRUCTURE
RECORDS ARE REFERENCED BY VARIOUS NOMENCLATURE, SUCH AS BILLS OF
MATERIAL, PARTS LISTS, AND WHERE-USED LISTS, DEPENDING UPON
INDIVIDUAL ORGANIZATION PREFERENCES AND THE ARRANGEMENT OF THE
DATA. THE REQUIREMENTS FOR MAINTAINING PRODUCT STRUCTURE
RECORDS ARE SUFFICIENTLY SIMILAR TO ALLOW DEVELOPMENT OF STANDARD
SYSTEMS APPROACHES. THE 1440/1311 BILL OF MATERIAL PROCESSOR
PACKAGE INCLUDES- /1/ GENERALIZED PROGRAMS THAT ORGANIZE AND
MAINTAIN PRODUCT STRUCTURE DATA ON 1311 DISK FILES AND /2/ LOGIC
DIAGRAMS EXPLAINING THE USE OR RETRIEVAL OF THE PRODUCT STRUCTURE
INFORMATION IN FUNDAMENTAL APPLICATIONS.

FEATURES--
• THIS PACKAGE CAN BE USED IN A WIDE RANGE OF MANUFACTURING
INDUSTRIES WHERE PRODUCT STRUCTURE RECORDS ARE MAINTAINED.
• PRODUCT STRUCTURE RECORDS ARE LINKED WITH PART NUMBER MASTER
INVENTORY TYPE RECORDS ON DISK STORAGE.
• DISK CHAINING IS USED TO ORGANIZE PRODUCT STRUCTURE DATA IN
TWO INHERENT SEQUENCES--
/1/ ASSEMBLY OR BILL OF MATERIAL SEQUENCE /I.E., LINKING
THE COMPONENTS OF AN ASSEMBLY/. THE USER DETERMINES THE
MAINTAINED SEQUENCE OF COMPONENTS WITHIN
THE ASSEMBLY. TYPICAL SEQUENCES MIGHT BE COMPONENT PART
NUMBER OR ENGINEERING DRAWING ITEM NUMBER.
/2/ WHERE-USED SEQUENCE /I.E., LINKING THE USAGES OF A PART
NUMBER ON HIGHER LEVEL ASSEMBLIES/. THIS CROSS-
REFERENCED SEQUENCE /1/ ELIMINATES THE NEED TO /2/ MAINTAIN A
DUPLICATE FILE IN WHERE-USED SEQUENCE OR /3/ PERIODICALLY
SORT AN ASSEMBLY DECK FILE TO WHERE-USED SEQUENCE FOR
LISTING PURPOSES.

• RAW MATERIAL CAN BE INCLUDED IN THE PRODUCT STRUCTURE FILE,
PROVIDING COMPLETE WHERE-USED CROSS REFERENCE OF EACH RAW
MATERIAL NUMBER.
• USER DESIGNS HIS OWN DISK RECORD LAYOUTS BY INCORPORATING HIS
OWN INFORMATION PLUS CERTAIN REQUIRED DATA INTO PART NUMBER
MASTER INVENTORY AND PRODUCT STRUCTURE RECORDS.
• LOW LEVEL CODING IS AUTOMATICALLY MAINTAINED.
• ASSEMBLY TO SUB-ASSEMBLY CONTINUITY IS VERIFIED. THIS FEATURE
GUARANTEES THAT THE PRODUCT STRUCTURE RECORDS CAN BE
"EXPLODED".
• USER BUILDS HIS OWN ENGINEERING CHANGE PROCEDURE INTO THE
FILE ORGANIZATION AND MAINTENANCE PROGRAMS.
THIS IS A DISK-ORIENTED CONCEPT THAT REQUIRES A PART NUMBER
MASTER INVENTORY TYPE FILE /I.E., ONE RECORD PER UNIQUE PART
NUMBER/ AND THE PRODUCT STRUCTURE FILE TO BE ON-LINE
SIMULTANEOUSLY. THE PART NUMBER MASTER INVENTORY RECORDS AND AN
ASSOCIATED PART NUMBER INDEX FILE ARE LOADED, ADDED, AND DELETED
USING THE IBM DISK-FILE ORGANIZATION ROUTINES. THE PRODUCT
STRUCTURE DATA /RECORDED AS A SERIES OF SINGLE LEVEL ASSEMBLIES/
ARE LOADED, ADDED, DELETED, OR CHANGED USING A SINGLE
COMPREHENSIVE FILE ORGANIZATION AND MAINTENANCE PROGRAM. THIS
PROGRAM SIMULTANEOUSLY UPDATES THE ASSEMBLY AND WHERE-USED
SEQUENCE CHAINS. ALL PROGRAMS ARE USER MODIFIED AT SOURCE LEVEL
AND THEN ASSEMBLED, PROVIDING AN OBJECT PROGRAM TAILORED TO THE
USER'S REQUIREMENTS. THE PACKAGE INCLUDES LOGIC DIAGRAMS FOR
SIX FUNDAMENTAL CLASSIFICATIONS OF RETRIEVAL PROGRAMS. THEY ARE--
/1/ ONE LEVEL BILL OF MATERIAL OR PARTS LIST, /2/ NEXT ASSEMBLY
WHERE-USED LISTING, /3/ INDENTED PARTS LIST, /4/ INDENTED
WHERE-USED LIST, /5/ SUMMARIZED EXPLOSION AND /6/ SUMMARIZED
IMPLOSION. THE PACKAGE IS DESIGNED SO THAT THE LOGIC DIAGRAMS
CAN BE USED BY ANY CUSTOMER AS A GUIDE IN THE PREPARATION OF
HIS OWN SET OF PROGRAMS.

SYSTEM REQUIREMENTS- AN 8K 1440 WITH INDEXING AND STORE REGISTER,
1447 CONSOLE MODEL 2, 1442 CARD READ PUNCH MODEL 1, 1443 PRINTER
MODEL 1, AND ENOUGH 1311 DISK STORAGE DRIVES TO CONTAIN THE PART
NUMBER MASTER INVENTORY RECORDS, PART NUMBER INDEX RECORDS AND
PRODUCT STRUCTURE RECORDS ON LINE.
THE 1440 DISK-FILE ORGANIZATION ROUTINES /GROUP C - COMMON-
RANDOM AND CONTROL SEQUENTIAL/ MUST BE ORDERED INDEPENDENTLY OF
THE BILL OF MATERIAL PROCESSOR.
THE PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS
CARD IMAGES. ONLY ONE REEL OF TAPE 2400 FEET IN LENGTH IS
REQUIRED IF ONE OR MORE 1440/1311 PROGRAMS ARE ORDERED AT THE
SAME TIME.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DIRECTORY...
PROGRAMMER MANUAL... OPERATOR MANUAL... SYSTEM MANUAL...
MACHINE READABLE - SOURCE DECK FOR PRODUCT STRUCTURE FILE
ORGAN. & MAINTENANCE PROGRAM... SAMPLE PROBLEM SOURCE, DATA
AND OBJECT DECKS.

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1440-MI-701 1440 STERLING SUBROUTINES
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-MI-701

THE 1440 STERLING SUBROUTINES, #1440-MI-701, OPERATE ON DATA
FIELDS CONTAINING REPRESENTATIONS OF STERLING MONETARY VALUES
/POUNDS, SHILLINGS, PENCE, AND DECIMALS OF PENCE/ IN ANY OF
THREE FORMATS- /1/ OPERATIONS FOR TRANSLATION, /2/ ARITHMETIC,
AND /3/ PREPARATION FOR PRINTING. IN ADDITION TO BEING
IMMEDIATELY USEFUL FOR OPERATIONS ON STERLING FIELDS OF THE SIZES
AND FORMATS FOR WHICH THEY HAVE BEEN PROGRAMMED, THE SUBROUTINES
ARE USEFUL AS GUIDES AND MODELS FOR PROGRAMMING BY THE USER
OF ALTERED, EXTENDED, AND RELATED SUBROUTINES.
THE 1440 STERLING SUBROUTINES ARE PROVIDED AS 1440 AUTOCODER
SYMBOLIC STATEMENTS IN PUNCHED CARDS. THOSE SUBROUTINES DESIRED
BY THE USER FOR A 1440 PROGRAM MAY BE INCORPORATED IN THE
PROGRAM AND ASSEMBLED BY ANY VERSION OF 1440 AUTOCODER. IF 1440
BASIC AUTOCODER IS TO BE USED, THE PUNCHED CARDS MUST BE
REPRODUCED WITH COLUMNS OFFSET IN ACCORDANCE WITH BASIC
AUTOCODER INPUT SPECIFICATION.
MINIMUM SYSTEM REQUIREMENTS--
ANY 1440 SYSTEM WITH INDEXING AND STORE ADDRESS REGISTER
FEATURE. THIS FEATURE IS USED FOR SUBROUTINE ENTRY AND EXIT
PURPOSES. IT IS NOT REQUIRED IF DIFFERENT CODING FOR SUBROUTINE
LINKAGE IS USED. AN ALTERNATIVE VERSION OF ONE OF THE
SUBROUTINES MAKES USE OF THE MULTIPLY/DIVIDE FEATURE.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT
IS ORDERED.

1440-MI-702 1440 STERLING MACRO
INSTRUCTIONS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-MI-702

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PURPOSE- THIS SET OF MACRO-INSTRUCTIONS, FOR INCLUSION IN THE
USER'S 1440 AUTOCODER LIBRARY ON DISK, PROVIDES FOR OPERATIONS
ON DATA FIELDS CONTAINING REPRESENTATIONS OF STERLING MONETARY
VALUES /POUNDS, SHILLINGS, PENCE AND DECIMALS OF PENCE/ IN ANY
OF THREE FORMATS. OPERATIONS FOR TRANSLATION AND ARITHMETIC ARE
PROVIDED.

FEATURES- FLEXIBILITY IN THE SIZE OF STERLING FIELDS HANDLED
IS PROVIDED, WITH VARIATION IN THE NUMBER OF POUNDS POSITIONS
AND THE NUMBER OF DECIMALS OF PENCE. WORK-AREAS ARE SHARED AS
FAR AS POSSIBLE AND THE GENERATED CODE IS FURTHER REDUCED BY A
FACILITY OF PARAMETER OMISSION.

USE- THE PROGRAMMER INCLUDES THE APPROPRIATE MACRO-INSTRUCTION
CODE AT THE POINT IN THE PROGRAM WHEN EXECUTION OF THE STERLING
OPERATION IS REQUIRED. THE SUBSEQUENT INCLUSION OF A DEFINITE
MACRO-INSTRUCTION, ALSO PROVIDED, CAUSES THE GENERATION OF CODE
TO CARRY OUT THE NECESSARY STERLING PROCESSING.

MINIMUM SYSTEM REQUIREMENTS- A 4K 1440 SYSTEM WITH... 1311
DISK STORAGE DRIVE, MDL 1... 1442 CARD READ PUNCH... 1443
PRINTER. INDEXING AND STORE ADDRESS REGISTER FEATURE IS
NECESSARY IN ADDITION TO THE ASSEMBLY REQUIREMENTS. ADVANTAGE
CAN BE TAKEN OF THE MULTIPLY-DIVIDE FEATURE.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS MANUAL
... OPERATING PROCEDURES.
CARD DECKS-- SYSTEM CARD DECK... SAMPLE PROGRAM.

OPTIONAL PROGRAM MATERIAL-- SYSTEMS FLOW CHARTS AND LISTINGS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

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1440-MX-02X PROJECT CONTROL SYSTEM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-MX-02X

THE 1440 PROJECT CONTROL SYSTEM, 1440-MX-02X, IS ORIENTED TO
THE SPECIFIC NEEDS OF A CONSTRUCTION COMPANY AND WILL PROVIDE THE
BACKBONE FOR A SALES PROGRAM THAT CAN RESULT IN NET 1440 SALES.
DESCRIPTION- THE PROJECT CONTROL SYSTEM PROVIDES A BASIC
CAPABILITY RELATED TO THE PLANNING, SCHEDULING, AND CONTROL OF A
PROJECT THROUGH THE USE OF THE CRITICAL PATH METHOD. IN THE
BASIC SYSTEM THE USER CAN INITIALLY PLAN A PROJECT, UPDATE AND
MODIFY THE PROJECT SCHEDULE, MONITOR PROGRESS, AND INVESTIGATE
ALTERNATE APPROACHES.

THE BASIC SYSTEM CAN BE EXPANDED BY THE USER TO INCLUDE SUCH
RELATED PROJECT FUNCTIONS AS ESTIMATING AND COST CONTROL.

FEATURES--
- A BASIC SYSTEM FRAMEWORK IS PROVIDED THAT INCLUDES 1440
PROGRAMS FOR PLANNING, SCHEDULING, AND CONTROL OF
CONSTRUCTION PROJECTS.
- ALL PROGRAMS, INCLUDING THOSE ADDED BY THE USER, OPERATE
UNDER THE CONTROL OF A SYSTEMS MONITOR.
- PLANNING ACCOMPLISHED THROUGH CONVENTIONAL ARROW DIAGRAMMING
OR THE NEW, HIGHLY EFFICIENT AND EASIER TO USE PRECEDENCE
DIAGRAMMING.
- EACH BULLETIN CAN CONTAIN UP TO 2,000 ACTIVITIES.
- OUTPUT IN TERMS OF PROJECT OR CALENDAR DAYS CAN BE DISPLAYED
AS BAR CHARTS, EXCEPTION REPORTS, AND PROGRESS LISTINGS IN
TERMS OF QUANTITIES SET, PERCENT COMPLETE, OR REMAINING
DURATION.

USE- THE SYSTEM, WRITTEN IN AUTOCODER AND IOCS, OPERATES UNDER
ITS OWN MONITOR. THE MASTER SYSTEMS PACK, CONTAINING THE
THIRTY-SYSTEM PROGRAMS AND CUSTOMER PROGRAMS, RESIDES ON ONE
DISK DRIVE. THE PROJECT MASTER FILE PACK RESIDES ON A SECOND
DISK DRIVE. THE USER SPECIFIES PROCESSING SEQUENCE AND OUTPUT
DESIRED THROUGH CONTROL CARDS ALLOWING BATCHED PROCESSING OF A
NUMBER OF PROJECTS WITHOUT OPERATOR INTERVENTION.

MINIMUM SYSTEM REQUIREMENTS- AN 8K 1440 SYSTEM... TWO 1311 DISK
STORAGE DRIVES... 1442 CARD READ PUNCH... 1443 PRINTER...
INDEXING AND STORE ADDRESS REGISTER, DIRECT SEEK, ADDITIONAL
PRINT POSITIONS... 1447 CONSOLE WITH SENSE SWITCHES.
THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT
IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE
ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION PROGRAM
MANUAL... USERS MANUAL... OPERATORS MANUAL... SYSTEMS
MANUAL...
CARD DECKS - OBJECT PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL - SOURCE PROGRAM CARD DECKS... PROGRAM
DECKS MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD
IMAGES.

1440-OS-090 OPERATING SYSTEM COMPUTER
ASSISTED INSTRUCTION COURSEWRITER LANGUAGE
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-OS-090

*M

FOR MANY YEARS, PROGRAMMED INSTRUCTION, HAS BEEN USED TO
ACCELERATE THE LEARNING PROCESSES, AUGMENT THE CONVENTIONAL
TEACHING METHODS, AND PROVIDE REMEDIAL TEACHING MEASURES. THIS
TECHNIQUE HAS TAKEN THE PHYSICAL FORM OF PROGRAMMED INSTRUCTION
TEXT OR TEACHING MACHINES. IN BOTH CASES, THE OBJECTIVE IS TO
PERMIT THE STUDENT TO PROGRESS THROUGH COURSE MATERIAL AS FAST
AS HIS INDIVIDUAL CAPABILITIES WILL ALLOW. A PROGRAMMED
INSTRUCTION COURSE PRESENTS TEXT MATERIAL, QUESTIONS, AND
ANSWERS TO A STUDENT IN A CAREFULLY PLANNED SEQUENCE. AS HE
PARTICIPATES IN THE COURSE, THE STUDENT IS CONTINUOUSLY AWARE OF
HIS PROGRESS. WHENEVER HE RESPONDS INCORRECTLY TO A QUESTION,
HE IS TOLD IMMEDIATELY THAT HE MADE A MISTAKE, WHICH HE IS OFTEN
REQUIRED TO CORRECT. AS A CONSEQUENCE, THE MORE CAPABLE STUDENT
MOVES FASTER BECAUSE HE MAKES FEWER ERRORS. THE SLOWER STUDENT
RECEIVES THE PRACTICE AND REINFORCING TEXT HE NEEDS TO AID
HIM IN LEARNING. AS EACH STUDENT MASTERS EACH SEGMENT OF THE
ENTIRE SUBJECT, HE PROGRESSES THROUGH THE COURSE IN AN
ORDERLY, DISCIPLINED FASHION.

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THE COURSEWRITER LANGUAGE IS A SPECIAL USER LANGUAGE WITH WHICH A TEACHER /I.E., ,AUTHOR,,/ CAN PREPARE HIS COURSE MATERIALS TO ACCOMMODATE THE RANGE OF STUDENT ABILITIES. THE OPERATING SYSTEM CONSISTS OF--

1. A MONITOR TO SUPERVISE WRITING AND INSTRUCTING SIMULTANEOUSLY.
2. AN ASSEMBLER WHICH ENABLES THE COURSE AUTHOR TO COMMUNICATE WITH THE COMPUTER WHEN WRITING AND REVISING COURSES.
3. UTILITIES FOR PREPARING STUDENT AND COURSE REPORTS. IT PROVIDES THE ABILITY--

1. FOR AUTHORS TO WRITE AND CORRECT COURSE MATERIAL WHILE STUDENTS ARE TAKING COURSES.
2. FOR A ,PROCTOR,, WHO OPERATES THE SYSTEM, TO UNDERTAKE ESSENTIAL ADMINISTRATIVE ROUTINES.
3. TO COLLECT DATA ON STUDENT RESPONSES FOR LATER ANALYSIS.
4. FOR AUTHORS OR PROGRAMMERS TO ADD NEW FUNCTIONAL CAPABILITY TO THE COURSEWRITER.
5. TO OPERATE SIMULTANEOUSLY UP TO FIVE COURSES PER 1316 DISK PACK.
6. TO SERVICE UP TO TWELVE 1050 POINT-TO-POINT LINES WITH A 1448 OR UP TO FOUR LINES WITH FOUR 1026 TRANSMISSION CONTROL UNITS.

THE WORD ,ASSISTED,, IN THE TERM ,COMPUTER ASSISTED INSTRUCTION,, IS IMPORTANT. THIS NEW METHODOLOGY IS NOT INTENDED TO REPLACE THE IMPORTANT ROLE OF THE TEACHER IN THE EDUCATIONAL PROCESS. INSTEAD, IT IS A NEW SCIENCE FOR ASSISTING THE TEACHER IN ADMINISTERING COURSE MATERIAL AND TAKING FULLEST ADVANTAGE OF THE BENEFITS OF CAI.

MINIMUM 1440/1448 CONFIGURATION IS 1441 PROCESSING UNIT MODEL A6 WITH CONSOLE ATTACHMENT, DIRECT SEEK, DISK STORAGE CONTROL, INDEXING AND STORE ADDRESS REGISTER, BIT TEST, TRANSMISSION CONTROL UNIT ATTACHMENT, AND PRINTER ATTACHMENT... 1442 CARD READ PUNCH MODEL 1 WITH CARD READ PUNCH ADAPTER... 1443 PRINTER MODEL 1 WITH SELECTIVE CHARACTER SET AND PRINTER CONTROL... 1447 CONSOLE MODELS 1 AND 4 WITH SENSE SWITCHES... 1311 STORAGE DRIVE ONE MODEL 1 AND ONE MODEL 2 WITH DIRECT SEEK... 1448 TRANSMISSION CONTROL UNIT MODEL 1 WITH 1050 ATTACHMENT FEATURE, FIXED TIME-OUT FEATURES /NEW LINE AND LINE FEED, HORIZONTAL TAB/ AND, AS REQUIRED, LINE GROUP, LINE ADAPTER SET, COMMON CARRIER ADAPTER SET... ONE CAN ALSO OPTIONALLY SPECIFY TEXT TIME-OUT SUPPRESSION TO DISABLE THE TIMER FROM OPERATING AT THE NORMAL 9-18 SECOND DISCONNECT WHEN OPERATING WITH POINT-TO-POINT SYSTEMS. THIS OPTIONAL FEATURE IS TO BE USED WITH THE TEXT TIME-OUT SUPPRESSION ON THE 1051 CONTROL UNIT... 1050 DATA COMMUNICATION SYSTEM -- UP TO 12 SYSTEMS MAXIMUM, EACH CONSISTING OF A 1051 CONTROL UNIT MODEL 2 WITH AN ,A,, TERMINAL IDENTIFICATION LETTER AND A 1052 PRINTER-KEY-BOARD WITH THE 1ST PRINTER FEATURE. /IF DESIRED, THE TEXT TIME-OUT SUPPRESSION FEATURE CAN BE ORDERED ON THE 1051 AS A REQUIRED COMPANION TO THE ONE SPECIFIED ON THE 1448./

PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGE. ONLY ONE REEL IS REQUIRED IF ONE OR MORE 1440 PROGRAMS ARE ORDERED AT THE SAME TIME.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP...INSTRUCTION MANUAL...
AUTHOR AND PROCTOR MANUAL...STUDENT MANUAL.
MACHINE READABLE -- A CARD DECK CONSISTING OF...SYSTEM CONTROL PROGRAM...COMPUTER ASSISTED INSTRUCTION PROGRAM...UTILITY PROGRAMS DECK.

OPTIONAL PROGRAM MATERIAL -- FLOWCHARTS...PROGRAM LISTINGS.

1440-05-091 1440-1026 OPERATING SYSTEM
COMPUTER ASSISTED INSTRUCTION
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-05-091

THE COURSEWRITER LANGUAGE IS A SPECIAL USER LANGUAGE WITH WHICH TEACHER CAN PREPARE HIS COURSE MATERIALS TO ACCOMMODATE THE RANGE OF STUDENT ABILITIES. THE OPERATING SYSTEM CONSISTS OF--

1. A MONITOR TO SUPERVISE WRITING AND INSTRUCTING SIMULTANEOUSLY.
2. AN ASSEMBLER WHICH ENABLES THE COURSE AUTHOR TO COMMUNICATE WITH THE COMPUTER WHEN WRITING AND REVISING COURSES.
3. UTILITIES FOR PREPARING STUDENT AND COURSE REPORTS.

IT PROVIDES THE ABILITY--

1. FOR AUTHORS TO WRITE AND CORRECT COURSE MATERIAL WHILE STUDENTS ARE TAKING COURSES.
2. FOR A ,PROCTOR,, WHO OPERATES THE SYSTEM, TO UNDERTAKE ESSENTIAL ADMINISTRATIVE ROUTINES.
3. TO COLLECT DATA ON STUDENT RESPONSES FOR LATER ANALYSIS.
4. FOR AUTHORS OR PROGRAMMERS TO ADD NEW FUNCTIONAL CAPABILITY TO THE COURSEWRITER.
5. TO OPERATE SIMULTANEOUSLY UP TO FIVE COURSES PER 1316 DISK PACK.
6. TO SERVICE UP TO TWELVE 1050 POINT-TO-POINT LINES WITH A 1448 OR UP TO FOUR LINES WITH FOUR 1026 TRANSMISSION CONTROL UNITS.

THE WORD ASSISTED IN THE TERM COMPUTER ASSISTED INSTRUCTION IS IMPORTANT. THIS NEW METHODOLOGY IS NOT INTENDED TO REPLACE THE IMPORTANT ROLE OF THE TEACHER IN THE EDUCATIONAL PROCESS. INSTEAD, IT IS A NEW SCIENCE FOR ASSISTING THE TEACHER IN ADMINISTERING COURSE MATERIAL AND TAKING FULLEST ADVANTAGE OF THE BENEFITS OF CAI.

MINIMUM CONFIGURATION--
1441 PROCESSING UNIT MODEL A5 WITH DIRECT SEEK, DISK STORAGE CONTROL, INDEXING AND STORE ADDRESS REGISTER, BIT TEST, TRANSMISSION CONTROL UNIT ATTACHMENT, PRINTER ATTACHMENT, AND INTERRUPT... 1442 CARD READ PUNCH MODEL 1 WITH CARD READ PUNCH ADAPTER... 1443 PRINTER MODEL 1 WITH SELECTIVE CHARACTER SET AND PRINTER CONTROL... 1447 CONSOLE MODEL 1 WITH SENSE SWITCHES... 1311 DISK STORAGE DRIVE MODELS 1 AND 2 WITH DIRECT SEEK... 1026 TRANSMISSION CONTROL UNIT... UP TO 4 MODEL 1 MAXIMUM. THE FIRST 1026 MUST HAVE THE EXPANDED LINE FEATURE AND AS MANY AS THREE ADDITIONAL 1026 MODEL 1, EACH WITH THE ADDITIONAL LINE FEATURE. ONE MUST SPECIFY TEXT TIME-OUT SUPPRESSION TO DISABLE THE TIMER FROM OPERATING AT THE NORMAL 9-18 SECOND DISCONNECT. THIS FEATURE IS TO BE USED WITH THE TEXT TIME-OUT SUPPRESSION ON THE 1051 CONTROL UNIT -- 1050 DATA COMMUNICATION SYSTEM -- AS MANY AS FOUR SYSTEMS EACH CONSISTING OF A 1051 CONTROL UNIT MODEL 2 AND A 1052 PRINTER-KEYBOARD WITH THE 1ST PRINTER FEATURE. /WHEN THE TEXT TIME-OUT SUPPRESSION FEATURE IS SPECIFIED ON THE 1026 COMPONENTS, IT MUST ALSO BE ORDERED ON THE 1051./

THE PROGRAM DECKS MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE PROGRAMS ARE ORDERED AT THE SAME TIME.

THE TAPES SUPPLIED SHOULD BE 2400 FEET IN LENGTH AND TESTED AT 556 BPI.

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CONTINUED FROM PRIOR COLUMN--

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP...AUTHOR AND PROCTOR MANUAL
STUDENT MANUAL...COURSEWRITER DESCRIPTION MANUAL.
MACHINE READABLE -- SYSTEM CONTROL PROGRAM...INSTRUCTION FUNCTION DECK... INITIAL LOAD DECK...UTILITY PROGRAMS DECK.

OPTIONAL PROGRAM MATERIAL -- FLOWCHARTS...PROGRAM LISTINGS.

1440-RG-020 1440/1311 REPORT PROGRAM
GENERATOR
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-RG-020

1440/1311 RPG ENABLES A PROGRAM WRITTEN IN 1401/1440/1460 RPG LANGUAGE TO BE COMPILED AND ASSEMBLED ON A 1440/1311 SYSTEM. INSTEAD OF WRITING A SPECIFIC PROGRAM FOR A REPORT, THE USER STATES HIS PROBLEM ON FIXED FORM SPECIFICATIONS SHEETS IN 1401/1440/1460 RPG LANGUAGE. THE RPG PROCESSOR OPERATES ON THE PUNCHED SPECIFICATIONS, GENERATING A PROGRAM TO DO THE SPECIFIC JOB. BY RELIEVING THE USER OF THE MACHINE CODING AND PROGRAM TESTING, RPG PERMITS HIM TO CONCENTRATE HIS EFFORTS ON THE SOLUTION TO HIS PARTICULAR PROBLEM. RPG WILL GENERATE PROGRAMS TO PRODUCE REPORTS OF A VARIETY OF FORMS FROM SOURCE DATA CONTAINED IN A CARD FILE OR DISK STORAGE FILE. THE OUTPUT REPORT CAN BE OBTAINED AT THE PRINTER, ON CARDS, ON DISK STORAGE, OR ANY COMBINATION OF THE THREE.

WITH THE RPG AND AUTOCODER /WITH IOCS LIBRARY ROUTINES/ IN DISK STORAGE, THE PROBLEM SPECIFICATION CARDS ARE LOADED AT THE CARD READER. THE COMPILATION AND ASSEMBLY ARE COMPLETELY AUTOMATIC. THE OUTPUT OBJECT PROGRAM IS EITHER THE MACHINE LANGUAGE EQUIVALENT PROGRAM OR THE 1440/1311 AUTOCODER EQUIVALENT PROGRAM. THE MACHINE LANGUAGE EQUIVALENT OBJECT PROGRAM MAY BE IN THE FORM OF CONDENSED CARDS, OR IF /LOAD-AND-GO/ IS DESIRED, THE OBJECT PROGRAM MAY BE DIRECTLY LOADED FROM THE SYSTEM PACK FOR IMMEDIATE EXECUTION. THE PROGRAM LISTING, DOCUMENTATION AND DIAGNOSTIC OUTPUT ARE RECORDED ON THE PRINTER.

MINIMUM MACHINE REQUIREMENTS--FOR REPORT PROGRAM GENERATION--4K 1440 SYSTEM WITH...ONE 1442 CARD READ PUNCH...1443 PRINTER...ONE 1311 DISK STORAGE DRIVE. FOR REPORT PROGRAM EXECUTION--1440 SYSTEM WITH CORE STORAGE CAPACITY DEPENDING ON COMPLEXITY OF REPORT...ONE 1442 CARD READ PUNCH...1443 PRINTER AND/OR 1311 DISK STORAGE AS REQUIRED BY REPORT. THE PROGRAM MAY ALSO BE OBTAINED ON MAGNETIC TAPE AS CARD IMAGES /ONLY ONE REEL OF TAPE IS REQUIRED IF ONE OR MORE 1440/1311 PROGRAMS ARE ORDERED AT THE SAME TIME/. THE OPTIONAL PROGRAM MATERIAL CONSISTS OF SYSTEM LISTING AND SYSTEM FLOWCHARTS. REFERENCE MATERIAL 1440/1311 AUTOCODER, #1440-AU-002
1440/1311 IOCS, #1440-IO-010
1440/1311 DISK UTILITY PROGRAMS, #1440-UT-041.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP...LISTINGS...SPECIFICATIONS AND OPERATION PROCEDURES
CARD DECKS -- R.P.G. SYSTEM CARD DECK...SAMPLE SOURCE PROGRAM FOR TEST PURPOSES.

OPTIONAL PROGRAM MATERIAL --
ONE MAGNETIC TAPE -- PROGRAM IN CARD IMAGE FORM.
LISTINGS.
FLOWCHARTS.

1440-RG-021 BASIC REPORT PROGRAM
GENERATOR
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-RG-021

THIS SYSTEM IS DESIGNED TO ENABLE A PROGRAM WRITTEN IN 1440 BASIC RPG LANGUAGE TO BE COMPILED ON THE 1440 SYSTEM. THE OUTPUT IS USED TO EXECUTE THE APPLICATION ON A 1440 SYSTEM. THE RPG PROGRAM HAS THE ABILITY TO PUNCH OBJECT DECKS ON A 1444 CARD PUNCH AS WELL AS TO GENERATE OBJECT PUNCH ROUTINES FOR IT. THE SPACE-AFTER-PRINT LOGIC HAS A DELAYED SPACE RATHER THAN AN IMMEDIATE SPACE INSTRUCTION. THIS YIELDS A FASTER RUNNING OBJECT PROGRAM. THE SOURCE PROGRAM IN THE 1440 BASIC RPG LANGUAGE, PUNCHED IN CARDS, IS COMPILED ON A 1440 SYSTEM. THE OUTPUT OBJECT PROGRAM IS IN THE 1440 MACHINE LANGUAGE. THE OBJECT PROGRAM MAY BE IN THE FORM OF CONDENSED CARDS, OR IF /LOAD/GO IS DESIRED, IT MAY BE DIRECTLY EXECUTED. THE PROGRAM LISTING, DOCUMENTATION, AND DIRECTLY EXECUTED. THE PROGRAM LISTING, DOCUMENTATION, AND DIAGNOSTIC OUTPUT IS RECORDED ON THE PRINTER. MINIMUM MACHINE REQUIREMENTS--THE MINIMUM 1440 SYSTEM REQUIREMENTS FOR GENERATION AND EXECUTION ARE THE FOLLOWING-- 4K 1440 SYSTEM WITH...ONE 1442 CARD READ PUNCH...1443 PRINTER.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- WRITE-UP... SPECIFICATIONS AND PROCEDURES...
CARD DECKS -- PRINTER DECKS... SAMPLE PROBLEM SOURCE WITH DATA DECKS -- ORDER GROUP A OR B --
GROUP A -- PROGRAM FOR 4K SYSTEMS
GROUP B -- PROGRAM FOR 8, 12 OR 16K SYSTEMS

OPTIONAL PROGRAM MATERIAL -- FLOWCHARTS AND LISTINGS.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-RG-024 REPORT PROGRAM GENERATOR 2K
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-RG-024

THE 1440 REPORT PROGRAM GENERATOR 2K WILL ENABLE A PROGRAM WRITTEN IN 1440 RPG 2K LANGUAGE TO BE COMPILED ON THE SYSTEM. THE OUTPUT IS USED TO EXECUTE THE APPLICATION ON A 1440 SYSTEM. THE SOURCE PROGRAM IN THE 1440 RPG 2K LANGUAGE, PUNCHED IN CARDS, IS COMPILED ON A 1440 SYSTEM. THE OUTPUT OBJECT PROGRAM IS ON CONDENSED CARDS IN 1440 MACHINE LANGUAGE, OR IF ,/LOAD AND GO,, IS DESIRED, THE OBJECT PROGRAM MAY BE DIRECTLY EXECUTED. THE PROGRAM LISTING, DOCUMENTATION, AND DIAGNOSTIC OUTPUT ARE RECORDED BY THE PRINTER. MINIMUM SYSTEM REQUIREMENTS A 2K 1440 SYSTEM WITH... 1443 PRINTER... ONE 1442 CARD READ PUNCH, MODEL 1 OR 2 OR ONE 1442 CARD READER, MODEL 4, AND ONE 1444 CARD PUNCH.

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THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES.
MACHINE READABLE - PROGRAM DECK... SAMPLE PROBLEM SOURCE
DECK... SAMPLE PROBLEM DATA DECK.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS... PROGRAM LISTINGS...
PROGRAM DECK CAN BE OBTAINED ON ONE REEL OF MAGNETIC TAPE IN CARD
IMAGE FORM.

1440-RG-720 1440/1311 STERLING REPORT
PROGRAM DEVELOPMENT
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-RG-720

PURPOSE- A DEVELOPMENT FROM 1440/1311 REPORT PROGRAM GENERATOR THAT HAS THE ADDED FACILITY OF PROCESSING STERLING FIELDS.
USE- AS WITH 1440/1311 RPG, THE OBJECT PROGRAM IS EITHER THE MACHINE LANGUAGE EQUIVALENT PROGRAM OR THE 1440/1311 AUTOCODER EQUIVALENT PROGRAM. EXTRA DIAGNOSTIC MESSAGES ARE PROVIDED APPROPRIATE TO THE STERLING PROCESSING. WHEN STERLING FIELDS ARE NOT SPECIFIED, STERLING RPG PERFORMS THE SAME FUNCTIONS AS 1440/1311 RPG.
MINIMUM SYSTEM REQUIREMENTS- A 4K 1440 SYSTEM WITH... 1442 CARD READ PUNCH... 1443 PRINTER... ONE 1311 DISK STORAGE DRIVE, MDL 1. STERLING PROCESSING IS IMPROVED BY THE PRESENCE OF MULTIPLY-DIVIDE AND THE INDEXING AND STORE ADDRESS REGISTER FEATURES ON THE OBJECT MACHINE.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... STERLING RPG
SPECIFICATIONS AND OPERATING PROCEDURES... BASIC RPG
SPECIFICATIONS MANUAL... BASIC RPG OPERATING PROCEDURES.
CARD DECKS-- SYSTEM CARD DECK... SAMPLE PROBLEM AND DATA
CARDS.

OPTIONAL PROGRAM MATERIAL-- SYSTEMS FLOW CHARTS AND LISTINGS.

1440-RG-721 1440 STERLING BASIC REPORT
PROGRAM GENERATOR
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-RG-721

PURPOSE- A DEVELOPMENT FROM 1440 BASIC RPG THAT HAS THE ADDED FACILITY OF PROCESSING STERLING DATA FIELDS.
FEATURES- THE HANDLING OF STERLING IS ACCOMPLISHED BY THE GENERATION OF CODE TO CONVERT FROM STERLING TO PENCE ON INPUT AND TO RECONVERT FROM PENCE TO STERLING ON OUTPUT. CONSIDERABLE FLEXIBILITY IS ALLOWED IN LENGTHS OF STERLING FIELDS AND THEIR FORMATS. COLUMN 75 IS USED TO INDICATE STERLING ON DATA AND FORMAT SPECIFICATIONS. THEREFORE, EDIT WORDS AND CONSTANTS HAVE ONE LESS CHARACTER AVAILABLE THAN WITH 1440 BASIC RPG.
USE- AS WITH 1440 BASIC RPG, AN OBJECT PROGRAM MAY BE PUNCHED IN CONDENSED FORMAT OR THE ,LOAD AND GO, OPTION MAY BE USED. EXTRA INFORMATION APPROPRIATE TO STERLING IS INCLUDED AS PART OF THE PRINT-OUT. WHEN STERLING FIELDS ARE NOT SPECIFIED, STERLING BASIC RPG PERFORMS THE SAME MAIN FUNCTION AS 1440 BASIC RPG WITH THE FOLLOWING RESTRICTIONS: /A/ MONTHLY CONVERSION FROM SINGLE DIGIT INPUT IS NOT AVAILABLE. /B/ NO PRINTING OF SEQUENCE ERROR CHECKS IN THE EDIT LISTING TAKES PLACE.
MINIMUM SYSTEM REQUIREMENTS- A 4K 1440 SYSTEM WITH... 1442 CARD READ PUNCH... 1443 PRINTER.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS MANUAL...
OPERATING PROCEDURES... BASIC REPORT PROGRAM GENERATOR
SPECIFICATIONS AND OPERATING PROCEDURES.
CARD DECKS-- ONE OF THE FOLLOWING GROUPS MUST BE SPECIFIED.
GROUP A - 4K SYSTEM CARD DECK... SAMPLE PROBLEM
/SPECIFICATIONS CARDS AND DATA/.
GROUP B - 8, 12, 16K SYSTEM CARD DECK...
SAMPLE PROBLEM /SPECIFICATIONS CARDS AND DATA/.

OPTIONAL PROGRAM MATERIAL-- SYSTEMS FLOW CHARTS AND LISTINGS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1440-SM-030 SORT 5
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SM-030

SORT 5 IS A GENERATIVE SORT PROGRAM DESIGNED FOR GENERATION AND USE ON AN IBM 1440 WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE, AND A MINIMUM OF 4000 POSITIONS OF CORE STORAGE. THE PROGRAM NOW HAS THE ABILITY TO USE 7335 MAGNETIC TAPE FOR INPUT/OUTPUT FILES AND THE OPTION TO RELOCATE PHASE FOUR OUTPUT TO THE BEGINNING OF THE WORK AREA. THE PROGRAM REQUIRES THE USE OF 1401/1440/1460 AUTOCODER /ON DISK/ FOR GENERATION OF A SORT OBJECT PROGRAM. IT IS A GENERATIVE SORT PROGRAM-ALSO NEEDS IC-010 FEATURES-SORT 5 OBJECT PROGRAM WILL SORT FIXED LENGTH, BLOCKED OR UNBLOCKED, RECORDS IN MOVE MODE INTO EITHER ASCENDING OR DESCENDING SEQUENCE. SORTING CAN BE CONTROLLED BY AS MANY AS TEN CONTROL DATA FIELDS OF TOTAL LENGTH UP TO A MAXIMUM OF 189 CHARACTERS. SORT 5 CAN GENERATE AN OBJECT PROGRAM THROUGH USE OF THE AUTOCODER MACRO-GENERATOR AND PARAMETER CARDS. IT IS FURTHER CLASSIFIED AS A GENERALIZED PROGRAM BECAUSE IT CAN MODIFY ITSELF AT OBJECT RUN TIME ACCORDING TO INFORMATION PUNCHED IN CONTROL CARDS. MINIMUM MACHINE REQUIREMENTS- FOR GENERATION AND OBJECT TIME- 4K 1440 SYSTEM...ONE 1311 DISK STORAGE DRIVE...1442 CARD READ PUNCH...1443 PRINTER. THE OBJECT PROGRAM CAN USE, IF AVAILABLE, UP TO 5 DISK STORAGE DRIVES AND 8K, 12K, OR 16K CCRS STORAGE CAPACITY.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - WRITE-UP... SPECS. AND OPERATING
PROCEDURES... LIBRARY DECK LISTING... PREPHASE PROGRAM
LISTING.
CARD DECKS - LIBRARY ROUTINES FROM WHICH OBJECT PROGRAMS MAY
BE GENERATED... PREPHASE DECK.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1440-SM-031 MERGE 5
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SM-031

CONTINUED FROM PRIOR COLUMN--

IBM 1440 MERGE 5, #1440-SM-031, IS A GENERATIVE PROGRAM FOR AN IBM 1440/1311 SYSTEM. WITH 1440/1311 AUTOCODER AND IC05, MERGE 5 WILL GENERATE SPECIFIC OBJECT PROGRAMS THAT ARE FITTED TO THE USERS PARTICULAR MERGING APPLICATIONS. THE OBJECT PROGRAMS GENERATED BY MERGE 5 ARE GENERALIZED IN THAT THEY CAN BE MODIFIED ACCORDING TO INFORMATION SUPPLIED BY THE USER IN CONTROL CARDS. WITH OBJECT PROGRAMS THE USER CAN MERGE PRE-SORTED, FIXED LENGTH, BLOCKED OR UNBLOCKED, DISK RECORDS IN THE MOVE MODE INTO EITHER ASCENDING OR DESCENDING SEQUENCE. A ONE-, TWO-, THREE-, OR FOUR-WAY MERGE CAN BE PERFORMED. IF SPECIFIED BY THE USER AT GENERATION TIME, OPTIONS SUCH AS LABEL CHECKING, ADDITIONS FROM CARDS, SEQUENCE CHECK AND HASH TOTAL, DELETIONS OR SELECTIONS BY CLASS CAN BE INCORPORATED INTO THE OBJECT PROGRAM.
MINIMUM SYSTEM REQUIREMENTS-
OBJECT PROGRAM GENERATION- SAME AS FOR 1440/1311 AUTOCODER.
OBJECT PROGRAM EXECUTION- A 4K 1440 SYSTEM WITH SUFFICIENT CORE STORAGE TO UTILIZE THE OBJECT PROGRAM OPTIONS... ONE 1442 CARD READ PUNCH... AND, DEPENDING UPON THE OBJECT PROGRAM REQUIREMENTS, A 1443 PRINTER OR 1447 CONSOLE MDL 2, AND ONE TO FIVE 1311 DISK STORAGE DRIVES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... SPECIFICATIONS... OPERATING
PROCEDURES... FLOW CHARTS... LIBRARY LISTING... ASSEMBLY
LISTING.
CARD DECKS - LIBRARY PROGRAM DECK... PREPHASE DECK.

1440-SM-032 SORT 52
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SM-032

THE IBM 1440 SORT 52, /1440-SM-032/ IS A GENERALIZED SORT PROGRAM DESIGNED FOR USE ON AN IBM 1440 EQUIPPED WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE AND A MINIMUM OF 8,000 POSITIONS OF CORE STORAGE. THIS PROGRAM SORTS FIXED LENGTH RECORDS IN THE MOVE MODE. THE MAXIMUM RECORD LENGTH THAT MAY BE SORTED VARIES FROM 1,200 CHARACTERS FOR AN 8K SYSTEM UP TO 3,000 CHARACTERS FOR A 16K SYSTEM. THE SORTING CAN BE ACCOMPLISHED IN EITHER ASCENDING OR DESCENDING SEQUENCE BASED UPON UP TO 10 CONTROL DATA FIELDS AND 189 CHARACTERS OF CONTROL DATA CONTAINED IN THESE FIELDS. THE MINIMUM MACHINE REQUIREMENTS FOR THE USE OF SORT 52 ARE- 8K 1440, ONE 1311 DISK STORAGE DRIVE, 1443 PRINTER, 1442 CARD READ PUNCH. THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OBJECT PROGRAM LISTING...
SPECIFICATIONS MANUAL... OPERATING PROCEDURES.
CARD DECKS - OBJECT PROGRAM DECK. /THIS DECK CAN BE
OBTAINED ON ONE REEL OF MAGNETIC TAPE/.

1440-SM-033 SORT 53
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SM-033

THE IBM 1440 SORT 53, /1440-SM-033/ IS A GENERALIZED SORT PROGRAM DESIGNED FOR USE ON AN IBM 1440 EQUIPPED WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE, A MINIMUM OF 4,000 POSITIONS OF CORE STORAGE, AND THE DIRECT SEEK FEATURE. THIS PROGRAM SORTS FIXED LENGTH RECORDS IN THE MOVE MODE. THE MAXIMUM RECORD LENGTH THAT MAY BE SORTED IS 400 CHARACTERS. THE SORTING CAN BE ACCOMPLISHED IN EITHER ASCENDING OR DESCENDING SEQUENCE BASED UPON UP TO 10 CONTROL DATA FIELDS AND 189 CHARACTERS OF CONTROL DATA CONTAINED IN THESE FIELDS. THE MINIMUM MACHINE REQUIREMENTS FOR THE USE OF SORT 53 ARE- 4K 1440, ONE 1311 DISK STORAGE DRIVE, 1443 PRINTER, 1442 CARD READ PUNCH, AND THE DIRECT SEEK FEATURE. THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OBJECT PROGRAM LISTING...
SPECIFICATIONS MANUAL... OPERATING PROCEDURES.
CARD DECKS - OBJECT PROGRAM DECK. /THIS DECK CAN BE OBTAINED
ON ONE REEL OF MAGNETIC TAPE/.

1440-SM-034 SORT 54
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SM-034

THIS PROGRAM SORTS FIXED LENGTH RECORDS IN THE MOVE MODE. THE MAXIMUM LENGTH RECORD THAT MAY BE SORTED VARIES FROM 1,200 CHARACTERS FOR AN 8K SYSTEM UP TO 3,000 CHARACTERS FOR A 16K SYSTEM. THE SORTING CAN BE ACCOMPLISHED IN EITHER ASCENDING OR DESCENDING SEQUENCE BASED UPON UP TO 10 CONTROL DATA FIELDS AND 189 CHARACTERS OF CONTROL DATA CONTAINED IN THESE FIELDS. THE MINIMUM MACHINE REQUIREMENTS FOR USE OF SORT 54 ARE- 8K IBM 1440 EQUIPPED WITH ONE IBM 1311 DISK STORAGE DRIVE, AN IBM 1443 PRINTER, AN IBM 1442 CARD READ PUNCH, AND THE DIRECT SEEK FEATURE. THIS PROGRAM HAS BEEN GENERATED FROM THE 1440 SORT 5 LIBRARY, PROGRAM #1440-SM-030, USING THE FOLLOWING PARAMETER CARDS.
C L I
O P
I N P U T M E D I A O P E R A N D S
C A R D D I S K
O U T P U T M E D I A
S E L E C T D E L C L A S S , C O N T R O L D A T A
A D D I T I O N S
C H E C K S
O S K L A B O U T
S Y S T E M S P E C
C A R D
S E Q H A S H
A L L
D I R E C T

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAM LISTING...
SPECIFICATIONS MANUAL... OPERATING PROCEDURES.
CARD DECKS - OBJECT DECK.

1440-SM-035 SORT 51
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SM-035

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THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

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BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... APPLICATION DESCRIPTION
MANUAL... PROGRAM INFORMATION MANUAL... OPERATORS
MANUAL... DETAILED PROGRAM DOCUMENTATION.
MACHINE READABLE - OBJECT PROGRAM DECKS... SAMPLE PROBLEM.

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OPTIONAL PROGRAM MATERIAL - SOURCE CARD DECKS... ONE MAGNETIC TAPE CONTAINING ALL CARD DECKS.

090 1440-1070 PROCESS

1440-SV-090 1440-1070 PROCESS

1440-3V-090 1440-1070 PROCESS
COMMUNICATION MONITOR FOR 1401/40/60 AUTOCODER /ON DISK/

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SV-090

*M

THE IBM 1440-1070 PCM, CONSISTS OF A SET OF 1401/1440/1460 AUTOCORR /ON DISK/ LIBRARY ROUTINES, USED TO GENERATE PROCESS COMMUNICATION PROGRAMS ORIENTED TO MEET THE REQUIREMENTS OF THE 1070 PROCESS COMMUNICATION SYSTEM. THE ROUTINES ARE-

- MONITOR ROUTINE - CONTROLS THE HANDLING OF INTERRUPTS AND SCHEDULING OF LINE OPERATIONS ON A PRIORITY BASIS. IT
- TIME Slices THE CPU TIME ALONG THE CLOCK AND INTERVAL TIMERS.

IN ADDITION, IT INFORMS OF ERRORS DETECTED AND RECORDS THE STATUS OF THE LINES AND OF THE REMOTE SYSTEMS.

- MONITORING AND RECORDING SYSTEMS.
- CONVERSION SUBROUTINE - CALCULATES THE LOGS OF 1070 SYSTEMS AND CONVERTS ADC READINGS TO A STANDARD RANGE.
- DELTA/LIMIT CHECK SUBROUTINE - PERFORMS LIMIT AND/OR CR DELTA CHECKS ON CONVERTED ADC READINGS.
- CONVERSION SUBROUTINE - PERFORMS CURRENT CONTACT SENSE READINGS WITH A MASTER MASK OR WITH PREVIOUS READINGS.
- THERMOCOUPLE SUBROUTINE - GENERATES TEMPERATURE VALUES FROM CONVERTED THERMOCOUPLE READINGS.
- ERROR INDICATING ROUTINE - PERFORMS OUTPUT CHECKS ON TRANSMISSION LINES AND REMOTE SYSTEMS.

THE PROGRAM IS USED IN CONJUNCTION WITH 1401/1460/1460 AUTOCORDER /ON DISK/. THE PCM IS INSERTED IN THE AUTOCORDER LIBRARY DURING A LIBRARY RUN AND CALLED BY MACRO-INSTRUCTIONS. THE AUTOCORDER HAS TWO MODES OF OPERATION: 1. USED IN CONJUNCTION WITH THE 1460 IOCS OR 1401/1460 IOCS 2. USED IN CONJUNCTION WITH THE 1460 IOCS. THE FOLLOWING ARE THE FEATURES OF THE MINIMUM SYSTEM CONFIGURATIONS - ONLY THOSE FEATURES REQUIRED BY 1401/1460/1460 AUTOCORDER /ON DISK/ ARE NEEDED WHEN ASSEMBLING A PROGRAM. THE FOLLOWING ARE THE 1460 IOCS FEATURES REQUIRED FOR AN OBJECT PROGRAM USING THE PCM. THE FOLLOWING ARE REQUIRED FOR AN 8K 1460 OR 1460 SYSTEM WITH...1447 CONSOLE, MODEL 2...INDEXING AND STORE ADDRESS REGISTER...MULTIPLY-DIVIDE /FOR CONVERSION OF STORE ADDRESS SUBROUTINES/...ONE 1626 TRANSMISSION CONTROL UNIT...INTERPRETER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...SPECIFICATION MANUAL...
OPERATING PROCEDURES MANUAL.
MACHINE READABLE - LIBRARY ROUTINES CARD DECK.

OPTIONAL PROGRAM MATERIAL - PROGRAM LISTINGS...PROGRAM
FLOWCHARTS.

NOTE- PROGRAM CARD MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE PROGRAMS ARE ORDERED AT THE SAME TIME.
OPTICAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED.
THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

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091 1440-1070 PROCESS

1440-SV-091 1440-1070 PROCESS
COMMUNICATION MONITOR FOR 1440-1070 PROCESS

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SV-091

THE IBM 1440-1070 PCM, CONSISTS OF A SET OF 1440 BASIC AUTCCCDR ROUTINES, USED TO GENERATE PROCESS COMMUNICATION PROGRAMS ORIENTED TO MEET THE REQUIREMENTS OF THE 1070 PROCESS COMMUNICATION SYSTEM. THE ROUTINES ARE-

- COMMUNICATION SYSTEM. THE ROUTINES ARE-
 - MONITOR ROUTINE - CONTROLS THE HANDLING OF INTERRUPTS AND SCHEDULING OF LINE OPERATIONS ON A PRIORITY BASIS. IT SIMULATES A REAL-TIME CLOCK AND UP TO NINE INTERVAL TIMERS. IN ADDITION, IT IS CAPABLE OF DETECTING AND RECORDS THE STATUS OF THE LINES AND OF THE REMOTE SYSTEMS.
 - CONVERSION SUBROUTINE - CALIBRATES THE ADC OF 1070 SYSTEMS AND CONVERTS ADC READINGS TO A STANDARD RANGE.
 - DELTA/LIMIT CHECK SUBROUTINE - PERFORMS LIMIT AND/OR DELTA CHECKS ON CONVERTED ADC READINGS.
 - CONTACT SENSE SUBROUTINE - COMPARES CURRENT CONTACT SENSE READINGS WITH A MASTER MASK OR WITH PREVIOUS READINGS.
 - THERMOCOUPLE SUBROUTINE - GENERATES TEMPERATURE VALUES FROM CONTACT THERMOCOUPLE READINGS.
 - ERROR LOCATING ROUTINE - PERFORMS OUTPUT CHECKS ON TRANSMISSION LINES AND REMOTE SYSTEMS.

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TRANSMISSION LINES AND REMOTE SYSTEMS.
THERMOCOUPLES, THERMISTORS, AND CONTACTS. THE 1440 BASIC AUTOCODER.
FOR A PRE-ASSEMBLY RUN IS REQUIRED TO TAILOR THE PCM TO THE USER'S
INSTALLATION AND REQUIREMENTS BEFORE ASSEMBLY WITH THE
USER'S PROGRAM.
MINIMUM SYSTEM CONFIGURATIONS - ONLY THOSE FEATURES REQUIRED BY
THE BASIC AUTOCODER ARE NEEDED WHEN ASSEMBLING A PROGRAM
USING THE 1440-1070 PCM. FOR A PRE-ASSEMBLY RUN AND FOR
THE EXECUTION OF AN OBJECT PROGRAM USING THE PCM, THE FOLLOWING
IS REQUIRED - AN 8K 1440 SYSTEM WITH...1447 CONSOLE, MODEL 2...
INDEXING AND STORE ADDRESS REGISTER...MULTIPLY-DIVIDE /FIR
...THERMOCOUPLES, THERMISTORS, AND CONTACTS...
TRANSMISSION CONTROL UNIT...INTERFACES...TIME EMULATOR

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...SPECIFICATIONS MANUAL...
OPERATING PROCEDURE MANUAL.
MACHINE READABLE - 1440 BASIC AUTOCODE ROUTINES AND A
PRE-ASSEMBLY OBJECT PROGRAM DECK.

OPTIMAL PROGRAM MATERIAL - PROGRAM LISTINGS...PROGRAM FLOWCHARTS.
NOTE- PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE PROGRAMS ARE ORDERED AT THE SAME TIME.
OPTIMAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR ITEM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED.
THE TAPE PROVIDER MUST BE 2400 FEET IN LENGTH.

IBM Programs

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1440-UH-01X HOSPITAL PATIENT BILLING
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-UH-01X

THE APPLICATION PROGRAM FOR PATIENT BILLING CONSISTS OF FOURTEEN IBM 1440 PROCESSING RUNS TO PROVIDE FOR THE ACCOUNTING AND CONTROL OF SERVICES RENDERED TO PATIENTS OF A HOSPITAL. PROCESSING IS DONE UNDER A MONITOR WHICH ALLOWS FOR PROGRAM INTERRUPT TO SATISFY INTERIM REPORTS SUCH AS DISCHARGE/DEMAND BILLS OR PATIENT BALANCES. FEATURES--
PROCESSING PROGRAMS ARE KEPT IN DISK STORAGE AND ARE CALLED IN, AS NEEDED, BY A UNIQUE CALL CARD.
PROCESSED DATA IS PUNCHED INTO INPUT CARDS, THUS PRESERVING BASIC AND RESIDENT DATA.
RUNNING PROGRAMS CAN BE INTERRUPTED FROM THE CONSOLE TO OBTAIN THE STATUS OF AN ACCOUNT.

USE-AT THE TIME A PATIENT IS ADMITTED, A MASTER RECORD IS CREATED AND ENTERED TO DISK STORAGE. THROUGH-OUT THE PATIENTS STAY IN THE HOSPITAL, ALL CHARGES, CREDITS, ETC. ARE ACCRUED TO THE MASTER FILE. INTERIM REPORTS SUCH AS CENSUS AND IN-HOUSE BILLS ARE CREATED. UPON DISCHARGE BILLS CAN BE ISSUED. FINAL AND INSURANCE BILLS ARE PREPARED FOLLOWING THE CUSTOMARY THREE-DAY ALLOWANCE FOR LATE CHARGES TO BE RECEIVED AT THE DATA PROCESSING CENTER. REVENUE DISTRIBUTION IS AVAILABLE FROM DATA RETAINED IN DISK STORAGE. MINIMUM MACHINE REQUIREMENTS--
4K 1441 PROCESSING UNIT, MODEL A3 WITH-- INDEXING AND STORE ADDRESS REGISTER FEATURE
1443 PRINTER ATTACHMENT FEATURE
DISK STORAGE CONTROL FEATURE
CONSOLE /1447 MODEL 2/ ATTACHMENT FEATURE
1442 CARD READ PUNCH
1443 PRINTER, WITH PRINTER CONTROL FEATURE
1447 CONSOLE, MODEL 2, WITH SENSE SWITCHES
1311 DISK STORAGE DRIVE, MODEL 1

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... PROGRAM MANUAL... LISTINGS.
CARD DECKS -- SOURCE PROGRAM DECKS... ROUTINE DECKS FOR REASSEMBLIES.

1440-UH-02X ACCOUNTS RECEIVABLE FOR
HOSPITALS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-UH-02X

THE PROGRAM ACCOMPLISHES ALL FUNCTIONS NORMALLY REQUIRED BY HOSPITALS TO MAINTAIN WELL CONTROLLED ACCOUNTS RECEIVABLE OPERATION. IT INCLUDES ESTABLISHMENT OF NEW ACCOUNTS, CASH POSTING OF RECEIPTS, AGED TRIAL BALANCE REPORTS, INQUIRY INTO ACCOUNT STATUS, STATEMENT WRITING AND FILE MAINTENANCE TO CLOSE ACCOUNTS. PROCESSING PROGRAMS ARE KEPT IN DISK STORAGE AND ARE CALLED IN, AS NEEDED, BY A CALL CARD. THEY CAN BE INTERRUPTED FOR INQUIRY AND EXCEPTION REPORTS. INFORMATION NECESSARY TO CONSTRUCT THE ACCOUNTS RECEIVABLE RECORD IN DISK STORAGE IS AUTOMATICALLY CREATED BY THE PATIENT BILLING PROCEDURES /1440-UH-01X/ WHEN A PATIENT IS DISCHARGED, OR BY KEY-PUNCHED DATA OBTAINED FROM OUT-PATIENT ACCOUNTING PROCEDURES. CASH RECEIPTS ARE POSTED AS RECEIVED. STATEMENTS ARE WRITTEN AT THE DISCRETION OF THE USER. THIS IS ACCOMPLISHED BY SPECIFYING TO THE SYSTEM WHAT PORTION OF THE ACCOUNTS RECEIVABLE FILE STATEMENTS ARE TO BE WRITTEN FROM. AGED TRIAL BALANCE CAN BE WRITTEN AT ANY DESIRED INTERVAL TO PROVIDE UNIFORM LOAD DISTRIBUTION. ACCOUNTS MAY BE SEQUENCED TO PROVIDE SELECTIVE AGING ANALYSIS. PROGRAM REQUIREMENTS--THIS PROGRAM RUNS UNDER THE MONITOR CONTAINED IN THE IBM 1440 HOSPITAL PATIENT BILLING /NG. 1440-UH-01X/, APPLICATION PROGRAM. MINIMUM MACHINE REQUIREMENTS--4K 1441 PROCESSING UNIT, MODEL A3, WITH-- INDEXING AND STORE ADDRESS REGISTER FEATURE
1443 PRINTER ATTACHMENT FEATURE
DISK STORAGE CONTROL FEATURE
CONSOLE /1447 MODEL 2/ ATTACHMENT FEATURE
1442 CARD READ PUNCH
1447 CONSOLE, MODEL 2, WITH SENSE SWITCHES
1311 DISK STORAGE DRIVE, MODEL 1

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... PROGRAM MANUAL... LISTINGS.
CARD DECK -- SOURCE CARD DECK.

1440-UH-03X HOSPITAL ACCOUNTS PAYABLE
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-UH-03X

HOSPITAL ACCOUNTS PAYABLE CONSISTS OF NINE 1440 PROCESSING PROGRAMS TO PROVIDE FOR ACCOUNTING AND CONTROL OF THE ACCOUNTS PAYABLE OF A HOSPITAL. A 1311 DISK STORAGE DRIVE WITH A 1316 DISK PACK IS THE MEDIUM USED FOR STORAGE OF ALL ACCOUNT PAYABLE AND DISTRIBUTION RECORDS AND IS ORGANIZED TO RECORD AN UNLIMITED NUMBER OF ENTRIES FOR EACH PAYABLE ACCOUNT. WHEN A PAYABLE INVOICE IS RECEIVED, IT IS POSTED TO THE MASTER PAYABLE FILE UNTIL MANAGEMENT'S DECISION TO PAY THE INVOICE. AT THIS TIME, A CHECK RUN IS MADE AGAINST THE MASTER PAYABLE FILE AND THE INVOICE IS FLAGGED AS PAID. AT A LATER TIME, THE PAID INVOICE RECORD IS REMOVED FROM THE MASTER PAYABLE FILE, AND THE AMOUNT OF DISCOUNT TAKEN ON THE INVOICE IS PUNCHED INTO THE INITIAL INVOICE CARD WHICH HAS BEEN KEY-PUNCHED FROM THE ORIGINAL INVOICE. INCLUDED IN HOSPITAL ACCOUNTS PAYABLE ARE THE FOLLOWING PROGRAMS-- CREATE NEW ACCOUNTS PAYABLE RECORDS, CREATE NEW ACCOUNT RECORDS, CREATE VENDOR INDEX TABLE, EDIT INVOICE AND DISTRIBUTION RECORDS, POST VENDOR INVOICES, PRINT CASH REQUIREMENT REPORT, PRINT TRIAL BALANCE, PRINT CHECK AND ADMITTANCE ADVICE, AND CLOSE VENDOR INVOICES.

PROGRAM REQUIREMENTS-- THESE PROGRAMS RUN UNDER THE MONITOR CONTAINED IN THE IBM 1440 HOSPITAL PATIENT BILLING /1440-UH-01X/ APPLICATION PROGRAM.
MINIMUM MACHINE REQUIREMENTS-- A 4K 1441 PROCESSING UNIT, MODEL A3, WITH-- INDEXING AND STORE ADDRESS REGISTER, PRINTER ATTACHMENT, DISK STORAGE CONTROL, CONSOLE ATTACHMENT /1447, MODEL 2/... 1442 CARD READ PUNCH... 1443 PRINTER, WITH PRINTER CONTROL... 1447 CONSOLE, MODEL 1, WITH SENSE SWITCHES AND A 1447, MODEL 2... 1311 DISK STORAGE DRIVE, MODEL 1.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... PROGRAM MANUAL INCLUDING LISTINGS.
CARD DECKS -- SOURCE PROGRAM DECKS.

1440-UH-04X HOSPITAL INVENTORY PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-UH-04X

A PERPETUAL INVENTORY PROVIDES FOR A CONTINUOUS RECORD OF SUPPLY RECEIPTS, ISSUES, AND STOCK ON HAND. ITEMS REQUIRING MANAGEMENT ATTENTION ARE LISTED ON EXCEPTION REPORTS. ON A PERIODIC BASIS, TRANSACTIONS POSTED TO THE INVENTORY RECORDS ARE TRANSFERRED TO GENERAL LEDGER ACCOUNTS WHICH REFLECT THE AGGREGATE OF RECEIPTS AND ISSUES POSTED TO INDIVIDUAL INVENTORY LEDGER RECORDS. A 1311 DISK STORAGE DRIVE WITH A 1316 DISK PACK IS USED FOR STORAGE OF ALL INVENTORY ITEM AND OPEN PURCHASE ORDER RECORDS. THE FILE IS ORGANIZED AND CONTROLLED SEQUENTIALLY, AND, BECAUSE DISK PACKS ARE INTERCHANGEABLE, THERE IS VIRTUALLY NO LIMIT TO THE NUMBER OF ITEMS IT CAN HANDLE.

FEATURES--
- COMPREHENSIVE EXTERNAL AND INTERNAL CONTROL WITH ALGOT TRAIL.
- SEQUENTIAL INVENTORY FILE ORGANIZATION WITH 5280 ITEMS IN 40 CYLINDERS.
- PROGRAMS ON DISK UNDER THE CONTROL OF A MONITOR.
- AUTOMATIC FLAGGING OF ITEMS BELOW MINIMUM INVENTORY LEVELS OR CUT OF STOCK.
- MEANINGFUL REPORTS FOR STOCK STATUS, PURCHASE ORDER, TRANSACTION REGISTER, GENERAL STORES INVOICE, ITEM DISTRIBUTION, AND CONTROL UNITS.
- INQUIRY TO INVENTORY ITEM AND PURCHASE ORDER RECORDS.

PROGRAM REQUIREMENTS--
THESE PROGRAMS RUN UNDER THE MONITOR CONTAINED IN THE IBM 1440 HOSPITAL PATIENT BILLING /1440-UH-01X/ APPLICATION PROGRAMS.
MINIMUM SYSTEM REQUIREMENTS--
A 4K 1441 PROCESSING UNIT MODEL A3 WITH-- INDEXING AND STORE ADDRESS REGISTER, 1443 PRINTER ATTACHMENT, DISK STORAGE CONTROL, 1447 CONSOLE ATTACHMENT MODEL 2... 1442 CARD READ PUNCH... 1443 PRINTER WITH PRINTER CONTROL... 1447 CONSOLE MODEL 2 WITH SENSE SWITCHES... 1311 DISK STORAGE DRIVE MODEL 1.

BASIC PROGRAM MATERIAL--
DOCUMENTATION -- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.
CARD DECKS -- SOURCE PROGRAM DECKS.

1440-UH-05X HOSPITAL GENERAL LEDGER
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-UH-05X

THE 1440 HOSPITAL GENERAL LEDGER PROGRAM /1440-UH-05X/ PACKAGE REDUCES THE TIME AND EFFORT REQUIRED BY HOSPITALS TO PROGRAM AND INSTALL A GENERAL LEDGER APPLICATION.
SEVEN PROGRAMS ARE PROVIDED WHICH RESULT IN THREE MAJOR REPORTS AND A UNIFORM CHART OF ACCOUNTS. THE PROGRAMS ARE-- LOAD MASTER LEDGER ACCOUNTS, ADD AND DELETE MASTER RECORDS, GENERAL LEDGER POSTING, TRIAL BALANCE RUN, INCOME AND EXPENSE REPORT, GENERAL LEDGER INQUIRY AND COST ANALYSIS PROGRAM. PROCESSING PROGRAMS ARE RETAINED IN DISK STORAGE AND CALLED IN, AS NEEDED, BY UNIQUE CALL CARDS. GENERAL LEDGER ACCOUNT MASTERS ARE KEPT AND MAINTAINED IN DISK STORAGE WITH THE PROVISION, THROUGH THE INQUIRY PROGRAM, TO BE DISPLAYED ON THE CONSOLE OR TYPEWRITER.
PROGRAM REQUIREMENTS-- THE PROGRAMS IN THIS PACKAGE RUN UNDER THE MONITOR CONTAINED IN THE IBM 1440 HOSPITAL PATIENT BILLING APPLICATION PROGRAM /1440-UH-01X/.
MINIMUM SYSTEM REQUIREMENTS-- 1441 PROCESSING UNIT MDL A3 WITH INDEXING AND STORE ADDRESS REGISTER, 1443 PRINTER ATTACHMENT, DISK STORAGE CONTROL, CONSOLE /1447 MDL 2/ ATTACHMENT... 1442 CARD READ PUNCH... 1443 PRINTER WITH PRINTER CONTROL... 1447 CONSOLE MDL 2 WITH SENSE SWITCHES... 1311 DISK STORAGE DRIVE MDL 1.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.
CARD DECKS -- OBJECT DECKS... SAMPLE PROBLEM.

OPTIONAL PROGRAM MATERIAL -- SOURCE CARD DECKS.
ALL CARD DECKS MAY BE OBTAINED IN CARD IMAGE FORM ON ONE REEL OF MAGNETIC TAPE. THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-UH-06X HOSPITAL PAYROLL
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-UH-06X

HOSPITAL PAYROLL IS DESIGNED TO ACCOMPLISH BASIC PAYROLL FUNCTIONS OF A HOSPITAL. RECOGNIZING THAT THERE ARE SUBSTANTIAL VARIATIONS IN PAYROLL POLICIES AMONG HOSPITALS, THE SYSTEM CAN BE EASILY MODIFIED TO SPECIFIC REQUIREMENTS. TWO FILE DATA LOAD PROGRAMS-- EMPLOYEE LOAD PROGRAM AND DEPARTMENT LOAD PROGRAM-- ARE USED TO INITIALIZE THE PAYROLL DISK PACK AND TO SET UP TWO-SECTOR EMPLOYEE RECORDS FOR EACH EMPLOYEE. THREE PROGRAMS ARE INCLUDED WHICH PERFORM PAYROLL CALCULATIONS AND PRINTED PAYROLL REGISTER PROGRAM CALCULATES PAY FOR SALARIED EMPLOYEES, PAID 81-MONTHLY, AND HOURLY EMPLOYEES, PAID WEEKLY. THIS PROGRAM PRINTS THE PAYROLL REGISTER SHOWING THE NUMBER OF HOURS WORKED, GROSS PAY, EXTRA EARNINGS, FICA, FIT, TOTAL DEDUCTIONS, AND NET PAY. DEPARTMENTAL TOTALS ARE PRINTED AND PUNCHED AS DESIRED. THE CHECK AND STATEMENT PROGRAM PRINTS CHECKS AND STATEMENTS WHILE CALCULATING AND CHECKING CONTROL TOTALS HELD IN DISK STORAGE FROM THE PAYROLL REGISTER RUN. THE THIRD PROGRAM PRINTS A DEDUCTION REGISTER REFLECTING EMPLOYEE NAME AND NUMBER, CURRENT GROSS, CURRENT NET, AND ALL DEDUCTIONS TAKEN FOR THE PAYROLL PERIOD.

PROGRAM REQUIREMENTS-- THESE PROGRAMS RUN UNDER THE MONITOR CONTAINED IN THE IBM 1440 HOSPITAL PATIENT BILLING /1440-UH-01X/ APPLICATION PROGRAM.
MINIMUM MACHINE REQUIREMENTS-- A 4K 1441 PROCESSING UNIT, MODEL A3, WITH-- INDEXING AND STORE ADDRESS REGISTER, PRINTER ATTACHMENT, DISK STORAGE CONTROL, CONSOLE ATTACHMENT /1447, MODEL 2/... 1442 CARD READ PUNCH... 1443 PRINTER, WITH PRINTER CONTROL... 1447 CONSOLE, MODEL 1, WITH SENSE SWITCHES AND A 1447, MODEL 2... 1311 DISK STORAGE DRIVE, MODEL 1.

BASIC PROGRAM MATERIAL --
DOCUMENTATION -- PROGRAM WRITE-UP... PROGRAM MANUAL INCLUDING LISTINGS.
CARD DECKS -- SOURCE PROGRAM DECKS.
ONE MAGNETIC TAPE -- CONTAINS ALL CARD DECKS IN CARD IMAGE FORM. /THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

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1440-US-01X SECONDARY SCHOOL PROGRAMS
/STUDENT SCHEDULING/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-US-01X

STUDENT SCHEDULING CONSISTS OF FIVE PROGRAMS- COURSE REQUEST TALLY, CONFLICT MATRIX, SCHEDULING, SCHEDULE PRINTING, AND UTILITY. THE COURSE REQUEST TALLY AND CONFLICT MATRIX PROGRAMS ARE AN AID TO THE SCHOOL ADMINISTRATOR IN BUILDING HIS MASTER SCHEDULE. THE TALLY PROGRAM COUNTS THE STUDENT REQUESTS AND COMPUTES THE NUMBER OF SECTIONS BASED ON ONE FIXED FACTOR. ONLY ONE FACTOR IS USED FOR ALL COURSES. THE CONFLICT MATRIX PROGRAM DETERMINES THE NUMBER OF POTENTIAL CONFLICTS FOR A MAXIMUM OF 100 SINGLE AND DOUBLE SECTION COURSES. A MATRIX IS PRINTED SHOWING THIS INFORMATION. THE STUDENT SCHEDULING PROGRAM IS DIVIDED INTO TWO PHASES. PHASE 1 PROCESSES THE STUDENT REQUEST CARDS AGAINST THE MASTER SCHEDULE STORED IN THE DISK FILE TO DETERMINE CONFLICTS. STUDENT CONFLICTS ARE PRINTED SHOWING STUDENT INFORMATION, THE COURSE CAUSING THE CONFLICT AND ALL COURSES REQUESTED BY THE STUDENT. SCHEDULED INFORMATION FOR STUDENTS IS WRITTEN INTO THE DISK FILE. AT THIS POINT, DEPENDING ON THE NUMBER OF CONFLICTS, THE PROGRAM MAY GO TO PHASE 2 OR BE TERMINATED. PHASE 2 WRITES THE DETAIL COURSE INFORMATION FOR EACH SCHEDULED STUDENT INTO THE STUDENT MASTER RECORD AREA. IT SCHEDULES LUNCH FOR THE FOURTH OR FIFTH PERIOD AND STUDY HALLS. THE SCHEDULE PRINTING PROGRAM PRINTS THE STUDENT AND COURSE INFORMATION FROM THE DISK FILE ONTO THE SCHEDULE. IT WILL PRINT AND TOTAL COURSE FEES WHERE APPLICABLE. FEATURES
WILL HANDLE 799 COURSES, 4 SECTIONS PER PERIOD OR 3200 SECTIONS MAXIMUM. /EXPANDABLE WITH MORE DISK STORAGE/
USES EIGHT PERIODS A DAY AND SEVEN STUDENT REQUESTS
3000 STUDENTS PER DISK PACK
PRINTS SCHEDULES AND PUNCHES GRADE CARDS AT EIGHT TO TEN STUDENTS PER MINUTE--CAN SCHEDULE LUNCH AND STUDY HALLS
BALANCES THE CLASSES AND FILLS CLASSES TO SPECIFIED SEAT CAPACITY
PRINTS A COMPLETE CONFLICT MESSAGE TO PROVIDE ANALYSIS OF THE REASON FOR A STUDENT CONFLICT.
MINIMUM MACHINE REQUIREMENTS A 4K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS...1442 CARD READ PUNCH...1443 PRINTER WITH PRINT CONTROL...1447 CONSOLE WITH SENSE SWITCHES...1311 DISK STORAGE DRIVE.

BASIC PROGRAM MATERIAL-
DOCUMENTATION- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.
CARD DECKS- OBJECT PROGRAM DECKS... SAMPLE PROBLEM DECKS.

OPTIONAL PROGRAM MATERIAL-
SOURCE DECKS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-US-02X SECONDARY SCHOOL PROGRAMS
/GRADE REPORTING/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-US-02X

GRADE REPORTING CONSISTS OF FOUR PROGRAMS TO AID SCHOOL PERSONNEL IN PREPARING GRADE REPORTS AND IN COMPILATION OF STATISTICS FROM THE GRADES RECEIVED BY STUDENTS. GRADE CARDS ARE USED TO PREPARE THE GRADE REPORTS, UPDATE STUDENT GRADE RECORDS ON DISK PACK AND PRINT AN HONOR LIST. GRADE DISTRIBUTION REPORTS ARE PRINTED REFLECTING TOTALS OF LETTER GRADES GIVEN BY A TEACHER AS RECEIVED IN A COURSE. FAILURE LISTS INDICATING STUDENT AND COURSE ARE PRINTED USING THOSE GRADE CARDS WITH FAILING GRADES. FEATURES
WILL HANDLE UP TO SEVEN COURSES PER STUDENT
HONOR LIST IS AUTOMATICALLY AVAILABLE AFTER GRADE REPORT RUN
6600 STUDENTS PER DISK PACK
CAN PRINT PARENTS NAME AND ADDRESS ON THE GRADE REPORT
PRINTS GRADE REPORTS AT 10 TO 15 STUDENTS PER MINUTE
GRADE DISTRIBUTION SPEED AT 300 CARDS PER MINUTE
FAILURE LIST PRINTING AT UP TO 15C LINES PER MINUTE
MINIMUM MACHINE REQUIREMENTS A 4K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS...1442 CARD READ PUNCH...1443 PRINTER WITH PRINT CONTROL...1447 CONSOLE WITH SENSE SWITCHES...1311 DISK STORAGE DRIVE.

BASIC PROGRAM MATERIAL-
DOCUMENTATION- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.
CARD DECKS- OBJECT PROGRAM DECKS... SAMPLE PROBLEM DECKS.

OPTIONAL PROGRAM MATERIAL-
SOURCE DECKS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-US-03X SECONDARY SCHOOL PROGRAMS
/PAYROLL AND PERSONNEL/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-US-03X

PAYROLL AND PERSONNEL PROGRAMS ARE AN AID TO SCHOOL PERSONNEL IN PREPARING THE MONTHLY SALARIED PAYROLL, WRITING PAYROLL CHECKS, PRINTING DEDUCTION REGISTER AND CHECK RECONCILIATION. THE TEACHER CONTRACT PROGRAM PRINTS PERTINENT TEACHER DATA ON CONTRACT FORMS. THE TEACHER LIST PROGRAM PROVIDES SCHOOL PRINCIPALS WITH LIST OF TEACHERS IN THE SCHOOL. FEATURES
WILL HANDLE UP TO 16,000 PERSONNEL PAYROLL RECORDS PER DISK PACK
PRINT PAYROLL REGISTER AND DEDUCTION REGISTER AT SPEEDS OF 50 TO 60 EMPLOYEES PER MINUTE
PRINT PAYROLL CHECKS AT THE RATE OF 35 TO 40 PER MINUTE
PREPARE RECONCILIATION REPORT AT THE RATE OF APPROXIMATELY 300 CHECKS PER MINUTE
PREPARE TEACHER CONTRACTS AT THE RATE OF 30 TO 35 PER MINUTE
PREPARE TEACHER LISTS AT THE RATE OF 15C TEACHERS PER MINUTE
SENSE SWITCH CONTROL DETERMINES IF A PRE-PAYROLL OR PAYROLL REGISTER IS DESIRED
IF A PERSON RESIGNS, HIS FINDER CARD CAN BE HELD OUT OF THE PAYROLL RUNS TO DELETE HIM FROM THE PAYROLL. THE RECORD WILL REMAIN ON THE DISK FOR END OF YEAR REPORT WRITING AND CAN BE ACCESSED BY REPLACING THE FINDER CARD.
MINIMUM MACHINE REQUIREMENTS A 4K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS...1442 CARD READ PUNCH...1443 PRINTER WITH PRINT CONTROL...1447 CONSOLE WITH SENSE SWITCHES...1311 DISK STORAGE DRIVE.

CONTINUED FROM PRIOR COLUMN--

BASIC PROGRAM MATERIAL-
DOCUMENTATION- PROGRAM WRITE-UP... REFERENCE MANUAL INCLUDING PROGRAM LISTINGS.
CARD DECKS- OBJECT PROGRAM DECKS... SAMPLE PROBLEM DECKS.

OPTIONAL PROGRAM MATERIAL-
SOURCE DECKS.
OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-US-04X ATTENDANCE RECORDING FOR
SECONDARY SCHOOLS
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-US-04X

ATTENDANCE RECORDING CONSISTS OF AN ATTENDANCE REGISTER WRITING PROGRAM WHICH WILL AID SCHOOL PERSONNEL IN THE PREPARATION OF ATTENDANCE REGISTERS AND IN COMPILATION OF ATTENDANCE STATISTICS FOR STATE AND FEDERAL AGENCY REPORT REQUIREMENTS. THE ATTENDANCE RECORDING PROGRAM USES ATTENDANCE CARDS, WHICH ARE MARKED BY THE TEACHER OR ATTENDANCE CLERK AND THEN MARK SENSE PUNCHED, TO PREPARE AN ATTENDANCE REGISTER AND CALCULATE ATTENDANCE TOTALS AND PERCENTAGES. IT WILL ALSO UPDATE THE STUDENT MASTER RECORD ON THE DISK PACK. FEATURES
- WILL HANDLE UP TO A 25-DAY ATTENDANCE PERIOD.
- WILL HANDLE EITHER HALF DAY OR WHOLE DAY ATTENDANCE RECORDING.
- WILL UPDATE STUDENT MASTER RECORD ON THE DISK PACK WITH YEAR-TO-DATE ABSENCES AND TARDIES.
- CARDS ARE NOT MARKED WHEN STUDENTS ARE PRESENT.
- WILL HANDLE UP TO 95 ATTENDANCE CARDS PER MINUTE.
- AUTOMATICALLY CALCULATES- AGGREGATE ATTENDANCE, AGGREGATE MEMBERSHIP, AVERAGE DAILY ATTENDANCE, AVERAGE MEMBERSHIP, PERCENT OF ATTENDANCE. THESE CALCULATIONS ARE PERFORMED FOR MALE STUDENTS, FEMALE STUDENTS, AND OVERALL STUDENT POPULATION.
- CALCULATES ATTENDANCE FIGURES FOR EACH SCHOOL AND FOR THE ENTIRE SCHOOL DISTRICT.

MINIMUM MACHINE REQUIREMENTS- A 4K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS... 1442 CARD READ PUNCH... 1443 PRINTER WITH PRINT CONTROL... 1447 CONSOLE WITH SENSE SWITCHES... 1311 DISK STORAGE DRIVE.

THE NUMBER OF TAPES INDICATED MUST BE PROVIDED FOR EACH ITEM THAT IS ORDERED. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL... PROGRAM LISTINGS.
CARD DECKS - SAMPLE PROBLEM DECK... PROGRAM DECKS.

OPTIONAL PROGRAM MATERIAL -
ONE MAGNETIC TAPE - CONTAINS PROGRAM DECKS IN CARD IMAGE FORM.

1440-UT-040 DISK FILE ORGANIZATION
ROUTINES
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-UT-040

THESE ROUTINES WILL LOAD AND MAINTAIN 1301 OR 1311 DISK STORAGE FILES ON A 1440 SYSTEM. THE NEW VERSION INCORPORATES THE ADDITIONAL FEATURES OF MAGNETIC TAPE INPUT/OUTPUT, 1301 DISK STORAGE AND 1444 CARD PUNCH OUTPUT CAPABILITIES. THERE ARE TWO COMPLETE SETS OF ROUTINES- ONE SET GENERATES OBJECT PROGRAMS FOR A RANDOM FILE.. THE OTHER SET GENERATES OBJECT PROGRAMS FOR A CONTROL SEQUENTIAL FILE.
THE USER/S FILE ORGANIZATION OBJECT PROGRAMS ARE GENERATED BY THE 1401/1440/1460 AUTOCODER /ON DISK/ MACRO-GENERATOR FROM A SERIES OF 1440 IOCS, VERSION 2, LIBRARY ROUTINES AND THE DISK FILE ORGANIZATION ROUTINES. THE USER SUPPLIES THE APPROPRIATE PARAMETERS FOR GENERATION BY MEANS OF CONTROL CARDS. THE OBJECT PROGRAMS FOR LOADING AND MAINTAINING A RANDOM FILE USE THE CHAINING METHOD. BY THIS TECHNIQUE RECORDS ARE LOADED INTO A DISK LOCATION DETERMINED BY A CONTROL FIELD WITHIN THE RECORD. RECORDS WHOSE CONTROL DATA CONVERT TO THE SAME DISK ADDRESS ARE LINKED TOGETHER WITH A CHAIN OF ADDRESSES. THE ROUTINES CAN GENERATE OBJECT PROGRAMS TO ADD RECORDS TO AND DELETE RECORDS FROM A FILE. RECORDS MAY BE LOADED OR UNLOADED FROM OR TO CARDS, TAPE, OR DISK STORAGE. THE OBJECT PROGRAMS FOR LOADING AND MAINTAINING A CONTROL SEQUENTIAL FILE ADD RECORDS TO AND DELETE RECORDS FROM THE FILE WITHOUT DESTROYING THE SEQUENCE. A SEQUENCE-LINK IS USED FOR THIS PURPOSE. A DISTRIBUTION INDEX IS BUILT BY THE PROGRAMS. THIS INDEX MAKES POSSIBLE QUICK ACCESS TO ANY GIVEN RECORD IN THE FILE. RECORDS MAY BE LOADED OR UNLOADED FROM OR TO CARDS, TAPE, OR DISK STORAGE.
THE REQUIREMENTS FOR GENERATION OF THE USER/S FILE ORGANIZATION OBJECT PROGRAMS ARE THE SAME AS THOSE FOR 1401/1440/1460 AUTOCODER /ON DISK/, NC. 1401-AU-008, AND 1440 IOCS, VERSION 2, NC. 1440-IO-010. THE EXECUTION REQUIREMENTS ARE- A 4K 1440 SYSTEM FOR 1311 USAGE OR 8K 1440 SYSTEM FOR 1301 USAGE WITH... ONE 1442 CARD READ PUNCH OR MDL 1 OR 2 OR 1442 CARD READER MDL 4... ONE 1311 DISK STORAGE DRIVE OR 1301 DISK STORAGE ARRAY... 1403 PRINTER MDL 2, 3, 5, 6, 1443 PRINTER OR 1447 CONSOLE MDL 2 OR 4 /IF A LOG IS TO BE KEPT DURING FILE LOADING, ADDITIONS, OR DELETIONS, THE 1443 PRINTER IS REQUIRED., IN THAT CASE, A 1447 CONSOLE MDL 1 MAY BE USED/... ONE 1444 CARD PUNCH /REQUIRED ONLY IF PUNCHED OUTPUT IS USED ON A SYSTEM WITH A 1442 CARD READER MDL 4/... ONE 7335 MAGNETIC TAPE UNIT /REQUIRED ONLY IF TAPE INPUT OR OUTPUT IS USED/.
THE FOLLOWING PROGRAMS ARE REQUIRED- 1401-AU-008., 1440-IO-010., 1440-UT-041.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... OPERATING PROCEDURES, C24-3194.
MACHINE READABLE - THE CARD DECK FOR ONE OF THE FOLLOWING THREE GROUPS MUST BE SPECIFIED ON THE ORDER CARD -
GROUP A - COMMON AND RANDOM
GROUP B - COMMON AND CONTROL SEQUENTIAL
GROUP C - COMMON, RANDOM AND CONTROL SEQUENTIAL

OPTIONAL PROGRAM MATERIAL - PROGRAM FLOWCHARTS.
PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE 1440 PROGRAMS ARE ORDERED AT THE SAME TIME.

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1440-UT-041 DISK UTILITY PROGRAMS ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-UT-041

THIS SYSTEM IS DESIGNED TO PERFORM CERTAIN FREQUENTLY REQUIRED OPERATIONS ON 1440 SYSTEMS WITH 1311 OR 1301 DISK STORAGE, WITHOUT PROGRAMMING EFFORT ON THE PART OF THE USER. THE PROGRAMS PROVIDED ARE-

CLEAR-DISK-STORAGE	DISK-TO-CARD
PRINT-DISK	DISK-TO-TAPE
CARD-TO-DISK	DISK-RECORD-LOAD
TAPE-TO-DISK	COPY-DISK
DISK-LABEL	

EACH PROGRAM IS GENERALIZED, MODIFYING ITSELF TO PERFORM SPECIFIC OPERATIONS BY INFORMATION RECEIVED THROUGH CONTROL CARDS. EACH PROGRAM INCLUDES AN OPTIONAL DISK LABEL CHECKING ROUTINE FOR USE WITH 1311 DISK STORAGE. THEY ARE DESIGNED FOR USE ON 4K OR LARGER SYSTEMS, 8K OR GREATER IS NECESSARY WHEN PROCESSING DISK DATA FOR WHICH THE TRACK RECORD SPECIAL FEATURE IS REQUIRED. THESE PROGRAMS PERFORM SUCH FUNCTIONS AS CLEAR DISK AND GENERATE ADDRESSES, SUPPLY OUTPUT FOR FILE PROTECTION PURPOSES, DISPLAY DISK STORAGE ON THE PRINTER, CHANGE DATA OR ADDRESSES IN DISK STORAGE, AND ON 1311 DISK STORAGE CREATE THE LABEL TRACK OR REMOVE THE LABEL TRACK, AND ENTER, DELETE, CHANGE, DISPLAY, AND PUNCH DISK LABELS.

A 4K 1440 SYSTEM /BK REQUIRED IF TRACK RECORD FORMAT IS USED/ WITH... 1442 CARD READ PUNCH MODEL 1 OR 2 OR A 1442 CARD READER MDL 4 AND A 1444 CARD PUNCH... 1443 PRINTER... ONE 1311 DISK STORAGE DRIVE OR ONE 1301 DISK STORAGE ARRAY... AND ONE 7335 MAGNETIC TAPE UNIT /TAPE PROGRAMS ONLY/. PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE 1440/1311 PROGRAMS ARE ORDERED AT THE SAME TIME.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - WRITE-UP... SPECIFICATIONS...
OPERATING INSTRUCTIONS.
CARD DECKS - NINE INDIVIDUAL DECKS/LISTED ABOVE/.

OPTIONAL PROGRAM MATERIAL - LISTINGS AND FLOWCHARTS.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1440-UT-043 TAPE UTILITY PROGRAMS ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1440-UT-043

THE 1440 TAPE UTILITY PROGRAMS INCLUDES THREE PROGRAMS TO TRANSFER DATA FILES BETWEEN CARDS AND TAPE AND FROM TAPE TO PRINTER.

FEATURES-

- * CARD-TO-TAPE * * TAPE-TO-CARD * * TAPE-TO-PRINTER *
- FIELD SELECTION- ALLOWS SELECTION OF UP TO 16 FIELDS IN THE INPUT RECORD AND ARRANGEMENT OF THESE FIELDS IN ANY ORDER IN THE OUTPUT RECORD.
- EXCEPTION RECORDS- BYPASSES RECORDS IDENTIFIED BY THE PRESENCE OR ABSENCE OF UP TO 72 CONSTANT EXCEPTION CHARACTERS.
- SEQUENCE CHECKING AND NUMBERING- CHECKS SEQUENCE OF CARD INPUT FILES, GENERATES AND PUNCHES SEQUENCE NUMBERS IN CARD OUTPUT FILES.
- SELECTIVE FILE PROCESSING- SEARCHES TAPE FILES FOR THE FILE IDENTIFIED BY A PARTICULAR HEADER LABEL.
- OPTIONS FOR OFF-LINE PROCESSING- FACILITATES OFF-LINE TAPE PROCESSING FOR/LARGE SYSTEMS. THEY ARE-
 - /1/ GROUP-MARK CONVERSION- THE CARD-TO-TAPE PROGRAM CAN CONVERT 1440 GROUP MARKS IN CARDS TO 7080 GROUP MARKS ON TAPE. THE TAPE-TO-CARD PROGRAM CAN CONVERT 7080 GROUP MARKS ON TAPE TO 1440 GROUP MARKS IN CARDS.
 - /2/ BINARY RECORDS- THE CARD-TO-TAPE AND TAPE-TO-CARD PROGRAMS CAN PROCESS COLUMN-BINARY CARD FILES AND BINARY TAPE FILES.
 - /3/ EVEN OR ODD PARITY- TAPES CAN BE PROCESSED IN EVEN OR ODD PARITY.
 - /4/ FIRST CHARACTER FORMS CONTROL- THE TAPE-TO-PRINTER PROGRAM CAN PRINT FILES IN WHICH SPACE SUPPRESSION OR SPACING/SKIPPING BETWEEN RECORDS IS DETERMINED BY THE FIRST CHARACTER OF THE RECORD.
 - /5/ TAPE LABELS- FILES WITH EITHER NO TAPE LABELS OR WITH THE IBM STANDARD 120-CHARACTER TAPE LABELS CAN BE ACCOMMODATED BY THESE PROGRAMS.
 - /6/ IF TAPE LABELS ARE TO BE CHECKED BY THE TAPE-TO-CARD OR TAPE-TO-PRINTER PROGRAM, THEY MUST BE THE IBM STANDARD 120-CHARACTER LABELS. HOWEVER, A NON-STANDARD HEADER LABEL CAN BE PROCESSED AND PRINTED /UP TO 120 CHARACTERS PRINTED/. IN THIS CASE, TRAILER LABELS MUST BE PRESENT BUT ARE USED ONLY TO INDICATE EOR OR EOF.
 - /7/ HEADER LABELS OTHER THAN THE STANDARD 120-CHARACTER LABEL CAN BE, BUT NEED NOT BE, FOLLOWED BY A TAPE MARK. TRAILER LABELS MUST BE PRECEDED AND FOLLOWED BY TAPE MARKS.

THESE ARE GENERALIZED UTILITY PROGRAMS, SUPPLIED BY IBM AS CONDENSED CARD OBJECT DECKS. THE PROGRAMS MODIFY THEMSELVES TO FIT A SPECIFIC APPLICATION THROUGH THE USE OF A CONTROL CARD. MINIMUM SYSTEM REQUIREMENTS- A 4K 1440 SYSTEM WITH... 7335 MAGNETIC TAPE UNIT... 1443 PRINTER... ONE 1442 CARD READ PUNCH MDL 1 OR 2 OR A 1442 CARD READER MDL 4 AND A 1444 CARD PUNCH. IF BINARY TAPE RECORDS OR COLUMN BINARY CARDS ARE TO BE PROCESSED, THE 1442 MUST BE EQUIPPED WITH THE CARD IMAGE FEATURE.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... PROGRAM LISTINGS...
SPECIFICATIONS... OPERATING PROCEDURES.
CARD DECKS - PROGRAM DECKS.

OPTIONAL PROGRAM MATERIAL - FLOWCHARTS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

CONTINUED FROM PRIOR COLUMN--

OR TAPE, PRINTED BY AN ON-LINE PRINTER, WRITTEN AS CARD IMAGES ON TAPE, OR PUNCHED. STORED INFORMATION MAY BE RECALLED FOR FURTHER PROCESSING.

FEATURES-

- DATA CORRECTION, MODIFICATION, AND REARRANGEMENT BY- BACKSPACING AND RETYPING DURING ENTRY... RETYPING BEGINNING WITH A PARTICULAR WORD... REPLACING A WORD OR PHRASE... ADDING TO A LINE OR TEXT UNIT... DELETING A LINE OR OTHER TEXT UNIT... MOVING OF GROUPS OF LINES OR TEXT UNITS... GATHERING OF STORED DATA IN ANY SEQUENCE... COPYING OF INFORMATION BY TRANSMISSION TO THE ORIGINATING TERMINAL.
- STORAGE AND RETRIEVAL OF DATA FROM DISK FILES OR TAPE.
- TRANSMISSION OF DATA TO ANY TERMINAL.
- OUTPUT FORMAT CONTROLLED FROM THE TERMINAL BY- LIMITING FREE-FORM TEXT LINE LENGTH... JUSTIFICATION OF RIGHT-HAND MARGIN... INTERMIX OF FREE-FORM TEXT WITH FIXED FORMAT INFORMATION... PLACING SPECIFIED HEADING AND FOOTING LINES ON ALL PAGES OF A DOCUMENT... AUTOMATIC PAGE NUMBERING... CONTROLLED VERTICAL SPACING... HALTING TO ALLOW OPERATOR INTERVENTION FOR TEXT INSERTION OR CHANGE OF PRINT ELEMENTS.
- DESK CALCULATOR FUNCTIONS- ADDITION... SUBTRACTION... MULTIPLICATION... DIVISION... ROOTS... POWERS... FACTORIALS... EVALUATION OF SIMPLE ALGEBRAIC EXPRESSIONS.
- USERS MAY ADD PROGRAMS TO DO SIMULTANEOUS PERIPHERAL OPERATIONS SUCH AS SIMPLE TAPE-TO-PRINTER AND CARD-TO-TAPE FUNCTIONS.
- AN IMPROVED DISK STORAGE ORGANIZATION SCHEME WILL GIVE IMPROVED TERMINAL RESPONSE ON REQUESTS INVOLVING PERMANENT DISK STORAGE.
- 1301 DISK FILE IMPLEMENTATION SIGNIFICANTLY INCREASES PERMANENT STORAGE CAPACITY.
- IMPROVED STORAGE REPORTING FACILITIES.

PRINCIPAL APPLICATION AREAS OF THE ADMINISTRATIVE TERMINAL SYSTEM ARE TECHNICAL MANUAL PREPARATION, PROPOSAL WRITING, TEST REPORT PREPARATION, FINANCIAL CREDIT REPORTING, STATISTICAL TYPING, AND SIMILAR AREAS. THE SYSTEM MAY ALSO BE USED FOR SOURCE DATA ENTRY, CAPTURING DATA DIRECTLY FROM A TYPEWRITER KEYBOARD. THIS HAS PARTICULAR SIGNIFICANCE IN THE COMPUTER PROGRAMMING AREA WHERE PROGRAM DECK CONTROL CARDS AND TEST DECKS MAY BE SELECTED, MODIFIED, COMBINED AND MADE AVAILABLE FOR RUNNING DIRECTLY FROM A TERMINAL.

THE SYSTEM, WHEN PROPERLY INSTRUCTED, CAN SAVE EVERY KEYSTROKE MADE BY THE OPERATOR. TO ALTER THE TEXT, THE OPERATOR DIRECTS THE SYSTEM TO LOCATE THE CHARACTERS TO BE CHANGED AND INSTRUCTS IT IN WHAT MANNER THESE ARE TO BE ALTERED. IF A COPY OF A DOCUMENT IS REQUESTED, THE SYSTEM WILL PRODUCE AND TRANSMIT IT TO THE TERMINAL. THE SOURCE PROGRAM LANGUAGE IS 1401/1440/1460 AUTOCODER /ON DISK/.

MINIMUM 1460 SYSTEM REQUIREMENTS- 16K 1460 WITH- BIT TEST, CONSOLE ATTACHMENT, DIRECT SEEK, DISK STORAGE CONTROL, INDEXING AND STORE ADDRESS REGISTER, TRANSMISSION CONTROL UNIT ADAPTER ON THE 1441 PROCESSING UNIT MODEL B6 AND AN APPROPRIATE MODEL 1461 INPUT/OUTPUT CONTROL ON THE 1461 ONE 1311 DISK STORAGE DRIVE MODEL 1 WITH DIRECT SEEK... 1447 CONSOLE MODEL 1 WITH SENSE SWITCHES... 1447 CONSOLE MODEL 4... 1448 TRANSMISSION CONTROL UNIT WITH THE 1050/1060 ATTACHMENT FEATURE AND RPQ E38485 AND, AS REQUIRED, COMMON CARRIER ADAPTER SETS OR LINE ADAPTER SETS... A 1402 CARD READ PUNCH MODEL 3 IS REQUIRED UNLESS ANOTHER 1401/1440/1460 SYSTEM IS AVAILABLE TO LOAD THE PROGRAM ON A 1316 DISK PACK.

OPTIONAL 1460 MACHINE REQUIREMENTS- TRANSLATE FEATURE ON THE 1441 PROCESSING UNIT... ONE TO FOUR 1311 DISK STORAGE DRIVES MODEL 2 WITH DIRECT SEEK AND SEEK OVERLAP /AT LEAST ONE 1311 MODEL 2 IS STRONGLY RECOMMENDED/... ONE TO FIVE MODULES OF 1301 DISK STORAGE /ONE 1311 MODEL 2 IS REQUIRED/... ONE TO SIX 729 MAGNETIC TAPE UNITS MODEL 2, 4, 5, 6 OR 7330 MAGNETIC TAPE UNITS... 1402 CARD READ PUNCH MODEL 3... 1403 PRINTER MODEL 2 OR 3 WITH THE PRINT STORAGE FEATURE ON THE 1461 INPUT/OUTPUT CONTROL AND RPQ M13490... LINE GROUP FEATURES AND RPQ B11390, AS REQUIRED TO ATTACH MORE THAN 10 LINES TO THE 1448 TRANSMISSION CONTROL UNIT. IF UPPERCASE AND LOWERCASE PRINTING WITH 120 CHARACTERS OF COURIER TYPE /MATCHING THE COURIER 72 PRINTING ELEMENT ON THE TERMINALS/ IS DESIRED USE A 1402 CARD READ PUNCH MODEL 2, ADD- RPQ/S 813148 AND 818029 ON THE 1461 INPUT/OUTPUT CONTROL. RPQ/S 812033, 812034, 898059, 33 EACH OF RPQ E33255, AND PART 823380 /THE CHAIN/ ON THE 1403 MODEL 2... RPQ 818019 ON THE 1441 PROCESSING UNIT.

TERMINAL REQUIREMENTS- 2741 COMMUNICATION TERMINALS /UP TO 40/ WITH COURIER 72 STANDARD SELECTRIC PRINTING ELEMENTS, AND LINE ADAPTERS IF REQUIRED. ATTS SUPPORTS ONLY THE CORRESPONDENCE CODE 2741 TERMINALS WITHOUT THE INTERRUPT FEATURE.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - APPLICATION DIRECTORY... APPLICATION DESCRIPTION, H20-0129... TERMINAL OPERATORS MANUAL, H20-0185... PROGRAMMERS MANUAL, H20-0228... CONSOLE OPERATORS MANUAL, H20-0247.
MACHINE READABLE - PROGRAM DECKS.

OPTIONAL PROGRAM MATERIAL -
DOCUMENTATION - SYSTEMS MANUAL /PROGRAM FLOW CHARTS/.
MACHINE READABLE - 1401/1440/1460 AUTOCODER /ON DISK/ OUTPUT FILE ON TWO 1316 DISK PACKS FROM WHICH SOURCE DECKS AND PROGRAM LISTINGS CAN BE CREATED USING 1401/1440/1460 AUTOCODER /ON DISK/ /1401-AU-008/.

NOTE- WHEN ORDERING THE OPTIONAL MATERIAL THE REQUESTOR MUST SUBMIT TWO 1316 DISK PACKS.

* 1460-IO-011 1460/1401 COMMUNICATIONS 10CS /1448-DDC/ ORDER THROUGH LOCAL IBM BRANCH OFFICE SPECIFY FILE NUMBER 1460-IO-011

1460-CX-08X ADMINISTRATIVE TERMINAL SYSTEM

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1460-CX-08X

THE PRIMARY CONCEPT OF THIS SYSTEM IS TO SUPPORT A TYPEWRITER-LIKE TERMINAL FOR TEXT PROCESSING. INFORMATION IS ENTERED FROM THE TERMINALS IN EITHER FREE OR FIXED FORM. IT CAN BE CORRECTED, MODIFIED, OR REARRANGED. OUTPUT FORMATS ARE FLEXIBLE AND MAY BE SPECIFIED FROM THE TERMINAL. OUTPUT MAY BE TRANSMITTED TO ANY TERMINAL, STORED ON DISK

THE 1401/1460 COMMUNICATIONS 10CS /1448/7740/DDC/ CONSISTS OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR IN AN ALTCCDDER /ON DISK/ SOURCE PROGRAM BY MACRO INSTRUCTIONS, ARE SELECTED, INCLUDED, AND INCLUDED IN THE OBJECT PROGRAM. THESE ROUTINES PERFORM THE FUNCTIONS NECESSARY TO HANDLE 1402, 1403, 1404, 1311, 729, AND 7330 INPUT/OUTPUT FILES, TO TRANSMIT INFORMATION TO AND RECEIVE INFORMATION FROM REMOTE LOCATIONS, AND REMOTE PROCESSORS, AND TO PROVIDE LINKAGE TO THE USER'S PROGRAMS. THE SPECIFIC ROUTINES GENERATED AT ASSEMBLY TIME DEPEND LARGELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USER'S SOURCE PROGRAM.

NOTE- THE 1448 IS NOT APPLICABLE TO THE 1401.

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THE NEW VERSION FACILITATES THE GENERATION OF PROGRAMS TO CONTROL 1448 COMMUNICATIONS WITH 1050 DATA COMMUNICATIONS SYSTEMS OVER COMMON CARRIER LEASED COMMUNICATION LINES USING AUTOMATIC DIALING AND AUTOMATIC ANSWERING FEATURES, AND OVER CUSTOMER-OWNED COMMUNICATION LINES, WITH THE 1030 DATA COLLECTION SYSTEM, THE 1032 DIGITAL TIME UNIT, THE 357 DATA COLLECTION SYSTEM /VIA THE 1408 TRANSMISSION UNIT/, THE 1060 DATA COMMUNICATION SYSTEM, AND ATST TYPE 8982 AND WESTERN UNION TYPE 115A TELEGRAPH TERMINALS /UTILIZING THE TELEGRAPH ATTACHMENT FEATURE/. USING THE EARLY WARNING PROGRAM OPTION, THE USER CAN TRANSMIT LARGE MESSAGES WITHOUT ASSIGNING EQUALLY LARGE BLOCKS OF CORE STORAGE TO HOLD THESE MESSAGES DURING TRANSMISSION. THE USER CAN ALSO GENERATE PROGRAMS TO CONTROL THE TRANSFER OF INFORMATION FROM A 1401 OR 1460 TO EITHER A 1401, 1440, OR 1460 VIA THE DIRECT DATA CHANNEL.

THE LIBRARY ROUTINES FOR THIS IOCS ARE PLACED IN THE AUTOCCODER SYSTEM THROUGH A LIBRARY RUN, USING AUTOCCODER /ON DISK/ FOR 1401, 1440, AND 1460 NO. 1401-AU-C08. REQUIREMENTS FOR PROGRAM ASSEMBLY ARE THE SAME AS THOSE FOR THE ASSEMBLY OF ANY PROGRAM USING THE IBM 1401/1440/1460 AUTOCCODER /ON DISK/ PROGRAM.

FOR OBJECT PROGRAM EXECUTION THE MACHINE CONFIGURATION DEPENDS UPON PROCESSING REQUIREMENTS. FOR COMMUNICATION BETWEEN REMOTE LOCATIONS, IOCS REQUIRED- AN 8K 1460 SYSTEM WITH... INDEXING AND STORE ADDRESS REGISTER FEATURE... 1448 TRANSMISSION CONTROL UNIT... 1447 CONSOLE MDL 4... 1402 CARD READ PUNCH... OTHER I/O UNITS AS REQUIRED.

FOR COMMUNICATION BETWEEN A 1401 OR 1460 AND EITHER A 1401, 1440, OR 1460, IOCS REQUIRED- A 4K 1401 OR 8K 1460 WITH... INDEXING AND STORE ADDRESS REGISTER /1460/ OR ADVANCED PROGRAMMING /1401/ FEATURE... HIGH-LOW-EQUAL COMPARE FEATURE /1401/... SERIAL INPUT/OUTPUT ADAPTER FEATURE... DIRECT DATA CHANNEL FEATURE... 1402 CARD READ PUNCH... OTHER I/O UNITS AS REQUIRED.

TOTAL CORE STORAGE REQUIREMENTS DEPEND UPON THE SPECIFIED FUNCTIONS TO BE SERVED BY THE PROGRAM. TO HANDLE BASIC INPUT/OUTPUT FILES, REQUIRE ONLY THOSE I/O UNITS WHICH ARE SPECIFIED FOR PROGRAM HANDLING. ALTHOUGH USER PROGRAMS CAN BE ASSEMBLED TO HANDLE IBM 1311, 1402, 1403 AND TAPE FILES ONLY, THIS IOCS SHOULD NOT BE USED EXCLUSIVELY FOR THAT PURPOSE.

NOTE THAT FOR COMMUNICATION BETWEEN PROCESSORS, THERE ARE TWO PROCESSING SYSTEMS, EACH HAVING SEPARATE REQUIREMENTS. PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES IF AS MANY AS TEN CONTROL DATA FIELDS OF TOTAL PROGRAMS ARE ORDERED AT THE SAME TIME.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - WRITE-UP... OPERATING INSTRUCTIONS... LIBRARY LISTING.
CARD DECKS - LIBRARY DECK OF MACROS.

OPTIONAL PROGRAM MATERIAL - SYSTEM FLOWCHARTS.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1460-SM-068 IBM 1460 SORT 14
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1460-SM-068

SORT 14 PROGRAMS ARE GENERALIZED OBJECT SORT PROGRAMS CAPABLE OF SORTING FIXED LENGTH, BLOCKED OR UNBLOCKED, RECORDS IN MOVE MODE IN EITHER ASCENDING OR DESCENDING SEQUENCE. THEY WILL ACCEPT INPUT FROM CARDS, 1301 DISK STORAGE, OR MAGNETIC TAPE, AND WILL WRITE THE FINAL OUTPUT ON 1301 DISK STORAGE OR TAPE. SORTING CAN BE CONTROLLED BY AS MANY AS TEN CONTROL DATA FIELDS OF TOTAL LENGTH UP TO A MAXIMUM OF 189 CHARACTERS.

PROGRAM NO. 1460-SM-068 WILL PROCESS TAPES WITH NO LABELS OR WITH IOCS TYPE B 80 CHARACTER IBM LABELS /A TAPE MARK CANNOT FOLLOW LABELS/. THERE IS NO PROVISION FOR HANDLING NON-STANDARD TAPE LABELS.

MINIMUM SYSTEM REQUIREMENTS- AN 8K 1460 SYSTEM WITH... ONE 1301 DISK STORAGE MODULE... 1402 CARD READ PUNCH... ONE 1403 PRINTER. THE PROGRAM CAN USE, IF AVAILABLE, UP TO FIVE 1301 DISK STORAGE MODULES, ONE OR TWO MAGNETIC TAPE UNITS FOR INPUT/OUTPUT, AND 12K OR 16K CORE STORAGE.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES... PROGRAM SPECIFICATIONS... TIMINGS MANUAL.
CARD DECKS - OBJECT DECK.

OPTIONAL PROGRAM MATERIAL-- SYSTEM LISTINGS... FLOW CHARTS
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1460-SM-069 IBM 1460 SORT 14
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1460-SM-069

SORT 14 PROGRAMS ARE GENERALIZED OBJECT SORT PROGRAMS CAPABLE OF SORTING FIXED LENGTH, BLOCKED OR UNBLOCKED, RECORDS IN MOVE MODE IN EITHER ASCENDING OR DESCENDING SEQUENCE. THEY WILL ACCEPT INPUT FROM CARDS, 1301 DISK STORAGE, OR MAGNETIC TAPE, AND WILL WRITE THE FINAL OUTPUT ON 1301 DISK STORAGE OR TAPE. SORTING CAN BE CONTROLLED BY AS MANY AS TEN CONTROL DATA FIELDS OF TOTAL LENGTH UP TO A MAXIMUM OF 189 CHARACTERS.

PROGRAM NO. 1460-SM-069 WILL PROCESS TAPES WITH NO LABELS OR WITH 120 CHARACTER IOCS TYPE A IBM STANDARD LABELS /A TAPE MARK MUST FOLLOW LABELS/. THERE IS NO PROVISION FOR HANDLING NON-STANDARD TAPE LABELS.

MINIMUM SYSTEM REQUIREMENTS- AN 8K 1460 SYSTEM WITH... ONE 1301 DISK STORAGE MODULE... 1402 CARD READ PUNCH... ONE 1403 PRINTER. THE PROGRAM CAN USE, IF AVAILABLE, UP TO FIVE 1301 DISK STORAGE MODULES, ONE OR TWO MAGNETIC TAPE UNITS FOR INPUT/OUTPUT, AND 12K OR 16K CORE STORAGE.

BASIC PROGRAM MATERIAL--
DOCUMENTATION - PROGRAM WRITE-UP... OPERATING PROCEDURES... PROGRAM SPECIFICATIONS... TIMING MANUAL.
CARD DECKS - OBJECT DECK.

OPTIONAL PROGRAM MATERIAL-- SYSTEM LISTINGS... FLOW CHARTS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1460-SV-090 1460-1070 PROCESS
COMMUNICATION MONITOR FOR 1401 AUTOCCODER /ON TAPE/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1460-SV-090

CONTINUED FROM PRIOR COLUMN--

THE IBM 1460-1070 PCM, CONSISTS OF A SET OF 1401 AUTOCCODER /ON TAPE/ LIBRARY ROUTINES, USED TO GENERATE PROCESS COMMUNICATION PROGRAMS ORIENTED TO MEET THE REQUIREMENTS OF THE 1070 PROCESS COMMUNICATION SYSTEM. THE ROUTINES ARE-

- MONITOR ROUTINE - CONTROLS THE HANDLING OF INTERRUPTS AND SCHEDULING OF LINE OPERATIONS ON A PRIORITY BASIS. IT SIMULATES A REAL-TIME CLOCK AND UP TO NINE INTERVAL TIMERS. IN ADDITION, IT INFORMS OF ERRORS DETECTED, AND RECORDS THE STATUS OF THE LINES AND OF THE REMOTE SYSTEMS.
- CONVERSION SUBROUTINE - CALIBRATES THE ADC OF 1070 SYSTEMS AND CONVERTS ADC READINGS TO A STANDARD RANGE.
- DELTA/LIMIT CHECK SUBROUTINE - PERFORMS LIMIT AND/OR DELTA CHECKS ON CONVERTED ADC READINGS.
- CONTACT SENSE SUBROUTINE - COMPARES CURRENT CONTACT SENSE READINGS WITH A MASTER MASK OR WITH PREVIOUS READINGS.
- THERMOCOUPLE SUBROUTINE - GENERATES TEMPERATURE VALUES FROM CONVERTED THERMOCOUPLE READINGS.
- ERROR LOCATING ROUTINE - PERFORMS OUTPUT CHECKS ON TRANSMISSION LINES AND REMOTE SYSTEMS.

THE PROGRAM IS USED IN CONJUNCTION WITH 1401 AUTOCCODER /ON TAPE/. THE PCM IS INSERTED IN THE LIBRARY DURING A LIBRARY RUN AND CALLED BY MACRO-INSTRUCTIONS IN THE USERS PROGRAM. THE PCM CAN BE USED IN CONJUNCTION WITH THE 1401 IOCS. A PRE-ASSEMBLY RUN IS REQUIRED TO TAILOR THE PCM TO THE USERS INSTALLATION AND REQUIREMENTS BEFORE ASSEMBLY WITH THE USERS PROGRAM.

MINIMUM SYSTEM CONFIGURATIONS- ONLY THOSE FEATURES REQUIRED BY 1401 AUTOCCODER /ON TAPE/ ARE NEEDED WHEN ASSEMBLING A PROGRAM USING THE 1460-1070 PCM. FOR A PRE-ASSEMBLY RUN AND FOR THE EXECUTION OF AN OBJECT PROGRAM USING THE PCM, THE FOLLOWING IS REQUIRED- AN 8K 1460 SYSTEM WITH...1447 CONSOLE, MODEL 2...INDEXING AND STORE ADDRESS REGISTER...MULTIPLY-DIVIDE /FOR CONVERSION AND THERMOCOUPLE SUBROUTINES/...ONE 1026 TRANSMISSION CONTROL UNIT...INTERRUPT...TIME EMITTER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...
MACHINE READABLE - LIBRARY ROUTINES AND PRE-ASSEMBLY OBJECT PROGRAM DECKS.

OPTIONAL PROGRAM MATERIAL - PROGRAM LISTINGS...PROGRAM FLOWCHARTS.

NOTE- PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE PROGRAMS ARE ORDERED AT THE SAME TIME.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

*M 1460-SV-091 1460-1070 PROCESS
COMMUNICATION MONITOR FOR 1401 BASIC AUTOCCODER 2K
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1460-SV-091

THE IBM 1460-1070 PCM, CONSISTS OF A SET OF 1401 BASIC AUTOCCODER 2K ROUTINES, USED TO GENERATE PROCESS COMMUNICATION PROGRAMS ORIENTED TO MEET THE REQUIREMENTS OF THE 1070 PROCESS COMMUNICATION SYSTEM. THE ROUTINES ARE-

- MONITOR ROUTINE - CONTROLS THE HANDLING OF INTERRUPTS AND SCHEDULING OF LINE OPERATIONS ON A PRIORITY BASIS. IT SIMULATES A REAL-TIME CLOCK AND UP TO NINE INTERVAL TIMERS. IN ADDITION, IT INFORMS OF ERRORS DETECTED, AND RECORDS THE STATUS OF THE LINES AND OF THE REMOTE SYSTEMS.
- CONVERSION SUBROUTINE - CALIBRATES THE ADC OF 1070 SYSTEMS AND CONVERTS ADC READINGS TO A STANDARD RANGE.
- DELTA/LIMIT CHECK SUBROUTINE - PERFORMS LIMIT AND/OR DELTA CHECKS ON CONVERTED ADC READINGS.
- CONTACT SENSE SUBROUTINE - COMPARES CURRENT CONTACT SENSE READINGS WITH A MASTER MASK OR WITH PREVIOUS READINGS.
- THERMOCOUPLE SUBROUTINE - GENERATES TEMPERATURE VALUES FROM CONVERTED THERMOCOUPLE READINGS.
- ERROR LOCATING ROUTINE - PERFORMS OUTPUT CHECKS ON TRANSMISSION LINES AND REMOTE SYSTEMS.

THE PROGRAM IS USED IN CONJUNCTION WITH 1401 BASIC AUTOCCODER 2K. A PRE-ASSEMBLY RUN IS REQUIRED TO TAILOR THE PCM TO THE USERS INSTALLATION AND REQUIREMENTS BEFORE ASSEMBLY WITH THE USERS PROGRAM.

MINIMUM SYSTEM CONFIGURATION- ONLY THOSE FEATURES REQUIRED BY 1401 BASIC AUTOCCODER 2K ARE NEEDED WHEN ASSEMBLING A PROGRAM USING THE 1460-1070 PCM. FOR A PRE-ASSEMBLY RUN AND FOR THE EXECUTION OF AN OBJECT PROGRAM USING THE PCM, THE FOLLOWING IS REQUIRED- AN 8K 1460 SYSTEM WITH...1447 CONSOLE, MODEL 2...INDEXING AND STORE ADDRESS REGISTER...MULTIPLY-DIVIDE /FOR CONVERSION AND THERMOCOUPLE SUBROUTINES/...ONE 1026 TRANSMISSION CONTROL UNIT...INTERRUPT...TIME EMITTER.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...SPECIFICATIONS MANUAL... OPERATING PROCEDURES MANUAL.
MACHINE READABLE - BASIC AUTOCCODER 2K ROUTINES AND A PRE-ASSEMBLY OBJECT PROGRAM DECK.

OPTIONAL PROGRAM MATERIAL - PROGRAM LISTINGS...PROGRAM FLOWCHARTS.

NOTE- PROGRAM DECK MAY BE OBTAINED ON ONE REEL OF MAGNETIC TAPE AS CARD IMAGES. ONLY ONE REEL IS REQUIRED IF ONE OR MORE PROGRAMS ARE ORDERED AT THE SAME TIME.

OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

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1401-01.1.006 FULL MAST /FULL MINNEAPOLIS
OF SPS-27 /REVISED/
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.1.006

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THIS PROGRAM IS A MODIFICATION OF THE 1401 SPS II ASSEMBLY PROGRAM. IT WILL HANDLE MULTIPLE PROGRAMS AUTOMATICALLY FROM INPUT THROUGH POST-LIST AND PUNCHING, PERFORMING NECESSARY REITERATIONS WITHOUT INTERVENTION. NO SPECIAL DEVICES REQUIRED. ALLOWS REASSEMBLY OF PREVIOUSLY ASSEMBLED PROGRAMS. SENSE SWITCH SELECTION OF ONE PER CARD, SPS CONDENSED OR AUTOCODER CONDENSED OUTPUT. THE PROGRAM IS CONTAINED ON A SYSTEMS TAPE WITH SIMPLE MEMORY PRINT AND TAPE PRINT PROGRAMS TO PROVIDE A COMPACT TESTING PACKAGE. MACHINE CONFIGURATION- 4K OR LARGER 1401, 1402, 1403 WITH 100 OR 132 PRINT POSITIONS, 3 TAPE UNITS 7330 OR 729, READ RELEASE - FOR MORE SPEED, IF AVAILABLE. SENSE SWITCHES - FOR PUNCHING FLEXIBILITY, IF AVAILABLE. WRITE-UP CONTAINS MINOR CHANGES NECESSARY TO ELIMINATE THE REQUIREMENT FOR READ RELEASE AND SENSE SWITCHES.

1401-01.1.013 TWO TAPE MINNEAPOLIS
ASSEMBLY OF SPS TWO
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.1.013

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THIS PROGRAM IS A MODIFICATION OF THE 1401 SPS II ASSEMBLY PROGRAM. IT WILL HANDLE MULTIPLE PROGRAMS AUTOMATICALLY FROM INPUT THROUGH POST LIST AND PUNCHING, PERFORMING NECESSARY REITERATIONS WITHOUT INTERVENTION. NO SPECIAL DEVICES REQUIRED. THE PROGRAM IS CONTAINED ON A SYSTEMS TAPE WITH SIMPLE MEMORY PRINT AND TAPE PRINT PROGRAMS TO PROVIDE A COMPACT TESTING PACKAGE. MACHINE CONFIGURATION- 1. 1401 WITH 4K OR LARGER MEMORY.
2. 1402.
3. 1403 WITH 100 OR 132 PRINT POSITIONS.
4. TWO TAPE UNITS /7330 OR 729/.
*5. READ RELEASE - FOR ADDED SPEED, IF AVAILABLE.
*6. SENSE SWITCHES- FOR PUNCHING FLEXIBILITY, IF AVAILABLE.
*WRITE-UP CONTAINS MINOR CHANGES NECESSARY TO ELIMINATE THE REQUIREMENT FOR THESE DEVICES.

1401-01.1.014 AUTOEDIT-1401 EDIT FOR 1410
AUTOCODER PROGRAMS
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.1.014

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PROGRAM TO EDIT 1410 PROGRAMS WRITTEN IN AUTOCODER. CHECKS VALIDITY OF OPCCODES AND MACROS. SPREADS THE OPERANDS OF INSTRUCTIONS. COUNTS CORE USED BY INSTRUCTIONS. PERFORMS SEVERAL MORE EDITING FUNCTIONS. 4K 1401 WITH ADVANCED PROGRAMMING PACKAGE, HI-LOW-EQUAL COMPARE, WITH 132 PRINTING POSITIONS.

1401-01.1.016 ACCELERATOR PACK - SYMBOLIC
4K PROGRAMMING SYSTEM ASSEMBLY
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.1.016

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THE 4K ACCELERATOR PACK IS A PROGRAM FOR ASSEMBLING SPS PROGRAMS FOR 1.4-4K 1401S ON 4K CARD 1401S. IT WAS DEVELOPED TO ELIMINATE THE PARTIALLY PROCESSED CARDS THAT ARE PUNCHED OUT DURING THE FIRST PASS OF SPS 1 AND 2. SOURCE LANGUAGE 1401 SYMBOLIC PROGRAMMING SYSTEM. EQUIPMENT SPECIFICATIONS- 4K ANY MODEL - NO SPECIAL FEATURES REQUIRED.

1401-01.1.017 RAPID ASSEMBLY PROGRAM NO.
14043
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.1.017

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RAP WAS WRITTEN PRIMARILY TO ELIMINATE THE INTERMEDIATE PUNCHING OF CARDS WHEN ASSEMBLING SPS II PROGRAMS ON A CARD INPUT-OUTPUT 1401 SYSTEM. PROVISION WAS MADE TO OBTAIN AN OBJECT LISTING WITH OR WITHOUT AN OBJECT ONE-PER-CARD DECK AND WITH OR WITHOUT A CONDENSED DECK, AT THE TIME THE PROGRAM IS BEING ASSEMBLED. DUPLICATE LABELS ARE DETECTED

CONTINUED FROM PRIOR COLUMN--

AND PRINTED DURING THE FIRST PASS AND AT CONCLUSION OF THE SECOND PASS A DUMP OF LABELS AND ADDRESSES AND UNREFERENCED LABELS IS MADE. THE ONE-PER-CARD OBJECT DECK MAY BE ASSEMBLED AS A SOURCE DECK AND MAY BE LISTED WITHOUT ASSEMBLY. A MNEMONIC OF EQU HAS BEEN ADDED TO EQUATE A LABEL TO A LABEL PREVIOUSLY DEFINED. EQUIPMENT SPECIFICATIONS- 1401 CARD SYSTEM WITH ADVANCE PROGRAMING PACKAGE, PRINT CONTROL ADDITIONAL, HIGH-LOW-EQUAL COMPARE AND SENSE SWITCHES.

1401-01.1.018 TWO-TAPE AUTOCODER ASSEMBLY
FOR THE 1401.
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.1.018

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THIS PROGRAM WILL ASSEMBLE SOURCE PROGRAMS WRITTEN IN THE 1401 AUTOCODER LANGUAGE, WITH RESTRICTIONS OUTLINED BELOW, ON 1401 SYSTEMS WITH ONLY TWO TAPE UNITS. IT PROVIDES FOR UNLIMITED REITERATIONS, AND PRODUCES AN ASSEMBLY LISTING AND A PROGRAM DECK IN THE AUTOCODER CONDENSED FORMAT. MACHINE CONFIGURATION- 1. 1401 WITH 4K OR LARGER STORAGE.
2. 1402.
3. 1403 WITH 132 PRINT POSITIONS.
4. TWO TAPE UNITS /729 OR 7330/.
5. HIGH/LOW/EQUAL COMPARE FEATURE.
6. ADVANCED PROGRAMMING FEATURE.
SOURCE LANGUAGE - 1401 AUTOCODER.

THE ONE REEL OF TAPE REQUIRED TO OBTAIN THE OPTIMAL SOURCE DECK MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

1401-01.1.020 EDIT /EDITING DATA INPUT FOR
VALIDITY/
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.1.020

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A PROGRAM FOR SCANNING CARDS AT 800 PER MINUTE FOR VALIDITY ERRORS- I.E., INVALID MULTIPLE PUNCHES. USEFUL FOR CHECKING DATA FILES CONVERTED AT TIME OF INSTALLATION OF A SYSTEM, OR FOR CHECKING TRANSACTION INPUT CARDS. PREVENTS INTERRUPTIONS DURING JOB PROCESSING DUE TO PRESENCE OF INVALID PUNCHING THAT MAY EXIST IN CARDS- THE EDIT PROGRAM IDENTIFIES SUCH ERROR CARDS IN A PRIOR RUN, RATHER THAN HAVING THE CARDS CAUSE A MACHINE HALT DURING JOB PROCESSING. INVALID CARDS CAN BE IDENTIFIED IN VARIOUS WAYS UNDER SENSE SWITCH CONTROL. CAN BE USED FOR CARD COUNTING IF NO OTHER MEANS IS AVAILABLE. CARD READ ERROR LATCH IS TESTED FOR EACH CARD READ AND DESIRED ACTION TAKEN ON ERROR CARDS ACCORDING TO SENSE SWITCH SETTINGS. ASSEMBLED FOR 4K 1401, WITH MODEL 2 PRINTER AND SENSE SWITCHES. CORE POSITIONS 001 THRU 1184 USED. LANGUAGE 1401 SPS.

1401-01.1.026 AUTOCODER PRE-LIST
DIAGNOSTIC
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.1.026

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A PROGRAM FOR MAKING STACKED PRE-LISTS OF 1401 AUTOCODER SOURCE PROGRAM DECKS. THE PURPOSE IS TO PROVIDE A MEMO OF PRELIMINARY CHECKING WHERE A 1401 TAPE SYSTEM MAY NOT BE AVAILABLE FOR PRELISTING AS A MEANS OF CHECKING PRIOR TO ASSEMBLY TO ATTEMPT LIMITING SOURCE DECK ERRORS. AN EDIT OF OPERATION CODES AND A MINOR EDIT OF OPERANDS IS TAKEN AND ERRORS ARE NOTED. LOGS CARDS ARE ACCEPTED. DISK, BINARY, CALL, INCLD AND ACTUAL INSTRUCTIONS ARE NOT HANDLED. THE RUN REQUIRES A 4K 1401 WITH HI-LO-EQUAL COMPARE AND SENSE SWITCHES- 1403 MODEL 2 PRINTER- AND 1402 MODEL 1 CARD READ PUNCH. THIS PROGRAM WRITTEN IN SPS HAS 678 SOURCE CARDS, IS PRIMARILY CARD TO PRINTER WITH FORMATTING OF OUTPUT AND HAS BEEN TESTED SUCCESSFULLY INNUMERABLE TIMES.

1401-01.1.030 SYMBOLIC LABEL CHECKING, ANY
MACHINE S.P.S.
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.1.030

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A PROGRAM FOR CHECKING SYMBOLIC LABELS USED IN AN S.P.S. SOURCE PROGRAM. AT THE END OF PROCESSING, A LIST OF UNREFERENCED, UNDEFINED AND DUPLICATE LABELS IS PRINTED. 69 LABELS CAN BE CHECKED ON A 1.4 K MACHINE, 154 ON 2 K, 440 ON 4K, 1012 ON 8K, 1583 ON 12 K, AND 2154 ON 16 K. THIS PROGRAM, WHICH IS WRITTEN IN S.P.S., EXECUTES AT 400 TO 800 CARDS PER MINUTE. ANY 1401 MAY BE USED.

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1401-01.1.033 1401/1410 PRE-ASSEMBLY
PROGRAM EDIT AND REFERENCE /PAPER/
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.033

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PAPER IS A SERIES OF THREE PROGRAMS. ITS PURPOSE IS TO DEVELOP AN ALPHABETIC LISTING OF SYMBOLIC NAMES AND THE INSTRUCTIONS IN WHICH THEY ARE USED FOR EACH SEGMENT OF EACH AUTOCODER STATEMENT IN A PROGRAM. FOR USE PRIOR TO ASSEMBLY, ALL UNDEFINED LABELS IN THE PROGRAM WILL BE INDICATED ON THE LISTING. FOR USE IN TESTING AND PROGRAM MAINTENANCE, THE LISTING WILL PROVIDE A CROSS REFERENCE OF EACH SYMBOLIC NAME AND THE INSTRUCTIONS IN WHICH IT WAS USED. PROGRAM 1 /LABEL PROGRAM/ IS A CARD-TO-TAPE PROGRAM. A TAPE RECORD IS DEVELOPED FOR EACH SEGMENT OF AN AUTOCODER STATEMENT- IT CONSISTS OF A SORT FIELD AND THE STATEMENT. THE SORT FIELD CONTAINS THE SYMBOLIC NAME USED AND A CODE SPECIFYING THE USAGE OF THE NAME. A PROGRAM LISTING, WITH SUBSTITUTE CHARACTERS, AND CARD SEQUENCE CHECKING OPTIONS ARE ALSO PART OF THE PROGRAM. PROGRAM 2 IS A TAPE UTILITY SORT PROGRAM FOR ANY COMPUTER. PROGRAM 3 /PRINT PROGRAM/ IS A TAPE-TO-PRINT PROGRAM. THE LISTING IS IN COLLATING SEQUENCE, GROUPED BY EQUAL SYMBOLIC NAMES. SYMBOLIC NAMES THAT REFER TO UNDEFINED LABELS ARE INDICATED. MACHINE CONFIGURATION- 4K 1401, 1 TAPE, 1403 1 CR 2, ADVANCED PROGRAMMING, 1402, HI-LOW-EQUAL. MAY ALSO BE USED ON A 1410 SYSTEM.

1401-01.1.035 TAPE SYSTEM LOADER
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.035

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THE TAPE SYSTEM LOADER PERMITS THE 1401 USER TO PLACE SEVERAL PROGRAMS ON ONE SYSTEM TAPE. THE SYSTEM LOADER CAN-SELECT A PROGRAM FOR LOADING, ADD A NEW PROGRAM TO THE SYSTEM FROM CONDENSED CARDS OR FROM AUTOCODER LOADABLE TAPE, DELETE A PROGRAM FROM THE SYSTEM, LIST ALL THE HEADER CONTROL RECORDS OF THE PROGRAMS ON THE SYSTEM, PLACE ITSELF ON THE SYSTEM TAPE, AND DUPLICATE THE SYSTEM ONTO ANOTHER TAPE. REQUIRES AN 8K SYSTEM WITH THE FEATURES AND EQUIPMENT FOR TAPE AUTOCODER. HOWEVER, IT CAN BE EASILY MODIFIED FOR A 4K 1401 BY CHANGING SEVERAL MODIFY ADDRESS INSTRUCTIONS. WRITTEN IN 1401 TAPE AUTOCODER.

1401-01.1.036 SPSS - AN IMPROVED SPS-
ASSEMBLER
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.036

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TWO PASS ASSEMBLY OF SPS SOURCE PROGRAMS DIRECTLY INTO CONDENSED CARDS. PRE-AND POSTLIST INCLUDED. NO RESTRICTIONS. EXTENDED ERROR CHECKS. UNDEFINED, ETC. LABELS PRINTED AFTER PASS 1. 4K AFFORDS POSSIBILITY FOR USAGE OF OVER 250 LABELS PER ITERATION, 8K OF OVER 800. NO SPECIAL FEATURES NEEDED. 4K- 8K-12K-16K, 1402, 1403.

1401-01.1.039 PRE-LIST FOR AUTOCODER
SOURCE DECK
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.039

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THIS PROGRAM WILL MAKE A THOROUGH CHECK ON AN AUTOCODER SOURCE DECK LISTING EACH STATEMENT AND PRINTING ANY ERRORS FOUND IN THAT STATEMENT ON THE SAME LINE. IN ADDITION THE PROGRAM WILL PRINT AT THE END OF THE LISTING A SYMBOL TABLE INDICATING UNDEFINED OPERANDS UNREFERENCED AND DUPLICABLE LABELS. IT WILL CHECK FOR PAGE/LINE OUT OF SEQUENCE, INVALID LABEL, INVALID OPERATION, COLUMN 19, FLAG ALL NON STANDARD MNEMONICS AS MACROS, TEST FOR ALL LOGICAL ERRORS IN THE OPERAND AND COMPARE COLUMNS 73 - 75 TO BLANK. WRITTEN IN AUTOCODER. REQUIRES 8K STORAGE, ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE.

1401-01.1.040 1401/1410 CROSS REFERENCE
LISTING PROGRAM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.040

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CONTINUED FROM PRIOR COLUMN--

THIS IS AN 8K, 2 TAPE 1401 PROGRAM WHICH WILL PRODUCE A CROSS REFERENCE LISTING OF LABELS AND ALL INSTRUCTIONS THAT REFERENCE THESE LABELS. REFERENCES MADE TO INDEX REGISTERS ARE ALSO LISTED. INPUT IS A 1401 OR 1410 AUTOCODER DECK. OPTIONS WILL PRODUCE A SEQUENCE CHECKED CARD IMAGE LISTING AND A LISTING OF ALL REFERENCES MADE TO NON-EXISTENT TAGS. THIS IS A VALUABLE TOOL FOR PRE-ASSEMBLY AUDIT, AS WELL AS PROGRAM CHANGING AND MAINTENANCE.

1401-01.1.041 PREASSEMBLY TEST FOR
AUTOCODER SOURCE DECKS
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.041

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THE PAT PROGRAM WILL EDIT AND SEQUENCE 1401 AUTOCODER SOURCE DECKS, AND PROVIDE A LISTING FOR DESK-CHECKING. TWO PASSES OF THE SOURCE INFORMATION ARE REQUIRED TO DO THIS. IN THE FIRST PASS, THE CARDS ARE WRITTEN ON TAPE, AND A LABEL TABLE IS DEVELOPED. DURING THE SECOND PASS, THE TAPE IS READ AND A LISTING IS CREATED, SHOWING THE PUNCHED CARD INSTRUCTIONS ON THE LEFT SIDE OF THE LISTING AND A QUASIASSEMBLED LISTING ON THE RIGHT SIDE. ON THE RIGHT SIDE OF THE LISTING, PAGE AND LINE NUMBERS OF THE INSTRUCTION WHICH FIRST REFERENCED THE LABEL IN THE LABEL FIELD WILL BE SUBSTITUTED FOR THE LABEL. ANY ERRORS WHICH MAY OCCUR ARE NOTED, AND A COUNT IS ACCUMULATED, WHICH IS PRINTED AT THE BOTTOM OF THE LISTING. LABELS IN THE OPERAND WHICH ARE FUNCTIONS OF AUTOCODER WILL BE NOTED AS /AUTOC/. REFERENCES TO AREA DEFINING LITERALS WILL BE SUBSTITUTED BY THE PAGE AND LINE NUMBER OF THE INITIALIZING INSTRUCTION. ALL OPEN AND CLOSE INSTRUCTIONS WILL BE LABELED /IOPS/. THE PAT PROGRAM CAN PROCESS INTERNALLY A MAXIMUM OF 340 LABELS. ANY EXCESS OF THIS ARE WRITTEN ON TAPE UNIT 1. MACHINE REQUIREMENTS- 8K STORAGE, ADVANCED PROGRAMMING, 1403 PRINTER, TWO 72" TAPE DRIVES, 1402 CARD READER.

1401-01.1.043 AUTOCODER PRE-LIST
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.043

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AUDITS BASIC AUTOCODER STATEMENTS FOR PAGE-LINE SEQUENCE, IDENTIFICATION, VALID MNEMONIC OR ACTUAL OPERATION INCLUDING STANDARD AUTOCODER/IOPS MACROS, VALID SYMBOLIC OR ACTUAL OPERANDS INCLUDING INDEXING AND CHARACTER ADJUSTMENT, VALID DECLARATIVE STATEMENTS VALID D-MODIFIER TO MNEMONIC RELATIONSHIP, LOGICAL INSTRUCTION LENGTH, BLANKS IN CARD COLUMNS 73 - 75, AND DUPLICATE OR UNDEFINED LABELS WITHIN THE LIMITS OF STORAGE. REQUIRES 4K 1401, 1402, 1403 MOD. 1 OR 2, HIGH-LOW-EQUAL COMPARE, AND ADVANCED PROGRAMMING. LABEL CAPACITY IS 666 FOR 8K, 1333 FOR 12K AND 2000 FOR 16K. PROGRAM HAS 887 AUTOCODER SOURCE STATEMENTS OCCUPYING 3376 POSITIONS OF STORAGE.

1401-01.1.045 SPS PRE-LIST
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.045

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A TWO PASS, PRE-PROCESS LISTING FOR SPS PROGRAMS WHICH VERIFIES THE VALIDITY OF THE SYMBOLIC A AND B OPERANDS. IN ADDITION, THE PROGRAM CHECKS- /1/ PAGE AND LINE SEQUENCE, /2/ COUNT, AND /3/ MNEMONIC OPERATION CODES. THE PROGRAM HAS THE CAPACITY TO STORE ONLY 400 LABELS SO IT CAN VERIFY ONLY THE FIRST 400 ENCOUNTERED DURING PASS 1. STORAGE AND EQUIPMENT SPECIFICATIONS- THE PROGRAM IS DESIGNED TO OPERATE ON A 4K 1401. THE PRINT CAN BE ACCOMMODATED ON EITHER A MODEL 1 OR A MODEL 2. NO SPECIAL FEATURES ARE REQUIRED FOR THE 1401, 1402 OR 1403.

1401-01.1.046 LABEL CHECKS /SPS/
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.1.046

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THE LABEL CHECKER CHECKS 1401 SOURCE PROGRAMS WRITTEN IN SYMBOLIC PROGRAMMING SYSTEMS, /SPS/, LANGUAGE FOR UNREFERENCED AND DUPLICATE LABELS, AND UNREFERENCED OPERANDS. IT REQUIRES TWO PASSES OF THE SOURCE DECK THROUGH THE 1402 CARD READER. PASS 1 LOADS THE LABEL TABLE. PASS 2 PRINTS THE LABEL TABLE IN ALPHA SEQUENCE ON THE HIGH ORDER POSITION OF THE LABEL, CHECKS EACH OPERAND FIELD FOR A LABEL AND IF IT CONTAINS A LABEL, IT THEN CHECKS THE LABEL FOUND IN THE OPERAND FIELD AGAINST THE LABEL TABLE. IF THE LABEL TABLE DOES NOT COMPARE EQUAL, THE UNREFERENCED OPERAND IS PRINTED WITH THE PAGE AND LINE NUMBER OF THE INSTRUCTION. AFTER READING ALL THE CARDS, THE LABEL TABLE IS SCANNED FOR DUPLICATE AND UNREFERENCED LABELS. ANY SUCH LABELS ARE THEN PRINTED. A MAXIMUM OF 447 LABELS CAN BE PROCESSED ON A 4K MACHINE WITH AN ADDITIONAL 666 LABELS FOR EACH ADDITIONAL 4K. EQUIPMENT SPECIFICATIONS ARE A 4K 1401 WITH A 1403 PRINTER AND A 1402 READER, ANY MODELS. SELECT STACK IS THE ONLY SPECIAL FEATURE USED.

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1401-01.1.049 PATCH GENERATOR FOR
AUTOCODER TESTING
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.1.049

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PAGEN IS A PROGRAM THAT ENABLES THE USER TO CREATE PATCHES WITH A MINIMUM OF WRITING AND KEY-PUNCHING, AND MOST ESPECIALLY, NOT HAVING TO TRANSLATE FOUR POSITION ADDRESSES TO THREE. INSTRUCTIONS AND CONSTANTS MAY BE MIXED. CONSECUTIVE ITEMS NEED ONLY THE STARTING ADDRESS. MACHINE CONFIGURATION- 1401 WITH 8K OR LESS, 1402, ADVANCED PROGRAMMING PACKAGE, MODIFY ADDRESS, OCCUPIES 803 CORE LOCATIONS STARTING AT 0333. SOURCE LANGUAGE- AUTOCODER.

1401-01.1.050 1401 ASAP
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.1.050

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AN SPS ASSEMBLY PROGRAM FOR 4K OR GREATER IBM 1401/1460 CARD SYSTEM. IT DOES NOT REQUIRE SPECIAL FEATURES FOR ASSEMBLY, BUT THE OBJECT PROGRAM MAY USE ANY OF THEM. LANGUAGE EXTENSIONS- B OPERAND ACCEPTED IN END OR EX STATEMENTS. PROCESS OVERLAP A OPERAND. DSE STATEMENT, EQUIVALENT TO DSA WITHOUT WORD MARK. FIRST PASS GOES AT 800 CPM WITH PRELISTING OF ERRORS. SECOND PASS GOES AT 300/600 CPM, PRINTING POST LIST AND/OR PUNCHING AUTOCODER FORMAT CONDENSED DECK. A LABEL TABLE AND DUPLICATED AND UNREFERENCED LABELS ARE PRINTED. REITERATION IS POSSIBLE AND NECESSARY IF THE NUMBER OF LABELS EXCEEDS 176, 620, 1065, OR 1509 FOR 4, 8, 12 OR 16K MEMORY. THE CONDENSED CARD NUMBER CORRESPONDING TO EACH LINE IS PRINTED IN POST LIST. THE OUTPUT OPTIONS ARE UNDER CTL CARD SPECIFICATIONS. MACHINE CONFIGURATION- PROCESSOR MACHINE WITH 4000 OR MORE CORE POSITIONS, 1402 AND 1403. ANY OBJECT MACHINE. SOURCE LANGUAGE- SPS.

1401-01.1.051 1401/1460 PACE PRE-ASSEMBLY
CHECK AND EDIT
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.1.051

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PACE BRINGS TO THE 1401/1460 USER AN EFFICIENT AND MEANINGFUL DIAGNOSTIC PROGRAM. IT WILL CHECK AND EDIT 1401 AUTOCODER AND AUTOCODER/IOCS SOURCE PROGRAMS BY DETECTING UNDEFINED LABELS, FORMAT AND PARAMETER ERRORS, CODING ERRORS AND KEY PUNCH ERRORS. THE PRINTED OUTPUT PROVIDES A LABEL TABLE IN ALPHABETICAL ORDER FOLLOWED BY A LISTING OF THE SOURCE PROGRAM WITH ERRORS UNDERLINED BY A SIGNIFICANT SPECIAL CHARACTER. AN EDIT IS ALSO PERFORMED ON DIOCS AND DTF ENTRIES FOR ACCEPTABILITY AND SPELLING. THERE ARE THREE CHECKS OF AUTOCODER STATEMENTS PERTAINING TO LABELS, OPERATION CODES AND OPERANDS. THE CHECKING RESULTS ARE EQUAL TO AN AUTOCODER ASSEMBLY. THIS PROGRAM WILL RUN ON ANY 1401/1460 SYSTEM WITH A MINIMUM STORAGE OF 4,000 POSITIONS. P - 1311, HIGH-LOW-EQUAL COMPARE AND ADVANCED PROGRAMMING. PRINTED OUTPUT OPTIONS ARE AVAILABLE WITH SENSE SWITCHES. PACE WILL ALLOW PROGRAMMERS TO BECOME MORE PRODUCTIVE BY MINIMIZING PROGRAM TESTING. SINCE IT AVERAGES BETWEEN 195 AND 265 CARDS PER MINUTE DEPENDING UPON THE MACHINE CONFIGURATION, IT WILL ALSO ELIMINATE A SUBSTANTIAL AMOUNT OF MACHINE TIME PREVIOUSLY USED FOR ASSEMBLY AND PROGRAM TESTING.

1401-01.1.052 SPS SINGLE PASS ASSEMBLER
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.1.052

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THIS PROGRAM WAS DESIGNED SPECIFICALLY FOR 4K CARD SYSTEMS, AND COMPLETELY ELIMINATES THE CARD FOR CARD PUNCHING NORMALLY ASSOCIATED WITH CARD ASSEMBLERS. NO SPECIAL FEATURES ARE REQUIRED TO USE THIS PROGRAM. THE SOURCE DECK BEING ASSEMBLED IS READ TWICE. THE FIRST READING SETS UP AN INTERNAL LABEL TABLE, THE SECOND TIME THROUGH A CONDENSED DECK IS PUNCHED AND THE LISTING PRINTED. A LABEL TABLE IS ALSO PRINTED WITH UNREFERENCED AND DUPLICATE LABELS INDICATED AS SUCH. MA, SAR, SBR, MIZ, MCK, BBE, AND INDEXING CANNOT BE ASSEMBLED WITH THIS PROGRAM. TAPE, DISC, AND DRUM INSTRUCTIONS OF ANY TYPE CANNOT BE ASSEMBLED. THERE IS A MAXIMUM NUMBER OF LABELS THAT CAN BE PROCESSED AND THIS VARIES FROM 224-252. DSA, DS, DC AND DCW CARDS ARE PLACED IN MEMORY WHERE THEY APPEAR IN THE SOURCE DECK. A 4K 1401 /ANY MODEL/, 1402, AND 1403 WITH NO SPECIAL FEATURES IS REQUIRED.

1401-01.1.053 CONDENSE FARGO
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.1.053

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CONTINUED FROM PRIOR COLUMN--

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THIS PROGRAM, CONDENSE FARGO, WILL CONDENSE A 4K FARGO PROGRAM TO THE MINIMUM AMOUNT OF LOADABLE ACTUAL INSTRUCTION CARDS UTILIZING THE STANCARD AUTOCODER LOAD FORMAT. THE FINAL CONDENSED FARGO OBJECT DECK WILL BE APPROXIMATELY 1/3 THE SIZE OF THE ORIGINAL FARGO SOURCE DECK. THE BENEFITS REALIZED ARE TWOFOLD- PROGRAM LOAD TIME IS REDUCED MORE THAN TWO THIRDS. ASSEMBLY OF THE PROGRAM INTO STORAGE BY PHASES IS NO LONGER NECESSARY. THE OBJECT DECK LOADS INTO STORAGE IN THE SAME MANNER AS ANY AUTOCODER OBJECT DECK. PHYSICAL STORAGE ROOM NEEDED FOR PROGRAM DECKS IS REDUCED BY APPROXIMATELY TWO THIRDS. TWO INSERT CARDS ARE REQUIRED IN EACH SOURCE DECK TO BE CONDENSED. A HEADER CARD WITH A LOZENGE /12-4-8/ IN COLUMN 1 MUST BE PLACED ON THE FRONT OF EACH DECK. A LINKAGE CARD MUST BE INSERTED IMMEDIATELY PRECEDING THE END, CARD WHICH PRECEDES FARGO PHASE 4 HEADING CARDS. /THE END CARD WILL HAVE A SLASH /0-1/ IN COLUMN 56 USED IN THE SPS LOAD FORMAT OR COLUMN 40 USED IN THE AUTOCODER LOAD FORMAT/. THIS PROGRAM REQUIRES AN 8K 1401 WITH ADVANCED PROGRAMMING UTILIZING THE 1401 AND 1402 ONLY. THE PROCESSOR OCCUPIES STORAGE POSITIONS 4000 - 5130 DURING PROGRAM EXECUTION. SOURCE LANGUAGE - AUTOCODER.

1401-01.1.054 CROSS-REFERENCE PHASE OF
1401 AUTOCODER
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.1.054

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DURING COMPILATION OF A 1401 AUTOCODER AND/OR SPS SOURCE LANGUAGE PROGRAM, THIS PATCH TO THE 1401 AUTOCODER SYSTEM /1401-AU-037/ WILL ALLOW AUTOMATIC GENERATION OF A CROSS-REFERENCED LISTING OF LABELS, ADDRESS CONSTANTS, IMPLICITLY-DEFINED LITERALS, AND ALL INSTRUCTIONS WHICH REFERENCE THESE ITEMS. THIS INFORMATION IS VERY USEFUL IN DEBUGGING AND MAINTAINING PROGRAMS WRITTEN IN 1401 AUTOCODER AND/OR SPS SOURCE LANGUAGE. THIS CROSS-REFERENCE PHASE IS EXECUTED AFTER PASS 7 OF A 1401 AUTOCODER COMPILATION. THE PRINTED CROSS-REFERENCED LISTING FOLLOWS THE ASSEMBLY LISTING. NO PROVISION HAS BEEN MADE TO WRITE THE CROSS-REFERENCED LISTING ON THE 1401 AUTOCODER LISTING TAPE /TAPE 3/. NO BLANKS ARE ALLOWED BETWEEN OPERANDS IN THE SOURCE LANGUAGE STATEMENTS. THIS PATCH IS INTENDED FOR THE 1401-AU-037 VERSION 3 MODIFICATION LEVEL 10 SYSTEMS DECK. CAUTION SHOULD BE EXERCISED WHEN INSERTING THESE CHANGES INTO ANY OTHER VERSION OR LEVEL OF 1401-AU-037. STORAGE REQUIREMENTS- 8,000 POSITIONS OF CORE STORAGE. EQUIPMENT SPECIFICATIONS- 1401 WITH 8,000 POSITIONS OF CORE STORAGE, 4 /FOUR/ 729 II OR IV TAPE UNITS, 1403 PRINTER MODEL 3 /CARRIAGE CONTROL TAPE MUST HAVE PUNCHES IN CHANNELS 1 AND 12/, 1402 CARD READ-PUNCH, ADVANCED PROGRAMMING FEATURES, HIGH-LOW-EQUAL COMPARE. SOURCE LANGUAGE- 1401 AUTOCODER. A PROGRAM CONSISTING OF 1713 AUTOCODER SOURCE LANGUAGE STATEMENTS, CONTAINING 404 LABELS AND 1746 REFERENCES TO THOSE LABELS, WAS COMPILED IN 13.8 MINUTES USING AN AUTOCODER SYSTEM WITHOUT CROSS-REFERENCING AND IN 20.4 MINUTES USING AN AUTOCODER SYSTEM WITH CROSS-REFERENCING. THE CROSS-REFERENCED LISTING CONSISTED OF 489 PRINTED LINES.

ONE REEL OF TAPE IS REQUIRED TO OBTAIN THE PROGRAM CARDS. THE TAPE MUST BE 2400 FEET AND MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE.

1401-01.1.055 LOAD AND GO ASSEMBLER
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.1.055

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THIS PROGRAM ASSEMBLES AND EXECUTES INSTRUCTIONS WRITTEN IN A FIXED FORM SYMBOLIC LANGUAGE. THREE HUNDRED POSITIONS OF STORAGE ARE USED BY THE ASSEMBLER, PLUS SIX FOR EACH LABEL AND SIX FOR EACH INSTRUCTION HAVING INDEXED OPERANDS. THE USERS SOURCE DECK MAY CONTAIN UP TO FIVE INSTRUCTIONS PER CARD. THE PROCESSOR IS DESIGNED TO OPERATE ON 1401 SYSTEMS OF 2000 OR MORE POSITIONS OF STORAGE, BUT IS ADAPTABLE TO 1-4K SYSTEMS WITH MODIFICATIONS TO THE SOURCE DECK. NO SPECIAL FEATURES ARE REQUIRED.

1401-01.2.003 THREE TAPE SORT PROGRAM
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.2.003

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TO PROVIDE A SORT PROGRAM FOR 1401 SYSTEMS USING 3 MAGNETIC TAPE UNITS. THE PROGRAM CONSISTS OF FOUR PHASES AND MAY ALSO BE USED FOR MERGING TWO TAPE FILES WHICH ARE ALREADY IN ASCENDING ORDER. 4000 POSITIONS OF CORE STORAGE ADVANCED PROGRAMMING FEATURE HIGH-LOW-EQUAL COMPARE FEATURE SENSE SWITCHES FEATURE THREE /3/ TAPE UNITS /733C OR 729 II OR IV/

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1401-01.2.005 CARD FILE MERGE
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.2.005

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THE PROGRAM IS DESIGNED TO MERGE TWO CARD FILES. 670 POSITIONS, 1401 WITH 1400 POSITIONS OF MEMORY, READ-PUNCH FEED DEVICE, HIGH-LOW-EQUAL COMPARE, RPQ DEVICE READ STACKER SELECT DELAY, REFERENCE W92210, DEVICE CODE 1401-4235.

1401-01.2.007 AUTO-LODER 8K, 12K, 16K
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.2.007

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1401 AUTO-LODER IS A LOAD-6-GO SUBSET OF AUTOCODER LOADED FROM CARDS. TAPES ARE NEEDED ONLY IF DESIRED BY OBJECT PROGRAM FOR I/O THE USERS SOURCE PROGRAM IS PUNCHED IN AUTOCODER SYMBOLIC LANGUAGE USING LABELS AND ACTUAL ADDRESSES OF 2 OR 3 CHARACTERS. AUTO-LODER PLUS SYMBOLIC DECK EQUALS OBJECT DECK. MACHINE REQUIREMENTS ARE 8,000 POSITIONS OF CORE STORAGE, 1402 CARD READER, ADVANCED PROGRAMMING FEATURE AND HIGH-LOW-EQUAL COMPARE. THIS PROGRAM HAS PROVED EXTREMELY USEFUL FOR ALL NOT-TOO-ELABORATE JOBS- JOBS WITH AT MOST A FEW HUNDRED PROGRAM STEPS. THE NO-ASSEMBLY LOAD-6-GO FEATURE GIVES FASTER DELIVERY OF RUSH JOBS AND PERMITS EASY PROGRAM ALTERATION. IT IS ALSO VALUABLE FOR ONE-TIME-ONLY PROGRAMS SUCH AS EMERGENCY INFORMATION RETRIEVAL OR RESTART, AND CONVERTING DATA INTO NEW FORMAT. AUTO-LODER CONSISTS OF 76 CARDS. AUTO-LODER USES 2327 STORAGE POSITIONS PLUS SIX FOR EACH USER LABEL. THIS IS LOADED INTO THE HIGHEST LOCATION DOWN. IF THERE IS NO ORG THE OBJECT PROGRAM WILL BEGIN AT 333.

1401-01.2.009 SEQUER TO SEQUENCE CHECK A
FILE OF CARDS ALPHANUMERICALLY AND/OR NUMERICALLY
AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.2.009

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TO SEQUENCE CHECK A FILE OF CARDS. THE CONTROL WORD MAY CONSIST OF 1 TO 13 SEPARATE CONTROL FIELDS. EACH SEPARATE CONTROL FIELD MAY BE SEQUENCED AS ALPHANUMERIC OR NUMERIC. THIS ROUTINE WILL ALLOW OR PROHIBIT EQUAL RECORDS. IF A SEQUENCE ERROR IS DETECTED /STEP DOWN OR PROHIBITED EQUAL/, THE ERROR WILL BE REPEATED FOR EACH FOLLOWING CARD UNTIL AN EQUAL OR HIGH CONDITION IS REACHED. TO ELIMINATE THE REQUIREMENT OF WIRING COLLATOR BOARDS. RESTRICTIONS, RANGE-THE TYPE OF SEQUENCE AND THE NUMBER OF FIELDS TO BE SEQUENCE CHECKED IS BASED ON ONE CONTROL CARD WHICH FOLLOWS THE PROGRAM DECK. THE CONTROL CARD IS COMPLETELY ANALYZED, AND IF ANY ERRORS ARE DETECTED IN THE CONTROL CARD, THE PROGRAM WILL NOT PROCESS THE DETAIL FILE. STORAGE REQUIREMENTS 1401-2K
EQUIPMENT SPECIFICATIONS 1. ADVANCED PROGRAMMING FEATURE
2. HIGH-LOW-EQUAL COMPARE
3. READ-RELEASE FEATURE

1401-01.2.011 THREE TAPE SORT PROCESSOR
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.2.011

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THIS PROCESSOR GENERATES A THREE TAPE SORT PROGRAM IN 1401 AUTOCODER LANGUAGE FROM A CONTROL CARD. THE GENERATED PROGRAM CAN BE EITHER A SOURCE OR OBJECT DECK. THE GENERATED PROGRAM WILL SORT UNBLOCKED FIXED LENGTH RECORDS INTO ASCENDING OR DESCENDING ORDERS ON A MAXIMUM OF TEN CONTROL FIELDS USING THREE TAPE DRIVES. RESTRICTIONS- THE SORT PROGRAM SHOULD ONLY BE USED ON SMALL VOLUME AS IT BECOMES INEFFICIENT ON MEDIUM OR LARGE VOLUME FILES. EQUIPMENT SPECIFICATIONS- 1402 CARD READER PUNCH- 1403 PRINTER- FOUR 729 II, IV, V, VI TAPE UNITS- 1401 PROCESSING UNIT WITH 8K STORAGE /MINIMUM/, HI-LO-EQ COMPARE, ADVANCED PROGRAMMING, MULTIPLY-DIVIDE, SENSE SWITCHES- AUTOCODER SYSTEM TAPE.

1401-01.2.012 TTSRT - TWO TAPE SORT
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.2.012

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THIS PROGRAM WILL SORT FIXED LENGTH, FIXED BLOCK RECORDS ON A TWO-TAPE 1401 PROVIDED THE CONTROL FIELDS ARE NUMERIC ONLY. INPUT AND OUTPUT ARE ON TAPE. 4K MEMORY SIZE IS NEEDED AND SENSE SWITCHES ARE DESIREABLE FOR USE OF AN OPERATING OPTION IN THE READ ERROR ROUTINE. NO OTHER SPECIAL FEATURES REQUIRED. USER SPECIFIES HIS RECORD SIZE, CONTROL FIELDS,ECT ON A SINGLE CONTROL CARD. PORTION OF DOCUMENTATION OF PROGRAM IS BUILT INTO LISTING USING COMMENTS AND COMMENTS CARDS. UP TO 5 NUMERIC CONTROL FIELDS ARE ALLOWED. MAXIMUM INPUT VOLUME IS ONE REEL OF TAPE, THEREFORE, ACTUAL NUMBER OF RECORDS WHICH CAN BE SORTED WILL VARY WITH BLOCK SIZE AND RECORD LENGTH. MAXIMUM INPUT BLOCK SIZE IS 1200 CHARACTERS. PROGRAM IS WRITTEN IN SPS.

1401-01.2.013 CARD SORTER
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.2.013

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THIS TWO PHASE PROGRAMMING SYSTEM PROVIDES AN OPTIMUM METHOD FOR ARRANGING CARD FILES IN ASCENDING ORDER ON A 1401 TAPE SYSTEM. ATTRACTIVE FEATURES OF THE SYSTEM INCLUDE THE ABILITY TO INPUT CARD FILES DIRECTLY OR FROM MAGNETIC TAPE EITHER UNBLOCKED OR BLOCKED 22 WITH A TERMINAL RECORD MARK, THE OPTION TO CONTROL SORTING ON AS MANY AS TEN SEPARATE CONTROL FIELDS, AND THE PROVISION TO INCLUDE THE RELATIVELY SMALL OBJECT DECKS IN A LARGE PROGRAMMING SYSTEM THROUGH AN OVERLAY MODE FEATURE. METHOD- A TWO PHASE PROCESS IS USED- 1/ PHASE ONE CHECKS THE PARAMETER AND, HAVING VERIFIED ITS ACCEPTABILITY, PROCEEDS TO READ THE INPUT FILE IN BLOCKS OF FOURTY-FOUR RECORDS, PERFORM A MODIFIED BIT REVERSE SORT METHOD INTERNAL SORT ON THESE RECORDS, AND WRITE THEM IN BLOCKS OF TWENTY-TWO ON UNITS THREE AND FOUR IN SEQUENCES AS LARGE AS POSSIBLE. 2/ PHASE TWO PERFORMS A BALANCED TWO WAY MERGE AND SPREAD ON THE BLOCKED FILES WRITTEN BY PHASE ONE. THE LAST MERGE PASS ADJUSTS THE OUTPUT TO THE DESIRED FORM. RANGE- AS MANY AS 205,000 RECORDS MAY BE SORTED USING 2400 FOOT REELS OF 800 CPI TAPE. THIS FIGURE DRIPS TO 154,000 FOR 2400 FOOT REELS OF 556 CPI TAPE. STORAGE REQUIREMENTS- 7949 POSITIONS OF STORAGE ARE REQUIRED. POSITIONS 7,950 TO 7,999 ARE LEFT COMPLETELY UNDISTURBED BY BOTH PHASES, AND AT THE END OF SORT, IF THE PROGRAM HAS BEEN INSTRUCTED TO OPERATE IN THE OVERLAY MODE, POSITION 7949 CONTAINS THE UNIT NUMBER OF THE SORTED OUTPUT TAPE WITH A WORD MARK. EQUIPMENT SPECIFICATIONS- AN 8K 1401, WITH 4 TAPE DRIVES, HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING PACKAGE, STORE ADDRESS REGISTER, AND INDEX REGISTER FEATURES IS REQUIRED.

1401-01.2.016 TWO-TAPE SORT
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.2.016

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CARDS ARE INPUT TO A PROGRAM WHICH SORTS ON AS MANY AS FIVE CONTROL FIELDS AND PRODUCES AS OUTPUT A TAPE WHOSE RECORDS CONTAIN BLOCKS OF FORTY CARD IMAGES IN ASCENDING SEQUENCE. MACHINE CONFIGURATION- 8K 1401, 2 TAPE UNITS, ADVANCED PROGRAMMING, HLE COMPARE, READ RELEASE, CARD READER PUNCH, PRINTER.

1401-01.2.018 CARD MERGE
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.2.018

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THIS IS A CARD COLLATING PROGRAM DESIGNED TO SEQUENCE CHECK, SEQUENCE CHECK WITH SELECTION, MERGE, MERGE WITH SELECTION, MATCH, AND MATCH WITH SELECTION. A MAXIMUM OF 16 PARAMETER CONTROLLED FIELDS MAY BE UTILIZED. MACHINE CONFIGURATION REQUIRED IS A 1401 WITH 4K, HI-LO-EQ COMPARE AND ADVANCED PROGRAMMING FEATURES, A 1402 WITH PUNCH FEED READ AND READ FEED STACKER DELAY FEATURES AND ANY MODEL 1403. SOURCE LANGUAGE IS AUTOCODER.

1401-01.2.019 SORT 71- SORT 7 WITH THREE
TAPE UNBALANCED SORT CAPABILITY
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.2.019

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THIS PROGRAM WAS DEVELOPED AND IMPLEMENTED TO INVESTIGATE AND VERIFY MERGING TECHNIQUES AND THEIR ASSOCIATED REDISTRIBUTION PHASE. THE SPECIFICATIONS FOR SORT 71 ARE THE SAME AS THOSE DESCRIBED FOR SORT 7 IN THE SPECIFICATIONS BULLETIN ,,SORT 7 AND MERGE 7 FOR THE IBM 1401 SPECIFICATIONS,, FORM C24-3075 EXCEPT THAT SORT 71 CAN, IN ADDITION, SORT FIXED LENGTH BLOCKED OR UNBLOCKED RECORDS WITHOUT LABEL HANDLING CAPABILITIES ON SYSTEMS EQUIPPED WITH ONLY 3 TAPE DRIVES. SORT 71 WAS IMPLEMENTED USING AS A BASIS THE IBM 1401 PROGRAM SORT 7 FILE NUMBER 1401-SM-060 GENERALIZED SORT PROGRAM VERSION 1. THE MINIMUM MACHINE REQUIREMENTS FOR SORT 71 ARE IDENTICAL TO THOSE REQUIRED FOR SORT 7 AS DELINEATED IN THE OPERATIONS BULLETIN ,,SORT 7 FOR THE IBM 1401., OPERATING PROCEDURES,, FORM C24-3107,

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ONLY THREE TAPE DRIVES ARE NEEDED WHEN USING THREE TAPE MULTIPHASE IN SORT 71. SORT 71 CAN RUN ON AN 8K SYSTEM. THE TAPE FILE GENERATOR INCLUDED TO GENERATE INPUT FOR SAMPLE PROBLEM UTILIZES A 12K 1401 WITH ONE TAPE UNIT. THE PROGRAM USED MCST OF THE AVAILABLE CORE WHEN USING AN 8K SYSTEM. THE PROGRAM USES APPROXIMATELY 4000 POSITIONS OF CORE IN PHASE 1 AND 2815 POSITIONS OF CORE IN PHASE 2. THE PROGRAM WAS WRITTEN IN 1401 TAPE AUTOCODER, BUT DOES NOT USE THE AUTOCODER IOCS. THERE ARE 9853 SOURCE STATEMENTS. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP...
MACHINE READABLE - TAPE FILE GENERATOR AND CONTROL CARDS...
ONE REEL OF MAGNETIC TAPE CONTAINING OBJECT DECK AND LISTINGS.

OPTIONAL PROGRAM MATERIAL - ONE REEL OF MAGNETIC TAPE CONTAINING THE SOURCE DECK.

1401-01.2.020 GENERALIZED THREE TAPE SORT PROGRAM

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.2.020

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THIS IS A GENERALIZED SORTING PROGRAM WRITTEN FOR A 3-TAPE, 4K 1401 SYSTEM, AND WILL SORT FIXED LENGTH RECORDS WRITTEN IN THE MOVE-MODE. IT SORTS IN ASCENDING OR DESCENDING SEQUENCE IN UP TO 10 CONTROL FIELDS AS SPECIFIED BY THE CONTROL CARDS AND SENSE SWITCHES.

RESTRICTIONS--
- INPUT BLOCKS LARGER THAN 800 POSITIONS MAY NOT BE SORTED.
- MAXIMUM NUMBER OF CONTROL FIELDS IS TEN.
- ANY NUMBER OF INPUT RECORDS MAY BE SORTED PROVIDED PERMISSIBLE BLOCK LIMITS ARE NOT EXCEEDED.
- A RECORD CONTAINING A DOT, /12-8-3 PUNCH/, AS THE FIRST CHARACTER OF ITS FIRST CONTROL FIELD MAY NOT BE SORTED.
- RECORDS CONTAINING A RECORD-MARK IN OTHER THAN THEIR LOCK ORDER POSITION MAY NOT BE SORTED.
MACHINE CONFIGURATION-- 4K 1401, 3 TAPE UNITS, HIGH-LOW-EQUAL, SBR, SAR, SENSE SWITCHES, MULTIPLY-DIVIDE, INDEX REGISTERS.

1401-01.2.021 THREE DISK SORT -SORT 72 AVAILABLE 4TH QUARTER 1965. SPECIFY FILE NUMBER 1401-01.2.021

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THIS PROGRAM WAS DEVELOPED AND IMPLEMENTED TO INVESTIGATE AND VERIFY DISK MERGING TECHNIQUES AND THEIR ASSOCIATED REDISTRIBUTION PHASE. THE SPECIFICATIONS FOR SORT 72 ARE SIMILAR TO THOSE DESCRIBED FOR SORT 7 AND THE TYPE III PROGRAM, SORT 71, IN THE SPECIFICATIONS BULLETIN ,,SORT 7 AND MERGE 7 FOR THE I.B.M. 1401 SPECIFICATIONS,, FORM C24-3075 EXCEPT THAT SORT 72 WILL SORT FIXED LENGTH BLOCKED OR UNBLOCKED RECORDS WITHOUT LABEL HANDLING CAPABILITIES ON SYSTEMS EQUIPPED WITH ONLY 3-1311 DISK DEVICES. THIS PROGRAM DOES NOT HANDLE TAPE SORTING. SORT 72 WAS IMPLEMENTED USING AS A BASIS THE PRESENTLY AVAILABLE TYPE III PROGRAM ,,SORT 71 - SORT 7 WITH 3 TAPE UNBALANCED SORT CAPABILITY,, FILE NUMBER 1.2.019. THE MINIMUM MACHINE REQUIREMENTS FOR SORT 72 ARE IDENTICAL TO THOSE REQUIRED FOR SORT 7 AS DELINEATED IN THE OPERATIONS BULLETIN ,,SORT 7 FOR THE IBM 1401,, OPERATING PROCEDURES,, FORM C24-3107 EXCEPT THAT SORT 72 UTILIZES 3-1311 DISK DEVICES. 4282 SOURCE STATEMENTS.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP.
MACHINE READABLE - PROGRAM DECK... ONE REEL OF MAGNETIC TAPE CONTAINING OBJECT DECKS AND THE ASSEMBLY LISTING.

OPTIONAL PROGRAM MATERIAL -
ONE REEL OF MAGNETIC TAPE CONTAINING THE SOURCE CARDS.

THE NUMBER OF TAPES REQUIRED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-01.2.022 8K THREE TAPE SORT MERGE AVAILABLE 4TH QUARTER 1966. SPECIFY FILE NUMBER 1401-01.2.022

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THE PURPOSE IS TO PROVIDE AN ALPHANUMERIC SORT PROGRAM FOR 1401 SYSTEM USING THREE MAGNETIC TAPE UNITS. IT IS A MODIFICATION OF 1401-01.2.003. INPUT IS FIXED LENGTH BLOCKED OR UNBLOCKED RECORDS. OUTPUT IS ASCENDING SEQUENCE ONLY. THE PROGRAM CONSISTS OF FOUR PHASES AND MAY ALSO BE USED FOR MERGING TWO TAPE FILES WHICH ARE ALREADY IN ASCENDING SEQUENCE. EQUIPMENT SPECIFICATIONS-- ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, SENSE SWITCHES, THREE TAPE UNITS /7330 OR 729 II OR IV./ AND 8000 POSITIONS OF CORE.

1401-01.2.023 IBM 1401/1440/1460/1311 DISK SORT AVAILABLE 4TH QUARTER 1966.

CONTINUED FROM PRIOR COLUMN--
SPECIFY FILE NUMBER 1401-01.2.023

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THIS PROGRAM IS A GENERALIZED DISK SORT AND WILL RUN ON 1440-1460-1401. DARTS-2 WILL SORT FIXED LENGTH BLOCKED OR UNBLOCKED RECORDS IN SECTOR MODE AND FIXED LENGTH RECORDS IN TRACK MODE. DARTS-2 WILL SORT ASCENDING OR DESCENDING ALPHA OR NUMERIC. DARTS-2 WILL PROVIDE EXITS FOR JOB TO JOB LINKAGE, MONITOR LINKAGE, INQUIRY LINKAGE, CAN RESIDE ON DISK OR TAPE, AND USES A VERY SMALL WORK AREA. INPUT AND OUTPUT AREAS MAY BE PHYSICALLY THE SAME OR ADDRESSED THE SAME. DARTS-2 IS WRITTEN IN 1401-1440 AUTOCODER AND CONSISTS OF 2 PROGRAMS. MINIMUM MACHINE REQUIREMENTS ARE 8K, ADVANCED PROGRAMMING, HI-LO-EQUAL, 1311, 1442-1402.

1401-01.3.003 GENERAL PURPOSE TAB-BACK PROGRAM

AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.3.003

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TO PROVIDE TABULATIONS OR LISTINGS OF SUMMARY CARDS OR INITIAL DATA CARDS FOR CONTROL AND VERIFICATION PURPOSES. THIS PROGRAM MAY HAVE THE FOLLOWING 1 CARD A UP TO TEN, EIGHT COLUMN ADD FIELD DESCRIPTIONS
2 CARD B A/ UP TO TEN POSITIVE, TEN COLUMN ADD FIELDS, OR UP TO TEN NEGATIVE, EIGHT COLUMN ADD FIELDS, B/ UP TO THREE CLASSES OF COMPARING OF NOT MORE THAN TEN COLUMNS FOR EACH CLASS OF COMPARING, C/ UP TO FOUR CLASSES OF TOTALS. 3479 CORE POSITIONS ARE REQUIRED FOR THIS PROGRAM. EQUIPMENT SPECIFICATIONS 4K, 1401 CARD SYSTEM, WITH THE ADVANCED PROGRAMMING PACKAGE, AND 1403 PRINTER.

1401-01.3.004 SLIP /SYMBOLIC LANGUAGE INSERT PACKAGE/ /CARD/

AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.3.004

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TO SIMPLIFY THE WRITING OF PROGRAMS FOR A BASIC CARD IBM 1401 SYSTEM BY ELIMINATING THE OVERALL LOOPED CONCEPT OF STORED PROGRAM LOGIC, THE FIRST AND LAST CARD IDIOSYNCRASIES, AND THE SETTING OF SWITCHES FOR REPORT HEADING AND TOTAL PROGRESSION ROUTINES. ALSO, TO SIMPLIFY PROGRAMMING EFFORT BUT AT THE SAME TIME TO RETAIN THE INHERENT FLEXIBILITIES OF THE ONE FOR ONE IBM SYMBOLIC PROGRAMMING SYSTEM. SLIP OCCUPIES 484 POSITIONS OF CORE AND USES AN ADDITIONAL 80 POSITIONS OF CORE FOR SCHEDULING AND STACKING OF CARDS FROM THE IBM 1402 READ FEED. 1401 CARD SYSTEM.

1401-01.3.005 REPORT PROGRAM GENERATOR PRE-EDIT

AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.3.005

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AN IBM 1401 PROGRAM TO EDIT REPORT PROGRAM GENERATOR CONTROL, INPUT SPECIFICATIONS, DATA SPECIFICATIONS, CALCULATION SPECIFICATIONS, AND FORMAT SPECIFICATION CARDS FOR POSSIBLE CLERICAL AND LOGICAL ERRORS. THE PROGRAM SUPPLIES A CARD IMAGE LISTING AND SPECIFIC ERROR MESSAGES. 4K CORE. IBM 1401, IBM 1402 AND IBM 1403, MODEL 1 OR 2.

1401-01.3.008 SLIP III SYMBOLIC LANGUAGE INSERT PACKAGE

AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.3.008

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SOUTH BEND INDIANA

DIRECT INQUIRIES TO AUTHOR

SLIP I AND II WERE DESIGNED FOR BASIC CARD IBM 1401 APPLICATIONS WHERE THE PUNCH FEED OF THE 1402 IS USED AS A NORMAL PUNCH UNIT. SLIP III IS A COMPANION PACKAGE AND IS DESIGNED FOR IBM 1401 OPERATIONS THAT REQUIRE INPUT DATA TO BE READ FROM THE PUNCH FEED OF THE 1402. SLIP III DOES NOT REPLACE OR OBSOLETE THE SLIP I AND II PACKAGES. INCLUDED IN THE PACKAGE ARE FACILITIES FOR AUTOMATIC SCHEDULING OF BOTH INPUT FEEDS SIMILAR TO AN IBM COLLATOR MATCH OPERATION, SIMULTANEOUS REPORT PREPARATION WITH HEADINGS AND A MAXIMUM OF FIVE /5/ LEVELS OF TOTAL, AND AN OPTIONAL MACRO-LIKE METHOD FOR MULTIPLICATION AND/OR DIVISION. SLIP III IS DESIGNED TO SIMPLIFY THE WRITING OF PROGRAMS BY ELIMINATING THE OVERALL LOOPED CONCEPT OF STORED PROGRAM LOGIC, THE FIRST AND LAST CARD IDIOSYNCRASIES, SCHEDULING OF FEEDING INPUT DATA FROM BOTH FEEDS OF THE 1402, AND THE SETTING OF SWITCHES FOR REPORT HEADING AND TOTAL PROGRESSION ROUTINES. ALSO, TO SIMPLIFY

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PROGRAMMING EFFORT BUT AT THE SAME TIME TO RETAIN THE
INHERENT FLEXIBILITIES OF THE ONE FOR ONE IBM SYMBOLIC
PROGRAMMING SYSTEM. 4K BASIC IBM CARD SYSTEM, PUNCH-FEED-
READ AND HIGH-LOW-EQUAL COMPARE.

1401-01.3.010 SHORT IOCS FOR FIXED LENGTH RECORDS

AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.3.010

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DIRECT INQUIRIES TO AUTHOR

COMPLETE IOCS FOR 1-4 729 OR 7330 TAPES. USES 830-2000
POSITIONS. COVERS ALL IBM TAPE RECOMMENDATIONS EXCEPT ERROR
STATISTICS AND RECORD LENGTH CHECK. COVERS SAME AREA AS
AUTOCODER IOCS MACROS, USING LESS STORAGE. INCLUDES SEPARATE
ROUTINES TO GET, PUT, OPEN, CLOSE, TEST FOR AND CORRECT TAPE
ERRORS, FOR SINGLE AND BLOCKED RECORDS. HANDLES SINGLE OR
MULTI-REEL FILES. COUNTS RECORDS READ OR WRITTEN ON EACH TAPE.
PRINTS COUNTS AT EOL. ON TAPE ERROR CLEANS TAPE AND RETRIES.
PUNCHES RECORD CONTAINING PERMANENT READ ERROR AND HALTS.
STANDARD HEADER AND TRAILER LABELS USED, BUT SHORTENED. INPUT
FILES CHECKED FOR FILE NUMBER AND REEL. OLD LABELS ON OUTPUT
TAPES CHECKED THAT RETENTION PERIOD IS PAST. REQUIRES ADVANCED
PROGRAMMING. BLOCK DIAGRAMS AND SUBROUTINES ARE EASILY MODIFIED
TO NEEDS OF USER. MACHINE CONFIGURATION - TAPE 1401 /4K
MINIMUM/. ADVANCED PROGRAMMING /HI-LO-EQUAL COMPARE/. SOURCE
LANGUAGE IS AUTOCODER.

1401-01.3.011 ONE CARD 80-80 LIST

AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.3.011

AUTHOR...HILLEL BARDIN
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233 FORDHAM LANDING ROAD
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DIRECT INQUIRIES TO AUTHOR

TO PROVIDE A COMPACT CARD LISTING PROGRAM FOR USE ON A 100 OR
132 POSITION PRINTER, WITH THE CARRIAGE BEING RESTORED AT THE
START OF THE JOB AND ON FORMS OVERFLOW. EQUIPMENT SPECIFICATIONS
ANY 1401 MODEL WITH 3 INDEX REGISTERS. OPERATING PROCEDURES
PLACE DECK TO BE LISTED BEHIND PROGRAM CARD IN READ HOPPER.
LOAD PROGRAM. TO PRINT LAST CARD, PRESS START.

1401-01.3.013 SIMPLE METHOD OF ASSEMBLING REPORTS FROM TAPE OR CARDS /SMART/

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.3.013

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM PROVIDES THE CAPABILITY OF ACCOMPLISHING NORMAL
TABULATOR OPERATIONS ON THE 1401 THAT COULD BE DONE ON A 402 OR A
407, WITH EITHER CARD OR TAPE INPUT. THE PROGRAM DOES NOT HAVE
THE ABILITY TO OFFSET TOTALS. ALL TOTALS WILL BE PRINTED
UNDER THE COLUMNS TO WHICH THEY PERTAIN. MACHINE CONFIGURATION-
1. 1401 WITH 8K STORAGE.
2. 1402
3. 1403
4. TWO TAPE UNITS /729 OR 7330/.
5. ADVANCED PROGRAMMING FEATURE.
6. MODIFY ADDRESS.
7. CONSOLE INQUIRY.
SOURCE LANGUAGE-1401 AUTOCODER.

1401-01.3.015 TABTEK, A PROGRAM TO GENERATE A PROGRAM FROM TABULAR INPUT

AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.3.015

AUTHORS...MRS. BARBARA F. YOUNG
PAN AMERICAN WORLD AIRWAYS, INC.
ELECTRONIC DATA PROCESSING DEPT.
BLDG. 991-MAIL UNIT 938
PATRICK AIR FORCE BASE, FLA.

DIRECT INQUIRIES TO AUTHOR

TO GENERATE AUTOCODER OR FORTRAN PROGRAMS FROM TABULAR DECISION
TABLE INPUT. THE INPUT IS ANY COMBINATION OF SOURCE LANGUAGE
CARDS AND CARDS IN TABULAR DECISION TABLE FORMAT. THE OUTPUT IS
/A/ A PRINTED LISTING OF THE INPUT CARDS, DIAGNOSTIC MESSAGES
IF ANY, AND THE PROGRAMS GENERATED AND /B/ A PUNCHED DECK
CONSISTING OF THE ORIGINAL SOURCE PROGRAM CARDS AND THE GENERATED
PROGRAMS IN THE SOURCE LANGUAGE. /THE TABULAR CARDS ARE NOT
PUNCHED./ THE OUTPUT SOURCE LANGUAGE IS FORTRAN IF SWITCH B IS
OFF, AUTOCODER IF SWITCH B IS ON. ONE INPUT DECK CAN CONTAIN AS
MANY AS FIFTY TABLES. MACHINE REQUIREMENTS 8K 1401, HIGH-LOW-
EQUAL COMPARE, AND ADVANCED PROGRAMMING PACKAGE. 5747 CORE
LOCATIONS ARE REQUIRED BY THE PROGRAM AND INPUT-OUTPUT AREAS.
PROGRAM WAS WRITTEN IN 1401 AUTOCODER.

1401-01.3.016 GENERAL PURPOSE PROGRAMS FOR DATA REDUCTION ON THE IBM 1401 TAPE SYSTEM

AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.3.016

AUTHOR...T.E. DETMER

CONTINUED FROM PRIOR COLUMN--

DIRECT INQUIRIES TO..

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*M

THIS IS A PACKAGE OF THREE PROGRAMS FOR DATA REDUCTION. THE
FIRST PROGRAM PERFORMS A TAPE SELECTION FUNCTION. IT CAN SELECT
VARIOUS RECORDS, SELECT GROUPS OF RECORDS, MERGE RECORDS, COMBINE
RECORDS OR ASSOCIATE HEADER INFORMATION WITH FOLLOWING RECORDS.
THE SECOND PROGRAM IS A TAPE REARRANGE PROGRAM. DATA IN ANY
FORMAT CAN BE REARRANGED INTO ANY OTHER FORMAT. THE THIRD
PROGRAM IS A TABULATION PROGRAM WHICH PERFORMS FUNCTIONS THAT THE
407 DOES. IF SORTING IS REQUIRED, A STANDARD SORT SHOULD BE
USED. WITH A CARD-TO-TAPE UTILITY PROGRAM IT IS POSSIBLE TO
PERFORM A WIDE RANGE OF DATA REDUCTION PROCESSING ON THE 1401
WITHOUT ANY PROGRAMMING. MACHINE CONFIGURATION- 4K 1401 2 TAPE
DRIVES, INDEXING, STORE REGISTER HIGH-LOW EQUAL, MOVE RECORD
AND SENSE SWITCHES. PROGRAM REQUIREMENTS- 3786 POSITIONS FOR
PROGRAM I, 983 POSITIONS FOR PROGRAM II, AND 2994 POSITIONS FOR
PROGRAM III. SOURCE LANGUAGE- AUTOCODER.

REQUESTOR MUST SUBMIT ONE REEL OF MAGNETIC TAPE FOR BASIC PROGRAM
MATERIAL. THIS TAPE CONTAINS THE ASSEMBLY OUTPUT OF JEEP 1, 2 AND 3.
THE FOLLOWING IBM UTILITY PROGRAMS ARE REQUIRED TO ACQUIRE THE
ASSEMBLY LISTINGS & CONDENSED CARDS FROM THIS TAPE- 1401-UT-026 AND
1401-UT-028. OPTIONAL MATERIALS- SAMPLE PROBLEM PROGRAM. REQUESTOR
MUST SUBMIT ONE REEL OF MAGNETIC TAPE.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. *

1401-01.3.017 DOWGO LOAD AND GO REPORT GENERATOR

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.3.017

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DIRECT INQUIRIES TO AUTHOR

DOWGO IS A LOAD AND GO REPORT GENERATOR FOR THE IBM 1401 THAT
CAN ACCEPT CARDS OR MAGNETIC TAPE AS INPUT, WITH CARDS AND/OR
LIST AND/OR TAPE FOR OUTPUT. MANY TYPES OF LISTED OR GROUP
PRINTED REPORTS MAY BE QUICKLY PREPARED. ONE TO THREE MAGNETIC
TAPES ARE REQUIRED FOR TAPE INPUT, TAPE OUTPUT, AND CHECKPOINT.
INPUT TAPE RECORDS MAY BE BLOCKED AND MAY BE FIXED OR VARIABLE
LENGTH WITH OR WITHOUT RECORD MARKS. TAPE LABELS MAY BE USED IF
DESIRED, AND IF USED, ARE CHECKED. MACHINE REQUIREMENTS-
1401 8K, ADVANCED PROGRAMMING, HI-LO-EQUAL COMPARE, AND SENSE
SWITCHES. IF AVAILABLE, A 1407 CONSOLE TYPEWRITER CAN BE USED.

1401-01.3.018 SELF-CENTERING QUICK REPORT-QUICKIE

AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.3.018

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DIRECT INQUIRIES TO AUTHOR

PRODUCE QUICK GEOMETRICALLY SPACED PRINTED REPORT WITHOUT
DESIGNING A SPECIFIC LAYOUT, AS A LISTING OR TABULATION, WITH OR
WITHOUT SUMMARY PUNCHING, ONTO ONE OF THREE SPECIFIED SIZES
OF PAPER WIDTHS 8 1/2 IN., 10 5/8 IN., 14 7/8 IN. / ACCORDING
TO FIELD DEFINITION AND FIELD CONTROL ESTABLISHED BY
PREPARATION OF SIMPLE CONTROL CARDS.
EQUIPMENT SPECIFICATIONS ARE- A 1401 WITH 4K STORAGE. NO
SPECIAL FEATURES REQUIRED, HOWEVER, EQUIPMENT WITH LESS THAN 132
PRINT POSITIONS CANNOT SPECIFY USE OF 14 7/8 IN. WIDTH
PAPER. WRITTEN IN SPS.

1401-01.3.020 SYSTEM/360 MODEL 20 RPG PRELISTER RUN ON THE IBM 1401/1460

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.3.020

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THE MODEL TWENTY PRELISTER PROVIDES AN EDITING AND DOCUMENTATION
TOOL FOR THE USERS MODEL 20 REPORT PROGRAM GENERATOR. SINCE THE
MODEL 20 HAS RECEIVED SUCH WIDE CUSTOMER ACCEPTANCE, AND SINCE
MOST MODEL 20 PROGRAMS ARE TO BE WRITTEN IN RPG, THERE IS AN
URGENT NEED FOR AN EDITING AND DOCUMENTING TOOL FOR MODEL 20 RPG.
THE MODEL TWENTY PRELISTER PERFORMS A THOROUGH EDIT ON THE FIVE
TYPES OF MODEL 20 RPG SPECIFICATION CARDS. FORTY TWO TYPES OF
ERRORS ARE CHECKED AGAINST ALL RELEVANT TYPES OF SPECIFICATION
CARDS. THE OUTPUT LISTING OF RPG SPECIFICATION CARDS IS FORMATTED
SIMILARLY TO SYSTEM 360 RPG CODING SHEETS, THUS REPLACING THEM TO
BECOME THE PROGRAM DOCUMENTATION. PROGRAMS CAN BE STACKED
TOGETHER WHEN USING THE MODEL TWENTY PRELISTER. THERE ARE 1547
SOURCE STATEMENTS. THE MODEL TWENTY PRELISTER IS WRITTEN IN
AUTOCODER. IT CAN BE RUN ON AN IBM 1401 OR 1460 DATA PROCESSING
SYSTEM WITH 8,000 POSITIONS OF STORAGE AND 120 PRINT POSITIONS.
NO OTHER FEATURES ARE NECESSARY. THE WRITUP CONTAINS
INSTRUCTIONS FOR MODIFYING MTP FOR AN IBM 1460 SYSTEM.

1401-01.3.021 INSTALLATION PROGRESS REPORT FOR SMALL 1400 COMPUTER INSTALLATIONS

AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.3.021

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*M

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM MAY BE USED WITH SMALL 1400 COMPUTER INSTALLATIONS TO GIVE CUSTOMER AND IBM MANAGEMENT ACCURATE INFORMATION ON THE PROGRESS OF THE INSTALLATION. THE PROGRAM IS DESIGNED TO BE RUN WITH FARGO 160-G, BUT COULD EASILY BE ADAPTED BY THE READER TO FARGO 40TY. IT IS QUICK, SIMPLE TO USE, EASY TO UPDATE, AND REQUIRES NOMINAL PREPARATION. IT PROVIDES IN A BAR GRAPH, A FORM A RUNNING WEEKLY HISTORY OF EACH INCOMPLETE JOB, AS WELL AS JOB TOTALS BY PROGRAMMER IN THESE CATEGORIES- NOT STARTED, BEING PROGRAMMED, BEING KEYPUNCHED, BEING TESTED, FINISHED THIS WEEK, AND FINISHED PREVIOUSLY. OVERALL TOTALS IN THESE CATEGORIES AS WELL AS CORRESPONDING PERCENTAGES, ARE GIVEN AT THE END OF THE REPORT. JOBS MAY BE ADDED OR DELETED AT ANY TIME WITHOUT AFFECTING THE PROGRAM. UPDATING TO REFLECT WEEKLY PROGRESS IS ACCOMPLISHED BY A SINGLE PUNCH FOR EACH JOB BEING WORKED ON.

1401-01.3.022 SOMR- SPUR OF THE MOMENT REPORTING

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.3.022

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DIRECT INQUIRIES TO AUTHOR

PROVIDES AN EASY AND QUICK MEANS OF PRODUCING A PRINTED REPORT FROM CARD INPUT. THIS PERMITS A SHORT RESPONSE TIME FOR ONE-TIME REQUESTS AND PROVIDES A STOP-GAP PROGRAM TO ALLOW ADDITIONAL TIME FOR PROGRAMMING A SPECIFIC JOB. SAVES PROGRAM STORAGE SPACE FOR IT IS ONLY NECESSARY TO RETAIN A MAXIMUM OF EIGHT SETUP CARDS FOR EACH JOB INSTEAD OF AN ENTIRE PROGRAM. THIS PROGRAM CAN TAKE THE PLACE OF MANY PROGRAMS FOR LISTINGS AND TABULATIONS. LISTING, TABULATING, AND GROUP INDICATING FIELDS CANNOT BE GREATER THAN FOURTEEN FIELDS. MAXIMUM COUNTER SIZE IS TEN DIGITS IN ALL CASES. MINOR, INTERMEDIATE AND MAJOR BREAKS ARE EACH CONTROLLED BY ONE FIELD OF THIRTY COLUMNS MAXIMUM. REQUIRES A 1401 WITH 4,000 POSITIONS OF STORAGE AND HI-LOW-EQUAL COMPARE, 1402 AND 1403 MODEL 1 OR 2. USES 3,988 POSITIONS OF STORAGE. SOURCE LANGUAGE IS SPS. 275 LINES PER MINUTE OUTPUT DURING A LISTING JOB AND 400 CARDS PER MINUTE DURING A TABULATE JOB ON A 1401 SYSTEM WITHOUT PRINT STORAGE.

1401-01.4.008 BINARY TAPE DUMP
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.008

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STEAM DIVISION, B. PLANT, ROOM 410
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM PROVIDES THE ABILITY TO DUMP A BINARY TAPE IN OCTAL EQUIVALENT. THE PRINTED RESULT IS IN WORD BLOCKS WITH EIGHT BLOCKS TO A LINE. 1401 STANDARD MODEL C3, TWO TAPES, COLUMN BINARY, ADVANCED PROGRAMMING PACKAGE, HIGH-LOW-EQUAL COMPARE. SENSE SWITCHES /OPTIONAL/.

1401-01.4.009 ZIP /INSTANT PRINTING/
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.009

AUTHOR...KEITH SWAN
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DIRECT INQUIRIES TO AUTHOR

A UTILITY LOAD AND GO PROGRAM FOR LISTING CARDS AT A RATE OF 600 LINES PER MINUTE. 10 FIELDS OF ANY SIZE CAN BE LISTED. READ RELEASE AND PRINT BUFFER REQUIRED FOR ANY 2K OR LARGER 1401.

1401-01.4.010 ESCAPE /EFFORTLESS SYSTEM OF CALCULATING AND PRINTING EVERYTHING/
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.010

AUTHOR...W. J. TEAGARDEN
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A UTILITY PROGRAM WHICH PROVIDES RAPID CONVERSION OF 604, 602, AND 528 JCBS TO THE 1401. THIS LOAD AND GO PROGRAM ALSO MAY BE USED TO REPRODUCE CARDS AS WELL AS GANG PUNCHING, SELECTIVE REPRODUCING, SEQUENCE NUMBERING, LISTING OR COMBINATIONS OF THESE OPERATIONS. TWO CARD ROUTINES AND END-OF-FILE ROUTINE MAY BE DEVELOPED. THE EFFECTIVE WORKING STORAGE OF THE OBJECT PROGRAM IS COMPRISED OF 20 COUNTERS AND 20 STORAGE UNITS OF TEN POSITIONS EACH. MULTIPLICATION AND DIVISION CAN BE EXECUTED ONLY FROM COUNTERS. APPROXIMATELY 1800 POSITIONS OF CORE ARE AVAILABLE TO BUILD THE THREE ROUTINES OF 1,000 POSITIONS, 500 POSITIONS AND 300 POSITIONS. 4K 1401 PUNCH FEED READ, MULTIPLY-DIVIDE AND HIGH-LOW-EQUAL COMPARE FEATURES ARE REQUIRED IF PROGRAM IS COMPLETELY USED.

1401-01.4.011 INPUT OUTPUT TAPE CONTROL SYSTEM /REVISED/
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.011

AUTHOR...R.J. MACARTNEY

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IBM CORP.

6252 EAST TELEGRAPH ROAD
LOS ANGELES 22, CALIF.

DIRECT INQUIRIES TO AUTHOR

THIS PACKAGE SUPPLIES OPEN, CLOSE, GET, AND PUT CLOSED SUBROUTINES FOR HANDLING TAPE INPUT AND OUTPUT OPERATION. ALSO INCLUDED IS AN OPTIONAL DATA LOADING ROUTINE. IT SUPPLIES THE ADVANTAGES OF IOCS LOGIC TO THOSE USERS WHO ARE UNABLE TO TAKE ADVANTAGE OF 1401 IOCS BECAUSE OF MACHINE CONFIGURATION OR STORAGE REQUIREMENTS. 1401 MODEL C, D, E, F-13-16, F-23-26, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE. THE PACKAGE IS AVAILABLE IN BOTH SPS AND AUTOCODER. FITS WILL NOT HANDLE BLOCKED, VARIABLE LENGTH RECORDS.

1401-01.4.012 SCOOP I AND II /SIMPLIFIED CONVERSION OF OTHER PUNCHES/
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.012

AUTHOR...LEWIS P. POULIN
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TO PROVIDE A SIMPLE METHOD OF CONVERTING 90 COLUMN CARDS IN DESCENDING SEQUENCE TO 80 COLUMN CARDS /OR MAGNETIC TAPE/ IN ASCENDING SEQUENCE. 1401 WITH 4,000 POSITIONS OF STORAGE AND COLUMN BINARY DEVICE. SCOOP II REQUIRES THE ADVANCED PROGRAMMING PACKAGE. THE INTERCHANGEABLE BRUSH BLOCK /RPG NO. 899287/ IS NOT REQUIRED WHEN USING SCOOP.

1401-01.4.015 TAPE EXECUTIVE PROGRAM
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.015

AUTHOR...H. LEE BAKER
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DIRECT INQUIRIES TO AUTHOR

TO PLACE 1401 PROGRAMS ON AN EXECUTIVE SYSTEM TAPE. TO SELECT AND LOAD THESE PROGRAMS, BASED ON SENSE SWITCH SETTINGS, TO UPDATE THE EXECUTIVE SYSTEM TAPE. 4000 MEMORY POSITIONS HI-LO-EQ COMPARE. 1401 MODEL C-3, TWO 729 MODEL II OR IV TAPE UNITS, 1402 READ/PUNCH, 1403 PRINTER.

1401-01.4.022 TAPE UPDATE UTILITY PROGRAM /CARD/
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.022

AUTHORS...JERRY KIMBALL MARVIN BADER

DIRECT INQUIRIES TO...
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TO UPDATE A BCD TAPE OF N FILES, WHOSE RECORDS ARE LESS THAN 880 CHARACTERS. ENTIRE FILES, OR INDIVIDUAL RECORDS WITHIN A FILE MAY BE DELETED, CHANGED, OR INSERTED BY THE USE OF CONTROL CARDS AND THE SENSE SWITCHES. MEMORY 4K MODEL C 1401 WITH TWO TAPE UNITS, 1403 PRINTER, ADVANCED PROGRAMMING, MULTIPLY-DIVIDE, AND HIGH-LOW-EQUAL COMPARE.

1401-01.4.027 EXACT TAPE TO PRINTER /CARD/
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.027

AUTHOR...HENRY M. BOCKE
WACHOVIA BANK & TRUST COMPANY
WINSTON-SALEM, NORTH CAROLINA

DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM IS DESIGNED FOR EASE IN OBTAINING A PRINTED REPRODUCTION OF 1401 TAPE RECORDS, WRITTEN WITH OR WITHOUT WORD MARKS AND IN VARIABLE OR FIXED LENGTH FORMAT. THIS PROGRAM DOES NOT REQUIRE CONTROL CARDS TO PRINT TAPE. MAXIMUM TAPE RECORD LENGTH 2,700 CHARACTERS. 4K 1401 ADVANCE PROGRAMMING HIGH-LOW-EQUAL COMPARE.

1401-01.4.029 GENERAL TAPE MAINTENANCE RUN /CARD/
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.029

AUTHOR...MAURICE BABB
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DIRECT INQUIRIES TO AUTHOR

TO PERMIT DELETION, INSERTION, OR ANY DESIRED MODIFICATION OF DATA ENTRIES NOT AFFECTING FILE SEQUENCE OF ANY SPECIFIED RECORD /AS DISTINGUISHED BY A COMBINATION OF NUMERIC SEQUENCE FACTORS NOT IN EXCESS OF 29 CHARACTERS/ FOR ANY FILE CONTAINING FIXED LENGTH UNBLOCKED RECORDS NOT IN EXCESS OF 450 CHARACTERS. 4000 CORES. EQUIPMENT SPECIFICATIONS 1401, ANY MODEL C WITH HIGH-LOW-EQUAL COMPARE AND ADVANCED PROGRAMMING FEATURE 1402, ANY MODEL 2 729 TAPE UNITS, 1403.

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1401-01.4.034 GENERAL APPROACH TO
AUTOMATIC PROGRAMMED ADDRESS CONVERSION
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.034

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WILL COMPUTE A DISK ADDRESS FROM A CONTROL
FIELD, SUCH AS A PART NUMBER, EMPLOYEE NUMBER, ETC., USING
A GENERALIZED METHOD, AND WILL EVALUATE THE EFFICIENCY OF
ADDRESSING METHODS. MAXIMUM SIZE OF THE CONTROL FIELD 20
POSITIONS. 1401. 1. 4000 POSITIONS OF STORAGE. 2.
ADVANCED PROGRAMMING. 3. HIGH/LOW/EQUAL COMPARE. 4.
MULTIPLY/DIVIDE. 5. SENSE SWITCHES. 1403 MODEL 11
4 TAPE UNITS.

1401-01.4.036 SEE - SELECTIVE
EIGHTY-EIGHTY PROGRAMS
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.036

AUTHOR...EARL E. HITT
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DIRECT INQUIRIES TO AUTHOR

TO COMBINE ALL OF THE 80-80 TYPE PROGRAMS ON THE 1401 INTO
ONE PROGRAM UNDER SWITCH CONTROL. TO PERMIT MULTIPLE
OUTPUT COMBINATIONS AND HANDLE LARGE TAPE RECORDS WITH OR
WITHOUT WORD MARKS. IF TAPE INPUT OR OUTPUT IS USED,
ADVANCED PROGRAMMING PACKAGE MUST BE ON MACHINES. SIZE OF
TAPE RECORD TO BE HANDLED MUST BE LESS THAN SIZE OF CORE
MINUS 1300. 1. 4K ADVANCED PROGRAMMING FEATURE OF TAPE
RECORDS TO BE HANDLED ALL 7 SENSE SWITCHES.

1401-01.4.037 MLR UTILITY PROGRAM
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.037

AUTHOR...BERNARD S. BALTER
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DIRECT INQUIRIES TO AUTHOR

THE PURPOSE OF THIS PROGRAM IS TO PRODUCE MLR JOBS
UTILIZING THE HIGH SPEED OF THE 1403 PRINTER. NEITHER
PANEL WIRING NOR PROGRAMMING IS NECESSARY, MAKING IT
POSSIBLE TO ACCEPT AN MLR JOB AND BE READY FOR PRODUCTION
WITHIN A MOMENT'S NOTIFICATION. AN ADDED FEATURE OF THIS
IS A LABELING OPTION, THE ABILITY TO PRINT LABELS 3 ACROSS
ON THE SAME LINE OF PRINT. AUTOCODED 2,000 POSITIONS OF
STORAGE. 1401 4K, 1403 PRINTER, HIGH-LOW-EQUAL COMPARE,
AND INDEX REGISTERS.

1401-01.4.038 STORAGE PUNCHOUT PROGRAM
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.038

AUTHOR...FRANK T. MOY
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WATLAND, MASSACHUSETTS

DIRECT INQUIRIES TO AUTHOR

PROGRAM TO PUNCH OUT STORAGE IN CONDENSED RELOADABLE
FORMAT. THIS IS A PUNCH STORAGE PROGRAM WITH THE ADVANTAGE
OF CONDENSED FORMAT OUTPUT WITH CLEAR STORAGE CARDS AND
REQUIRES FIXED LOCATIONS 001-332.

1401-01.4.039 MONITOR SYSTEM FOR TAPE
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.039

AUTHOR...BARRON A. McDONALD
THE SERVICE BUREAU CORPORATION
IBM PLANT, BUILDING 10, ROOM 308
MONTEREY AND COTTLE ROADS
SAN JOSE, CALIFORNIA

DIRECT INQUIRIES TO AUTHOR

THE MONITOR PROGRAM IS GENERATED AS THE FIRST TWO RECORDS
OF A SYSTEM TAPE. ACCESS TO ITS USE IS BY THE LOAD TAPE
BUTTON. THE PRIMARY FUNCTIONS OF THE MONITOR ARE TO /1/
ADD ANY 1401 PROGRAM TO THIS TAPE AND, /2/ CALL ANY
DESIGNATED PROGRAM FROM THIS TAPE INTO CORE FOR EXECUTION.
ADDITIONAL FUNCTIONS PERFORMED BY THE MONITOR ARE /1/ TO
DELETE ANY PROGRAM ON THIS TAPE AND, /2/ SYSTEM
MAINTENANCE. ANOTHER MONITOR CONTROLLED FEATURE ALLOWS FOR
ONE PROGRAM ON THE SYSTEM TAPE TO CALL ANY OTHER PROGRAM ON
THAT TAPE FOR EXECUTION. A 1401 MODEL C- ONE OR TWO TAPE
DRIVES, ADVANCED PROGRAMMING, HIGH/LOW EQUAL COMPARE,
AND THE COLUMN BINARY FEATURE.

1401-01.4.040 ONE CARD 80-80 LIST
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.040

AUTHOR...HARRY CASTELLUCCI
FLUID DYNAMICS LABORATORY
LOCKHEED CALIFORNIA COMPANY
A DIV. OF LOCKHEED AIRCRAFT CORP.
BURBANK, CALIFORNIA

CONTINUED FROM PRIOR COLUMN--

DIRECT INQUIRIES TO AUTHOR

TO COMPACT ANY EXISTENT 80-80 LIST PROGRAMS INTO ONE CARD
IN ORDER TO MINIMIZE PROGRAM DECK AND CARD HANDLING AS MUCH
AS POSSIBLE. ANY 1401 MODEL

1401-01.4.044 GENERALIZED TAPE ADD AND
FILE SEARCH
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.044

AUTHOR...JAMES P. GREELEY
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SPRINGFIELD, ILLINOIS

DIRECT INQUIRIES TO AUTHOR

TO ACCUMULATE GRAND TOTALS AND RECORD COUNTS FROM A TAPE
FILE, EITHER SELECTIVELY OR THE ENTIRE FILE. SELECTED
RECORDS MAY BE WRITTEN ON AN OUTPUT TAPE. MAX. TAPE
RECORD LENGTH 1000 CHARACTERS. MAX. TAPE RECORD LENGTH
COULD BE ENLARGED FOR 8K, 12K, AND 16K SYSTEMS BY CHANGING
THE CA CARD AND REASSEMBLING THE SOURCE DECK. 4000 1403
PRINTER MODEL 1 *100 POS. * SENSE SWITCHES A THRU G. HIGH,
LOW, EQUAL COMPARE. 1 OR 2729 OR 7330 TAPE UNITS FOR
ACCUMULATION. 2 REQUIRED TO FLIP FLOP INPUT TAPES. 3
UNITS REQUIRED FOR TAPE OUTPUT. /162 INP/.

1401-01.4.045 CARD AND TAPE SELECTIVE
LISTER

AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.045

AUTHOR...M. BADER

DIRECT INQUIRIES TO..

CHARLES P. HUGHES
STRATEGY AND TACTICS ANALYSIS GROUP
DEPT. OF THE ARMY
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TO PRINT CARD OR TAPE RECORDS UP TO 80 CHARACTERS IN SIZE
IN AN EXPANDED FORM. THE PROGRAM WILL HANDLE UP TO 30
SEPARATE FIELDS OF 132 PRINT POSITIONS. A BAD TAPE RECORD
CAUSES 9 TRIES TO READ, THEN HALTS. CONTROL CARDS FOLLOW-
ING THE PROGRAM SPECIFY THE JOB TO BE PERFORMED. EACH PAGE
OF THE PRINTOUT MAY BE HEADED BY THE USE OF A TITLE CARD,
CONTAINING A T IN COLUMN ONE, AS THE FIRST CONTROL CARD.
COLUMNS TWO THRU EIGHTY CONTAIN THE DESIRED HEADING
INFORMATION. IF NO HEADER IS DESIRED THIS CARD IS
UNNECESSARY. 1.4K 1401, 1403, STORE ADDRESS REGISTER,
HIGH-LOW-EQUAL COMPARE, ADDITIONAL PRINT CONTROL /132 PRINT
POSITIONS/. TAPE UNIT IF NECESSARY.

1401-01.4.047 TAPE INPUT/OUTPUT MACROS AND
SUBROUTINES FOR THE 1401
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.047

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2911 CEDAR SPRINGS ROAD
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DIRECT INQUIRIES TO AUTHOR

THIS SET OF ROUTINES PROVIDES THE PROGRAMMER WITH MACROS TO
BLOCK AND UNBLOCK FIXED LENGTH TAPE RECORDS. A READ TAPE
AND A WRITE TAPE MACRO ARE INCLUDED FOR USE WHERE BLOCKING
IS NOT NEEDED THE COMPLETE SET OF SUBROUTINES WILL OCCUPY
638 POSITIONS OF STORAGE. THE GENERATED ROUTINES REQUIRE
THE ADVANCED PROGRAMMING FEATURE ON THE OBJECT MACHINE.

1401-01.4.048 SINGLE CARD LIST WITH SKIP
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.048

AUTHOR...ALEX PITEGOF
30 CONRAD DRIVE
NEW HAVEN 15 CONNECTICUT

DIRECT INQUIRIES TO AUTHOR

TO COMBINE THE NEATNESS OF A LISTING WITH A SKIP TO A NEW
PAGE ON PAGE OVERFLOW WITH THE CONVENIENCE OF A SINGLE CARD
LISTING PROGRAM. A 1401 CENTRAL PROCESSING UNIT, A 1402
CARD READER PUNCH, AND A 1403 PRINTER /TYPE I OR TYPE II/
ARE REQUIRED FOR THIS PROGRAM. ONLY LOCATIONS IN AND BELOW
THE PRINT AREA ARE USED FOR THE PROGRAM AND DATA AND
CONSEQUENTLY ANY 1401 WILL SUFFICE.

1401-01.4.050 MEMORY ANNOTATION, POST-TEST
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.050

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DIRECT INQUIRIES TO AUTHOR

DESIGNED PRIMARILY AS A DEBUGGING AID, MAPT PRODUCES A
HIGHLY LEGIBLE 1401 MEMORY PRINT-OUT OF ALL OR ANY
PORTIONS/ OF CORE. PRINTS PROGRAM LOCATIONS AND INSTRU-
CTIONS IN MACHINE LANGUAGE ADDRESSES TO 5
DECIMAL-DIGIT FORM, WITH INDEX REGISTER IDENTIFICATION, IF
TAGGED, DISTINGUISHES BETWEEN NUMERIC-CONSTANT FIELDS /FOR
WHICH SIGN BITS ARE CONVERTED TO 0 OR -/, AND ALPHABETIC
FIELDS. THE PROGRAM IS RELOCATABLE INTO ANY BLOCK OF 1,419
LOCATIONS. ANY MODEL 1401 WITH ADVANCED PROGRAMMING AND
HI-LO-EQUAL COMPARE FEATURES. IF 4K OR BELOW, MUST HAVE
MODIFY ADDRESS OP CODE. MAPT COULD BE REVISED TO

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CONTINUED FROM PRIOR PAGE--
ACCOMMODATE LACK OF INDEX REGISTERS, SBR AND MA, AT THE
COST OF ADDITIONAL CORE POSITIONS. UTILIZES 132 PRINT
POSITIONS /1403 MODEL 2/, BUT COULD BE CONFINED TO MODEL 1
CAPACITY *100 POSITIONS PER LINE*.

1401-01.4.051 SELECTIVE REPRODUCE/GANG
PUNCH FOR THE 1401
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.051

AUTHOR...R. G. HARMON
D.C. GOVERNMENT
FINANCE DIVISION
MUNICIPAL CENTER
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WASHINGTON D.C.

DIRECT INQUIRIES TO AUTHOR

MACHINE REQUIREMENTS 1,400 CORE STORAGE POSITIONS NO
SPECIAL FEATURES REQUIRED. SELRP IS A CARD TO CARD
REPRODUCE/GANG PUNCH ROUTINE WITH PROVISIONS FOR COLUMN
SPLITTING. THE MASTER GANG PUNCH CARD MUST BE PLACED
BEHIND THE PROGRAM DECK WHETHER GANG PUNCHING OR NOT.

1401-01.4.052 PROGRAM TAPE EXECUTIVE
ROUTINE
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.052

AUTHOR...B. J. MANRING
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DIRECT INQUIRIES TO AUTHOR

TO WRITE AND MAINTAIN A 1401 PROGRAM TAPE FROM SPS OR
AUTOCODER CONDENSED DECKS. THE PROGRAMS ON THE TAPE ARE
LOADED BY SETTING SENSE SWITCHES AND PRESSING LOAD TAPE.
4K MINIMUM. ALSO TESTED ON 8 AND 16K. 1403, ADVANCED
PROGRAMMING, HIGH-LOW-EQUAL COMPARE, CNE OR TWO TAPES,
SENSE SWITCHES.

1401-01.4.054 REPRO - REPRODUCER SIMULATOR
ROUTINE FOR THE IBM 1401
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.054

AUTHOR...R. WEBER
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM SIMULATES THE 514 REPRODUCER BY ASSEMBLING
WITHIN CORE A PROGRAM TO DO SUCH OPERATIONS AS /1/ ADDING
HOLERITH INFORMATION TO THE CARD /2/ REPRODUCING AND
SHIFTING FIELDS OF INFORMATION /3/ SKIPPING OVER COLUMNS
/4/ SEQUENTIALLY NUMBERING CARDS /5/ MOVING ZONES FROM ONE
COLUMN TO ANOTHER AND /6/ ADDING OF ZONES TO THE
DESIRED COLUMNS.

1401 MODEL B, WITH 1402 READER PUNCH, NO SPECIAL FEATURES.

1401-01.4.055 KEEP
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.055

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DIRECT INQUIRIES TO AUTHOR

TO STORE SYMBOLIC PROGRAMS ON TAPE WITH THE ABILITY TO
DELETE, ADD, OR CHANGE INSTRUCTIONS AND REASSIGN SEQUENCE
NUMBERS TO THE ENTIRE PROGRAM.

4K 1401, 2 TAPE DRIVES, HIGH-LOW-EQUAL COMPARE, AND
ADVANCED PROGRAMMING PACKAGE.

THE PACKAGE CONSISTS OF THREE PROGRAMS CREATE, UPDATE,
OUTPUT.

1401-01.4.056 GENERALIZED TABULATE AND/OR
SEQUENCE CHECKING PROGRAM
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.056

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DIRECT INQUIRIES TO AUTHOR

TO ELIMINATE THE NECESSITY FOR MANY INDIVIDUAL PROGRAMS
REQUIRED AT A 1401 INSTALLATION TO TAKE CONTROL AND BALANCE
TOTALS.

TO PROVIDE A RAPID MEANS OF CHECKING SEQUENCE OF A FILE
OF CARDS PRIOR TO A LONG 1401 PROGRAM RUN. 1401-1.4K,
1402, 1403 MODEL 1 OR 2.

1401-01.4.058 TAPE SEARCH PROGRAM
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.058

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CONTINUED FROM PRIOR COLUMN--

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MANAGEMENT RESEARCH DIVISION
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TULSA OKLAHOMA

DIRECT INQUIRIES TO AUTHOR

TO SEARCH TAPE FILES FOR SPECIFIC RECORDS, AND EMIT VIA
PRINTER, CARD AND/OR TAPE ANY OR ALL SUCH DATA CONTAINED
WITHIN THE SELECTED RECORD/S IN AN ORGANIZED USABLE FORMAT.

8-16K, 2 TAPES, HI-LO-EQUAL COMPARE, ADVANCED PROGRAMMING.

1401-01.4.060 SEQUENTIAL NUMBER ASSIGNER
FOR FOURTEEN-C-ONE USERS /SNAFU/
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.060

AUTHOR...A. PITEGOFF
30 CONRAD DRIVE
NEW HAVEN 15 CONN.

DIRECT INQUIRIES TO AUTHOR

THE PURPOSE OF THIS PROGRAM IS TO PROVIDE AN EASY TO
CONTROL METHOD OF CHECKING AND ASSIGNING SEQUENTIAL
NUMBER FIELDS IN DECKS OF CARDS.

A 1400 CORE POSITION 1401 WITH SENSE SWITCHES, A 1402 AND
A 1403 / TYPE I OR TYPE II / ARE ALL THAT ARE REQUIRED FOR
OPERATION. HIGH-LOW-EQUAL COMPARE MAY BE USED IF INSTALLED
IN ORDER TO PERMIT THE CHECKING OF ALPHABETIC FIELDS.

1401-01.4.061 MODULAR PROGRAMMING CONCEPT
FOR MACRO-ORIENTED PROBLEMS /MOPMOP/
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.061

AUTHOR...J. BAYALIS
LUKENS STEEL COMPANY
SYSTEMS AND PROCEDURES DEPARTMENT
CCATESVILLE PA.

DIRECT INQUIRIES TO AUTHOR

MOPMOP CONSISTS OF A GROUP OF MACRO-ROUTINES WHICH ENABLE
THE USER TO PREPARE COMPLETE PROGRAMS WITH THE MINIMUM OF
NON-MACRO INSTRUCTIONS. IT EMBODIES THE PRINCIPLE THAT
PROGRAMS GENERALLY MAY BE SUB-DIVIDED INTO INDIVIDUAL AND
INTERDEPENDENT ROUTINES AND FOR ALL INTENTS AND PURPOSES
CONSIDERED AS SEPARATE ENTITIES. ANY SIZE IBM 1401 TAPE
SYSTEM, ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE.

1401-01.4.062 GENERAL PURPOSE MACROS FOR
DIV. CONVERSION OF DATES TO JULIAN DAYS, SIMPLE READ/WRITE TAPE IOCS
AVAILABLE 4TH QUARTER 1962
SPECIFY FILE NUMBER 1401-01.4.062

AUTHOR...HENRY M. BOOKE
WACHOVIA BANK AND TRUST COMPANY
WINSTON-SALEM, N. C.

DIRECT INQUIRIES TO AUTHOR

1. DIVIDE II, A FASTER DIVIDE ROUTINE WHICH USES LESS CORE.
2. JULIAN-TO CONVERT DATE INTO JULIAN DAYS. 3. VERIFY-
VERIFIES MOD 10 CHECK DIGITS FOR 5 OR 6 DIGIT NUMBERS. 4.
READ/WRITE-A SIMPLE IOCS PACKAGE TO PROVIDE NORMAL TAPE
READ AND/OR WRITE INSTRUCTIONS AND ERROR ROUTINES USING A
MINIMUM AMOUNT OF CORE. 5. ERVTP-A READ/WRITE ERROR
ROUTINE USING 174 POSITIONS OF CORE. NOISE TESTS ARE NOT
INCLUDED.

RESTRICTIONS - 1. DIVIDE II-ADVANCE PROGRAMMING
2. JULIAN-NONE
3. VERIFY-NONE
4. READ/WRITE-ADVANCE PROGRAMMING-
MODIFY ADD. /THIS INSTRUCTION
MAY BE CHANGED BY USER./
5. ERVTP-SAME AS 4.

1401-01.4.063 MEMORY-DUMP IN BANDS OF 100
POS. /20 CARDS/
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.063

AUTHOR...URI J. SHAFIR
IBM ISRAEL LTD.
P.O.B. 2881
TEL-AVIV, ISRAEL

DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WILL PRINT-OUT THE WHOLE MEMORY IN BANDS OF
100 POS., WITH NUMBERING OF LOCATIONS. THE PRINTOUT FORMAT
IS EASILY READABLE AND WELL SUITED FOR DEBUGGING.

SOURCE LANGUAGE-ACTUAL /CONDENSED/ 4K MACHINE ONLY,
1402, 1403 MODEL 1.

1401-01.4.064 MEMORY-DUMP IN WORDS /18
CARDS/
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-01.4.064

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WILL PRINT-OUT THE WHOLE MEMORY, ONE WORD PER LINE. PURPOSE IS TWO-FOLD--

1. AS DEBUGGING AID--INSTRUCTIONS AND CONSTANTS ARE CLEARLY SEPARATED AND PERMIT EASY TRACING.
2. TO PRINT-OUT A PROGRAM IN CONDENSED FORM, IN A FORMAT WHICH PERMITS EASY TRACING.

4K MACHINE ONLY, 1402,1403 MODEL 1.

1401-01.4.065 TO 1410 SYMBOLIC ANALYZER
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.065

AUTHOR...CHARLES CONE, JR.

DIRECT INQUIRIES TO...
CHARLES CONE, JR., IBM CORP., 1439 PEACHTREE ST., N.E.
ATLANTA, GA.

THE SYMBOLIC ANALYZER-VERSION II IS A 1401 PROGRAM USED TO ENABLE A 1401 USER TO CONVERT HIS PROGRAMS TO THE 1410 AUTOMATICALLY USING HIS 1401 TO PERFORM THE CONVERSION. INPUT TO THE SYMBOLIC ANALYZER IS 1401 AUTOCODER SOURCE CARDS ALONG WITH ONE TO SEVEN SYMBOLIC ANALYZER CONTROL CARDS. OUTPUT IS 1410 AUTOCODER SOURCE CARDS INCLUDING AUTOMATICALLY GENERATED DIOCS, DTFS, IDCS MACROS, AREA ASSIGNMENTS, AND SUCH CORRECTIONS AS CAN BE ACCURATELY MADE TO ALLOW THE 1410 PROGRAMS TO BE BROUGHT UP TO THE STATUS OF RUNNING 1410 PROGRAMS WITH A MINIMUM OF MANUAL INTERVENTION. A DIAGNOSTIC LISTING IS ALSO SUPPLIED TO AID IN THIS MANUAL PHASE. VERSION II OF THE SYMBOLIC ANALYZER IS WRITTEN IN 1401 AUTOCODER AND REQUIRES A 16K 1501 /CR 1410 COMPATIBILITY MODE/ WITH 3 TAPES, ADVANCED PROGRAMMING, HI-LO-EQUAL COMPARE, AND MULTIPLY-DIVIDE. THE 1407 CONSOLE PRINTER MAY BE USED IF AVAILABLE.

OPTIONAL PROGRAM MATERIAL - ONE TAPE CONTAINING ASSEMBLY LISTING THE TAPE REQUIRED TO OBTAIN THE OPTIONAL PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH. OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-01.4.066 GENERALIZED LIST PROGRAM
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.066

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DIRECT INQUIRIES TO AUTHOR

TO ELIMINATE THE NECESSITY FOR MANY INDIVIDUAL PROGRAMS REQUIRED TO PRODUCE LISTINGS ON THE 1401, TO PROVIDE A GENERALIZED LIST PROGRAM FOR USERS WHOSE MACHINES ARE UNABLE TO USE FARGO. TO PROVIDE A RAPID MEANS FOR PROGRAMMERS TO LIST TEST CARDS. 1401. 1.4K, 1402, 1403 MODEL 1 OR 2.

1401-01.4.067 UNPACK CONDENSED CARDS
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.067

AUTHORS...J. J. HARDING W. W. PAPICIK

DIRECT INQUIRIES TO...
J. J. HARDING
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7700 2ND BLVD.
DETROIT 2, MICHIGAN

THIS PROGRAM MAY BE USED TO GET A ONE FOR ONE LISTING OF AN SPS OR AUTOCODER CONDENSED DECK. PROGRAM WILL LIST SEQUENTIALLY ALL FIELDS IN CORE WHICH POSSESS A HIGH ORDER MARK. PROGRAM GIVES LOCATION OF HIGH ORDER WORD MARK. MACHINE CONFIGURATION- BASIC 1401 WITH NO SPECIAL FEATURES. HOWEVER, ALL ROUTINES AND SAMPLE PROBLEMS HAVE BEEN ASSEMBLED WITH 441 CONTROL CARDS, WHICH PRODUCE PROGRAMS SUITABLE ONLY FOR AN 8K OR LARGER SYSTEM. SOURCE LANGUAGE IS SPS AND AUTOCODER.

1401-01.4.068 REER /REPRODUCE, EMIT,
ELIMINATE, RE-ARRANGE/
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.068

AUTHOR...EVAN J. STAUDI
E. I. DU PONT DE NEMOURS & CO.
FILM DEPARTMENT
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BRANDYWINE BLDG.
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WILL REPRODUCE CARDS, EMIT CHARACTERS INTO OUTPUT CARD COLUMNS, ELIMINATE INPUT CARD COLUMNS FROM OUTPUT CARD COLUMNS, AND RE-ARRANGE INPUT CARD COLUMNS TO OUTPUT CARD COLUMNS. SOURCE LANGUAGE 1401 SPS. EQUIPMENT SPECIFICATIONS-
A. HIGH - LOW - EQUAL COMPARE.
B. ADVANCED PROGRAMMING PACKAGE.

1401-01.4.069 STUMP /SPECIAL TAPE UTILITY
MAINTENANCE PROGRAM/
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.069

AUTHOR...REY F. STONE
DATA PROCESSING SUPERVISOR
NORTON COMPANY

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WAS WRITTEN TO HANDLE THE ROUTINE TASKS OF DUMPING A TAPE ON THE 1403 PRINTER, THE DUPLICATING OF A TAPE, AND THE OCCASIONAL MINOR FILE MAINTENANCE FUNCTIONS FOR WHICH NO TAILORED PROGRAM EXISTS. EQUIPMENT SPECIFICATIONS- 8-K OR GREATER 1401 WITH SENSE SWITCHES, ADVANCED PROGRAMMING, AND HIGH-LOW-EQUAL COMPARE. THIS PROGRAM MAY ALSO BE RUN ON A 1410 IN THE 1401 MODE. TO OBTAIN THE MACHINE READABLE PORTION OF THE PROGRAM ONE FULL, 2400 FOOT, REEL OF MAGNETIC TAPE IS REQUIRED. THE TAPE MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE.

1401-01.4.070 GUTS-1401 GENERAL UTILITY
TAPE SEARCH
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.070

AUTHOR...JOHN E. NACK
CATERPILLAR TRACTOR CO.
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DIRECT INQUIRIES TO AUTHOR

USING INPUT CARDS CONTAINING THE CONTROL DATA, SEARCHES A TAPE FILE SEQUENTIALLY AND UPON FINDING AN EQUAL, PUNCHES FIRST 80 POSITIONS OF RECORD OR PRINTS FIRST 132 POSITIONS OF RECORD, OR BOTH. STORAGE REQUIREMENTS- 1210 POSITIONS OF STORAGE PLUS TAPE READ AREA EQUIPMENT SPECIFICATIONS- 1402, 1403 & 1 TAPE DRIVE. HI-LO-EQUAL COMPARE- STORE B REGISTER, INDEXING.

1401-01.4.071 CORE DUMP ROUTINE
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.071

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DIRECT INQUIRIES TO AUTHOR

THIS IS A SUBROUTINE WHICH ENABLES THE USER TO TAKE CORE DUMPS UNDER PROGRAM CONTROL WHILE TESTING HIS PROGRAM. THUS, A SPECIAL PROGRAM DOES NOT HAVE TO BE LOADED INTO THE MACHINE EACH TIME A CORE DUMP IS NEEDED, NOR IS IT NECESSARY TO MANUALLY DUMP THE READ AND PUNCH AREAS. TEST TIME IS THEREBY MORE EFFICIENTLY UTILIZED. THIS SUBROUTINE CAN BE USED BY ANY 1401 WITH ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE. IT USES POSITIONS OF CORE. THE SUBROUTINE IS CONTAINED IN AN SPS SOURCE DECK.

1401-01.4.074 CONTROL TOTAL ROUTINE
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.074

AUTHOR...LAWRENCE D. ROSS
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DIRECT INQUIRIES TO AUTHOR

ACCUMULATES CONTROL TOTALS FROM CARD INPUT. LISTED OR TABBED TOTALS. ACCUMULATES UP TO FOUR DIFFERENT TOTALS. /I.E.-- QUANTITY, POUNDS, GROSS, AND NET/ PROVIDES FOR THREE CLASSES OF TOTALS.
MINOR - DETERMINED BY SPECIFICATION CARD.
INTERMEDIATE - DETERMINED BY SPECIFICATION CARD.
FINAL - AUTOMATIC WITH LAST CARD RUNOUT.
PRINTS TOTALS AND CONTROL FIELDS ON 1403 PRINTER.
LIMITED TO ONE CARD FORMAT AT A TIME. MACHINE CONFIGURATION- BASIC 1401

1401-01.4.077 TAPE DUPLICATION OR COMPARE
FOR 8K 1401B
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.077

AUTHOR...MR. SY BERLIN
RESEARCH ANALYSIS CORP.
6935 ARLINGTON ROAD
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM PERMITS MULTI-FILE DUPLICATION OR COMPARE OF BINARY AND BCD INFORMATION. THE INFORMATION MAY BE IN MIXED OR SINGLE MODE. 1401 MODEL C4, 2 TAPE DRIVES, COLUMN BINARY FEATURE IS OPTIONAL. SOURCE LANGUAGE - S.P.S.

1401-01.4.078 SUPERVISOR FOR PROGRAM
OVERLAYS
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.078

AUTHOR...K. E. BROOKE
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DIRECT INQUIRIES TO AUTHOR

A PROGRAM SUBROUTINE WHICH, IN EFFECT, EXPANDS 1401 MEMORY AND SIMPLIFIES THE USE OF PROGRAM OVERLAYS. OVERLAYS ARE LOADED ONTO A SCRATCH TAPE AS EXECUTE PHASES OF OBJECT PROGRAM LOADING. THEY ARE CALLED INTO MEMORY AS OFTEN AS NEEDED DURING THE PROGRAM RUN. STANDARD 80 CHARACTER TAPE

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LABEL CONTROLS ARE OPTIONAL. THE SUPERVISOR REQUIRES 115 CORE POSITIONS AND IS AVAILABLE AS A 1401 AUTOCODER-- VERSION 3-- MACRO. THE OBJECT PROGRAMS RUNS ON ANY 1401 WITH ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, AND ONE TAPE DRIVE. WRITTEN IN AUTOCODER.

1401-01.4.081 DIVISION AND RADIX
PROGRAMMED ADDRESS CONVERSION TECHNIQUES
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.081

AUTHORS..R. L. DUNKLE G. N. CADWALLADER

DIRECT INQUIRIES TO..
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THE RANDOM ADDRESSING PROBLEM IS TO CONVERT AN UNEVENLY DISTRIBUTED SET OF NUMBERS TO AN EVENLY DISTRIBUTED SET OF NUMBERS WITHIN THE ADDRESS LIMITS OF A RANDOM ACCESS DEVICE. THE ADDRESSING TECHNIQUES USED IN THIS PROGRAM ARE DESIGNED TO ACCOMPLISH THIS TASK. THIS PROGRAM CAN CALCULATE A DISK ADDRESS FOR ANY ITEM NUMBER THAT IS TWENTY POSITIONS OR LESS IN LENGTH. THE MINIMUM 1401 CONFIGURATION TO OPERATE THIS PROGRAM IS 1401 MODEL C, 4000 POSITIONS OF CORE STORAGE, HIGH-LOW-EQUAL COMPARE DEVICE, TWO TAPE DRIVES /729 MODEL 2 OR 4 OR TYPE 7330/, AND ADVANCED PROGRAMMING FEATURE. THE PROGRAM WAS WRITTEN AND ASSEMBLED USING SPS II.

1401-01.4.082 SYLVANIA PRINT ROUTINE
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.082

AUTHOR...EDWIN BENKHART
SYLVANIA ELECTRIC PRODUCTS INC.
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DIRECT INQUIRIES TO AUTHOR

TO PRINT A BCD TAPE DISPLAYING 100 CHARACTERS PER LINE, CR TO A RECORD MARK WHICHEVER OCCURS FIRST. EACH TAPE BLOCK IS NUMBERED /ON THE LEFT MARGIN/ AND A CUMULATIVE CHARACTER COUNT BY LINE FOR THE TAPE BLOCK IS ALSO RECORDED /ON THE RIGHT MARGIN/. ENCOUNTERING A TAPE MARK CAUSES TAPE MARK TO PRINT AND PROGRAM HALT. SEGMENT MARK /IBM 7070/ IS PRINTED AS SEGMENT MARK BUT PROGRAM DOES NOT HALT. TAPE READ IN AREA STARTS AT 2001. THE MAXIMUM TAPE BLOCK WHICH CAN BE PRINTED IS 1996, 5996, 5996 AND 13996 CHARACTERS FOR 4K, 8K, 12K AND 16K RESPECTIVELY. 1401 MODEL C3, 1402 READER-PUNCH, 1400 MODEL 2 PRINTER, 729 MODEL 2 CR 4 TAPE UNIT, HI-LO-EQUAL COMPARE, ADVANCED PROGRAMMING FEATURES.

1401-01.4.091 SCANX MACRO FOR THE 1401
AUTOCODER
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.091

AUTHOR...THOMAS F. MARRIE
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THE 1401 SCANX MACRO IS A TABLE LOOKUP MACRO INSTRUCTION. IT DOES NOT TIE UP AN INDEX REGISTER. IT DOES USE THE ADVANCED PROGRAMMING FEATURES. IT CAN BE USED ON TABLES CONTAINING VARIABLE LENGTH FUNCTIONS. A SINGLE LINE OF CODING WILL GENERATE SIXTEEN INSTRUCTIONS THAT WILL USE A MAXIMUM OF 80 POSITIONS OF CORE STORAGE. BEFORE THE PROGRAM CAN BE ASSEMBLED THE 1401 AUTOCODER MUST BE UPDATED.

MACHINE CONFIGURATION-- TO GENERATE DURING ASSEMBLY WITH 1401 AUTOCODER 4K CORE MEMORY, 4 TAPE UNITS /729 II OR 729 IV CR 7330/, 1 1402 CARD READER PUNCH, 1 1403 PRINTER, HI-LO-EQUAL COMPARE ADVANCED PROGRAMMING. FOR OPERATING PROGRAM - 4K CORE MEMORY, 1 1402 CARD READER PUNCH OR 1 TO 4 TAPE UNITS, HI-LO-EQUAL COMPARE ADVANCED PROGRAMMING. WRITTEN IN AUTOCODER.

1401-01.4.092 TRACE
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.092

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THE 1401 TRACE IS DESIGNED TO AID DEBUGGING A PROGRAM BY EXECUTING IT STEP BY STEP AND PRINTING A RUNNING LOG ON THE 1403 PRINTER, INCLUDING EACH INSTRUCTION AND VARIOUS ASSOCIATED FIELDS AND REGISTERS. THE METHOD USED IS THE ACCESSING OF INSTRUCTIONS FROM THE PROGRAM BEING TRACED AND THEIR EXECUTION FROM WITHIN TRACE, ALONG WITH A PRINTOUT OF INFORMATION PERTINENT TO THE OPERATION. NO RESTRICTION IS PLACED ON THE OBJECT PROGRAM BEING TRACED. TRACE WILL PROCESS AND RECOVER REGISTER SETTINGS FROM ALL 1401 INSTRUCTIONS. THE PROGRAM MAY BE USED EITHER IN SOURCE OR CONDENSED DECK FORM. TRACE DISPLAYS THE FOLLOWING INFORMATION FOR EACH INSTRUCTION-- 1. INSTRUCTION, INSTRUCTION LENGTH, I, A, AND B ADDRESS REGISTERS, AND INDEX REGISTERS. 2. UP TO 98 CHARACTERS OF A AND B DATA FIELDS BEFORE AND AFTER EXECUTION OR 3. FOR INPUT - OUTPUT INSTRUCTION, COMPLETE RECORDS WITH WORD MARKS ARE DISPLAYED AS STORAGE DUMPS. 1401 PROCESSOR /2-16K/, 1402 CARD READER, 1403 PRINTER /ANY MODEL/, ADVANCED PROGRAMMING FEATURES /STORE REGISTERS, INDEXING/, OPTIONAL - SENSE SWITCHES. SOURCE LANGUAGE- SPS I /AUTOCODER ORIENTED/.

OPTICAL PROGRAM MATERIAL - SOURCE DECK

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OPTICAL PROGRAM MATERIAL MUST BE ITEMIZED ON THE ORDER CARD.

1401-01.4.094 APTCO - AUTOMATIC
PROGRAMMING, TESTING AND CONDENSING OPERATION
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.094

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APTCC IS A LOAD-AND-GO PROGRAM DESIGNED TO MINIMIZE PROGRAMMING, TESTING, AND DEBUGGING TIME REQUIRED FOR BUSINESS PROGRAMS AND YET PROVIDE THE FLEXIBILITY TO HANDLE A WIDE VARIETY OF PROBLEMS FOR A CARD SYSTEM 1401, FROM SIMPLE LISTINGS, REPRODUCTIONS AND GANGLPUNCHINGS TO COMPLICATED REPORTS REQUIRING EXTENSIVE USE OF LOGIC OPERATIONS. APTCO WILL AUTOMATICALLY HANDLE UP TO 5 HEADING LINES, 9 TOTAL LEVELS, AND 198 SYMBOLIC LABELS. IN ONE PASS, APTCO WILL PRINT A LISTING OF THE CONTROL CARDS WITH ERROR INDICATIONS, PRINT A CORE DUMP IF DESIRED, AND TEST GENERATED PROGRAM OR RUN ACTUAL DETAILS. 4K STORAGE REQUIRED - ADDITIONAL STORAGE CAPACITY IS ENTIRELY AVAILABLE FOR OBJECT PROGRAM. APTCO WILL AUTOMATICALLY GENERATE MULTIPLE/ DIVERSE SUBROUTINE WHEN REQUIRED AND WILL HANDLE PUNCH FEED READ PROBLEMS.

1401-01.4.096 UNIVERSAL MEMORY PRINT
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.096

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THIS PROGRAM IS DESIGNED TO PROVIDE A LEGIBLE /DOT/ MEMORY PRINT. IT WILL AUTOMATICALLY MODIFY ITSELF TO RUN ON A 1401 OF ANY MEMORY SIZE. ONLY THE 00 BAND MUST BE PRINTED FROM THE CONSOLE. CORE FROM 001 TO THE UPPER LIMIT OF THE OBJECT MACHINE IS THEN PRINTED. MACHINE CONFIGURATION IS 1401, ANY MODEL, 1402, 1403, MODEL 2. NO 1401 SPECIAL FEATURES ARE REQUIRED. WRITTEN IN ABSOLUTE AND SPS. CONTAINS 322 SPS INSTRUCTION AND COMMENT CARDS IN 1 PER CARD FORMAT. THE CONDENSED OBJECT DECK CONTAINS 96 CARDS. CHECKED OUT ON 4K, 8K AND 16K SYSTEMS OF VARYING CONFIGURATIONS. A SINGLE HIGH ORDER CORE POSITION/ I.E. 3999 ON 4K SYSTEM, 15999 ON A 16K SYSTEM/ IS DESTROYED, BUT A WORK MARK THERE IS UNCHANGED.

1401-01.4.097 SYMBOLIC BLOCK DIAGRAMMING
SYSTEM
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.097

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THE SYMBOLIC BLOCK DIAGRAMMING SYSTEM ASSEMBLES AND PRINTS BLOCK DIAGRAMS IN A MANNER SIMILAR TO THAT IN WHICH A SYMBOLIC PROGRAMMING SYSTEM PROCESSES PROGRAMS. THE INPUT TO THE SYSTEM IS CARDS PUNCHED FROM A BLOCK DIAGRAM CODING FORM, WHICH IS DESIGNED TO LOOK MUCH LIKE THE FINISHED DIAGRAM. THE CODING SPECIFIES THE TYPE /SHAPE/ OF THE BLOCK TO BE DRAWN FOR EACH CARD AND THE NARRATIVE TO BE PRINTED IN THE BLOCK. EACH BLOCK MAY BE ASSIGNED A LABEL, AND CHANGES TO THE NORMAL FLOW OF THE DIAGRAM ARE INDICATED BY REFERENCING THE LABELS OF OTHER BLOCKS. UP TO THREE LABELS CAN BE REFERENCED FROM A DECISION BLOCK, AND ONE LABEL CAN BE REFERENCED FROM OTHER BLOCKS. A SAMPLE OF THE CODING FORM IS PROVIDED WITH THE PROGRAM WRITEUP. JUST AS A PROGRAMMER NEED NOT SPECIFY CORE LOCATIONS WHEN USING A SYMBOLIC PROGRAMMING SYSTEM, HE NEED NOT SPECIFY THE PAGE OR POSITION ON THE PAGE WHICH A BLOCK IS TO OCCUPY WHEN USING THE SYMBOLIC BLOCK DIAGRAMMING SYSTEM. THE SYSTEM ASSIGNS ALL LOCATIONS /PAGE AND POSITION/ IN THE FIRST PHASE. IN LATER PHASES, IT PRINTS THE LABEL TABLE, THE REFERENCES TO ALL LABELS, AND THE DIAGRAM ITSELF. OBVIOUSLY, THE DIAGRAM CAN BE UPDATED BY PUNCHING ONLY THE CARDS INVOLVED IN A CHANGE AND REPRINTING THE DIAGRAM.

SINCE DIAGRAMS TO BE PROCESSED ARE CODED SEPARATELY FROM THE PROGRAM, THERE IS NO MACHINE OR LANGUAGE LIMITATION ON THE DIAGRAMS WHICH CAN BE PROCESSED. THE NUMBER OF LABELS AND REFERENCES IS LIMITED BY OBJECT CORE SIZE- 4K, 265 LABELS AND 290 REFERENCES- 8K, 665 AND 690- 12K, 1065 AND 1090- AND 16K, 1465 AND 1490. DIAGRAMS OF UP TO 59 PAGES CAN BE PROCESSED. AN IBM 1401 WITH 4, 8, 12, OR 16 THOUSAND POSITIONS OF CORE STORAGE HI-LO-EQ COMPARE, ADVANCED PROGRAMMING FEATURES, A 1403 MODEL II, A 1402, AND AT LEAST TWO MAGNETIC TAPE UNITS. SENSE SWITCHES ARE REQUIRED FOR PUNCHING RE-SEQUENCED INPUT DECKS AND FOR MULTIPLE PRINTINGS OF DIAGRAMS. SOURCE LANGUAGE- AUTOCODER

1401-01.4.098 RANDOM ADDRESS
TRANSFORMATION EVALUATION PROGRAM
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.098

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Contributed Programs

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THIS IS AN IBM 1401 PROGRAM FOR EVALUATING THE RANDOMNESS OF A SET OF GENERATED ADDRESSES /FOR RANDOM ACCESS STORAGE DEVICES SUCH AS THE IBM 1301/ IN A RANGE FROM 0000 UP TO A MAXIMUM OF 9999. LONGER RANGES CAN BE EVALUATED IN SEGMENTS. INPUT IS UNSORTED TAPE RECORDS IN ANY UNBLOCKED FORMAT. LOCATION OF THE ADDRESS FIELD IS SPECIFIED BY A CONTROL CARD. AN OPTION PERMITS DIRECT INPUT OF CUSTOMER RECORDS AND COMPUTATION OF SEMI-RANDOM ADDRESSES BY THE DIVISION REMAINDER METHOD. THE PRINTED OUTPUT TABULATES ADDRESS UTILIZATION /RANGING FROM 0 TO 29 TIMES PER ADDRESS/ AND COMPARES IT WITH A THEORETICAL RANDOM DISTRIBUTION FOR THE SAME PARAMETERS. THE MINIMUM SYSTEM IS A 4K IBM 1401 WITH ADVANCED PROGRAMMING, HI-LO-E COMPARE, RECORD MOVE AND FOUR TAPE UNITS. THE SOURCE PROGRAM CONSISTS OF 1077 STATEMENTS IN AUTOCODER, SPS AND IBM 1401 MACHINE LANGUAGE.

1401-01.4.099 GENERAL PURPOSE CARD EDIT ROUTINE

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.099

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THIS GENERAL PURPOSE EDIT ROUTINE WAS DESIGNED TO HELP PURIFY THE INPUT MEDIA WITH A MINIMUM OF DEVELOPMENTAL EFFORT. ALL THAT IS REQUIRED IS AN EXACT DEFINITION OF THE VARIOUS CARD FIELDS AND THE PERMISSIBLE CHARACTERS CONTAINED IN EACH. AN ERROR CARD WILL BE PRINTED AND AN 80-80 IMAGE CARD WILL BE PUNCHED TO BE USED AS A LOCATOR. THERE ARE NO RESTRICTIONS TO THE USE OF THIS PROGRAM. STORAGE REQUIREMENT- AT LEAST 2K. COMPONENTS NEEDED ARE 1401 WITH ADVANCED PROGRAMMING, SENSE SWITCHES, ADDITIONAL PRINT CONTROL, HI-LO-EQUAL COMPARE, AND COLUMN BINARY. ALSO NEEDED ARE A 1402 READ-PUNCH, AND A 1403 PRINTER.

1401-01.4.100 TAPE ANALYZE PROGRAM, 8K VERSION

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.100

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THIS PROGRAM WILL CHECK A BCD OR BINARY MAGNETIC TAPE FOR-
A. REDUNDANT RECORDS.
B. LENGTH OF EACH RECORD.
C. A RECORD SIZE ERROR IN AN ASSUMED FIXED RECORD LENGTH FILE.
D. A TOTAL RECORD COUNT OF A FILE.
E. THE OPTION TO PRINT ANY SIZE RECORD FROM 1 THRU 6,996 CHARACTERS IN LENGTH, FIXED OR VARIABLE.
1401 PROCESSING UNIT. 1402 CARD READ-PUNCH. 1403 PRINTER. 8K STORAGE. HI-LO-EQ COMPARE FEATURE. ADVANCED PROGRAMMING FEATURE. ONE TAPE DRIVE.

1401-01.4.102 CHECKPOINT AND RESTART PROCEDURE

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.102

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THE IBM 1401 CHECKPOINT AND RESTART PROCEDURE PROVIDES FOR THE WRITING OF CHECKPOINT RECORDS ON MAGNETIC TAPE AND AUTOMATIC RESTART AT A LATER TIME IN THE EVENT OF PROGRAM INTERRUPTION. IT IS OF MOST VALUE ON PROGRAMS INVOLVING EXCESSIVE RUNNING TIME AND WHERE PROGRAM INTERRUPTION MAY BE REQUIRED OR UNAVOIDABLE. THE PROCEDURE UTILIZES A 1401 AUTOCODER MACRO TO PROVIDE THE NECESSARY PROGRAM INSTRUCTIONS TO WRITE CHECKPOINT RECORDS. A SEPARATE RESTART DECK IS PROVIDED WHICH RE-CREATES STORAGE FROM THE CHECKPOINT RECORD, RESTORES ALL TAPE DRIVES, PROVIDES FOR RESTARTING ANY CARD FILE, AND ENTERS THE USER'S PROGRAM TO CONTINUE PROCESSING. MACHINE CONFIGURATION- 8K, 1401 WITH ADVANCED PROGRAMMING, HI-LO-EQUAL COMPARE, SENSE SWITCHES AND ONE TAPE DRIVE /FOUR FOR ASSEMBLY/. CHECKPOINT AND RESTART ROUTINES-310-360 POSITIONS OF STORAGE. SOURCE LANGUAGE- AUTOCODER

1401-01.4.103 RELOCATABLE TRACE PROGRAM

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.103

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THE PROGRAM TRACES TAPE, CARD RAMAC, BINARY AND STANDARD 1401 COMMANDS. IT SHOWS STEPS, DATA, ADDRESS REGISTERS AND INDEX REGISTERS. OUTPUT IS PRINTED ON THE 1403 WITH ONE LINE PER PROGRAM STEP EXECUTED. THIS LINE CONTAINS 1/ THE LOCATION OF THE STEP BEING EXECUTED, 2/ THE ACTUAL STEP, 3/ UP TO 15 CHARACTERS OF THE B FIELD BEFORE TAKING THE STEP, 4/ THE B FIELD AFTER TAKING THE STEP, 5/ THE CONTENTS OF THE A AND B ADDRESS REGISTERS AFTER THE STEP, 6/ THE CONTENTS OF INDEX REGISTERS 1, 2, AND 3 AT THE TIME OF EXECUTION. THE TRACE PROGRAM FOLLOWS AN OBJECT PROGRAM ONE STEP AT A TIME BY EXTRACTING YOUR STEP, PLACING IT IN THE APPROPRIATE TRACE ANALYSIS ROUTINE AND ACTUALLY EXECUTING YOUR STEP WITHIN THE AREA OCCUPIED BY TRACE. THE MINIMUM MACHINE REQUIREMENTS FOR OPERATION ARE 1/ 8000 POSITIONS OF CORE, 2/ ADVANCED PROGRAMMING, AND 3/ ANY FEATURES OR DEVICES CALLED FOR IN THE OBJECT PROGRAM. SOURCE LANGUAGE- WRITTEN IN MACHINE

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CONTINUED FROM PRIOR COLUMN--
LANGUAGE.

1401-01.4.106 NO RESTRICTIONS SELECTIVE TRACE

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.106

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THIS IS A UTILITY PROGRAM TO ALLOW A PROGRAMMER TO FOLLOW THE PATH OF A PROGRAM BEING DEBUGGED BY PRINTING CERTAIN INFORMATION JUST PRIOR TO EXECUTING EACH INSTRUCTION OF THAT PROGRAM. THE TRACE IS PLACED BEHIND THE OBJECT PROGRAM AND LOADED INTO UPPER CORE. IT EXTRACTS INSTRUCTIONS SEQUENTIALLY FROM THE PROGRAM AND EXECUTES THEM IN A SPECIAL AREA IN THE TRACE. JUST BEFORE EXECUTION, IT PRINTS A LINE SHOWING WHICH INSTRUCTION IS BEING EXECUTED, AS WELL AS THE CONTENTS OF THE INDEX REGISTERS AND THE CONTENTS OF A 50 CHARACTER WORK AREA SPECIFIED BY THE USER. THE PROGRAM WHICH IS BEING TRACED MUST USE NO MORE THAN 6770, 10,770 OR 14,770 LOCATIONS DEPENDING ON THE SIZE OF CORE. MACHINE CONFIGURATION- 8K STORAGE, ADVANCED PROGRAMMING, HIGH-LOW EQUAL COMPARE, /MAY BE MODIFIED TO 4K/. 1401 TRACE USES 1230 POSITIONS OF CORE. SOURCE LANGUAGE- WRITTEN IN SPS.

1401-01.4.107 STACK - STORAGE ON TAPE TO ABRIDGE CARD-KEEPING

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.107

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A SET OF THREE PROGRAMS DESIGNED TO MINIMIZE PUNCHED CARD STORAGE BY STACKING CARD FILES ON MAGNETIC TAPE. SIZE AND FORMAT OF CARD FILES ARE VIRTUALLY UNLIMITED. THE EQUIVALENT OF UP TO TEN CASES OF CARDS MAY BE PLACED ON ONE 2400-FOOT REEL OF TAPE AT 556 CPI. THE SET CONSISTS OF-
1/ CARD TO TAPE PROGRAM /CTTAP/.
2/ UPDATE PROGRAM /UPDAT/. IN ADDITION TO ADDING, DELETING, OR REPLACING FILES, THIS PROGRAM WILL COPY THE INPUT TAPE AND WILL FURNISH A LIST OF THE FILE-TITLES WITH THE NUMBER OF RECORDS IN THE FILES.
3/ SEARCH PROGRAM /SERCH/ TO RETRIEVE FILES IN PUNCHED AND FOR PRINTED FORM.
AUTOCODER WITH 100CS. MINIMUM MACHINE CONFIGURATION- UPDATE- 1401 8K, 2 TAPES
SEARCH & CARD-TO-TAPE- 4K, 1 TAPE
ALL 3 PROGRAMS REQUIRE 1402, 1403, SENSE SWITCHES, ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE FEATURES. SOURCE STATEMENT COUNT- CARD-TO-TAPE, 79- UPDATE, 601- SEARCH, 164.

1401-01.4.108 TAPE DUPLICATION

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.108

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TO DUPLICATE BCD OR BINARY TAPE RECORDS FROM 13 TO 2300 CHARACTERS IN LENGTH. WITH THE SETTING OF SENSE SWITCHES IT WILL DUPLICATE SINGLE OR MULTIPLE FILES, AND WRITE A TRAILER LABEL. THE TAPE TO BE DUPLICATED IS MOUNTED ON UNIT 1 AND FILE PROTECTED. THE OUTPUT TAPE IS MOUNTED ON UNIT 2 WITH A FILE PROTECT RING. SENSE SWITCHES ARE SET FOR THE OPTIONS DESIRED. TAPE ONE IS READ INTO CORE, TESTED FOR SIZE, HEADERS, TRAILERS AND NOISE RECORDS AND WRITTEN ON TAPE TWO. THE PROGRAM WILL NOT COPY RECORDS GREATER THAN 2300 CHARACTERS OR LESS THAN 12 CHARACTERS. MACHINE CONFIGURATION - A 1401 MODEL C, 4K SYSTEM- WITH 7/ TWO TAPE UNITS, /B/ 1402 /C/ 1403, /D/ ADVANCED PROGRAMMING AND /E/ BINARY FEATURE /OPTIONAL/. SOURCE LANGUAGE- 1401 AUTOCODER.

1401-01.4.109 TL001 TABLE LOOKUP CLOSED SUBROUTINE

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.109

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TO SIMPLIFY PROGRAMMING OF DATA PROCESSING APPLICATIONS REQUIRING TABLE OPERATIONS ON THE IBM 1401. THE CLOSED SUBROUTINE IS GENERALIZED IN NATURE, AND RELOCATABLE IN AN UNASSEMBLED SPS FORM. INCLUDED WITHIN THE SUBROUTINE ARE THREE /3/ ROUTINES AS FOLLOWS- 1. PROGRESSIVE TABLE LOADER. 2. TABLE SEARCH HIGH-LOW-EQUAL. 3. TABLE UPDATE. THE USER MUST SUPPLY WITHIN HIS SOURCE PROGRAM A MINIMUM OF RELATED PARAMETERS, AND SIMPLE LINKAGE TO THE CLOSED SUBROUTINE. THE TABLE FOLLOWS THE LAST MEMORY POSITION OF THE USER'S OBJECT PROGRAM AND CAN CONTINUE TO THE END OF MEMORY. THIS TECHNIQUE ALLOWS THE MAXIMUM SIZE TABLE OF ARGUMENTS AND FUNCTIONS FOR A GIVEN USER'S PROGRAM AND/OR MODEL OF IBM 1401. THE CLOSED SUBROUTINE USES 165 POSITIONS OF MEMORY. EQUIPMENT SPECIFICATIONS- BASIC IBM 1401 SYSTEM WITH HIGH-LOW-EQUAL COMPARE. NO ADDITIONAL SPECIAL FEATURES ARE REQUIRED.

Contributed Programs

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1401-01.4.110 SPECIAL FEATURE MULTIPLY AND DIVIDE MACROS

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.110

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MPYMC-A ROUTINE TO SIMPLIFY MULTIPLICATION USING THE MULTIPLY OP CODE /A SPECIAL FEATURE ON THE 1401./ THE USER MAY SET UP A 2, 3, 4, OR 5 WAY MULTIPLICATION SERIES AS A X B, A X B X C, A X B X C X D, OR A X B X C X D X E. HALF ADJUSTING MAY BE HANDLED BY THE MACRO. DVMC-THIS ROUTINE IS USED TO SIMPLIFY DIVISION USING THE DIVIDE OP CODE /A SPECIAL FEATURE ON THE 1401./ HALF ADJUSTING MAY BE HANDLED BY THE MACRO. AUTOCODES EQUIPMENT- MULTIPLY-DIVIDE SPECIAL FEATURE, 1401, 1402, 1403.

1401-01.4.113 GENERAL TAPE CORRECTION PROGRAM

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.113

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THIS PROGRAM WAS DEVELOPED TO SOLVE THE PROBLEM OF MAINTAINING THOSE TAPE FILES WHICH ARE NOT ORDINARILY MAINTAINED AT OBJECT PROGRAM TIME AND WOULD REQUIRE A SEPARATE PROGRAM FOR CORRECTING EACH FILE IN THE LIBRARY. IN ADDITION IT WILL PROVE VALUABLE IN CONVERTING CARD FILES TO TAPE BY OFF LINE PREPARATION OF THE INPUT DATA. THIS PROGRAM DIFFERS FROM OTHER KNOWN PROGRAMS IN THAT IT IS GENERAL IN NATURE AND IN ITS ABILITY TO ACCESS ANY TAPE FILE WITHIN THE LIMITATION SET FORTH BELOW.
MACHINE CONFIGURATION- 1401 8K, 1402, 1403-132 PRINT POSITIONS, HI-LCW-EQUAL COMPARE, ADVANCED PROGRAMMING, 2 TAPE DRIVES, 729 11, IV, OR 7330.

WRITTEN IN SPS USING TCS AS THE I/O MEDIUM. HOWEVER, THE USER MAY EMPLOY ANY OTHER I/O PACKAGE BY PROVIDING THE NECESSARY LINKAGE. CAPABILITIES AND LIMITATIONS- THE PROGRAM PROVIDES THE FOLLOWING FEATURES-

1. INSERTING OR DELETING RECORDS.
2. CHANGING ANY FIELDS/ IN THE RECORD.
3. UP TO 5 CONTROL FIELDS WHICH NEED NOT BE ADJACENT.
4. UP TO 50 CHARACTERS OF CONTROL E.G. USER MAY HAVE AN AGGREGATE OF 50 CONTROL CHARACTERS MAKING UP 1 TO 5 CONTROL FIELDS IN ANY COMBINATION.

1401-01.4.115 CORP CODE-NUMERIC ENCODING OF BUSINESS, COMPANY AND CORPORATE NAMES

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.115

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A PROGRAM TO NUMERICALLY ENCODE UP TO THE FIRST FIVE LETTERS OF THE FIRST THREE COMPANY NAMES OF ANY BUSINESS NAME. BY A TABLE LOOK-UP TECHNIQUE ON A 1000 NAME COMPANY TABLE, THREE DIGITS ARE ASSIGNED FOR EACH OF THE FIRST THREE NAMES FOR A TOTAL OF NINE DIGITS. THIS PROGRAM DIFFERS FROM AUTOPIC /1401-1.4.014/ IN THAT IT DEALS WITH COMPANY RATHER THAN INDIVIDUAL NAMES- IT USES A VARIABLE LENGTH INSTEAD OF FIXED NAME FIELDS- THE RESULTANT CCCE IS ENTIRELY DIGITAL- IT IS COMPATIBLE WITH THE SIZE OF THE NUMBER GENERATED BY AUTOPIC. IT IS, IN EFFECT, THE BUSINESS NAME COMPLEMENT OF THE INDIVIDUAL NAME AUTOPIC. USES A PROGRAMMED TABLE LOOK-UP TECHNIQUE. CAN SEARCH UP TO 70 ALPHABETIC POSITIONS OF A COMPANY NAME ISOLATING THE FIRST FIVE LETTERS OF THE FIRST THREE NAMES BY SEARCHING FOR BLANKS BETWEEN NAMES. ANY NUMBER OF BLANKS CAN SEPARATE THE WORDS IN THE NAME. THE PROGRAM PRESENTLY SEARCHES 23 LETTERS FROM COLUMNS 17-39 IN A CARD OR TAPE RECORD. THE RESULTANT CODE CAN BE PUNCHED OR WRITTEN ANYWHERE IN THE CARD OR TAPE OUTPUT. THE PRESENT PROGRAM PLACES THE FIRST NAME CODE IN COLUMNS 6-8, 2ND CODE IN COLUMNS 9-11 AND THE 3RD CODE IN COLUMNS 12-14. BY CHANGING 3 OUTPUT DATA TRANSFERS, THE OUTPUT COLUMNS CAN BE ALTERED. THE PROGRAM CAN BE REASSEMBLED FOR ANY SPECIFIC JOB BY CHANGING A TOTAL OF 5 CARDS. MACHINE CONFIGURATION- 1401, 8K, HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING- OPTIONAL-READ-PUNCH RELEASE, 1 OR 2 TAPE DRIVES, PUNCH FEED READ, SENSE SWITCHES, 100 POSITION PRINTER REQUIRED ONLY TO PRINT OUT COMPANY TABLE. SOURCE LANGUAGE- SPS 11, ASSEMBLED IN AUTOCODER.

1401-01.4.118 REPRO-REPRODUCE AND/OR EMIT ALPHANUMERIC /12-9/, NUMERIC/0-9/ONLY, AND NUMERIC ZONE/12-11/ONLY

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.118

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TO REPRODUCE CARDS, ALLOWING MANIPULATION OF NUMERIC FIELDS 70-97, NUMERIC ZONING /12-11/, AND EMITTING OF CONSTANT DATA. TO ELIMINATE THE REQUIREMENT OF WIRING REPRODUCER BOARDS. TO PROVIDE A PROGRAM FOR GENERAL CONVERSION OF CARD FORMATS NORMALLY UTILIZED BY EAM INSTALLATIONS. THE PROGRAM DECK IS FOLLOWED BY CONTROL CARDS WHICH SET UP THE OPERATIONS TO BE PERFORMED. THE CONTROL CARDS ARE COMPLETELY ANALYZED AND IF ANY ERRORS IN THE CONTROL CARDS, THE PROGRAM WILL NOT PROCESS THE DETAIL FILE. STORAGE REQUIREMENTS-1401-4K. EQUIPMENT

CONTINUED FROM PRIOR COLUMN--

SPECIFICATIONS-1. ADVANCED PROGRAMMING FEATURE. 2. HIGH-LCW-EQUAL COMPARE. IT IS SIGNIFICANT TO NOTE THAT WITHIN THE OPERATION OF THIS PROGRAM, 0-9 IS CONSIDERED NUMERIC AND 11-12 IS CONSIDERED ZONE.

1401-01.4.121 SELF-CHECKING NUMBER CALCULATION- MODULUS 10

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.121

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CALCULATES THE SELF-CHECKING NUMBER FOR BASE NUMBERS OF THREE TO TWELVE POSITIONS. A LEAD CARD INSTRUCTS THE PROGRAM IN THE SIZE OF THE BASE NUMBER AND THE DESIRED INPUT AND OUTPUT. OPTIONS FOR INPUT-1. GENERATES BASE NUMBER FROM 1 TO 9/5. 2. GENERATE BETWEEN SPECIFIED NUMBERS. 3. READ SPECIFIC NUMBERS FROM CARDS. OPTIONS FOR OUTPUT-1. PUNCH BASE NUMBER AND ITS CHECK DIGIT. 2. PUNCH AND PRINT BASE NUMBER AND ITS CHECK DIGIT. PLEASE REFER TO IBM MANUAL 622-8502-0, ACCOUNT NUMBERING AND SELF-CHECKING NUMBER SYSTEMS- SERIES 1200 CHARACTER SENSING EQUIPMENT FOR A DISCUSSION OF THE MODULUS 10 FORMULA AND ITS USES. FORMULA FOR MODULUS 10 CHECK DIGIT. TAKE THE BASE NUMBER, DOUBLE THE UNITS POSITION AND ALTERNATE POSITION TO THE LEFT. ADD THE DIGITS OF THE RESULTS AND THE EVEN POSITIONS OF THE BASE NUMBER. SUBTRACT THE RESULT FROM 110 /A MULTIPLE OF 10/. THE UNITS OF ANSWER IS THE CHECK DIGIT. MACHINE CONFIGURATION-THIS PROGRAM IS DESIGNED TO OPERATE ON A 4K OR HIGHER 1401 DATA PROCESSING SYSTEM. NO SPECIAL FEATURES ARE REQUIRED. PROGRAM REQUIREMENTS- THIS PROGRAM REQUIRES 2717 POSITIONS OF CORE STORAGE. THE SOURCE LANGUAGE IS SPS.

OPTIONAL PROGRAM MATERIAL - SOURCE DECK.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-01.4.123 TAPE COMPARE ERROR PRINT/DUPLICATE

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.123

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THIS PROGRAM WILL COMPARE OR DUPLICATE MIXED BCD AND BINARY TAPES. ON A TAPE COMPARE, PRIOR PROGRAMS HALTED ON AN ERROR. THIS PROGRAM PRINTS OUT ONE OF THE TWO TAPES, 100 CHARACTERS PER LINE, DOUBLE SPACED, WITH WORD MARKS UNDER EACH DIGIT FAILING TO COMPARE. THIS PROGRAM IS USEFUL IN DEVELOPMENT TESTING, THE FILING OF MANY TAPE FILES ON ONE TAPE REEL AND ACCESSING THESE FILES, AND IN DAILY CHECKING OF EQUIPMENT PRODUCING MAGNETIC TAPE. THIS PROGRAM PROVIDES FOR ADDITIONAL PROGRAMMING VIA PROGRAM EXITS, IF DESIRED.
MACHINE REQUIREMENTS- A 4K OR LARGER 1401 WITH TWO TAPE DRIVES AND INDEXING, A 1402 CARD READ PUNCH, AND A 1403 PRINTER. THE PROGRAM IS CODED IN SPS AND ASSEMBLED IN AUTOCODER CONDENSED FORMAT USING CARAT V.

1401-01.4.124 MODIFIED DUMP

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.124

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THIS ROUTINE IS THE STANDARD IBM 1401 DUMP MODIFIED TO PROVIDE THE FOLLOWING ADDITIONAL CONVENIENCES-

1. LOGIC INDICATORS INCLUDED IN PRINTOUT.
2. ALL GROUP MARKS ARE CHANGED TO LOZENGES.
3. BLANK BLOCKS OF MEMORY /X00-X99/ ARE NOT PRINTED.

STORAGE REQUIREMENTS-POSITIONS 1-80 INITIALLY AND 81-399 AFTER CONTENTS HAVE BEEN PRINTED. EQUIPMENT SPECIFICATIONS-ANY MODEL OR SIZE MEMORY.

1401-01.4.126 PRINT DECISION TABLES

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.4.126

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TO PRINT DECISION TABLES ON 1403 PRINTER. THE PRINCIPLE BENEFITS OF THIS METHOD ARE THE ABILITY TO QUICKLY UPDATE AND PRODUCE DECISION TABLES WHICH ARE SUITABLE FOR PHOTOGRAPHIC REPRODUCTION. THE INPUT CARDS /ONE OR TWO PER LINE/ IDENTIFY THE LINE AS A TITLE, SETUP, CONDITION OR ACTION LINE. SOURCE LANGUAGE, 1401 AUTOCODER. THE DECISION TABLE TO BE PRINTED MAY CONTAIN ANY NUMBER OF LINES AND ALLOWS FOR 15 RULES AND AN ELSE RULE. IF LESS THAN 9 ENTRIES ARE ALL THAT ARE NEEDED, ONLY ONE CARD NEED BE PREPARED PER LINE. EXTENDED OR LIMITED ENTRY MAY BE USED. STORAGE REQUIREMENTS-THIS PROGRAM USES 1405 POSITIONS OF CORE STORAGE. EQUIPMENT SPECIFICATIONS-4K 1401, HI-LC-EQUAL COMPARE, ADVANCE PROGRAMMING FEATURES, 1402 CARD READER PUNCH, 1403 PRINTER WITH 132 POSITIONS.

Contributed Programs

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1401-01.4.128 1401/1410 AUTOCODER PROGRAM
LOGIC DIAGRAMMER
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.128

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THIS PROGRAM WILL MACHINE DOCUMENT THE LOGIC OF A 1401 OR 1410 SYMBOLIC PROGRAM WRITTEN IN THE AUTOCODER LANGUAGE. THE DIAGRAMMER CONSISTS OF TWO PASSES. PASS 1 BUILDS UP A SYMBOL TABLE FROM THE SOURCE CARDS, PASS 2 PRINTS THE DIAGRAM. THE MAXIMUM NUMBER OF LABELS IN THE SOURCE PROGRAM BEING DIAGRAMMED VARIES ACCORDING TO OBJECT MACHINE SIZE, FROM A MINIMUM OF 125 LABELS FOR A 4K MACHINE TO A MAXIMUM OF 875 LABELS IN A 16K MACHINE. THE PROGRAM ANALYZES MNEMONIC OP CODES ONLY. MACRO INSTRUCTION ANALYSIS CANNOT BE GUARANTEED CORRECT. THIS PROGRAM MAY BE RUN ON ANY 1401 OR 1410 CARD SYSTEM WITH A MINIMUM OF 4K STORAGE AND ONE TAPE DRIVE. ALSO NECESSARY ARE THE ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, EXPANDED PRINT SPECIAL FEATURES. SENSE SWITCHES ARE REQUIRED TO PROCESS 1410 SOURCE CARDS. THE PROGRAM WILL USE ALL OF THE AVAILABLE MEMORY SPACE IN THE OBJECT MACHINE. THE PROGRAM IS WRITTEN IN 1401 AUTOCODER.

1401-01.4.130 CARD LIST OVERFLOW
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.130

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THIS ONE CARD PROGRAM WILL LIST 80 COLUMN CARDS, TEST FOR OVERFLOW CONDITIONS AND SKIP FORMS TO CARRIAGE CHANNEL 1 IF A 12 HAS BEEN SENSED IN THE CARRIAGE TAPE. ANY 1401 CONFIGURATION WILL ACCOMPLISH THESE RESULTS. THIS ONE PROGRAM, OF NECESSITY, WAS WRITTEN IN ACTUAL LANGUAGE UTILIZING NO PRESENT PROGRAMS, PROCEDURES OR PACKAGES. THE USER MUST PRESS HALT KEY TO STOP THE 1401.

1401-01.4.131 CONVERT SPS CARD FORMAT TO
AUTOCODER CARD FORMAT
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.131

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TO CONVERT PROGRAMS PREVIOUSLY PUNCHED IN SPS TO AUTOCODER. SIMILAR ROUTINES, I.B.M. 4 TAPE AUTOCODER. SOURCE LANGUAGE 1401 CARD AUTOCODER. MACHINE CONFIGURATION - 4K 1401 WITH THE ADVANCED PROGRAMMING PACKAGE. 2,000 POSITIONS OF STORAGE ARE REQUIRED FOR THIS PROGRAM. A MINIMUM OF 4 K 1401 CARD SYSTEM WITH THE ADVANCED PROGRAMMING PACKAGE AND 1403 PRINTER.

1401-01.4.132 AUTOCODER SEQUENCE CHECKING
PROGRAM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.132

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THE LOADER ENSURES THAT ALL OBJECT CARDS ARE PRESENT AND IN SEQUENCE EACH TIME THE PROGRAM IS USED. THE TWO CARDS MUST BE INSERTED AFTER THE BOOTSTRAP CARD IN THE OBJECT DECK. IF THE PROGRAM CONTAINS OVERLAYS, THE CARDS MUST BE INSERTED AFTER THE BOOTSTRAP CARD OF EACH OVERLAY IN ADDITION TO THE FIRST BOOTSTRAP. THIS MODIFICATION WILL DETECT MISPLACED CARDS BUT DOES NOT CHECK CONTENTS OF THE CARDS, A SEQUENCE ERROR CAUSES A HALT. FAILURE TO INSERT CARDS AFTER THE OVERLAY WILL CAUSE THE REMAINING CARDS TO BE UNCHECKED. THIS ROUTINE IS WRITTEN IN CONDENSED AUTOCODER MACHINE LANGUAGE AND CAN BE USED ON ANY 1401. ROUTINE OCCUPIES LOCATIONS 200-278 DURING PROGRAM LOADING ONLY.

1401-01.4.133 TRACE THAT NEEDS NO SPECIAL
FEATURES
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.133

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THIS TRACE PROGRAM IS AN AID FOR DEBUGGING PROGRAMS. IT CAN BE USED ON A BASIC 1401 SYSTEM, THOUGH A PROGRAM USING MOST SPECIAL FEATURES CAN BE TRACED. IT IS SPECIFICALLY MEANT FOR SYSTEMS WITHOUT ADVANCED PROGRAMMING, AS THERE IS NO OTHER TRACE PROGRAM FOR THESE SYSTEMS. IT WILL PRINT OUT THE I ADDRESS, INSTRUCTION, THE CONTENTS OF THE A FIELD, AND THE CONTENTS OF THE B FIELD BOTH BEFORE AND AFTER EVERY INSTRUCTION IN THE PROGRAM TO BE TRACED. MACHINE CONFIGURATION- BASIC 1401 DPS NO SPECIAL FEATURE REQUIRED. REQUIRES 700 TO 1,300 CORE LOCATIONS DEPENDING ON REFINEMENTS.

CONTINUED FROM PRIOR COLUMN--

PROCEDURE DESCRIPTION THE METHOD INVOLVES PLACING EACH INSTRUCTION IN TURN INTO A WORKING AREA, EXECUTING IT FROM THAT WORKING AREA, AND PRINTING OUT THE CONTENTS OF THE A AND B FIELDS FOR EVERY PROGRAM STEP INVOLVING DATA TRANSFER. SOURCE LANGUAGE- SPS. IT CAN ALSO BE USED DIRECTLY IN MACHINE LANGUAGE.

1401-01.4.134 PROGRAM TO LOAD AUTOCODER
CONDENSED PROGRAM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.134

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THE PROGRAM WILL ACCEPT CONDENSED PROGRAM CARDS FROM 1401 AUTOCODER AND LOAD THEM ON TAPE MAKING A TAPE LOADABLE PROGRAM TAPE. THE SIGNIFICANT ADVANTAGES OF THIS PROGRAM ARE- 1/MINIMUM USAGE OF STORAGE, 2/ABILITY TO HANDLE ANY NUMBER OF GROUPMARKS IN THE OBJECT PROGRAM, AND 3/ABILITY TO HANDLE EXECUTE TYPE INSTRUCTIONS WITH PROGRAM OVERLAPS. A SEARCH PROGRAM IS GENERATED TO LOOKUP THE REQUESTED PROGRAM ON A FIVE CHARACTER FIELD. THE PROGRAM WILL ADD OR DELETE PROGRAMS UNDER SENSE SWITCH CONTROL. SOURCE LANGUAGE- AUTOCODER THE LOAD INSTRUCTIONS IN THE CONDENSED CARDS ARE OVERLAID BY A TAPE INSTRUCTION TO LOAD THE CARDS FROM TAPE. THIS USES POSITION 40 THROUGH 86 OF CORE. THESE ARE THE ONLY POSITIONS OCCUPIED BY THE LOAD PROGRAM. MACHINE CONFIGURATION 4K OR LARGER MODEL C3 ADVANCED PROGRAMMING HI-LO-EQ COMPARE SENSE SWITCHES ONE OR TWO 7330 OR 729 TAPE DRIVES.

1401-01.4.135 IMPACT SIMULATOR
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.135

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A 1401 PROGRAM WHICH SIMULATES THE RESULTS OF AN IMPACT OPERATING SYSTEM. ACCOMPANYING PROGRAM DESCRIPTION OUTLINES NEED FOR PROGRAM AND METHOD OF GATHERING DATA REQUIRED. THE SIMULATOR CALCULATES INITIAL VALUES OF FORECAST, MAD AND ECONOMIC ORDER QUANTITY. DEMAND DATA IS OPERATED UPON AS IN AN IMPACT SYSTEM AND FOR EACH ITEM SIMULATED THE PERCENTAGE OF SERVICE RENDERED AND AVERAGE TOTAL INVENTORY ACHIEVED DURING SIMULATION IS INDICATED. THE IMPACT SIMULATOR RUNS ON A 1401 8K CARD SYSTEM WITH HIGH-LOW-EQUAL COMPARE. SOURCE LANGUAGE IS 1401 SPS.

1401-01.4.136 WRITE AND READ TAPE CHECK
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.136

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THIS PROGRAM MAY BE USED TO CLASSIFY THE WORKABILITY OF TAPES AND/OR GIVE AN INDICATION OF THE READING AND WRITING TEMPERAMENT OF A TAPE UNIT. 1 TO 6 TAPE DRIVES MAY BE USED. IT WILL-
1. MEASURE TAPE FROM REFLECTIVE SPOT TO REFLECTIVE SPOT.
2. PRINT ERRORS IN FEET AND INCHES FROM LOAD POINT.
3. PRINT TAPE NUMBER-3 POSITION-AND UNIT NUMBER ON WHICH ERRORS HAS OCCURRED.
4. STORE 15 ERRORS FOR EACH REEL. IF THERE ARE MORE THAN 15 ERRORS, THEY WILL PRINT OUT AS THEY OCCUR.
5. PRINT OUT AS THEY OCCUR WITH SENSE SWITCH B ON BEFORE 15 ERRORS.
6. PRINT A LISTING OF ERRORS AT THE END OF EACH REEL.
7. REWIND AFTER WRITING AND HALT. REWIND AND UNLOAD AT THE END OF READING.
THE PROGRAM WILL BEGIN BY WRITING A RECORD OF 1807 CHARACTERS- PART OF WHICH WILL BE THE PROGRAM AND THE REMAINDER IN PERIODS AB821. HIGH DENSITY READS OR WRITES 556 CHARACTERS PER INCH. INTER-RECORD GAP IS 3/4 INCH. 556 X 3 1/4 INCHES IS 1807 CHARACTERS PLUS 3/4 INCH INTER-RECORD GAP. THUS EACH TIME A RECORD IS READ OR WRITTEN IT PASSES 4 INCHES OF TAPE MAKING IT POSSIBLE TO MEASURE TAPE AND INDICATE POSITION OF ERROR. FEATURES USED-1401 4000 CORE POSITIONS MIN. SENSE SWITCHES HIGH-LOW-EQUAL COMPARE INDEXING

1401-01.4.139 TAPE TEST PROGRAM, 4K
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.139

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THE NUMBER OF ERRORS IS ACCURATELY MEASURED. A NUMERIC ONE IS ADDED TO THE ERROR COUNTER EVERY TIME A BRANCH IS TAKEN ON A BER COMMAND. EVERY TIME AN ERROR CONDITION IS ENCOUNTERED ON WRITING, THE TAPE IS BACKSPACED AND ANOTHER TRY IS MADE TO WRITE ON THAT SECTION OF TAPE. IF THIS ERROR PERSISTS AFTER TEN ATTEMPTS, THE TAPE IS SKIPPED OVER THAT PORTION. SIMILAR ACTION IS TAKEN ON READING EXCEPT THAT FIFTY ATTEMPTS ARE MADE TO READ A RECORD BEFORE IT IS CLASSIFIED AS A PERMANENT ERROR. THE PROGRAM IS CAPABLE OF TESTING ANY TAPE AT HIGH DENSITY. THERE IS A SLIGHT LIMITATION AS TO THE ACCURACY OF THE MEASUREMENTS MADE AS THE TAPE IS WRITTEN. THE RECORD WRITTEN IS 1806 CHARACTERS WHICH EQUALS 4.0008 INCHES INCLUDING THE INTER-RECORD GAP. THIS IS ADDED TO THE LENGTH OF THE TAPE AS BEING .33 FEET. A SKIP AND BLANK TAPE, WHICH IS APPROXIMATELY 8 INCHES IS ADDED AS .67 FEET.

Contributed Programs

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THE PROGRAM REQUIRES A 4K MACHINE. THE PROGRAM ITSELF OCCUPIES 1499 POSITIONS OF CORE STORAGE AND THE RECORDS WRITTEN OCCUPY 1806 POSITIONS FOR A TOTAL OF 3305 POSITIONS. THE RECORDS ARE 1806 POSITIONS TO APPROXIMATE 3.25 INCHES SO THAT RECORD WRITTEN WILL AS CLOSELY AS POSSIBLE EQUAL 4 INCHES INCLUDING INTER-RECORD GAP. THIS IS THE LARGEST POSSIBLE WHOLE INCH INCREMENT THAT WILL CLOSELY EQUAL A TWO POSITION DECIMAL.

1401-01.4.141 SYMBOLIC CORE DUMP
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.141

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THIS PROGRAM PRINTS THE CONTENTS OF CORE STORAGE IN EITHER A DATA OR INSTRUCTION FORMAT AS DETERMINED BY INTERNAL CONTEXT. ALL POSSIBLE 64 BCD CHARACTERS ARE PRINTED ON CONVENTIONAL EQUIPMENT. INSTRUCTIONS RESEMBLE AUTOCODER FREE FORM WITH DECIMAL ADDRESSES. CORE IS RESTORED AFTER PRINTOUT. THE PROGRAM REQUIRES AN 8K OR LARGER MEMORY, ONE TAPE DRIVE, AND ADVANCED PROGRAMMING AND HI-LO-EQ COMPARE FEATURES. IT WAS WRITTEN AND ASSEMBLED IN AUTOCODER.

1401-01.4.144 AID /AUTOMATIC INPUT
DEFINER/ /CARD/
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.144

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THIS PROGRAM IS DESIGNED TO READ ANY CARD FORMAT AND TO SPACE ANY SIZE FIELD ACCORDINGLY ON THE PRINTED REPORT. FURTHERMORE, ADDITION, SUBTRACTION, EDITING, COMPARING, AND SUMMARY PUNCHING CAN BE ACCOMPLISHED BY PUNCHING ONE CONTROL CARD. A QUICK AND EASY WAY OF DOING SIMPLY LISTINGS WITHOUT WRITING A SPECIFIC PROGRAM. FIVE CLASSES OF TOTALS ARE AVAILABLE WITH 10 ACCUMULATORS IN EACH CLASS AND 10 POSITIONS IN EACH ACCUMULATOR. THERE IS A MAXIMUM OF 20 COMPARING POSITIONS WITH SUMMARY PUNCHING AVAILABLE ON MINOR TOTALS. PREDETERMINED PRINT POSITIONS CAN NOT BE OBTAINED-- HOWEVER, THERE ARE 5 BLANK POSITIONS BETWEEN EACH FIELD ON THE PRINTED REPORT. STORAGE REQUIREMENTS-4K OR LARGER. EQUIPMENT SPECIFICATIONS-1401 WITH ADVANCED PROGRAMMING AND 132 PRINT POSITIONS ARE REQUIRED. CONSOLE SWITCHES AND EXPANDED PRINT EDIT ARE ADVISABLE, BUT NOT REQUIRED.

1401-01.4.145 SELECT DATA RETRIEVAL SYSTEM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.145

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RETRIEVE INFORMATION FROM MAGNETIC TAPE FILES. IT WILL /S/EARCH, /E/XTRACT AND SORT, /L/IIST, /E/OIT, /C/OUNT AND /T/OTAL. SEARCH, EXTRACT AND SORT, LIST, EDIT, COUNT AND TOTAL. IT COMPILES AN EXTRACT PROGRAM AND A REPORT WRITING PROGRAM AND COMBINES THEM WITH SORT TO FORM A COMPLETE SYSTEM. PERMITS UP TO NINE REPORTS FROM ONE PASS OF TAPE FILE WITH UP TO 5,000 CHARACTERS IN THE INPUT RECORD. FEATURES- ENGLISH LANGUAGE SPECIFICATION STATEMENTS, MULTIPLE REPORTS PER PASS, AUTOMATIC EDITING, FAST COMPILER, UNLIMITED LEVELS OF CRITERIA, MULTI-REEL FILES, SINGLE OR BLOCKED RECORD, WITH OR WITHOUT LABELS, GOOD DIAGNOSTICS, AUTOMATIC SECURITY CHECK, RESTART PROCEDURES, USERS EXITS. AN IBM 1401 WITH 8K MEMORY, ADV. PROG., HI-LO-EQ, AND 4 TAPE UNITS IS REQUIRED.

THE PROGRAMS SOURCE DECKS ARE OPTIONAL MATERIAL. THEY ARE AVAILABLE ON A DTR. THE DTR WILL BE SUPPLIED BY THE PROGRAM INFORMATION DEPARTMENT. THE SOURCE DECKS MUST BE SPECIFICALLY REQUESTED ON THE ORDER CARD.

1401-01.4.148 CORE-TO-CARD DUMP
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.148

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THIS FORTY CARD PROGRAM DUMPS THE CONTENTS OF ALL USED STORAGE OUTSIDE THE READ AREA ONTO CARDS IN A CONDENSED, RELOADABLE FORMAT, PRECEDED BY CLEAR STORAGE CARDS. ITS MAIN USE IS TO ENABLE THE OPERATOR TO STOP THE EXECUTION OF A PROGRAM, SAVE THE CONTENTS OF STORAGE AT THE TIME, GET OFF THE COMPUTER, AND CONTINUE THE EXECUTION OF THE PROGRAM AT ANY LATER TIME. IT CAN ALSO BE USED TO CONDENSE PROGRAMS OR TO GENERATE OBJECT DECKS FOR TYPED-IN PROGRAMS. THE ADVANTAGES OF CHAINING AND INDEXING HAVE BEEN EXPLOITED. METHOD-- THE DUMP PROGRAM CONSIDERS CHARACTERS AND WORD MARKS IN SEPARATE PHASES IN ORDER TO SIMPLIFY THE ASSEMBLY OF OUTPUT RECORDS AND MINIMIZE THE STORAGE USED BY THIS PROGRAM. CHARACTER OUTPUT CARDS CONTAIN UP TO SIXTY-SIX DIGITS, AND WORD MARK OUTPUT CARDS CAUSE TWENTY WORD MARKS TO BE SET. OUTPUT CARDS ARE SEQUENCE NUMBERED. THE DUMP PROGRAM OCCUPIES NO STORAGE OUTSIDE THE READ AREA UNTIL A SMALL AMOUNT OF STORAGE HAS BEEN DUMPED IN INTERMEDIATE FORM, TO BE CONVERTED TO FINAL FORM AND INTEGRATED WITH THE MAIN OUTPUT IN A SUBSEQUENT PHASE.

CONTINUED FROM PRIOR COLUMN--

STORAGE REQUIREMENTS-- THE PROGRAM HAS BEEN WRITTEN FOR AN 8K MACHINE. IT CAN EASILY BE MODIFIED FOR ANY CAPACITY MACHINE. THE HIGHEST CORE OCCUPIED BY THE PROGRAM IS 539. EQUIPMENT SPECIFICATIONS-- ONE IBM 1401 OF ANY STORAGE CAPACITY. ONE 1402 CARD READ-PUNCH. THE FOLLOWING SPECIAL FEATURES--INDEXING, STORE A- AND B-ADDRESS, AND MODIFY ADDRESS. LANGUAGE-- WRITTEN IN MACHINE LANGUAGE.

1401-01.4.149 DECK CLEANER I
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.149

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DECK CLEANER I IS DESIGNED TO READ A DECK OF DATA CARDS, SCANNING EACH COLUMN IN EACH CARD FOR ERRONEOUS AND/OR INVALID DATA. DECK-- ANY GROUP OF CARDS STACKED FOR INPUT TO ANY PROGRAM. INVALID PUNCH-- ANY COMBINATION OF HOLES PUNCHED IN A COLUMN WHICH WOULD CAUSE A VALIDITY CHECK ON THE 1401 AND, UNDER NORMAL CIRCUMSTANCES, CAUSE THE 1401 TO STOP. UNWANTED PUNCH-- ANY COMBINATION OF HOLES /INCLUDING NO HOLES/ PUNCHED IN A CARD COLUMN WHICH MIGHT CAUSE THE USERS PROGRAM TO FUNCTION INCORRECTLY. /INCLUDES INVALID PUNCH./ CLEAN-- TO EXAMINE EACH CARD COLUMN OF A DECK FOR INVALID PUNCHES OR UNWANTED PUNCHES. BLANK FIELD-- ANY NUMBER OF CONSECUTIVE COLUMNS ON A DECK CARD SUCH THAT NO HOLES ARE PUNCHED IN THESE COLUMNS AND THESE BLANKS ARE UNWANTED PUNCHES. DECK CLEANER I READS A CONTROL CARD, AND PERUSES EACH COLUMN OF THE CONTROL CARD TO DETERMINE WHAT SORT OF PUNCHES WILL BE CONSIDERED UNWANTED. READING A CARD FROM THE DECK, DECK CLEANER I THEN SCANS EACH COLUMN OF THAT CARD, TO DETERMINE WHETHER OR NOT THE PUNCHES IN THAT COLUMN ARE WANTED, UNWANTED OR INVALID. IF THE INFORMATION IN ANY COLUMN IS WANTED, DECK CLEANER I THEN EXAMINES THE NEXT COLUMN. IF THE INFORMATION IN ANY COLUMN IS UNWANTED OR INVALID, DECK CLEANER I PLACES A 12-0 PUNCH IN THE CORRESPONDING COLUMN OF A CARD FROM THE PUNCH HOPPER AND, AFTER HAVING SCANNED THE ENTIRE CARD FOR ERRONEOUS PUNCHES, MERGES A CARD FROM THE PUNCH FEED INTO THE 8/2 STACKER JUST BEHIND THE CARD WITH THE INVALID OR UNWANTED PUNCHES. DECK CLEANER I IS COMPLETELY SELF-INITIALIZING WITHIN THE LIMITATIONS OF THE 1401. AFTER THE LAST CARD IS READ, THE MACHINE HALTS-- PUSHING THE START BUTTON WILL MAKE DECK CLEANER I READ ANOTHER CONTROL CARD AND PROCESS ANOTHER DECK.

1401-01.4.150 1401/407 SIMULATION UTILITY
PROGRAM
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.150

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THIS PROGRAM WAS WRITTEN TO SIMULATE THE 407 ACCOUNTING MACHINE WHEN IT WAS BEING REPLACED BY THE 1401. THIS PROGRAM WILL ACCOMPLISH MOST OF THE FUNCTIONS OF THE 407 AND ELIMINATES THE NEED TO WRITE MANY PROGRAMS THAT SIMPLY LIST AND TOTAL DECKS OF CARDS. IT IS ESPECIALLY USEFUL FOR ONE-SHOT LISTINGS OR TABULATIONS OR JOBS THAT ARE SELDOM RUN. AFTER THE PROGRAM IS READ IN, THE CONTROL CARDS SET WORD MARKS, SET MOVE AND ADD INSTRUCTIONS, COMPARE INSTRUCTIONS, ETC. IF A SENSE SWITCH IS TURNED TO ZINE ON POSITION, THE CONTROL CARD THAT THE SWITCH CONTROLS MUST BE PRESENT. A PROCESS LIGHT WILL OCCUR IF A SWITCH IS ON AND THE CORRESPONDING CONTROL CARD IS NOT PRESENT. THE PROGRAM WILL PRINT UP TO FIFTEEN /15/ DIFFERENT FIELDS FROM INPUT CARDS, FOUR OF WHICH WILL PRINT TOTALS. THE FOUR TOTAL FIELDS CAN BE EDITED ONLY WITH A MINUS -/ TO INDICATE A CREDIT. WHEN THE CONTROL CARD /FORMAT A 4K 1401 WITH CARD READER, PRINTER, HIGH-LOW EQUAL COMPARE, AND SENSE SWITCHES B, C, D ARE NECESSARY. SWITCHES E, F, G ARE USED IN THE PROGRAM BUT NOT NECESSARY TO THE OPERATION OF IT. SOURCE LANGUAGE IS 1401 AUTOCODER. NO SPECIAL MACRO INSTRUCTIONS ARE USED AND IOCS IS NOT USED.

1401-01.4.151 MULTIPLY AND DIVIDE MACROS
AVAILABLE 2ND QUARTER 1964
SPECIFY FILE NUMBER 1401-01.4.151

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THESE AUTOCODER MACROS WILL PRODUCE OPEN MULTIPLY OR DIVIDE ROUTINES TAILORED TO EXACT LENGTHS OF TERMS. OBJECTIVE OF ROUTINES IS TO PROVIDE FLEXIBILITY WHILE COMPROMISING BETWEEN SPEED AND CORE UTILIZATION. MACRO STATEMENTS ARE AUTOMATICALLY EDITED FOR FORMAT /FORMAT A 4K 1401 WITH CARD READER, PRINTER, HIGH-LOW EQUAL COMPARE, AND SENSE SWITCHES B, C, D ARE NECESSARY. INCLUDE DECIMAL CONTROL AND HALF ADJUSTING OF ANSWER. NEGATIVE VALUES NOT PERMITTED. ADVANCED PROGRAMMING REQUIRED. MULTIPLY-DIVIDE SPECIAL FEATURE NOT USED. MULTIPLY 3 X 6 USES 87 POSITIONS OF STORAGE WITH AVERAGE EXECUTION OF 9.643 MS. 5 X 10 USES 99 POSITIONS WITH 19.010 MS. DIVIDE 7/3 USES 90 POSITIONS WITH AVERAGE EXECUTION OF 26.623 MS. 12/5 USES 104 POSITIONS WITH 58.742 MS.

1401-01.4.153 SORAL - SIMPLE OPTIMUM
REPRODUCING ALL
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.153

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Contributed Programs

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DIRECT INQUIRIES TO AUTHOR

UTILITY PROGRAM FOR REPRODUCTION, MULTIPUNCHING /EITHER SIMPLE OR WITH MATRIX CARDS/ AND PROGRESSIVE NUMERATION. POSSIBILITIES AND LIMITS- /1/ REPRODUCTION UP TO 10 DIFFERENT FIELDS. /2/ ELIMINATION OF ZONES /MAX 4/ AND ADDITION OF X ZONES /MAX 5/. /3/ MULTIPUNCH WITH MATRIX CARDS, MAX 3 FIELDS OF 27 COLUMNS. MATRIX CARDS MAY BE PUNCHED IN ONE OR TWO X PUNCHINGS. THIS OPERATION MAY ALSO BE DONE WITH THE CARDS INTO THE CARD PUNCH UNIT WHEN THE PUNCH READ FEED DEVICE IS CONNECTED. /4/ REJECTION OF MATRIX CARDS WHEN MULTIPUNCH IS PERFORMED INTO THE CARD PUNCH UNIT. /5/ PROGRESSIVE NUMERATION BEGINNING FROM ANY NUMBER UP TO A MAXIMUM OF 6 FIGURES WITH POSSIBILITY OF INCREASE FROM CARD TO CARD, UP TO A MAXIMUM OF 3 FIGURES. /6/ SIMPLE MULTIPUNCHING- MAX 4 DIFFERENT FIELDS OF 8 COLUMNS. MACHINE REQUIREMENTS- 4 K 1401 WITH A 1402. THE PUNCH FEED READ DEVICE IS OPTIONAL. WRITTEN IN SPS.

1401-01.4.158 GENERAL PURPOSE TAPE DUMP
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.158

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THIS OPERATION WILL PRINT IN A HIGHLY LEGIBLE FORMAT THE CONTENTS OF BCD TAPE RECORDS. A MAXIMUM OF A HUNDRED CHARACTERS ON A LINE ARE PRINTED WITH PERIODS DEFINING LEFT AND RIGHT MARGINS. THE CORE CAPACITY OF THE COMPUTER IS DETERMINED BY OBJECT TIME AND A MAXIMUM OF /MEMORY SIZE - 959/ CHARACTERS CAN BE DUMPED FROM EACH TAPE RECORD. THE CHARACTER COUNT OF EACH RECORD IS DISPLAYED ALONGSIDE THE PRINTED RECORD AND A RECORD COUNT IS DISPLAYED UPON EACH END-OF-FILE. SENSE SWITCH OPTIONS PERMIT ARBITRARY SUPPRESSION OF PRINTING AND HALTS ON END-OF-FILE. PARITY ERROR DIAGNOSTICS ARE VERY COMPLETE. WHEN A RECORD CANNOT BE CORRECTLY READ AFTER A CLEANING PROCEDURE HAS BEEN UTILIZED, IT IS PRINTED AS IT READ INTO CORE ALONG WITH AN ERROR WARNING MESSAGE. WRITTEN IN AUTOCODER. EQUIPMENT REQUIREMENTS- ONE MAGNETIC TAPE DRIVE... 1403 PRINTER -/132 POSITIONS/... 1402 CARD READER... ADDITIONAL SENSE SWITCHES... HIGH-LOW-EQUAL COMPARE... 4K OR GREATER CORE... ADVANCED PROGRAMMING... MODIFY-ADD INSTRUCTION... 1407 INQUIRY STATION /OPTIONAL/.

1401-01.4.159 1401/1311 CARD-TO-DISK
CONSECUTIVE LOAD PROGRAM
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.159

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A LOAD-AND-GO PROGRAM FOR CONVERTING PRESENT CARD FILES TO CONSECUTIVE 1311 DISK FILES WITHOUT ANY REPUNCHING OF CARD FILES INTO A PRESCRIBED FORMAT. THE PROGRAM WILL HANDLE UP TO 6 USER SPECIFIED CARD FORMATS AND BUILD THEM INTO A USER SPECIFIED DISK RECORD FORMAT. FORMATS OF CARD INPUT AND DISK RECORD OUTPUT ARE SPECIFIED IN CONTROL CARD FORM AND SUPPLIED TO THE PROGRAM ON A LOAD-AND-GO BASIS. UP TO 10 DATA FIELDS FROM EACH CARD FORMAT SPECIFIED CAN BE ASSEMBLED INTO SINGLE DISK RECORDS. PROGRAM WILL ASSEMBLE FILES IN EITHER BLOCKED OR UNBLOCKED FORM. MACHINE REQUIREMENTS- THE PROGRAM WILL OPERATE ON ANY 1401-1311 SYSTEM HAVING AT LEAST 4K, MODIFY ADDRESS, STORE B REGISTER AND INDEX REGISTERS. WITH A 4K MACHINE 500 CHARACTER DISK RECORDS ARE THE LONGEST RECORDS THAT CAN BE PROCESSED. ON AN 8K MACHINE THE MAXIMUM RECORD LENGTH IS 4500 POSITIONS.

1401-01.4.160 CONVERSION OF SPS TO
AUTOCODER
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.160

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A PROGRAM WRITTEN IN SPS DESIGNED TO CONVERT 1401 SYMBOLIC PROGRAMS TO THE AUTOCODER FORMAT. INPUT-OUTPUT COMMANDS AND DSA/S WILL NOT BE CONVERTED. SPECIAL ATTENTION SHOULD BE PAID TO SS AND CC COMMANDS TO SEE THAT THEIR FORMAT IS ACCEPTABLE TO THE AUTOCODER FOR A SPECIFIC MACHINE. OUTPUT MAY BE PRINTED ONLY, OR PRINTED AND PUNCHED. ALL SPECIAL /OP/ CODES WILL BE CONVERTED SO THAT THE OUTPUT SHOULD BE READY FOR AN AUTOCODER ASSEMBLY ONCE THE I/O COMMANDS AND DSA/S ARE CHANGED. THE PROGRAM SHOULD TAKE CARE OF ABOUT 98 PERCENT OF THE CONVERSION EFFORT. THIS PROGRAM WAS DESIGNED PRIMARILY FOR 1401 CARD SYSTEMS, BUT SHOULD BE HELPFUL IN THE CONVERSION OF TAPE AND RAMAC SYSTEMS IF THE PROGRAMS WERE WRITTEN IN SPS. REQUIRES- 1401-A3, 1402, 1403 /MODEL 2 FOR FULL PRINTOUT/, SENSE SWITCHES.

1401-01.4.161 SELECTIVE LIST WITH FOUR
CLASSES OF TOTAL AND HEADINGS
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.161

AUTHORS..BRANCH MOTOR EXPRESS CO.

B-1401

CONTINUED FROM PRIOR COLUMN--

DIRECT INQUIRIES TO..

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TO PROCESS A SIMPLE LISTING WITH UP TO FOUR LEVELS OF TOTALS AND FIELD HEADING BY MAKING UP A FEW CONTROL CARDS. STORAGE REQUIREMENTS- 4K. EQUIPMENT SPECIFICATIONS- 1401 CARD 4K. PROGRAMMING LANGUAGE- AUTOCODER.

1401-01.4.162 CORE SEARCH FOR BRANCH
INSTRUCTIONS TO A GIVEN ADDRESS
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.162

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THE PROGRAM ALLOWS THE OPERATOR TO MAKE A CORE SEARCH TO LOCATE ALL BRANCH INSTRUCTIONS, WHICH BRANCH TO A GIVEN ADDRESS DESIGNATED EITHER IN A CONTROL CARD OR MANUALLY ALTERED INTO CORE. MANY HOURS CAN BE SPENT SEARCHING FOR A BRANCH INSTRUCTION WHICH MAY OR MAY NOT EXIST, TRYING TO DETERMINE WHY THE /I/ ADDRESS REGISTER IS AT A GIVEN LOCATION. UNDER SENSE SWITCH CONTROL THIS PROGRAM CAN ALSO SEARCH FOR ALL /A/, OR /B/, ADDRESSES EQUAL TO A GIVEN ADDRESS. THE ONLY APPARENT RESTRICTIONS ENTAIL THE PUNCHING OF A THREE POSITION ADDRESS AND A PROGRAM OVERLAY IF THE PROGRAM TO BE SEARCHED IS LENGTHY. THERE ARE TWO PROGRAMS - ONE FOR AN 8K 1401 WITH INDEXING AND PROGRAMMING AND THE OTHER FOR A 4K 1401 WITH NO SPECIAL FEATURES. THE 8K PROGRAM REQUIRES 495 POSITIONS OF CORE AND THE 4K OCCUPIES 295 POSITIONS. THE PROGRAM HAS BEEN WRITTEN IN SPS.

1401-01.4.163 FORM WRITING SUBROUTINE
/FORM/
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.163

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FORM IS A 1401 SUBROUTINE WHICH MAY BE INSERTED INTO ANY 1401 PROGRAM. IT IS DESIGNED TO PRINT A FORM AT THE SAME TIME A REPORT IS BEING RUN, THUS ELIMINATING PRE-PRINTED FORMS. MACHINE CONFIGURATION - 1401 OR 1460 WITH 4K STORAGE, A 1402 READER PUNCH, A 1403 PRINTER, HIGH-LOW-EQUAL COMPARE AND ADVANCED PROGRAMMING. THE SUBROUTINE REQUIRES 814 POSITIONS OF CORE. THIS MAY BE REDUCED BY UP TO 149 POSITIONS IN SOME CASES. SOURCE LANGUAGE IS SPS.

1401-01.4.164 TAPE TESTING ROUTINE
FOR 1401
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.164

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TO TEST MAGNETIC TAPE BY WRITING /PREDOMINANTLY/ /ALL BITS/, RECORDS. PROVIDES A PRINTED RECORD OF LOCATION AND SERIOUSNESS OF /BAD-SPOTS/, ANY DENSITY. ONE OR TWO 729 DRIVES. CAN STOP TO INSPECT-CLEAN TAPE AT /+10 TRIES/, BAD-SPOTS. TWO PASSES/TAPE. AT END OF SECOND PASS ABOUT 95 PERCENT OF THE TAPE HAS BEEN TESTED. WRITES 2.75 /BIRG/ RECORDS OF /ALL BITS/, EXCEPT FOR INTERNAL RECORD-COUNT. TRIES TO WRITE /UP TO/ 10 TIMES ON EACH BAD-SPOT AND, THUS, IS SLOW WHEN TESTING VERY BAD TAPE. ANY PASS MAY BE TERMINATED BY S.S. OPTION. CANNOT BE INTERRUPTED/ RESTARTED- COUNTERS RESET ON LOADING. TESTS FULL TAPE /TO E.C.T. MARKER/ AND INSISTS ON TWO PASSES. STORAGE REQUIREMENT- 4000 CHARACTERS. EQUIPMENT SPECIFICATIONS- 1401 4K, ADVANCED PROGRAMMING FEATURE, SENSE SWITCHES, 1402 CARD REAC-PUNCH, 1403 PRINTER, AND ONE OR TWO 729 MAGNETIC TAPE TRANSPORTS. LANGUAGE- SPS.

1401-01.4.165 SOPHISTICATED SPS TO
AUTOCODER CONVERTER
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.165

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TWO PROGRAMS ARE INCLUDED. SPSAC IS DESIGNED TO CONVERT A PROGRAM IN THE SPS SOURCE LANGUAGE TO A PROGRAM IN THE AUTOCODER SOURCE LANGUAGE, WHICH IS COMPATIBLE WITH THE BASIC AUTOCODER PRODUCED BY THE IBM DALLAS DATA CENTER. AN EXTREMELY SOPHISTICATED AUTOCODER PROGRAM IS PRODUCED, DESIGNED TO BE AS CLOSE AS POSSIBLE TO A PROGRAM ORIGINALLY WRITTEN IN AUTOCODER. CONAC IS DESIGNED TO REPRODUCE AN SPS CONDENSED CARD FORMAT OBJECT PROGRAM INTO AN AUTOCODER CONDENSED CARD FORMAT OBJECT PROGRAM, WHEN NO SOURCE LANGUAGE PROGRAM IS AVAILABLE, AND IT IS DESIRABLE TO HAVE ALL OBJECT PROGRAMS IN ONLY ONE FORMAT. MACHINE REQUIREMENTS- 1401 4K, CARD SYSTEM.

Contributed Programs

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1401-01.4.167 TUB FILE GANG PUNCH PROGRAM
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.167

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THE 1401 TUB FILE GANG PUNCH PROGRAM IS A 1401 PROGRAM DESIGNED TO PUNCH TUB FILE CARDS FOR A CUSTOMER INSTALLATION. IT IS ESPECIALLY VALUABLE FOR A NEW UNIT RECORD INSTALLATION. ANY NUMBER OF DUPLICATES OF EACH MASTER CARD MAY BE PUNCHED AND THESE WILL BE COLLATED BEHIND THE MASTER CARD IN THE CENTER POCKET OF THE 1402. MASTER CARDS MAY BE REPRODUCED 80-80 OR FIELDS IN THE MASTER CARD MAY BE OFFSET OR ELIMINATED IN THE TUB FILE CARDS. ANY 1401G, 1401 OR 1460 WITH NO FEATURES MAY BE USED. PROGRAM REQUIRES 746 POSITIONS OF CORE PLUS ENOUGH CORE TO STORE INFORMATION FROM CONTROL CARDS IF OFFSET GANG PUNCHING IS REQUIRED. SOURCE LANGUAGE IS SPS.

1401-01.4.170 FIXIT UTILITY PROGRAM
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.170

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THIS PROGRAM WAS WRITTEN TO PROVIDE A SIMPLE METHOD OF REPRODUCING CARD FILES 80-80, 80-80 WITH GANGPUNCHING, 80-80 WITH COLUMN ELIMINATION. AN EASILY PREPARED HEADER CARD IS REQUIRED TO CONTROL ALL THREE JOBS. IT IS EXTREMELY USEFUL IN A 1401 INSTALLATION HAVING NO REPRODUCING PUNCH. THIS PROGRAM DIFFERS FROM ALL OTHERS IN THAT THE HEADER CARD REQUIRED CAN BE PREPARED BY SOMEONE WITH NO KNOWLEDGE OF PROGRAMMING. THE PROGRAM IS EXECUTED BY STORING AND SCANNING THE HEADER CARD. INSTRUCTIONS ARE MODIFIED TO INSERT THE INFORMATION IN THE STORED HEADER CARD INTO THE OUTPUT FILE. THIS IS ACCOMPLISHED BY TESTING FOR BLANK POSITIONS IN THE STORED HEADER CARD. WHEN A NON-BLANK COLUMN IS DETECTED, THE INFORMATION IN THAT COLUMN OR A BLANK IS INSERTED INTO THE CORRESPONDING COLUMN OF THE OUTPUT FILE, DEPENDING UPON THE POSITION OF SENSE SWITCH 1, B, EQUIPMENT SPECS- 1401 4K, 1402, SENSE SWITCH B. SENSE SWITCH 1, B, CAN BE ELIMINATED BY CHANGING ONE INSTRUCTION IN THE PROGRAM TO AN UNCONDITIONAL BRANCH.

1401-01.4.171 CHECK POINT SUBROUTINE AND
RESTARTING PROGRAM FOR IBM 1401 TAPE SYSTEM
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.171

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A PROGRAM DESIGNED TO ENABLE RESTARTING OF A PROGRAM INTERRUPTED DURING NORMAL RUN DUE TO OPERATOR INTERVENTION OR MACHINE FAILURE. CP SUBROUTINE USES THE LAST 211 POSITIONS OF CORE STORAGE PLUS LOCATIONS 182-199 AND KEEPS THE CONTENTS OF MEMORY ON TAPE NO. 6, FOR EACH CP TAKEN DURING THE RUN. CAN BE ADAPTED TO FIT 4-8-12-16K MACHINES, AND WILL HANDLE PROGRAMS USING UP TO THREE TAPE UNITS IN ADDITION TO NO. 6. THE PUNCH AND READ AREA IMAGES ARE PUNCHED DURING EACH CP, AS WELL AS A CONTROL CARD FOR RESTARTING PURPOSES. THESE ARE SELECTED IN POCKET 278. IF THE OPERATOR DECIDES TO INTERRUPT THE RUN, OUTPUT TAPES WILL BE TAPE MARKED AND ALL UNITS INCLUDING TAPE NO. 6, UNLOADED, AFTER THE PROGRAM TAKES THE NEXT CP. RESTART CAN BE MADE FROM ANY CP OBTAINED DURING THE RUN BY USING THE APPROPRIATE RESTARTING CARD, AND DATA CARDS TO FOLLOW.

1401-01.4.172 AUTOPAC II
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.172

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THIS IS A PACKAGE OF THREE 1401 PROGRAMS DESIGNED TO AID THE FILE ORGANIZATION PROBLEM ENCOUNTERED WITH DATA PROCESSING SYSTEMS UTILIZING DIRECT ACCESS STORAGE DEVICES. THE FIRST PROGRAM PROVIDES A DISTRIBUTION ANALYSIS OF THE DIGITS WITHIN THE KEYSET, THE SECOND PROGRAM USES TWO ALGORITHMS /RADIOX TRANSFORMATION & C. DIVIDE/REMAINDER/ UNDER SENSE SWITCH CONTROL TO DEVELOP RANDOM ADDRESSES FROM THE KEYSET, AND THE FINAL PROGRAM EVALUATES THE DEVELOPED ADDRESSES IN TERMS OF UNIQUE ADDRESSES AND SYNONYMS, CYLINDER PACKING AND OVERFLOWS, TOTAL READS AND AVERAGE NUMBER OF READS TO RETRIEVE A RECORD FROM ANY CYLINDER OR FROM THE ENTIRE FILE. ANY ONE OF THE PROGRAMS CAN BE RUN TO THE EXCLUSION OF THE OTHER TWO AS LONG AS THE INPUT FORMAT REQUIREMENTS ARE MET. THE PROGRAMS WILL HANDLE A CONTROL FIELD UP TO 20 CHARACTERS LONG AND ADDRESSES GENERATED CAN HAVE A RANGE FROM 00000 TO 99999. THESE PROGRAMS WERE WRITTEN IN AUTOCODER AND REQUIRE A 4K 1401 WITH ADVANCED PROGRAMMING, I/L/E COMPARE, SENSE SWITCHES, AND MULTIPLY/DIVIDE, A 1402, A 14C3, AND 4 TAPE DRIVES.

1401-01.4.175 MONITOR SYSTEM FOR 8K, 12K,
16K TAPE SYSTEM
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.175

*M

CONTINUED FROM PRIOR COLUMN--

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*M

AN EASY TO USE AND INSTALL MONITOR PROGRAM WHICH ALLOWS AUTOMATIC JOB-TO-JOB TRANSITION FOR ALL 1401 AUTOCODER-ASSEMBLED PROGRAMS. THE RESIDENT MONITOR PORTION RESIDES IN THE UPPER 300 POSITIONS OF MEMORY. IT ALLOWS AUTOMATIC LINKAGE FROM USER/S PROGRAMS TO PROGRAMS, OR PROGRAM SECTIONS TO SECTIONS, BY USE OF CALL CARDS OR EMBEDDED CALLS. IT AUTOMATICALLY LOADS PROGRAMS FROM THE MONITOR SYSTEM TAPE WHICH HAS BEEN CREATED DURING A SYSTEM GENERATION RUN. IT CONTAINS A 42-POSITION STORAGE AREA FOR REFERENCE OR USE BY A SERIES OF INDIVIDUAL PROGRAMS. THE REMAINDER OF THE PROGRAM CONTAINS LIBRARY ROUTINES, INCLUDING THE SYSTEM GENERATION RUN, UPDATING, LISTING, PUNCHING OR COPYING OF THE SYSTEM TAPE. THE SYSTEM ALSO HANDLES THE CURRENT SORT 7 PROGRAM. THE SYSTEM REQUIRES A MINIMUM OF ONE TAPE DRIVE, 1402, 1403, HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING. MINIMUM OF TWO TAPES REQUIRED FOR UPDATING. MINIMUM OF FIVE TAPES REQUIRED FOR SORTING.

OPTIONAL PROGRAM MATERIAL - SOURCE DECKS.

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

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1401-01.4.176 1401/1311 DISK ADDRESS
UTILITY

AVAILABLE 1ST QUARTER 1965.

SPECIFY FILE NUMBER 1401-01.4.176

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THIS PROGRAM WAS WRITTEN TO HANDLE 1311 DISK MAINTENANCE REQUIREMENTS NOT COVERED HERETOFORE IN ANY LIBRARY PROGRAM, BUT WHICH OCCUR IN MOST 1311 INSTALLATIONS. WITH THE USE OF THIS PROGRAM, IT IS NOW POSSIBLE TO CHANGE THE ADDRESSING STRUCTURE OF A DISK PACK TO ANY NATURAL OR UNNATURAL RANGE WITHOUT ALTERING THE DATA WRITTEN ON THE PACK. UNNATURALLY ADDRESSED PACKS, SUCH AS THE SYSTEM PACK FOR AUTOCODER, 1401-AU-008 MAY NOW BE COPIED, LABEL TRACKS MAY ALSO BE COPIED. THE STANDARD DISK UTILITY PROGRAMS DO NOT PROVIDE THESE OPERATIONS. OPTIONS ELECTED BY CONTROL CARDS ARE- 1-CHANGE ADDRESSES WITHOUT DISTURBING DATA, 2-CHANGE ADDRESSES AND CLEAR DATA, 3-COPY ONE DISK PACK TO ANOTHER, AND 4-COMPARE ONE DISK TO ANOTHER. THE PROGRAM CAN BE RUN ON A 4K SYSTEM WITH HIGH-LOW-EQUAL COMPARE AND ADVANCED PROGRAMMING FEATURES AND WILL COPY A FULL PACK IN APPROXIMATELY SIX MINUTES.

1401-01.4.181 REPAIR DISK RECORD
AVAILABLE 1ST QUARTER 1965
SPECIFY FILE NUMBER 1401-01.4.181

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TO ALTER THE CONTENTS OF A 1311 DISK SECTOR, USING A CONTROL CARD WHICH CONTAINS- A/ THE DISK ADDRESS OF THE SECTOR, B/ THE LOW ORDER POSITION OF THE PORTION OF THE SECTOR TO BE CHANGED, C/ THE NUMBER OF CHARACTERS TO BE ALTERED, AND D/ THE REPLACEMENT DATA. ANY NUMBER OF SUCH CHANGES MAY BE MADE WITH ONE LOADING OF THE PROGRAM. CONTROL CARDS MAY BE IN ANY ORDER. A 1600 POSITION, IBM 1401 WITH 1403 PRINTER, 1402 CARD READER AND 1 - 1311 DISK DRIVE IS REQUIRED.

1401-01.4.182 COPY 1311 DISK FILE TO IEOP
AVAILABLE 1ST QUARTER 1965
SPECIFY FILE NUMBER 1401-01.4.182

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TO COPY A 1311 DISK FILE FROM ONE SET OF DISK PACKS TO ANOTHER, STOPPING WHEN THE END OF SYMBOL - IEOP - HAS BEEN REACHED. A CONTROL CARD WITH STARTING DISK SECTOR ADDRESS PUNCHED IN COLUMNS 1-6 IS PLACED BEHIND THE PROGRAM DECK. STORAGE OF ABOUT 6800 POSITIONS ON AN IBM 1401 WITH 1403 PRINTER, 1402 CARD READER AND 2 - 1311 DISK DRIVES, DIRECT SEEK FEATURE.

1401-01.4.186 1401/1460-1311 DISK PROGRAM
LOADER

AVAILABLE 2ND QUARTER 1965.

SPECIFY FILE NUMBER 1401-01.4.186

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THE DISK LOADER PROVIDES THE USER WITH MEANS OF STORING HIS PROGRAMS ON DISK AND CALLING THEM INTO CORE FOR EXECUTION WITH ONE CARD. THIS CARD IS A ONE CARD PROGRAM WHICH BRINGS IN THE LOADER FROM DISK, WHICH IN TURN BRINGS IN USER'S PROGRAM FROM DISK. THE LOADER IS ALMOST IDENTICAL TO THE CONDENSED CARD LOADER EXCEPT THAT THE LOADER READS DISK RECORDS IN THE CONDENSED FORMAT INSTEAD OF CARDS. ALSO IT IS NOT RELOCATABLE. OVERLAYS ARE HANDLED THE SAME AS WITH THE CONDENSED CARD LOADER. APPROXIMATELY 9 SECTORS OF DISK STORAGE ARE NEEDED FOR EVERY 800 CORE POSITIONS OF PROGRAM. PROGRAMS AND LOADER NEED NOT BE ON THE SAME PACK. LOADING IS 25 PERCENT FASTER THAN WITH CARD LOADER. ONE CALL CARD REPLACES OBJECT DECK. LOADER USES CORE LOCATIONS 1-330 AND READ, PUNCH AND PRINT AREAS CAN BE CLEARED

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AFTER PROGRAM HAS BEEN LOADED. THERE IS NO GROUP MARK WORD MARK RESTRICTION. CALL CARD IS COMPATIBLE WITH JOB STACKING BECAUSE A SLEDCM USED SPECIAL CHARACTER, CARD CODE 0-6-8, IS IN COLUMN 80. SOURCE LANGUAGE IS 1401-1311 AUTOCODER. MACHINE REQUIREMENTS - 1401 WITH MODIFY ADDRESS INSTRUCTION - AT LEAST ONE 1311 - PRINTER - 1402 READER PUNCH. IF MODIFY ADDRESS FEATURE IS NOT AVAILABLE PROGRAM MODIFICATION IS NECESSARY.

1401-01.4.187 1311 DISK RECORD FINDER
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.187

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DIRECT INQUIRIES TO AUTHOR

TO SEARCH AN IBM 1311 DISK FILE FOR RECORDS WHOSE CONTROL FIELD MATCHES A SEARCH ARGUMENT PUNCHED IN A CONTROL CARD. EACH SUCH RECORD, TOGETHER WITH ITS DISK SECTOR ADDRESS, IS PRINTED IN BLOCKED STYLE. RECORDS MUST BE FIXED LENGTH, MULTIPLES OF 5 CHARACTERS AND UP TO 125 CHARACTERS LONG. THE CONTROL FIELD MAY RANGE IN LENGTH FROM 1 TO 64 CONSECUTIVE CHARACTERS. STORAGE REQUIREMENTS ARE APPROXIMATELY 5,000 POSITIONS. AN IBM 1401 WITH 1403 PRINTER, 132 PRINT POSITIONS, ONE 1311 DISK DRIVE WITH DIRECT SEEK FEATURE IS REQUIRED.

1401-01.4.188 ONE OF ONE - 80X80 REPRODUCE
WITH LAST CARD TEST
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.188

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THIS ONE CARD PROGRAM READS A CARD AND MOVES THE DATA INTO THE PUNCH AREA BEFORE IT PUNCHES INSURING THAT THE FIRST CARD OUT IS A VALID REPRODUCTION OF THE FIRST DATA CARD IN. THE PROGRAM DOES NOT HAVE TO BE RELOADED IF MORE REPRODUCING IS DESIRED. THIS ONE CARD PROGRAM CONTAINS A LAST CARD TEST THAT WILL PROCESS THE LAST CARD AND GIVE A PROGRAM HALT, ELIMINATING THE CONTINUOUS CYCLING OF THE 1402. THIS PROGRAM REQUIRES NO SPECIAL FEATURES AND USES ONLY 400 POSITIONS OF STORAGE. SPEED IS 192 CARDS PER MIN.

1401-01.4.189 1401/1440/1460 RESEQUENCE
AUTOCODER SOURCE PROGRAMS - RASP
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.189

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AT VARIOUS TIMES, IT BECOMES NECESSARY FOR A RESEQUENCED SOURCE PROGRAM DECK TO BE OBTAINED. RASP WAS DEVISED TO PERMIT RESEQUENCING BEFORE, AND COMPLETELY INDEPENDENT OF, VALUABLE ASSEMBLY PROCESSING TIME. RASP USES 31 CORE STORAGE POSITIONS FOR ACTUAL PROGRAM OPERATION AS WELL AS THE READ AND PUNCH STORAGE AREAS. THE RESULTANT OUTPUT DECK CONTAINS THE ORIGINAL SOURCE CARD INFORMATION FROM COLUMN 6 THROUGH 72 AND THE NEW SEQUENCE NUMBERS IN COLUMNS 1 THROUGH 4, STARTING WITH ,,C101,, IN THE FIRST, OR ,,JOB,, CARD. REQUIRES 1401-1440 OR 1460 WITH NO SPECIAL FEATURES.

1401-01.4.190 MULTI-PURPOSE 80-80
REPRODUCING
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.190

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THIS 80/80 REPRODUCING PROGRAM WILL REPRODUCE EACH INPUT CARD INTO ONE, TWO, OR THREE OUTPUT CARDS AND STAKER SELECT THE OUTPUT CARDS. THIS IS AN ADVANTAGE OVER SINGLE CARD REPRODUCING PROGRAMS SINCE THE HANDLING TIME FOR GETTING SEVERAL COPIES OUT OF AN INPUT CARD DECK IS CONSIDERABLY REDUCED. ANY SIZE 1401 CENTRAL PROCESSING UNIT WITH SENSE SWITCHES AND A 1402 CARD READ PUNCH IS REQUIRED BY THE PROGRAM. EXECUTION TIME IS 73 CPM READ IN WHEN TRIPLE REPRODUCING, 100 CPM READ IN WHEN DOUBLE REPRODUCING AND 200 CPM READ IN WHEN SINGLE REPRODUCING.

1401-01.4.191 SELF CONDENSING MODIFIED
FARGO
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.191

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CONTINUED FROM PRIOR COLUMN--

THE END RESULT IS A CONDENSED VERSION OF FARGO WHICH IS COMPOSED OF LESS THAN 100, CARDS INCLUDING THE MULTIPLY AND DIVIDE SUBROUTINES WHICH ARE PERMANENTLY PATCHED INTO THE PROGRAM. FASTER LOADING, TO PERMIT FARGO TO BE USED WHERE THE ORIGINAL BULKY PROGRAM PROHIBITED ITS USE IN MANY CASES. WRITTEN IN ACTUAL LANGUAGE. AUTOCODER FORMAT. A 4K 1401 OR LARGER, WITH ADV. PROG. 6 SENSE SWITCHES IS REQUIRED. IT HAS ABILITY TO MULTIPLY AN 11 POSITION NUMBER BY A 9 POSITION NUMBER AND/OR DIVIDE A TEN POSITION NUMBER BY A TEN POSITION NUMBER AND HAVE THE REMAINDER AVAILABLE. SUBROUTINE LINKAGE CAN BE ALTERED FOR A MACHINE WITHOUT ADV. PROG.

1401-01.4.192 CHRISTMAS CLUB PROGRAMMING
PACKAGE

AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.192

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SET OF PROGRAMS /3/ TO PROCESS CHRISTMAS CLUB APPLICATION.. THEY INCLUDE DAILY JOURNAL, DAILY UPDATE OF MASTER TAPE /WITH TRIAL BALANCE/, AND YEARLY CHECK WRITING & VOUCHER PUNCHING. NO MORE THAN 10 MISSING PAYMENTS CAN BE STORED IN MASTER RECORD. PROGRAM CAN HANDLE TWO DIFFERENT TYPE CLUBS /IE. TYPE 1- CHRISTMAS CLUB, TYPE 2- CHANUKAH OR VACATION/, AND UP TO SIX BRANCH OFFICES. A 4K 1401 WITH THE ADVANCE PROGRAM PACKAGE, SENSE SWITCHES, A 1402, 2 TAPE DRIVES, AND A 1403 IS REQUIRED BY THE PROGRAM. WRITTEN IN SYMBOLIC PROGRAMMING SYSTEM.

1401-01.4.193 PAPER AND PROGRAM
DOCUMENTATION EDITOR

AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.193

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THIS IS A PROGRAM TO READ PUNCHED CARDS CONTAINING A TEXT IN FREE FORM, PACK IT TO CLOSE UP GAPS CAUSED BY DELETIONS, EXPAND IT TO ACCOMMODATE INSERTIONS, AND PRINT IT SO AS TO OCCUPY AN 8 1/2 BY 11 INCH PAGE IN CONTINUOUS FORM. NEW PARAGRAPHS, PAGES, AND OTHER FUNCTIONS ARE HANDLED AUTOMATICALLY OR BY THE USE OF CONTROL CODES WITHIN THE TEXT ITSELF. AFTER THE FIRST COPY IS PRINTED, REVISIONS MAY BE MADE BY PUNCHING ADDITIONAL CARDS IN A PRESCRIBED CHANGE FORMAT. THE PROGRAM IS WRITTEN IN THE AUTOCODER LANGUAGE FOR AN IBM 1401 WITH AT LEAST 4K STORAGE, ADVANCED PROGRAMMING, H-L-E COMPARE, 1402 AND ANY MODEL 1403 PRINTER.

1401-01.4.194 GENERAL TAPE INQUIRY PROGRAM

AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.194

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THIS PROGRAM WILL SEARCH TAPE FOR RECORDS WHICH CORRESPOND TO CONTROL CARDS AND PRINT OUT ALL SUCH RECORDS OR ALL RECORDS AFTER CERTAIN RECORDS ON THE TAPE. THE PROGRAM IS WRITTEN FOR A ONE TAPE 4K 1401 WITH READER AND PRINTER AND CAN HANDLE TAPE RECORDS AS LARGE AS 3004 POSITIONS IN ALL RECORD FORMS, ODD AND EVEN PARITY, MOVE AND LOAD MODE. THE PROGRAM CAN BE USED WITHOUT MODIFICATION ON LARGER MACHINES. SENSE SWITCHES, ADV. PROG. AND HLE COMPARE ARE USED. THE PROGRAM IS WELL SUITED FOR TROUBLE-SHOOTING, TESTING AND AUDIT SAMPLING.

1401-01.4.195 1401 SPS TO SYSTEM/360
BASIC ASSEMBLER LANGUAGE TRANSLATOR

AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.195

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A PROGRAM DESIGNED TO ASSIST IN THE REPROGRAMMING OF 1401 SPS SYMBOLIC PROGRAMS INTO S/360 BASIC ASSEMBLER LANGUAGE. TRANSLATION IS MADE OF COMMON 1401 STATEMENTS INTO THEIR S/360 EQUIVALENT, WITH FLAGS INSERTED IF GENERATION IS QUESTIONABLE. THE PROGRAM IS WRITTEN IN 1401 AUTOCODER, AND REQUIRES THE FOLLOWING MINIMUM CONFIGURATION. 1401 OR 1460... 8000 POSITIONS... ADVANCED PROG... HI-LO-EQ... SENSE SWITCHES... 1402 CARD READ/PUNCH... 1403 PRINTER.

OPTIONAL PROGRAM MATERIAL - SOURCE DECK,
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-01.4.198 ANTIC A LIST OF CONDENSED
CARDS

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.198

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Contributed Programs

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CONTINUED FROM PRIOR PAGE--

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ANTIC TRANSLATES CONDENSED CARDS OF EITHER AUTOCODER OR SPS INTO SINGLE-INSTRUCTION PRINT. CONSTANTS ARE - TO A HIGH DEGREE - SEPARATED FROM INSTRUCTIONS. OP-CODES ARE TRANSLATED INTO AUTOCODER OR SPS MNEMONICS, ADDRESSES CONVERTED TO INDEXED NUMBERS AND - IN AUTOCODER - SOME DIGIT MODIFIERS ARE BUILT INTO THE MNEMONICS - BCY, BN, BSS, BPCB, A. S. G. EQUIPMENT SPECIFICATIONS ARE- 4K 1401 MODEL 3, 1402 READER, 1403.

1401-01.4.199 GENERALIZED TAPE COMPARE MARK III.

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.199

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G.T.C. MK. III IS DESIGNED TO COMPARE RECORDS ON ONE TAPE FILE AGAINST THOSE ON ANOTHER, AND TO PRINT OUT A LISTING OF THE DIFFERENCES ENCOUNTERED WITHIN THE TWO FILES. IT WILL ALSO PRINT OUT INSERTED AND DELETED RECORDS. G.T.C. MK. III WILL PROCESS MULTIPLE INPUT REELS; WILL DEBLOCK EACH TAPE FILE, AND WILL PROCEED FROM ONE JOB TO ANOTHER WITH MINIMAL OPERATOR INTERVENTION. RESTRICTIONS: RANGE- MAXIMUM RECORD LENGTH IS 2896 CHARACTERS. STORAGE REQUIREMENTS- 8K OR MORE. EQUIPMENT SPECIFICATIONS- 2 OR 3 TAPE DRIVES, CARD READER, SENSE SWITCHES, COMPARE, STORE B REGISTER, AND INDEXING. WRITTEN IN S.P.S. RUNNING TIME IS A FUNCTION OF THE NUMBER OF RECORDS TO BE COMPARED, THE BLOCKING FACTORS, AND THE AMOUNT OF PRINTING TO BE DONE AS A RESULT OF UNEQUAL RECORDS. G.T.C. MK. III HAS BEEN RUN SUCCESSFULLY OVER 100 TIMES, AND EACH FEATURE HAS BEEN TESTED THOROUGHLY. 240 HOURS WERE SPENT IN THE DESIGN AND PROGRAMMING OF G.T.C. MK. III.

1401-01.4.200 HEURISTIC CORRUGATOR SCHEDULING PROGRAM

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.200

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THE HEURISTIC CORRUGATOR SCHEDULING PROGRAM SCHEDULES A BOX PLANT CORRUGATOR TO PRODUCE RECTANGLES OF SPECIFIED DIMENSIONS GIVEN CUSTOMER ORDER REQUIREMENTS, CORRUGATOR PARAMETERS, AND ROLL STOCK INVENTORY AVAILABILITY. THE METHOD EMPLOYED IN THE PROGRAM IS SIMILAR TO THAT EMPLOYED BY BOX PLANT SCHEDULERS IN THAT VARIOUS SPLITTING COMBINATIONS ARE TESTED AND THE BEST IS CHOSEN FOR ENTRY INTO THE SCHEDULE. THE PROGRAM, AS PRESENTLY COMPILED, WILL HANDLE UP TO 24 DIFFERENT CUSTOMER ORDERS AND UP TO FIFTEEN DIFFERENT BOARD WIDTHS. EACH ORDER MAY CONTAIN UP TO 99,999 CORRUGATED BLANKS. THE OBJECT PROGRAM CAN BE EXECUTED ON A 12K 1401 WITH THE ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, AND MULTIPLY-DIVIDE FEATURES. IT REQUIRES A 1402 CARD READER-PUNCH AND A 1403 PRINTER, MODEL 1 OR 2. ONE IBM TAPE DRIVE WILL SPEED EXECUTION TIME SIGNIFICANTLY. THE PROGRAM WAS WRITTEN IN FORTRAN AND COMPILED BY 1401-FO-05C VERSION 3, LEVEL 3., AND IS COMPOSED OF THREE OVERLAYS.

1401-01.4.203 LATCH LIST ALL THE SPECIAL CHARACTERS

AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.203

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THIS PROGRAM LISTS TAPES OR CARDS, AND ALL THE SPECIAL CHARACTERS ARE PRINTED ON TWO LINES. THE PROGRAM TAKES CARE OF EVEN OR ODD PARITY AND EVERY LENGTH OF RECORDS. READ-ERROR RECORDS ARE WRITTEN AFTER 50 TRIES. ALL RECORDS ARE NUMBERED. MAXIMUM FIRST 100 POSITIONS OF ANY TAPE RECORD ARE LISTED. TAPE RECORDS LARGER THAN 100 POSITIONS CAN BE HANDLED ALTHOUGH NO LISTING AFTER THE 100TH CHARACTER WILL TAKE PLACE. MACHINE CONFIGURATION- A 4K 1401 SYSTEM WITH ONE TAPE UNIT, A 1402, AND A 1403 IS REQUIRED. THE PROGRAM OCCUPIES 1814 CORE POSITIONS, AND WAS WRITTEN IN 1401 AUTOCODER, BUT DOES NOT USE THE AUTOCODER LOGS. AN APPENDIX TO THE PROGRAM MODIFICATION DESCRIBES FULLY A MODIFICATION VIA PATCHING WHICH ALLOWS THIS PROGRAM TO LIST EBCDIC 360 SPECIAL CHARACTERS, COMPLETE PL/I CHARACTER SET INCLUDED.

1401-01.4.205 CARD SPS TO AUTOCODER FOR 1401/1460

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.205

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THIS PROGRAM WILL CONVERT 1401 SPS SOURCE STATEMENTS TO 1401, 1440, OR 1460 FULL AUTOCODER. SPS SOURCE MUST BE IN STANDARD SPS SOURCE FORMAT. IT PRINTS A SOURCE LISTING OF THE SPS STATEMENT AND THE NEW AUTOCODER STATEMENT SIDE BY SIDE, AND PUNCHES THE AUTOCODER STATEMENT WITH A NEW SEQUENCE NO. REQUIRES 4K 1401 OR 8K 1460, 1402, 1403 WITH NO SPECIAL

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FEATURES. PROGRAM OCCUPIES 3205 POSITIONS. THERE ARE 576 SOURCE STATEMENTS. WRITTEN IN 1401 AUTOCODER.

1401-01.4.206 GENERALIZED CARD IMAGE UPDATE PROGRAM

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.206

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THE PURPOSE OF THIS PROGRAM IS TO PROVIDE AN EXTREMELY GENERAL TECHNIQUE FOR UPDATING FILES OF FIXED-LENGTH BCD RECORDS OF FROM 13 TO 84 CHARACTERS, INCLUSIVE. CONTROL CARDS ARE SUBMITTED DESCRIBING THE RECORD LENGTH, BLOCKING FACTOR, INPUT SEQUENCE, CODING FIELDS, DATA FIELDS, ETC. OF THE SPECIFIC APPLICATION. THE PROGRAM WILL PROCESS TAPE BLOCKS OF AT MOST 2555 CHARACTERS AND SIMULTANEOUSLY ALLOW FOR A TABLE IN CORE OF AT MOST 10 "PERMANENT", CHANGE RECORDS. WHILE THE PROGRAM ASSUMES NO TAPE LABELS, IT CAN IGNORE THEM WITHOUT UNDUE DIFFICULTY. STORAGE REQUIREMENTS ARE 16K. FOLLOWING A REASSEMBLY THE PROGRAM CAN FUNCTION WITH LESS SCOPE ON A 12K OR 8K. EQUIPMENT SPECIFICATIONS- A 1401 WITH INDEX REGISTERS, STORE ADDRESS REGISTER FEATURE, MODIFY ADDRESS HARDWARE, HIGH-LOW-EQUAL COMPARE, SENSE SWITCH FEATURE, MOVE RECORD FEATURE, FOUR TAPE DRIVES.

1401-01.4.207 RAPID SELECTIVE TRACE

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.207

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THIS IS A POWERFUL DEBUGGING, DOCUMENTATION AND TEACHING AID THAT ACCURATELY SIMULATES THE FUNCTIONING OF THE 1401 UNDER CONTROL OF ANY OBJECT PROGRAM AND PRINTS OUT COMPLETE INFORMATION ABOUT WHAT THE PROGRAM IS DOING IN AN EASY-TO-READ FORMAT. THE INSTRUCTION ADDRESS, A AND B ADDRESS REGISTER CONTENTS AT THE BEGINNING OF THE EXECUTION PHASE, THE INSTRUCTION, INDEX REGISTER CONTENTS AND UP TO 18 POSITIONS OF THE A-FIELD AND THE B-FIELD BOTH BEFORE AND AFTER INSTRUCTION EXECUTION ARE GIVEN ON A SINGLE PRINT LINE. ALL ADDRESSES ARE GIVEN IN DECIMAL FORM. COMPLETE DUMPS OF RECORDS READ, WRITTEN, CHECKED OR MOVED ARE PRODUCED. RST OPERATES MORE RAPIDLY THAN OTHER SIMILAR PROGRAMS BY CALCULATING THE A-ADDRESS ONLY WHEN NECESSARY. MINIMUM RESTRICTIONS APPLY TO THE TRACED PROGRAM. LOADERS SUPPLIED PERMIT USE OF TRACE OBJECT DECK WITH ANY OBJECT PROGRAM IN STANDARD LOAD CARD OR TAPE FORMATS. REQUIREMENTS - 1385 CORE POSITIONS, HIGH-LOW-EQUAL AND ADVANCED PROGRAMMING. CAN BE USED WITH 4K MACHINES. SOURCE LANGUAGE- BASIC AUTOCODER 2K. ANY AUTOCODER PROCESSOR CAN BE USED FOR ASSEMBLY.

1401-01.4.208 SYSTEM/360 RUN TIMING ON THE 1401/1440

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.208

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THIS IS A PROGRAM WRITTEN TO COMPUTE SYSTEM/360 RUN TIMES BASED UPON PROCESSOR, DEVICE, RUN AND FILE SPECIFICATIONS. ANY COMBINATION UP TO 30 TAPES AND DISKS ON THREE SELECTOR CHANNELS MAY BE SPECIFIED. ALL CARD I/O DEVICES /TAPE AND DISKS ALSO/ ARE PROVIDED FOR ON THE MULTIPLEXER CHANNEL. PROCESS TIME MAY BE COMPUTED BASED UPON AVERAGE NUMBER OF INSTRUCTIONS EXECUTED PER RECORD OR AS A PERCENTAGE OF LIMITING CHANNEL TIME. OVERLAPPING OF PROCESSING WITH SELECTOR AND MULTIPLEXER CHANNEL IS PROVIDED. DETAIL RUNS LIST TIMES IN MINUTES. TIMES ARE CONVERTED TO HOURS ON MONTHLY RUN SUMMARY. PROGRAM REQUIRES AN 8K 1401 OR 1440 WITH MULTIPLY-DIVIDE, ADVANCE PROGRAMMING, HI-LO-EQUAL COMPARE AND SENSE SWITCHES. SOURCE PROGRAM WAS WRITTEN IN AUTOCODER.

1401-01.4.209 CVZZA TO CONVERT 1401 AUTOCODER OPS TO 1440 OPS ON 1401

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.209

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THIS PROGRAM CONVERTS 1401 AUTOCODER OP CODES TO ACCEPTABLE 1440 OP CODES. IT ALSO PUNCHES OUT A FORM OF CARD & PRINTER I/O SUBROUTINES AND INCLUDES THEM IN THE NEW SOURCE DECK. THE SOURCE PROGRAM IS WRITTEN IN AUTOCODER. THERE ARE 293 SOURCE STATEMENTS. 4K-1401, INDEXING AND STORE ADDRESS REGISTER, HIGH-LOW-EQUAL COMPARE, ONE 1402 CARD READER PUNCH, ONE 1403 PRINTER.

1401-01.4.210 GENERAL DISTRIBUTION CLOSED SUBROUTINES IN MACRO FORM FOR A TAPE AUTOCODER SYSTEM

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.210

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Contributed Programs

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THE PURPOSE OF THE MACRO IS TO PROVIDE A MEANS OF SUMMARIZING DATA WITHOUT SORTING. THE MACRO CONSISTS OF A SERIES OF CLOSED SUBROUTINES WHICH BUILD A TABLE IN UNUSED MAIN STORAGE AND PROVIDE A MEANS FOR THE PROGRAMMER TO EXTRACT DATA FROM THE TABLE IN EITHER SEQUENTIAL OR NON-SEQUENTIAL ORDER. THE MACRO WILL HANDLE A MINIMUM OF A ONE CHARACTER CONTROL AND A ONE CHARACTER AMOUNT FIELD. THERE MAY BE AS MANY AS 100 AMOUNT FIELDS FURNISHED BY THE PROGRAMMER TO BE SUMMARIZED IN EACH ITEM. THE NUMBER OF ITEMS THAT MAY BE HELD AND SUMMARIZED IS LIMITED BY THE AMOUNT OF MAIN STORAGE AVAILABLE AND THE TOTAL LENGTH OF THE CONTROL AND AMOUNT FIELDS. EQUIPMENT SPECIFICATIONS-
ASSEMBLY MACHINE- 4K, 4 MAGNETIC TAPES, 1403 PRINTER, 1402 CARD READ-PUNCH, ADVANCED PROGRAMMING, HI-LO-EQ COMPARE.
OBJECT MACHINE- 8K, ADVANCED PROGRAMMING, HI-LO-EQ COMPARE, SOME MEANS OF PROGRAM INPUT.

1401-01.4.211 1401-1311 DISK PRINT PROGRAM
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.211

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THIS PROGRAM PROVIDES THE FOLLOWING DISK-PRINT CAPABILITIES- PRINT INTERMIXED MOVE AND LOAD MODES AUTOMATICALLY, OMIT PRINTING BLANK SECTORS, WITH OPTIONS TO SUMMARIZE THEM ON A SINGLE LINE OR IGNORE THEM COMPLETELY, OPTION TO PRINT SINGLE LINES ALL CONTIGUOUS SECTORS WRITTEN IN SAME MODE AND EITHER BLANK OR NON-BLANK, PERMIT SPACING OPTION - SINGLE OR DOUBLE SPACING, AND EITHER SOLID BLOCK OF 90 OR 100 CHARACTERS OR SPLIT INTO BLOCKS OF 10 CHARACTERS. THE PROGRAM IS WRITTEN IN 1401 AUTOCODER, AU-008, AND REQUIRES 8K, 1402, 1403 WITH 132 POSITIONS, 1311, ADVANCED PROGRAMMING, AND HI-LO-EQUAL COMPARE.

1401-01.4.212 CARD COLLATOR SIMULATOR
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.4.212

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THIS PROGRAM WILL PERFORM THE COLLATOR FUNCTIONS OF SEQUENCE CHECK, STRAIGHT MERGE, MERGE SELECTING EQUALS, MERGE REPLACING EQUALS, MERGE EQUALS ONLY, MATCH EQUALS, OR PULL EQUALS. THE CONTROL FIELD IS DESIGNATED BY A LEAD CARD. IT MAY BE BROKEN DOWN INTO 18 SUB-FIELDS WHICH MAY CONTAIN 80 COLUMNS OF A CARD IN ANY ORDER. BOTH FILES ARE SEQUENCED CHECKED, AND THE CONTROL FIELDS MAY BE ALPHABETIC. THE PROGRAM REQUIRES 3,224 POSITIONS OF STORAGE, HI-LO-EQUAL COMPARE, PUNCH FEED READ, AND THE READ STACKER SELECT DELAY DEVICE RPQ NO. W92210. THE PROGRAM IS WRITTEN IN BASIC AUTOCODER 2K.

1401-01.4.213 1401/1440/1460 BCC-BCD
CONVERSION SUBROUTINE
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.213

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THIS 1401/1440/1460 AUTOCODER SUBROUTINE DECODES AND ENCODES DATA IN THE BINARY CODED CENTESIMAL /BCC/ FORMAT TO BCD FORMAT. BCC IS A STORAGE METHOD WHICH EFFECTIVELY PACKS NUMERIC DATA TWO-DIGITS-PER-CHARACTER ON DISK OR TAPE. TO BE OPERATED ON IN CORE, HOWEVER, THE DATA MUST BE DECODED INTO BCD. THE CONVERSION SUBROUTINE WILL DECODE ANY NUMBER OF BCC CHARACTERS INTO BCD, THEN RESTORE THEM TO BCC WHEN PROCESSING IS COMPLETED. APPROXIMATELY 700 POSITIONS OF CORE ARE REQUIRED FOR THE SUBROUTINE, PLUS 17 FOR EACH CALL TO THE ROUTINE. HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, AND MODIFY ADDRESS SPECIAL FEATURES ARE REQUIRED.

1401-01.4.214 TWO COLUMN ANALYSIS
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.214

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PROGRAM TO ANALYZE SINGLE PUNCHES IN ANY SPECIFIED CARD COLUMN VERSUS SINGLE PUNCHES IN ANY OTHER SPECIFIED CARD COLUMN OF A DATA DECK. OUTPUT IS A 12 BY 12 MATRIX OF CARD COUNTS USEFUL IN APPLICATIONS SUCH AS PSYCHOLOGICAL TESTING, ANALYZING MOTOR VEHICLE VIOLATIONS BY SEX, RACE, ETC. AND OBTAINING CARD COUNTS BY CARD TYPE. CONTROL COLUMN AND TEST COLUMN, OR Y-AXIS AND X-AXIS RESPECTIVELY, ARE SPECIFIED IN A CONTROL CARD. DATA CARDS NEED NOT BE SORTED SINCE ALL CARDS ARE PROCESSED BEFORE MATRIX IS PRINTED. WRITTEN IN SPS. REQUIRES 4K STORAGE, 1402, AND 1403 MODEL 1 OR 2. 562 SOURCE STATEMENTS.

1401-01.4.215 DIRECT ACCESS STORAGE DEVICE
INDEX SEQUENTIAL FILE ANALYZER DASDISFA
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.215

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THIS IS A 1401/1440 PROGRAM MEANT TO ASSIST IN OBTAINING FILE STATISTICS FOR ORGANIZING OR REORGANIZING A 2311, 2302, 2321 OR 2314 UNDER THE INDEX SEQUENTIAL FILE MANAGEMENT SYSTEM OF EITHER OPERATING SYSTEM OR BASIC OPERATING SYSTEM AS SUPPORTED BY IBM PROGRAMMING SYSTEMS. STATISTICS PRODUCED FROM ONE CARD INPUT DATA RELATE TO THE ANALYSIS OF BLOCKING FACTORS, OVERFLOW AREAS, RECORD LENGTH, KEY LENGTH AND FILE SIZE. THE DOCUMENTATION INCLUDED SUFFICIENT DISCUSSION OF THE ISFMS TO AID THE USER IN EFFICIENT ANALYSIS OF THE OUTPUT FROM THIS AUTOCODER PROGRAM. MINIMUM MACHINE REQUIRED IS EITHER A 1401 OR 1440 WITH CARD READER, PRINTER, 4K, STORE-B-REGISTER AND HI-LO-EQUAL.

1401-01.4.218 LISTING OF IBM SYSTEM/360
PROGRAM SOURCE CARDS ON AN IBM 1401
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.218

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A PROGRAM TO LIST S/360 SOURCE DECKS ON A 1401, AND PRINT A TWO CHARACTER /ONE ABOVE THE OTHER/ INDICATION OF CERTAIN S/360 SPECIAL CHARACTERS. CHARACTERS INDICATED ARE 12-5-8 LEFT PAREN, 11-5-8 RIGHT PAREN, 12-6-8 PLUS, 11-0 MINUS ZERO, 12-0 PLUS ZERO, 12-7-8 GROUP MARK, 5-8 QUOTE, 6-8 EQUAL, 7-8 TAPE MARK. ANY COMBINATION OF PUNCHES VALID TO THE 1401 BUT NOT IN TABLES OF PRINTABLE CHARACTERS IS INDICATED BY XX AND THE LINE FLAGGED. CARDS CONTAINING CHARACTERS NOT VALID ON 1401 ARE STACKER SELECTED. PROGRAM IS DESIGNED FOR EASE IN CHANGING CHARACTER TABLES OF PRINTABLE AND NONPRINTABLE CHARACTERS, AND ADDITION OF LINE EDITING. MACHINE CONFIGURATION IS 1401, 4K, ADVANCED PROG, HI-LO-EQ, 1402, 1403. SOURCE LANGUAGE IS SPS.

1401-01.4.219 IBM 1405 TO 1311 SIMULATION
SUBROUTINES FOR 1401/1460
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.219

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THESE 1401/1460 SUBROUTINES WILL SIMULATE THE 1405 DISK USING 1311 DRIVES. THE USER NEED SIMPLY SUBSTITUTE APPROPRIATE BRANCH INSTRUCTIONS TO THESE ROUTINES IN PLACE OF HIS 1405 INSTRUCTIONS. ALL DISK CONTROL FIELDS AND I/O AREA DIFFERENCES ARE CONVERTED AUTOMATICALLY TO 1311 FORMAT, THE FUNCTION IS PERFORMED, AND THEN CONTROL FIELD AND I/O AREAS RESTORED TO 1405 FORMAT. SUBROUTINES ARE IN AUTOCODER SOURCE FORM. ADVANTAGES OF USE ARE INCREASED EFFICIENCY OF 1311 DRIVE OVER 1405 PLUS THE ABILITY TO RUN 1405 PROGRAMS ON S/360 USING THE EMULATOR. REQUIREMENTS FOR USE ARE- 2K STORAGE /ADDITIONAL OVER OBJECT PROGRAM/, HI-LO-EQUAL COMPARE, ADVANCED PROGRAMMING AND ONE-1311 DRIVE FOR EVERY 2 MILLION CHARACTERS OF CONTIGUOUS ON-LINE 1405 DISK STORAGE.

1401-01.4.220 1401/1440/1460 JOB CONTROL
MONITOR ON DISK
AVAILABLE 3RD QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.220

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JOBCC IS A PROGRAM THAT RESIDES ON 1311 DISK STORAGE. JOBCC CAN MONITOR USER PROGRAM EXECUTION BY THE USE OF CONTROL CARDS. JOBCC LOADS USER PROGRAMS ON DISK IN CORE-IMAGE FORM IN THE AREA ASSIGNED BY THE USER AND CAN CONTROL 350 PROGRAMS ON 1 DISK PACK. JOBCC CAN BE USED ON ANY 1311 DISK DRIVE ON THE SYSTEM AND USES FILE PROTECTED ADDRESSES TO PREVENT DESTRUCTION OF USER PROGRAMS ON DISK. JOBCC USES THE HIGH ORDER 600 POSITIONS OF CORE STORAGE FOR PERMANENT AND TRANSIENT ROUTINES. THESE ROUTINES HAVE THE ABILITY TO LOAD PROGRAMS ON DISK, CALL PROGRAMS FROM DISK, DELETE PROGRAMS ON DISK, SIMULATE THE LOAD BUTTON FOR EXECUTION OF CARD DECK PROGRAMS, AND PRINT A CORE DUMP AS DIRECTED BY THE USER. CYLINDER OVERFLOW IS HANDLED BY JOBCC. JOBCC ALLOWS STACKED JOBS TO BE EXECUTED AS DIRECTED BY THE USER. JOBCC WAS WRITTEN IN AUTOCODER AND WILL OPERATE ON 1401/1440/1460 SYSTEMS THAT HAVE 8, 12, OR 16K WITH HI-LO-EQUAL INDEXING, STORE REGISTERS WITH AT LEAST 1 CARD READER, 1 PRINTER, AND 1 1311 DISK DRIVE.

1401-01.4.221 REPRODUCE ONLY CERTAIN
COLUMNS ON THE IBM 1401
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.221

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Contributed Programs

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TO REPRODUCE ONLY CERTAIN CARD COLUMNS USING THE 1402 AS A VERSATILE AUXILIARY CARD REPRODUCER. THERE ARE NO RESTRICTIONS ON THIS PROGRAM. ANY NUMBER OF COLUMNS UP TO AND INCLUDING 80, ADJACENT OR NON-ADJACENT, CAN BE REPRODUCED BY USING A CONTROL CARD. THIS PROGRAM IS SET UP SO THAT YOU CAN REPRODUCE A SERIES OF DECKS. WHEN ONE DECK HAS BEEN REPRODUCED, PLACE ANOTHER DECK WITH THE PROPER HEADER CARD IN THE READ HOPPER AND PRESS START.

1401-01.4.222 1401/1460 PROGRAM TO LABEL SYSTEM/360 7-TRACK TAPES
AVAILABLE 3RD QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.222

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THE LABEL PROGRAM IS INTENDED FOR USERS WITH A SYSTEM/360 WITH 7-TRACK TAPE DRIVES. RATHER THAN USING THE BPS INITIALIZE TAPE UTILITY TO LABEL TAPES TO BE USED ON THESE DRIVES, SITUATIONS MAY OCCUR WHEN A 1401 PROGRAM MIGHT ACCOMPLISH THE SAME FUNCTION MORE CONVENIENTLY. THE PROGRAM REQUIRES A 1401/1460 SYSTEM WITH AT LEAST 4K, SBR INSTRUCTION, A MINIMUM OF ONE MAGNETIC TAPE UNIT /ADDITIONAL DRIVES CAN BE UTILIZED/, AND SENSE SWITCHES. A 1407/1447 WILL BE USED IF AVAILABLE. THE PROGRAM IS WRITTEN IN 1401 TAPE AUTOCODER.

1401-01.4.223 DOCUMENT AND TESTING AIDS FOR COBOL THROUGH A LOGIC TRACE AND DATA-NAME CROSS REFERENCE LIST
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.223

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A SERIES OF THREE PROGRAMS- 1401 AUTOCODER CARD TO TAPE SORT ON ANY COMPUTER, AND 1401 AUTOCODER TAPE TO PRINT WILL PRODUCE A LOGIC TRACE AND DATA-NAME CROSS REFERENCE LISTING TO AID IN THE DOCUMENTATION, MAINTENANCE, AND TESTING OF COBOL PROGRAMS. THE FIRST PART OF THE LISTING IS AN ALPHABETICAL LIST OF ALL SECTIONS AND PARAGRAPHS CONTAINED IN THE PROCEDURE DIVISION OF A COBOL PROGRAM AND ALL DIRECTIVES TO THEM. THE DIRECTIVES WILL INDICATE THE PRECEDING SECTION OR PARAGRAPH NAME, AND GO TO, GO TO DEPENDING ON, PERFORM, PERFORM THRU INSTRUCTIONS AND THEIR ASSOCIATED PARAGRAPH NAME, THAT REFER TO THE SECTION OR PARAGRAPH NAME LISTED. THE SECOND PART OF THE LISTING IS AN ALPHABETICAL LIST OF ALL COBOL WORDS AND/OR DATA-NAMES USED IN THE PROCEDURE DIVISION AND, THE PARAGRAPH NAME THEY WERE USED IN. A USER OPTION IS PROVIDED TO ELIMINATE THE PRINTING OF ANY COBOL WORDS OR DATA NAMES NOT DESIRED ON THE LISTING.
MACHINE CONFIGURATION-
4K-1401, HI-LO-EQUAL, INDEXING, 1402, 1403, 1 TAPE DRIVE.

1401-01.4.224 CODAC - 1401/1440/1460 CONDENSED OBJECT DECK TO AU-008 CORELOAD CONVERTER
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.224

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THE PROGRAM READS CONDENSED OBJECT DECKS AS PRODUCED BY 1401/1440/1460 AU-008, AND USES INFORMATION PROVIDED BY TWO CONTROL CARDS PRECEDING THE DECK TO CONVERT THE CARDS TO CORELOAD FORMAT ON DISK. THE PROGRAM ON DISK MAY THEN BE CALLED AS A CONVENTIONAL CORELOAD-FORMAT PROGRAM VIA AN EXECUTION RUN UNDER THE AUTOCODER SYSTEM CONTROL PROGRAM, OR, ALTERNATIVELY, BY A STAND-ALONE DISK-LOADER, ITSELF LOADED INTO CORE AS A CARD PROGRAM. THE PROGRAM MAY ALSO BE USED TO PATCH EXISTING PROGRAMS ON DISK, UTILISING UP TO TWO INDEPENDENT PATCHING AREAS, AND ESTABLISHING ALL NECESSARY LINKAGE INFORMATION WITH THE ORIGINAL PROGRAM. SOURCE LANGUAGE IS AUTOCODER. MACHINE REQUIREMENTS ARE AN 8K 1401/1440/1460, 1403/1443, 1402/1442, 1311 AND INDEXING AND STORE ADDRESS REGISTER FEATURES. 1407/1447 CAN BE UTILIZED.

1401-01.4.225 UTILITY PRINT PROGRAM
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.225

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THIS PROGRAM ALLOWS THE USER TO DETAIL LIST ANY CARD FILE IN ANY DESIRED PRINT FORMAT, PRINT EDIT ANY OR ALL CARD FIELDS, ACCUMULATE ANY OR ALL PRINTED FIELDS FOR- /A/ TOTALING ON CONTROL BREAK- /B/ OVERALL TOTALS AT END OF JOB, INCLUDING A CARD COUNT, SEQUENCE CHECK INPUT FILE, PRINT HEADINGS ON PAGE OVERFLOW, EXTRA SPACE AFTER PRINTING, BYPASS DETAIL LIST AND PRINT MINOR SUMMARY TOTALS ON CONTROL BREAK AND PAGE OVERFLOW ON CONTROL BREAK. RESTRICTIONS- PRINT CAPACITY NO MORE THAN 99 POSITIONS OF OUTPUT PER LINE, CARD FIELD CAPACITY - MAXIMUM OF EIGHT /B/ FIELDS OF PRINTING FROM CARD; ANY NUMBER OF CARD COLUMNS PER FIELD, SEQUENCE CHECKING REQUIRES HI, LOW, EQUAL COMPARE FEATURE AND CONTROL BREAK ON ONE OF EIGHT FIELDS.

PROGRAM REQUIRES A 4K 1401 WITH HIGH, LOW, EQUAL COMPARE.

1401-01.5.002 DIGS - 1311/1301 INPUT - OUTPUT SYSTEM FOR THE 1401/1440/1460
AVAILABLE 1ST QUARTER 1965.

CONTINUED FROM PRIOR COLUMN--
SPECIFY FILE NUMBER 1401-01.5.002

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A COMPLETE AUTOCODER MACRO SYSTEM FOR THE IBM 1311 AND/OR 1301. ALL DISK OPERATIONS ARE HANDLED IN BOTH THE MOVE AND LOAD MODE WITH THE EXCEPTION OF SECTOR COUNT OVERLAY. PRIMARY CONSIDERATIONS ARE THE MINIMUM USE OF CORE STORAGE AND EASE OF PROGRAMMING. ONE MACRO STATEMENT ESTABLISHED THE DIGS MAINLINE IN HIGH CORE. CORE REQUIREMENTS ARE 204 OR 245 WITH STANDARD SEEK AND 383 OR 428 WITH DIRECT SEEK ON THE 1311 DISK DRIVES. THE 1301 DOES NOT REQUIRE DIRECT SEEK AS NO SEEK CALCULATIONS ARE REQUIRED. AN ERROR HALT LIST IS INCLUDED IN THE USER/S AUTOCODER LISTING. TEN CORE POSITIONS ARE GENERATED FOR EACH GET, PUT, SEEK OR SCAN. AN AUTOMATIC EXIT BETWEEN THE WRITE DISK AND WRITE DISK CHECK IS PROVIDED WHEN DESIRED BY THE USER. THE OBJECT MACHINE MUST BE EQUIPPED WITH INDEXING AND STORE REGISTERS, AND HIGH-LOW-EQUAL COMPARE.

1401-01.5.003 TIOMS - /TAPE INPUT-OUTPUT MACRO SYSTEM/
AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-01.5.003

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TIOMS IS A COMPACT INPUT/OUTPUT CONTROL SYSTEM FOR 1 TO 6 TAPE UNITS. HEADER AND TRAILER LABELS COMPATIBLE WITH IBM APPLIED PROGRAMS ARE PROCESSED. TIOMS MAKES USE OF AN OVERLAP OPEN TO INITIALIZE ALL FILES. IN THIS WAY, CONSIDERABLE STORAGE IS SAVED FOR USERS NOT HAVING MULTIREEL FILES. EXITS ARE PROVIDED DURING HEADER AND TRAILER LABEL PROCESSING FOR USER ROUTINES. HALTS ARE AVAILABLE AFTER HEADER LABEL READING OR WRITING TO CHANGE DENSITY, ETC.
RESTRICTIONS/RANGE-
PROCESS FIXED LENGTH RECORDS, UNBLOCKED, OR BLOCKED WITH FIXED BLOCKING AND RECORD MARK SEPARATION. /OTHER FORMATS MAY BE PROCESSED BY THE USER/. HEADER AND TRAILER LABELS ARE ALWAYS WRITTEN ON OUTPUT FILES. TAPE ERROR ROUTINES DO NOT INCLUDE TAPE CLEANER.
STORAGE REQUIREMENTS-
VARIABLE DEPENDING ON USER SPECIFICATIONS. MAXIMUM IS ABOUT 1500 POSITIONS FOR FOUR MULTI-REEL TAPE FILES, MINIMUM ABOUT 750 POSITIONS FOR ONE UNBLOCKED OUTPUT FILE.
EQUIPMENT SPECIFICATIONS-
1401, 1403, HIGH LOW EQUAL COMPARE, ADVANCED PROGRAMMING, SENSE SWITCHES, AND ONE TO SIX IBM TAPE UNITS. ROUTINE SETUP TO USE THE MODIFY ADDRESS INSTRUCTION, HENSE IS READY FOR USE ON 8, 12, OR 16K SYSTEMS. WITH SLIGHT USER MODIFICATION, IT CAN BE USED, ON 4K SYSTEMS.

1401-01.5.008 AUTOCORRELOGRAM AND CROSSCORRELOGRAM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.5.008

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TO COMPUTE A CORRELOGRAM OF AUTO-OR CROSSCORRELATION COEFFICIENTS FROM A LAG OF ZERO TO A SPECIFIED MAXIMUM LAG. MORE THAN 10,000 4-DIGIT OBSERVATIONS MAY BE PROCESSED. MISSING DATA ARE PERMISSIBLE. A MAXIMUM LAG OF 87 MAY BE USED WITH 8K SYSTEM. INPUT IS EITHER CARD OR MAGNETIC TAPE. OUTPUT IS EITHER PRINTED OR PRINTED AND PUNCHED. INPUT DATA NEED NOT BE IN ANY GIVEN FORMAT. BATCH PROCESSING IS POSSIBLE, CONTROLLING ON AN IDENTIFICATION FIELD OF UP TO 10 CHARACTERS. MACHINE REQUIREMENTS-MINIMUM OF 8K CORE STORAGE, HIGH SPEED PRINTER, MULTIPLY-DIVIDE, MOVE RECORD, STORE B ADDRESS REGISTER, INDEX REGISTERS, AND SENSE SWITCHES. PROGRAMMING LANGUAGE-AUTOCODER.

1401-01.5.010 MULTI PURPOSE EXTRACT AND SELECT
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.5.010

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THIS PROGRAM WILL ALLOW RECORD EXTRACTION FROM BCD TAPE INPUT, WITH AN OPTIONAL OUTPUT FLEXIBILITY. MULTIPLES OF THREE DIFFERENT TYPES CAN BE EXTRACTED, TO MULTIPLE OUTPUT CAPABILITIES OF EITHER/OR TAPE, CARD OR PRINTER. OPERATOR CHOICE OF CARD OR TAPE OUTPUT CAN BE SELECTED TO A MAXIMUM OF THREE PUNCH POCKETS OR THREE TAPE UNITS. A MAXIMUM OF THREE TOTALS WITH RECORD COUNTS ARE ALLOWED FOR IN EACH OF THE THREE TYPES OF EXTRACT CONTROLS, AS WELL AS SPECIFYING OUTPUT RECORD LENGTHS UP TO 500 CHARACTERS. THE PROGRAM HAS AN ADDITIONAL USE IN THAT IT MAY BE USED AS A GENERAL PURPOSE PRINT AND PUNCH PROGRAM WITH RECORD COUNTS. MINIMUM MACHINE CONFIGURATION IS A 4K TAPE 1401, WITH ADVANCED PROGRAMMING, PRINT CONTROL FEATURE, ADDRESS MODIFICATION, HI-LOW-EQUAL COMPARE AND SENSE SWITCHES. THE PROGRAM CAN ALSO BE MODIFIED FOR A 1401 CARD SYSTEM WITH THE ABOVE FEATURES.

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1401-01.5.018 SIOCS- A SHORT INPUT/OUTPUT
CONTROL SYSTEM
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.5.018

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THE PROGRAM DOES MUCH THAT STANDARD ICSS ACCOMPLISHES WITH LESS STORAGE REQUIREMENTS. ANY NUMBER OF TAPES ARE COMPLETELY GOVERNED BY THIS SET OF MACROS. IT IS ENTERED AS MACRO ON 1401 AUTOCODER SYSTEM TAPE. OPENS, CLOSES, READS OR WRITES TAPE IN NON-OVERLAP AND OVERLAP. VARIABLE LENGTH RECORDS MAY BE PROCESSED IN THE OVERLAP MODE. WORK AREAS MAY BE SPECIFIED OR MAY VARY. HEADER EXITS PROVIDED. FROM 1900-2500 POSITIONS OF CORE STORAGE ARE REQUIRED. THE 1401 MUST HAVE THE ADVANCED PROGRAMMING FEATURE AND HI-LO-EQUAL COMPARE. ADDITIONAL REMARKS- THE SIOCS GENERALLY ADDS 3-5 MINUTES TO A NORMAL AUTOCODER ASSEMBLY. ASSEMBLIES MAY TAKE ANYWHERE FROM 5 TO 20 MINUTES.

1401-01.5.019 MASTER UTILITY SYSTEM
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-01.5.019

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TO ESTABLISH A LARGE NUMBER OF PROGRAMS ON ONE TAPE AS SINGLE RECORDS TO LOAD QUICKLY AND TO BE MAINTAINED EASILY AS WELL AS TO LEAD TO UNIFORMITY AND SIMPLICITY WITH SPEED. A 4K 1401 IS REQUIRED. SINCE THE BRANCH INSTRUCTION TO A STORE-B-REGISTER INSTRUCTION IS USED, INDEXING MUST BE AVAILABLE, THOUGH NOT USED BY THE SYSTEM /BECAUSE ON SYSTEMS WITHOUT IT, THE B-REGISTER CONTAINS A DIFFERENT ADDRESS AFTER A BRANCH/.

1401-01.5.020 SIMPLE IBM 1311 ID LABEL
CHECKING MACROS FOR 1401/1440/1460
AVAILABLE 3RD QUARTER 1965
SPECIFY FILE NUMBER 1401-01.5.020

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CKLBL AND LABEL ARE TWO MACROS DESIGNED FOR SIMPLIFIED LABEL ID CHECKING ON IBM-1311 DISK DRIVES. THE MACROS ARE WRITTEN IN 1401/40/60 AUTOCODER LIBRARY FORMAT USING STANDARD LIBRARY SYMBOLIC LABELS AND WILL CHECK STANDARD IBM LABEL IDS. ADVANTAGES GAINED BY USING CKLBL AND LABEL ARE CORE SAVINGS BY OVERLAYING ALL LABEL DATA, LESS CODING, AND EASIER MODIFICATION IF ONE PROGRAM CHECKS SEVERAL FILES. MINIMUM MACHINE REQUIREMENTS ARE AN IBM 1401, 1440, OR 1460 WITH INDEX REGISTERS AND AT LEAST ONE IBM-1311 DISK DRIVE.

1401-01.5.021 IBM 1405 TO IBM 1311 DISK
FORMAT CONVERSION
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.5.021

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A SERIES OF 4 PROGRAMS TO ALLOW CURRENT 1401-1405 USERS TO GO TO S/360 IN 1401-1311 COMPATIBILITY MODE. PROGRAM NO. 1 AUTOMATICALLY INSERTS BRANCH INSTRUCTIONS IN SPS SOURCE PROGRAMS IN PLACE OF DISK READ OR WRITE OPERATIONS. IT IS IN SPS SOURCE FORMAT AND REQUIRED A 8K 1401 WITH HI LO EQ AND ADVANCED PROGRAMMING. PROGRAMS NO. 2 AND NO. 3 ARE PASS 1 AND PASS 2 OF AN SPS COMPILER USING THE 1405 DISK. THEY ARE IN OBJECT LANGUAGE AND REQUIRE AN 8K 1401 WITH HI LO EQ. IF THE 1311 VERSION IS USED, A 12K 1401 IS REQUIRED. PROGRAM NO. 4 IS A CONTROL PROGRAM OCCUPYING THE TOP 4K OF STORAGE THAT CONVERTS BETWEEN 1405 AND 1311 ADDRESSES AND FORMATS. IT CONTROLS DISK OPERATIONS ON THE 1311. IT IS IN 1401-1311 AUTOCODER FORMAT WITH 1401-1311 ICSS, AND REQUIRES HI LO EQ, ADVANCED PROGRAMMING AND DIRECT SEEK. SINCE IT REQUIRES 4K FOR ITSELF, IT CAN ONLY HANDLE UP TO 12K PROGRAM.

1401-02.0.005 FARGO MODIFIED
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-02.0.005

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TO PROVIDE FOR THE ABILITY TO WRITE ANY BASIC 1401 MACHINE LANGUAGE INSTRUCTION WITHOUT PATCHING ON EITHER THE DETAIL CONTROL CARD SHEET /PHASE 3/ OR THE TOTAL CONTROL CARD SHEET /PHASE 2/. TO PROVIDE FOR THE ABILITY TO CHARACTER ADJUST THE I-ADDRESS, A-OPERAND, B-OPERAND OR BOTH THE A AND B OPERANDS IN THESE BASIC 1401 INSTRUCTIONS. SAME AS PUBLISHED FARGO. FARGO WAS EXPANDED TO PROVIDE FOR ANY LENGTH BASIC MACHINE INSTRUCTION IN PHASES 2 AND 3 OF FARGO PROCESSING AND TO INCORPORATE THESE INSTRUCTIONS IN

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CONTINUED FROM PRIOR COLUMN--
THE GENERATED PROGRAM. 1401 BASIC MACHINE LANGUAGE

1401-02.0.008 1405 STAR-SYSTEM FOR
STORING, MAINTAINING AND RETRIEVING PROGRAMS ON THE 1405 DISK FILE
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-02.0.008

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THE 1405 STAR SYSTEM CREATED DISK RECORDS FROM AUTOCODER CONDENSED OR SPS CONDENSED LOAD CARDS. THESE DISK RECORDS THEN BECOME INPUT FOR A SUPERVISOR ROUTINE WHICH WILL RECREATE THE ORIGINAL PROGRAM IN CORE STORAGE AT OBJECT TIME. IN ADDITION, THE SYSTEM IS CAPABLE OF MAINTAINING THE FILE OF PROGRAMS THROUGH DOCUMENTATION AND PATCHING. BY MAKING PROGRAMS IMMEDIATELY AVAILABLE, THROUGH EITHER A CONSOLE ENTRY OR A CALLING CARD DEFINITE REDUCTIONS IN SET-UP TIME CAN BE REALIZED. FROM A PROGRAMMING STANDPOINT, REAL SAVINGS CAN BE OBTAINED BY STORING NUMEROUS SUBROUTINES ON THE FILE. THIS HAS THE EFFECT OF EXPANDING CORE STORAGE CAPACITY ON A GIVEN JOB FAR BEYOND THE RESTRICTIONS OF THE FIXED CORE SIZE OF THE MACHINE. MINIMUM MACHINE CONFIGURATION-

1401 4K WITH ADVANCED PROGRAMMING /INDEXING/
/STORE ADDRESS REGISTERS & MOVE RECORD/, AND HI-LOW-EQUAL.
1402 NO FEATURES
1403 MODEL 2
1405 ONLY ONE ACCESS AREA
1407

SUPER INCLUDES THE DISK ERROR ROUTINE AND THE 200 POSITION DISK READ IN AREA. THE SECOND FORM OF SUPER IS AN SPS SYMBOLIC DISK. THIS USES 875 POSITIONS. THIS VERSION ALSO ALLOWS DATA TO BE PLACED IN THE INDEX REGISTERS. SOURCE LANGUAGE IS SPS.

1401-02.0.009 FARGO STAGE II /EXPANDED 4K
CARD 1401 VERSION/
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-02.0.009

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FARGO-STAGE II IS A MODULAR BUILDING BLOCK, CONTROL CARD ORIENTED, LOAD AND GO SYSTEM WHICH EXTENDS THE CAPABILITIES OF THE IBM 1401 DPS FARGO PROGRAM. STAGE II CONSISTS OF SIX ADDITIONAL PROGRAM PHASES WHICH MAY BE ADDED TO THE BASIC FOUR PHASES OF FARGO AS NEEDED. ONE OR ALL SIX OF THE STAGE II PHASES MAY BE CALLED INTO USE FOR A GIVEN JOB AS REQUIRED BY THE USER. EACH PHASE GENERATES ADDITIONAL MACHINE LANGUAGE INSTRUCTIONS AS NEEDED IN THE GENERATED OBJECT PROGRAM AREA OF CORE STORAGE ABOVE THE FIRST FOUR REGULAR FARGO PHASES. IN ADDITION, ALL NECESSARY LINKAGE BETWEEN THE REGULAR FARGO PROGRAM AND THE NEWLY GENERATED ROUTINES IS PROVIDED AUTOMATICALLY. 4K 1401, NO SPECIAL FEATURES REQUIRED. FARGO PROGRAM NO. 1401-RG-045 MUST PRECEDE FARGO-STAGE II. SOURCE LANGUAGE IS SPS.

1401-02.0.012 CONDENSING AFTER REPORT
GENERATING OPERATION
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-02.0.012

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THE PROGRAM MAKES IT POSSIBLE TO PRODUCE A CONDENSED OBJECT PROGRAM DECK IN AUTOCODER FORMAT DIRECTLY FROM CORE STORAGE WHEN THE PROGRAM WAS GENERATED USING FARGO. CARGO PROGRAM INSTRUCTIONS ARE STORED IN THE READ PUNCH AND PRINT AREAS DURING PHASE 1. AFTER FIRST 600 POSITIONS HAVE BEEN PUNCHED OUT, PHASE 2 LOADS INTO THIS AREA AND PROCEEDS TO CONDENSE AND PUNCH THE BALANCE OF CORE STORAGE. CARGO WILL PRODUCE AN AUTOCODER CONDENSED FORMAT OBJECT PROGRAM DECK FROM A FARGO PROGRAM WHICH HAS BEEN LOADED INTO 4K 1401 CORE STORAGE RANGING FROM POSITION 0001 TO 3999. MACHINE CONFIGURATION- 4K 1401 WITH 1402. NO SPECIAL FEATURES REQUIRED. SOURCE LANGUAGE- AUTOCODER

1401-02.0.013 CARD AUTOCODER PROGRAMMING
SYSTEM /CAUTO/
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-02.0.013

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TO ASSEMBLE, CONDENSE, AND LIST PROGRAMS WRITTEN IN AUTOCODER LANGUAGE, IN ONE COMPACT AND SPEEDY ROUTINE. COMPARISON TO SPS 1 & 2- AFTER LOADING CAUTO, TWO PASSES OF THE SYMBOLIC SOURCE PROGRAM /THE FIRST, AT UP TO 800 CARDS PER MINUTE, TO LOAD THE LABEL TABLE- THE SECOND, AT UP TO 300 CARDS PER MINUTE, TO PUNCH CONDENSED CARDS AND PRINT A PROGRAM LISTING/ TAKE THE PLACE OF FIVE PASSES WITH SPS 1 & 2. /THE FIRST, AT UP TO 300 CARDS PER MINUTE, TO EDIT THE SOURCE PROGRAM ABOUT TO BE ASSEMBLED. THE SECOND, AT UP TO 250 CARDS PER MINUTE, TO CREATE INTERMEDIATE CARDS WHICH WILL BE DISCARDED AFTER PASS THREE. THE THIRD, AT UP TO 250 CARDS PER MINUTE, TO PUNCH SINGLE INSTRUCTION ABSOLUTE CARDS. THE FOURTH, AT UP TO 300 CARDS PER MINUTE, TO PRINT A

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PROGRAM LISTING. THE FIFTH, AT UP TO 600 CARDS PER MINUTE, TO CONDENSE THE ABSOLUTE PROGRAM/. COMPARISON TO AUTOCODER ASSEMBLY- CAUTO TAKES FROM 1/2 TO 3/4 FOR THE TIME REQUIRED FOR AN AUTOCODER ASSEMBLY, AND SUPPLIES ALL THE DIAGNOSTICS SUPPLIED BY AUTOCODER WITH THE EXCEPTION OF THE ALPHABETIC LABEL SORT AND THE UNREFERENCED LABEL LISTING. CAUTO HAS THE ADVANTAGE OF NOT REQUIRING ANY TAPE DRIVES TO ASSEMBLE AUTOCODER PROGRAMS. SOURCE LANGUAGE 1401 SP56

8K 1401 WITH THE ADVANCED PROGRAMMING PACKAGE FOR ASSEMBLY OF UP TO 268 LABELS, IN PROGRAMS UP TO 15,959 CORE POSITIONS. 12K 1401 WITH THE ADVANCED PROGRAMMING PACKAGE FOR ASSEMBLY OF UP TO 713 LABELS, IN PROGRAMS UP TO 15,999 CORE POSITIONS. 16K 1401 WITH THE ADVANCED PROGRAMMING PACKAGE FOR ASSEMBLY OF UP TO 1157 LABELS, IN PROGRAMS UP TO 15,999 CORE POSITIONS. A MINIMUM OF 7,999 POSITIONS OF STORAGE ARE REQUIRED FOR THIS PROGRAM. A MINIMUM OF 8K, 1401 CARD SYSTEM, WITH THE ADVANCED PROGRAMMING PACKAGE AND 1403 PRINTER. THIS PROGRAM GIVES TO THE 1401 CARD SYSTEM USER AN ASSEMBLY PROGRAM WITH THE FLEXIBILITY AND SPEED OF A 1401 TAPE SYSTEM ASSEMBLY PROGRAM.

1401-02.0.014 FAST LOAD INSTRUCTION TAPE
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.014

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AN AUTOCODER PROGRAM SYSTEM THAT WILL PROVIDE THE GREATEST POSSIBLE SPEED AND FLEXIBILITY FOR MAINTAINING TAPE LOADABLE PROGRAMS. CAPABLE OF CREATING, SEARCHING, UPDATING, DUPLICATING, AND PRINTING THE MULTI-PROGRAM, MONITORED SYSTEM TAPE. TAPE LOADABLE PROGRAMS ARE GENERATED AS ONE OR MORE RECORDS OF VARYING LENGTH FROM AUTOCODER CONDENSED OBJECT CARDS, AND MAY BE CALLED THROUGH THE 1407 CONSOLE TYPEWRITER. THE SYSTEM MAINTENANCE PROGRAM REQUIRES 4K. THE 600 POSITION MONITOR THAT CONTROLS USER PROGRAM SEARCHING, LOADING, AND EXECUTION IS NOT KEPT IN CORE DURING PROGRAM EXECUTION, BUT MAY BE RECALLED BY MACRO LINKAGE ROUTINES REQUIRING 36 TO 66 CORE POSITIONS. MINIMUM MACHINE CONFIGURATION IS 1401 4K, H-L-E, ADV PROG, SS, 1407, 1403-2, 1402, AND 3 TAPE UNITS.

1401-02.0.015 FARGO MULTIPLY ROUTINE WITH
AUTOMATIC PATCH LINKAGE
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.015

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THIS PROGRAM AND SUBROUTINE, MULTIPLY AND PATCH, WILL ALLOW 1401 USERS WHO DO NOT HAVE MULTIPLY/DIVIDE AND ADVANCED PROGRAMMING FEATURES TO EITHER BEGIN USING OR EXPAND THEIR USAGE OF FARGO, WHICH IS A LOAD-AND-GO REPORT PROGRAM GENERATION SYSTEM. MULTIPLY IS DESIGNED TO HANDLE A NINE POSITION MULTIPLIER AND ELEVEN POSITION MULTIPLICAND WITHOUT ALGEBRAIC SIGN CONTROL. THE SUBROUTINE IS WRITTEN TO ALLOW LINKAGE FROM SIX DISTINCT FARGO LOCATIONS. THE NUMBER OF CORE LOCATIONS USED IS 191. IT IS WRITTEN IN SPS. THE RESTRICTION PLACED ON THE USER IS THE FIRST THREE CONSTANTS AREAS DEFINED IN FARGO MUST BE, A NINE POSITION MULTIPLIER, ELEVEN POSITION MULTIPLICAND AND, TWENTY-ONE POSITION PRODUCED, AUTOMATICALLY SCANS STORAGE FOR NODD AND N888888 DEFINED UNDER PATCHING IN FARGO MANUAL C24-1464-1 AND PUNCHES LINKAGE PATCH CARDS TO MULTIPLY ENABLING AUTOMATIC ENTRY AND EXIT. THIS PROGRAM ELIMINATES THE NECESSITY OF CORE DUMPS, MANUAL CORE SCANS AND PATCH CARD CREATIONS NECESSARY FOR INCORPORATING THE MULTIPLY SUBROUTINE.

1401-02.0.016 CONTROLLER
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.016

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THE 1401 CONTROLLER IS A JOB SUPERVISOR SYSTEM CONSISTING OF A GROUP OF 1401 PROGRAMS DESIGNED TO PROVIDE /A/ DISC STORAGE OF PROGRAMS, SUBROUTINES, OVERLAYS, ETC. /B/ CONTROL CARD CALL DOWN OF PROGRAMS /C/ PROGRAM CALL DOWN OF PROGRAMS, SUBROUTINES, OVERLAYS, ETC. WITH A MINIMUM OF PROGRAMMING EFFORT. RESTRICTIONS/RANGE-
1. ALL PROGRAMS, SUBROUTINES, OVERLAYS, ETC. ORIGINATE AT POS 333.
2. MAXIMUM NUMBER OF USER PROGRAMS IS 53.
3. CONTROLLER SYSTEMS PACK MUST BE ON DRIVE 0.
4. ALL USER PROGRAMS MUST BE IN THE 1401-1311 CONDENSED CARD FORMAT. MACHINE CONFIGURATION- 1401 CONTROLLER IS DESIGNED TO OPERATE ON THE FOLLOWING MINIMUM MACHINE CONFIGURATION 1401-4K STORAGE 2-1311 DISK DRIVES ADVANCED PROGRAMMING FEATURE HIGH-LOW-EQUAL COMPARE FEATURE 1402 READER PUNCH 1403 PRINTER PROGRAM REQUIREMENTS- MINK OCCUPIES 111 POSITIONS OF HIGH CORE. IN ADDITION, DURING OVERLAY OPERATION, POSITIONS 90-741 ARE USED BY MCALL. THE AREA FROM 333-741 WILL EVENTUALLY CONTAIN THE BEGINNING OF THE USERS ROUTINE- HOWEVER, ALL DATA COMMON TO BOTH SECTIONS OF A PROGRAM MUST BE NO LOWER THAN POS 742. SOURCE LANGUAGE- 1401-1311 AUTOCODER

1401-02.0.017 AUTOBLOCK II
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.017

AUTHOR...W.C. MILLHOFF
IBM CORP.

CONTINUED FROM PRIOR COLUMN--
1955 THE ALAMEDA
SAN JOSE, CALIF.

DIRECT INQUIRIES TO AUTHOR

AUTOBLOCK II AUTOMATICALLY PRODUCES CROSS-REFERENCE TABLES AND A DOCUMENTED BLOCK DIAGRAM, USING NEW SYMBOLS IN ACCORDANCE WITH ASCII STANDARDS. IT PROVIDES THREE DIFFERENT TABLES, ONE OF WHICH IS THE BRANCH-FROM TABLE, AND ACCEPTS AN UNLIMITED NUMBER OF BRANCH POINTS, SINCE THE PROGRAM TAKES FULL ADVANTAGE OF CORE SIZE. IN ADDITION TO THE COMMON INSTRUCTIONS, AUTOBLOCK II HANDLES IOCS, MACROS, OVERLAYS, AND THE EXECUTE INSTRUCTION. AUTOBLOCK II IS AN EXTENSION AND REVISION OF AUTOBLOCK I AND IS RUN AFTER THE AUTOCODER PROGRAM UTILIZING THE AUTOCODER CONFIGURATION- 4K MINIMUM, FOUR-TAPE ADVANCED PROGRAMMING, HIGH-LOW-EQUAL-COMPARE.

1401-02.0.018 FARGO ONE-SIXTY-G
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.018

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FARGO ONE-SIXTY-G FOR THE 1401, 1460, AND 1401G IS A GREATLY EXPANDED NEW VERSION OF A LOAD AND GO REPORT GENERATOR WHICH GIVES ALL THE CAPABILITIES OF BASIC FARGO PLUS- /A/ UP TO SIX HEADER LINES WHICH CAN BE MODIFIED AT ANY TIME WITHIN OBJECT TIME. /B/ MULTIPLY-DIVIDE WITH OR WITHOUT THE FEATURE. /C/ MULTIPLE AND/OR IF/NOT CONDITIONS IN DEFINING UP TO TEN CARD TYPES. /D/ SEQUENCE CHECK OF INPUT FILE AT ANY LEVEL. /E/ HIGH-LOW-EQUAL IS INSTALLED. /F/ UP TO FOUR SPLIT CONTROL FIELDS WITH OR WITHOUT STRIPPED ZONES FOR DEFINING EACH OF FOUR TOTAL LEVEL. /G/ TOTAL FORCE HEADING OR HEADING FORCE TOTAL, DIVORCED MINOR AND SUPPRESS COMPARE OF A CARD TYPE AT ANY TOTAL LEVEL. /H/ AND MORE....THE PROGRAM IS FULLY COMPATIBLE WITH THE FARGO-FORTY PROGRAM BY C.P. DOOLITTLE, THE LATEST VERSION OF FARGO FOR THE 1440.

OPTIONAL PROGRAM MATERIAL - ONE TAPE CONTAINING SOURCE DECKS AND LISTINGS.

THE TAPE REQUIRED TO OBTAIN OPTIONAL MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH. OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-02.0.019 AUTOMATIC FLOW CHART
TECHNIQUE

AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.019

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A PROGRAM WHICH PRODUCES FLOWCHARTS FROM A LANGUAGE SIMILAR TO 1400 SERIES AUTOCODER. ALL INFORMATION PERTAINING TO ONE SYMBOL IS CONTAINED ON ONE KEYPUNCH FORM LINE. FREE FORM CODING OF TEXT INFORMATION IS USED. THE PROGRAM FLOATS AND CENTERS THE TEXT WITHIN THE SYMBOL, THUS RELIEVING THE WRITER OF THIS TEDIOUS TASK. PAGE AND CONNECTOR NUMBERS ARE ASSIGNED AUTOMATICALLY BY THE PROGRAM. TWELVE UNIQUE SYMBOLS ARE AVAILABLE, ALL OF WHICH HAVE BEEN APPROVED BY THE AMERICAN STANDARDS ASSOCIATION. FLOW CHARTS PRODUCED ARE MACHINE INDEPENDENT. BY USE OF SPECIAL COMMENT CARDS, LINE TEXT INFORMATION MAY BE PRODUCED WITH OPTIONS FOR CENTERING, LEFT, RIGHT OR FULL JUSTIFICATION. THE PROGRAM MEETS THE REQUIREMENTS OF TWO MAGNETIC TAPES AND ADVANCED PROGRAMMING FEATURE. SOURCE LANGUAGE OF THE PROCESSOR PROGRAM IS AUTOCODER.

1401-02.0.020 FARGO MULTIPLY-DIVIDE II
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.020

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FARGO MULTIPLY/DIVIDE IS AN INTERPRETIVE PROGRAM FOR 1401 COMPUTERS THAT DO NOT HAVE THE MULTIPLY AND DIVIDE FEATURE. THE FLEXIBILITY OF THE ORIGINAL FARGO PROGRAM IS NOT HAMPERED IN ANY WAY EXCEPT THAT WITH EIGHTEEN MULTIPLIES OR DIVIDES, 1634 POSITIONS OF CORE ARE AVAILABLE WHICH IS GENERALLY QUITE AMPLE. THIS PROGRAM CAN BE USED ON ANY BASIC 1401 WITH 4000 OR MORE POSITIONS OF CORE. IF THE 1401 HAS THE MULTIPLY/DIVIDE FEATURE, IT WILL NOT BE UTILIZED AND THE INCLUDED MACROS WILL BE USED. NO ADDITIONAL 1401 FEATURES ARE UTILIZED DURING THE ASSEMBLY OF THE LINKAGES. THE MULTIPLY SUBROUTINE UTILIZED, DESCRIBED IN THE IBM 1401 GENERAL PROGRAM LIBRARY PAMPHLET- 3-C.001, IS THE 9 X 9, 10 MILLISECOND SUBROUTINE. THE DIVIDE SUBROUTINE UTILIZED IS THE STANDARD DIVIDE DESCRIBED IN THE IBM GENERAL PROGRAM LIBRARY BULLETIN- PROGRAMS FOR 1401 CARD SYSTEMS, NO. J29-0209-1. THE MULTIPLICATION AND DIVISION IS CODED AS IF THE FEATURE IS PRESENT, THE ANSWERS ARE DEVELOPED IN A THIRD PRE-DEFINED AREA.

1401-02.0.021 1401/1311 MONITOR FOR
PROGRAMS ON DISK PACKS
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.021

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Contributed Programs

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CONTINUED FROM PRIOR PAGE--

THIS PROGRAM CONSISTS OF TWO PARTS. THE FIRST, SR01, LOADS USER/S PROGRAMS ON DISK PACKS AND CREATES AN ENTRY IN A PROGRAM TABLE STORED ON THE FIRST FOUR SECTORS OF A DISK PACK. THE TABLE IS CHECKED BEFORE A PROGRAM IS LOADED TO PREVENT OVERLAP WITH PROGRAMS ALREADY STORED ON THE DISK PACK. THE SECOND, SR02, PROVIDES FOR STANDARD CATES TO BE USED BY THE USER/S PROGRAMS, INQUIRIES, /BOTH DIRECT ADDRESS AND SCAN TYPE/, PROGRAM PULLDOWN THROUGH USE OF A SENTINEL CARD, COPYING OF PROGRAMS AND TABLE TO NEW PACK ON DISK-TO-DISK UPDATING JOBS, AND A LOG OF PROGRAM ACTIVITY ON AN IBM 1407. MACHINE REQUIREMENTS- ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, SCAN DISK SF IS OPTIONAL FOR SCAN INQUIRIES. STORAGE USED- APPROX. 2K. SOURCE LANGUAGE- 1401/1311 AUTOCODER.

1401-02.0.022 FLOGEN - IBM 1401 FLOW CHART GENERATOR

AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.022

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THIS 1401 PROGRAM WILL PRODUCE A PRINTED FLOW CHART WITH BLOCK TEXT, COMMENTS, BLOCK LABELS, AND DECISION BLOCK CONNECTOR CONDITIONS. THE PROGRAM PROCESSES SINGLE CARD ENTRIES FOR EACH BLOCK AND IS CAPABLE OF PRODUCING SUCCESSIVE CHARTS OF FIFTY /5 BY 10/ BLOCKS. A SIMPLIFIED CODING SYSTEM IS EMPLOYED WHICH PROCURES FLOW CHARTS OF ASA APPROVED SYMBOLS FOR ANY PROGRAMMING SYSTEM IN A FORM MUCH LIKE 7074 AUTOCHART. AN 8K WITH MODEL 2 PRINTER AND ADVANCED PROGRAMMING FEATURE IS REQUIRED.

1401-02.0.023 TAPE FARGO FOR IBM 1401

AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-02.0.023

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A MODIFICATION TO BASIC FARGO /1401-RG-045/ TO ALLOW PRINTING REPORTS FROM PAPER TAPE FILE INSTEAD OF FROM CARDS. PHASES 1, 2, AND 4 OF RG-045 ARE USED INTACT. PHASE 3 HAS BEEN REWRITTEN, AND PHASE 5 HAS BEEN ADDED. FARGO CONTROL CARDS ARE NOT CHANGED. ACCEPTS LABELED OR UNLABELED TAPE FILES FIXED LENGTH, UNBLOCKED OR FIXED LENGTH, BLOCKED, OR VARIABLE LENGTH, UNBLOCKED. RECORDS MUST BE MOVE MODE, EVEN PARITY WITH MAXIMUM LENGTH OF 2498. EXIT IS PROVIDED TO BY PASS RECORDS OR DO ADDITIONAL PROCESSING. REQUIRED 8K, HI-LO-EQUAL COMPARE, INDEXING AND STORE REGISTER COMMANDS AND AT LEAST ONE TAPE DRIVE, 1402, 1403. THE SOURCE LANGUAGE IS AUTOCODER WITH IOCS.

1401-02.0.024 FLOWCHARTING AND DOCUMENTATION AID PROGRAM

AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-02.0.024

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THIS PROGRAM PROVIDES FACILITY FOR COMPUTER PREPARATION OF FLOWCHARTS AND TEXTUAL DOCUMENTATION BY MEANS OF AN EASY TO LEARN AND USE PROBLEM ORIENTED CHARTING LANGUAGE. THE FLOWCHART MATRIX IS 3 X 10 BLOCKS AND ALL BLOCK CONNECTION ARE COMPUTER GENERATED. SYMBOLS CONFORM TO ASA STANDARDS AND NORMAL FLOWCHARTING CONVENTIONS. PAGES OF TEXT CONTAIN 57 CHARACTERS PER LINE, AND MANY OPTIONS ARE AVAILABLE FOR ADJUSTMENT AND CHARACTER SPACING. THE FLOWCHARTING LANGUAGE IS COMPATIBLE WITH THE LANGUAGE USED IN ANOTHER PROGRAM NOW AVAILABLE FROM THE TYPE III LIBRARY UNDER CATALOG NUMBER 2.0.G19. REQUIRES AN IBM 1401 WITH 8K STORAGE, 4 TAPES, HI-LO-EQUAL COMPARE, ADVANCED PROGRAMMING AND SENSE SWITCHES.
BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP.
MACHINE READABLE - SYSTEMS TAPE.
OPTIONAL PROGRAM MATERIAL - ONE REEL OF TAPE CONTAINING SOURCE CARDS.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-02.0.025 FORTRAN MODIFICATION WHICH ELIMINATES THE MULTIPLY-DIVIDE SPECIAL FEATURE REQUIREMENT

AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-02.0.025

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BY INSERTING THIS CHANGE INTO THE 1401 FORTRAN II COMPILER, PROGRAMS CODED IN FORTRAN MAY BE COMPILED AND RUN ON 1401 MACHINES NOT HAVING THE MULTIPLY-DIVIDE SPECIAL FEATURE. THE ONLY PROGRAMMING CONSIDERATION NECESSARY IS THAT THE ADDRESS IN THE PARAMETER CARD SHOULD BE APPROXIMATELY 1000 POSITIONS LESS THAN THE MACHINE CORE CAPACITY. OPERATING CONVENIENCE IS NOT SERIOUSLY AFFECTED. THESE ADVANTAGES OF THE FORTRAN COMPILER ARE RETAINED - RAPID COMPILE TIME /AROUND 2 MINUTES/... DIAGNOSTICS... COMPILE-AND-GO CAPABILITY... OPTIONAL PUNCHED OBJECT DECK /READY TO USE/... COMPILER MAY BE ON CARDS OR TAPE. CORE REQUIRED FOR THE SUBROUTINE REDUCES BY APPROXIMATELY 1000 POSITIONS THE CORE AVAILABLE FOR COMPILING THE SOURCE PROGRAM.

CONTINUED FROM PRIOR COLUMN--

EQUIPMENT SPECIFICATIONS- FORTRAN WITH THIS CHANGE REQUIRES 8K, HI-LO-EQUAL COMPARE, ADVANCED PROGRAMMING, READER-PUNCH, AND PRINTER.

1401-02.0.028 SYSTEM/360 BASIC ASSEMBLER PROGRAM

AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-C2.0.028

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THIS 1401 PROGRAM ASSEMBLES S/360 BASIC ASSEMBLY LANGUAGE INSTRUCTIONS AS DESCRIBED IN MANUAL C28-6503, BASIC ASSEMBLY LANGUAGE, PLUS EXTENDED BRANCH MNEMONICS AND PACKED AND ZONED DECIMAL CONSTANTS AS DESCRIBED IN MANUAL C28-6514. THE PROGRAM DOES EXTENSIVE ERROR CHECKING AND PRODUCES AN EDITED LISTING OF SOURCE LANGUAGE, HEXADECIMAL REPRESENTATION OF COMPILED LOCATIONS AND INSTRUCTIONS, AND EFFECTIVE ADDRESS OF OPERANDS. A PUNCHED DECK IN HEXADECIMAL FORMAT IS OPTIONAL. THE ONE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-02.0.029 BCDIC/EBDCIC/BCDIC CHARACTER TRANSLATION PROGRAM

AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-C2.0.029

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DIRECT INQUIRIES TO AUTHOR

THIS IS A CHARACTER CODE TRANSLATION PROGRAM. IT WILL TRANSLATE FROM BCD INTERCHANGE CODE TO EXTENDED BCD INTERCHANGE CODE AND VICE VERSA. THE TRANSLATION CAN BE PERFORMED FROM EITHER CARD OR TAPE INPUT /TAPE RECORDS UP TO 560 CHARACTERS/ TO EITHER CARD OR TAPE OUTPUT. MOST OPTIONS /INPUT, OUTPUT, DIRECTION OF CONVERSION, INTERRUPTION AND CONTROL CARD/ ARE SENSE SWITCH CONTROLLED BUT THERE ARE THREE OPTIONS AVAILABLE FROM A CONTROL CARD, STARTING POINT OF SCAN, STOPPING POINT OF SCAN, AND CONVERSION OF COLLAR SIGN OR RECORD MARK TO AMPERSAND. THE PROGRAM REQUIRES A 4K 1401 WITH ADVANCED PROGRAMMING PACKAGE, 1402, 1403, SENSE SWITCHES AND ZERO TO TWO TAPE DRIVES DEPENDING ON DESIRED INPUT-OUTPUT REQUIREMENTS. THE PROGRAM IS WRITTEN IN 1401 AUTOCODER.

1401-02.0.031 AUTOCHART

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-02.0.031

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THIS PROGRAM GIVES 1401 USERS THE ABILITY TO PRODUCE FLOWCHARTS SIMILAR TO THOSE WHICH CURRENTLY CAN ONLY BE PRODUCED ON THE IBM 7070/74. IT REQUIRES AN 8K 1401 WITH FOUR TAPE DRIVES, 1402, 1403, ADVANCED PROGRAMMING PACKAGE, SENSE SWITCHES, HIGH-LOW-EQUAL COMPARE, AND MULTIPLY-DIVIDE FEATURES. THE PROGRAM HAS TEN PHASES PLUS A SUPERVISOR. IT WILL ALSO ACCEPT INPUT PREPARED FOR THE IBM 7070/74 AUTOCHART PROGRAMS. FILE MAINTENANCE OF THE INPUT HAS NOT BEEN INCLUDED IN THE PROGRAM. INITIAL TIMING RUNS INDICATE THAT THE PRODUCTION OF EACH FLOWCHART TAKES APPROXIMATELY ONE-HALF MINUTE, INCLUDING PRINTING. RESTART PROCEDURES ARE INCLUDED SO THAT THE PROGRAM CAN BE INTERRUPTED AT THE END OF THE RUN AND CONTINUED AT A LATER TIME. SYSTEM TAPE CREATION IS ALSO INCLUDED. THE PROGRAM USES THE AUTOCHART LANGUAGE FOR INPUT. IT IS AN EASILY LEARNED LANGUAGE AND IS MACHINE INDEPENDENT. THE OUTPUT IS A PRINTED CHART, STANDARDIZED FOR CLARITY AND READABILITY AND SUITABLE FOR REPRODUCTION. THIS IS A TOOL TO HELP THE USER MAINTAIN BETTER PROGRAM DOCUMENTATION BY PROVIDING FLOWCHARTS WHICH CONFORM TO BOTH IBM CORPORATE STANDARDS AND TO THE PROPOSED AMERICAN STANDARDS ASSOCIATION FLOWCHART STANDARDS. IT IS ALSO VERY USEFUL IN PRODUCING VARIOUS TYPES OF GRAPHICS AND OTHER CHARTS. ASSEMBLY OUTPUT FOR OBJECT DECK AND LISTING, SAMPLE PROBLEM INPUT DATA, AND SOURCE DECK ARE BASIC PROGRAM MATERIAL.

THE ONE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-02.0.032 MODIFIED FORTRAN COMPILER

AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-02.0.032

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THIS PAPER DESCRIBES THE IBM 1401 MODIFIED FORTRAN COMPILER AND ILLUSTRATES THE METHOD FOR CONVERTING THE IBM 1401 FORTRAN COMPILER TO A MODIFIED COMPILER TO REDUCE COMPILE TIME AND EXCESS PAPER USAGE. EQUIPMENT SPECIFICATIONS- IBM 1401 COMPUTER, /ANY MODEL/... ADVANCE PROGRAMMING FEATURE... HIGH-LOW-EQUAL COMPARE FEATURE... MULTIPLY-DIVIDE FEATURE... 1402 CARD READER AND PUNCH... 1403 PRINTER... 1 MAGNETIC TAPE UNIT.

Contributed Programs

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1401-02.0.033 CONVERTER TO EBCDIC OF
HEXADECIMAL OUTPUT OF SYSTEM/360 BASIC ASSEMBLER
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-02.0.033

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THIS PROGRAM WILL CONVERT HEXADECIMAL CARDS PRODUCED BY THE
S/360 BASIC ASSEMBLER ON THE 1401 / PROGRAM NO. 2.0.028/
INTO S/360 LOAD DECKS -- EITHER ABSOLUTE OR RELOCATABLE -- AS
SPECIFIED IN THE S/360 SPECIAL SUPPORT UTILITY PROGRAMS MANUAL.
MINIMUM MACHINE REQUIREMENTS ARE 8K 1401, ADVANCED PROGRAMMING,
HI-LO-EQ, 1402 READ-PUNCH, AND COLUMN BINARY FEATURE. 619
SOURCE STATEMENTS.

1401-02.0.035 DISASSEMBLER OF 1401/1460
PROGRAMS FROM OBJECT TO AUTOCODER SOURCE
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-02.0.035

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THIS GROUP OF 4 PROGRAMS WAS WRITTEN TO ASSIST DOCUMENTATION AND
CONVERSION EFFORTS WHERE THE USER HAS ONLY AN OBJECT DECK FROM
WHICH TO WORK. IT CONVERTS AN OBJECT PROGRAM INTO MEANINGFUL
AUTOCODER SOURCE STATEMENTS, SUITABLE FOR ASSEMBLY OR
FLOWCHARTING.
THE FINAL OUTPUT IS A LISTING /A PUNCHED DECK IS OPTIONAL/ IN
WHICH THE STATEMENTS ARE LABELLED AS REQUIRED IN THE FORM
BX-XXXXX FOR INSTRUCTIONS, REFERENCING THE OP CODE LOCATION, AND
CX-XXXXX FOR CONSTANTS, REFERENCING THE UNITS POSITION. THE
INSTRUCTION OPERANDS REFERENCE THESE LABELS.
MACHINE REQUIREMENTS ARE AN 8K 1401/1460 WITH 4 TAPE DRIVES,
SENSE SWITCHES, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, A
1402 CARD READ-PUNCH, AND A 1403 PRINTER WITH 132 PRINT
POSITIONS. IF A LARGER MACHINE IS AVAILABLE, THE FOURTH PROGRAM
/PHASE 111/ CAN BE REASSEMBLED TO TAKE ADVANTAGE OF THE LARGER
CORE, THUS CUTTING DOWN THE PROCESSING TIME. THE PROGRAM WILL
UTILIZE A 1407 IF ONE IS ON LINE, BUT DOES NOT REQUIRE IT. THE
SOURCE LANGUAGE IS 1401 AUTOCODER AND THERE ARE 2564 SOURCE
STATEMENTS.

TO OBTAIN THE BASIC PROGRAM MATERIAL SUBMIT ONE FULL 2400 FOOT
REEL OF MAGNETIC TAPE IN A STANDARD CONTAINER.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR
IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED.

1401-02.0.036 1401 FARGO TO SYSTEM/360 RPG
MODEL 20 CONVERSION PROGRAM
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-02.0.036

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THIS PROGRAM CONVERTS IBM 1401 FARGO CONTROL CARDS
TO SYSTEM/360 MODEL 20 RPG SPECIFICATION CARDS. SOURCE
LANGUAGE IS 1401 AUTOCODER. THE OBJECT PROGRAM REQUIRES
16K, ADVANCED PROGRAMMING FEATURE, AND 2 TAPE UNITS.
THIS PROGRAM CAN BE OF GREAT VALUE WHEN CONVERTING FROM 1401
TO IBM SYSTEM/360. INPUT MAY BE ANY FARGO PROGRAM WHICH
CONFORMS TO THE SPECIFICATIONS IN FARGO FOR IBM 1401 /C24-1462/.
OUTPUT CONSISTS OF SYSTEM/360 MODEL 20 RPG SPECIFICATION CARDS
AND A LISTING OF FARGO SPECIFICATIONS WHICH WERE NOT CONVERTED BY
THE PROGRAM. ONE MAGNETIC TAPE -2400 FEET IN LENGTH- IS REQUIRED
TO OBTAIN THE BASIC PROGRAM MATERIAL. THE TAPE MAY BE SUPPLIED
OR ORDERED FROM YOUR IBM REPRESENTATIVE.

1401-02.0.037 TAPE MACROS
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-02.0.037

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THIS PROGRAMMING SYSTEM IS A SET OF SOURCE LANGUAGE /AUTOCODER/
LIBRARY ROUTINES DESIGNED TO AID THE COMMERCIAL USER WITH MANY
OF THE DAY-TO-DAY REQUIREMENTS OF A 1401/1460 TAPE SYSTEM. BY
MEANS OF MACROS IN HIS SOURCE PROGRAM HE CAN CALL FOR ROUTINES
TO PERFORM THE FOLLOWING TASKS:-
1. MULTIPLICATION AND DIVISION WITH OR WITHOUT THE
SPECIAL FEATURE. THIS INCLUDES ANY SHIFTING, ROUNDING, AND/OR
DECIMAL ALIGNMENT THAT MIGHT BE NECESSARY.
2. TABLE LOOK-UPS.
3. CLEARING AND SETTING WORD MARKS.
4. EDITING ONE OR MORE FIELDS.
5. TESTING FIELDS FOR BLANKS AND/OR NON-NUMERIC CHARACTERS.
6. TESTING FIELDS AND ARITHMETIC CALCULATIONS FOR ZERO, POSITIVE,
AND/OR NEGATIVE CONDITIONS.
7. PRINTING A LINE, PAGE SKIPPING, AND CLEARING THE PRINT AREA.
THESE MACROS RESIDE ON THE AUTOCODER SYSTEM TAPE AND CAN BE USED
BY ANY 1401/1460 TAPE SYSTEM WITH ADVANCED PROGRAMMING AND AT
LEAST 4,000 POSITIONS OF MEMORY.

1401-02.0.038 DECISION TABLE MAINTENANCE
ON THE IBM 1401 TAPE
AVAILABLE 3RD QUARTER 1966.

CONTINUED FROM PRIOR COLUMN--
SPECIFY FILE NUMBER 1401-02.0.038

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THIS PROGRAM IS USED FOR ORIGINAL CREATION AND SUBSEQUENT
MAINTENANCE OF DECISION TABLE FORM DOCUMENTATION. A 1401 8K
3 TAPE SYSTEM IS THE MINIMUM CONFIGURATION. SOURCE LANGUAGE
IS 1401 AUTOCODER. THE PROGRAM PROVIDES A DOCUMENTATION LIBRARY
MAINTAINED ON MAGNETIC TAPE. IT HAS THE ABILITY TO PRODUCE
COPIES OF DOCUMENTATION IN PRINTED, PUNCH CARD AND MAGNETIC TAPE
FORM. DOCUMENTATION CAN BE RETRIEVED BY INDIVIDUAL TABLE OR
GROUPS OF TABLES. MAINTENANCE CAN BE PERFORMED ON INDIVIDUAL
LINES WITHIN A TABLE. THE PROGRAM MAKES POSSIBLE CONVENIENT
AND ECONOMIC MAINTENANCE OF CURRENT PROJECT DOCUMENTATION.

THE SOURCE DECKS ARE OPTIONAL MATERIAL AND MUST BE SPECIFICALLY
REQUESTED.

1401-02.0.039 SYSTEMS FLOW CHARTER
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-02.0.039

AUTHOR...MR. D.L. FISHER

DIRECT INQUIRIES TO..

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SAN JOSE, CALIF.

THE PROGRAM IS A 16K 1401 SYSTEMS FLOW CHARTER, WRITTEN
IN AUTOCODER. THE MACHINE MUST HAVE /1/ INDEX REGISTERS,
/2/ HI-LO-EQ COMPARE, /3/ ADVANCED PROGRAMMING, /4/ 1402,
/5/ 1403 AND /6/ 1 TAPE /USING CARD PROGRAM/ OR 2 TAPES USING
LOADABLE TAPE. THE PROGRAM WILL DRAW SYSTEMS FLOW CHARTS,
CREATE A /SYSTEMS TABLE AND PROGRAM-FILE CROSS-REFERENCE...
THE SYMBOLS DRAWN ARE CLERICAL OPERATION, STORAGE BIN, WIDE
PROGRAM, OFF-PAGE CONNECTOR, ADDING MACHINE, TRANSMITTAL TAPE,
MULTIPLE CARD FILE, TAPE, RANDOM FILE, CARD, DOCUMENT,
GRAPHIC DISPLAY, TERMINAL, KEYBOARD, PAPER TAPE, COMMENTS AND
SEQUENCE OF FILE.
MACHINE CONFIGURATION- PROGRAM REQUIRES A 1401 WITH 16K
MEMORY, ADVANCED PROGRAMMING, SBR AND INDEXING, SENSE
SWITCHES, TWO TAPES, A 1403 PRINTER AND 1402 CARD READER.
THE PROGRAM HAS BEEN SUCCESSFULLY EMULATED ON AN IBM S/360
MODEL 30. BASIC 1401 AUTOCODER WAS USED EXCEPT FOR THE
TCVLY MACRO. THE PROGRAM IS TAPE LOADED USING THE TAPE
GENERATED BY THE AUTOCODER ASSEMBLER.

TO OBTAIN THE MACHINE READABLE PORTION OF THE PROGRAM ONE
FULL, 2400 FOOT, REEL OF MAGNETIC TAPE IS REQUIRED. THE TAPE
MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE.

1401-02.0.040 TYPEWRITER MACROS FOR
1401/1460/1460 DISK AUTOCODER
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-02.0.040

AUTHOR...A.P. DELOACH

DIRECT INQUIRIES TO..

A.P. DELOACH, IBM CORP., 450 JAMES ROBERTSON PKWY.,
NASHVILLE, TENN. 37202

THESE TWO MACROS WERE DESIGNED WITH THE IDEA OF MAKING THE
CONSOLE TYPEWRITER VERY EASY TO USE. THE MSG MACRO ALLOWS THE
USER TO TYPE OUT A MESSAGE BY SIMPLY CODING MSG IN THE OP-CODE
FIELD AND THE ACTUAL MESSAGE IN THE OPERAND FIELD. THE ECJ
MACRO TYPES OUT /ECJ/, ON THE TYPEWRITER AND COMES TO A DEAD
HALT WITH 999 IN THE A AND B STARS. AS AN OPTION, THE USER
MAY TYPE A MESSAGE OUT INSTEAD OF /ECJ/, BY SIMPLY WRITING
THE ACTUAL MESSAGE IN THE OPERAND FIELD. PROGRAM MATERIAL
ABBREVIATIONS AND SUBSTITUTIONS MAY BE CHOSEN BY THE USER.
PROGRAM TO ASSEMBLE TO TEST THEIR OPERATION. SOURCE LANGUAGE
IS DISK AUTOCODER MACRO LANGUAGE. MACHINE CONFIGURATION
REQUIRED IS 4K 1401/40/60 WITH ONE 1311 AND DISK AUTOCODER
/1401-AU-C08/. A CONSOLE TYPEWRITER IS REQUIRED FOR EXECUTION.

1401-02.0.041 COBOL EXPANDER PROGRAM
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-02.0.041

AUTHOR...J.G. TATE

DIRECT INQUIRIES TO..

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THE COBOL EXPANDER PROGRAM PERMITS THE USER TO CODE COBOL
PROGRAMS IN A VERY ABBREVIATED FORM. THIS PROGRAM EXPANDS THE
ABBREVIATIONS USED AND PUNCHES A DECK READY FOR THE COBOL
COMPILER.

CURRENT USE INDICATES A SAVINGS OF 25 TO 60 PERCENT OF CODING
AND KEYPUNCHING EFFORT. A STANDARD COBOL CODING SHEET IS USED.
ABBREVIATIONS AND SUBSTITUTIONS MAY BE CHOSEN BY THE USER.
APPLICABLE FOR COBOL FOR ANY MACHINE. WILL CONVERT PERCENT,
LCZENGE, POUND SIGN, AT SIGN AND AMPERSAND TO S/360 CHARACTERS
OPEN PARENTHESIS, CLOSE PARENTHESIS, EQUAL MARK, QUOTE MARK
AND PLUS SIGN IF DESIRED. WILL RESEQUENCE AND IDENTIFY OUTPUT
DECKS. PROGRAMS MAY BE STACKED. PERMITS EXPLOITATION OF
INHERENT SELF DOCUMENTING FACILITY OF COBOL WITHOUT VOLUPTUOUS
CODING AND KEYPUNCHING EFFORTS NORMALLY REQUIRED. WRITTEN IN
SPS FOR A 4K OR ABOVE 1401 CARD SYSTEM, USING ADVANCED
PROGRAMMING FEATURE, HI-LO-EQUAL AND SENSE SWITCHES.
412 SOURCE STATEMENTS.

1401-03.0.001 9 X 9 TEN MILLISECOND
MULTIPLY SUBROUTINE
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.001

AUTHORS...R. B. FEASTER W. F. POST

Contributed Programs

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CONTINUED FROM PRIOR PAGE--

DIRECT INQUIRIES TO--
R. B. FEASTER
IBM CORPORATION
340 MARKET STREET
SAN FRANCISCO 11, CALIFORNIA

THIS PROGRAM WILL MULTIPLY TWO NINE POSITION FIELDS TOGETHER, WITH SIGN CONTROL. 10 MS. PER MULTIPLICATION. 334 POSITIONS. 1401 - ANY MODEL.

1401-03.0.003 SQUARE ROOT SUBROUTINE
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.003

AUTHOR...KENNETH JOHNSON
BUREAU OF PUBLIC ROADS
DEPARTMENT OF COMMERCE
WASHINGTON 25, D. C.

DIRECT INQUIRIES TO AUTHOR

COMPUTES THE SQUARE ROOT OF A SINGLE-PRECISION FIXED POINT 10 DIGIT NUMBER. ACCURACY - 1 IN UNITS POSITION 314 POSITIONS OF CORE STORAGE. MINIMUM 1401 WITH AUTOMATIC MULTIPLY-DIVIDE AND HIGH, LOW, EQUAL COMPARE FEATURES.

1401-03.0.004 FLOATING POINT SUBROUTINES
/NORMALIZED/
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.004

AUTHOR...H. P. NUCCI
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WASHINGTON 25, D. C.

DIRECT INQUIRIES TO AUTHOR

COMPUTES FLOATING POINT ADD, ADD ABSOLUTE, SUBTRACT, SUBTRACT ABSOLUTE, MULTIPLY, AND DIVIDE. 806 CORES OF MEMORY. 1401 WITH INDEX REGISTERS, MULTIPLY-DIVIDE, HIGH-LOW-EQUAL COMPARE.

1401-03.0.005 SIN-COS SUBROUTINE
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.005

AUTHOR...KENNETH JOHNSON
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WASHINGTON 25, D. C.

DIRECT INQUIRIES TO AUTHOR

COMPUTES SIN AND/OR COS CONVERTING DEGREES TO RADIAN'S PRODUCING A NINE DECIMAL PLACE RESULT. 700 POSITIONS OF CORE STORAGE. 1401 WITH AUTOMATIC MULTIPLY-DIVIDE AND HIGH, LOW, EQUAL COMPARE FEATURES.

1401-03.0.006 SYMBOLIC A TO THE X POWER
SUBROUTINE
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.006

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DIRECT INQUIRIES TO AUTHOR

A SYMBOLIC SUBROUTINE FOR COMPUTING A TO THE FRACTIONAL EXPONENT X. THIS SUBROUTINE WILL USE 1081 CORE POSITIONS, INCLUDING POSITIONS 0333-0530 WHICH ARE USED IN ABSOLUTE FORM. THE ORIGIN OF THE MAIN PROGRAM USING THIS SUBROUTINE MUST BE AT 0531. 4K 1401 WITH HIGH-LOW-EQUAL COMPARE AND MULTIPLY-DIVIDE SPECIAL FEATURE.

1401-03.0.008 NEPCO MULTIPLY ROUTINE
/CARD/
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.008

AUTHOR...R. J. BOUVIN
NEKOSA-EDWARDS PAPER COMPANY
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DIRECT INQUIRIES TO AUTHOR

THIS MULTIPLY ROUTINE IS FOR 1401 INSTALLATIONS NOT EQUIPPED WITH THE MULTIPLY-DIVIDE FEATURE. IT USES 11.44 MS. TO MULTIPLY 5 DIGITS X 5 DIGITS AND 29.9 MS. FOR 10 DIGITS. THIS ASSUMES THAT THE DIGITS OF THE MULTIPLIER HAVE AN AVERAGE VALUE OF 4.5. THIS ROUTINE IS ESPECIALLY ADVANTAGEOUS FOR SMALL FACTORS. IT GIVES ONLY A SLIGHT ADVANTAGE OVER OTHER ROUTINES ON LARGE FACTORS. 1401 SYSTEM

1401-03.0.010 SQUARE ROOT SUBROUTINE
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.010

AUTHOR...RICHARD D. BARKER
ITEK CORPORATION
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DIRECT INQUIRIES TO AUTHOR

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CONTINUED FROM PRIOR COLUMN--

THIS PROGRAM WILL CALCULATE THE SQUARE ROOT OF ANY SIX-DIGIT NUMBER. 600 POSITIONS ARE REQUIRED TO STORE THE PROGRAM. 403 OF THESE POSITIONS ARE USED TO STORE THE DIVIDE SUBROUTINE. 1401 - ANY MODEL

1401-03.0.011 CALCULATE NUM. OF DAYS
BETWEEN TWO DATES SUBROUTINE /DTALC/
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.011

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THIS SUBROUTINE CALCULATES THE NUMBER OF CALENDAR DAYS BETWEEN TWO DATES PROVIDING ACCURATE ACCOUNTING FOR LEAP YEAR DAY. SOURCE LANGUAGE SPS. DATES MAY BE IN SEPARATE ADJACENT CENTURIES, BUT CANNOT BE MORE THAN 199 YEARS AND 365 DAYS APART. 395 POSITIONS PLUS 24 POSITIONS FOR EACH TIME A SUBROUTINE IS USED. 1401-ANY MODEL, NO SPECIAL FEATURES ARE REQUIRED.

1401-03.0.013 E TO THE X AND E TO THE -X
SUBROUTINE /FIXED POINT/
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.013

AUTHOR...JOSEPH J. OTT
U. S. DEPT. OF COMMERCE
BUREAU OF PUBLIC ROADS
WASHINGTON 25, D. C.

DIRECT INQUIRIES TO AUTHOR

TO PROVIDE A SUBROUTINE FOR DEVELOPING CO-LOGARITHMS TO THE BASE E. HASTINGS APPROXIMATIONS FOR DIGITAL COMPUTERS APPROXIMATELY 1,200 POSITIONS OF CORE STORAGE. IBM 1401 WITH 4,000 OR MORE POSITIONS OF CORE STORAGE AND MULTIPLY-DIVIDE, HIGH-LOW-EQUAL COMPARE, AND INDEXING FEATURES.

1401-03.0.014 SQUARE ROOT SUBROUTINE USING
ODD INTEGER METHOD
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.014

AUTHOR...BURR PRESTON
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DIRECT INQUIRIES TO AUTHOR

THIS GENERALIZED, CLOSED SUBROUTINE EXTRACTS THE SQUARE ROOT OF ANY NON-NEGATIVE NUMBER. IF THE ARGUMENT IS NEGATIVE, THE SQUARE ROOT OF THE ABSOLUTE VALUE OF THE ARGUMENT IS GENERATED, AND CONTROL TRANSFERS TO THE MAIN PROGRAM VIA AN ERROR RETURN. THE ARGUMENT SIZE IS VARIABLE AND LIMITED ONLY BY AVAILABLE CORE. THE ROOT CONTAINS HALF AS MANY DIGITS AS THE ARGUMENT. AN EXTREMELY GENERAL AND EASY TO USE LINKAGE ALLOWS THE PROGRAMMER TO HAVE NO KNOWLEDGE OF THE WORK AREAS OR SYMBOLIC LABELS USED BY THE SUBROUTINE. 285 POSITIONS ARE REQUIRED FOR A 10 DIGIT ARGUMENT. IN GENERAL, 255 & 3L POSITIONS ARE REQUIRED FOR AN ARGUMENT OF LENGTH L. ADVANCED PROGRAMMING /INDEX REGISTERS, MOVE RECORD, STORE A AND B REGISTERS/, HIGH-LOW-EQUAL COMPARE, AND MODIFY ADDRESS. THE LATTER TWO FEATURES MAY BE ELIMINATED BY MINOR PROGRAM MODIFICATIONS.

1401-03.0.015 SQUARE ROOT ROUTINE
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.015

AUTHOR...M. J. KENNY
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DIRECT INQUIRIES TO AUTHOR

A CLOSED SPS SQUARE ROOT ROUTINE USING NO SPECIAL FEATURES AND ONLY 262 POSITIONS OF CORE. OPERATES ON ANY 1401. EXECUTION TIME ESTIMATED AT 20 TO 30 MILLISECONDS DEPENDING ON THE SUM OF DIGITS IN RADICAND. METHOD OF SUCCESSIVE SUBTRACTIONS BASED ON FORMULA S/N/ EQUALS /N.N & N//2. FIXED POINT ARITHMETIC GIVING A SIX SIGNIFICANT DIGIT ANSWER. RANGE, LARGEST NUMBER IS 9999888888888888, IRRESPECTIVE OF WHERE DECIMAL POINT IS LOCATED IN THE NUMBER. ROUTINE HAS BEEN USED ON SAMPLE PROBLEMS AND A WIDE RANGE OF CUSTOMER DATA.

1401-03.0.016 A CLOSED SUBROUTINE FOR THE
COMPLETE SOLUTION OF QUADRATIC EQUATIONS ON THE IBM 1401
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.016

AUTHOR...E. FLINN
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HOUSTON 2 TEXAS

DIRECT INQUIRIES TO AUTHOR

THE PURPOSE OF THE SUBROUTINE IS THE SOLUTION OF QUADRATIC EQUATIONS OF THE FORM PLUS OR MINUS A TIMES X SQUARE PLUS PLUS OR MINUS B TIMES X PLUS PLUS OR MINUS C EQUALS 0.

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THE MINIMUM MACHINE REQUIREMENTS ARE A BASIC 1.4K 1401 CARD OR TAPE SYSTEM, 554 CORE STORAGE POSITIONS AND THE MULTIPLY AND DIVIDE SPECIAL FEATURE.

1401-03.0.019 A SQUARE ROOT SUBROUTINE FOR THE 1401 USING NORMAL EXTRACTION METHOD
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-03.0.019

AUTHOR...GEORGE F. NARDIN

DIRECT INQUIRIES TO...
DIANN C. HANSEN
IBM CORP.
340 MARKET STREET
SAN FRANCISCO, CALIFORNIA

THE PURPOSE OF THIS WRITEUP IS TO PRESENT A FLEXIBLE SUBROUTINE FOR TAKING THE SQUARE ROOT OF ANY SIZE NUMBER USING THE NORMAL EXTRACTION METHOD. DOES NOT REQUIRE MULTIPLY-DIVIDE AND CAN BE USED WITH /METHOD I/ OR WITHOUT /METHOD II/ ADVANCED PROGRAMMING. METHOD I REQUIRES 183 POSITIONS OF CORE AND METHOD II REQUIRES 254 POSITIONS OF CORE. THE SAMPLE PROGRAM INCLUDED IN THE WRITEUP IS FOR A 14 DIGIT RADICAND WITH A 7 DIGIT ROOT.

THE WRITEUP ALSO INCLUDES EXPLANATION OF TERMINOLOGY USED IN THE SUBROUTINE, COMMENTS ON HOW TO ADJUST TO ANY SIZE RADICAND, A CHART OF HOW THE METHOD ACTUALLY WORKS, FLOW CHARTS, SPS SOURCE DECKS, PROGRAM DECKS AND LISTINGS OF TEST DATA AND RESULTS. 1401-ANY SIZE, METHOD I-ADVANCED PROGRAMMING-METHOD II-NO ADDITIONAL FEATURES.

1401-03.0.020 FIXED POINT SQUARE ROOT SUBROUTINE
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-03.0.020

AUTHOR...MR. S. NORDIN
IBM SVENSKA AKTIEBOLAG
NORDENFLYCHTSVAGEN 7C
STOCKHOLM 30, SWEDEN

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THIS SUBROUTINE WILL COMPUTE THE SQUARE ROOT OF THE ABSOLUTE VALUE OF A FIXED POINT NUMBER OF ARBITRARY LENGTH /1-20 DIGITS/. THE RESULT WILL CONTAIN ONE DIGIT MORE THAN THE ARGUMENT, AND THE MAXIMUM ERROR IS LESS THAN FIVE /5/ IN THE LAST DIGIT. 1401-ANY MODEL EQUIPPED WITH MULTIPLY-DIVIDE AND ADVANCED PROGRAMMING FEATURES. WRITTEN IN SPS.

1401-03.0.021 SINE-COSINE SUBROUTINE
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-03.0.021

AUTHOR...E.B. WEIDNER
CAPE COMPUTER FACILITY
RCA, MISSILE TEST PROJECT
BLDG. 2-1655, MU 574C
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DIRECT INQUIRIES TO AUTHOR

TO CALCULATE SINE OR COSINE VALUES FROM RADIAN. 4K 1401 WITH NC SPECIAL FEATURES.

1401-03.0.022 BINARY AUTOMATIC MULTIPLY SUBROUTINE /BAMS/
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-03.0.022

AUTHOR...MR. CARL PORTER
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134 CAMBRIDGE STREET,
CAMBRIDGE 41, MASS.

DIRECT INQUIRIES TO AUTHOR

TO PROVIDE A MULTIPLY SUBROUTINE WHICH WOULD REQUIRE A MINIMUM OF CORE STORAGE AND ALLOW FLEXIBILITY. THIS SUBROUTINE MAY BE INSERTED IN A PROGRAM EITHER AS A CLOSED ROUTINE OR OPEN ROUTINE, AND HANDLE MULTIPLICATIONS FROM A 1X1 TO 20X20 /OR GREATER/ WITHOUT LIMITATIONS. THIS METHOD WAS DEEMED PREFERABLE OVER THE EXISTING MULTIPLY AND /2/ DUE TO ITS COMPLETE FLEXIBILITY, EASE OF UNDERSTANDING, SPEED AND LESS CORE STORAGE REQUIREMENTS. NO SIGN CONTROL IS PROVIDED, SINCE MOST BUSINESS APPLICATIONS DO NOT REQUIRE SIGN CONTROL. SIGN CONTROL MAY BE INITIATED IN THE MAIN PROGRAM WITH LITTLE EFFORT. THIS PROGRAM REQUIRES 94 POSITIONS OF STORAGE FOR A 1X1 TO 227 POSITIONS FOR A 20X20 MULTIPLICATION. 1401 CARD SYSTEM WITH HIGH-LOW-EQUAL FEATURE. THIS PROGRAM IS WRITTEN IN SPS LANGUAGE.

1401-03.0.025 FAST DIVIDE SUBROUTINE FOR 1401/1440/1460
AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-03.0.025

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THIS PROGRAM HAS BEEN DESIGNED TO ACCOMPLISH DIVISION, FOR MACHINES WITHOUT THE MULTIPLY-DIVIDE HARDWARE, IN THE SHORTEST POSSIBLE AMOUNT OF TIME. THE PROGRAM PRINTS OUT THE DIVIDEND, DIVISOR, QUOTIENT AND REMAINDER. THE DIVIDEND AND THE DIVISOR CAN BE OF UNLIMITED SIZE EXCEPT THAT THE DIVIDEND CANNOT BE SMALLER THAN THE DIVISOR. THE ARITHMETIC IS FIXED POINT. THE ONLY SPECIAL FEATURE REQUIRED IS THE HIGH-LOW-EQUAL COMPARE FEATURE ON THE 1401. THE 1440 AND 1460 REQUIRE NO SPECIAL

CONTINUED FROM PRIOR COLUMN--

FEATURES. THE PROGRAM REQUIRES 399 POSITIONS OF CORE FOR A 7 PLACE DIVIDEND AND A 3 PLACE DIVISOR. THE PROGRAM IS WRITTEN IN AUTOCCOR.

1401-03.0.027 SQUARE ROOT SUBROUTINE
AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-03.0.027

AUTHOR...MR. HAROLD M. GAY, JR.
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UNIVERSITY OF OKLAHOMA MEDICAL CENTER
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DIRECT INQUIRIES TO AUTHOR

WILL COMPUTE SQUARE ROOT OF 20-DIGIT INTEGER TO 10-DIGIT ACCURACY. ODD INTEGER METHOD 20-DIGIT ARGUMENT- 10-DIGIT RESULT. STORAGE REQUIREMENTS-237 STORAGE POSITIONS. EQUIPMENT SPECIFICATIONS-MOVE RECORD, MODIFY ADDRESS, STORE B ADDRESS REGISTER, AND INDEX REGISTERS. MAY BE RE-WRITTEN FOR OTHER MACHINE CONFIGURATIONS. EXECUTION TIME VARIES FROM 77.4 MS. /ALL ZEROS/ TO 175.2 MS. /ALL NINES/.

1401-03.0.028 MULTIPLY SUBROUTINE /130 POSITION/
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-03.0.028

AUTHOR...D.T. MOELLER
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CHICAGO - WEST /097/
7321 W. LAKE ST.
RIVER FOREST, ILL.

DIRECT INQUIRIES TO AUTHOR

THIS IS A MULTIPLY SUBROUTINE FOR THE 1401 WHICH IS FASTER THAN THE STANDARD MPY I SUBROUTINE AND WHICH REQUIRES A MINIMUM AMOUNT OF CORE STORAGE - 130 POSITIONS. MACHINE CONFIGURATION- THIS SUBROUTINE REQUIRES THE ADVANCED PROGRAMMING SPECIAL FEATURE. EXCEPT FOR THIS REQUIREMENT, IT CAN BE USED ON ANY SIZE 1401 SYSTEM, WITH ANY COMPLEMENT OF INPUT/OUTPUT EQUIPMENT AND SPECIAL FEATURES.

THIS SUBROUTINE PERFORMS ITS MULTIPLICATION FUNCTION BY SUCCESSIVE ADDITION TO THE PRODUCT AREA. STARTING WITH THE UNITS POSITIONS OF THE MULTIPLIER, THE SUBROUTINE SUBTRACTS ONE FROM THE MULTIPLIER EACH TIME THAT THE MULTIPLICAND IS ADDED UNTIL THE MULTIPLIER DIGIT IS REDUCED TO ZERO. AS EACH SUCCESSIVE DIGIT OF THE MULTIPLIER IS USED, THE PARTIAL PRODUCT IS SHIFTED ONE POSITION RIGHT. THE FINAL PRODUCT IS ALWAYS RIGHT-ADJUSTED IN THE PRODUCT AREA AT THE COMPLETION OF THE SUBROUTINE. SOURCE LANGUAGE- THIS SUBROUTINE IS WRITTEN IN SPS IN ORDER TO ALLOW ITS INCLUSION IN EITHER AN SPS PROGRAM OR AN AUTOCCOR PROGRAM /THROUGH USE OF THE ENT SPS COMMAND/.

1401-03.0.029 AUTOCODER MULTIPLY-DIVIDE MACRO
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-03.0.029

AUTHOR...R.T. STEFFANSON
PCTLATCH FORESTS, INC.
LEWISTON, IDAHO

DIRECT INQUIRIES TO AUTHOR

TO PROVIDE A HARDWARE COMPATIBLE MULTIPLY-DIVIDE CAPABILITY FOR 1401 MACHINES NOT EQUIPPED WITH MULTIPLY-DIVIDE SPECIAL FEATURE. WITH MINOR RESERVATIONS, IS A MACRO-DUPLICATE OF THE 1401 MULTIPLY-DIVIDE SPECIAL FEATURE. STORAGE REQUIREMENTS- MULTIPLY 285 POSITIONS. DIVIDE 415 POSITIONS. EQUIPMENT SPECIFICATIONS- INDEX REGISTERS, STORE ADDRESS REGISTERS. ASSEMBLY REQUIRED FOR 1401 AUTOCODER SYSTEM WITH 4K 1401, 4 TAPE UNITS, 1402 READER, 1403 PRINTER, ADVANCED PROGRAMMING, AND HI-LO-EQUAL COMPARE. LANGUAGE- AUTOCCOR. AN ASSEMBLED VERSION IS USEABLE WITH FARGO.

1401-03.0.030 LOOK-UP - BINARY TABLE LOOK-UP MACRO
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-03.0.030

AUTHOR...J. V. VILLALOBOS

DIRECT INQUIRIES TO...

G. VAN DE BLANKEVOORT
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1645 W. VALENCIA DRIVE
FULLERTON, CALIF.

THIS IS A TABLE LOOK-UP MACRO FOR 1401 AUTOCODER ASSEMBLIES OPTIMIZED BY USING THE BINARY TECHNIQUE. GIVEN AN INDEXED TABLE OF SEQUENCED ITEMS, IT SEARCHES FOR AN EQUAL ENTRY AND EXITS TC A FOUND OR NOT FOUND ADDRESS ACCORDINGLY. IF FOUND, INDEX REGISTER IS PROPERLY SET. MACHINE REQUIREMENTS- MODIFY-ADDRESS, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE AND ADVANCED PROGRAMMING FEATURES. MACRO USES 177 CORE POSITIONS. IT CAN HANDLE ANY NUMBER OF TABLE ENTRIES THROUGH 4096 AND ANY SIZE ENTRY THROUGH 999. NO LINEAR COMPARES ARE USED AND THE MAXIMUM NUMBER OF COMPARES NEEDED TO FIND ANY ITEM IS TWELVE.

1401-03.0.034 BINARY TABLE SEARCH TECHNIQUE USING INDEX REGISTERS ON THE 8K-16K 1401
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-03.0.034

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Contributed Programs

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DIRECT INQUIRIES TO AUTHOR

THIS IS A WRITTEN ARTICLE WHICH WAS DESIGNED TO FAMILIARIZE THE INQUIRER WITH THIS TECHNIQUE AND ALLOW HIM/HER TO ADAPT THIS TECHNIQUE TO HIS/HER SPECIFIC NEED. A SAMPLE PROGRAM DECK AND PROGRAM LISTING WILL BE SENT TO THE INQUIRER UPON REQUEST ALONG WITH THE WRITTEN ARTICLE. THIS METHOD WAS CHOSEN ABOVE ALL OTHERS BECAUSE IT IS EXTREMELY RAPID, EASY TO PROGRAM, AND VERY CONSERVATIVE OF CORE. THE ONLY RESTRICTION TO THIS TECHNIQUE IS THE SIZE OF THE TABLE WHICH MAY BE PLACED IN CORE STORAGE, WHICH IS A FUNCTION OF THE SIZE OF CORE STORAGE. STORAGE REQUIREMENTS-- ANY IBM 1401 OR 1460 WITH 8K OR LARGER MEMORY. EQUIPMENT SPECIFICATIONS-- 1401 8-16K WITH INDEXING... CARD READER... PRINTER... ADDRESS MODIFICATION FEATURE... HI-LO-EQUAL COMPARE FEATURE... /THIS TECHNIQUE MAY BE ADAPTED TO A 4K OR LESS 1401 BY USING MODULUS 4 ARITHMETIC./ THE SAMPLE DEMONSTRATION PROGRAM IS WRITTEN IN S.P.S. LANGUAGE AND THE OBJECT DECK IS CONDENSED. THE RUNNING TIME IS DEPENDENT UPON THE TYPE OF OPERATION TO BE DONE USING THIS TECHNIQUE. AS FAR AS INFORMATION RETRIEVAL TIME, THE TECHNIQUE IS EXTREMELY RAPID.

1401-03.0.036 AUTOCODER SEARCH BINARY
SEARCH MACRO
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-03.0.036

AUTHOR...R.T. STEFFANSON
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DIRECT INQUIRIES TO AUTHOR

BINARY SEARCH IS A HIGHLY EFFICIENT METHOD OF TABLE LOOK-UP AND HAS NOTHING TO DO WITH COLUMN BINARY OR BINARY ARITHMETIC. THE SEARCH MACRO GENERATES AN OPEN SUBROUTINE TO CONDUCT A BINARY SEARCH OF A TABLE. SEARCH DOES NOT SET UP THE TABLE, IT MERELY SEARCHES THE TABLE AND EXITS TO THE NEXT SEQUENTIAL INSTRUCTION IF THE DATA RECORD IS MATCHED, OR EXITS TO AN ADDRESS SUPPLIED AS A PARAMETER IF THE DATA IS NOT MATCHED. INDEX REGISTER 3 CONTAINS THE ADDRESS OF THE TABLE ENTRY WHICH COMPARED EQUAL. EMPHASIS IS ON EASE OF USE. SEARCH USES A MACRO-GENERATED ADDRESS TABLE TO DIVIDE THE TABLE OF ENTRIES INTO SUCCESSIVELY SMALLER HALVES AND DOES NOT REQUIRE THE MULTIPLY-DIVIDE SPECIAL FEATURE. ALL ENTRIES MUST BE OF SAME LENGTH AND IN ASCENDING SEQUENCE. SIZE AND NUMBER OF ENTRIES IN THE TABLE IS RESTRICTED ONLY BY CORE STORAGE AVAILABLE. STORAGE REQUIREMENTS-- VARIES. TYPICAL REQUIREMENTS ARE 107 POSITIONS FOR 31 ENTRY TABLE, 149 POSITIONS FOR 4095 ENTRY TABLE, 8 ADDITIONAL POSITIONS IF MODIFY ADDRESS IS NOT AVAILABLE. EQUIPMENT SPECIFICATIONS-- ADVANCED PROGRAMMING, HI-LO-EQUAL COMPARE. ASSEMBLY REQUIRES 1401 AUTOCODER SYSTEM. LANGUAGE-- AUTOCODER.

1401-03.0.041 1401/1460 SIMULTANEOUS
MULTIPLY DIVIDE SUB-ROUTINE
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-03.0.041

AUTHOR...MR. E.D. SPRAKER
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THIS PROGRAMMED SUB-ROUTINE PROVIDES THE ABILITY TO MULTIPLY AND DIVIDE SIMULTANEOUSLY IN ONE OPERATION WITH ALGEBRAIC SIGN CONTROL AND DECIMAL CONTROL UP TO FIVE ADDITIONAL PLACES. BOTH THE MULTIPLICATION AND DIVISION IN ANY COMBINATION IS ACCOMPLISHED IN APPROXIMATELY HALF THE TIME IT TAKES TO USE TWO SEPARATE MULTIPLY AND DIVIDE ROUTINES. THIS ROUTINE ALLOWS USE OF EITHER MULTIPLICATION, OR DIVISION OR THE COMBINATION WITH COMPLETE LINKAGE TO USERS PROGRAM. IT PROVIDES FOR THE MULTIPLICAND, DIVISOR AND MULTIPLIER/DIVIDEND TO BE UP TO 10 POSITIONS EACH AND SUPPLIES A 20 POSITION SIGNED ANSWER AND 10 POSITION REMAINDER. USES LESS THAN 260 POSITIONS OF ANY 1401-1460 WITH ADVANCED PROGRAMMING.

1401-03.0.043 1401/1440 MORDIMER-MULTIPLY
OR DIVIDE UTILITY PROGRAM
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-03.0.043

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DIRECT INQUIRIES TO AUTHOR

MORDIMER IS A PROGRAM THAT WILL MULTIPLY OR DIVIDE AND GIVE IMMEDIATE RESULTS. QUANTITIES OF VARYING LENGTHS ARE PROCESSED BY USING CONVENTIONAL MULTIPLY AND DIVIDE SUBROUTINES. START INPUT DATA CARD IN COLUMN 1 AND PUNCH ANY COMBINATION OF TWO QUANTITIES SEPARATED BY AN X FOR MULTIPLICATION OR A / FOR DIVISION. THE FIRST QUANTITY CAN BE UP TO 11 DIGITS, THE SECOND UP TO 9 DIGITS. THE INPUT AND RESULTS FOR EACH CARD ARE PRINTED ON ONE LINE. DATA CARD INPUT 222/11 GIVES IMMEDIATE PRINTED OUTPUT-- 222 / 11 EQUALS 20 REMAINDER 02. DATA CARD TWO 123456789X12345678 PRINTS--
123456789 X 12345678 EQUALS 1524157763907942. CARD THREE 12345678901/9787 PRINTS-- 1234567890 / 9787 EQUALS 1261436 REMAINDER 4769, ETC. PROGRAM IS USEFUL IN SETTING UP OR CONFIRMING TEST DATA COMPUTATIONS, ESTABLISHING DISK ADDRESS CONVERSION ROUTINES, AND PERFORMING ALL INITIAL PROVING CALCULATIONS WHICH ARE USUALLY DONE BY HAND OR WITH A COMPTONETER. HALF-ADJUSTING AND DECIMAL ALIGNMENT MUST STILL BE DONE MANUALLY. PROGRAM COULD ALSO BE USED FOR ON-THE-SPOT DEMOS. AUTOCODER, 1401/1440, LESS THAN 1.4K, NO SPECIAL FEATURES REQUIRED.

1401-03.0.044 TRIGONOMETRIC SUBROUTINES
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-03.0.044

B-1401

CONTINUED FROM PRIOR COLUMN--

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THIS PACKAGE IS DESIGNED TO PERFORM THE BASIC TRIGONOMETRIC FUNCTIONS. THE INCLUDED CLOSED SUBROUTINES AND THEIR STORAGE REQUIREMENTS ARE AS FOLLOWS-- DEGREES TO RADIANS /125/, RADIANS TO DEGREES /145/, SQUARE ROOT /144/, ARCTAN-ARCCOT /348/, ARCSIN-ARCCOS /484/, SIN-COS-TAN-COTAN /627/. IF ONLY ANGLES LESS THAN 90 DEGREES ARE TO BE USED AND THE TAN AND COT ARE NOT NEEDED, THE SIN-COS SUBROUTINE CAN BE REDUCED FROM 627 TO 262 CHARACTERS. HASTINGS APPROXIMATIONS USED FOR TRIGONOMETRIC FUNCTIONS, EXCEPT FOR THE SIN-COS WHICH USES A SERIES, WILL ACCEPT ANY POSITIVE ANGLE LESS THAN TEN RADIANS. ACCURACY TO SEVEN DECIMAL PLACES OR ONE-TENTH OF A SECOND FOR ANGULAR MEASURE. SQUARE ROOT OF A NINETEEN DIGIT NUMBER WILL YIELD TEN DIGITS. STORAGE REQUIREMENTS OF THE COMBINED PACKAGE -- 1,493 CHARACTERS. EQUIPMENT SPECIFICATIONS-- ADVANCED PROGRAMMING, MULTIPLY-DIVIDE, HIGH-LOW-EQUAL COMPARE. WRITTEN IN S.P.S. THE COMBINED PACKAGE USES COMMON FIELDS, THEREBY REQUIRING LESS STORAGE THAN THE TOTAL OF THE INDIVIDUAL SUBROUTINES.

1401-03.0.045 AUTOCODER DECISION TABLE
TRANSLATOR

AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-03.0.045

AUTHOR...E.R. HARRIS

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E.R. HARRIS, IBM CORP., 1001 WHITAKER ST., SAVANNAH, GA.

A SUBROUTINE AND ASSOCIATED TECHNIQUE. THE TECHNIQUE IS FOR WRITING LIMITED ENTRY DECISION TABLES IN AUTOCODER IN A FORMAT CONGRUOUS WITH STANDARD DECISION TABLE FORMAT. THE SUBROUTINE WILL EXECUTE THE DECISION TABLE, AND IS WRITTEN IN AUTOCODER. MACHINE REQUIREMENTS ARE A 1401/1440/1460 WITH INDEX REGISTERS AND STORE ADDRESS REGISTER AND MODIFY ADDRESS INSTRUCTIONS. THIS SUBROUTINE AND TECHNIQUE, AS WELL AS PROVIDING DIRECT TRANSLATION OF DECISION TABLES INTO AUTOCODER, AUGMENTS DOCUMENTATION CLARITY, FACILITATES MODULAR PROGRAMMING, AIDS DEBUGGING, AND PERMITS LARGE SCALE CHANGES OF PROGRAM LOGIC WITHOUT RE-ASSEMBLY OR EXTENSIVE PATCHING.

1401-03.0.046 CALOG, IBM 1401 CALOG
SUBROUTINE

*N

AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-03.0.046

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BY A PROCESS OF ITERATION THE NUMBER IS BROUGHT TO A PRODUCT OF CORRESPONDING DIFFERENT FACTORS. THESE FACTORS ARE CHOSEN IN SUCH A MANNER THAT THE MULTIPLICATIONS AND DIVISIONS CAN BE REPLACED BY SIMPLE ADDITIONS. EQUIPMENT REQUIREMENTS-- 21 POSITIONS MAIN PROGRAM IN CONNECTICA WITH CALOG SUBROUTINE. 160 INSTRUCTIONS CALOG SUBROUTINE, 1247 POSITIONS /MACHINES WITHOUT MA-FEATURE/, 1119 POSITIONS /MACHINES WITH MA-FEATURE/. MAXIMUM LENGTH OF NUMBER 20 POSITIONS. MAXIMUM ACCURACY /EXACT/ OF MANTISSA 20 POSITIONS. BEFORE ASSEMBLING ,,EXACT,, /DESIRED ACCURACY OF LOGARITHM/ MUST BE DEFINED BY THE USER. THE AUTOCODER PROGRAM IS RELOCATABLE. THE PURPOSE OF CALOG IS TO PROVIDE A FAST CALCULATION OF LOGARITHMS. THE HIGHER THE DESIRED ACCURACY OF LOGARITHMS, THE MORE TIME AND COMPUTATION EFFORT IS SAVED BY THIS SUBROUTINE.

1401-05.0.001 MIP /MATRIX INVERSE PROGRAM
FOR THE IBM 1401/ /CARD/
AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-05.0.001

AUTHOR...HARRY CASTELLUCCI
FLUID DYNAMICS LABORATORY
LOCKHEED-CALIFORNIA COMPANY
A DIV. OF LOCKHEED AIRCRAFT CORP.
BURBANK, CALIFORNIA

DIRECT INQUIRIES TO AUTHOR

TO INVERT AN /N/ BY /N/ MATRIX USING FLOATING POINT ARITHMETIC. DATA FORMAT SIX SIGNIFICANT FIGURES. MULTIPLY - DIVIDE FEATURES, INDEX REGISTERS, AND HI-LO-EQUAL COMPARE.

1401-05.0.003 MULTIPLE SIMULTANEOUS
EQUATION AND MATRIX INVERSION PROGRAM
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-05.0.003

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UP TO 37 SIMULTANEOUS EQUATIONS ARE SOLVED. MATRICES UP TO 38 X 38 MAY BE INVERTED AS WILL BE THE COEFFICIENT MATRIX OF THE SIMULTANEOUS EQUATIONS. ALL CALCULATIONS ARE CARRIED OUT IN EIGHT-DIGIT PRECISION. NO ROUNDING IS PERFORMED.

Contributed Programs

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THE PROGRAM REQUIRES THE HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE AND ADVANCED PROGRAMMING FEATURES AND 4, 8, 12 CR 16K POSITIONS OF CORE STORAGE. WRITTEN IN AUTOCODER.

1401-05.0.005 SOLUTION TO SIMULTANEOUS LINEAR EQUATIONS

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-C5.0.005

AUTHORS..F. A. CHRISTOPHER DR. T.S. KASHYAP

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TO SOLVE N LINEAR EQUATIONS IN N UNKNOWNNS USING FIXED POINT ARITHMETIC ON THE 1401. N MUST BE LESS THAN OR EQUAL TO 19. THE GAUSSIAN ELIMINATION METHOD IS USED TO SOLVE FOR THE UNKNOWNNS. THE PROGRAM WAS WRITTEN USING 20 POSITION DATA FIELDS WITH THE DECIMAL UNDERSTOOD TO BE IN THE CENTER. THE FIELD WAS MADE THIS LARGE IN ORDER TO MINIMIZE ROUND OFF AND TRUNCATION ERRORS. MACHINE CONFIGURATION- THE PROGRAM IS WRITTEN IN SPS FOR A Tbc TAPE 1401 WITH THE FOLLOWING FEATURES- ADVANCED PROGRAMMING, HI-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, AND SENSE SWITCHES. SOURCE LANGUAGE- WRITTEN IN SPS

1401-05.0.006 SOLUTION OF BANK COST ALLOCATION BETWEEN DEPARTMENTS USING SIMULTANEOUS LINEAR EQUATIONS

AVAILABLE 2ND QUARTER 1965
SPECIFY FILE NUMBER 1401-C5.0.006

AUTHOR...MR. KEITH KASSEL

IBM CORP.
MARKET DEVELOPMENT
BANKING AND FINANCE
3424 WILSHIRE BOULEVARD
LOS ANGELES, CALIF.

DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM PACKAGE IS DESIGNED TO PROVIDE A READY SOLUTION TO THE PROBLEM OF BANK DEPARTMENTAL INTERACTIONS. THE FIRST PROGRAM CREATES THE INPUT FOR THE SECOND BY TAKING DECIMAL INPUT, CONVERTING IT TO FLOATING POINT AND PUNCHING IT IN THE REQUIRED FORMAT. THE SECOND PROGRAM SOLVES A SYSTEM OF LINEAR EQUATIONS TO DETERMINE THE RESULT OF THE DEPARTMENTAL INTERACTIONS. THE THIRD PROGRAM CONVERTS THE RESULTS OF THE LINEAR EQUATION SOLUTION FROM FLOATING POINT TO DECIMAL AND PRINTS THEM OUT IN A DEPARTMENTAL EXPENSE LISTING. THIS PACKAGE IS WRITTEN IN AUTOCODER AND REQUIRES AN 8K 1401, WITH HIGH-LOW-EQUAL-COMPARE, AND ADVANCED PROGRAMMING, 1402, 1403 AND TWO TAPE UNITS.

1401-06.0.001 SEASONAL ADJUSTMENT OF MONTHLY TIME SERIES

AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-06.0.001

AUTHOR...FABIO TOMCHINSKY

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DIRECT INQUIRIES TO AUTHOR

COMPUTES A PRELIMINARY SEASONALLY ADJUSTED SERIES FOLLOWING THE CONVENTIONAL RATIO TO MOVING AVERAGE TECHNIQUE. THEN IT UTILIZES A WEIGHTED FIFTEEN-MONTH MOVING AVERAGE AS THE ESTIMATE OF THE TREND CYCLE CURVE USED TO OBTAIN THE FINAL SEASONALLY ADJUSTED SERIES. COMPUTES THE IRREGULAR, CYCLICAL AND SEASONAL COMPONENTS. CARD 1401-4K NO SPECIAL DEVICE SHISKIN METHOD. THE PROGRAM HAS BEEN WRITTEN IN SPS. THE PROGRAM WILL HANDLE UP TO 15 YEARS OF MONTHLY DATA WITH ONE DATA CARD FOR EACH YEAR. EACH CARD MUST HAVE INFORMATION FOR ALL 12 MONTHS OF A CALENDAR YEAR.

1401-06.0.002 LINEAR REGRESSION ANALYSIS

AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-06.0.002

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DIRECT INQUIRIES TO AUTHOR

A Tbc PASS 1401 FORTRAN PROGRAM THAT WILL ACCOMMODATE EIGHT INDEPENDENT VARIABLES ON A 1401 8K SYSTEM. EASILY MODIFIED TO INCREASE THE NUMBER OF VARIABLES FOR USE ON A LARGER SYSTEM 1401 8K.

1401-06.0.003 MULTIPLE REGRESSION PROGRAM

AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-C6.0.003

AUTHORS..FEDERAL RESERVE BANK OF KANSAS CITY

RESEARCH DEPARTMENT
FEDERAL RESERVE BANK OF KANSAS CITY
FEDERAL RESERVE P. C. STATION
KANSAS CITY 6, MISSOURI

A MULTIPLE REGRESSION ANALYSIS DESIGNED TO HANDLE UP TO 10 VARIABLES. COMPUTES PARTIAL REGRESSION AND STANDARDIZED PARTIAL REGRESSION COEFFICIENTS, STANDARD ERRORS, T VALUES, PARTIAL AND MULTIPLE CORRELATION COEFFICIENTS, AND THE DURBIN WATSON RATIO. MACHINE CONFIGURATION 1401 CARD SYSTEM WITH 8K MEMORY, MULTIPLY-DIVIDE, INDEXING, STORE ADDRESS REGISTER, HI-LO-EQUAL COMPARE, EXPANDED PRINT EDIT.

1401-06.0.004 MULTIPLE LINEAR REGRESSION ANALYSIS

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-06.0.004

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THIS PROGRAM IS DESIGNED TO ACCOMPLISH A REGRESSION ANALYSIS OF UP TO 14 INDEPENDENT VARIABLES ON THE SMALLEST 1401 WITH FORTRAN CAPABILITIES. IT SACRIFICES SPEED AND ELEGANCE TO ACCOMMODATE LARGER PROBLEMS THAN ANY OTHER SUCH PROGRAM NOW AVAILABLE. EASILY MODIFIED BY USER WITH FORTRAN KNOWLEDGE. THE METHOD USED IS LEAST SQUARES AND STATISTICS ARE CALCULATED FOR THE EVALUATION OF OVERALL FIT AND INDIVIDUAL COMPONENTS. DATA FORMAT MAY BE MODIFIED BY USER. REQUIRES 8K 1401 WITH FORTRAN FEATURES. 152 SOURCE STATEMENTS. WRITTEN IN FORTRAN.

1401-06.0.005 MULTIPLE CORRELATION- VARIABLES OF IMPORTANCE DETERMINED /VOID/

AVAILABLE 1ST QUARTER 1965
SPECIFY FILE NUMBER 1401-C6.0.005

AUTHOR...DR. J.R. JOHNSON

INDUSTRIAL ENGINEERING DEPT.
R.J. REYNOLDS TOBACCO CO.
WINSTON-SALEM, N.C.

DIRECT INQUIRIES TO AUTHOR

TO DETERMINE THE ORDER OF IMPORTANCE OF THE INDEPENDENT VARIABLES IN A MULTIPLE CORRELATION PROBLEM, TO FIND THE COEFFICIENTS OF MULTIPLE CORRELATION FOR THE VARIABLES AS THEY ARE INTRODUCED, TO FIND F-TESTS OF SIGNIFICANCE OF THESE COEFFICIENTS, TO FIND THE COEFFICIENTS OF THE REGRESSION EQUATION FOR THE VARIABLES SELECTED, AND /IF DESERVED/ TO CALCULATE PREDICTED VALUES OF THE DEPENDENT VARIABLE. WHERRY-DOCLITTLE METHOD. THIS PROGRAM IS INTENDED TO REPLACE A SIMILAR PROGRAM OF IDENTICAL TITLE DATED JUNE, 1963. UP TO 100 VARIABLES WITH 220 OBSERVATIONS, WHERE THE NUMBER OF OBSERVATIONS MUST EXCEED THE VARIABLES. BY CHANGING THE DIMENSION STATEMENT IN PHASE 1, ONE CAN ADD TWO OBSERVATIONS FOR EVERY VARIABLE NOT NEEDED. STORAGE REQUIREMENTS- 16,000 POSITIONS. MODULUS IS 5 AND MANTISSA IS 8. EQUIPMENT SPECIFICATIONS- IBM 1401, 16K WITH THE FOLLOWING FEATURES- ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, AND MULTIPLY-DIVIDE., THREE TAPE DRIVES., 1402 CARD READER AND PUNCH., 1403 PRINTER., AND HIGH-SPEED SORTER. A CARD REPRCDUCER IS HELPFUL.

1401-06.0.006 CORL-8 THIRTEEN VARIABLE SIMPLE CORRELATION

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-C6.0.006

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CORL8 WILL CORRELATE UP TO THIRTEEN VARIABLES AND PRINT THE CORRELATION COEFFICIENTS ALONG WITH HEADINGS SPECIFIED BY THE USER. THROUGH HEADER CARDS, THE USER SPECIFIES NUMBER OF VARIABLES /12-13/, TITLE OF EACH VARIABLE /FOR IDENTIFICATION ON PRINTED REPORT/, AND DATA CARD LOCATION OF VARIABLES. AN OPTICAL HEADER CARD WILL PRINT UP TO 78 COLUMNS OF INFORMATION AT THE TOP OF THE REPORT. NUMBER OF DATA CARDS CANNOT EXCEED 99,999. IF INPUT DATA IS NOT ON CARDS, THE SPS LANGUAGE SOURCE VARIABLES SHOULD BE REQUESTED, AS MODIFICATIONS WILL BE NECESSARY. MACHINE REQUIREMENTS- IBM 1401 WITH MULTIPLY-DIVIDE, 1402 CARD READER/PUNCH, 1403 PRINTER, 4K CORE STORAGE. SOURCE LANGUAGE- SYMBOLIC PROGRAMMING SYSTEM, SPS.

1401-06.0.007 REGRESSION ANALYSIS COMPUTER PROGRAM

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-C6.0.007

AUTHOR...JCEPH J. OTT

DIRECT INQUIRIES TO..

JOSEPH J. OTT,U.S. DEPARTMENT OF COMMERCE,
BUREAU OF PUBLIC ROADS, WASHINGTON 25, D.C.

TO PROVIDE A PROGRAM FOR THE SOLUTION OF SIMPLE AND MULTIPLE REGRESSION EQUATIONS INVOLVING FROM 2 TO 26 VARIABLES AND FROM 2 TO 9999 OBSERVATIONS.

DATA TO BE ENTERED MUST BE IN 10 DIGIT FORM WITH THE DECIMAL POINT ASSIGNED TO BE BETWEEN THE FIFTH AND SIXTH DIGITS. NO CHECK IS MADE OF THE MATRIX TO SEE IF THERE ARE IDENTICAL ROWS OR COLUMNS. 16000 POSITIONS OF CORE STORAGE. IBM 1401 /OR WITH COMPATIBILITY SWITCH/. ADVANCED PROGRAMMING PACKAGE. FOUR TAPE UNITS.

OPTIONAL PROGRAM MATERIAL - ONE REEL OF TAPE CONTAINING THE SOURCE CARDS FOR PHASES 1, 2 AND 3. THE REEL OF TAPE REQUIRED TO OBTAIN THE OPTIONAL MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH. OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-06.0.008 REGAN - 4K REGRESSION ANALYSIS AND CORRELATION COEFFICIENTS PROGRAM

AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-C6.0.008

AUTHOR...L. E. HANNEMAN

Contributed Programs

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*M

REGAN COMPUTES SIMPLE CORRELATION COEFFICIENTS AND PERFORMS A LINEAR REGRESSION ANALYSIS UTILIZING A MINIMUM AMOUNT OF CORE SPACE. THE PROGRAM HANDLES UP TO ONE HUNDRED OBSERVATIONS, AND ACCEPTS UP TO EIGHT INDEPENDENT VARIABLES AND ONE DEPENDENT VARIABLE. MACHINE CONFIGURATION-- A 4K 1401 WITH ADVANCED PROGRAMMING IS REQUIRED. THE PROGRAM INSTRUCTIONS OCCUPY CORE POSITIONS 0100-3098. THE MATRIX OCCUPIES POSITIONS 3100-3999. POSITIONS 0100-0132 ARE CLEARED BEFORE PRINTING OCCURS. THE SOURCE PROGRAM IS WRITTEN IN 1401 SPS.

*M

OPTIONAL PROGRAM MATERIAL - SOURCE DECKS... ONE-PER-CARD

*M

OBJECT DECK.

*M

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

*M

1401-06-0.009 SEASONAL ADJUSTMENT-CENSUS
METHOD II, X-9 VERSION, 4K, LONG PROGRAM
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-06-0.009

AUTHOR...MR. E.C. CHRIST
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TO ADJUST SEASONALLY MONTHLY TIME SERIES AND TO PROVIDE ADDITIONAL MEASURES AS AIDS TO ANALYZING THE DATA. THE BASIC PROCEDURE MAY BE FOUND IN ELECTRONIC COMPUTERS AND BUSINESS INDICATORS BY JULIUS SHISKIN, PUBLISHED BY THE NATIONAL BUREAU OF ECONOMIC RESEARCH AS OCCASIONAL PAPER 57. THE X-9 VERSION IS GENERALLY DESCRIBED IN BUSINESS CYCLE DEVELOPMENTS, MARCH 1962, PUBLISHED BY THE BUREAU OF THE CENSUS, U.S. DEPARTMENT OF CONGRESS. MAXIMUM OF 15 YEARS OF MONTHLY DATA. EACH YEAR MUST BE COMPLETE, WITH NO MINUS OR ZERO VALUES. MONTHLY VALUES NOT TO EXCEED 6 DIGITS. ANY CONSECUTIVE 12 MONTHS MUST TOTAL LESS THAN 10,000,000. EQUIPMENT SPECIFICATIONS-- 4K, 132 PRINT POSITIONS, CARD SYSTEM, NO SPECIAL FEATURES.

1401-06-0.010 SEASONAL ADJUSTMENT, CENSUS
METHOD II, X-9 VERSION, 4K, SHORT PROGRAM
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-06-0.010

AUTHOR...MR. E.C. CHRIST
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TO SEASONALLY ADJUST MONTHLY TIME SERIES AND TO CHART THE ORIGINAL AND THE SEASONALLY ADJUSTED DATA. THE BASIC PROCEDURE MAY BE FOUND IN ELECTRONIC COMPUTERS AND BUSINESS INDICATORS BY JULIUS SHISKIN, PUBLISHED BY THE NATIONAL BUREAU OF ECONOMIC RESEARCH AS OCCASIONAL PAPER 57. THE X-9 VERSION IS GENERALLY DESCRIBED IN BUSINESS CYCLE DEVELOPMENTS, MARCH 1962, PUBLISHED BY THE BUREAU OF THE CENSUS, U.S. DEPARTMENT OF CONGRESS. MAXIMUM OF 15 YEARS OF MONTHLY DATA. EACH YEAR MUST BE COMPLETE, WITH NO MINUS OR ZERO VALUES. MONTHLY VALUES NOT TO EXCEED 6 DIGITS. ANY CONSECUTIVE 12 MONTHS MUST TOTAL LESS THAN 10,000,000. EQUIPMENT SPECIFICATIONS-- 4K, 132 PRINT POSITIONS, CARD SYSTEM, NO SPECIAL FEATURES.

1401-06-0.011 METHOD OF RECORDING COMPUTER
UTILIZATION AND 3 1401 PROGRAMS TO FACILITATE STATISTICAL ANALYSIS
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-06-0.011

*M

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*M

THIS PROGRAM EXPLAINS IN DETAIL THE BASIC CONCEPTS AND REQUIREMENTS OF A CONSOLE OPERATIONS LOG, SPECIFICALLY ORIENTED TO 1401-1410 SYSTEMS, BUT IS GENERAL ENOUGH TO BE ADAPTED FOR ANY INSTALLATION. TO SUPPLEMENT THE METHOD OUTLINED, THREE 1401 4K PROGRAMS ARE PROVIDED TO ENABLE A MEANS OF ANALYZING THE CARDS PUNCHED FROM THE LOG. EIGHT REPORTS ARE ILLUSTRATED. MACHINE CONFIGURATION--NO SPECIAL FEATURES OR DEVICES ARE USED EXCEPT SENSE SWITCHES AND 132 PRINT POSITIONS. BASIC SYSTEM CONFIGURATION NECESSARY TO UTILIZE PROGRAMS, 4K 1401, 1402 AND 1403. SOURCE LANGUAGE-CODING IS IN BASIC SPS TO ACCOMMODATE THE NON-AUTOCODER USER.

*M

OPTIONAL PROGRAM MATERIAL - SOURCE DECK FOR LOG 1, 2 AND 3.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

*M

*M

1401-06-0.012 ANALYSIS OF VARIANCE, 2 TO
THE N POWER FACTORIAL DESIGN
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-06-0.012

AUTHORS..DR. J. ROBERT JOHNSON, JR.
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WINSTON-SALEM, NORTH CAROLINA

DIRECT INQUIRIES TO AUTHOR

ANALYSIS OF VARIANCE OF DATA FOR A 2 TO THE N POWER FACTORIAL DESIGN. AS GIVEN IN MANUAL OF EXPERIMENTAL STATISTICS BY FREUND, LIVERMORE, AND MILLER, PRENTICE - HALL, 1960. WRITTEN IN FORTRAN. FOR N, THE NUMBER OF FACTORS, 2 LESS THAN N LESS THAN 5. THE NUMBER OF REPLICATIONS MUST BE MORE THAN ONE AND LESS THAN 26. THERE IS AMPLE ROOM IN STORAGE FOR EXPANDING THE LIMITS ON THE RESTRICTIONS. 9300 POSITIONS. MODULUS IS 5, MANTISSA IS 8. EQUIPMENT SPECIFICATIONS - 1401, 12K OR 16K, WITH THE FOLLOWING FEATURES-- ADVANCED PROGRAMMING, HIGH-LOW-EQUAL

CONTINUED FROM PRIOR COLUMN--
COMPARE, AND MULTIPLY-DIVIDE- CARD READER AND PUNCH- 1403
PRINTER.

1401-06-0.013 DATA TRANSFER - PROGRAM
FOR CENSUS METHOD II
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-06-0.013

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THE PROGRAM TAKES THE FINAL SEASONALLY ADJUSTED SERIES GENERATED BY THE 4K 1401 VERSIONS OF CENSUS METHOD II, A SEASONAL ADJUSTMENT PROGRAM, APPLIES A SPENCER FIFTEEN-TERM SMOOTHING FORMULA, AND PUNCHES OUT RESULTS WHICH ARE INPUT FOR THE 16K 1401 PROGRAM TITLED POLYNOMIAL CURVE FIT FOR ECONOMIC ANALYSIS AND FORECASTING, FILE NUMBER 7.0.003. THE SPENCER SMOOTHING IS APPLIED TO ADJUST FOR THE IRREGULAR COMPONENT, THEREBY LEAVING A TREND-CYCLE COMPONENT SERIES FOR FINAL ANALYSIS.

1401-06-0.014 ONE-WAY ANALYSIS OF VARIANCE
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-06-0.014

AUTHOR...M.M. JOHNSON
THE BENCIX CORPORATION
PIONEER-CENTRAL DIVISION
HICKORY GROVE ROAD
DAVENPORT, IOWA

DIRECT INQUIRIES TO AUTHOR

COMPUTATION OF F RATIO, FOR ONE WAY ANALYSIS OF VARIANCE. THE PROGRAM IS DESIGNED FOR BOTH VARIABLE AND CONSTANT SAMPLE SIZES PER COLUMN. THE PROGRAM IS LIMITED TO A MATRIX OF 99 COLUMNS AND 999 ROWS. EQUIPMENT SPECIFICATIONS-- 8K 1401 CARD SYSTEM WITH A 132 POSITION PRINTER, AND STANDARD FORTRAN CONFIGURATION. SOURCE LANGUAGE-- FORTRAN.

1401-06-0.015 TIME SERIES ANALYSIS & DATA
REDUCTION PROGRAM
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-06-0.015

AUTHOR...R.A. KOPP
IBM CORPORATION
PRODUCT FORECASTING
HARRISON, N.Y.

DIRECT INQUIRIES TO AUTHOR

PERFORMS DATA REDUCTION AND SMOOTHING OF TIME SERIES FUNCTIONS BY CLASSIFYING SERIES DATA INTO RUNS OR GROUPS OF POINTS HAVING POSITIVE OR NEGATIVE RATES OF CHANGE OR TREND. REPEATED AVERAGING OF RUNS PRODUCES SMOOTHING AND REDUCES THE NUMBER OF OBSERVATIONS IN A SERIES TO A LEVEL WHERE MAJOR TRENDS CAN BE REASONABLY ISOLATED. USES METHODOLOGY FROM THE PAPER THE ANALYSIS OF ECONOMIC TIME SERIES FOR PROBABILITY FORECASTING AND CONTROL, Z.Z. SZATROWSKI, JULY, 1963. ACCOMMODATES SERIES WITH FIXED OR VARIABLE TIME INTERVALS AND PROVIDES FOR ASSIGNMENT OF CONSTANT OR VARIABLE WEIGHTING FACTORS TO EACH SERIES OBSERVATION. OUTPUT IS ON TAPE AND PRINTER. AUTOCODER PROGRAM USES 8K 1401 WITH FOUR TAPE DRIVES, ADVANCED PROGRAMMING, SENSE SWITCHES, MULTIPLY/DIVIDE, AND 1403 MCC. 2 OR 3.

1401-06-0.016 FIRST AND SECOND DEGREE
ORTHOGONAL CURVE FIT
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-06-0.016

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DIRECT INQUIRIES TO AUTHOR

TO FIT FIRST AND SECOND DEGREE POLYNOMIALS TO SET OF EQUALLY SPACED POINTS AND TO EXTRAPOLATE FOR A SPECIFIED NUMBER OF POINTS. A 16K- 1401, 1402, 1403 /MODEL 2/, MULTIPLY, DIVIDE, HIGH-LOW, EQUAL COMPARE, ADVANCED PROGRAMMING. THIS PROGRAM CAN BE REASSEMBLED FOR A SMALLER MACHINE.

1401-06-0.017 ORTHOGONAL POLYNOMIAL CURVE
SMOOTHING FOR ACTUARIAL DEPRECIATION STUDIES AND TEST OF FIT
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1401-06-0.017

AUTHOR...A. MCFARLANE
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DIRECT INQUIRIES TO AUTHOR

TO SMOOTH A SET OF RETIREMENT RATIOS FOR A CLASS OF DEPRECIABLE PLANT. THE ASSOCIATED SMOOTHED AND OBSERVED RATIOS ARE CALCULATED ALONG WITH THE SMOOTHED AND OBSERVED LIFE TABLES. THE SMOOTHED RESULTS ARE ALSO EXTRAPOLATED BEYOND THE OBSERVED REGION. AN 8K 1401, 1402, 1403 /MODEL 2/, MULTIPLY-DIVIDE, HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, SENSE SWITCHES. THIS ROUTINE CONSISTS OF A CURVE SMOOTHING /SPS/ PROGRAM AND A CORRELATION COEFFICIENT, TEST OF FIT, AND AVERAGE SERVICE LIFE /FORTRAN/ PROGRAM.

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1401-06.0.018 TRADING-DAY ADJUSTMENT FOR
1401 VERSIONS OF CENSUS METHOD II
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-06.0.018

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THIS 8K-1401 FORTRAN PROGRAM IS AN ADAPTION OF THE BUREAU OF THE
CENSUS TRADING-DAY ADJUSTMENT WHICH WILL BE INCLUDED IN THE X-11
VERSION OF CENSUS METHOD II. THE SUBJECT PROGRAM WAS WRITTEN TO
BE COMPLETELY COMPATIBLE AND AUTOMATED WITH THE X-9 AND ORIGINAL
VERSIONS OF CENSUS METHOD II AVAILABLE FROM THE 1401 GENERAL
PROGRAM LIBRARY. SPECIFICALLY, IT TAKES THE ORIGINAL AND FINAL
SEASONALLY ADJUSTED SERIES AS INPUT /BOTH AVAILABLE IN THE FRACPER
CARD FORMAT FROM THE CENSUS METHOD II PROGRAMS MENTIONED ABOVE/.
DEVELOPS THE IRREGULAR COMPONENT., FURTHER DEVELOPS TRADING-DAY
ADJUSTMENT FACTORS FOR EACH MONTH IN A SERIES, ADJUSTS THE
ORIGINAL SERIES FOR TRADING-DAY VARIATIONS., AND PRINTS AND
PUNCHES OUTPUT WHICH BECOME INPUT TO THE SEASONAL ADJUSTMENT
PROGRAMS SO THAT THE VARIOUS MEASURES AND FACTORS CAN BE COMPUTED
AFTER CORRECTION FOR TRADING-DAY VARIATIONS. THE MACHINE
REQUIREMENT IS AN 8K-1401 WITH AT LEAST ONE TAPE DRIVE FOR WHICH
A FORTRAN COMPILER HAS BEEN WRITTEN.

OPTIONAL PROGRAM MATERIAL - SOURCE PROGRAM DECK.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

*M

CONTINUED FROM PRIOR COLUMN--

DIRECT INQUIRIES TO AUTHOR

TO GENERATE OR VERIFY A 1-POSITION CHECK DIGIT FOR A 9-DIGIT
NUMBER - BASED UPON MODULUS 11 - WHOSE DIGITS ARE WEIGHTED BY
VALUES IN GEOMETRIC PROGRESSION. IT CAN BE USED WHERE TIME IS AT
A PREMIUM. STORAGE REQUIREMENTS ARE 365 POSITIONS. NO SPECIAL
1401 FEATURES ARE REQUIRED.
THE TIME CONSUMED IS NO MORE THAN 2.4 MILLISECOND S BASED UPON AN
11.5 MICROSECOND MEMORY CYCLE. FOR A 1460, WITH ITS 6
MICROSECOND MEMORY CYCLE, THE TIME IS NO MORE THAN 1.1
MILLISECOND S. THERE IS ANOTHER SUB-ROUTINE WHICH TAKES TWICE AS
MUCH TIME BUT REQUIRES ABOUT HALF THE STORAGE.

1401-09.2.007 HIGHWAY EARTHWORK QUANTITIES
AND DESIGN DATA
AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-09.2.007

AUTHOR...DAVID CENZER

STATE OF ILLINOIS
DIVISION OF HIGHWAYS
BUREAU OF RESEARCH & PLANNING
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THE PURPOSE OF THE PROGRAM IS TO COMPUTE CUT AND FILL
QUANTITIES, MASS DIAGRAM ORDINATES, AND CRITICAL TEMPLATE
OFFSETS AND ELEVATIONS, FOR SUCH PROJECTS AS HIGHWAYS,
LEVEES, AND CHANNELS, FROM GROUND CROSS SECTIONS EXPRESSED
EITHER BY RODS AND OFFSETS OR BY ELEVATIONS AND OFFSETS,
A PROFILE GRADE LINE, AND A ROADWAY TEMPLATE OF NOT MORE
THAN 20 POINTS ON EACH SIDE OF CENTERLINE. TWO CUT
SLOPES AND THREE FILL SLOPES OF ANY SELECTED RATE OF SLOPE
MAY BE USED. ALL TEMPLATE POINTS ARE DEFINED BY VERTICAL
AND HORIZONTAL OFFSETS FROM THE PRECEDING POINT, SO THAT
THE DIMENSIONS OF ANY POINT MAY BE CHANGED AT ANY CROSS
SECTION STATION WITHOUT AFFECTING THE RELATIVE POSITION OF
OTHER UNCHANGED POINTS ON THE TEMPLATE. THE PROGRAM MAY BE
USED FOR MULTIPLE ROADWAYS SO LONG AS ONE-HALF WIDTH CAN
BE DEFINED BY NOT MORE THAN 20 TEMPLATE POINTS.

IBM 1401 COMPUTER SYSTEM WITH 16K MEMORY.

1401-09.2.015 DESIGN EARTHWORK /CARD/
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-09.2.015

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THIS PROGRAM IS PATTERNED AFTER THE IBM 650 CUT AND FILL
PROGRAM DEVELOPED BY J. W. KIBBEE AND J. W. ROBINSON OF IBM
IN HOUSTON, COMMONLY CALLED THE H841 PROGRAM. A DETAILED
EXPLANATION OF THIS PROGRAM MAY BE FOUND IN THE IBM 650
PROGRAM LIBRARY, FILE NO. 9.2.004. THIS PROGRAM COMPUTES
EARTHWORK QUANTITIES USING ORIGINAL GROUND DATA WITH EITHER
ROADWAY TEMPLATE DATA OR FINAL GROUND REMEASURE DATA. IT
USES THE AVERAGE END AREA FORMULA TO DEVELOP THE VOLUMES.
SLOPE STAKES AT THE CATCH POINTS ARE GIVEN. CUMULATIVE CUT
AND FILL VOLUMES AND THE MASS ORDNATE ARE GIVEN AT EACH
STATION. EQUIPMENT SPECIFICATIONS- USES ADVANCE
PROGRAMMING, PRINT CONTROL ADDITIONAL, EXPANDED PRINT EDIT,
HIGH-LOW-EQUAL COMPARE, SENSE SWITCHES AND MULTIPLY-DIVIDE.

1401-09.2.017 GEOMETRIC COMPUTATION
PROGRAM INCLUDING SPIRAL CURVES
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-09.2.017

AUTHOR...ROBERT B. KEIR

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THIS PROGRAM PROVIDES FOR SOLUTION OF
UNKNOWN S IN A TRAVERSE, INVERSION BETWEEN COORDINATES, AREA
AND CIRCULAR SEGMENT COMPUTATION, FINDING THE STATIONING OR
BEARING AT THE P.O.C. IN HORIZONTAL CURVES, SOLVING FOR
POINTS ON THE SPIRAL OR OFFSET SPIRAL, INTERSECTING LINES
AND SPIRALS, INTERSECTING CIRCULARS WITH SPIRALS. PRIMARY
USES OF PROGRAM INCLUDE BRIDGE AND HIGHWAY DESIGN,
SURVEYING, AND BUILDING CONSTRUCTION. STORAGE
REQUIREMENTS- 12K- ONLY NINE POSITIONS ARE UNUSED.
EQUIPMENT- MULTIPLY/DIVIDE, ADVANCED PROGRAMMING. SENSE
SWITCH REQUIRED FOR DATA CHECK OPTION.

1401-09.2.022 FLOOD PLAIN ANALYSIS PROGRAM
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-09.2.022

AUTHOR...J.R. HAMILTON, JR.

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THIS PROGRAM MAKES THE NECESSARY CALCULATIONS AND EXTENSIONS
FROM BASIC FLOOD PLAIN DATA BY MEANS OF AN ENERGY
BALANCE BETWEEN ANY SUCCESSIVE PAIR OF CROSS SECTIONS. THE
ACCURACY OF A FLOOD PLAIN SURVEY. ACCEPTED ENGINEERING METHODS
ARE EMPLOYED. INPUT-OUTPUT FORMATS, AS WELL AS ALL SUBROUTINES,
ARE IN FIXED POINT NOTATION, WITH FOUR PLACE ACCURACY.
PROGRAM WILL OPERATE ON ANY 4K 1401 WITH HI-LO-EQUAL COMPARE,
ADVANCED PROGRAMMING, AND MODEL 2 1403. SPS SOURCE LANGUAGE.

1401-06.0.019 LOG SCALE VERSUS TIME SCALE
GRAPHICAL PRINTOUT
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-06.0.019

AUTHOR...W.M. ROBBINS

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THIS PROGRAM HAS BEEN WRITTEN TO REPLACE THE S - 5 PHASE OF
THE SEASONAL ADJUSTMENT, CENSUS METHOD II, X-9 VERSION, SHORT
PROGRAM NO. 1401 - 06.0.010. A GRAPHICAL PLOT ON A SINGLE CYCLE
STANDARD LOGARITHMIC SCALE VERSUS A MONTHLY TIME SCALE IS
OBTAINED WHICH ALLOWS THE COMPARISON OF TWO TRENDS EVEN THOUGH
THE MONTHLY VOLUMES MAY BE FAR APART. SOME FEATURES OF THE
PROGRAM ARE- 12 DIFFERENT LOG SCALES CAN BE REQUESTED, HIGH AND
LOW OFF-SCALE VALUES ARE HANDLED, AND BOTH THE ORIGINAL AND THE
SEASONALLY ADJUSTED VALUES ARE PLOTTED. THE PROGRAM REQUIRES
AN 8K - 1401 WITH THE ADVANCED PROGRAMMING FEATURE. IT ACCEPTS
THE DATA FROM THE SEASONAL ADJUSTMENT PROGRAM WITHOUT
MODIFICATION.

1401-07.0.002 SELF-CHECKING NUMBER
CALCULATION MODULUS 11
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-07.0.002

AUTHORS...MRS. NANCY N. MERRILL

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DIRECT INQUIRIES TO AUTHOR

CALCULATES THE SELF-CHECKING NUMBER FOR BASE NUMBERS, 3-15
POSITIONS. A LEAD CARD INSTRUCTS THE PROGRAM IN THE SIZE OF THE
BASE NUMBER AND THE DESIRED INPUT AND OUTPUT. OPTIONS FOR INPUT-
1/ GENERATE BASE NUMBERS FROM 1 TO 95, 2/ GENERATE BETWEEN
SPECIFIED NUMBERS, 3/ READ SPECIFIC NUMBERS FROM CARDS. OPTIONS
FOR OUTPUT 1/ PUNCH BASE NUMBER AND ITS CHECK DIGIT, 2/ PRINT
AND PUNCH BASE NUMBER AND ITS CHECK DIGIT. 4K 1401 SPS.

1401-07.0.003 POLYNOMIAL CURVE FIT FOR
ECONOMIC ANALYSIS AND FORECASTING
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-07.0.003

AUTHOR...LAWRENCE SALZMAN

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM IS WRITTEN IN FORTRAN FOR A 16K-1401 AND IS
COMPATIBLE WITH THE 16K-1401 VERSION OF THE DATA TRANSFER PROGRAM
FOR CENSUS METHOD II, NO. 06.0.013. THESE TWO PROGRAMS IN
CONJUNCTION WITH THE 4K-1401 VERSIONS OF CENSUS METHOD II NO.
06.0.009 FORM AN AUTOMATED PACKAGE FOR FORECASTING. THIS PROGRAM
TAKES TIME-SERIES DATA AND FITS A FIRST, SECOND, AND/OR THIRD
DEGREE POLYNOMIAL TO THE SERIES. IT COMPUTES THE FUNCTION,
FITTING POINTS TO THE EQUATION AND SUBTRACTING AND DIVIDING THE
FITTED FROM THE OBSERVED DATA. THIS GIVES THE DEVIATIONS ABOUT
AN ASSUMED TREND WHICH TENDS TOWARD THE CYCLE FOR THOSE SERIES
THAT HAVE A CYCLE. AS AN OPTION, THE TREND CAN BE PROJECTED 24
TIME PERIODS INTO THE FUTURE, I.E., IF MONTHLY DATA ARE USED
THIS GIVES A 2-YEAR PROJECTION. THE COEFFICIENTS ARE COMPUTED BY
THE LEAST SQUARES TECHNIQUE. THE CALCULATIONS UTILIZE FORTRAN
FLOATING POINT ARITHMETIC. A MODIFIED GAUSSIAN ELIMINATION
TECHNIQUE IS USED TO SOLVE THE RESULTING SET OF LINEAR EQUATIONS.

1401-07.0.005 1401/1460 SUBROUTINE FOR
MODULUS 11 CALCULATIONS FOR A 9 DIGIT NUMBER
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-07.0.005

AUTHOR...T. LANCI

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1401-09.6.001 FLANGE TAP-OFFICE AND
DISPLACEMENT METER CALCULATIONS
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-09.6.001

AUTHOR...M. MYLRICIE

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THIS PROGRAM DOES NATURAL GAS, FLANGE TAP, GRIFICE AND
DISPLACEMENT METER VOLUME CALCULATIONS BASED ON THE
RECOMMENDATIONS OF THE AMERICAN GAS ASSOCIATION. THE PROGRAM
ALSO PROVIDES FOR A COMPLETE AUDIT LISTING AND AUTOMATIC FILE
MAINTENANCE. MACHINE CONFIGURATION- 8K1401 CARD SYSTEM WITH
ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, AND
MULTIPLY-DIVIDE. PROCEDURE- THE PROGRAM CONVERTS ALL CONSTANTS
TO FLOATING POINT DURING LOADING, AS WELL AS COMPUTING MCL
FRACTION OF N SUB 2 AND CO SUB 2, THETA AND PI. USING
RECOMMENDED CORRECTION FACTORS, BILLING COSTS ARE COMPUTED. A
COMPLETE AUDIT TRAIL IS PRINTED AND AUTOMATIC FILE
MAINTENANCE IS PROVIDED. SOURCE LANGUAGE- SPS. ACCURACY- ALL
COMPUTATIONS ARE DONE IN FLOATING POINT, AND CONFORM TO THE
RECOMMENDED PROCEDURE OF THE AGA. ALL EQUATIONS USED IN THE
PROGRAM ARE INCLUDED IN THE WRITEUP. MEMORY REQUIREMENTS- 7981
POSITIONS OF 8K STORAGE.

THE ONE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM
MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED.
THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.1.002 LINEAR PROGRAMMING
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.1.002

AUTHOR...R. CABELL
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THE PROGRAM MAXIMIZES A LINEAR OBJECTIVE FUNCTION OF N
VARIABLES, SUBJECT TO M CONSTRAINTS. THE VALUES FOR M & N
MUST BE SPECIFIED BY THE USER FOR EACH PROBLEM. THE
SIMPLEX METHOD IS USED, BUT IS REVISED TO PERMIT THE BASIS
TO BE CARRIED AS ONLY A COLUMN MATRIX.

THE PROGRAM REQUIRES 1500 POSITIONS. 1401 CPU 2K, 4K, 8K,
12K, OR 16K. 1402 CARD READER, 1403 MODEL I OR MODEL II
PRINTER. NO SPECIAL FEATURES ARE REQUIRED.

SOURCE DECK IS OPTIONAL MATERIAL AND MUST BE REQUESTED SPECIFICALLY.

1401-10.1.003 RAMAC LINEAR PROGRAM
AVAILABLE 3RD QUARTER 1963
SPECIFY FILE NUMBER 1401-10.1.003

AUTHORS...J. K. GCODE D. D. PAISLEY

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TO SOLVE PROBLEMS APPLICABLE TO USE OF LINEAR PROGRAMMING
TECHNIQUES WHICH REQUIRE MEMORY CAPACITY FAR BEYOND BASIC 1401
CORE MEMORY. IMMEDIATE APPLICATION IS IN MEAT PACKING INDUSTRY,
BUT THE PROGRAM HAS CAPABILITIES IN THE AREA OF METAL, GRAIN AND
PAPER INDUSTRIES FOR SUCH APPLICATIONS AS THE TRIM PROBLEM.
MACHINE CONFIGURATION- 4K 1401, 1C MEG 1405 RAMAC WITH ADVANCED
PROGRAMMING AND HIGH-LOW-EQUAL COMPARE. /DOES NOT USE MORE THAN 1
MEG OF RAMAC/. SOURCE LANGUAGE-SPS.

1401-10.1.004 LINEAR PROGRAMMING, REVISED
SIMPLEX METHOD
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.1.004

AUTHORS...DR. J. ROBERT JOHNSON, JR.
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DIRECT INQUIRIES TO AUTHOR

TO SOLVE A GENERAL LINEAR PROGRAMMING PROBLEM. REVISED SIMPLEX
METHOD, PRODUCT FORM OF THE INVERSE, FORTRAN. UP TO 108
EQUATIONS WITH ANY NUMBER OF UNKNOWN. STORAGE REQUIREMENTS
16000 POSITIONS. MODULUS IS 5 AND MANTISSA IS 8.83 MINUTES
OR 21 EQUATIONS IN 53 UNKNOWN. 730 ITERATIONS. THE TIME IS
MORE LARGELY A FUNCTION OF THE NUMBER OF VARIABLES INVOLVED AND
OF THE NUMBER OF ITERATIONS THAN OF THE NUMBER OF EQUATIONS.
EQUIPMENT SPECIFICATIONS 1401, 16K WITH THE FOLLOWING FEATURES-
ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, AND MULTIPLY-
DIVIDE- THREE 7330 TAPE DRIVES- CARD READER AND PUNCH- 1403
PRINTER. 1402 CARD READ PUNCH.

1401-10.2.003 INVENTORY MANAGEMENT
SIMULATOR
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.2.003

AUTHOR...K. KIMBALL HOLLAND
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OBERLIN, OHIO

DIRECT INQUIRIES TO AUTHOR

CONTINUED FROM PRIOR COLUMN--

1401 INVENTORY MANAGEMENT SIMULATOR IS A SMALL SIZE BASIC
INVENTORY MANAGEMENT SIMULATOR WHICH OFFERS AN EASY METHOD
OF SIMULATING THE BEHAVIOR OF VARIOUS INVENTORY POLICIES
USING HISTORICAL SALES DATA. MANY DIFFERENT POLICY OPTIONS
ARE AVAILABLE AND THE ROUTINES ARE EASILY MODIFIABLE.
MEMORY 4K 1401 PROCESSOR 1402 CARD READER/PUNCH 1403 MODEL
/132 PRINT POSITIONS/

1401-10.2.005 MONTHLY INVESTMENT INTEREST
AND PRINCIPAL ACCUMULATION
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.2.005

AUTHORS...HARTLEY FREDRICKSON
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WILL CALCULATE INTEREST PER DIVIDEND PERIOD OR
YEAR, ACCUMULATED INTEREST, ACCUMULATED PRINCIPAL AND A TOTAL OF
ACCUMULATED PRINCIPAL AND INTEREST FOR A CONSTANT MONTHLY
INVESTMENT. IT WILL PRINT A SCHEDULE OF THESE ITEMS FOR THE
PERIOD OF TIME SPECIFIED OR UNTIL A GIVEN TOTAL AMOUNT IS
REACHED. A SAVINGS ACCOUNT IS A TYPICAL EXAMPLE. AS TO THE
RESTRICTIONS AND RANGE OF THE PROGRAM, AN ARITHMETIC OVERFLOW
WILL OCCUR IF THESE LIMITS ARE EXCEEDED- \$10,000.00 MONTHLY
INVESTMENT AT 4.5 PERCENT FOR 100 YEARS. THE REQUIRED MACHINE
CONFIGURATION MUST INCLUDE A 4K 1401 WITH 132 PRINT POSITIONS,
THE MULTIPLY-DIVIDE FEATURE, AND THE HIGH-LOW-EQUAL COMPARE
FEATURE. THE PROGRAM IS WRITTEN IN AUTOCCODER.

1401-10.2.006 MORTGAGE AMORTIZATION
SCHEDULE
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.2.006

AUTHORS...HARTLEY FREDRICKSON
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348 EAST SOUTH TEMPLE
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WILL BE WRITTEN TO AMORTIZE A MORTGAGE AND PRINT A
SCHEDULE OF THE AMORTIZATION. THE PRINTED ITEMS FOR A GIVEN
DATE WOULD INCLUDE- DATE OF EACH PAYMENT, AND NUMBER OF
REMAINING PAYMENTS. AT THE END OF THE PROGRAM IT WILL PRINT THE
AMOUNT OF PRINCIPAL AND INTEREST PAID. THE VARIABLES THAT THE
USER CAN SPECIFY WILL BE- PRINCIPAL AMOUNT- INTEREST RATE-
AMOUNT OF PAYMENT, AND DATE OF FIRST PAYMENT. THE PROGRAM WILL
HAVE THE ABILITY TO STOP IT ON A CERTAIN DATE, AFTER A CERTAIN
AMOUNT OF PAYMENT IS REACHED, OR UNTIL THE MORTGAGE IS COMPLETELY
AMORTIZED. EXTRA PRINCIPAL PAYMENTS MAY BE INCLUDED IF DESIRED.
REQUIRES 4K 1401 HIGH-LOW-EQUAL COMPARE, MULT. & DIVIDE AND 132
PRINT POSITIONS.

1401-10.2.007 MANAGEMENT DECISION MAKING
LABORATORY AUTOMATIC PLOTTING OF RESULTS
AVAILABLE 2ND QUARTER 1964
SPECIFY FILE NUMBER 1401-10.2.007

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MACMAP IS A PROGRAM UTILIZING HISTORY AND DECISION CARDS
FROM EACH PERIOD OF PLAY TO AUTOMATICALLY GENERATE NINE GRAPHS
OF LABORATORY RESULTS ON THE 1403 PRINTER. BY USING THIS
PROGRAM, THE DECISION MAKING LABORATORY ADMINISTRATOR ELIMINATES
THE NEED FOR PERSONNEL TO MANUALLY GRAPH RESULTS. ANY
COMBINATION OF GRAPHS CAN BE SELECTED BY SENSE SWITCHES AND
ADDITIONAL COPIES MADE WITHOUT RELOADING THE PROGRAM OR DATA.
1401 REQUIREMENTS ARE THE SAME AS THOSE FOR THE IBM 1401
MANAGEMENT DECISION MAKING LABORATORY. WRITTEN IN AUTOCCODER
LANGUAGE, THE OBJECT PROGRAM CAN BE ON CARDS OR TAPE. GRAPHS
AVAILABLE ARE--PRICE BY AREA, MARKETING BY AREA, TOTAL MARKETING,
TOTAL DOLLAR SALES AND UNIT SALES, RESEARCH AND DEVELOPMENT AND
UNIT COST, PRODUCTION QUANTITY AND PRODUCTION AS PERCENT OF
CAPACITY, INCOME, ASSETS AND RETURN ON ASSETS. IN ADDITION,
A SUMMARY REPORT OF INCOME, ASSETS, AND RETURN IS ALSO WRITTEN
FOR THE USE OF THE ADMINISTRATOR. MACHINE CONFIGURATION- 1401
PROCESSING UNIT WITH 4000 POSITIONS OF STORAGE, ADVANCED
PROGRAMMING FEATURE, HI-LOW-EQUAL COMPARE FEATURE, SENSE SWITCHES
FEATURE, MULTIPLY-DIVIDE FEATURE, 1402 CARD-READ PUNCH, 1403
PRINTER- 729 OR 7330 MAGNETIC TAPE UNITS /27.

1401-10.2.008 GENERAL PURPOSE SIMULATOR -
GPSS-2
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.2.008

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THIS PROGRAM IS BASED ON THE 7090 APPLICATION PROGRAM, GENERAL
PURPOSE SYSTEMS SIMULATOR, WRITTEN IN AUTOCCODER, FOR A 16K 1401
WITH ONE TAPE, ADVANCEE PROGRAMMING AND HIGH-LOW-EQUAL COMPARE,
FOR GENERAL PURPOSE SYSTEMS SIMULATION. IT CONTAINS MOST
FEATURES OF GPSS II EXCEPT FORTRAN-TYPE EXPRESSIONS. IT IS
LIMITED TO 75 BLOCKS, 15 FACILITIES, 15 STORAGES, 10 QUEUES,
10 LOGIC SWITCHES, 20 SAVEX LOCATIONS, 10 FUNCTIONS, 10 TABLES,
WITH 150 TRANSACTIONS IN THE SYSTEM CONCURRENTLY. THE 1401
GENERAL PURPOSE SIMULATOR IS USEFUL FOR DEMONSTRATIONS,
EDUCATION, PRELIMINARY SIMULATION STUDIES OR SIMULATION OF
COMPLETE SMALL SYSTEMS.

Contributed Programs

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THE ONE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

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*M
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1401-10.2.009 TELLER SIMULATION DATA
CONVERSION AND SUMMARIZATION PROGRAM
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.2.009

AUTHORS..J.V. SPIKES, JR. JOHN GROSS

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PROGRAM SHOULD BE USED IN CONJUNCTION WITH ANOTHER PROGRAM, COMMERCIAL AND SAVINGS TELLER SIMULATION USING NABAC MODEL ON IBM 1401. A PRACTICAL METHOD IS SUGGESTED FOR THE RECORDING OF CUSTOMER ARRIVALS AND TRANSACTION MIX VIA AN IBM CIO KEYPUNCH. PROGRAM SUMMARIZES THESE STATISTICS AND PROVIDES PRINTED AND PUNCHED CARD OUTPUT SUITABLE FOR USE AS INPUT TO THE TELLER SIMULATOR PROGRAM. USER IS ALLOWED 9 TRANSACTION TYPES WITHIN ANY WINDOW GROUP AND A MAXIMUM OF 25 TIME PERIODS. PROGRAM REQUIRES- 4K CARD 1401, PRINTER, AP, F/L/E, M/D. SOURCE LANGUAGE IS 1401 AUTOCODER WITH IOCS.

1401-10.2.010 COMMERCIAL AND SAVINGS
TELLER SIMULATION USING NABAC MODEL
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.2.010

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PROGRAM SIMULATES TELLER OPERATION, PROVIDING SUMMARY STATISTICS WHICH REFLECT LEVELS OF CUSTOMER SERVICE AND TELLER UTILIZATION. MODEL WAS DEVELOPED BY NABAC. THE SIMULATOR UTILIZES MONTE CARLO TECHNIQUE OF RANDOM SELECTION IN THE ASSIGNMENT OF TRANSACTION TYPE AND PROCESSING TIME TO SIMULATED CUSTOMERS. CUSTOMER ARRIVALS ARE GENERATED ASSUMING ARRIVAL WITHIN TIME PERIOD FITS A POISSON DISTRIBUTION FUNCTION. THE USER IS ALLOWED A MAXIMUM OF 5 WINDOW TYPES, TOTAL WINDOWS NOT TO EXCEED 30, AND MAXIMUMS OF 29 TIME PERIODS, 20 TRANSACTION TYPES, QUEUE LENGTH OF 9. PROGRAM REQUIRES NABAC/S TELLER PERFORMANCE STANDARDS TO DETERMINE PROCESSING TIME FOR EACH CUSTOMER BY TRANSACTION TYPE. IT IS SUGGESTED THAT DATA ON CUSTOMER ARRIVALS AND TRANSACTION MIX BE GATHERED BY A SEPARATE PROGRAM. TELLER SIMULATION DATA CONVERSION AND SUMMARIZATION PROGRAM FOR IBM 1401. MACHINE REQUIREMENTS- 8K, 1401, 2 TAPE DRIVES, 1402, 1403, ADVANCED PROGRAMMING, H-L-E, MULTIPLY DIVIDE. SOURCE LANGUAGE- 1401 AUTOCODER IOCS.

1401-10.2.011 CAPERTISM - COMPUTER
ASSISTED PROJECT EVALUATION AND REVIEW TECHNIQUE SIMULATOR
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.2.011

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DIRECT INQUIRIES TO AUTHOR

TO TRAIN PERSONNEL IN THE USE OF PERT NETWORK AS
/1/ A PLANNING AND CONTROL DEVICE FOR COMPLEX PROJECTS.
/2/ TO ENABLE STUDENTS TO EXPERIENCE THE SIGNIFICANCE
OF TIME-COST TRADE-OFFS.
/3/ TO ACQUAINT STUDENTS WITH THE USE OF THE COMPUTER AS AN AID
TO MANAGEMENT.
METHOD- A PERT NETWORK IS READ IN FOLLOWED BY CONTROL CARD
FOLLOWED BY THE STUDENT CHANGES TO THE PERT NETWORK. ANALYSIS OF
THE STUDENT CHANGES IS MADE, THE PERT NETWORK IS UPDATED, THE
CHANGE IN COST IS COMPUTED AND THE NETWORK IS PERTED AND A
NEGATIVE SLACK SORT IS PRINTED. IBM 8K 1401 WITH ADVANCED
PROGRAMMING, MULTIPLY/DIVIDE, 1402 AND 1403. THE SOURCE
LANGUAGE IS- SPS.

1401-10.2.012 1401/1440 DISK MANAGEMENT
DECISION MAKING LABORATORY
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.2.012

AUTHOR...S.B. LUCAS

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S.B. LUCAS-IBM CORP., 520 N. DEARBORN ST., CHICAGO, ILL.

THIS PROGRAM MAKES AVAILABLE THE MANAGEMENT DECISION MAKING LABORATORY ON A 1401/1311 OR 1440/1311 DISK SYSTEM. THE PROGRAM USES THE SAME ECONOMIC MODEL AND GENERATES THE SAME REPORTS AS THE PRESENT 1401 TAPE VERSION. IN ADDITION, PARAMETERS AND INITIAL HISTORY ARE STORED ON DISK. PROGRAM AND RUNNING HISTORY CAN BE STORED ON DISK OR RUN WITH CARD INPUT/OUTPUT. CHANGE CARD FORMATS ARE USED TO EASILY ALTER PARAMETERS AND HISTORY ON DISK. THE BUSINESS INDEX CAN BE INCREASED OR DECREASED AND ADDITIONAL INDUSTRY AND CONFIDENTIAL REPORTS CAN BE WRITTEN BY SENSE SWITCH SELECTION. AT THE END OF ANY DECISION RUN, RESULTS STORED ON DISK CAN BE PLOTTED, ELIMINATING THE NEED FOR POST-LABORATORY GRAPHING. THE MINIMUM 1311 SYSTEM CONSISTS OF AN 8K 1401 OR 1440 WITH ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, AND SENSE SWITCHES. ONE 1311 DRIVE AND ONE 1316 DISK PACK FOR LABORATORIES IN PROGRESS ARE REQUIRED. 2569 SOURCE STATEMENTS.

*M

*M

CONTINUED FROM PRIOR COLUMN--

OPTIONAL PROGRAM MATERIAL - SOURCE DECK.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

*M
*M

1401-10.3.001 LESS -- LEAST-COST
ESTIMATING AND SCHEDULING /4K-SCHEDULING PHASE ONLY/ /REVISED/
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.001

AUTHORS..LCU J. GRANATO JIM BORDEN

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PROGRAM IS A HIGH SPEED METHOD OF DETERMINING CRITICAL JOBS AND RELATED INFORMATION /FLOAT TIMES, ETC./ FOR PROJECTS WHERE SCHEDULING IS IMPORTANT. PROGRAM WILL HANDLE 574 EVENTS /NODES/ WITH ANY NUMBER OF ARROWS /JOBS/. THE LENGTH OF THE CRITICAL PATH CANNOT EXCEED 6 DIGITS /999999/. 1401 CARD SYSTEM, 4K MEMORY, NO SPECIAL FEATURES REQUIRED. WRITTEN IN SPS II.

1401-10.3.002 LESS /LEAST-COST ESTIMATING
AND SCHEDULING/ 8K, 12K, AND 16K
AVAILABLE 1ST QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.002

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THIS PROGRAM IS A HIGH SPEED METHOD OF DETERMINING CRITICAL PATH AND RELATED INFORMATION /FLOAT TIME ETC./ FOR PROJECTS WHERE SCHEDULING IS IMPORTANT. THE PROGRAM WILL HANDLE 8K MEMORY - 985 EVENTS/ 12K MEMORY - 1555 EVENTS/ 16K MEMORY - 2125 EVENTS/ /ANY NUMBER OF JOBS /ARROWS/ CAN BE HANDLED. LENGTH OF THE CRITICAL PATH CANNOT EXCEED 7 DIGITS /9999999/. WILL HANDLE 1000 ARROWS IN APPROXIMATELY 12 MINUTES INCLUDING CARD HANDLING TIME. THIS IS A THREE /3/ PHASE, TWO /2/ PASS PROGRAM. 1401 CARD SYSTEM WITH 8, 12 OR 16K MEMORY MULTIPLY DIVIDE FEATURE HI-LO-EQUAL COMPARE

1401-10.3.004 SDI 3 FOR THE IBM 1401 DATA
PROCESSING SYSTEM
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.004

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THE IBM 1401 DATA PROCESSING SYSTEM WILL ESTABLISH AND MAINTAIN A CURRENT LIST OF PEOPLE WHO JOIN THE SDI SYSTEM. EACH PERSON, WITH A LIST OF KEYWORDS ORIGINATED BY HIM THAT DESCRIBE HIS WORK INTERESTS, IS RECORDED ON MAGNETIC TAPE. THEN, AS NEW DOCUMENTS ARE PUBLISHED, A LIST OF KEYWORDS FROM EACH DOCUMENT IS ENTERED INTO THE IBM 1401 DATA PROCESSING SYSTEM. THE COMPUTER THEN MATCHES EACH NEW DOCUMENT AGAINST ALL OF THE USERS RECORDED ON TAPE, PUNCHING OUT A NOTIFICATION CARD ONLY FOR USERS WHICH THE CP SYSTEMS SELECT AS INTERESTED IN A PARTICULAR DOCUMENT. 4000 POSITIONS OF MAGNETIC CORE STORAGE. IBM 1401, EQUIPPED WITH THE HIGH-LOW-EQUAL COMPARE FEATURE, AN IBM 1402 CARD READ-PUNCH, AN IBM 1403 PRINTER, AND TWO MAGNETIC TAPE UNITS / ANY MODEL COMPATIBLE WITH THE IBM 1401/.

1401-10.3.006 INVERTED CARD FILE-IBM 1401
INFORMATION RETRIEVAL SYSTEM
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.006

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THE SYSTEM PERFORMS LITERATURE SEARCHES ON PUNCHED CARD DECKS REPRESENTING LIBRARY INFORMATION OR DOCUMENT COLLECTIONS WHICH HAVE BEEN ENCODED BY COORDINATE INDEXING TECHNIQUES. IT USED THE INVERTED FILE ORGANIZATION WITH EIGHTEEN DOCUMENT NUMBERS PER CARD. A MAINTENANCE PROGRAM PRODUCES NEW AND UPDATES OLD KEYWORD CARDS AUTOMATICALLY. THERE ARE TWO PRINT PROGRAMS. ONE WILL PRINT ONE DOCUMENT NUMBER PER LINE, AND THE OTHER WILL PRINT SELECTED INFORMATION FROM A BIBLIOGRAPHY CARD FILE. BOOLEAN OPERATIVES-AND, AND NOT, OR-ARE USED IN DOCUMENT NUMBER COMPARISONS. A 4K 1401 WITH THE HIGH, LOW, EQUAL COMPARE FEATURE IS REQUIRED. MODIFICATIONS NECESSARY TO USE OTHER SIZES OF CORE AND INDEX REGISTERS ARE DISCUSSED.

1401-10.3.007 PERT
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.007

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Contributed Programs

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CONTINUED FROM PRIOR PAGE--

DIRECT INQUIRIES TO AUTHOR

TO AID IN THE PLANNING, COORDINATION AND CONTROL FUNCTION OF PROJECTS WHERE SCHEDULES ARE IMPORTANT. EVALUATES AND SEQUENCES JOBS WITHIN THE OVERALL PROJECT WITH RESPECT TO THEIR EFFECT ON THE OVERALL PROJECT AND OTHER JOBS WITHIN THE PROJECT. SIMILAR TO THE LESS PROGRAMS FOR 1401 AND ALSO THE EXISTING PERT PROGRAMS. PROVIDES FOR THE USE OF THREE/3/ TIME ESTIMATES BUT DOES NOT CALCULATE PR, I.E., THE PROBABILITY ASSOCIATED WITH MEETING PREDETERMINED SCHEDULE DATES. 1401 MODEL C-3,4,5 OR 6 WITH, MULTIPLY-DIVIDE FEATURE HI-LOW-EQUAL COMPARE FEATURE 1402 CARD READ-PUNCH 1403 PRINTER, MODEL 2 729 MODEL II OR IV TAPE UNITS WRITTEN IN S.P.S. ASSEMBLED WITH AUTOCODER.

1401-10.3.008 FORECASTING BY EXPONENTIAL SMOOTHING

AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.008

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THIS PROGRAM IS USED TO FIND THE CORRECT SMOOTHING PARAMETER FOR EACH OF A FIRMS PRODUCTS AND THEN USED TO FORECAST MONTHLY DEMAND FOR ONE, TWO, THREE, AND FOUR MONTHS IN ADVANCE FOR THESE PRODUCTS. 1401 WITH 4 K STORAGE 1402 MODEL 1 1403 MODEL 2 /132 PRINTING POSITIONS/ NO OTHER SPECIAL FEATURES ARE REQUIRED. THE EXPONENTIAL SMOOTHING METHOD OF FORECASTING IS USED WITH OPTIONAL FEATURES OF ADJUSTMENTS FOR SEASONAL VARIATION AND VARYING NUMBER OF DAYS IN A MONTH.

1401-10.3.009 ASK INFORMATION RETRIEVAL PROGRAM FOR THE 1401

AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.009

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ASK IS AN INFORMATION RETRIEVAL PROGRAM. IT WILL SELECT RECORDS FROM TAPE THAT SATISFY RANGES, AND, AND NOT, OR, OR NOT, CONDITIONS. FREE FORM INQUIRY FORMAT IS USED AND MULTIPLE INQUIRIES MAY BE PROCESSED WITH ONE PASS OF THE MASTER TAPE. SIGNIFICANT FEATURES ARE THE ABILITY TO MAKE MULTIPLE INQUIRIES, THE USE OF FREE FORM INQUIRY, AND THE OMISSION OF ANY NECESSITY FOR CONTROL CARDS. 4K 1401 TWO TAPE DRIVES ADVANCED PROGRAMMING PACKAGE HI-LOW-EQUAL COMPARE FEATURE 1402 CARD READER 1403 PRINTER.

1401-10.3.010 KWIC SYSTEM

AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.010

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THE SIX PROGRAMS, RUNS 1 THROUGH 6, TOGETHER WITH AN PROGRAMMING SYSTEMS SORT PACKAGE, WILL PERMIT THE PREPARATION OF A PUBLICATION CONSISTING OF A BIBLIOGRAPHY, KWIC INDEX, AND PERSONAL AUTHOR INDEX.

IBM 1401 SYSTEM - 4K MEMORY - 6 SENSE SWITCHES, 2 TAPE DRIVES, HI-LOW-EQUAL COMPARE FEATURE, ADVANCED PROGRAMMING FEATURE /INDEXING, MOVE RECORD, STORE A AND B/, 1402 CARD READ-PUNCH, AND 1403 PRINTER.

1401-10.3.011 COST CURVE ESTIMATION AND PROJECTION BY LEARNING CURVE THEORY

AVAILABLE 4TH QUARTER 1962.
SPECIFY FILE NUMBER 1401-10.3.011

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TWO PROGRAMS USING LEARNING CURVE THEORY TO PROJECT COSTS INTO FUTURE. FIRST PROGRAM CONVERTS RAW COST VS PRODUCTION SERIAL NUMBER TO LOGARITHMS AND DETERMINES LINE OF BEST FIT PUNCHING AND PRINTING PROGRESS RATE AND CO-ORDINATES OF REFERENCE POINT, TO ALLOW PLOTTING OF CURVE ON LOG-LOG PAPER. SECOND PROGRAM TAKES ABOVE OUTPUT OR ESTIMATES OF PROGRESS RATE AND REFERENCE POINT AND PREDICTS COSTS DURING UP TO TWELVE PERIODS FOR WHICH PRODUCTION HAS BEEN ESTIMATED. UP TO SEVEN COST ELEMENTS ARE SUMMARIZED INTO SUB-GROUPS, AND ANY NUMBER OF SUB-GROUPS INTO TOTAL FACTORY COST.

1401 CARD MACHINE WITH ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, MODIFY ADDRESS AND AT LEAST 4K STORAGE. WRITEUP INCLUDES CHANGES FOR 4K MACHINE WITH NO MODIFY ADDRESS.

1401-10.3.012 LESS PRE-EDIT
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.012

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THIS PROGRAM PROVIDES A LIST OF UNMATCHED IS AND JS, REMOVES DUPLICATE JOBS, CHECKS FOR 1 EQUAL TO OR GREATER THAN J /OPTIONAL/, AND DOES AN ASCENDING OR DESCENDING SEQUENCE CHECK ON ANY CONSECUTIVE CARD COLUMNS /OPTIONAL WITH A MAXIMUM OF 8 COLUMNS/. THE I AND J MAY CONTAIN 1-4 DIGITS AND BE LOCATED IN ANY CARD COLUMN/5/. IT REQUIRES ONE PASS OF THE CRITICAL PATH DECK THROUGH THE 1401 AT 800 CPM AND APPROXIMATELY ONE MINUTE FOR LOADING AND A TABLE SEARCH AT THE END. IT PROVIDES A 10 OR 15 TO 1 SAVINGS OVER THE UNIT RECORD APPROACH. MACHINE CONFIGURATION- 4K CARD 1401 WITH NO SPECIAL FEATURES. SOURCE LANGUAGE- 1401 SPS

1401-10.3.013 CRITICAL PATH SCHEDULER /BASIC 1401/

AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.013

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A PROGRAM FOR CRITICAL PATH SCHEDULING ON ANY 1401 SYSTEM WITH A 1402 AND 1403. PURPOSE WAS TO USE A CARD INPUT FORMAT COMPATIBLE WITH THE 1620 LESS PROGRAM AND TO EXPAND AND IMPROVE UPON THE 1401 LESS PROGRAM. SOME OF THE MANY CHANGES TO 1401 LESS INCLUDE- MISSING NODE NUMBERS PERMITTED, ELIMINATION OF MEMORY TO NINES CARD PREPARATION FOR PHASE 1. ELIMINATION OF HEADER AND TRAILER CARDS FOR JOB CARD INPUT DECKS, AND MANY REPORT FORMAT CHANGES. A FOUR PHASE PROGRAM. PHASE 1 COMPUTES LATE FINISH TIME. PHASE 2 COMPUTES EARLY START TIME. PHASE 3 COMPUTES EARLY FINISH TIME, LATE START TIME, TOTAL FLOAT, FREE FLOAT, AND THE CRITICAL PATH. PHASE 4 ACCUMULATES PROJECT COST AND EDITS FIELDS INTO REPORT FORMAT. RESTRICTIONS AND RANGE CRITICAL PATH MAY NOT EXCEED 99,999 TIME UNITS. THE MAXIMUM EVENT OR NODE NUMBER IS 711 ON A 4K SYSTEM, 311 ON 2K, AND 191 ON 1.4K. MACHINE CONFIGURATION REQUIRES 1402 AND 1403 ON SYSTEM. NO SPECIAL FEATURES ARE USED. WRITTEN FOR A 4K SYSTEM, BUT REQUIRES ONLY FOUR PATCHES TO PHASE 1 TO OPERATE ON 2K OR 1.4K SYSTEM. PROGRAM REQUIREMENTS USES ALL STORAGE AVAILABLE ON 1.4K, 2K, AND 4K SYSTEMS. SOURCE LANGUAGE- SPS.

1401-10.3.014 ASK II

AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.014

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DIRECT INQUIRIES TO AUTHOR

ASK II IS AN INFORMATION RETRIEVAL PROGRAM FOR A 1401 CARD SYSTEM. IT WILL SELECT AND PRINT CARDS FROM A FILE THAT SATISFY DATA RANGES, AND, AND NOT, OR, OR NOT CONDITIONS. FREE FORM INQUIRY FORMAT IS USED AND MULTIPLE INQUIRIES MAY BE PROCESSED WITH ONE PASS OF THE MASTER FILE.

SIGNIFICANT FEATURES ARE THE ABILITY TO MAKE MULTIPLE INQUIRIES, THE USE OF AND/OR LOGIC, AND THE USE OF FREE FORM INQUIRY. NO CONTROL CARDS ARE NEEDED TO MAKE AN INQUIRY. 4K 1401 W/ADVANCED PROGRAMMING PACKAGE AND HI-LOW-EQUAL COMPARE. THE ASK II PROGRAM IS WRITTEN USING THE IBM 1401 SYMBOLIC PROGRAMMING SYSTEM /SPS/ LANGUAGE. THE PROGRAM COMES IN SKELETAL, UNASSEMBLED FORM.

1401-10.3.015 PIECEWORK-TIMEWORK PAYROLL

AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.015

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THE PIECEWORK-TIMEWORK PAYROLL PROGRAM, PHASE 1, COMPUTES EMPLOYEE EARNINGS TO FIRST GROSS, AND PRINTS A PRELIMINARY PAYROLL REGISTER FOR SUPERVISORY AUDIT. IT PROVIDES FOR AN EMPLOYEE WORKING A COMBINATION OF PIECEWORK WITH A SPECIAL RATE FOR EVERY JOB, AND TIMEWORK WITH EITHER A SPECIAL RATE FOR EVERY JOB, OR WITH EITHER A SPECIAL OR REGULAR TIME RATE. SHIFT DIFFERENTIALS ARE CALCULATED IF THE WORK WAS PERFORMED ON OTHER THAN FIRST SHIFT- TOTAL HOURS WORKED /PIECEWORK PLUS TIMEWORK/ ARE ADJUSTED IF UNEQUAL TO TIMECARD HOURS- AND LOST LABOR IS COMPUTED IF PRODUCTIVE EARNINGS ARE LESS THAN GUARANTEED EARNINGS. PHASE 2 PRODUCES THE ERROR REGISTER. REMAINING CCRS MAY BE USED TO DEVELOP MORE SOPHISTICATED ERROR DIAGNOSTIC ROUTINES.

WITHOUT MODIFICATION, THE PROGRAM REQUIRES A 1401 SYSTEM WITH 8K, 27330 TAPE DRIVES, 1405, 1407, MULTIPLY-DIVIDE, HI-LOW-EQUAL COMPARE, AND ADVANCED PROGRAMMING. PHASE 1 REQUIRES 6643 POSITIONS OF CORE AND 1015 SOURCE STATEMENTS. PHASE 2 REQUIRES 2211 POSITIONS OF CORE WITH 369 SOURCE STATEMENTS. SOURCE LANGUAGE- WRITTEN IN AUTOCODER.

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1401-10.3.016 CAPITAL INVESTMENT ANALYSIS
/8K/

AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.016

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A 1401 PROGRAM TO CALCULATE THE RATE OF RETURN OF AN INVESTMENT BASED ON THE DISCOUNTED CASH FLOW METHOD. THIS PROGRAM PROVIDES A STANDARD TECHNIQUE FOR RANKING PROPOSED CAPITAL EXPENDITURES, OR, THE RATE OF RETURN MAY BE COMPARED WITH A MINIMUM ACCEPTABLE RATE TO HELP DETERMINE WHETHER OR NOT A PROPOSED PROJECT SHOULD BE UNDERTAKEN. MACHINE CONFIGURATION- THE PROGRAM IS WRITTEN FOR AN 8K 1401 WITH MULTIPLY-DIVIDE, ADVANCED PROGRAMMING AND SENSE SWITCHES. SOURCE LANGUAGE- WRITTEN IN AUTOCODER.

1401-10.3.017 LESS PROGRAM 4K
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.017

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THIS PROGRAM REVISES THE 1401 LESS 4K PROGRAM, #10.3.001, BY LCU GRANTO, JIM BORDEN, AND JOE ROSE TO INCLUDE A FOURTH PHASE WHICH PREPARES A GANTT CHART. THIS REVISION INCLUDES CHANGES TO PHASE 1, 2, AND 3 TO PROVIDE PUNCHED OUTPUT FROM PHASE 3 FOR SUBSEQUENT PREPARATION OF GANTT CHART PICTORIAL SCHEDULES IN PHASE 4. THE MAXIMUM NUMBER OF EVENTS HAS BEEN REDUCED FROM 575 TO 544. OTHER FEATURES OF REFERENCED PROGRAM, 10.3.001 REMAIN THE SAME- ANY NUMBER OF ARROWS-JOBS-AND A 6-DIGIT LIMIT ON THE LENGTH OF THE CRITICAL PATH. DETAILED SCHEDULES IN PHASE 4 CANNOT EXCEED 93 DAYS. BASIC 4K 1401 WITH A 1402 AND A MODEL 2 1403 PRINTER. NO SPECIAL FEATURES ARE REQUIRED. PHASE 1 573 CORE POSITIONS, PHASE 2 522 CORE POSITIONS, PHASE 3 723 CORE POSITIONS, PHASE 4 1018 CORE POSITIONS. SOURCE LANGUAGE- SPS

1401-10.3.018 LESS 1
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.018

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LESS 1 IS A 1401 CARD PROGRAM TO HANDLE THE SCHEDULING PHASE OF LEAST COST ESTIMATION AND SCHEDULING /LESS/. PREVIOUS 1401 PROGRAMS REQUIRED THAT THE INPUT DATA REPRESENTING PROJECT NETWORKS HAVE NODE NUMBERS WHERE THE I NODE MUST BE NUMERICALLY LESS THAN THE J NODE AND THAT THE NODE MUST BE CONSECUTIVELY NUMBERED STARTING WITH THE BEGINNING I NODE. LESS 1 DOES NOT PLACE THIS RESTRICTION ON THE PLANNER WISHING TO UTILIZE LESS. THE SECOND AREA OF IMPROVEMENT IS ILLUSTRATED BY THE FACT THAT PAST PROGRAMS GAVE THE USER FINDER CARDS FOR OUTPUT WHILE THE ANSWERS REMAINED IN CORE STORAGE. LESS 1 HOWEVER PUNCHES OUT ALL THE NEEDED ANSWERS IN CARDS. THUS ANY LATER LISTING CAN BE PRODUCED IN ANY DESIRED SEQUENCE. UP TO 1000 NODE NUMBERS. THE SIZE OF NETWORK WHICH THE 1401 16K SYSTEM CAN ACCOMMODATE CAN BE DETERMINED FROM FOLLOWING FORMULA. $10X / \text{THE HIGHEST NUMERICAL VALUED NODE NUMBER} + \text{PLUS } 10X / \text{THE NUMBER OF ACTIVITY CARDS}$ THE SUM MUST BE LESS THAN OR EQUAL TO 14,740. 16K, HI-LOW-EQUAL COMPARE. STORAGE SIZE MAY BE ALTERED TO 8K OR 12K, BUT 8K STORAGE IS THE LIMIT SINCE MODIFY ADDRESS INSTRUCTIONS ARE USED. SOURCE LANGUAGE- WRITTEN IN 1401 SPS

1401-10.3.019 CRITICAL PATH SCHEDULING
WITH ARBITRARY NODE NUMBERING- 4K VERSION
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.019

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DIRECT INQUIRIES TO AUTHOR

THE PROGRAM COMPUTES START, FINISH AND FLOAT TIMES AND FINDS THE CRITICAL PATH THROUGH AN ARROW DIAGRAM. THE NUMBERING OF THE NODES IS ARBITRARY. WRITTEN IN SPS. ONE VERSION FOR A 4K MACHINE, 750 FOR AN 8K MACHINE. TWO VERSIONS OF THE PROGRAM. ONE REQUIRING COMPARE. THE 4K PROGRAM CAN HAVE A MAXIMUM OF 250 NODES, 8K CAN HAVE 750. THE MAXIMUM NUMBER OF ACTIVITIES IS LIMITED ONLY BY THE LENGTH OF THE SCRATCH TAPES.

1401-10.3.020 CRITICAL PATH SCHEDULING
PROGRAM WITH ARBITRARY NODE NUMBERING 8K
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.020

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TO COMPUTE START, FINISH, AND FLOAT TIMES FOR ACTIVITIES IN AN ARROW DIAGRAM AND INDICATE THE CRITICAL PATH THROUGH THE DIAGRAM. NUMBER OF NODES LESS THAN OR EQUAL TO 250 FOR A 4K MACHINE, 750 FOR AN 8K MACHINE. TWO VERSIONS OF THE PROGRAM. ONE REQUIRING 4K, THE OTHER 8K. EQUIPMENT SPECIFICATIONS- HI-LOW-EQUAL

CONTINUED FROM PRIOR COLUMN--

COMPARE, TWO TAPES. ADDITIONAL REMARKS- WRITTEN IN SPS. THE NUMBERING OF THE NODES IN THE ARROW DIAGRAM IS ARBITRARY WITHIN THE RESTRICTION THAT THEY ARE A 1 TO 4 DIGIT INTEGER.

1401-10.3.022 GENERALIZED KWIC COMPILE AND
GO INDEX SYSTEM 4K TAPE

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.022

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THIS IS A SOPHISTICATED BUT STRAIGHT FORWARD PROGRAM WHICH ALLOWS THE USER TO TAILOR THE GENERALIZED SYSTEM SUPPLIED ACCORDING TO HIS INDIVIDUAL KWIC INDEXING NEEDS. THE PROGRAM WILL PRINT A BIBLIOGRAPHIC INDEX, AN AUTHOR INDEX, NORMAL KWIC OUTPUT OR ANY COMBINATION OF THESE. IT WILL ROTATE OR NOT ROTATE THE BIBLIOGRAPHIC INDEX AS DESIRED. IT ALLOWS THE USER TO EITHER ACCEPT ONLY OR IGNORE ONLY A WORD LIST HE SUPPLIES IN PRODUCING THE INDEX.

THIS PROGRAM CAN RUN ON A 3 TAPE 1401 IF TAPE SORTING IS DONE ELSEWHERE. THE FULL SYSTEM CAN RUN ON 5 TAPES WITH OPERATOR INTERVENTION. ON 6 TAPES IT IS FULLY AUTOMATIC. THE MAXIMUM LENGTH ENTRY IS APPROXIMATELY 800 CHARACTERS. MODIFICATIONS TO THE AUTOCODER DECK COULD ALLOW THIS RESTRICTION TO BE LIFTED. THE SYSTEM READS FREE FORMAT CONTROL CARDS CONTAINING VERBS AND SUBVERBS SPECIFYING WHICH OF THE PHASES WILL BE USED, THE INPUT FORMAT, THE DESIRED METHOD OF INDEXING, THE OUTPUT FORMAT, ETC. THE SYSTEM MODIFIES ITSELF ACCORDINGLY AND WRITES A SPECIFIC SYSTEMS TAPE.

THIS IS A HIGHLY DESIRABLE SYSTEM FOR INSTALLATIONS WITH 5-6 TAPE DRIVE 1401S AND ALLOWS SUFFICIENT FLEXIBILITY TO SATISFY DIVERSE INDEXING NEEDS. THIS PROGRAM IS AVAILABLE ONLY ON MAGNETIC TAPE.

THE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.3.023 INVENTORY MANAGEMENT

ANALYSIS PROGRAM

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.023

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THE INVENTORY MANAGEMENT ANALYSIS PROGRAM PROVIDES ANALYSIS AND CLASSIFICATION BY INVESTMENT VALUE AND PROFIT STANDING. ALSO, THE PROGRAM PROVIDES FOR THE CALCULATION OF EQQ, NUMBER OF ORDERS PER YEAR BASED ON ORDER QUANTITY, FIXED ORDER POINTS AND PROJECTED TURNOVER RATIOS. INDIVIDUAL ANALYSIS IS MADE FOR EACH INVENTORY TYPE, I.E., FINISHED GOODS, PURCHASED PARTS, MANUFACTURED PARTS AND RAW MATERIAL. THIS PROGRAM PROVIDES A MEANS FOR SELECTING DATA FOR INVENTORY MANAGEMENT SIMULATION, BY DEFINING THE AREA OF GREATEST POTENTIAL RETURN.

STRATIFICATION OF INVENTORY ITEMS MAY BE MADE BY CORRELATING DEMAND, COST AND NET PROFIT. THERE ARE MANY OTHER FACTORS WHICH SHOULD BE CONSIDERED FOR A COMPLETE ANALYSIS SUCH AS STORAGE CAPACITY, OBSOLESCENCE, SHELF LIFE, MOVEMENT INVENTORY AND SEASONAL DEMAND. MACHINE REQUIREMENTS-IBM 1401 CARD SYSTEM, 4K, MULT/DIVIDE, 132 PRINT POSITIONS.

1401-10.3.024 LOT-SIZE INVENTORY
MANAGEMENT INTERPOLATION TECHNIQUE /LIMIT/

AVAILABLE 4TH QUARTER 1963.
SPECIFY FILE NUMBER 1401-10.3.024

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LOT-SIZE INVENTORY MANAGEMENT INTERPOLATION TECHNIQUE /LIMIT/ IS A PROGRAM WHICH ATTACKS THE PROBLEM OF INVENTORY CARRYING. COST FOUND IN THE CLASSICAL EQQ FORMULA BY DISTRIBUTING A DEPARTMENT OR PLANTS SETUP HOURS IN A MORE REASONABLE MANNER. OUTPUT IS THE BEST ORDER QUANTITY FOR ALL ITEMS WITHIN THE LIMITATION OF A PRESCRIBED SETUP COST AND A MATRIX FOR GRAPHING SHOWING THE RELATIONSHIP OF INVENTORY TO SET UP COST FOR VARIOUS POINTS. REQUIRES 4K, MODEL 2 1403, MULTIPLY-DIVIDE, ADVANCED PROGRAMMING, AND HI-LO-EQ. REFERENCES APICS RESEARCH PROJECT NO. 1 FOR MORE DETAILS.

1401-10.3.026 ONE HUNDRED THOUSAND NODE

LESS PROGRAM FOR THE 4K IBM 1401 CARD SYSTEM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.026

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A PROGRAM FOR THE SOLUTION OF EXTREMELY LARGE CRITICAL PATH SCHEDULING REQUIREMENTS. A NEW APPROACH TO THE PROBLEM MAKES SOLUTION VIRTUALLY INDEPENDENT OF MACHINE SIZE. THE PROCEDURE IS PROGRAMMED FOR AN IBM 1401 WITH NO SPECIAL FEATURES BUT AT LEAST FOUR-THOUSAND POSITIONS OF CORE STORAGE. SIMPLE RESTRICTIONS ARE IMPOSED ON THE NUMBERING OF NODES. NODES MUST BE NO MORE THAN 499 APART, AND THE SUCCESSOR MUST BE HIGHER IN NUMBER THAN THE PREDECESSOR. THE PROGRAM IS A MULTIPLE PASS PROCEDURE. THE FIRST PASS COMPUTES EARLIEST STARTING TIME AND/

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OR CHECKS FOR NETWORKS ERRORS. THE SECOND PASS COMPUTES LATEST FINISH TIME REFERRED TO THE END OF THE PROJECT. PASS THREE GIVES ALL OTHER RESULTS AND ALLOWS FOR THE INSERTION OF AN END OF PROJECT SCHEDULE TIME. THE OUTPUT OF PASS THREE IS IN THE FORM OF A PRINTED REPORT AND IN PUNCHED CARD FORM.

1401-10.3.027 LESS NODE NUMBERING PROGRAM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.027

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A PROGRAM TO NUMBER THE NODES OF A CRITICAL PATH NETWORK IN ASCENDING AND CONTINUOUS ORDER ACCORDING TO THE REQUIREMENTS OF THE 1401 LESS PROGRAM. WILL RUN ON ANY SYSTEM 4K OR BETTER, REQUIRING ONLY THE 1402 AND A MODEL 1 1403. CAN PROCESS 544 ACTIVITY CARDS USING ALPHA/NUMERIC NODE IDENTIFICATIONS ENTERED IN RANDOM ORDER. OUTPUT CONSISTS OF CROSS REFERENCE INDEX LISTINGS AND TWO CARD DECKS CONTAINING NEW NUMBERS. THESE DECKS ARE SUITABLE FOR PROCESSING BY THE 1401 LESS PROGRAM BUT MUST FIRST BE SORTED IN ACCORDANCE WITH LESS INPUT REQUIREMENTS.

1401-10.3.028 CRITICAL PATH LISTING AND
RESOURCE ANALYSIS
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.028

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THIS PROGRAM PERFORMS TWO MAJOR FUNCTIONS. FIRST, IT LISTS CRITICAL PATH OUTPUT IN ANY CARD FORMAT. SECOND, IT PERFORMS PRELIMINARY ANALYSIS OF RESOURCE REQUIREMENTS PRIOR TO RESOURCE SIMULATION. THIS ANALYSIS DETERMINES THE REASONABLENESS OF THE RESOURCE REQUIREMENTS. THESE REQUIREMENTS MAY BE REVISED AS A RESULT OF THIS ANALYSIS BEFORE PROCEEDING WITH RESOURCE SIMULATION. THE PROGRAM HAS FOUR OPTIONS.
A. INCLUDE TOTAL FLOAT, FREE FLOAT, RESOURCE ANALYSIS
B. INCLUDE TOTAL FLOAT, RESOURCE ANALYSIS
C. INCLUDE TOTAL FLOAT, FREE FLOAT
D. LIST INPUT CARDS
THE PROGRAM OPTIONS AND DATA FIELD LOCATIONS ARE SPECIFIED BY A CONTROL CARD. THE PROGRAM CAN HANDLE STACKED NETWORKS. MACHINE CONFIGURATION IBM 4K 1401 WITH ADVANCED PROGRAMMING, MULTIPLY/DIVIDE, AND A 1403 WITH 132 PRINT POSITIONS. PROGRAM STORAGE REQUIREMENTS 3568 POSITIONS OF CORE USED. SOURCE LANGUAGE SPS II

1401-10.3.030 INVENTORY MANAGEMENT
SIMULATOR SELECTION PROGRAM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.030

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THIS PROGRAM IS DESIGNED TO BE USED WITH THE 1401 MODULAR INVENTORY MANAGEMENT SIMULATOR /1401-CS-03X/ TO SELECT THE DESIRED SUBROUTINE DECKS PRIOR TO FORTRAN COMPILATION. THE MASTER SIMULATOR DECK MAY BE ON CARDS OR TAPE. METHOD- ONE COMMENT CARD IS READ IN FOR EACH ROUTINE DESIRED. THESE ROUTINES ARE THEN SELECTED FROM THE MASTER DECK /OR, IF TAPE OPTION IS USED, DESIRED ROUTINES ARE PUNCHED/. MACHINE CONFIGURATION 1401 WITH CARD I/O. TAPE CAN BE UTILIZED IF AVAILABLE. SENSE SWITCHES AND ADVANCED PROGRAMMING ARE REQUIRED FOR TAPE OPTION. PROGRAM REQUIREMENTS 970 STORAGE POSITIONS /INCLUDING I/O AREAS AND CONTROL FIELDS/, USED IN CONJUNCTION WITH 1401-CS-03X. SOURCE LANGUAGE- AUTOCODER.

1401-10.3.031 NODE NUMBERING
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.031

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TO ORDER AN ARBITRARILY NUMBERED PERT NETWORK SO THAT THE NETWORK IS CONSECUTIVELY NUMBERED AND THAT EACH ACTIVITY HAS ITS END NODE GREATER THAN ITS START NODE. THE METHOD USED TO ORDER THE NETWORK IS BASED ON TWO RULES. ANY NODE WHICH DOES NOT HAVE ACTIVITY VECTORS GOING TO IT MAY BE NUMBERED AND ONCE A NODE IS NUMBERED ALL ACTIVITY VECTORS ORIGINATING AT THAT NODE MAY BE REMOVED FROM THE NETWORK. MACHINE CONFIGURATION - 8K, 12, OR 16K. ADVANCE PROGRAMMING HIGH LOW EQUAL, SENSE SWITCHES. STORAGE REQUIREMENTS-8K MINIMUM, THE CONDENSED DECK IS ASSEMBLED FOR 16K.

1401-10.3.032 PERT NETWORK RANKING PROGRAM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.032

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CONTINUED FROM PRIOR COLUMN--

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A PROGRAM WHICH WILL ACCEPT A RANDOMLY NUMBERED PERT NETWORK AND SEQUENTIALLY NUMBER IT ACCORDING TO RANK.1 PROGRAM PUNCH CARD OUTPUT MAY BE USED AS INPUT INTO THE 1401 PERT PROGRAM. MINIMUM MACHINE CONFIGURATION- 1401 MODEL C-3, ADVANCED PROGRAMMING PACKAGE, HI-LO-EQ COMPARE, TWO /2/ TAPE DRIVES, 1402 READER-PUNCH, AND A 1403 PRINTER.

1401-10.3.034 TAPE INQUIRY PROGRAM /TIP/
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.034

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WITH THE ADVENT OF AUTOMATIC DATA PROCESSING, MANAGEMENT HAS ACHIEVED THE ABILITY TO ACCURATELY STORE VAST AMOUNTS OF DATA ON MAGNETIC TAPE. THIS ABUNDANT AMOUNT OF DATA CAN PROVIDE MANAGEMENT THE MEANS TO MAKE STATISTICAL SOUND DECISIONS, ONLY IF HE CAN QUICKLY SELECT THOSE ITEMS OF DATA WHICH ARE RELATIVE TO THE PROBLEM AT HAND. THE EXTRACTION OF THE DATA MAY REQUIRE A DIFFERENT PROGRAM FOR EACH DIFFERENT REQUEST. THE LAG TIME THAT IS CREATED IN WRITING THE PROGRAMS TO OBTAIN THE DATA NECESSARY TO MAKE THE FINAL DECISION MAY WELL MAKE AN ACCURATE SOUND DECISION WORTHLESS BECAUSE OF ITS UNTIMELY DELIVERY. THE LAG TIME LARGELY DEPENDS UPON THE DEGREE OF SELECTIVITY OF THE REQUEST. ONE CAN READILY APPRECIATE THE NEED FOR A PROGRAM WHICH WILL RETRIEVE DATA BY SIMPLY PUNCHING A FEW INQUIRY CARDS. IN DECIDING TO USE A GENERAL PURPOSE INQUIRY PROGRAM, ONE MUST TAKE INTO CONSIDERATION THE AMOUNT OF DATA TO BE SEARCHED. IF THE QUANTITY OF DATA INVOLVED IS SEVERAL REELS OF TAPE, OPTIMUM PROGRAM SELECTION EFFICIENCY IS DESIRED. HENCE, ONE MAY DESIRE TO CREATE A SPECIAL PURPOSE PROGRAM. IN DECIDING UPON A SPECIAL PURPOSE PROGRAM, ONE MUST TAKE INTO CONSIDERATION THE FOLLOWING-
1. ASSEMBLY, PROGRAM TESTING AND DEBUGGING TIME OF THE SPECIAL PURPOSE PROGRAM. WILL THE MACHINE TIME NEEDED HERE EXCEED THE TIME SAVED IN USING THIS SPECIAL PURPOSE PROGRAM AND ARE THE MAN HOURS EXPENDED WORTH THE COST?
2. WHAT IS THE PER CENT INCREASE IN OPTIMIZATION ATTAINED OVER THE USE OF THE GENERAL PURPOSE INQUIRY PROGRAM.
3. THE VOLUME OF DATA TO BE SEARCHED.
4. THE ADDITIONAL LAG TIME CREATED FROM REQUEST TO RESPONSE.
5. THE NUMBER OF TIMES THE REQUEST WILL BE MADE.
6. THE LEVEL OF SOPHISTICATION NEEDED IN THE PROGRAM E. G., MUST THE PROGRAM BE INTERRUPTABLE. /TIP PROGRAM IS/.
THE TIP PROGRAM HAS ATTEMPTED TO MINIMIZE THE NUMBER OF INSTRUCTIONS PER CONDITION CONTAINED IN AN INQUIRY. THE ABILITY TO PROCESS AT LEAST EIGHT /8/ INQUIRIES WITH UP TO NINE /9/ CONDITIONS PER INQUIRY PER PASS OF THE TAPE ADDS TO ITS FLEXIBILITY. ERROR DETECTION HAS BEEN BUILT INTO THE PROGRAM TO ASSURE VALID OR LOGICAL USE OF THE ,,AND,, OR ,,OR,, OPERATORS. THE TIP PROGRAM, USED FOR SELECTION OF TAPE RECORDS AND PLACING THEM ON A SECOND TAPE, CONSISTS OF TWO /2/ PARTS.
1. THE PROGRAM WHICH CREATES THE PROGRAM THAT SEARCHES THE TAPE.
2. THE EXECUTION OF THE TAPE SEARCH BY THE NEWLY CREATED PROGRAM.
NOTE- THE PROGRAM WHICH CREATED THE PROGRAM THAT SEARCHES THE TAPE FILE WAS WRITTEN IN THE TAPE INPUT AREA AND IS COMPLETELY CLEARED FROM CORE PRIOR TO THE EXECUTION OF THE TAPE SEARCH.
MACHINE CONFIGURATION-
1401 ADVANCED PROGRAMMING /INDEXING, HIGH, LOW, EQUAL COMPARE/,
1402 READER/PUNCH,
1403 PRINTER,
7330 OR 729, /2 UNIT - 3 UNITS IF INTERRUPT IS DESIRED/,
CORE 8K.

1401-10.3.035 QUICK KWIC INDEX
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.035

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THIS IS A ONE PASS PROGRAM TO PRODUCE A SIMPLE KWIC INDEX FROM CARDS USING ONLY ONE CARD FOR EACH ENTRY TO THE INDEX. PREVIOUS PROGRAMS HAVE GENERALLY REQUIRED SEVERAL MACHINE RUNS TO PRODUCE A KWIC INDEX. THE PROGRAM REQUIRES A 4K 1401 WITH 1402 AND 1403 AND 4 TAPE DRIVES. ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE FEATURES ARE REQUIRED. THE PROGRAM IS WRITTEN IN AUTOCODER AND USES THE FULL 4000 MEMORY POSITIONS.

1401-10.3.036 GENERAL RETRIEVAL
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.036

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GENERAL RETRIEVAL IS A TAPE TO TAPE PARAMETER-TYPE PROGRAM DESIGNED TO PERFORM A MULTI-LEVEL RETRIEVAL ON ANY FORMAT FIXED RECORD LENGTH MAGNETIC TAPE FILE. THIS ELIMINATES THE NECESSITY OF A SEPARATE PROGRAM FOR EACH TYPE OF RETRIEVAL, AND ACCOMMODATES ANY UNUSUAL REQUESTS WHICH MAY OCCUR. AN OPTION TO PRINT THE OUTPUT FILE WHILE RETRIEVING IS PROVIDED. THE OPERATION CAN BE INTERRUPTED AT ANY TIME BY TURNING ON A SENSE SWITCH, AND REMOVED COMPLETELY FROM THE COMPUTER. RESTART PROCEDURES CONSIST ONLY OF RELOADING THE PROGRAM AND TAPES, AND SETTING A SENSE SWITCH. MINIMUM MACHINE REQUIREMENTS- 4000 POSITIONS OF CORE, 2 MAGNETIC TAPE DRIVES, CARD READER, PRINTER, INDEXING FEATURE, SENSE SWITCHES, AND HI-LO-EQ COMPARE. SOURCE LANGUAGE- AUTOCODER.

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1401-10.3.037 PROGRAM TO PRODUCE MULTIPLE INDEXES

AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.037

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THIS PROGRAM SYSTEM CONSISTS OF THREE PROGRAMS USED IN SEQUENCE. THEY SELECT NECESSARY INFORMATION FROM A FILE OF DATA, SORT IT, AND PRODUCE UP TO FOUR DIFFERENT INDEXES OF THE ORIGINAL DATA IN A SINGLE PASS. 1/ PROGRAM TO SELECT INFORMATION FOR INDEXES /IPSEL/ - SELECTS FROM A COMPLETE FILE OF DATA ALL THE INFORMATION NEEDED TO PRODUCE THE INDEXES DESIRED. THE DATA FILE IS IN A SPECIFIED FORMAT, PREVIOUSLY CHECKED FOR SEQUENCE AND ACCURACY. 2/ A SORT II PROGRAM - SORTS THE DATA SELECTED BY IPSEL. THE SORTED OUTPUT IS USED AS INPUT TO IPPIP. 3/ PROGRAM TO PRINT INDEXES /IPPIP/ - PROCESSES THE SORTED OUTPUT AND PREPARES A MAGNETIC TAPE CONTAINING THE INDEXES IN PRINT FORMAT. REQUIREMENTS- IPSEL AND IPPIP RUN ON AN IBM 1401 WITH 16,000 MEMORY POSITIONS, TWO TAPE DRIVES, 1401 CONSOLE, ADVANCED PROGRAMMING AND HIGH-LOW-EQUAL COMPARE FEATURES. THE SORT II PROGRAM REQUIRES AT LEAST TWO ADDITIONAL TAPE DRIVES. SOURCE LANGUAGE- 1401 AUTOCODER WITH LOGS. ONE REEL OF MAGNETIC TAPE IS REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL. THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.3.038 LESS AND DATE CONVERSION PROGRAM

AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.038

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THIS IS A 1401 PROGRAM WRITTEN TO PERFORM THE SCHEDULING PORTION OF LESS AND CONVERSION OF OUTPUT TIMES TO CALENDAR DATES IN ONE PROCESSING RUN, IF DESIRED. PRIMARY AIMS ARE ABILITY TO HANDLE INPUT TIMES OF HOURS, DAYS OR WEEKS; ADAPT TO USER SPECIFIED STANDARD WORK WEEK WITH SPECIAL DATE HANDLING; AUTOMATIC UTILIZATION OF ALL CORE 4K-16K; SEVERAL TYPES OF OUTPUT OPTIONS, TRACKING OF ERROR LOOPS; SIMPLICITY AND SPEED OF OPERATION. A TECHNIQUE OF A SELF-CREATING PROGRAM TAPE IN SMALL PHASES, CALLED BY A CONTROL PROGRAM IS USED, THEREBY MAKING MAXIMUM USE OF CORE FOR LESS AND DATE TABLES. TWO WORK TAPES ARE UTILIZED TO AVOID RELOADING OF DATA MULTIPLE TIMES, BUT THE MAIN TABLES RESIDE IN CORE FOR FASTER OPERATION. PROGRAM REQUIREMENTS- ADVANCE PROGRAMMING PACKAGE, MODIFY ADDRESS, HI-LO-EQUAL COMPARE, SENSE SWITCHES, THREE TAPES AND A CORE SIZE OF 4000 TO 16000.

THE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.3.039 THE TRAVELING SALESMAN

AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.039

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A PROGRAM TO SOLVE THE TRAVELING SALESMAN PROBLEM, WHERE IT IS DESIRED TO FIND THE MINIMUM DISTANCE REQUIRED TO VISIT A NUMBER OF CITIES AND RETURN. THE PROGRAM USES AN ALGORITHM DEVELOPED BY THE AUTHOR, WHICH SELECTS AN INITIAL CONTINUOUS PATH, AND SEARCHES FOR IMPROVEMENTS THAT CAN BE MADE THAT WILL NOT DESTROY CONTINUITY. MAXIMUM PROBLEM SIZE FOR AN 8K 1401 IS 11 CITIES, WHICH CAN BE SOLVED IN LESS THAN 3 MINUTES. THE PROGRAM WAS WRITTEN IN FORTRAN, AND HAS BEEN COMPILED AND TESTED ON THE 1620, THE 1410, THE 709, AND THE 7094. COMPUTATIONS ARE DONE IN FIXED POINT ARITHMETIC. MULTIPLY-DIVIDE, HI-LO-EQUAL COMPARE, AND ADVANCED PROGRAMMING ARE REQUIRED. PROGRAM IS STRUCTURED TO USE ALL AVAILABLE MEMORY. ADDITIONAL CORE MAY BE USED TO SOLVE PROBLEMS OF UP TO 45 CITIES WITH 16K CORE.

1401-10.3.040 BOND INVENTORY OR VALUATION

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.040

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THIS TWO PASS PROGRAM WAS DESIGNED AS A WORKING TOOL FOR HOLDERS OF BOND PORTFOLIOS. FIRST PASS IS AN INPUT VALIDITY CHECK. SECOND PASS PRODUCES SIMPLE INVENTORY AND/OR VALUATED INVENTORY REPORTS FOR ANY NUMBER OF PORTFOLIOS. FOUR REPORTS ARE PRODUCED FOR EACH PORTFOLIO AS FOLLOWS- 1/ AN ITEMIZED SCHEDULE GROUPING INFORMATION BY YEAR OF MATURITY. 2/ A RECAP BY TYPE OF SECURITIES. 3/ A RECAP BY YEAR OF MATURITY. 4/ A WEIGHTED AVERAGE MATURITY OF THE PORTFOLIO. SIMPLE INVENTORY OUTPUT INCLUDES DESCRIPTIVE DATA AND COMPUTED PAR VALUE AND LINEARLY AMORTIZED BOOK VALUE, AND VARIATION BETWEEN CURRENT MARKET PRICE AND BOOK VALUE. PROGRAM INPUT IS COMPATIBLE WITH BOND TRADE ANALYSIS PROGRAM AND THE OUTPUT IS SUGGESTED FOR USE WITH THAT PROGRAM. OUTPUT ALSO HAS MANY ACCOUNTING VALUES. PROGRAM REQUIREMENTS- 8K 1401 WITH HIGH-LOW-EQUAL COMPARE AND ADVANCED PROGRAMMING, 1402, AND 1403.

OPTIONAL MATERIAL - AUTOCODER SOURCE DECKS FOR THE EDIT PASS AND MAIN PASS.

1401-10.3.041 FAST - FULLY AUTOMATIC SCORING TECHNIQUE

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.041

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A COMPLETE SYSTEM OF TEST SCORING AND REPORTING. THE SYSTEM USES THE IBM 1401 CARD DATA PROCESSING SYSTEM. THE INPUT SOURCE DOCUMENT IS A MARK-SENSE TEST ANSWER CARD. METHOD- BASICALLY, TABLE LOOKUP AND COMPUTATION. WILL SCORE UP TO TEN DIFFERENT TESTS FOR AN INDIVIDUAL STUDENT, USING ALL NORMAL FORMULA/S OR SCORING TECHNIQUES. UP TO SIXTEEN RAW SCORE POINTS SUMMARIZED INTO A SINGLE OUTPUT CARD PER STUDENT. STORAGE REQUIREMENTS- 4K. EQUIPMENT SPECIFICATIONS- CARD SYSTEM, COLUMN BINARY, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, SENSE SWITCHES, 1403 PRINTER MODEL 2, 1402 CARD READ PUNCH. LANGUAGE - CARD AUTOCODER /BASIC/.

1401-10.3.042 INFORM 2 - GENERALIZED INFORMATION RETRIEVAL SYSTEM

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.042

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INFORM-2 IS A GENERALIZED BASIC INFORMATION RETRIEVAL SYSTEM DESIGNED FOR USE ON AN IBM 1401 WITH 4K MEMORY AND 2-3 MAGNETIC TAPE DRIVES. EACH FILE ITEM IS ORGANIZED TO PERMIT STORAGE OF UP TO 6000 CHARACTERS OF TEXTUAL INFORMATION. INFORM-2 EMPLOYS 9 - CHARACTER KEY WORK MATCH LOGIC TOGETHER WITH THE OPTIONAL USE OF OTHER SPECIFIC CRITERIA-AUTHOR, SOURCE, DATE RANGE, AND SUBJECT. A FILE ITEM MAY BE INDEXED USING UP TO 54 UNLINKED KEY WORDS. QUERIES MAY USE A LIKE NUMBER OF KEY WORDS, COMBINED IN VARIOUS AND/OR RELATIONSHIPS. INFORM-2 MAY BE USED INDIVIDUALLY OR IN CONJUNCTION WITH THE IBM 1401 KWIC INDEX SYSTEM AND/OR THE IBM 1401 SDI-3 SYSTEM. THE 4K 1401 MUST, IN ADDITION TO TWO MAGNETIC TAPE DRIVES, HAVE THE HI-LO-EQUAL COMPARE, SENSE SWITCHES, AND 1403 PRINTER /132/, THE ADVANCED PROGRAMMING FEATURE, AND SENSE SWITCHES. THE PROGRAM IS WRITTEN IN 1401 AUTOCODER.

1401-10.3.043 DETERMINATION OF PAYROLL HOURS FROM 357 JOB-IN AND CLOCK-OUT CARDS.

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.043

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THIS PROGRAM HAS BEEN DESIGNED TO PRODUCE LABOR DISTRIBUTION CARDS FROM EACH JOB-IN CARD AND ONE CLOCK CARD FOR EACH MAN, SUMMARIZING HIS REGULAR HOURS, OVERTIME HOURS, DOUBLE TIME HOURS AND TOTAL HOURS. THE LABOR DISTRIBUTION CARDS PRODUCED ARE ESSENTIALLY THE SAME AS THE JOB CARDS AND ARE ONLY PUNCHED HERE TO PROVIDE INFORMATION FOR A LATER PROGRAMS WHICH HAD BEEN IN USE PRIOR TO THE 357 SYSTEMS INSTALLATION. THE PROGRAM HANDLES AUTOMATICALLY, SITUATIONS INVOLVING A THREE-SHIFT OPERATION AND ALL DAYS OF THE WEEK.

1401-10.3.044 PROJECT PROGRESS REPORT PHASE 1

AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.044

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THIS PROGRAM EVALUATES THE PROGRESS OF PROJECTS BY INDIVIDUAL WITH TOTALS FOR INDIVIDUALS, GROUPS AND THE ENTIRE REPORT. COMPLETED PROJECTS CAN BE ENTERED FOR HISTORY AND MAN-DAYS EARLY OR LATE ARE COMPUTED. FUTURE PROJECTS CAN BE ENTERED FOR INFORMATION AND ARE PICKED UP AS CURRENT PROJECTS WHEN THE START DATE IS PASSED. CURRENT PROJECTS ARE CHECKED, WARNINGS PRINTED ON CONDITION, AND PROJECTED COMPLETION DATES AND MAN-DAYS DEVIATION FROM THE SCHEDULED COMPLETION DATE ARE CALCULATED AND PRINTED ON ANOTHER CONDITION. SIX MONTHLY PROJECTIONS OF MAN-DAY WORK LOAD ARE COMPUTED FOR CURRENT AND FUTURE PROJECTS FOR EACH INDIVIDUAL. MINIMUM MACHINE REQUIREMENTS- 1401 8K, MULTIPLY-DIVIDE, ADVANCED PROGRAMMING PACKAGE AND HIGH-LOW-EQUAL COMPARE. SOURCE LANGUAGE IS AUTOCODER. PROGRAM USES 5900 POSITION OF CORE. 1402 CARD READER 132 POSITION 1403 PRINTER.

1401-10.3.045 SYNTRAN AN INDEXING ABSTRACTING AND RETRIEVAL SYSTEM

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.3.045

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SYNTRAN IS AN IBM 1401 INFORMATION RETRIEVAL SYSTEM. IT IS DESIGNED TO INDEX, ABSTRACT, AND RETRIEVE INFORMATION RECORDED IN ENGLISH PROSE LANGUAGE. IT IS EFFECTIVE ON TEXTS OF ANY LENGTH, COVERING ANY NON-FICTION SUBJECT. IT ESTABLISHES AN INDEX IN DEPTH WITH A MINIMUM OF KEY WORDS /3 PER CENT OF TEXT WORD TOTAL/. ITS INDEX FACILITATES BOTH PREPARATION OF A THESAURUS /10.3.054/ AND RETRIEVAL OF UP TO 80 PER CENT OF TEXT FILE INFORMATION RELEVANT TO PROSE STYLE QUERIES WITH UP TO 80 PER CENT OF RETRIEVALS ACTUALLY RELEVANT. SYNTRAN ABSTRACTS WITH SUFFICIENT ACCURACY TO PROVIDE VIRTUALLY THE SAME INFORMATION AS WOULD BE ABSTRACTED MANUALLY. MOREOVER, SYNTRAN ABSTRACTING CAN BE BIASED TO SERVE A PARTICULAR INTEREST. SYNTRAN IS PROGRAMMED FOR AN 8K 1401 WITH 4 TAPE DRIVES, 1402, 1403, ADVANCED PROGRAMMING, MULTIPLY/DIVIDE, AND SENSE SWITCHES. PROGRAMS ARE WRITTEN IN AUTOCODER. THE ONE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.3.046 PERT INPUT GENERATOR
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.046

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A 1401 SYSTEM TO SIMPLIFY AND INCREASE THE USABILITY OF IBM PERT COST II PROGRAM. 1/ UTILIZING FORMS THAT ARE MEANINGFUL, EASILY READ AND UNDERSTOOD, MINIMIZE DUPLICATION AND REDUCE THE POSSIBILITY OF ENTERING OR PUNCHING DATA IN THE WRONG PLACE 2/ ASSIGN AND RECORD CATEGORY AND SEQUENCE CODES TO INPUT, ALLOWING PROGRAM OFFICE KNOWLEDGE AND CONTROL, TOGETHER WITH MECHANICAL ARRANGING AND MODULAR PROGRAMMING 3/ PRE-EDIT AND SEQUENCE INPUT TO PRECLUDE A MAXIMUM NUMBER OF ERROR CONDITIONS, AS WELL AS INCREASING THE POTENTIAL OF OBTAINING MEANINGFUL REPORTS 4/ ALLOW CHANGES TO IBSYS CARDS CONTROLLING DATE AND TYPE OF RUN 5/ MINIMIZE OPERATOR INTERVENTION AND HANDLING. RANGE- 99 SUB-NETWORKS FOR EACH NETWORK. 1 NETWORK PER RUN. RESOURCE CATEGORY FIELD LIMITED TO 4 DIGITS. EQUIPMENT SPECIFICATIONS- 8K 1401, 4 TAPE DRIVES.

1401-10.3.047 INFORMATION STORAGE AND
RETRIEVAL PROGRAM
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.3.047

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THE INFORMATION STORAGE AND RETRIEVAL /ISR/ SYSTEM IS ALSO KNOWN AS THE COMBINED FILE SEARCH SYSTEM/CFSS/. IT OPERATES ON AN IBM 8K, 1401 WITH THE ADVANCED PROGRAMMING PACKAGE, SENSE SWITCHES, 4 TAPE UNITS, A CARD READER, AND A PRINTER. TO IMPROVE THROUGHPUT IN THE SEARCH ONE 1311 MAY BE USED ON AN OPTICAL BASIS. THE SYSTEM IS GENERAL PURPOSE.. IT ACCOMMODATES LARGE FILES.. IT OFFERS AN ELABORATE SET OF SEARCH OPTIONS.. IT HAS AN UNUSUALLY FAST SEARCH, AND IT IS DESIGNED TO GRADUATE INTO MORE ELABORATE SYSTEMS. CFSS IS TESTED, OPERATIONAL, AND READY FOR IMMEDIATE USE. ITS SIGNIFICANCE IS THAT IT UTILIZES A LOW COST, SMALL COMPUTER CONFIGURATION, YET PROVIDES SOPHISTICATED FUNCTIONS COUPLED WITH VERY ECONOMICAL OPERATING TIMES. THESE CHARACTERISTICS ARE POSSIBLE BECAUSE OF THE FILE STRUCTURE AND THE SEARCH TECHNIQUE. THE FILE STRUCTURE AND THE SEARCH TECHNIQUE ARE CLOSELY INTERRELATED ELEMENTS OF THE TOTAL SYSTEM, EACH NECESSARY TO THE OTHER. THE MASTER FILE IS STRUCTURED ACCORDING TO THE CONCEPT OF COORDINATE INDEXING, USING INDEPENDENT TERMS AS THE BASIC DESCRIPTIVE ELEMENTS. HOWEVER, CFSS PROVIDES FOR SUBTERMS, THAT IS, DEPENDENT ADJECTIVES TO THE TERMS, AND FOR ASSOCIATING NUMERICAL VALUES WITH ANY TERMS OR SUBTERMS. THIS FACILITY MAKES POSSIBLE ANOTHER DIMENSION IN BOTH FILE INDEXING AND FILE SEARCHING. ANY GIVEN DOCUMENT CAN THUS BE DESCRIBED TO A CONSIDERABLE DEPTH AND TO A FINE DEGREE OF PRECISION, AND THIS CAN BE DONE INDEPENDENT OF THE LEVEL OF DESCRIPTION IN OTHER DOCUMENTS. THE SEARCH TECHNIQUE ITSELF IS A SYNTHESIS OF THE TRADITIONAL SERIAL FILE AND INVERTED FILE METHODS, RETAINING THE STRENGTHS OF EACH AND AVOIDING THEIR WEAKNESSES. THIS SUCCESSFUL SYNTHESIS EXTENDS THE POWER OF THE SEARCH AND AT THE SAME TIME ACHIEVES A SIGNIFICANTLY GREATER EFFICIENCY IN OPERATING TIME. THE METHOD OF THE COMBINED FILE SEARCH BASICALLY USED THE INVERTED FILE TO DRASTICALLY REDUCE THE DOMAIN OF INTEREST AND PERFORMS THE ACTUAL, DETAILED SEARCH ON THE RESULTANT REDUCED SERIAL FILE. IT THUS CIRCUMVENTS THE INCOMPATIBILITY BETWEEN THE SEARCH REQUEST, WHICH CONTAINS DESIRED CHARACTERS, WORDS, AND THE SERIAL FILE, WHICH IS ORGANIZED BY FILE RECORD IDENTITY. THIS INCOMPATIBILITY REQUIRES THAT EVERY REQUEST LOOK AT EVERY RECORD, A GRASS AND INHERENT INEFFICIENCY. AT THE SAME TIME, THE METHOD AVOIDS THE LIMITATIONS OF THE INVERTED FILE IN THAT IT MAKES ITS FINAL DETERMINATION ON THE INDIVIDUAL FILE RECORD WITH A FACILITY FOR DEPTH AND PRECISION NOT ATTAINABLE ON THE INVERTED FILE. FOR EXAMPLE, THE SUBTERMS, NUMERICAL VALUES, AND LINKS AND ROLES ACCOMMODATED IN CFSS ARE IMPOSSIBLE OR CUMBERSOME IN A STRICT INVERTED FILE SEARCH. THE GENERALITY OF THE FILE STRUCTURE IS ATTESTED TO BY THE ACCOMMODATION OF FILES IN ENGINEERING PARTS, MEDICAL LIBRARY MATERIAL, PERSONNEL RECORDS, ETC. THE STRUCTURE IS ALSO FLEXIBLE, PERMITTING THE ADDITION OF SPECIAL FUNCTIONS WHILE LEAVING THE BASIC STRUCTURE INTACT, AN EXAMPLE OF WHICH IS THE INCORPORATION OF THE LINKS AND ROLES FUNCTION. THE FILE THUS ALLOWS BREADTH AND DEPTH BUT PERMITS INDEXING AND SEARCHING TO TAKE PLACE AT ANY DESIRED LEVEL ACCORDING TO THE REQUIREMENTS OF THE INDIVIDUAL DOCUMENT AND THE INDIVIDUAL SEARCH REQUEST. THE IMPACT OF CFSS THEN RESIDES IN THE ACHIEVEMENT OF POWER, FLEXIBILITY, GENERALITY, AND EFFICIENCY IN A SINGLE SYSTEM. THESE CHARACTERISTICS ARE ROOTED IN THE FILE STRUCTURE AND THE SEARCH METHOD WHICH REPRESENT AN ADVANCE TO A MORE ACCURATE CONFORMITY TO THE INHERENT NATURE OF ISR. A FURTHER IMPORTANCE OF CFSS IS THAT IT IS NOT A THEORETICAL APPROACH, BUT A CONCEPT TRANSLATED INTO AN OPERATING SYSTEM,

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AVAILABLE TO THOSE WITH ISR NEEDS. THIS PROGRAM ALSO PERMITS TRUNCATION OF SUBDESCRIPTORS, ALLOWS FOR LARGER SEARCH QUESTIONS /UP TO 2200 CHARACTERS/, ALLOWS CARD OR TAPE INPUT /SEARCH/, ALLOWS UP TO 16 SCOPE NOTES IN DICTIONARY PROGRAM /MAXIMUM SIZE PERMISSIBLE BY SORT II OR SORT VII/, PROVIDES INPUT PRINT PROGRAM IN UTILITIES SECTION AND ADDS A MAINT 7 WHICH PROVIDES FOR DUPLICATION OF MASTER FILE, MERGING OF MULTIPLE MASTER FILES AND RECONSTRUCTION OF DESCRIPTOR FILE FROM MASTER FILE. ONE-REEL OF MAGNETIC TAPE IS REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL. THIS TAPE MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.3.048 SYSTEM FOR INFORMATION
STORAGE, RETRIEVAL, AND DISSEMINATION
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-10.3.048

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THE SYSTEM DESCRIBED IN THIS WRITE-UP CONSISTS OF SEVEN DISTINCT PROGRAMS /IPBUL, IPDUP, IPDUD, IPPUD, IPSOD, IPPAP, IPANS/. THESE PROGRAMS ARE DESIGNED TO PERFORM THE NECESSARY PROCEDURES OF INFORMATION STORAGE, RETRIEVAL, AND DISSEMINATION. THE SELECTION PROCESS IS BASED ON FIVE DIFFERENT CRITERIA INCLUDING BOTH BOOLEAN EXPRESSION AND PERCENTAGE FACTOR SELECTION CAPABILITIES. IN THE RETRIEVAL PORTION THE ANSWERS CAN BE LIMITED TO THE NUMBER OF MOST RELEVANT DOCUMENTS DESIRED BY THE REQUESTOR. SEARCH TERMS CAN BE WEIGHTED. COMPLETE ABSTRACTS OF ALL DOCUMENTS RETRIEVED OR DISSEMINATED CAN BE LISTED. IN THE DISSEMINATION PORTION NOTIFICATION CARDS ARE ALSO PREPARED. DURING THE DISSEMINATION OF NEW DOCUMENTS THE INFORMATION REGARDING THESE DOCUMENTS IS ADDED TO THE FILE OF DOCUMENTS, IN DESCRIPTOR SEQUENCE, WHICH ARE SEARCHED DURING THE RETRIEVAL PHASE. THE SYSTEM REQUIRES A 16K 1401 WITH A MINIMUM OF FOUR TAPE DRIVES, CONSOLE INQUIRY STATION, HI-LO-EQUAL COMPARE, AND ADVANCED PROGRAMMING FEATURES. THE SYSTEM WAS WRITTEN USING 1401 AUTOCODER WITH IOCS. MODIFICATIONS CAN BE MADE TO THE INDIVIDUAL PROGRAMS TO ELIMINATE THE 1407. A REDESIGN OF SOME PROGRAMS COULD ENABLE THE USER TO RUN THE SYSTEM ON A 1401 SMALLER THAN 16K.

THE TWO REELS OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.3.049 SKILLS INVENTORY SYSTEM
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.3.049

AUTHOR...MRS. B.K. PAVELLE

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THE SKILLS INVENTORY SYSTEM IS AN INFORMATION RETRIEVAL SYSTEM WHICH ALLOWS ACCESS TO PRECODED DATA CONCERNING EMPLOYEE SKILLS AND BACKGROUND. THE SYSTEM HAS THE ABILITY TO SELECT EMPLOYEES MEETING THE QUALIFICATIONS FOR AVAILABLE POSITIONS. STATISTICAL ANALYSES MAY ALSO BE PERFORMED. A FILE CODED EMPLOYEE INFORMATION IS BUILT WHICH CAN BE UPDATED, SEARCHED AND RETRIEVED IN UNCODED FORM /ENGLISH RATHER THAN CODES/. MACHINE CONFIGURATION- 8K 4-TAPE 1401 WITH ADVANCED PROGRAMMING PACKAGE AND HIGH-LO-EQUAL COMPARE.

THE REEL OF TAPE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1401-10.3.050 1401/1311 TRANSPORTATION
PROBLEM
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.3.050

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THE TRANSPORTATION PROBLEM OPTIMIZES THE COST OF SHIPPING A PRODUCT FROM A NUMBER OF WAREHOUSES /SUPPLIERS/ TO A NUMBER OF RETAILERS /DEMANDERS/. THIS CLASS OF PROBLEM INCLUDES PERSONNEL ASSIGNMENT, PRODUCTION SCHEDULING, DISTRIBUTION PROBLEMS, CONTRACT AWARDS, ETC. THE SOURCE LANGUAGE IS AUTOCODER. THE MAXIMUM PROBLEM SIZE IS 300 SUPPLIERS BY 999 DEMANDERS. THE TIME REQUIRED TO SOLVE A PROBLEM DEPENDS UPON THE PROBLEM SIZE AND THE NUMBER OF ITERATIONS TAKEN. A 15X23 PROBLEM RAN IN 10 MINUTES. A 50X40 RAN 7 HOURS. THE PROGRAM IS WRITTEN FOR A 16K 1401 WITH ADVANCED PROGRAMMING, MULTIPLY-DIVIDE FEATURE AND ONE 1311 DISK DRIVE WITH DIRECT SEEK.

OPTIONAL PROGRAM MATERIAL - SOURCE DECKS.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1401-10.3.053 LESS IV
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-10.3.053

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TO CONVERT THE OUTPUT FROM 1401 LESS /LEAST COST ESTIMATING AND SCHEDULING/ 8K, 12K, 16K - PRESENTLY IN AN ELAPSED DAY FORMAT, TO AN ACTUAL CALENDAR DATE FORMAT. THIS PROGRAM STARTS AT ANY PRESELECTED DAY, INCLUDES WEEKENDS AND HOLIDAYS OR ELIMINATES THEM SELECTIVELY. ELAPSED DURATION CANNOT EXCEED 36 MONTHS. 1401 CARD SYSTEM W/8K, MULTIPLY-DIVIDE FEATURE. HI-LOW-EQUAL COMPARE. SOURCE LANGUAGE IS AUTOCODER.

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LIB-H IS THE ONLY PROGRAM CURRENTLY REQUIRING 12K. FOUR OF THE OPERATING SYSTEMS OF THE LIBRARY MANAGEMENT SYSTEMS COMPRISE THE NORMAL INPUTS TO THIS SERIES OF PROGRAMS, HOWEVER, HISTORICAL DATA CAN BE ENTERED DIRECTLY INTO THIS SYSTEM. OUTPUTS OF THE PROGRAMS INCLUDE- TRANSACTION CODE COUNTERS BY BATCH, COUNTS OF ACTIVITY BY DEPARTMENTS AND BY USERS, TABULATED REPORTS BY AREA/DEPARTMENT/MAN /THREE OPTIONS/. SUBJECT/DEPARTMENT /TWO OPTIONS/, SUBJECT/MAN /TWO OPTIONS/ BUILDING. ADDITIONAL REPORTS AVAILABLE AS A BRANCH OF THIS SYSTEM WILL BE AVAILABLE IN A LATER RELEASE AND INCLUDE- A RECAP OF ACTIVITY BY VENDOR /OPTIONAL IN TAB OR LIST FORM/, A RECAP OF ACTIVITY BY TITLE OF CIRCULATED ITEMS, A RECAP OF ACTIVITY BY TITLE BY THE REQUESTOR WHO ORDERED THE ITEM.

TO OBTAIN THE BASIC MACHINE READABLE MATERIAL ONE FULL, 2400 FOOT, REEL OF MAGNETIC TAPE IS REQUIRED. THIS TAPE MAY BE SUPPLIED OR ORDERED FROM YOUR IBM REPRESENTATIVE.

1401-10.3.063 FAST - FULLY AUTOMATIC SCORING TECHNIQUE - PHASE 1 PROGRAM PACKAGE AVAILABLE 4TH QUARTER 1966. SPECIFY FILE NUMBER 1401-10.3.063

AUTHOR...MR. C.F. WILKES

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MR. C.F. WILKES, IBM CORP., 9045 LINCOLN BLVD., LOS ANGELES, CALIF.

FAST PROGRAMS ARE DESIGNED TO ACCEPT-FAST-TEST ANSWER CARDS, A VERTICALLY ORIENTED, TWO-COLUMN PER SIDE MARK-SENSE CARD ON WHICH A TEST SUBJECT MARKS HIS RESPONSES. THIS TYPE OF RESPONSE WILL BE SCORED WITHIN THE COMPUTER. IN ADDITION, KEY PUNCHED OR 1230/534 PUNCHED RAW SCORES CAN BE ACCOMMODATED. REGARDLESS OF INPUT METHOD, RAW SCORES ARE CONVERTED TO DERIVED SCORES, LISTED IN VARIOUS SEQUENCES, PRINTED ON PRESSURE-SENSITIVE LABELS, AND PRODUCE PROFILE CARDS. A FIVE-POINT FREQUENCY DISTRIBUTION CAN BE PRODUCED. CAN BE RUN ON 1401, 1440 OR 1460 SYSTEMS, WITH 8K, ONE 1311 DISK DRIVE, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, BIT-TEST, AND ANY 1401/40/60 I/O HARDWARE. IF FAST MARK-SENSE CARDS ARE USED, MUST HAVE COLUMN BINARY OR CARD IMAGE FEATURE. ONE ADDITIONAL 1311 DRIVE REQUIRED IF DISK RECORDS ARE SORTED FOR ADDITIONAL LISTING SEQUENCES.

1401-11.0.003 A PROGRAM FOR SOLVING SYSTEMS OF LINEAR EQUATIONS ON THE IBM 1401 AVAILABLE 1ST QUARTER 1962. SPECIFY FILE NUMBER 1401-11.0.003

AUTHOR...SCREEN NORDIN
IBM SVENSKA BA
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DIRECT INQUIRIES TO AUTHOR

A PROGRAM FOR SOLVING LINEAR EQUATION SYSTEMS. IT IS ALSO WELL SUITED AS A DEMONSTRATION PROGRAM. 4,000 POSITIONS 1401 MODEL C3 1402 CARD READ PUNCH 1403 PRINTER 2 TAPE UNITS

1401-11.0.005 REACTION TIMING PROGRAM FOR IBM 1401 /CARD/ AVAILABLE 2ND QUARTER 1962. SPECIFY FILE NUMBER 1401-11.0.005

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THE REACTION TIMING PROGRAM FOR THE IBM 1401 IS DESIGNED PRIMARILY AS A DEMONSTRATION. HOWEVER, THE PROGRAM CAN BE USED TO MEASURE REACTION TIME AS A FUNCTION OF WAITING TIME. 1401 1. 4K /SENSE SWITCHES DESIRABLE/ 1402, 1403 MODEL 1 OR 2.

1401-11.0.007 FALLOUT AVAILABLE 3RD QUARTER 1962. SPECIFY FILE NUMBER 1401-11.0.007

AUTHOR...THOMAS P. CALLAHAN
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DIRECT INQUIRIES TO AUTHOR

FALLOUT IS A PACKAGE OF DEMONSTRATION PROGRAMS DESIGNED TO EMPHASIZE AUDIENCE PARTICIPATION AND VISUAL IMPACT WHILE DEMONSTRATING 1401 CAPABILITIES. SOURCE LANGUAGE SPS 4K CARD 1401 WITH SENSE SWITCHES REQUIRED FOR BASIC PACKAGE. FALLOUT IS DESIGNED TO DEMONSTRATE 1401 CAPABILITIES TO ANYONE, PARTICULARLY PERSONS WITH NO DATA PROCESSING KNOWLEDGE WHATSOEVER. SOME CAPABILITIES DEMONSTRATED ARE OUTPUT PRINTING SPEED, INTERNAL STORAGE CAPACITY, INTERNAL ARITHMETIC SPEED, DECISION-MAKING ABILITY, COMPUTER LOGIC, AND COMPUTER FLEXIBILITY.

1401-11.0.009 INFORMATION RETRIEVAL DEMO AVAILABLE 4TH QUARTER 1962. SPECIFY FILE NUMBER 1401-11.0.009

AUTHOR...H. STERN
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COLUMBUS, OHIO

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM IS A COMPLETE SELF CONTAINED DEMONSTRATION OF 1401 INFORMATION RETRIEVAL. DOCUMENTS, TITLES, ABSTRACTS AND KEYWORDS ARE STORED ON TAPE. INQUIRIES TO THE FILE IS MADE BY A SERIES OF REQUEST CARDS CONTAINING KEYWORDS. IF THE DOCUMENT CONTAINS ALL OF THE KEYWORDS THEN ITS TITLE AND ABSTRACT ARE PRINTED ON THE 1403.

4K, ADVANCE PROGRAMMING.

1401-11.0.010 THE GAME BRIDGE-IT ON THE 1401

AVAILABLE 1ST QUARTER 1963. SPECIFY FILE NUMBER 1401-11.0.010

AUTHOR...GUNTHER WENZEL
IBM DEUTSCHLAND DP BASIC RESEARCH
INTERNATIONALE BUERO MASCHINEN GMBH
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DIRECT INQUIRIES TO AUTHOR

THIS DEMONSTRATION PROGRAM PLAYS THE GAME BRIDGE-IT. IT MUST HAVE THE FIRST MOVE AND WILL THEN SUCCEED IN EVERY CASE AGAINST THE OPPONENT. THE WINNING STRATEGY IS FROM OLIVER GROSS, RAND CORPORATION. MACHINE CONFIGURATION- 4K 1401, NO SPECIAL FEATURES REQUIRED. THE INPUT CHOICE BETWEEN 1402 AND 1407 IS POSSIBLE.

1401-11.0.012 MUSIC - MUSIC SIMULATION ON A 1401 COMPUTER

AVAILABLE 1ST QUARTER 1964. SPECIFY FILE NUMBER 1401-11.0.012

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MUSIC IS A 1401 PROGRAM WHICH DEMONSTRATES A TECHNIQUE FOR PRODUCING MUSIC ON THE 1403 PRINTER. THE DISTRIBUTED DECK IS SET UP TO PLAY RAVELS BOLERO. THIS WRITE-UP DESCRIBES THE PROCEDURES BY WHICH ANY DESIRED MUSIC MAY BE PRODUCED. MUSIC WILL LOAD AND OPERATE IN 1401S OF ANY SIZE. THE OBJECT MACHINE, HOWEVER, MUST HAVE SENSE SWITCHES AND ADVANCED PROGRAMMING.

1401-12.1.003 AUTOCODER SUBROUTINE TO VERIFY MODULUS 10 CHECK DIGITS

AVAILABLE 2ND QUARTER 1963. SPECIFY FILE NUMBER 1401-12.1.003

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OPEN, FLEXIBLE ROUTINE TO VERIFY MODULUS 10 CHECK DIGITS, WITH EXITS FOR VARIOUS ERROR CONDITIONS. OPERATES ON BASIC NUMBERS FROM 1 TO 15 CHARACTERS IN LENGTH. REQUIRES NO WORDMARKS IN USERS AREA. 1401 WITH ADVANCED PROGRAMMING, H-L-E COMPARE. SOURCE LANGUAGE IS 1401 AUTOCODER.

1401-12.1.004 AUTOCODER SUBROUTINE TO VERIFY MODULUS 11 CHECK DIGITS

AVAILABLE 2ND QUARTER 1963. SPECIFY FILE NUMBER 1401-12.1.004

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OPEN, FLEXIBLE ROUTINE TO VERIFY MODULUS 11 CHECK DIGITS, WITH EXITS FOR VARIOUS ERROR CONDITIONS. OPERATES ON BASIC NUMBERS FROM 1 TO 15 CHARACTERS IN LENGTH. REQUIRES NO WORDMARKS IN USERS AREA. MACHINE CONFIGURATION- 1401 WITH ADVANCED PROGRAMMING, H-L-E COMPARE. PROGRAM REQUIREMENTS- 307 POSITIONS INCLUDING AREAS AND CONSTANTS. SOURCE LANGUAGE- 1401 AUTOCODER SOURCE STATEMENT COUNT- 61.

1401-13.1.001 TAPE DUPLICATION OR COMPARE AVAILABLE 1ST QUARTER 1962. SPECIFY FILE NUMBER 1401-13.1.001

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THIS PROGRAM PERMITS MULTI-FILE DUPLICATION OR COMPARE OF BINARY AND BCD INFORMATION. THE INFORMATION MAY BE IN MIXED OR SINGLE MODE. PROGRAM OCCUPIES 800 POSITIONS IN CORE. MODEL C 3, 2 TAPE DRIVES, OPTIONAL COLUMN BINARY.

1401-13.1.009 RGCP - REPRODUCE, GANG-PUNCH, COUNT & PRINT AVAILABLE 1ST QUARTER 1962. SPECIFY FILE NUMBER 1401-13.1.009

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Contributed Programs

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TO REPRODUCE CARDS, PERFORMING OPERATIONS WHICH WOULD OTHERWISE ENTAIL WIRING A SEPARATE REPRODUCER BOARD, TO LIST CARDS WHERE A REFORMATING OF THE CARD IMAGE IS DESIRED, AND TO SERIALY NUMBER CARDS AND/OR LINES ON A PAGE. 4K 1401, 1402, 1403 MODEL 2, SENSE SWITCHES B-D, ADVANCED PROGRAMMING FEATURE, HIGH-LOW-EQUAL COMPARE.

1401-13.1.025 TAPE-TO-TAPE FOR THE SHARE
LIBRARY

AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-13.1.025

AUTHORS..A.E. BLOSSOM R. HOYNES

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UPDATE SHARE PROGRAM TAPES STARTING WITH REEL NUMBER 5. SHARE MEMBERS MAY BUILD TAPE 5 BY DUPLICATING DISTRIBUTIONS DISSEMINATED FROM THE LIBRARY. THE USER IS REFERRED TO THE MEMORANDUM TO SHARE MEMBERS DATED NOVEMBER 14, 1962. THIS PROGRAM IS THE THIRD IN A SET DESIGNED FOR USE WITH THE AFOREMENTIONED TAPES. THE TAPE TO BE UPDATED IS MOUNTED ON UNIT TWO WITH A FILE PROTECT RING. THIS TAPE SHOULD BE EITHER BLANK OR CONTAIN THE MOST CURRENT SHARE DISTRIBUTIONS. THE INPUT TAPE CONTAINING THE NEW DISTRIBUTIONS IS FILE PROTECTED AND MOUNTED ON UNIT ONE. TAPE TWO IS SEARCHED FOR A TAPE MARK, BACKSPACED OVER THE TAPE MARK, AND A TAPE TO TAPE OPERATION IS INITIATED. TAPE ONE IS INPUT, TAPE TWO IS OUTPUT. MACHINE SPECIFICATIONS - 1401 4K, TWO TAPE UNITS, 1402, 1403, COLUMN BINARY, SENSE SWITCHES, AND LOCATION 3901 IS THE LAST CORE POSITION USED. LANGUAGE- SPS ASSEMBLED WITH AUTOCODER.

1401-13.1.026 CARD-TO-TAPE FOR THE SHARE
LIBRARY

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-13.1.026

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TO LOAD SOURCE AND OBJECT PROGRAM CARD DECKS, SUBMITTED THROUGH THE SHARE ORGANIZATION ON MAGNETIC TAPE IN BLOCKED FORMAT. MACHINE SPECIFICATIONS- 1401 4K, ONE TAPE UNIT, 1402 CARD READER, 1403 PRINTER, COLUMN BINARY, ADVANCED PROGRAMMING AND SENSE SWITCHES. THE PROGRAM USES THE BLOCK OF STORAGE FROM 333 TO 1874 PLUS 1601 LOCATIONS FOR A RECORD AREA. SPS ASSEMBLED WITH AUTOCODER.

1401-13.1.027 DELETE-MERGE FOR THE SHARE
LIBRARY

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-13.1.027

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PERMITS USERS OF THE SHARE LIBRARY TAPES TO MAINTAIN CARD DECKS ON THESE TAPES IN A CURRENT STATUS. THE DELETE AND MERGE METHOD USED IS STRAIGHT FORWARD AND CAN BE ACCOMPLISHED WITH A ONE-PHASE PROGRAM ON A 1401 TAPE SYSTEM. THE ONLY SPECIAL FEATURE USED IS COLUMN BINARY. THIS PROGRAM IS A THREE TAPE OPERATION. UNIT 1 CONTAINS THE MASTER REEL, UNIT 2 IS THE CHANGE TAPE, AND UNIT 3 IS THE OUTPUT. THE PROGRAM DOES NOT REWIND TAPES, THEREFORE, THE CHANGE TAPE CAN CONTAIN MORE THAN ONE FILE. EACH FILE IS DEVOTED TO A PARTICULAR LIBRARY TAPE. AS WRITTEN, THIS PROGRAM WILL NOT ADD NEW PROGRAMS, I.E., IF THE PROGRAM DOES NOT EXIST ON THE MASTER TAPE /UNIT 1/, THEN IT CANNOT BE PLACED ON THE CHANGE TAPE /UNIT 2/. ONLY A DIRECT SWAP IS VALID. MACHINE CONFIGURATION- 1401 4K, 1402, THREE 3/3 TAPE UNITS, AND COLUMN BINARY. SOURCE LANGUAGE- AUTOCODER.

1401-13.1.028 TAPE-TO-CARD FOR THE SHARE
LIBRARY

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-13.1.028

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TO RETRIEVE PROGRAM CARD DECKS FROM THE SHARE PROGRAM LIBRARY TAPES. DESIGNED FOR USE WITH SHARE PROGRAM LIBRARY TAPES ONLY. MACHINE SPECIFICATIONS- 1401 4K, ONE TAPE UNIT, 1402, COLUMN BINARY FEATURE, 1403 PRINTER - USED ONLY FOR MESSAGES TO THE OPERATOR.

1401-13.1.029 SHARE ORDER CARD LIST AND
PUNCH

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1401-13.1.029

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PROVIDE USERS OF THE SHARE PROGRAM LIBRARY TAPES WITH A LISTING AND/OR THE ORDER CARDS PRECEDING EACH DECK ON THE TAPE. DESIGNED FOR USE WITH SHARE PROGRAM LIBRARY TAPES ONLY. MACHINE SPECIFICATIONS- 1401 4K, ONE TAPE UNIT, 1403 PRINTER, 1402 CARD PUNCH, COLUMN BINARY.

1401-13.1.032 DISTRIBUTION TAPE REEL FOR
SHARE

AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-13.1.032

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THIS PROGRAM WRITES MAGNETIC TAPE WITH SHARE CATALOG, ORDER AND PROGRAM DECKS, TOGETHER WITH 1401 RETRIEVAL ROUTINES. THE CREATED TAPE CONTAINS AN ENTIRE SHARE DISTRIBUTION OF CARD MATERIAL AND IS DUPLICATED TO SMALL 220 FOOT REELS OF MAGNETIC TAPE CALLED A CTR-DISTRIBUTION TAPE REEL. THE DISTRIBUTION TAPE REEL /DTR/ WAS THE PRINCIPLE REASON FOR WRITING THIS PACKAGE OF PROGRAMS. TOGETHER, THEY PROVIDE A CONVENIENT AND EFFICIENT MEANS OF DISSEMINATING CARD DISTRIBUTION MATERIAL TO SHARE MEMBERS. THE CTR IS A 220 FOOT REEL OF MAGNETIC TAPE USED AS A DISTRIBUTION MEDIUM. MAGNETIC TAPE IS WRITTEN WITH 1401 CORE LOADS AND DATA CARDS TO CREATE A 1401 TAPE LOADABLE RETRIEVAL SYSTEM WITH FIVE JOB OPTIONS- 1. LIST AND PUNCH CATALOG AND ORDER CARDS. 2. LIST AND PUNCH CATALOG CARDS. 3. LIST AND PUNCH ORDER CARDS. 4. TAPE TO CARD RETRIEVAL FOR PROGRAM CARD DECKS. 5. SELECTIVE UPDATION FOR SHARE LIBRARY TAPES. MACHINE CONFIGURATION- A 4K 1401 WITH THREE 3/3 TAPE UNITS, SENSE SWITCHES, 1402, 1403, COLUMN BINARY, ADVANCED PROGRAMMING, AND HI-LO-EQ.

1401-13.2.002 FORTRAN PREPROCESSOR, DDT
/AN L201 /CARD/

AVAILABLE 2ND QUARTER 1962.
SPECIFY FILE NUMBER 1401-13.2.002

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TO SCAN FORTRAN SOURCE LANGUAGE PROGRAMS FOR ERRORS SO THAT THEY MAY BE ELIMINATED BEFORE COMPILING. AFTER ALL STATEMENTS OF A SOURCE PROGRAM HAVE BEEN SCANNED, THE DC, FORMAT, DIMENSIONAL VARIABLES, AND STATEMENT NUMBER TABLES WHICH HAVE BEEN FORMED ARE EXAMINED FOR ERRORS. MAKES USE OF THE FIRST 3985 CHARACTERS OF CORE. A 1401 HAVING AT LEAST 4000-CHARACTER CORE, HI-LOW-EQUAL COMPARE, 3 INDEX REGISTERS, STORE ADDRESS REGISTERS, AND TWO MAGNETIC TAPE UNITS.

1401-13.4.002 OPTRAIN -- OPERATOR TRAINING
ON THE 1401

AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-13.4.002

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THIS PROGRAM THRU A RANDOM SELECTION OF 6 SUBROUTINES, PUTS THE OPERATOR THRU MOST SITUATIONS WHICH ARE PROGRAMMABLE. IT ATTEMPTS TO MAKE THE OPERATOR ALERT ON THE PERIPHERAL GEAR AND TESTS HIS KNOWLEDGE OF BIT CONFIGURATIONS ON THE CONSOLE. IT IS OUR BELIEF THAT A GOOD FOUNDATION ON THIS COMPUTER WILL BE ADVANTAGEOUS AND EXPEDITE TRAINING ON LARGER COMPUTERS WHERE REQUIRED. WRITTEN IN AUTOCODER FOR A 8K, 1401 WITH INDEXING, SENSE SWITCH B AND TWO TAPE DRIVES.

1401-14.0.001 PLOT 1A /REVISED/
AVAILABLE 2ND QUARTER 1963.
SPECIFY FILE NUMBER 1401-14.0.001

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THIS IS A PROGRAM TO SIMULTANEOUSLY PLOT SEVERAL CURVES TWENTY POINTS TO THE INCH BOTH HORIZONTALLY AND VERTICALLY ON THE 1403 PRINTER. THE PROGRAM IS DESIGNED TO SATISFY THE REQUIREMENTS OF A LARGE NUMBER OF GRAPHING PROBLEMS AT A RELATIVELY LOW COST. SCALING- MINIMUM ORDINATE AND ORDINATE INCREMENT ARE FED TO THE 1401, WHICH DOES THE NECESSARY SCALING TO THE DATA. ABSCISSA LIE ON THE AXIS PARALLEL TO THE FORMS MOVEMENT AND ARE UNLIMITED. MACHINE CONFIGURATION- 1401 4K MEMORY, HI-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE- 1403 PRINTER WITH TEN LINES PER INCH, SPACE SUPPRESSION, SIX NON-STANDARD CHARACTERS. * MAY BE PROGRAMMED. **DESIRABLE FOR OUTPUT FORMAT, BUT NOT NECESSARY TO THE PROGRAM. SOURCE LANGUAGE- 1401 SPS

Contributed Programs

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1401-14.0.002 GENERALIZED PLOT PROGRAM
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-14.0.002

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THE 1401 GENERALIZED PLOT PROGRAM HAS BEEN WRITTEN TO TAKE DATA FROM CARDS, AND PREPARE A GRAPHIC REPRESENTATION OF THAT DATA. IT PLOTS TO LINEAR SCALES FOR BOTH AXES WITH DEPENDENT VARIABLE /Y-AXIS/ BEING PLOTTED PARALLEL TO THE PRINT CHAIN OF THE 1403. UP TO FIVE PIECES OF DATA MAY BE PLOTTED ON ONE RUN AND CAN BE TAKEN FROM NUMEROUS CONFIGURATIONS OF DATA ON THE CARD. CONTROL CARDS ARE PREPARED FOR THE PROGRAM TO INDICATE SCALES, ORIGIN VALUES, INCREMENTS DATA FIELD LOCATIONS ON THE CARD, AND HEADING INFORMATION. MACHINE CONFIGURATION- A BASIC 1401 WITH 4000 POSITIONS OF CORE STORAGE AND 132 PRINT POSITIONS ON THE 1403 IS REQUIRED. PROVISION HAS BEEN MADE FOR PLOTTING AT 10 LINES TO THE INCH, IF THIS SPECIAL FEATURE IS AVAILABLE. PROGRAM REQUIREMENTS- PHASE 1 USES 3024 LOCATIONS, PHASE 2 USES 3916 LOCATIONS. SOURCE LANGUAGE- THE PROGRAM IS WRITTEN IN SPS, AND UTILIZES THE DIVIDE SUBROUTINE.

1401-14.0.004 FOURTEEN O ONE OFFSET
REPRODUCING AND GANGPUNCHING OR EMITTING
AVAILABLE 3RD QUARTER 1962.
SPECIFY FILE NUMBER 1401-14.0.004

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TO PROVIDE A GENERALIZED PROGRAM FOR THE FOLLOWING FUNCTIONS. STRAIGHT 80-80 OFFSET REPRODUCING, STRAIGHT OR OFFSET REPRODUCING WITH GANG PUNCHING, PRODUCING PRE-DETERMINED QUANTITIES FROM SINGLE MASTERS. THE PROGRAM AS WRITTEN UTILIZES MODULUS 16 ARITHMETIC FOR ADDRESS MODIFICATION. MODELS WITH ONLY 4,000 POSITIONS OF STORAGE WILL HAVE TO MAKE SEVERAL PROGRAM CHANGES, EXPLAINED IN THE WRITEUP, TO SATISFY THE REQUIREMENTS OF MODULUS 4 ARITHMETIC. THE PROGRAM WILL NOT ACCOMMODATE PROCESSING INVOLVING SELECTION OR INTERSPERSING. 4000-16,000 POSITION CORE STORAGE HIGH-LOW-EQUAL COMPARE SENSE SWITCHES

1401-14.0.005 F A P I PROGRAM
/FOURTEEN-O-ONE AUTOMATIC PLOTTER I/
AVAILABLE 1ST QUARTER 1963.
SPECIFY FILE NUMBER 1401-14.0.005

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PROGRAM IS DESIGNED TO PRODUCE A LINEAR PLOT WITH DESCRIPTIVE INFORMATION FROM ANY SOURCE CARDS. MACHINE REQUIRED- 1401 CARD SYSTEM 1.4K OR MORE 132 PRINT POSITIONS ADVANCED PROGRAMMING FEATURE MULTIPLY-DIVIDE FEATURE SOURCE LANGUAGE- S P S

1401-14.0.008 SUBROUTINE TO CONVERT
DOLLARS AND CENTS DIGITS TO CHECK-FORM WORDS
AVAILABLE 3RD QUARTER 1963.
SPECIFY FILE NUMBER 1401-14.0.008

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A SUBROUTINE WHICH CONVERTS NUMERICAL VALUES OF DOLLARS AND CENTS TO THE TRADITIONAL SPELLED-OUT CHECK FORM. VALUES UP TO AND INCLUDING \$9999.99 CAN BE CONVERTED. MACHINE CONFIGURATION- THE SUBROUTINE REQUIRES 1401 WITH ADVANCED PROGRAMMING AND HLE COMPARE. THE PROGRAM UTILIZES 735 POSITIONS OF CORE STORAGE /133 STATEMENTS/. SOURCE LANGUAGE- SUBROUTINE IS WRITTEN IN 1401 AUTOCODER AND COULD BE INCLUDED IN THE SYSTEMS TAPE LIBRARY AS A CLOSED SUBROUTINE.

1401-14.0.012 STATE AND LOCAL INCOME TAXES
FOR IBM 1401 TAPE SYSTEM
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-14.0.012

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A PROGRAM FOR IBM 1401 4 TAPE SYSTEM WITH ADVANCE PROGRAMMING AND HI-LO-EQUAL COMPARE, WHICH COMPUTES ALL STATE AND LOCAL /CITY/ INCOME TAXES FOR A WEEKLY PAYROLL APPLICATION. EACH STATE TAX ROUTINE IS HANDLED AS A SEPARATE ENTITY THROUGH THE USE OF OVERLAYS. BY ALTERING CONSTANTS, BI-WEEKLY, SEMI-MONTHLY AND MONTHLY PAYROLLS CAN BE HANDLED. PROGRAM OCCUPIES 8K WHEN WRITTEN IN AUTOCODER USING IOCS, VERSION 2, LEVEL 2. WITHOUT IOCS, USER MAY MODIFY FOR USE ON A 4K SYSTEM. THROUGH THE USE OF EXECUTE COMMANDS, PROGRAM IS APPLICABLE TO CARD SYSTEMS. PROGRAM FOR CREATION AND UPDATING OF MASTER PROGRAM TAPE AND TAX ROUTINES INCLUDED.

CONTINUED FROM PRIOR COLUMN--

THREE REELS OF TAPE ARE REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL. THESE TAPES MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPES PROVIDED MUST BE 2400 FEET IN LENGTH. *M *M *M

1401-14.0.013 PLOTTING SUBROUTINE FOR THE
IBM 1401/ 1403
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1401-14.0.013

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A PROGRAM SUBROUTINE FOR PLOTTING UP TO 104 VALUES IN THE FORM OF INTEGERS OR FIXED-POINT ACROSS THE PAGE. NEGATIVE OR SPECIALLY CODED VALUES ARE RECOGNIZED AND INDICATED BY A SPECIAL CHARACTER SINCE ALL PLOTTING IS IN A POSITIVE DIRECTION. THE SUBROUTINE IS SELF-INITIALIZING DEPENDENT ON THE VALUES TO BE PLOTTED AND FIVE DEFINED PARAMETERS. THE RANGE OF VALUES IS FROM 2 TO 7 DIGITS WITH MAXIMUM NUMBER OF VALUES BEING 104. THE MAXIMUM HEIGHT IS 98. THE SUBROUTINE REQUIRES A MAXIMUM OF 1056 POSITIONS OF STORAGE PLUS STORAGE TO CONTAIN THE VALUES, E.G., 728 MAXIMUM. THE MACHINE CONFIGURATION IS A 1401/1403 WITH ADVANCED PROGRAMMING, MULTIPLY/DIVIDE, HIGH/LOW/EQUAL COMPARE, AND SENSE SWITCHES. THE SOURCE LANGUAGE OF THE SUBROUTINE IS AUTOCODER.

1401-14.0.014 LEASE VS. ANALYSIS, 80B
CIRCULAR A-54
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1401-14.0.014

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THIS PROGRAM COMPUTES LEASE COSTS VS. PURCHASE COSTS AND LEASE-WITH-OPTION TO PURCHASE COSTS AS REQUIRED FOR ALL GOVERNMENT AGENCIES PRIOR TO ACQUISITION OF DATA PROCESSING EQUIPMENT BY THE U.S. BUREAU OF THE BUDGET, CIRCULAR A - 54, OCTOBER 14, 1961. FOR EACH UNIT OF EQUIPMENT, CUMULATIVE COSTS FOR EACH PLAN OF ACQUISITION AND CUMULATIVE DIFFERENCES IN COSTS ARE LISTED. CUMULATIVE TOTALS ARE LISTED BY SYSTEM. CARD INPUT INCLUDES MONTHLY RENTAL, PURCHASE PRICES, MONTHLY MAINTENANCE, ACQUISITION DATE, EXTRA SHIFT PERCENTAGES FOR RENTAL AND MAINTENANCE PROJECTED SHIFT UTILIZATION BY MONTHS FOR SIX YEARS, PURCHASE OPTION PERCENTAGE AND DATE OF EXERCISE OF PURCHASE OPTION. PROGRAM IS WRITTEN IN 1401 AUTOCODER. REQUIREMENTS- 8K 1401 CARD SYSTEM WITH MULTIPLY/DIVIDE, ADVANCED PROGRAMMING, AND HIGH-LOW-EQUAL COMPARE.

1401-14.0.015 1401/360 TIMING CALCULATION
AID PROGRAM
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-14.0.015

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THIS IS A SERIES OF PROGRAMS TO AID THE SYSTEMS ENGINEER IN THE FIELD IN TIMING SYSTEM/360. /REAL TIME SYSTEMS ARE EXCLUDED./ THESE PROGRAMS AT PRESENT WILL ESTIMATE TIMES FOR OVERLAP AND NON-OVERLAP PROCESSING, DIRECT ACCESS DEVICES /2311, 1302, 2321/, TAPE /ANY TWO MODELS/, CARD READER, CARD PUNCH, PRINTER, PAPER TAPE READER, CONSOLE PRINTER, PAPER DOCUMENT READER, AND SETUP TIMES. PROVISION IS MADE FOR THE INSERTION OF PRECALCULATED SORT TIMES. THE PROGRAMS PRODUCE A SERIES OF LISTINGS, DETAIL AND SUMMARY, FOR EACH JOB AND RUN WITHIN JOB. TIMES ARE GIVEN FOR INPUT/OUTPUT DEVICES, SORTS, NON-OVERLAP AND OVERLAP PROCESSING, AND SETUP. SOURCE STATEMENT COUNT IS 1408. THE BASIC MACHINE CONFIGURATION IS 1401, 8K, SENSE SWITCHES, ADVANCED PROGRAMMING, AND HI-LO-EQUAL COMPARE. ONE TAPE DRIVE MAY BE USED TO PREPARE MULTIPLE LISTINGS.

1401-14.0.016 AUTOMATIC EDITING AND LINE
LENGTH MODIFICATION OF RUNNING TEXT
AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-14.0.016

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THE CLOSED SUBROUTINE EDITS AND/OR ALTERS THE LENGTH OF SEGMENTS OF RUNNING TEXT IN A SINGLE SCAN. NUMBERS PREVIOUSLY ASSIGNED THE ORIGINAL TEXT SEGMENTS, AND WORDS THEREIN, ENABLE THE ROUTINE TO LOCATE THE POINTS OF ALTERATION. WORDS OF THE ORIGINAL TEXT CAN BE DELETED, INSERTED OR REPLACED. ANY INPUT-OUTPUT DEVICE CAN BE EMPLOYED BY A PROGRAM UTILIZING THE ROUTINE. THE MAIN LINE PROGRAM SUPPLIES THE ROUTINE WITH SUCCESSIVE SEGMENTS OF THE ORIGINAL AND EDIT TEXT, AND ACCEPTS FROM IT NEWLY-CREATED SEGMENTS, EDITED AND/OR ALTERED IN LENGTH. WRITTEN IN 1401 SPS SOURCE LANGUAGE, THE ROUTINE OCCUPIES 2611 POSITIONS OF CORE. THE ROUTINE REQUIRES A MINIMUM OF 4K CORE, HIGH-LOW-EQUAL COMPARE, AND ADVANCED PROGRAMMING.

1401-14.0.018 1401/1440/1460 TYPE
COMPOSITION PROGRAM
AVAILABLE 1ST QUARTER 1965.

Contributed Programs

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CONTINUED FROM PRIOR PAGE--
SPECIFY FILE NUMBER 1401-14.0.018

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UNDER THE DIRECTION OF THIS PROGRAM, THE COMPUTER ACCEPTS INPUT IN THE FORM OF A SIX-CHANNEL PAPER TAPE CONTAINING PRINTER INDUSTRY-ORIENTED FORMAT CONTROL INSTRUCTIONS, ALONG WITH THE COPY THAT IS TO APPEAR IN PRINT. THE PROGRAM INTERPRETS THESE FORMAT INSTRUCTIONS AND PRODUCES A TAPE SUITABLE FOR CONTROLLING THE OPERATION OF A LINECASTING MACHINE. THE OUTPUT TAPE CONTAINS THE ORIGINAL COPY IN THE FORM OF PROPERLY JUSTIFIED LINES ARRANGED ACCORDING TO STYLE AND GRAPHIC CONSIDERATIONS DESCRIBED BY THE USER WITH THE FORMAT INSTRUCTIONS. A MAXIMUM OF 20 PAPER TAPE READERS AND 20 PAPER TAPE PUNCHES CAN BE ACCOMMODATED. MACHINE CONFIGURATIONS- 12K, 1440, 1401, OR 1460 WITH INDEXING, STORE ADDRESS REGISTERS, OP CODE XLATE 1 TO 2 CHAR, CONSOLE TYPEWRITER, SENSE SWITCHES, 1402 MOD 3 CARD READER, 1 1311, 1906 MOD 11 AND RQC/S FOR PAPER TAPE UNITS. 6 CHANNEL PAPER TAPE READERS AND 6 CHANNEL PAPER TAPE PUNCHES MUST BE PROVIDED BY USER. ON 1460 THRUPUT IS 11,000 - 12,000 30 CHAR LINES/HOUR. SOURCE LANGUAGE IS AUTOCODER.

1401-14.0.019 STANDARD NAME ALTERATION
PROGRAM

AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1401-14.0.019

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THIS SUBROUTINE WILL CONVERT NAMES THAT ARE LAST NAME FIRST OR LAST NAME LAST IN A FREE FORMAT TO ANY CONFIGURATION IN A FIXED FORMAT. THE USER IS GIVEN THE ADDRESSES OF THE AREAS WHICH CONTAIN THE FIRST NAME, FIRST INITIAL, MIDDLE INITIAL, LAST NAME, AND SUFFIX. ALL OUTPUT IS LEFT JUSTIFIED IN THE RESPECTIVE AREAS. THE SUBROUTINE WILL ACCOMMODATE EIGHT OF THE MORE COMMON PREFIXES TO LAST NAMES AND FOURTEEN OF THE MORE COMMON SUFFIXES. THE OPTION EXISTS TO PLACE THE SUFFIX ONE POSITION TO THE RIGHT OF THE LAST NAME. THE SUBROUTINE IS EASILY MODIFIABLE TO INSERT ANY EXTRA SUFFIXES OR PREFIXES WHICH ARE DESIRED. 1401 WITH 4K, HI-LO-EQUAL AND ADVANCED PROGRAMMING.

1401-14.0.021 THE IBM 1012 TAPE PUNCH AS A
TAPE READER

AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1401-14.0.021

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THIS PROGRAM PROVIDES THE FACILITY TO USE THE IBM 1012 TAPE PUNCH AS A TAPE READER, WITH THE IBM 1401. TRANSLATION, CHECKING, ETC., IS ACCOMPLISHED BY STORED PROGRAM TECHNIQUES. THIS PROGRAM OFFERS THE FOLLOWING ADVANTAGES.

1. ONE UNIT MAY BE USED FOR BOTH INPUT AND OUTPUT.
2. ANY TAPE CODE MAY BE TRANSLATED.
3. ENTIRE READING FUNCTION IS AT A MAXIMUM 1012 SPEED.
4. MOST CHARACTER CHECKING TECHNIQUES ARE ACCEPTED SUCH AS ODD OR EVEN PARITY, 2/5, 4/8, ETC.
5. ERROR CONTROL PERMITS RE-SCANNING A CHARACTER FOR ADDITIONAL READING ATTEMPTS.

THE MACHINE CONFIGURATION REQUIRED IS-
A 1401 PROCESSING UNIT WITH SERIAL I/O ADAPTERS, 1402 CARD READ PUNCH, 1403 PRINTER AND THE 1012 PUNCH WITH READ FEATURE.
SOURCE LANGUAGE - 1401 AUTOCODER.

1401-14.0.023 CLASSIFICATION USING RATING
FORM DATA

AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-14.0.023

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THIS IS A PACKAGE OF SEVEN PROGRAMS FOR A 1401-G COMPUTER /4000 CHARACTER MEMORY, PUNCH CARD I/O/, WHICH FINDS CLUSTERS OF OBJECTS BASED ON DATA FORMS WHICH SHOW RATINGS OF THE OBJECTS ON A NUMBER OF ATTRIBUTE SCALES. THE CLUSTERS IDENTIFY INHERENT CATEGORIES OF OBJECTS, AND SO FURNISH A NATURAL BASIS FOR A CLASSIFICATION SYSTEM FOR THE OBJECTS. THE PROGRAMS ARE BEING USED TO ASSIST IN ANALYSIS OF PSYCHIATRIC INTERVIEWS BY FINDING CLUSTERS OF KEY WORDS IN AN INTERVIEW. THE RATING FORM FOR THIS APPLICATION IS THE "SEMANTIC DIFFERENTIAL", WHICH HAS 20 SCALES WITH 7 POSITIONS ALONG EACH SCALE. A RATING IS MADE BY PLACING A MARK IN ONE OF THE 7 POSITIONS.

1440

1440-01.0.001 PACE - PRE-ASSEMBLY CHECK
AND EDIT LISTING

AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1440-01.0.001

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PACE BRINGS TO THE 1440 USER AN EFFICIENT AND MEANINGFUL DIAGNOSTIC PROGRAM. IT WILL CHECK AND EDIT 1440 AUTOCODER AND AUTOCODER/IOCS SOURCE PROGRAMS BY DETECTING UNDEFINED LABELS, FORMAT AND PARAMETER ERRORS, CODING ERRORS AND KEYPUNCH ERRORS. THE PRINTED OUTPUT PROVIDES A LABEL TABLE IN ALPHABETICAL ORDER FOLLOWED BY A LISTING OF THE SOURCE PROGRAM WITH ERRORS BY SIGNIFICANT SPECIAL CHARACTERS. AN EDIT IS ALSO PERFORMED ON DIOCS AND DTF ENTRIES FOR ACCEPTABILITY AND SPELLING. THERE ARE THREE CHECKS OF AUTOCODER STATEMENTS PERTAINING TO LABELS, OPERATION CODES AND OPERANDS. THE CHECKING RESULTS ARE EQUAL TO AN AUTOCODER ASSEMBLY. MACHINE REQUIREMENTS- 1440 4K, ONE 1311 AND INDEXING AND STORE ADDRESS REGISTER. PRINTED OUTPUT OPTIONS ARE AVAILABLE WITH SENSE SWITCHES. PACE WILL ALLOW PROGRAMMERS TO BECOME MORE PRODUCTIVE BY MINIMIZING PROGRAM TESTING. SINCE IT AVERAGES BETWEEN 75 AND 120 CARDS PER MINUTE DEPENDING UPON THE MACHINE CONFIGURATION, IT WILL ALSO ELIMINATE A SUBSTANTIAL AMOUNT OF MACHINE TIME PREVIOUSLY USED FOR ASSEMBLY AND PROGRAM TESTING. THE SOURCE DECKS ARE AVAILABLE AS OPTIONAL MATERIAL AND MUST BE SPECIFICALLY REQUESTED.

1440-01.1.001 CONTROLLER
AVAILABLE 1ST QUARTER 1964.
SPECIFY FILE NUMBER 1440-01.1.001

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THE 1440 CONTROLLER IS A JOB SUPERVISOR SYSTEM CONSISTING OF A GROUP OF 1401 PROGRAMS DESIGNED TO PROVIDE /A/ DISK STORAGE OF PROGRAMS, SUBROUTINES, OVERLAYS, ETC. /B/ CONTROL CARD CALL DOWN OF PROGRAMS /C/ PROGRAM CALL DOWN OF PROGRAMS, SUBROUTINES, OVERLAYS, ETC. WITH A MINIMUM OF PROGRAMMING EFFORT. RESTRICTIONS/RANGE

1. ALL PROGRAMS, SUBROUTINES, OVERLAYS, ETC. ORIGINATE AT PCS 345
2. MAXIMUM NUMBER OF USER PROGRAMS IS 53.
3. CONTROLLER SYSTEMS PACK MUST BE ON DRIVE 0.
4. ALL USER PROGRAMS MUST BE IN THE 1440 AUTOCODER CARD FORMAT. MACHINE CONFIGURATION- 1440 CONTROLLER IS DESIGNED TO OPERATE ON THE FOLLOWING MINIMUM MACHINE CONFIGURATION- 1441 4K STORAGE, 2-1311 DISK DRIVES, INDEXING AND STORE ADDRESS REGISTER FEATURE, 1440 READER PUNCH, 1443 PRINTER. PROGRAM REQUIREMENTS- MLINK OCCUPIES 111 POSITIONS OF HIGH CORE. IN ADDITION, DURING AN OVERLAY OPERATION, POSITIONS 90-741 ARE USED BY MCALL. THE AREA FROM 345-741 WILL USUALLY CONTAIN THE BEGINNING OF THE USERS ROUTINE- HOWEVER, ALL DATA COMMON TO BOTH SECTIONS OF A PROGRAM MUST BE NO LOWER THAN POS. 742. SOURCE LANGUAGE- 1440 AUTOCODER.

1440-01.1.002 PROGRAM TO LOAD PROGRAMS ON
DISK

AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1440-01.1.002

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A PROGRAM TO LOAD CORE IMAGE OF PROGRAMS ONTO DISK FOR USE EITHER AS MONITOR PROGRAMS OR AS OVERLAYS. USING ONLY THE RESTRICTION OF NO GROUPMARK--WORDMARKS IN THE INITIAL ASSEMBLY, THE USER'S PROGRAM CAN BE LOCATED ANYWHERE IN ANY DISK. THE OBJECT PROGRAM REQUIRES APPROXIMATELY 125 CORE POSITIONS AND HAS THE REMAINING POSITIONS CONTAINING THE BEGINNING OF THE USERS IN CORE BY REASSEMBLING. THE OBJECT PROGRAM REQUIRES A PARAMETER CARD DESCRIBING WHERE THE PROGRAM IS TO BE LOADED, ITS LENGTH, AND WHERE THE DCF REQUIRED TO WRITE THE PROGRAM OUT IS LOCATED. MACHINE REQUIREMENTS- 1440/1311 NO SPECIAL FEATURES.

1440-01.1.003 1440-1026-1070
MULTIPROGRAMMING SUPERVISORY MONITOR
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1440-01.1.003

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THIS PROGRAM PERMITS MULTIPROGRAMMED RUNNING OF BASIC ACCOUNTING-TYPE PROGRAMS WITH TELEPROCESSING/PROCESS CONTROL. RESIDENT IN CORE, IT INCLUDES 1311-1026-1070 IOCS AND RQCS TO HANDLE AUTOMATIC INTERRUPT, STATUS PROTECT AND AUTOMATIC RESTORATION AND EXECUTION OF INTERRUPTED PROGRAMS, AND JOB STACKING. PRESENT OPERATING CONFIGURATION IS 12K 1440, INDEXING AND STORE ADDRESS FEATURE, BIT TEST, AUTOMATIC INTERRUPT, AUTOMATIC EXTERNAL RESTART /RQC 36871/, 3 1311 WITH DIRECT ACCESS, 1442-1, 1443-2 WITH PRINT STORAGE, 1447-1, 1026-1 AND 1070-2 /600 BPS/ SYSTEM WITH 1053 PRINTER ATTACHED. THE PROGRAM OCCUPIES 4000 POSITIONS OF MEMORY.

1440-01.2.003 BASIC AUTOCODER REVISED FOR
USE ON 1974 DATA TRANSMISSION PROCESSOR
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1440-01.2.003

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Contributed Programs

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CONTINUED FROM PRIOR PAGE--

THIS PROGRAM IS A MAJOR REVISION OF 1440-4K BASIC AUTOCODER /1440-AU-001/, WHICH GIVES THE 1974 THE CAPABILITY OF ASSEMBLING SOURCE PROGRAMS WRITTEN ACCORDING TO 1440 BASIC AUTOCODER SPECS. NO FACILITY HAS KNOWINGLY BEEN ALTERED OR REMOVED IN THE REVISED ASSEMBLER. OPTIONS AND OPERATING PROCEDURES ARE IDENTICAL. 1974 USER MAY ASSEMBLE PROGRAM ON HIS OWN SYSTEM WITH A MINIMUM OF UNITS /1440-4K, 1443, 1442/. ALL INSTRUCTIONS HAVE BEEN MOVED INTO THE LOWER 2K OF CORE., THE UPPER 2K IS USED FOR SYMBOL TABLE, CONSTANTS, WORKING STORAGE, AND I/O AREAS.

1440-01.3.001 MACODER - MATHEMATICAL CODING SYSTEM

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1440-01.3.001

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THE MACODER-COMPILER TRANSLATES PROGRAMS WRITTEN IN THE MACODER-LANGUAGE. THE MACODER-LANGUAGE IS IDENTICAL TO FORTRAN II FOR THE IBM 1401 SYSTEM WITH THE EXCEPTION OF INPUT/OUTPUT STATEMENTS FOR TAPE DRIVES WHICH HAVE TO BE REPLACED BY THOSE FOR DISK DRIVES. MACHINE REQUIREMENTS- 1440 BK, MULT./DIV. FEATURE, INDEXING, STORE ADD REG., 1442 AND 1443. FOR COMPILATION THE COMPILER CAN BE PUNCHED INTO CARDS OR PLACED ON A DISK PACK. IF IT IS ON DISK PACKS, THE MACODER-SYSTEM LOADER IS REQUIRED. THE COMPILER CONSISTS OF 61 PHASES WHICH ARE FED INTO THE CORE STORAGE. PHASE 99 SERVES TO READ THE COMPILER INTO DISK STORAGE. AT THE END OF COMPILATION, THE PROGRAM IS IN CORE STORAGE AND CAN BE STARTED IMMEDIATELY. I.E., LOAD AND GO. CARD OUTPUT OPTION IS AVAILABLE, SO RECOMPILATION IS NOT NECESSARY FOR SUBSEQUENT RUNS.

1440-01.3.002 MACBADDY 8K 1440 FORTRAN

AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1440-01.3.002

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112 EAST POST ROAD
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MACBADDY IS A MODIFICATION OF IBM 1401 FORTRAN, VERSION II. THE SOURCE LANGUAGE IS AUTOCODER. THERE ARE 3262 CORE POSITIONS AVAILABLE FOR USER CODE. THE COMPILER IS CARD OR DISK RESIDENT. MINIMUM MACHINE CONFIGURATION IS AN 8K IBM 1441, STORE ADDRESS REGISTER FEATURE, INDEXING FEATURE, IBM 1442 CARD READ PUNCH, AND IBM 1443 PRINTER. THE SOURCE CARDS ARE OPTIONAL MATERIAL AND MAY BE OBTAINED BY SUBMITTING ONE FULL REEL OF MAGNETIC TAPE. TAPE. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPE PROVIDED MUST BE 2400 FEET IN LENGTH.

1440-01.4.001 RADIO - RANDOM DISK INPUT/ OUTPUT SUBROUTINE

AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1440-01.4.001

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AN AUTOCODER LIBRARY MACRO WHICH HANDLES 1311 DISK I/O FUNCTIONS AND ERROR ROUTINES. IT CAN HANDLE CYL. OVERFLOW AND USE DIRECT SEEK, SCAN DISK, AND TRACK RECORD, IF AVAILABLE, ON UP TO FIVE DRIVES. THE SUBROUTINE IS GENERATIVE, PROVIDING ONLY THE ROUTINES CALLED FOR. IT IS INTENDED TO REPLACE IOCS RANDOM GIVING THE USER GREATER EASE OF PROGRAMMING AND FLEXIBILITY. METHOD- THE ROUTINE WAS PATTERNED AFTER THE PAL WHOLESALE GROCERY MACRO UPTO TO INCLUDE- SPECIAL FEATURES, CYLINDER OVERFLOW, SAME CYLINDER TEST, AND IOCS TYPE CODED HALT. THE ROUTINE DOES NOT DO ANY LABEL CHECKING. THE DISK CONTROL FIELD MUST BE SET BY THE USER AND IS RESTORED AFTER THE OPERATION. THE SCAN ROUTINE CAN SCAN 999 SECTORS IN ONE OPERATION. STORAGE REQUIREMENTS- FROM 369 POS. TO 841 DEPENDING ON FEATURES USED. EQUIPMENT SPECIFICATIONS- 4K-1440 1442-MODEL 1 1443 MODEL 1 ONE 1311 DISK DRIVE INDEXING AND STORE ADDRESS REGISTER SPECIAL FEATURE.

1440-01.4.002 RAPID SELECTIVE TRACE

AVAILABLE 3RD QUARTER 1966.
SPECIFY FILE NUMBER 1440-01.4.002

AUTHOR--LAWRENCE E. COHEN

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LAWRENCE E. COHEN, IBM CORP., INSURGENTES SUR 100,
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THE RAPID SELECTIVE TRACE PROGRAM IS A POWERFUL DEBUGGING, DOCUMENTATION AND TEACHING AID THAT ACCURATELY SIMULATES THE FUNCTIONING OF THE 1440 UNDER CONTROL OF ANY OBJECT PROGRAM AND PRINTS OUT COMPLETE INFORMATION ABOUT WHAT THE PROGRAM IS DOING IN AN EASY-TO-READ FORMAT. THE INSTRUCTION ADDRESS, THE INSTRUCTION, A, AND B ADDRESS REGISTER CONTENTS AT THE BEGINNING OF THE EXECUTION PHASE, INDEX REGISTER CONTENTS AND UP TO 18 POSITIONS OF THE A-FIELD AND THE B-FIELD /THE LATTER BOTH BEFORE AND AFTER INSTRUCTION EXECUTION/ ARE GIVEN ON A SINGLE PRINT LINE. ALL ADDRESSES ARE GIVEN IN DECIMAL FORM. COMPLETE DUMPS OF RECORDS READ, WRITTEN OR MOVED, WITH ASSOCIATED WORD MARKS, ARE PRODUCED. RST OPERATES AT APPROXIMATELY 100 INSTRUCTION PER SECOND WHILE OUTSIDE OF THE LIMITS SUPPLIED BY A CONTROL CARD AND

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CONTINUED FROM PRIOR COLUMN--

AT MAXIMUM 1403 OR 1443 PRINTING SPEED WITHIN LIMITS. THIS SPEED IS ACHIEVED BY CALCULATING THE OLD A-ADDRESS FOR CHAINING ONLY WHEN NEEDED. REQUIREMENTS - 1310 CORE POSITIONS, INDEXING AND STORE ADDRESS REGISTER SPECIAL FEATURE. READY FOR USE WITH 4K MACHINES. THE SOURCE LANGUAGE IS BASIC AUTOCODER 2K. DISK AUTOCODER CAN BE USED FOR ASSEMBLY.

1440-01.5.001 FARGO FORTY

AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1440-01.5.001

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AN ENTIRELY NEW VERSION OF THE SUCCESSFUL FARGO REPORT GENERATOR DESIGNED FOR THE 1440 PROVIDES- ALL 1401 FARGO CAPABILITIES, MULTIPLE COLUMN OR FIELD IDENTIFICATION OF CARD TYPES, MULTIPLE AND/OR IF NOT TESTS FOR EACH TYPE OF CARD CONDITION, SIMPLIFIED MULTIPLY/DIVIDE, UP TO 6 HEADING LINES /TOP AND/OR BOTTOM/, HEADING MODIFICATION DURING REPORT PREPARATION, ETC. RETAINS THE SIMPLE TO USE PHILOSOPHY, AND SELF DESCRIPTIVE TYPE CONTROL SHEETS OF FARGO, INCORPORATES THE MOST SIGNIFICANT CONTRIBUTIONS FROM THE FIELD AND WILL OPERATE WITH NO DEVICES ON 1440/S. INITIAL VERSION IS A CARD ORIENTED SYSTEM. DOCUMENTATION IS AIMED AT UNIT RECORD ORIENTED CUSTOMER.

OPTIONAL MATERIAL - SOURCE DECK

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1440-01.6.001 SORT 54 DISK RESIDENT

AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1440-01.6.001

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A MODIFIED SORT 54 RESIDENT ON 1311 DISK STORAGE. THE SORT IS STORED IN THE LOAD MODE IN A SELF-LOADING FORMAT. IT REQUIRES 1540 CONSECUTIVE SECTORS ON ANY DRIVE, AND CAN BE FILE-PROTECTED. THE PROGRAM LOADER RESIDES IN THE HIGHEST 4K OF CORE. PROGRAM LOADING IS ACCOMPLISHED IN ABOUT 15 SECONDS. THE SORT IS A TAILORED VERSION OF SORT 5 FOR DISK-TO-DISK SORTING WITHOUT DISK LABEL CHECKING. THIS IMPROVES PERFORMANCE 20 TO 30 PERCENT. COMPATIBLE WITH 1440 CONTROLLER. MACHINE REQUIREMENTS- 12K MEMORY, 1311 DISK DRIVE, DIRECT SEEK, CONSOLE TYPEWRITER, SENSE SWITCHES.

1440-02.1.001 1440/1311 CARD-TO-DISK CONSECUTIVE LOAD PROGRAM

AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1440-02.1.001

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DIRECT INQUIRIES TO AUTHOR

A LOAD-AND-GO PROGRAM FOR CONVERTING PRESENT CARD FILES TO CONSECUTIVE 1311 DISK FILES WITHOUT ANY REPUNCHING OF CARD FILES INTO A PRESCRIBED FORMAT. THE PROGRAM WILL HANDLE UP TO 6 USER SPECIFIED CARD FORMATS AND BUILD THEM INTO A USER SPECIFIED DISK RECORD FORMAT. FORMATS OF CARD INPUT AND DISK RECORD OUTPUT ARE SPECIFIED IN CONTROL CARD FORM AND SUPPLIED TO THE PROGRAM ON A LOAD-AND-GO BASIS. UP TO 10 DATA FIELDS FROM EACH CARD FORMAT SPECIFIED CAN BE ASSEMBLED INTO SINGLE DISK RECORDS. PROGRAM WILL ASSEMBLE FILES IN EITHER BLOCKED OR UNBLOCKED FORM. MACHINE REQUIREMENTS- THE PROGRAM WILL OPERATE ON ANY 1440-1311 SYSTEM HAVING AT LEAST 4K, MODIFY ADDRESS, STORE B REGISTER AND INDEX REGISTERS. WITH A 4K MACHINE 500 CHARACTER DISK RECORDS ARE THE LONGEST RECORDS THAT CAN BE PROCESSED. ON AN 8K MACHINE THE MAXIMUM RECORD LENGTH IS 4500 POSITIONS.

1440-02.1.002 1440/1311 DISK ADDRESS UTILITY

AVAILABLE 1ST QUARTER 1965.
SPECIFY FILE NUMBER 1440-02.1.002

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WAS WRITTEN TO HANDLE 1311 DISK MAINTENANCE REQUIREMENTS NOT COVERED HERETOFORE IN ANY LIBRARY PROGRAM, BUT WHICH OCCUR IN MOST 1311 INSTALLATIONS. WITH THE USE OF THIS PROGRAM, IT IS NOW POSSIBLE TO CHANGE THE ADDRESSING STRUCTURE OF A DISK PACK TO ANY NATURAL OR UNNATURAL RANGE WITHOUT ALTERING THE DATA WRITTEN ON THE PACK. UNNATURALLY ADDRESSED PACKS, SUCH AS THE SYSTEM PACK FOR AUTOCODER, 1401-AU-008 MAY NOW BE COPIED. LABEL TRACKS MAY ALSO BE COPIED. THE STANDARD DISK UTILITY PROGRAMS DO NOT PROVIDE THESE OPERATIONS. OPTIONS ELECTED BY CONTROL CARDS ARE- 1-CHANGE ADDRESSES WITHOUT DISTURBING DATA, 2-CHANGE ADDRESSES AND CLEAR DATA, 3-COPY ONE DISK PACK TO ANOTHER, AND 4-COMPARE ONE DISK TO ANOTHER. THE PROGRAM CAN BE RUN ON A 4K SYSTEM WITH INDEXING AND STORE ADDRESS REGISTERS AND WILL COPY A FULL PACK IN APPROXIMATELY SIX MINUTES.

1440-02.1.003 1440-1311 DISK SORT PACKAGE

AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1440-02.1.003

Contributed Programs

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CONTINUED FROM PRIOR PAGE--

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A SET OF THREE PROGRAMS WHICH WILL PROVIDE A SPECIALIZED SORT FOR FREQUENTLY RUN JOBS. THE FIRST PROGRAM INTERPRETS A CONTROL CARD AND PRODUCES A FILE OF RANDOM CONTROL FIELDS TO TEST THE SORT, THEN PUNCHES A SERIES OF CARDS. THESE CARDS ARE MERGED INTO THE SECOND PROGRAM WHICH IS IN AUTOCODER SOURCE FORMAT. ASSEMBLY OF THIS SECOND PROGRAM PRODUCES AN OBJECT SORT. THE THIRD PROGRAM TESTS THE SORT TO INSURE CORRECT ASSEMBLY BY SEQUENCE CHECKING THE SORTED OUTPUT AND PRINTING ALL ERROR SEQUENCE CONDITIONS WITH THEIR LOCATION IN THE FILE. RUN TIMES ARE CONSIDERABLY FASTER THAN FOR SORT 5, PARTICULARLY FOR SHORT RECORDS. TEN THOUSAND RECORDS, THIRTY CHARACTERS LONG ARE SORTED IN LESS THAN THIRTEEN MINUTES. INPUT AND OUTPUT RECORDS MUST BE BLOCKED WITHIN THE FIRST EIGHTEEN SECTORS OF EACH TRACK. REQUIRES 8K, 2 DISK DRIVES, ADVANCED PROGRAMMING, AND HI-LC-EQUAL. 1139 SOURCE STATEMENTS.

1440-02.3.001 VARIABLE CARD REPRODUCER FOR
1440/1311

AVAILABLE 3RD QUARTER 1964.

SPECIFY FILE NUMBER 1440-02.3.001

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A LOAD-AND-GO CONTROL CARD ORIENTED PROGRAM FOR REPRODUCING CARDS ON A 1440 DISK SYSTEM WHICH HAS ONLY ONE CARD READ-PUNCH. CARD IMAGES ARE FIRST WRITTEN ON DISK, THEN READ FROM DISK AND PUNCHED INTO BLANK CARDS. SIMPLE CONTROL CARD PROVISION ALLOWS FOR RELOCATING FIELDS, OMITTING FIELDS, AND/OR OMITTING CHARACTERS. OPTIONAL PREP CONTROL CARD PROVIDES PRINTED ANALYSIS OF CONTROL CARDS, LISTING INPUT DECK AND/OR LISTING OUTPUT DECK. DECK LISTINGS INCLUDE CARD COUNTS AND COLUMN-NUMBER HEADINGS.

1440-02.3.002 ONE CARD 80-80 CARD TO
PRINTER PROGRAM WITH OVERFLOW

AVAILABLE 4TH QUARTER 1965.

SPECIFY FILE NUMBER 1440-02.3.002

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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM LISTS CARDS AND BRANCHES TO CHANNEL ONE ON SENSING CHANNEL TWELVE. STORAGE REQUIREMENTS- 181 POSITIONS. EQUIPMENT SPECIFICATIONS- 1440 WITH 1443 AND 1442/1402.

1440-02.3.003 1440/1311 80-80 REPRODUCE
PROGRAM

AVAILABLE 4TH QUARTER 1966.

SPECIFY FILE NUMBER 1440-02.3.003

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THIS PROGRAM WILL ENABLE 1440/1311 USERS WITH ONLY ONE 1442 ON LINE TO REPRODUCE PUNCHED CARD DECKS. BEFORE THE PROGRAM OBJECT DECK PLACE THE CARDS TO BE REPRODUCED, FOLLOWED BY AN END-INDICATOR-CARD, FOLLOWED BY BLANK CARDS. THE PROGRAM LOADS THE MASTER CARDS ONTO A NATURAL ZERO SCRATCH PACK ON DRIVE ZERO. IMMEDIATELY AFTER THE END-INDICATOR-CARD IS REACHED AND LOADED, THE REPRODUCED CARDS ARE PUNCHED OUT. AS MANY COPIES AS DESIRED OF THE ORIGINAL CARDS CAN BE OBTAINED SIMPLY BY PRESSING START ON THE CONSOLE WITHOUT RELOADING THE PROGRAM OR MASTERS. THE NUMBER OF CARDS THAT CAN BE ACCOMMODATED IS LIMITED ONLY BY THE NUMBER OF SECTORS AVAILABLE ON THE SCRATCH PACK STARTING AT ADDRESS 000000 AND ALLOWING ONE SECTOR PER CARD. PROGRAM IS WRITTEN IN AUTOCODER FOR ANY SIZE 1440 WITH ONE 1442 READER-PUNCH AND ONE 1311 DRIVE ZERO ON LINE. OBJECT DECK CONSISTS OF 14 CARDS AND USES ABOUT 500 CORE POSITIONS. NO SPECIAL FEATURES ARE REQUIRED.

1440-02.3.004 OBJECT DECK LISTING PROGRAM

AVAILABLE 4TH QUARTER 1966.

SPECIFY FILE NUMBER 1440-02.3.004

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THIS PROGRAM WAS DESIGNED PRIMARILY TO LIST OBJECT DECKS IN THE CONDENSED-LOADER FORMAT ON A PRINTER WITH THE STANDARD 52-CHARACTER TYPE-BAR. ANY OTHER CARDS WHICH CONTAIN THE 11 UNPRINTABLE SPECIAL CHARACTERS MAY ALSO BE LISTED. WHEN LISTING AN OBJECT DECK IN THE CONDENSED LOADER FORMAT IT IS NORMALLY IMPOSSIBLE TO TELL IF A BLANK POSITION IS A BLANK, WORD-SEPARATOR CHARACTER, GROUP MARK, OR ONE OF THE LESS FREQUENT SPECIAL CHARACTERS. THIS PROGRAM WILL PRINT THE CARD IMAGE AND THEN PRINT A SECOND LINE INDICATING THE SPECIAL CHARACTERS BY APPROPRIATE CODES. IF THE CARDS BEING LISTED ARE AN OBJECT DECK THE 5-CHARACTER ADDRESS EQUIVALENT OF THE 3-CHARACTER ADDRESS IN THE FIRST THREE COLUMNS IS PRINTED ON THIS LINE. IF THE FIRST THREE COLUMNS WILL NOT GENERATE A VALID ADDRESS /LOADER CARDS, CARDS WITH SPECIAL CHARACTERS, ALPHA CHARACTER IN COLUMN 2, ETC./ THE ADDRESS IS NOT PRINTED. THIS ADDRESS MAY ALSO BE BYPASSED

CONTINUED FROM PRIOR COLUMN--

BY A CONSOLE SWITCH. THE PROGRAM MAY BE MODIFIED TO PRINT DIFFERENT CODES OR HANDLE A DIFFERENT TYPEBAR CONFIGURATION. WITH THE BASIC PROGRAM, WHEN USED ON A 4K MACHINE THE ADDRESS IN THE FIRST THREE COLUMNS WILL NOT BE COMPUTED IF IT IS ABOVE 3999. THIS MAY BE CORRECTED IF THE MACHINE HAS THE MODIFY-ADDRESS SPECIAL FEATURE. THIS RESTRICTION DOES NOT APPLY TO 8K AND LARGER MACHINES. IF THE ADDRESS 107 /2307/ APPEARS THE EQUIVALENT WILL NOT BE COMPUTED, AS THIS IS USED TO DETECT A LOADER CARD.

SYSTEM REQUIREMENTS- MINIMUM OF 4K ON A 1440 WITH 1-1442 CARD READ/PUNCH MODEL 1 OR 2 OR 1-1442 CARD READER MODEL 4., 1443 OR 1403 PRINTER WITH A MINIMUM OF 120 PRINT POSITIONS., INDEXING AND STORE-ADDRESS-REGISTERS SPECIAL FEATURE., SENSE SWITCHES B THROUGH G. MODIFY ADDRESS IS ASSUMED ABSENT ON 4K MACHINES AND THE PROGRAM MUST BE MODIFIED IF THE FEATURE IS PRESENT. SOURCE LANGUAGE 1401/1440/1460 AUTOCODER ON DISK /FILE AU-008/., RUNNING TIME DEPENDENT UPON PRINT SPEED AND BUFFER FEATURE., ON A 1443 MODEL 2 THE PROGRAM CAN LIST APPROXIMATELY 110 CARDS PER MINUTE.

1440-02.4.001 ONE CARD INVALID CHARACTER
DETECTION PROGRAM

AVAILABLE 4TH QUARTER 1965.

SPECIFY FILE NUMBER 1440-02.4.001

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THIS PROGRAM SELECTS CARDS CONTAINING INVALID CHARACTER/S TO STACKER 2 AND PRINTS THEM. CARDS CONTAINING NO INVALID CHARACTERS GO TO STACKER 1 AND ARE NOT PRINTED. STORAGE REQUIREMENTS- 181 POSITIONS. EQUIPMENT SPECIFICATIONS- 1440 WITH 1443 AND 1442/1402.

1440-02.4.002 1231 READ MACRO FOR
1401/1440/1460 DISK SYSTEMS

AVAILABLE 1ST QUARTER 1966.

SPECIFY FILE NUMBER 1440-02.4.002

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A PROGRAM MACRO TO ENABLE THE 1231 OPTICAL MARK PAGE READER TO OPERATE WITH A 1440, 1401 OR 1460 DATA PROCESSING SYSTEM. THE MACRO IS WRITTEN FOR USE WITH 1401 AUTOCODER /ON DISK/, PROGRAM NO. 1401-AU-008, AND ALLOWS A SPECIFIC 1231 READ SUBROUTINE TO BE GENERATED. BOTH CONTINUOUS AND ON-DEMAND FEEDING CAN BE SPECIFIED, AND ALL 1231 INDICATORS ARE TESTED. A ROUTINE IS INCLUDED FOR TRANSLATION OF THE 1231 INPUT TO NUMERIC DATA. ALTERNATIVELY, THE USER CAN PROVIDE HIS OWN TRANSLATE TABLE TO TRANSLATE TO OTHER CODES, USING THE SUPPLIED 1231 TRANSLATE ROUTINE. A NUMBER OF EXITS ARE PROVIDED AT VARIOUS PLACES IN THE 1231 READ SUBROUTINE, SO ALLOWING THE USER TO MODIFY, OR BYPASS, PARTS OF THE SUBROUTINE. MINIMUM MACHINE REQUIREMENTS ARE 4K 1401, 1440 OR 8K 1460 WITH INDEXING AND STORE ADDRESS REGISTER FEATURE ON 1440 OR 1460, OR ADVANCED PROGRAMMING ON 1401, AND SENSE SWITCHES.

1440-02.5.002 CVDOO TO CONVERT 1401
AUTOCODER OPS TO 1440 OPS ON 1440

AVAILABLE 1ST QUARTER 1966.

SPECIFY FILE NUMBER 1440-02.5.002

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THIS PROGRAM CONVERTS 1401 AUTOCODER OP CODES TO ACCEPTABLE 1440 OP CODES. THE PROGRAM RUNS ON A 4K-1440 WITH ONE 1311, INDEXING AND STORE ADDRESS REGISTER, HIGH-LOW-EQUAL COMPARE, ONE CARD READER PUNCH - 1442, AND ONE PRINTER - 1443. THE SOURCE PROGRAM IS WRITTEN IN AUTOCODER. 208 SOURCE STATEMENTS.

1440-02.6.002 LEFT ZERO CHECK PROGRAM

AVAILABLE 4TH QUARTER 1965.

SPECIFY FILE NUMBER 1440-02.6.002

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THIS PROGRAM WILL TAKE A DECK OF USER KEYPUNCHED CARDS AND COUNT THE NUMBER OF LEADING ZEROS IN UP TO TEN USER DEFINED FIELDS. THE OUTPUT IS A SHORT REPORT SHOWING CARD COUNT, TOTAL CHARACTERS, NUMBER OF LEADING ZEROS, AND PERCENT LEADING ZEROS. THE PROGRAM IS DESIGNED TO LET ANY DATA PROCESSING INSTALLATION EVALUATE THE LEFT ZERO FEATURES OF THE 029 KEY PUNCH AND 059 KEY VERIFIER. 89 SOURCE STATEMENTS.

1440-02.7.001 AUTOCODER SYMBOLIC CORE
DUMP ROUTINE

AVAILABLE 2ND QUARTER 1964.

SPECIFY FILE NUMBER 1440-02.7.001

AUTHOR...DAVID R. ELLS
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Contributed Programs

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CONTINUED FROM PRIOR PAGE--
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DIRECT INQUIRIES TO AUTHOR

THIS IS A PROGRAM WRITTEN IN 1440 AUTOCODER TO PROVIDE CORE DUMPS ON A 1443 PRINTER. EACH CHARACTER FROM MEMORY IS DISTINCTLY INDEXED FOR EASE OF LOCATION. WORD MARKS ARE PRINTED AS THE NUMBER ONE ON A SEPARATE LINE. GROUP MARKS ARE INDICATED ON THE SAME LINE AS WORD MARKS WITH THE DIGIT TWO, AND GROUP MARKS WITH WORD MARKS AS THE DIGIT THREE. THE PROGRAM USES 606 TO 705 POSITIONS OF CORE AND IS IN SYMBOLIC FORM SO THAT IT CAN BE ASSEMBLED WITH ANY 1440 AUTOCODER PROGRAM. THIS PROGRAM CAN BE USED ON ANY 1440 WITH A 1443 PRINTER, INDEX REGISTERS, AND THE STORE ADDRESS REGISTER SPECIAL FEATURE. THE PROGRAM CAN BE USED ON ANY SIZE 1440.

1440-02.7.002 CORE PRINT
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1440-02.7.002

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THIS PROGRAM WILL GIVE A 4K, 8K, 12K OR 16K CORE PRINT. NO ADVANCED PROGRAMMING IS REQUIRED. ALL GROUP MARKS ARE CHANGED TO LCZENGES. INDEX REGISTERS ARE PRINTED SEPARATELY. CORE POSITION INDICATORS ARE SUPPLIED FOR OUTPUT ABOVE 501. WORD MARKS ARE PRINTED AS ONE'S BELOW THE DATA LINE. CORE POSITIONS 001 TO 100 MUST BE PRINTED MANUALLY. THIS PROGRAM WILL BE USEFUL FOR NON-DISK USERS AND TO OVERCOME THE 4K-12K AUTOTEST SHORTCOMINGS. THE PROGRAM CAN ALSO BE USED AS AN UTILITY PROGRAM FOR PRODUCTION RUNS. 1440 CORE PRINT CAN BE USED ON ALL 1440 SYSTEMS 4K TO 16K. THE PROGRAM HAS BEEN WRITTEN IN MACHINE LANGUAGE IN ORDER TO BYPASS THE NEED FOR A PROGRAM LOADER.

1440-02.7.003 CORE DUMP ROUTINE IN ACTUAL
FORM
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1440-02.7.003

AUTHOR...PAUL D. HAMILTON
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THIS IS A PROGRAM IN ACTUAL 1440 MACHINE LANGUAGE TO PROVIDE CORE DUMPS OF ANY SIZE MEMORY 1440 ON A 1443 PRINTER. A SEPARATE MEMORY ADDRESS INDEX LINE IS PRINTED FOR EACH 100 POSITIONS STARTING WITH LOCATION 101. WORD MARKS ARE PRINTED ON A SEPARATE LINE AS A NUMBER 1. GROUP MARKS 12-7-B ARE REPLACED AND PRINTED AS A PROGRAMMERS BLANK 2-B. THE PROGRAM DESTROYS ONLY THE FIRST 86 POSITIONS OF CORE. PRINT OUT IS ALSO GIVEN OF INDEX REGISTER CONTENTS LAST COMPARE STATUS AND SENSE SWITCHES ON. BLANK 100 POSITION BANDS WITH NO W/M ARE NOT PRINTED. THIS PROGRAM CAN BE USED WITHOUT MODIFICATION ON ANY 1440 WITH INDEX REGISTERS AND STORE ADDRESS REGISTER SPECIAL FEATURE.

1440-02.7.004 CORE DUMP
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1440-02.7.004

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THIS PROGRAM GIVES A CORE DUMP FOR 4K, 8K, 12K OR 16K 1440 SYSTEMS. IT WAS DESIGNED BECAUSE MOST OF THE EXISTING MEMORY DUMPS DESTROYED A PART, OR PARTS, OF STORAGE AS THEY WERE LOADED. THIS PROGRAM USES ONLY THE FIRST EIGHTY INITIALLY AND PRINTS ALL REMAINING POSITIONS OF STORAGE. WORD MARKS ARE PRINTED AS ONES ON THE LINE FOLLOWING EACH DATA BAND OF STORAGE. GROUP MARKS ARE PRINTED AS G/S IN THE DATA LINE AND W OR M IN THE WORD MARK LINE DEPENDING ON THE PRESENCE OR ABSENCE OF AN ASSOCIATED WORD MARK. THERE ARE TWO DECKS AVAILABLE -- A 4K DECK AND ONE FOR 8K AND LARGER SYSTEMS. TO FACILITATE THE LOADING OF THE PROGRAM AND THE CONSERVATION OF CORE USED, THE PROGRAM HAS BEEN WRITTEN IN SELF-LOADING, MACHINE LANGUAGE.

1440-02.7.005 TRACE WITH EASY ENTRY AND
EXIT
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1440-02.7.005

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THIS TRACE PROGRAM IS AN AID FOR DEBUGGING PROGRAMS. IT WILL PRINT OUT THE I ADDRESS, INSTRUCTION AND THE CONTENTS OF THE A AND B FIELD AFTER EACH INSTRUCTION IN THE PROGRAM TO BE TRACED. PROVISION IS MADE FOR PART TRACING. CERTAIN VERY UNUSUAL TYPES OF CHAINING CANNOT BE TRACED. MACHINE CONFIGURATION-- 1440 D.P.S. WITH S.A.R. AND M.A.. STORAGE REQUIREMENTS ARE 1380 LOCATION. SOURCE LANGUAGE IS AUTOCODER. PROGRAM EXECUTION TIME-- 1000 STEPS ARE TRACED PER MINUTE. 359 SOURCE STATEMENTS.

1440-02.7.006 SELF-LOADING CORE DUMP
AVAILABLE 3RD QUARTER 1966.
SPECIFY FILE NUMBER 1440-02.7.006

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CONTINUED FROM PRIOR COLUMN--

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THIS PROGRAM DUMPS CORE FROM POSITION 81 ONWARDS, UNIQUELY IDENTIFYING ALL CHARACTERS NOT NORMALLY PRINTED WITH THE 52 CHARACTER SET. NO SPECIAL FEATURES ARE REQUIRED. TWO OPERATION CODE PATCHES TO THE PROGRAM AS SUPPLIED RENDER IT USABLE ON A 4K 1440 WITH 1443 PRINTER AND CARD READER.

1440-02.7.007 UNRESTRICTED SELECTIVE TRACE
ROUTINE
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1440-02.7.007

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THE TRACE ROUTINE IS DESIGNED TO AID IN THE DEBUGGING OF COMPLEX PROGRAMS BY ALLOWING THE PROGRAMMER TO OBSERVE THE LOGIC FLOW WITHIN THE PROGRAM. PRIOR TO EXECUTING EACH INSTRUCTION THE TRACE ROUTINE PRINTS A LINE OF INFORMATION SHOWING THE INSTRUCTION, INDEX REGISTERS, HLE INDICATOR STATUS, THE DISK CONTROL FIELD ON DISK OPERATIONS, AND THE A- AND B-REGISTER CONTENTS. THE TRACING MAY BE RESTRICTED TO A SPECIFIC AREA IN CORE. MACHINE CONFIGURATION-- 8K OR LARGER 1440 WITH INDEXING AND STORE ADDRESS REGISTERS SPECIAL FEATURE. A 4K MACHINE MAY BE USED IF MODIFY ADDRESS IS AVAILABLE. 1443 OR 1403 PRINTER WITH ANY NUMBER OF PRINT POSITIONS. IF PRINT STORAGE IS AVAILABLE THE TRACE MAY BE REASSEMBLED TO RESIDE ABOVE THE PREDEFINED CORE POSITION.

1440-02.9.001 NAME AND ADDRESS FILE
MAINTENANCE PROGRAM
AVAILABLE 3RD QUARTER 1964.
SPECIFY FILE NUMBER 1440-02.9.001

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DIRECT INQUIRIES TO AUTHOR

THE PROGRAM CREATES AND MAINTAINS A SEQUENTIAL FILE OF NAMES AND ADDRESSES BY STORING THEM AS VARIABLE-LENGTH BLOCKED RECORDS ON THE DISK PACKS IN EITHER SECTOR OR TRACK RECORD MODE. THE NUMBER OF CHARACTERS PER LINE AND NUMBER OF LINES PER ADDRESS IS VARIABLE. APPROXIMATELY 39,000 ADDRESSES CAN BE STORED ON ONE PACK WITH THE TRACK RECORD FEATURE. A LOG IS PRINTED SHOWING ADDITIONS, DELETIONS, AND BEFORE AND AFTER FOR FILE CHANGES. 8K 1440 WITH INDEX REGISTERS, 1442 CARD READER/PUNCH, 1443 PRINTER, AND TWO 1311 DISK DRIVES. THE PROGRAM IS WRITTEN IN 1440 AUTOCODER.

1440-02.9.002 SOURCE REGENERATION OF 1401
SPS TO 1440 AUTOCODER /AUTOC/
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1440-02.9.002

AUTHOR...MR. R. CARELLI
BLUE CROSS/BLUE SHIELD CENTRAL N.Y.
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM WAS DESIGNED TO CONVERT THE SPS SOURCE PROGRAMS OF A 1401 CARD-ORIENTED SYSTEM TO THE AUTOCODER FORMAT OF THE 1440 SYSTEM UTILIZING 1440 HARDWARE. THIS PROGRAM WILL NOT CONVERT 1401 MAGNETIC TAPE OR DISK INSTS. A 1440 SYSTEM WITH 8,000 POSITIONS OF STORAGE... ADVANCED PROGRAMMING PACKAGE... 1441 CENTRAL PROCESSING UNIT... 1442 READ/PUNCH /2 UNITS ARE REQUIRED/ OR 1444 PUNCH /1 UNIT REQUIRED/... 1443 PRINTER OR 1403 PRINTER WITH 1446 CONVERTER.

1440-02.9.003 PUNCH CORE IN PROGRAM LOAD
FORMAT
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1440-02.9.003

AUTHOR...JEAN M. HARVEY
IBM CORP.
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DIRECT INQUIRIES TO AUTHOR

THE 1440 PUNCH DUMP PROGRAM WILL PUNCH IN THE CONDENSED LOADER FORMAT, CORE STORAGE STARTING WITH LOCATION 321. THE PRIMARY PURPOSE OF THE PROGRAM IS TO PROVIDE FOR DISASTER - RESTART PROCEDURES FOR A 1440 DISK SYSTEM. IF A PROGRAM FAILS TO GET TO END OF JOB, CORE CAN BE DUMPED INTO CARDS. THIS CORE IMAGE CAN BE RELOADED /WITH NECESSARY MODIFICATIONS/ THEREBY SAVING TOTAL ACCUMULATIONS, DISK STATUS AND INPUT/OUTPUT INFORMATION. THIS ALLOWS FOR ADDITIONAL OPERATOR INDEPENDENCE, SAVES POSSIBLE LENGTHY RERUNS AND PRESERVES DISK INFORMATION INTACT. THE PROGRAM IS WRITTEN FOR A 1440 EQUIPPED WITH A CARD/READ PUNCH IN AUTOCODER LANGUAGE.

1440-02.9.004 GULP 4
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1440-02.9.004

AUTHOR...MR. T. PATTERSON

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DIRECT INQUIRIES TO..

MR. T. PATTERSON, GRANITE CONSTRUCTION CO., P.O. BOX 900
WATSONVILLE, CALIF.

THIS PROGRAM PROVIDES A LOAD AND GO OBJECT DECK FOR PRODUCING QUICK AND SIMPLE REPORTS OR REPRODUCE CARDS IN NEW FORMATS PUNCHING ONLY AS MANY COLUMNS AS NECESSARY. GANG A SINGLE CONTROL FIELD. NUMBER OF COLUMNS IN THE PUNCHING FEATURE ARE INDICATED IN THE CONTROL CARD, CUTTING DOWN PUNCH TIME. THE PROGRAM PROVIDES ITS OWN EDIT WORKS, ZEROS, BLANKS AND NUMBERS FROM 0 TO 9 SO THAT SEPARATE CONSTANTS NEED NOT BE SET UP IN CONTROL CARDS BUT MERELY CALLED FOR. COLUMN HEADINGS ARE PROVIDED FOR AND PRINTING IS AUTOMATIC. IT ACCUMULATES TOTALS AND PRINTS THEM ON RUN OUT OF CARDS. INTERPERSE GANG PUNCHING CAN BE ACCOMPLISHED ON THE REPUNCHED CARDS. ALL CONTROL CARDS FOLLOW THE OBJECT DECK INSTEAD OF BEING INSERTED. ANYONE CAN MAKE CONTROL CARDS WITH A MINIMUM OF PROGRAMMING BACKGROUND. CONSTANTS AND EDIT WORKS SUPPLIED BY THE PROGRAM ARE ADDRESSED IN EASY TO UNDERSTAND TERMS I.E., FOR ELEVEN BLANKS CALL FOR B11, FIFTEEN ZEROS CALL FOR Z15, THE CONSTANT NUMBER 8 IS K08, ACCUMULATORS ARE A10, A20 ETC. MACHINE REQUIREMENTS ARE-

- 4K 1440 SYSTEM WITH INDEXING AND STORE ADDRESS SPECIAL FEATURE,
 - 1442 CARD READ-PUNCH MOD. 1,
 - 1443 PRINTER MODEL 1 AND
 - ONE 1311 DISK STORAGE DRIVE.
- SOURCE LANGUAGE IS AUTOCODER.

1440-03.1.001 REPRODUCE GANG PUNCH
SIMULATOR
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1440-03.1.001

AUTHOR...DENNIS P. LEE
C/O COMMODITY SERVICE CO. /J.A./ LTD.
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DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM HAS BEEN DESIGNED TO PERFORM ANY/ALL OF THE FUNCTIONS OF AN I.B.M. 519 WITHOUT PROGRAMMING EFFORT ON THE USERS PART. THE SYSTEM ON WHICH THE OBJECT PROGRAM IS TO BE RUN MUST HAVE AT LEAST 4000 POSITIONS OF CORE STORAGE WITH NO SPECIAL FEATURES. ONE I.B.M. 1442 CARD READ-PUNCH. ONE I.B.M. 1443 PRINTER. IF THE REPRODUCING PHASES ARE DESIRED THE OBJECT PROGRAM ALSO REQUIRES ONE I.B.M. 1311 DISK STORAGE DRIVE.

1440-03.3.001 SPS TO AUTOCODER CONVERSION
PROGRAM
AVAILABLE 3RD QUARTER 1966.
SPECIFY FILE NUMBER 1440-03.3.001

AUTHOR...MR. J.M. NEWCOMER

DIRECT INQUIRIES TO..

MR. J.M. NEWCOMER, ANDERSON & GILBERT ASSOC., INC.,
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SPSCV TRANSLATES SOURCE DECKS WRITTEN IN 1401 SPS INTO A SOURCE DECK FOR 1440 AUTOCODER PROCESSORS. THE RESULTING OBJECT DECK CAN THEN BE RUN ON A 1440. ALL 1401 OPCODES ARE REPLACED BY 1440 OPCODES, ALL I/O INSTRUCTIONS MAY BE TRANSLATED TO 1440 EQUIVALENTS UNDER SWITCH CONTROL. UNIQUE AUTOCODER MNEMONICS REPLACE ALL BRANCH, DISK, AND TAPE INSTRUCTIONS. AN OPTIONAL LISTING AND SOURCE DECK MAY BE OBTAINED WITH SENSE SWITCH CONTROL. UP TO 100 PERCENT TRANSLATION MAY BE OBTAINED ON MANY PROGRAMS. EQUIPMENT SPECIFICATIONS- 8K 1440 WITH EITHER ONE 1442 READER OR 1442 READ/PUNCH UNIT FOR INPUT, A SECOND 1442 READ/PUNCH OR A 1444 PUNCH UNIT FOR OUTPUT, A 1403 OR 1443 PRINTER WITH A MINIMUM OF 12 PRINT POSITIONS, BUFFERED OR UNBUFFERED, SENSE SWITCHES B THROUGH G, INDEXING AND STORE ADDRESS REGISTERS SPECIAL FEATURE. MODIFY ADDRESS IS NOT USED, AND REDUCTION IN THE FEATURES AVAILABLE MAY REDUCE CORE REQUIREMENTS TO BELOW 4K. SOURCE LANGUAGE- AUTOCODER /FILE AU-008/.

1440-09.3.001 VENDOR ANALYSIS RATING
SYSTEM
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1440-09.3.001

AUTHOR...HOWARD KATZ
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NORTHridge, CALIF.

DIRECT INQUIRIES TO AUTHOR

THIS SYSTEM OF FOUR PROGRAMS TAKES RECEIVING INSPECTION DETAIL INFORMATION PERTAINING TO INDIVIDUAL LOTS OF PURCHASED GOODS, ACCUMULATES THE DATA, AND BY A WEIGHING FACTOR, RATES EACH VENDOR AS TO THE QUALITY OF HIS WORK. ALL RATINGS ARE BASED UPON SAMPLING PLANS FOR RECEIVING INSPECTION AS SPECIFIED BY MILITARY SPECIFICATION 105-D. PROGRAMMING LANGUAGE USED IS AUTOCODER ON DISK-1401/1440/1460. MACHINE CONFIGURATION REQUIRED IS A 1440-8K-2 /1311/ DRIVES - ADVANCED PROGRAMMING-SENSE SWITCHES. IT WOULD BE HELPFUL TO HAVE DIRECT-SEEK SPECIAL FEATURE.

1440-10.2.002 1240/1440 PROOF OF DEPOSIT
AND CASH LETTER WRITING
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1440-10.2.002

AUTHOR...J.L. BROOKS
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CHICAGO, ILL.

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DIRECT INQUIRIES TO AUTHOR

DEPOSITS, CHECKS, CASH SLIPS, CONTROL SLIPS AND SUBSTITUTE DOCUMENTS ARE ENTERED INTO THE 1412 OR 1240. AN IN-PROOF JOURNAL IS PREPARED, A PRIMARY DISTRIBUTION OF THE DOCUMENTS IS PERFORMED, AND GOOD DATA RECORDED IN DISK STORAGE. THE DATA RECORDED IN DISK STORAGE IS THEN READ AND CASH LETTERS FOR KILL-POCKETS PREPARED. THERE ARE 1944 SOURCE STATEMENTS.

MACHINE CONFIGURATION FOR 1440 IS- A 1441-A4 8K CPU WITH NO. 4631 INDEX REGISTERS AND STORE REGISTERS... NO. 5561 PRINTER ATTACHMENT... NO. 3321 DISK STORAGE CONTROL... NO. 7080 SERIAL I/O ADAPTER... NO. 2260 CONSOLE ATTACHMENT. A 1442-1 OR 2 CARD READ PUNCH WITH NO. 1632 CARD READ PUNCH ADAPTER. A 1443-2 PRINTER WITH NO. 5567 PRINTER CONTROL... NO. 5559 PRINT POSITIONS, 24 ADDITIONAL... NO. 5585 PRINT STORAGE... NO. 6401 SELECTIVE CHARACTER SET... A 1447-1 CONSOLE WITH NO. 7600 SENSE SWITCHES. 1412 MAGNETIC CHARACTER READER WITH 1311-1 DISK STORAGE DRIVE... 1311-2 DISK STORAGE DRIVE.

MACHINE CONFIGURATION FOR 1240 IS- A 1241 A4 8K CPU WITH NO. 4631 INDEX AND STORE REGISTERS... NO. 5561 PRINTER ATTACHMENT... NO. 3321 DISK STORAGE CONTROL... NO. 2260 CONSOLE ATTACHMENT. A 1442 1 OR 2 CARD READ PUNCH WITH NO. 1632 CARD READ PUNCH ADAPTER. A 1443-2 PRINTER WITH NO. 5567 PRINTER CONTROL... NO. 5559 PRINT POSITIONS ADDITIONAL 24... NO. 5585 PRINT STORAGE... NO. 6401 SELECTIVE CHARACTER SET. A 1447-1 CONSOLE WITH NO. 7600 SENSE SWITCHES. A 1311-1 DISK STORAGE DRIVE 1311-2 DISK STORAGE DRIVE.

1440-10.2.003 INSTALLMENT LOAN ACCOUNTING
AVAILABLE 3RD QUARTER 1965.
SPECIFY FILE NUMBER 1440-10.2.003

AUTHOR...MR. ERNEST WONG

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THE COMPLETE INSTALLMENT LOAN ACCOUNTING FOR A SMALL TO MEDIUM SIZED BANK CAN BE ACCOMPLISHED ON THE IBM 1440 DATA PROCESSING SYSTEM WITH THIS PACKAGE OF 15 PROGRAM RUNS. THE RUNS ARE IN 3 MAIN CATEGORIES, AND CONSIST OF NEW LOAN, DAILY, AND PERIODIC PROCESSING. THE HANDLING OF NEW LOANS IS DONE IN 4 RUNS WHICH EDIT AND CONVERT FROM CARD TO FILE, PRINT A NEW LOAN, PRINT AN ALPHABETIC REFERENCE CARD, AND PRODUCE COUPONS AND COVERS. DAILY PROCESSING INVOLVES MASTER FILE MAINTENANCE, BATCH PROOF, POSTING TO MASTER AND DEALER FILES, AND REPORT OUTPUT. PERIODIC /WEEKLY AND MONTHLY/ RUNS ARE MADE ON DEALER FILE MAINTENANCE, AND PRINT-OUT OF DELINQUENCY NOTICES, TRIAL BALANCE, AND WEEKLY AND MONTHLY REPORTS. INTEREST REBATES ARE COMPUTED BY THE 78THS METHOD AND AMOUNT OF UNEARNED INCOME IS DONE BY THE STRAIGHT LINE METHOD. PROGRAMS ARE WRITTEN IN 1440 AUTOCODER WITH DISK IOCS AND REQUIRE 8K, INDEXING AND STORE ADDRESS REGISTER FEATURE, 1442, 1443 WITH 144 PRINT POSITIONS, SENSE SWITCHES, AND 2 - 1311 DISK DRIVES. THERE ARE 9067 SOURCE STATEMENTS.

SOURCE DECKS ARE OPTIONAL MATERIAL.
OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1440-11.3.001 /TARS/ TALLY ANALYSIS
REGISTRATION AND SCHEDULING
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1440-11.3.001

AUTHOR...MR. W.R. JOHNSON

DIRECT INQUIRIES TO..

W.R. JOHNSON, IBM CORP., 121 STATE ST., ALBANY, N.Y.

TARS - 1440 IS A SERIES OF PROGRAMS DESIGNED TO GIVE THE PROFESSIONAL INSTRUCTOR THE MOST COMPLETE FREEDOM AND FLEXIBILITY IN THE PREPARATION OF CONFLICT FREE STUDENT PROGRAMS. UTILIZING THE FULL POWER AND RANDOM ACCESS CAPABILITIES OF THE IBM 1440 COMPUTER SYSTEM, THE PROGRAMS HAVE ENCOMPASSED THE BEST ATTRIBUTES OF THE TWO BASIC METHODS OF STUDENT SECTIONING. THE TWO METHODS PRESENTLY IN USE IN MANUAL, SEMI-AUTOMATIC, UNIT RECORD AND EVEN IN LARGE-SCALE COMPUTER SYSTEMS ARE, SECTIONING BY SECTION, THE SORTER PLAN/ AND, SECTIONING BY STUDENT, THE BIN PLAN/. ALTHOUGH BOTH OF THESE SYSTEMS HAVE PERFORMED WELL OVER THE YEARS, EACH HAS CERTAIN LIMITATIONS. SECTIONING BY STUDENT /BIN PLAN/ REQUIRES THE PRE-SELECTION OF THOSE STUDENTS WHO ARE PRESUMED TO BE THE MOST DIFFICULT TO SCHEDULE, I.E., THOSE STUDENTS REQUESTING SEVERAL SINGLE OFFERING /SINGLE SECTION/ COURSES. AFTER THIS PRE-SELECTION, ARBITRARY DECISIONS CONCERNING WHICH SECTION, OF A MULTIPLE-SECTION COURSE OFFERING, TO USE ARE MADE MANUALLY BY A PROFESSIONAL OR AUTOMATICALLY BY A COMPUTER. BECAUSE A MAJOR FACTOR IN THESE ARBITRARY DECISIONS IS THE NUMBER OF REMAINING SEATS IN A SECTION, THIS METHOD HAS THE ADVANTAGE OF BALANCING THE NUMBER OF STUDENTS IN EACH OF SEVERAL SECTIONS OF A PARTICULAR COURSE. THE DISADVANTAGE OF THE SYSTEM OR APPROACH IS OF COURSE THE ARBITRARY DECISION MAKING. THE ARBITRARY DECISIONS MADE FOR THE EARLIER SECTIONED STUDENTS CAN CREATE VERY REAL BUT THEORETICALLY AVOIDABLE CONFLICTS FOR STUDENTS SUBSEQUENTLY SECTIONED. THE SECTIONING BY SECTION PLAN /SORTER PLAN/ DOES NOT MAKE THESE ARBITRARY DECISIONS AS EARLY AS THE BIN PLAN. WITH THIS METHOD, ALL STUDENTS REQUESTING SINGLE SECTION SUBJECTS ARE SECTIONED. THOSE REQUESTING DOUBLES ARE SECTIONED, THEN TRIPLES, ETC.. THE MAJOR DIFFICULTY WITH THIS METHOD IS THAT IT REQUIRES A GREATER AMOUNT OF CODING TO KEEP TRACK OF WHERE AND WHEN A STUDENT HAS BEEN SECTIONED. THIS METHOD ALSO HAS THE DISADVANTAGE OF PLACING LESS EMPHASIS ON CLASS BALANCING. HOWEVER, THE PLAN DOES HAVE SEVERAL SIGNIFICANT ADVANTAGES. FIRST AMONG THESE IS THAT IT REQUIRES LESS PROFESSIONAL INTERVENTION. IT DOES A BETTER JOB WITH THOSE STUDENTS WHO ARE MORE DIFFICULT TO SECTION. AND FINALLY, THIS PLAN IS EASILY PERFORMED ON BASIC UNIT RECORD EQUIPMENT.

BECAUSE OF THE TREMENDOUS POWER AND RANDOM ACCESS CAPABILITIES OF THE IBM 1440 COMPUTER SYSTEM, THE SIGNIFICANT ADVANTAGES OF BOTH OF THE AFORE-MENTIONED SYSTEMS HAVE BEEN INCORPORATED IN TARS - 1440. AS STATED BEFORE, TARS - 1440 IS A SERIES OF PROGRAMS DESIGNED TO GIVE FREEDOM

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AND FLEXIBILITY TO THE SCHOOL ADMINISTRATORS IN PREPARING
CONFLICT-FREE STUDENT PROGRAMS.
THIS SERIES OF PROGRAMS IS AS FOLLOWS- THE REQUEST COUNT
TALLY... THE POSSIBLE CONFLICT ANALYSIS... THE FILE LOAD... THE
STUDENT REQUEST LOADING AND SINGLE OFFERING SECTIONING...
MAIN SECTIONING - PHASE A - BY SECTION... MAIN
SECTIONING - PHASE B - BY STUDENT... BACKTRACKING FOR
CONFLICTS... UPDATED MASTER SCHEDULE... CONFLICT STUDENTS
PRINTOUT... FILE MAINTENANCE OR CHANGE PROGRAM... SCHEDULE
WRITING AND GRADE CARD PUNCHING.

THE IBM 1440 MACHINE SPECIFICATIONS AND CONFIGURATION ARE
AS FOLLOWS-

1441 - PROCESSING UNIT MODEL A-3 /4K/
/EXCEPT PHASE 3D BACKTRACKING WHICH REQUIRES 8K/
INDEXING AND STORE ADDRESS REGISTER FEATURE
DISK STORAGE CONTROL FEATURE
1443 PRINTER ATTACHMENT FEATURE
SENSE SWITCHES
1442 CARD READ PUNCH MODEL 1
1443 PRINTER MODEL 1
PRINTER CONTROL FEATURE
STANDARD 52-CHARACTER-SET TYPEBAR
1447 CONSOLE MODEL 1
1311 DISK STORAGE DRIVE
NOTE- IT IS FELT THAT THE USE OF THE DIRECT SEEK FEATURE
WOULD REDUCE RUNNING TIME UP TO 30 PER CENT.

THE TARS - 1440 PROGRAM SPECIFICATIONS ARE AS FOLLOWS -

1. MAXIMUM OF 2500 STUDENTS.
2. MAXIMUM OF 13 REQUESTS PER STUDENT /UP TO 12 IN ONE SEMESTER/.
3. MAXIMUM OF 12 PERIODS /TIME INCREMENT PER DAY/.
4. MAXIMUM OF 999 COURSES - PLUS LUNCH AND STUDY HALL.
5. LUNCH MAY BE SPECIFIED OR NOT.
6. ALL CLASSES FOR THIS PROGRAM, ARE SCHEDULED FOR A FULL YEAR
RATHER THAN TWO /2/ SEPARATE SEMESTERS.
7. A SINGLE COURSE SECTION MAY NOT SPAN MORE THAN 5 DIFFERENT
PERIODS /TIME INCREMENTS/, ALTHOUGH IT MAY MEET ANY OR ALL
DAYS OF THE WEEK DURING THOSE TIME INCREMENTS.
8. EACH STUDY HALL MAY HAVE ONE OR MORE SECTIONS.
9. STUDY HALLS WILL BE TREATED INDIVIDUALLY BY DAY AND PERIOD.
10. NO STUDENT MAY BE IN MORE THAN ONE SECTION OF STUDY HALL
DURING A PERIOD.
11. NO STUDENT MAY BE IN MORE THAN 8 DIFFERENT STUDY HALL
SECTIONS.
12. THE CONFLICT ANALYSIS WILL HANDLE UP TO 150 COURSE OFFERING
CODES.
13. THE TALLY PROGRAM WILL /A/ COUNT COURSE REQUESTS,
/B/ SPREAD REQUESTS BY GRADE AND SEX, /C/ PRINT REQUESTS BY
STUDENT AND /D/ PRINT STUDENTS REQUESTING EACH COURSE.
14. FORMAT OF REQUEST CARDS AND SECTION MASTERS IS THE SAME AS
CLASS 7070.
15. FORMAT OF LUNCH AND STUDY HALLS IS SAME AS OTHER SECTION
MASTERS. PROGRAM WILL HANDLE ONE DURING PERIOD.
16. PROGRAM WILL HANDLE UP TO 3000 COURSE SECTION WITH A
MAXIMUM OF 50 SECTIONS ALLOWED FOR ANY ONE COURSE.
17. ABILITY TO USE ONE OF THE 12 PERIODS OF THE DAY AS A
CUMMY PERIOD.

OPTIONAL PROGRAM MATERIAL - SOURCE DECK.

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1440-11.5.001 HOSPITAL CANCER CERVICAL
CASEFINDING SUMMATION AND REPORT
AVAILABLE 2ND QUARTER 1965.
SPECIFY FILE NUMBER 1440-11.5.001

AUTHOR...R.W. GATCOMBE
IBM CORP.
1 STRATHMORE ROAD
NATICK, MASS.

DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM PROCESSES CARDS PUNCHED FROM CASE-FINDING SOURCE
DOCUMENTS. THE CODES IN THE CARDS ARE CHECKED FOR LOGIC AND
ACCURACY AND ARE ACCUMULATED ON THE 1311 PACK BY TOTALS BASED ON
CODES. AS THE CARDS ARE PROCESSED, INCORRECTLY CODED CARDS ARE
LISTED AS BAD CARDS. WHEN ALL CARDS ARE PROCESSED THEN EACH EXAM
AND CUT PATIENT CLASS GROUP IS PRINTED IN REPORT FORMAT. TOTALS
OF ALL CARDS PROCESSED AND ALL BAD CARDS ALSO ARE LISTED.
MACHINE REQUIRED- 1440-4K, 1442 AND A 1443 WITH 52 CHART/BAR AND
A 1311 DISK STORAGE DRIVE.

1440-12.3.001 BILL OF MATERIAL PROCESSOR
STRUCTURE FILE ADDRESS REORGANIZATION MAINTENANCE PROGRAM
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1440-12.3.001

AUTHOR...RAMON L. FRITSCH

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THE PURPOSE OF THIS PROGRAM IS TO FACILITATE THE REORGANIZATION
OF AN INSTALLED 1440 BILL OF MATERIAL PROCESSOR SYSTEM,
APPLICATION PROGRAM 1440-ME-02X. DUE TO THE ADDITIONS AND
DELETIONS TO THE PART NUMBER /P/N/ MASTER FILE IN THE B/M
PROCESSOR SYSTEM, IT BECOMES NECESSARY TO REORGANIZE THE
RECORDS PERIODICALLY TO RETAIN EFFICIENT PROCESSING. SINCE
THE PHYSICAL LOCATION OF THE MASTER P/N RECORDS MAY BE
CHANGED AFTER THE FILE REORGANIZATION, THE LINKAGE ADDRESSES
IN THE PRODUCT STRUCTURE AND PART INDEX FILES MUST BE CHANGED
TO REFLECT THE NEW P/N MASTER LOCATIONS. STRUCTURE FILE
ADDRESS REORGANIZATION MAINTENANCE /SFARM/ PROGRAM PERFORMS
THESE CHANGES BY PROCESSING THE P/N MASTER FILE IN SEQUENCE,
ACCESSING EACH PRODUCT STRUCTURE RECORD IN THE WHERE-USED
CHAIN, THEN IN THE COMPONENT SEQUENCE AND THEN RANDOMIZES
THE P/N TO ACCESS THE PART INDEX RECORD. SFARM ELIMINATES
THE NEED FOR RELOADING THE PRODUCT STRUCTURE AND PART INDEX
FILES FROM CARDS.
THE PROGRAM IS WRITTEN IN 1440 AUTOCODER AND WILL RUN ON
A 4K 1440 DISK SYSTEM.

1440-12.3.002 LABOR AND MATERIAL PROGRAM
AVAILABLE 3RD QUARTER 1966.
SPECIFY FILE NUMBER 1440-12.3.002

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CONTINUED FROM PRIOR COLUMN--

AUTHORS...J.D. CALLON J. WITT PATRICIA ROCHE
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THIS IS A DEMONSTRATION PROGRAM WHICH IS AN EXTENSION OF THE
1440 BILL OF MATERIAL PROCESSOR. IT INCLUDES-

- . LOADING AND MAINTENANCE OF INVENTORY AND PRODUCT STRUCTURE
RECORDS.
 - . LOADING AND MAINTENANCE OF WORK CENTER AND ROUTING RECORDS.
 - . GROSS TO NET TIME SERIES PLANNING REPORT WITH REQUIREMENTS
OFFSET BY LEAD TIME.
 - . GROSS WORK CENTER LOADING BY TIME PERIOD.
 - . RETRIEVAL REPORTS /EXPLOSIONS AND IMPLICATIONS/.
 - . CALCULATION AND MAINTENANCE OF LOW LEVEL CODES.
- THIS PROGRAM OFFERS MANUFACTURING COMPANIES AN EXCELLENT
BASE FOR DEVELOPING MECHANIZED PRODUCTION CONTROL PROGRAMS.
BY TAKING ADVANTAGE OF THESE STANDARDIZED ROUTINES THE USER
CAN BENEFIT FROM EARLIER IMPLEMENTATION AS WELL AS MINIMIZATION
OF PLANNING AND PROGRAMMING EXPENSES.
THE PACKAGE MAKES EIGHT PROGRAMS AVAILABLE TO THE USER, WHICH
ENABLE HIM TO LOAD AND MAINTAIN HIS PART NUMBER AND MACHINE
GROUP MASTER FILES WITH RANDOM INDEXES TO THESE FILES.
MINIMUM SYSTEMS REQUIREMENTS ARE- 8K 1440 CPU...
1442 CARD READ PUNCH... 1443 PRINTER 120 PRINT POSITION...
1447 MODEL 2 CONSOLE WITH SENSE SWITCHES...
/2/ 1311 DISK DRIVES... INDEXING AND STORE ADDRESS REGISTER
FEATURE. WRITTEN IN AUTOCODER.
OPTIONAL MATERIAL CONSISTS OF SOURCE DECKS.

1440-13.0.001 A PROGRAM TO DEMONSTRATE THE
USE OF THE IBM 1440/1311 FOR LIBRARY CIRCULATION CONTROL
AVAILABLE 2ND QUARTER 1964.
SPECIFY FILE NUMBER 1440-13.0.001

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DIRECT INQUIRIES TO AUTHOR

THIS IS A PROGRAM WHICH HAS ALREADY BEEN USED SUCCESSFULLY
TO DEMONSTRATE THE USE OF THE IBM 1440/1311 FOR LIBRARY
CIRCULATION CONTROL. THE PROGRAM REQUIRES PHYSICAL PARTICIPATION
OF PROSPECTS WHO MAY NEVER HAVE SEEN A COMPUTER BEFORE. PROSPECT
PARTICIPATION IS DIRECTED BY MESSAGES ON THE CONSOLE
TYPEWRITER. THE PROGRAM CONSISTS OF FIVE PHASES. /1/ WRITING
RECORDS ON DISK, /2/ ENTERING BORROWER NUMBER ON CONSOLE AND
LISTING ALL BOOKS CHARGED TO THAT BORROWER, /3/ ENTERING
DATA ON CONSOLE AND LISTING ALL BOOKS OVERDUE AND UNRETURNED
AS OF THAT DATE, /4/ ENTERING RETURNS ON CARD READER AND
LISTING RETURNED OVERDUE BOOKS WITH ACCRUED FINES, /5/ ENTERING
CALL NUMBER ON CONSOLE AND PRINTING STATUS OF BOOK ON CONSOLE.
PROSPECT MAY CHANGE HOLD OR DUE DATE AND RECORD IS REWRITTEN
ON DISK WITH CHANGES. MINIMUM MACHINE REQUIREMENTS- 8K WITH ONE
1311, ONE DISK PACK, CARD READER, PRINTER, CONSOLE TYPEWRITER,
SCAN, DIRECT SEEK, MULTIPLY-DIVIDE, SENSE SWITCHES.

List of Program Deletions

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ALPHABETIC KEY - REASON FOR REMOVAL

- A. THIS PROGRAM HAS BEEN DELETED BECAUSE OF LOW USAGE.
- C. THIS PROGRAM HAS BEEN DELETED BECAUSE OF LIMITED USEFULNESS.
- D. THIS PROGRAM IS OBSOLETE AND REPLACED BY FILE NUMBER -----.
- F. THIS PROGRAM HAS BEEN WITHDRAWN BY THE AUTHOR.

Deletions Appearing for The First Time

FILE NUMBER TITLE REASON FOR DELETION

1401 DELETIONS

01.1.008	RAMAC /305/ EDITING OF 1401 PROGRAM LABELS AND OP CODES /CARD/	A
01.2.006	STACK TAPE UTILITY PROGRAM	A
01.4.016	UC TROP, TAPE TO PRINTER OR PUNCH	A
01.4.059	CATIO /CREATE AUTO-TEST INPUT DATA FROM TAPE RECORDS/	A
01.4.185	BLOCK- PRINT EVERY 17TH RECORD IN A 1311 DISK FILE	A
01.4.202	MONITOR- LIBRARIAN SYSTEM	A
01.4.204	SPS 51 COLUMN CARD LOADER	A
01.5.005	PRINT/COPY BCD TAPE	A
03.0.038	FORTAN USER FUNCTION TO COMPARE TWO VARIABLES	A
14.0.017	TRANSIT ITEM PAS OPTIMIZER	A
GF-01X	CIVILIAN PAYROLL FOR FEDERAL GOVERNMENT AGENCIES - BIWEEKLY SERIES	C

1440 DELETIONS

11.5.002	SCORING OF THE MINNESOTA HARTFORD PERSONALITY ASSAY	A
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Previous Deletions

FILE NUMBER TITLE REASON FOR DELETION

1401 DELETIONS

01.1.005	MAST /MINNEAPOLIS ASSEMBLY OF SPS TWO/	A
01.1.010	PASS-CNE PROGRAM ASSEMBLER	A
01.1.012	SPS-BPEPL-BP PUNCH-FEED-READ VERSION OF SPS-2	A
01.1.015	SHORTER TAPE ERROR ROUTINE FOR THE IBM 1401	A
01.1.042	SPAT SYMBOLIC PROGRAM ASSEMBLER-TAPE	A
01.2.008	MATCH CK MERGE /MCM/ SIMULATION OF COLLATOR	A
01.2.017	A PROGRAM TO RELOCATE THE PHASE 4 OUTPUT OF SORT 5 OR 6	A
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01.4.019	TRAP /TAPE RECORD ANALYZER PRINT/	A
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File Number 1401/1440-20

Re: Form No. C20-1601-5

This Newsletter No. N20-0013-10

Date April 30, 1967

Previous Newsletter Nos. None

CATALOG OF PROGRAMS FOR IBM 1240, 1401, 1420, 1440 and 1460
DATA PROCESSING SYSTEMS - April 1967 Supplement

This publication is a Supplement to the "Catalog of Programs for IBM 1240, 1401, 1420, 1440 and 1460 Data Processing Systems", Form No. C20-1601-5.

Complete instructions for using the KWIC Index and for ordering programs are included in the Catalog. Programs will not be supplied by authors and should not be requested from them.

It is possible to obtain card decks for one or more card programs on a single reel of magnetic tape. The decks will be copied in card image format. The tape supplied must be a full reel (2400 feet) and in a standard tape container.

This Supplement contains information about changes in the status of the Libraries since the publication of the December 1966 Catalog, (Form No. C20-1601-5). It incorporates the changes that have occurred since then. It consists of the following sections:

1. A list of new programs appearing for the first time.
2. A list of Types III and IV program corrections and modifications (if applicable).
3. A Keyword-in-Context (KWIC) Index on new and revised programs.
4. Abstracts for the new and revised programs.
5. A list of program deletions (if applicable).

The following codes appear at the extreme right end of the title line for each abstract that is new or that has been revised in this issue of the Supplement:

*N - This symbol indicates a new program.

*M - This symbol indicates that the title of the program has been modified when it appears only at the extreme right end of the title line.

*M - This symbol indicates that the text of the abstract has been modified when an additional *M or * alone appears at the extreme right end of each line of the abstract that has been modified.

*R - This symbol indicates that the entire text of the abstract has been revised.

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PHENETICS	#ALPHABETIC NAME FILE SEARCHING BASED ON	1401 01.2.024 003
AM FOR THE IBM 1080 ANALYTICAL DATA	#COMPUTER PROGR	1440 11.5.003 004
#FAST - FULLY AUTO SCORING TECH. - PHASE 2 PKG., UNIT		1401 10.3.064 003
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CGRAM #FAST - FULLY AUTOMATIC SCORING TECHNIQUE - PHASE 1 PR		1401 10.3.063 003
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ATE WITH CR WITHOUT CONTROL FIELDS	#GENERALIZED TABUL	1401 01.4.226 003
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TIMING PROGRAM FOR DCS/360 AND TCS/360 TAPE	#IBM 1401/60	1401 1L-010 001
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TRCL FIELDS	#GENERALIZED TABULATE WITH CR WITHOUT CON	1401 01.4.226 003
#INPUT/OUTPUT CONTROL SYSTEM		1401 10-065 001
SECUTIVE NUMBERS ON LABELS	#1401/1460 PRINT LARGE CON	1401 01.3.024 003
ATERIAL PROGRAMS TO LCAD, MAINTAIN AND EXPLCDE	#BILL OF M	1440 12.3.003 004
L PROGRAMS TO LCAD, MAINTAIN AND EXPLCDE	#BILL OF MATERIA	1440 12.3.003 004
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EXPLCDE	#BILL OF MATERIAL PROGRAMS TO LOAD, MAINTAIN AND	1440 12.3.003 004
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S		1440 DR-02X 001
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#FAST - FULLY AUTO SCORING TECH. - PHASE 2 PKG., UNIT		1401 10.3.064 003
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T - FULLY AUTOMATIC SCORING TECHNIQUE - PHASE 1 PROGRAM #FAS		1401 10.3.063 003
LPHABETIC NAME FILE SEARCHING BASED ON PHENETICS	#A	1401 01.2.024 003
#IBM 1405 TO 1311 SIMULATION SUBROUTINES FOR 1401/1460		1401 01.4.219 003
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# SRT/MERGE PROGRAM		1401 1L-010 001
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008 SYSTEMS PACK TO TAPE THEN TAPE TO	#COPY 1401-AU-	1401 14.0.024 004
S PACK TO TAPE THEN TAPE TO	#COPY 1401-AU-008 SYSTEM	1401 14.0.024 004
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YSTEMS PACK TO TAPE THEN TAPE TO	#COPY 1401-AU-008 S	1401 14.0.024 004
AFE	#IBM 1401/60 TIMING PROGRAM FOR DCS/360 AND TCS/360 T	1401 1L-010 001
RAW FOR DCS/360 AND TCS/360 TAPE	#IBM 1401/60 TIMING PROG	1401 1L-010 001
CH. - PHASE 2 PKG., UNIT	#FAST - FULLY AUTO SCORING TE	1401 10.3.064 003
#VARILIST		1401 01.4.227 003
PROGRAM FOR THE IBM 1080 ANALYTICAL DATA	#COMPUTER	1440 11.5.003 004
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1401-AU-037 AUTOCODER PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-AU-037

PURPOSE TO PROVIDE MORE POWERFUL TOOLS FOR PROGRAMMERS TO ENABLE THEM TO CONCENTRATE THEIR EFFORTS ON THE PROBLEMS OF PROGRAM LOGIC RATHER THAN CODING. IN ADDITION, TO PROVIDE AN EXTREMELY FAST ASSEMBLY TEST EQUIPMENT SPECIFICATION: 4000 CORE-STORAGE POSITIVE-LOGIC/F94729 II OR IV TAPE UNITS 1403 PRINTER MODEL 3 1402 CARD READ-PUNCH ADVANCED PROGRAMMING FEATURES HIGH-LOW-EQUAL COMPARE THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE FOR SUCH ITEM THAT IS ORDERED. THE TAPES MUST BE 2600 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP, OPERATING PROCEDURES.
MACHINE READABLE - ONE TAPE /SYSTEM TAPE AND LISTINGS/.

1401-FB-01X DEMAND DEPOSIT PROGRAM
PACKAGE
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FB-01X

THE APPLICATION PROGRAM CONTAINS A SERIES OF PROGRAMS FOR PERFORMING THE ENTIRE DEMAND DEPOSIT APPLICATION. SOME OF THE RUNS HAVE OPTIONS WHICH MAY BE SELECTED BY THE USER TO FIT HIS PARTICULAR NEEDS AND IN A VERY FEW SECTIONS SUCH AS SERVICE CHARGE CALCULATIONS, THE USER MUST ENTER HIS OWN PARTICULAR SUB-ROUTINE. THE FOLLOWING RUNS ARE PROGRAMMED. GENERAL ENVELOPE RUN, REMITTANCE RELEASE RUN, SUBSTITUTION TRANSACTION, SORT, TRANSACTION MERGE, POSTING RUN, POSTED DETAIL MERGE, SHORT STATEMENT RUN, DETAILED STATEMENT RUN, NSF RUN. THE PURPOSE OF THIS APPLICATION PROGRAM IS TO ASSIST THE USER IN SYSTEMATICALLY DEFINING THE PROBLEM. ALLOW THE USER TO USE THE VAST MAJORITY OF THE PROGRAMS WHICH ARE COMMON TO MANY BANKS BUT STILL MAINTAIN THE ABILITY TO MAKE HIS OWN RUNS. BY SUBSTITUTING SECTIONS TAILOR-MADE TO HIS OWN SPECIFICATIONS, THE PROGRAM REQUIRES A 1401 MODEL C-3, 1402, 1403, 1412 AND FOUR TAPE UNITS, EITHER 729 II S OR 7330 S. SPECIAL DEVICES REQUIRED INCLUDE ADVANCED PROGRAMMING PRINT STORAGE, HIGH-LOW-AND SERIAL I/O ADAPTER, ADDITIONAL PRINT CONTROL AND REAL TIME PUNCH.

REMARKS: TAPES AND ENVELOPES MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... LISTINGS... FLOWCHARTS.
MACHINE READABLE - SYSTEM TAPE.

1401-FB-02X BANK MANAGEMENT SIMULATOR
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-FB-02X

THE BANK MANAGEMENT SIMULATOR IS AN EXERCISE WHICH SIMULATES THE EFFECTS OF MANAGEMENT DECISIONS IN A \$50 MILLION COMMERCIAL BANK. EACH TEAMS OBJECTIVE IS TO MAKE DECISIONS IN THE MOST PROFITABLE USE OF ITS ASSETS. EACH TEAM HAS TWO PLAYERS MAKE DECISIONS SIMILAR TO THOSE WHICH WOULD BE MADE OVER A PERIOD OF SEVERAL YEARS. THIS EXERCISE WAS DESIGNED BECAUSE OF THE DIFFICULTY OF EXPOSING OFFICERS TO ASSET MANAGEMENT DECISIONS IN ANY OTHER WAY. THE COMPUTER APPLIES THE DECISIONS AGAINST A MATHEMATICAL MODEL OF THE BANK, CALCULATES THEIR EFFECT ON THE BALANCE OF THE BANK, AND THE EFFECT OF THE CALCULATED CHANGES IN THE ECONOMY THAT MIGHT TAKE PLACE DURING THE PARTICULAR QUARTER OF PLAY. THE RESULTS ARE PRESENTED TO THE PARTICIPANTS SO THEY MAY SEE THE INTERACTION OF THEIR VARIOUS DECISIONS. ONE TO NINE TEAMS MAY PARTICIPATE AT ONE TIME. TEAMS DO NOT COMPETE AGAINST EACH OTHER BUT ARE RATED AGAINST EACH OTHER. EQUIPMENT ISSUED IN THE GAME. A 4K 1401 SYSTEM WITH, THREE TAPE DRIVES, CARD INPUT/OUTPUT, HIGH-LOW-EQUAL, ADVANCED PROGRAMMING AND MULTIPLY-DIVIDE SPECIAL FEATURES. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES COST \$240 PER TAPE IN ADDITION. OPTIONAL MATERIAL REQUESTED MUST BE ITEMIZED ON THE ORDER CARD.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... OPERATORS GUIDE... PLAYERS
AND EXAMINER INSTRUCTIONS.
CARD DECKS - INITIALIZER PHASE OBJECT PROGRAM DECK... INITIALIZER
DATA DECK... SAMPLE PROBLEM DECK.
ONE MAGNETIC TAPE - CALCULATIONS PHASE OBJECT PROGRAM.

OPTIONAL PROGRAM MATERIAL - ONE MAGNETIC TAPE - ASSEMBLY LISTINGS.

1401-IL-01X THE 62 CFO PROGRAM
/CONSOLIDATED FUNCTIONS ORDINARY/
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IL-01X

THIS SERIES OF FOURTEEN PROGRAMS IS DESIGNED TO COMPUTE NET PREMIUMS AND TERMINAL RESERVES FOR MOST PLANS OF INSURANCE. COMPUTE ADJUSTED PREMIUMS AND MINIMUM CASH VALUES FOR THOSE PLANS REQUIRING SUCH VALUES. STORE COMPUTED RESULTS ON MASTER RATE TABLES FOR USE IN THE COMPUTATION OF LEGAL RESERVES OR NON-FAPEFUTE BENEFITS. PRINT THE RESULTS IN REPORTS IN THE FORMS OF YOUR CHOICE AND FOR OTHER PURPOSES. MINIMUM INPUT IS REQUIRED FOR MOST PLANS OF INSURANCE. /A WHOLE LIFE PLAN REQUIRES TWENTY-SIX COLUMNS OF DATA/. 62 CFO TERMINAL RESERVE, NET PREMIUMS, AND MINIMUM CASH VALUE PROGRAMS PROVIDE EXTREME FLEXIBILITY IN THE CALCULATION OF TERMINAL RESERVES AND MINIMUM CASH VALUES. THEY HAVE BEEN USED TO DUPLICATE THE RESULTS OF THE 62 CFO FOR THE 62 CFO PROGRAMS. THE PROGRAMS USE A WIDE VARIETY OF BENEFITS, MORTALITY TABLES, INTEREST RATES, AND METHODS OF VALUATION. USE OF THESE PROGRAMS WILL PROVIDE AN ECONOMIC MEANS OF PREPARING CONSOLIDATED FILES FOR CONVERSION TO 62 CFO DAILY CYCLE WHICH WILL BE AVAILABLE IN THE THIRD QUARTER OF 1963. EACH PLAN OF INSURANCE MUST BE DESCRIBED USING STANDARD FORMS. THE INPUT DATA REQUIRED FOR EACH PLAN IS INPUT AS DATA FILES THROUGH THE APPROPRIATE CFO PROGRAMS. INITIAL OUTPUT IS IN THE FORM OF MAGNETIC TAPE CONTAINING THE STRUCTURE OF THE

CONTINUED FROM PRIOR COLUMN—
PLAN, THE PREMIUMS, AND RELATED POLICY VALUES. A PRINT PROGRAM IS PROVIDED WHICH GENERATES DESCRIPTIVE INFORMATION AND PREPARES A COMPLETE REPORT ON EACH PLAN OF INSURANCE. THIS SERIES OF PROGRAMS WAS WRITTEN AND ASSEMBLED USING 1401 SPS, 12K 1401 TAPE SYSTEM WITH 1402 CARD READ PUNCH MOD 1, 1403 PRINT MOD 2, FOUR TRACK ADVANCED PROGRAMMING, EXPANDED PRINT EDIT, HIGH-LOW-EQUAL COMPARE, MULTIPLY-DIVIDE, PRINT CONTROL ADDITIONAL, AND SENSE SWITCHES SPECIAL FEATURES.
THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... 62 CFO VOLUMES I AND II.
ONE MAGNETIC TAPE - CONTAINS PROGRAM CARDS... MORTALITY TABLES...
SELECTED TWENTY-PAY LIFE PREMIUMS... SELECTED ADJUSTED LIFE
PREMIUMS.
CARD DECKS - TAPE-TO-CARD PROGRAM DECK... SAMPLE PROBLEM DECK.

1401-IG-065 INPUT/OUTPUT CONTROL SYSTEM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-IG-065

PURPOSE THE 1401 IOCS CONSISTS OF A SET OF LIBRARY ROUTINES WHICH, WHEN CALLED FOR IN A 1401 AUTOCODE SOURCE PROGRAM BY MACRO INSTRUCTIONS, ARE SELECTED AND TAILORED AND INCLUDED IN THE OBJECT PROGRAM. THESE ROUTINES PERFORM I/O FUNCTIONS AND PROVIDE LINKAGE TO THE USERS OBJECT PROGRAM. THE SPECIFIC STATEMENTS GENERATED AT ASSEMBLY TIME DEPEND COMPLETELY ON THE PARTICULAR SPECIFICATIONS CONTAINED IN THE USERS SOURCE PROGRAM. USE OF PROGRAM THE 1401 IOCS LIBRARY ROUTINES ARE TO BE PLACED IN THE 1401 AUTOCODE SYSTEM /VERSION 3 OR LATER VERSION/ THROUGH A LIBRARIAN RUN. MACHINE CONFIGURATION THE 1401 IOCS WILL PERFORM THE I/O FUNCTIONS AND ASSOCIATED HOUSEKEEPING FOR TAPE, CARD READER, CARD PUNCH AND PRINTER. THE OBJECT MACHINE MUST HAVE, IN ADDITION TO ANY OF THE ABOVE I/O UNITS, ADVANCED PROGRAMMING FEATURES AND THE HIGH-LOW-EQUAL COMPARE FEATURE. THE AMOUNT OF CORE STORAGE REQUIRED VARIES WIDELY FROM PROGRAM TO PROGRAM AND MUST BE DETERMINED AT ASSEMBLY TIME. THE NUMBER OF TAPES INDICATED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED FOR EACH ITEM THAT IS ORDERED. THE TAPES MUST BE 2400 FEET IN LENGTH.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM WRITE-UP... DOCUMENTATION OF THE 1401 IOCS
SYSTEM INCLUDING LANGUAGE SPECIFICATIONS... FLOWCHARTS...
SAMPLE PROGRAM.
ONE MAGNETIC TAPE - 1401 MODEL STATEMENTS IN CARD IMAGE FORM.

1401-LM-010 IBM 1401/60 TIMING PROGRAM
FOR DGS/360 AND TOS/360 TAPE SORT/MERGE PROGRAM
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1401-LM-010

THIS PROGRAM PROVIDES TIMING ESTIMATES FOR DOS AND TGS TAPE SORT/REVERSE PROGRAM WHEN OPERATING ON A SYSTEM/360 MODEL 2030 OR MODEL 2040 WITH A MAXIMUM OF 256K BYTES OF MAIN STORAGE, A CHANNEL CONFIGURATION OF EITHER ONE MULTIPLEXOR CHANNEL, ONE SELECTOR CHANNEL, OR TWO SELECTOR CHANNELS, CONNECTED TO A 2404 MAGNETIC TAPE UNIT AND CONTROL, A 2804 TAPE CONTROL, OR A 2816 SWITCHING UNIT, AND USING 1401, 1402, 1403, 2440, OR 2404 TAPE DRIVERS. TIMING ESTIMATES FOR THE MODEL 2030 ASSUME A 1.5 MICROSECOND CYCLE TIME. THE PROGRAM WILL PROVIDE ONE MULTIPLEXOR, ONE SELECTOR OR TWO SELECTOR CHANNEL SORT TIMING ESTIMATES FOR SORTING FIXED LENGTH RECORDS WITH A SINGLE CONTROL FIELD. TIMINGS CAN BE OBTAINED FOR SPECIFIC RECORD VOLUMES DESIGNATED BY THE USER, OR FOR A SPREAD OF RECORD VOLUMES DETERMINED BY THE TIMING PROGRAM. IN ADDITION, MAIN STORAGE CAPACITY, MAXIMUM FILE SIZE, AND FILE COUNTS IN THE PROGRAM OUTPUT. CONTROL CARDS ARE USED TO SUPPLY A DESCRIPTION OF THE SYSTEM AND RECORD/FILE CONFIGURATION FOR WHICH ESTIMATES ARE REQUIRED. MULTIPLE RECORD/FILE CARDS MAY BE USED WITH ONE SYSTEM CARD TO ESTIMATE TIMES FOR MANY FILE CONFIGURATIONS ON THE SAME SYSTEM. OR, MANY SYSTEMS CARDS MAY BE USED WITH ONE RECORD/FILE CARD TO ESTIMATE THE TIME FOR SORTING ONE FILE ON SEVERAL DIFFERENT SYSTEMS. MULTIPLE CONTROL CARD SETS CAN BE STACKED TO PROVIDE MULTIPLE ESTIMATES AT THE SAME TIME.

MINIMUM SYSTEM REQUIREMENTS- A 16K 1401 SYSTEM WITH...
ONE 1402 CARD READ PUNCH MODEL 1... ONE 1403 MODEL 2 OR 1404 PRINTER... HIGH/LOW/EQUAL COMPARE FEATURE... MULTIPLE/DIVIDE FEATURE... SENSE SWITCHES... ADVANCED PROGRAMMING FEATURE.

OR
A 16K 1460 SYSTEM WITH... ONE 1402 CARD READ PUNCH MODEL 3... ONE 1403 PRINTER MODEL 2... MULTIPLE-DIVIDE FEATURE... INDEXING AND STORE ADDRESS REGISTER FEATURE... SENSE SWITCHES.

BASIC PROGRAM MATERIAL -
DOCUMENTATION - PROGRAM MATERIAL LIST... 1401/60 TIMING
PROGRAM FOR BASIC OPERATING SYSTEM/360 TAPE SORT/MERGE
PROGRAM /16K/ MANUAL C24-3439... TAPE SORT/MERGE
/16K/ SPECIFICATIONS MANUAL C24-3438.
MACHINE READABLE - OBJECT CHECK

1440-DR-02X RETAIL ACCOUNTS RECEIVABLE
ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-DR-02X

THIS PROGRAM IS A SYSTEM OF SIXTEEN 1440 RUNS DESIGNED TO AUTOMATICALLY PERFORM RECEIVABLES MAINTENANCE AND BILLING IN MEDIUM-SIZED DEPARTMENT OR SPECIALTY STORES. THE PROGRAM HAS BEEN DESIGNED AS A SERIES OF ROUTINES WHICH PERFORM SPECIFIC FUNCTIONS SUCH AS: CREDIT ADVISING AND RECEIVING, CREDITING SPECIALIZED PROGRAMS FOR A PARTICULAR STORE ARE DEVELOPED. MODIFICATIONS AND REFINEMENTS TO PARAMETERS OF THESE ROUTINES CAN BE MADE TO HAVE THEM APPLY TO A SPECIFIC STORE. THE SYSTEM IS DESIGNED TO ACCOMMODATE FOUR TYPES OF CREDIT ACCOUNTS. THESE ACCOUNTS ARE: 1) CREDIT REVOLVING ACCOUNT--A REVOLVING ACCOUNT--A MONTHLY PAYMENT BASED ON A PERCENTAGE OF THE BALANCE. 2) INCLUDES OPTION ACCOUNTS. 3) 3/3 FIXED REVOLVING ACCOUNT--A FIXED MONTHLY PAYMENT BASED ON THE CREDIT LIMIT OF THE ACCOUNT... 4) CREDITED ACCOUNT, OR DEFERRED CREDIT ACCOUNT. ANY GIVEN STORE WILL BE PURCHASED BY WHOLESALE DEPARTMENTS. ANY GIVEN STORE WILL BE

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CONTINUED FROM PRIOR PAGE--

PROBABLY NOT HAVE ALL FOUR TYPES OF ACCOUNTS. HOWEVER, RUNS CAN BE MODIFIED TO DELETE THOSE TYPES OF ACCOUNTS WHICH ARE NOT NEEDED. TRANSACTIONS ARE ENTERED INTO THE SYSTEM IN THE FORM OF PUNCHED CARDS. EDIT AND ACCOUNTING CONTROL FUNCTIONS ARE PERFORMED, AND THE FOLLOWING MAJOR OUTPUTS ARE PRODUCED BY THE SYSTEM. ADJUSTMENTS LISTING, SERVICE CHARGE ADJUSTMENTS LISTING, CHARGE-OFFS LISTING, CREDITS LISTING, CASH BATCH BALANCE LISTING, TRANSACTION REGISTER, SIGNAL MESSAGES, CUSTOMER STATEMENTS, DELINQUENT ACCOUNT LISTING, AGED TRIAL BALANCE /ATB/, AND CONTROL BALANCE LISTING.

FEATURES

- DIAGNOSTIC AGED TRIAL BALANCE DESIGNED SPECIFICALLY FOR AUTHORIZATION PURPOSES.
- DELINQUENT LISTING TO AUTOMATICALLY SELECT FOR REVIEW AND FOLLOW-UP THOSE ACCOUNTS REQUIRING CREDIT ACTION.
- UP TO 20,000 MASTER ACCOUNTS CAN BE STORED ON EACH DISK PACK.
- SIGNAL MESSAGES PREPARED AS A BY-PRODUCT OF FILE MAINTENANCE WHEN SPECIAL ACTION IS REQUIRED ON AN ACCOUNT.
- AUTOMATIC AGING OF CUSTOMER ACCOUNTS TO 150 DAYS.
- AUTOMATIC POSTING OF TRANSACTIONS.
- OPERABLE WITH EITHER INTERNAL OR EXTERNAL ACCOUNT NUMBERS.
- IBM PUNCHED CARD CUSTOMER STATEMENTS PRINTED TWO UP.
- AUTOMATIC RE-ENTRY OF CASH PAYMENTS THROUGH PREPUNCHING OF THE CUSTOMER STATEMENT STUB.
- PREPARATION OF LABELS FOR PROMOTIONAL MAILINGS ON A SELECTIVE BASIS.
- COMPLETE AND AUTOMATIC CONTROLS.

MINIMUM SYSTEM REQUIREMENTS--A 4K 1440 SYSTEM WITH... 1442 CARD READ PUNCH... 1443 PRINTER... 1311 DISK STORAGE DRIVE... INDEXING AND STORE ADDRESS REGISTER, SELECTIVE STACKER, 24 ADDITIONAL PRINT POSITIONS, SELECTIVE CHARACTER SET, 39 CHARACTER SET.

BASIC PROGRAM MATERIAL -

- DOCUMENTATION - PROGRAM WRITE-UP... REFERENCE MANUAL *M
- INCLUDING LISTINGS. *M
- MACHINE READABLE - OBJECT AND SAMPLE PROBLEM DECKS. *M

OPTIONAL PROGRAM MATERIAL - SOURCE DECKS. *M

OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD. *M

1440-SM-030

SORT 5

ORDER THROUGH LOCAL IBM BRANCH OFFICE
SPECIFY FILE NUMBER 1440-SM-030

SORT 5 IS A GENERATIVE SORT PROGRAM DESIGNED FOR GENERATION AND USE ON AN IBM 1440 WITH AT LEAST ONE IBM 1311 DISK STORAGE DRIVE, AND A MINIMUM OF 4000 POSITIONS OF CORE STORAGE. THE PROGRAM NOW HAS THE ABILITY TO USE 7335 MAGNETIC TAPE FOR INPUT/OUTPUT FILES AND THE OPTION TO RELOCATE PHASE FOUR OUTPUT TO THE BEGINNING OF THE WORK AREA. THE PROGRAM REQUIRES THE USE OF 1401/1440/1460 AUTOCODER /ON DISK/ FOR GENERATION OF A SORT OBJECT PROGRAM. IT IS A GENERATIVE SORT PROGRAM-ALSO NEEDS IC-010 FEATURES--SORT 5 OBJECT PROGRAM WILL SORT FIXED LENGTH, BLOCKED OR UNBLOCKED, RECORDS IN MOVE MODE INTO EITHER ASCENDING OR DESCENDING SEQUENCE. SORTING CAN BE CONTROLLED BY AS MANY AS TEN CONTROL DATA FIELDS OF TOTAL LENGTH UP TO A MAXIMUM OF 189 CHARACTERS. SORT 5 CAN GENERATE AN OBJECT PROGRAM THROUGH USE OF THE AUTOCODER MACRO-GENERATOR AND PARAMETER CARDS. IT IS FURTHER CLASSIFIED AS A GENERALIZED PROGRAM BECAUSE IT CAN MODIFY ITSELF AT OBJECT RUN TIME ACCORDING TO INFORMATION PUNCHED IN CONTROL CARDS. MINIMUM MACHINE REQUIREMENTS-- FOR GENERATION AND OBJECT TIME-- 4K 1440 SYSTEM...ONE 1311 DISK STORAGE DRIVE...1442 CARD READ PUNCH...1443 PRINTER. THE OBJECT PROGRAM CAN USE, IF AVAILABLE, UP TO 5 DISK STORAGE DRIVES AND 8K, 12K, OR 16K CORE STORAGE CAPACITY.

BASIC PROGRAM MATERIAL -

- DOCUMENTATION - WRITE-UP... SPECS. AND OPERATING PROCEDURES... LIBRARY DECK LISTING... PREPHASE PROGRAM LISTING.

CARD DECKS - LIBRARY ROUTINES FROM WHICH OBJECT PROGRAMS MAY BE GENERATED... PREPHASE DECK.

Contributed Programs

1401

B-1401

PAGE 003

1401-01.2.024 ALPHABETIC NAME FILE
SEARCHING BASED ON PHONETICS
AVAILABLE 2ND QUARTER 1967.
SPECIFY FILE NUMBER 1401-01.2.024

AUTHOR...ROGER A. ROOT

DIRECT INQUIRIES TO...
ROGER A. ROOT, IBM CORP., 3424 WILSHIRE BLVD.
LOS ANGELES, CALIF.

THIS IS A DEMONSTRATION PROGRAM FOR SEARCHING ALPHABETIC-KEYED NAME FILES ON DISKS USING PHONETIC TECHNIQUES. THE PACKAGE IS EQUIPPED WITH A SAMPLE NAME FILE. IT ALSO CONTAINS PROGRAMS WHICH ALLOW THE USER TO GENERATE THE SPECIFIED FILE FORMAT FROM HIS OWN NAME FILE. INQUIRIES CAN BE MADE FROM THE CONSOLE, REMOTE I/O, OR IN BATCH FORM FROM THE CARD READER. CONTAINS FILE ORGANIZATION AND SEARCH TECHNIQUES BASED ON SOUND OF NAME NOT SPELLING. RETRIEVES DIRECT HITS PLUS NEAR MISSES. CATCHES TRANSCRIPTION ERRORS AND SOUND-ALIKE-BUT SPELLING-DIFFERENT SITUATIONS. NO OPERATOR CODING. APPLICABLE FOR INSURANCE, BANKING, AIRLINE, STATE AND LOCAL GOVERNMENT. PROVEN RESULTS. FOR 1401, 1440, OR 1460 (INTERCHANGEABLE), 12K, 1402, 1403, 1407-1447, UP TO FIVE 1311, ONE TAPE DRIVE, ADV PGM, SS, AND MPY-DIV. WRITTEN IN AUTOCODER WITH I/OCS. /1448-1050 OPTICNAL/.

THE BASIC PROGRAM MATERIAL IS AVAILABLE ON ONE 2400 FOOT REEL OF MAGNETIC TAPE. THE TAPE REQUIRED MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED.

1401-01.3.024 1401/1460 PRINT LARGE
CONSECUTIVE NUMBERS ON LABELS
AVAILABLE 2ND QUARTER 1967.
SPECIFY FILE NUMBER 1401-01.3.024

AUTHOR...PAUL K. CUERR

DIRECT INQUIRIES TO...
PAUL K. CUERR, IBM CORP., DEPT. 317, OMEGA, N.Y. 13827

THE PROGRAM WAS DESIGNED SPECIFICALLY TO EXPLODE THE SIZE OF CONSECUTIVE NUMBERS TO BE PRINTED ON INCH HIGH LABELS, BUT ANY NUMBERS OF FROM ONE TO NINE DIGITS MAY BE PRINTED. THE NUMBERS PRINTED ARE ALL SLIGHTLY LESS THAN 7/8 INCH IN HEIGHT. ONLY DIGITS ,0,, THROUGH ,9,, AND BLANKS MAY BE PRINTED. THE PROGRAM MAY BE RUN ON ANY 1401 OR 1460. CORE SIZE IS 1329 LOCATIONS AND NO SPECIAL FEATURES ARE REQUIRED. A CONTROL CARD IS NEEDED FOR EACH APPLICATION. USER ROUTINES MAY BE EASILY INCLUDED. THE SOURCE LANGUAGE FOR THE PROGRAM IS 1401 AUTOCODER.

1401-01.4.172 AUTOPAC II
AVAILABLE 4TH QUARTER 1964.
SPECIFY FILE NUMBER 1401-01.4.172

AUTHOR...ARLON O. HICKMAN
IBM CORP.
1307 S. BOULDER
TULSA, OKLA.

DIRECT INQUIRIES TO AUTHOR

THIS IS A PACKAGE OF THREE 1401 PROGRAMS DESIGNED TO AID THE FILE ORGANIZATION PROBLEM ENCOUNTERED WITH DATA PROCESSING SYSTEMS UTILIZING DIRECT ACCESS STORAGE DEVICES. THE FIRST PROGRAM PROVIDES A DISTRIBUTION ANALYSIS OF THE DIGITS WITHIN THE KEYSER. THE SECOND PROGRAM USES TWO ALGORITHMS /RADIX TRANSFORMATION & DIVIDE/REMAINDER/ UNDER SENSE SWITCH CONTROL TO DEVELOP RANDOM ADDRESSES FROM THE KEYSER. AND THE FINAL PROGRAM EVALUATES THE DEVELOPED ADDRESSES IN TERMS OF UNIQUE ADDRESSES AND SYNONYMS, CYLINDER PACKING AND OVERFLOWS, TOTAL READS AND AVERAGE NUMBER OF READS TO RETRIEVE A RECORD FROM ANY CYLINDER OR FROM THE ENTIRE FILE. ANY ONE OF THE PROGRAMS CAN BE RUN TO THE EXCLUSION OF THE OTHER TWO AS LONG AS THE INPUT FORMAT REQUIREMENTS ARE MET. THE PROGRAMS WILL HANDLE A CONTROL FIELD UP TO 20 CHARACTERS LONG AND ADDRESSES GENERATED CAN HAVE A RANGE FROM 0000 TO 9999. THESE PROGRAMS WERE WRITTEN IN AUTOCODER AND REQUIRE 4K 1401 WITH ADVANCED PROGRAMMING, H/L/E COMPARE, SENSE SWITCHES, AND MULTIPLY/DIVIDE. A 1402, A 1403, AND 4 TAPE DRIVES.

ONE REEL OF TAPE IS REQUIRED TO OBTAIN THE BASIC PROGRAM MATERIAL. THIS TAPE MAY BE ORDERED FROM YOUR IBM REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED SHOULD BE 2400 FEET IN LENGTH.

1401-01.4.219 IBM 1405 TO 1311 SIMULATION
SUBROUTINES FOR 1401/1460
AVAILABLE 1ST QUARTER 1966.
SPECIFY FILE NUMBER 1401-01.4.219

AUTHORS...BARBARA WILLIAMS ALAN KAUFMAN

DIRECT INQUIRIES TO...
BARBARA WILLIAMS, IBM CORP., 330 MADISON AVE., NEW YORK, N.Y.

THESE 1401/1460 SUBROUTINES WILL SIMULATE THE 1405 DISK USING 1311 DRIVES. THE USER NEED SIMPLY SUBSTITUTE APPROPRIATE BRANCH INSTRUCTIONS IN PLACE OF THE ROUTINES IN PLACE OF HIS 1405 INSTRUCTIONS. ALL DISK CONTROL FIELDS AND I/O AREA DIFFERENCES ARE CONVERTED AUTOMATICALLY TO 1311 FORMAT, THE FUNCTION IS PERFORMED, AND THEN CONTROL FIELD AND I/O AREAS RESTORED TO 1405 FORMAT. SUBROUTINES ARE IN AUTOCODER SOURCE FORM.

ADVANTAGES OF USE ARE INCREASED EFFICIENCY OF 1311 DRIVE OVER 1405 PLUS THE ABILITY TO RUN 1405 PROGRAMS ON S/360 USING THE EMULATOR. REQUIREMENTS FOR USE ARE- 2K STORAGE /ADDITIONAL OVER OBJECT PROGRAM/, HI-LO-EQUAL COMPARE, ADVANCED PROGRAMMING AND ONE-1311 DRIVE FOR EVERY 2 MILLION CHARACTERS OF CONTIGUOUS ON-LINE 1405 DISK STORAGE.

1401-01.4.226 GENERALIZED TABULATE WITH OR
WITHOUT CONTROL FIELDS
AVAILABLE 1ST QUARTER 1967.

CONTINUED FROM PRIOR COLUMN--
SPECIFY FILE NUMBER 1401-01.4.226

AUTHOR...E. STAUDT

DIRECT INQUIRIES TO...
E. STAUDT, AVISUN CORP., RIVER RD., NEW CASTLE, DEL. 19720

THE PURPOSE OF THE PROGRAM IS TO ELIMINATE THE NECESSITY FOR MANY INDIVIDUAL PROGRAMS REQUIRED AT A 1401 INSTALLATION TO TABULATE CONTROL AND BALANCE TOTALS AND TO PROVIDE FOR UP TO THREE CONTROL FIELDS TOTAL INDICATIONS AS WELL AS A FINAL TOTAL. A MAXIMUM OF FIVE FIELDS PER ANY GIVEN CARD FILE CAN BE TABBED WITH OR WITHOUT CONTROL FIELD TOTALS AND A FINAL TOTAL. THE USER MAY SPECIFY UP TO THREE CONTROL FIELD LEVELS. THE USER MAY ALSO LIST EACH CARD /CONTROL FIELDS/ WITH THE ASSOCIATED TAB FIELDS. REQUIRES 4K STORAGE.

1401-01.4.227 VARILIST
AVAILABLE 2ND QUARTER 1967.
SPECIFY FILE NUMBER 1401-01.4.227

AUTHOR...EDWARD GIEGLER

DIRECT INQUIRIES TO...
MR. GRAHAM KIMBLE, DIRECTOR OF DATA PROCESSING,
CARLETON COLLEGE, NORTHFIELD, MINN.

VARILIST - A LOAD AND GO PROCESSOR FOR GENERATING FAST RUNNING LISTING PROGRAMS. USES A SINGLE CONTROL CARD PLUS HEADING CARDS. FOR USE ON A 4K 1401 WITH SENSE SWITCHES, EXPANDED PRINT EDIT, AND 120 PRINT POSITIONS.

1401-10.3.063 FAST - FULLY AUTOMATIC
SCORING TECHNIQUE - PHASE I PROGRAM PACKAGE
AVAILABLE 4TH QUARTER 1966.
SPECIFY FILE NUMBER 1401-10.3.063

AUTHOR...MR. C.F. WILKES

DIRECT INQUIRIES TO...
MR. C.F. WILKES, IBM CORP., 112 E. POST RD., WHITE PLAINS, N.Y.

FAST PROGRAMS ARE DESIGNED TO ACCEPT-FAST-TEST ANSWER CARDS, A VERTICALLY ORIENTED, TWO-COLUMN PER SIDE MARK-SENSE CARD ON WHICH A TEST SUBJECT MARKS HIS RESPONSES. THIS TYPE OF RESPONSE WILL BE SCORED WITHIN THE COMPUTER. IN ADDITION, KEY PUNCHED OR 1230/534 PUNCHED RAM SCORES CAN BE ACCOMMODATED. REGARDLESS OF INPUT METHOD, RAM SCORES ARE CONVERTED TO DERIVED SCORES, LISTED IN VARIOUS SEQUENCES, PRINTED ON PRESSURE-SENSITIVE LABELS, AND PRODUCE PROFILE CARDS. A FIVE-POINT FREQUENCY DISTRIBUTION CAN BE PRODUCED. CAN BE RUN ON 1401, 1440 OR 1460 SYSTEMS, WITH 8K, ONE 1311 DISK DRIVE, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, BIT-TEST, AND ANY 1401/40/60 I/O HARDWARE. IF FAST MARK-SENSE CARDS ARE USED, MUST HAVE COLUMN BINARY OR CARD IMAGE FEATURE. ONE ADDITIONAL 125 SEQUENTIAL RECORDS IF DISK RECORDS ARE SORTED FOR ADDITIONAL LISTING SEQUENCES.

THE BASIC PROGRAM MATERIAL IS AVAILABLE IN CARD FORM OR ON ONE 7-TRACK /DATA CONVERSION FEATURE REQUIRED/ DTR. THE DTR WILL BE SUPPLIED BY PID - NO TAPE SUBMITTAL IS REQUIRED.

1401-10.3.064 FAST - FULLY AUTO SCORING
TECH. - PHASE 2 PKG., UNIT POINT PLOT FREQ. DIST. & CORR. COEFF. MATRIX
AVAILABLE 2ND QUARTER 1967.
SPECIFY FILE NUMBER 1401-10.3.064

AUTHORS...MR. C.F. WILKES M.N. SAMUEL

DIRECT INQUIRIES TO...
MR. C.F. WILKES, IBM CORP., 112 E. POST RD., WHITE PLAINS, N.Y.

THIS PACKAGE CONTAINS TWO PROGRAMS. THE FIRST PRINTS AND PLOTS A UNIT POINT FREQUENCY DISTRIBUTION. A NORMAL CURVE IS OVERLAID FOR COMPARATIVE PURPOSES. STATISTICS INCLUDE THE MEAN, STANDARD ERROR OF THE MEAN, MEAN DEVIATION, STANDARD DEVIATION, VARIANCE, G1, REGIAN, G3, AND UP TO 15 MODES. ABSCISSA IS SCALED ON Z-SCORES TO 0.05 SIGMA, AND THE ORDINATE IS SCALED ON THE MODE FREQUENCY. UNIT FREQUENCIES AND LOCAL PERCENTILES INCLUDED FOR EACH SCORE. CAN PUNCH CONVERSION TABLES FOR USE WITH FST21 TO ADD LOCAL NORMS TO STUDENT RECORDS. THE SECOND PROGRAM PRINTS A MATRIX OF COVARIANCE CORRELATION COEFFICIENTS. UP TO 15 SCORES CAN BE CORRELATED SIMULTANEOUSLY WITH OUTPUT OF A 14X14 TRIANGULAR MATRIX. BOTH PROGRAMS RUN ON A 1401, 1440 OR 1460 WITH 8K, ONE 1311, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, BIT TEST, AND ANY I/O HARDWARE.

NOTE- FAST-FULLY AUTOMATIC SCORING TECHNIQUE-PHASE I IS A NECESSARY PREREQUISITE FOR THE USE AND UNDERSTANDING OF THIS PROGRAM. IF NOT ALREADY IN THE USER'S POSSESSION IT SHOULD BE ORDERED FROM PID BY REQUESTING FILE NUMBER 1401-10.3.063.

THE BASIC PROGRAM MATERIAL IS AVAILABLE IN CARD FORM OR ON ONE 7-TRACK /DATA CONVERSION FEATURE REQUIRED/ DTR. THE DTR WILL BE SUPPLIED BY PID - NO TAPE SUBMITTAL IS REQUIRED.

1401-10.3.065 SOCRATES STUDENT SCHEDULING
SYSTEM
AVAILABLE 2ND QUARTER 1967.
SPECIFY FILE NUMBER 1401-10.3.065

AUTHORS...C.F. WILKES J.R. COTTRELL J.N. KESSELMAN
B.J. NEVIL M.N. SAMUEL

DIRECT INQUIRIES TO...
CHARLES F. WILKES, IBM CORP., 112 E. POST RD., WHITE PLAINS, N.Y. 10601

2200000\$SOCRATES SYSTEM PROVIDES AN IN-HOUSE SYSTEM FOR SCHEDULING SECONDARY SCHOOL STUDENTS INTO CLASSES OF GRADES SEVEN THROUGH TWELVE. THE SYSTEM SCHEDULES PERIODS ZERO THROUGH TEN FOR TWO REGULAR SEMESTERS SIMULTANEOUSLY, OR ONE SPLIT-WEEK SEMESTER. FEATURES INCLUDE ABILITY GROUPINGS, TEACHER SELECTION, GRADE RANGE SELECTION, SEX SELECTION, ALTERNATE COURSE REQUESTS, STUDY HALL SCHEDULING, BLOCKED COURSES, AND MAXIMUM CLASS BALANCING CONSISTENT WITH MINIMUM REJECTS.

Contributed Programs

CONTINUED FROM PRIOR PAGE--

INCLUDES A COMPLETE SERIES OF PROGRAMS TO SIMPLIFY DATA COLLECTION, CORRECTIONS, SCHEDULING AND ANALYSIS. FILE MAINTENANCE PROGRAMS PERMIT INDIVIDUAL OR MASS CHANGES. OUTPUT REPORTS INCLUDE VERIFICATION LISTINGS, SIMPLE TALLY, CONFLICT MATRIX, ANALYSIS OF REJECTS, CLASS LOAD ANALYSIS IN SEQUENCE BY ROOM, TEACHER, PERIOD AND COURSE, AND STUDENTS SCHEDULE LISTING WITH CARD OUTPUT OPTION. COMPREHENSIVE EDIT PROGRAM ASSURES CLEAN DATA PRIOR TO SCHEDULING. RUNS ON MINIMUM 8K 1401/40/60 WITH BIT TEST, HIGH-LOW-EQUAL COMPARE, ADVANCED PROGRAMMING, ONE 1311 DISK DRIVE, AND ANY I/O CONFIGURATION.

STC OBTAIN THE BASIC PROGRAM MATERIAL THE REQUESTOR MUST SUBMIT ONE 1316 DISK PACK.

1401-10.3.066 FAST - FULLY AUTOMATIC
SCORING TECHNIQUE
AVAILABLE 2ND QUARTER 1967.
SPECIFY FILE NUMBER 1401-10.3.066

AUTHOR...CHARLES F. WILKES

DIRECT INQUIRIES TO..

CHARLES F. WILKES, IBM CORP., 112 E. POST RD.,
WHITE PLAINS, N.Y. 10601

THIS PROGRAM PRODUCES A TEST ITEM ANALYSIS FOR UP TO FIVE VALID RESPONSES TO PLUS ONITS OR INVALIDS FOR EACH TEST QUESTION. INDIVIDUAL RESPONSE TALLIES ARE PRINTED ON A SINGLE LINE FOR THREE GROUPINGS OF STUDENTS WITHIN EACH TEST PART - TOTAL STUDENTS, THE UPPER 27 PER CENT AND THE LOWER 27 PER CENT. THE REPORT PRINTS THE QUESTION NUMBER, IDENTIFIES THE CORRECT RESPONSE, AND SHOWS THE COUNT AND PERCENTAGE OF STUDENTS SELECTING EACH POSSIBLE RESPONSE FOR THE THREE GROUPS. THIS PERMITS EVALUATION OF ITEM DIFFICULTY AND DISCRIMINATION, OR USE WITH A TABLE FOR DETERMINING THE NORMALIZED BI-SERIAL COEFFICIENTS OF CORRELATION. PROGRAM RUNS ON A 1401/40/60 WITH 8K, TWO 1311 DISK DRIVES, ADVANCED PROGRAMMING, HIGH-LOW-EQUAL COMPARE, COLUMN BINARY OR CARD IMAGE, BIT TEST, AND ANY I/O HARDWARE. FAST CARDS MUST HAVE BEEN USED WITH THE FAST PHASE ONE PROGRAM PACKAGE, FILE NUMBER 1401-10.3.063.

THE BASIC PROGRAM MATERIAL CAN BE OBTAINED IN CARD FORM OR ON ONE 7-TRACK /DATA CONVERSION FEATURE REQUIRED/ DTR. THE DTR WILL BE SUPPLIED BY PID - NO TAPE SUBMITTAL IS REQUIRED.

1401-14.0.024 COPY 1401-AU-008 SYSTEMS
PACK TO TAPE THEN TAPE TO 360/2311 IN COMPATIBILITY MODE
AVAILABLE 2ND QUARTER 1967
SPECIFY FILE NUMBER 1401-14.0.024

AUTHOR...MR. J.A. WINGER

DIRECT INQUIRIES TO..

MR. J.A. WINGER, IBM CORP., 1211 SOUTH HARRISON ST.,
FORT WAYNE, IND.

THIS PROGRAM WILL COPY A 1401-AU-008 AUTOCODER SYSTEMS PACK TO TAPE IN ODD PARITY ON A 1440 OR 1401 AND BY CHANGING SENSE SWITCH SETTINGS WILL COPY TAPE TO DISK ON EITHER 1400 SERIES OR ANY 360 EQUIPPED WITH COMPATIBILITY. RECORDS ARE READ AND WRITTEN ON DISK IN THE TRACK SECTOR FORMAT. MOVE MODE RECORDS ARE WRITTEN INTO TAPE WITHOUT MODIFICATION. LOAD MODE RECORDS ARE WRITTEN ONTO TAPE IN MOVE MODE WITH AN ADDITIONAL RECORD WHICH INDICATES WORD MARK LOCATIONS. BECAUSE THE SYSTEMS PACK CONTAINS WORD-SEPARATOR CHARACTERS, CURRENT IBM UTILITY PROGRAMS WILL NOT WORK. THERE ARE MANY DIFFERENT COMBINATIONS OF INFORMATION ON A 1401-AU-008 SYSTEMS PACK. THEREFORE, THE AUTHOR HAS MADE THE PROGRAM GENERAL ENOUGH TO HANDLE ANY SITUATION. PROGRAM REQUIRES 8K, ADVANCED PROGRAMMING, SENSE SWITCHES, 120 PRINT POSITIONS, 1 DISK AND 1 TAPE. DIRECT SEEK IS USED IF AVAILABLE.

1440

1440-11.5.003 COMPUTER PROGRAM FOR THE IBM
1080 ANALYTICAL DATA ACQUISITION SYSTEM
AVAILABLE 2ND QUARTER 1967.
SPECIFY FILE NUMBER 1440-11.5.003

AUTHOR...W.R. WHITTLE

DIRECT INQUIRIES TO..

W.R. WHITTLE, IBM CORP., 2651 STRANG BLVD.,
YORKTOWN HEIGHTS, N.Y. 10598

THIS IS A 1440 PROGRAM DESIGNED TO PROCESS THE PUNCHED CARD OUTPUT OF THE IBM 1080 ANALYTICAL DATA ACQUISITION SYSTEM SERVICING TECHNICON AUTO ANALYZERS AND ONE OR MORE IBM 1084 SAMPLE IDENTIFICATION TURNABLES, ALL OPERATING IN A CLINICAL LABORATORY ENVIRONMENT. IT MATCHES SPECIMEN IDENTIFICATION NUMBERS WITH THEIR RAW DATA VALUES, MAKES ADJUSTMENTS FOR DRIFT, BASELINE SHIFT, AND INTERACTION, LINEARIZES THE DATA, AND COMPUTES SPECIMEN CONCENTRATIONS. A QUALITY CONTROL REPORT IS PRODUCED WHICH SUMMARIZES THE AUTO ANALYZER RUNS, AND EACH TEST RESULT AND SPECIMEN IDENTIFICATION NUMBER IS STORED IN DISK MEMORY. THE USER THEN MUST WRITE A PROGRAM TO STORE THE RESULTS IN THE PATIENT FILE. THE PROGRAM REQUIRES 8K CORE STORAGE, A 1447-2, ONE 1311, A 1442, AND A 1443.

OPTIONAL MATERIAL - SOURCE DECKS. OPTIONAL MATERIAL DESIRED MUST BE ITEMIZED ON THE ORDER CARD.

1440-12.3.003 BILL OF MATERIAL PROGRAMS TO
LOAD, MAINTAIN AND EXPLODE BM FILES
AVAILABLE 1ST QUARTER 1967.
SPECIFY FILE NUMBER 1440-12.3.003

AUTHOR...MR. JOHN VONJESS

CONTINUED FROM PRIOR COLUMN--

DIRECT INQUIRIES TO..

MR. JOHN VONJESS, IBM CORP., 400 WYMAN ST., WALTHAM, MASS.

THESE PROGRAMS, DESIGNED FOR THE 4K USER, WILL LOAD A BILL OF MATERIAL FILE, MAINTAIN THE FILE WITH ADDITIONS, DELETIONS AND CHANGES. THE LOADING PROGRAM REDUCES THE PART NUMBER OF THE COMPONENTS DOWN TO A FIVE DIGIT ADDRESS SO THAT APPROXIMATELY SIX COMPONENTS CAN BE LOADED IN A SECTOR WITH A COMPLETE WHERE-USED INDEX GENERATED AT THE SAME TIME. CONTROLS ARE MAINTAINED IN EACH PROGRAM. THE EXPLOSION PROGRAM PERMITS THE EXPLOSION OF A BILL WITH SUBSTITUTIONS. INCLUDED ARE TWO INQUIRY PROGRAMS WHICH WILL GIVE A COMPLETE WHERE-USED REPORT FOR 1 LEVEL UP AND A BM LISTING OF 1 LEVEL DOWN. ALL DOCUMENTATION IS INCLUDED SO THAT ANY OTHER CUSTOMER COULD MAKE MODIFICATIONS TO SUIT HIS NEEDS. MACHINE REQUIREMENTS- 1440 - 4K PLUS, 1442, 1443, 1447 MODEL 2, 1311 AS REQUIRED-MINIMUM 1, ADVANCED PROGRAMMING, SCAN, AND SENSE SWITCHES.

List of Program Deletions

ALPHABETIC KEY - REASON FOR REMOVAL

- A. THIS PROGRAM HAS BEEN DELETED BECAUSE OF LOW USAGE.
- C. THIS PROGRAM IS DELETED BECAUSE OF LIMITED USEFULNESS.
- D. THIS PROGRAM IS OBSOLETE AND REPLACED BY FILE NUMBER -----.
- F. THIS PROGRAM HAS BEEN WITHDRAWN BY THE AUTHOR.

Deletions Appearing for The First Time

FILE NUMBER	TITLE	REASON FOR DELETION
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1401 DELETIONS

01.1.030	SYMBOLIC LABEL CHECKING, ANY MACHINE S.P.S.	A
01.1.046	LABEL CHECKES /SPS/	A
01.2.011	THREE TAPE SORT PROCESSOR	A
01.2.016	TWO-TAPE SORT	A
01.3.004	SLIP /SYMBOLIC LANGUAGE INSERT PACKAGE/ /CARD/	A
01.3.008	SLIP III SYMBOLIC LANGUAGE INSERT PACKAGE	A
01.3.015	FAST - A PROGRAM TO GENERATE A PROGRAM FROM TABULAR INPUT	A
01.4.009	ZIP /INSTANT PRINTING/	A
01.4.036	SEE - SELECTIVE EIGHTY-EIGHTY PROGRAMS	A
01.4.045	CARD AND TAPE SELECTIVE LISTER	A
01.4.055	KEEP	A
01.4.060	SEQUENTIAL NUMBER ASSIGNER FOR FOURTEEN-O-ONE USERS /SNAFU/	A
01.4.061	MODULAR PROGRAMMING CONCEPT FOR MACRO-ORIENTED PROBLEMS	A
	/PMOPMP/	
01.4.062	GENERAL PURPOSE MACROS FOR DIV. CONVERSION OF DATES TO JULIAN DAYS, SIMPLE READ/WRITE TAPE IOCS	A
01.4.082	SYLVANIA PRINT ROUTINE	A
01.4.109	TL001 TABLE LOOKUP CLOSED SUBROUTINE	A
01.4.110	SPECIAL FEATURE MULTIPLY AND DIVIDE MACROS	A
01.4.118	REPRO-REPRODUCE AND/OR EMIT ALPHANUMERIC /12-9/, NUMERIC /0-9/ ONLY, AND NUMERIC ZONE /12-11/ ONLY	A
01.4.144	AID /AUTOMATIC INPUT DEFINER/ /CARD/	A
01.4.182	COPY 1311 DISK FILE TO IOCF	A
01.4.192	CHRISTMAS CLUB PROGRAMMING PACKAGE	A
01.4.206	GENERALIZED CARD IMAGE UPDATE PROGRAM	A
01.4.213	1401/1440/1460 BCC-BCD CONVERSION SUBROUTINE	A
01.4.214	TWO COLUMN ANALYSIS	A
01.5.008	AUTOCORRELOGRAM AND CROSSCORRELOGRAM	A
01.5.010	MULTI PURPOSE EXTRACT AND SELECT	A
01.5.018	SI0CS- A SHORT INPUT/OUTPUT CONTROL SYSTEM	A
01.5.019	MASTER UTILITY SYSTEM	A
02.0.032	MODIFIED FORTRAN COMPILER	A
03.0.004	FLOATING POINT SUBROUTINES /NORMALIZED	A
03.0.013	E TO THE X AND E TO THE -X SUBROUTINE /FIXED POINT/	A
03.0.020	FIXED POINT SQUARE ROOT SUBROUTINE	A
03.0.028	MULTIPLY SUBROUTINE /130 POSITION/	A
05.0.001	MIP /MATRIX INVERSE PROGRAM FOR THE IBM 1401/ /CARD/	A
07.0.005	1401/1460 SUBROUTINE FOR MODULUS II CALCULATIONS FOR A 9 DIGIT NUMBER	A
10.3.030	INVENTORY MANAGEMENT SIMULATOR SELECTION PROGRAM	A
10.3.037	PROGRAM TO PRODUCE MULTIPLE INDEXES	A
11.0.003	A PROGRAM FOR SOLVING SYSTEMS OF LINEAR EQUATIONS ON THE IBM 1401	A
14.0.021	THE IBM 1012 TAPE PUNCH AS A TAPE READER	A

1440 DELETIONS

13.0.001	A PROGRAM TO DEMONSTRATE THE USE OF THE IBM 1440/1311 FOR LIBRARY CIRCULATION CONTROL	A
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Previous Deletions

FILE NUMBER	TITLE	REASON FOR DELETION
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1401 DELETIONS

01.1.033	1401/1410 PRE-ASSEMBLY PROGRAM EDIT AND REFERENCE /PAPER/	/
01.2.013	CARD SORTER	A
01.2.020	GENERALIZED THREE TAPE SORT PROGRAM	/
01.2.021	THREE DISK SORT - SORT 72	A
01.4.008	BINARY TAPE DUMP	A
01.4.040	CNE CARD 80 - 80 LIST	A
01.4.091	SCANX MACRO FOR THE 1401 AUTOCODER	A
01.4.132	AUTOCODER SEQUENCE CHECKING PROGRAM	A
02.0.005	FAST - A PROGRAM TO GENERATE A PROGRAM FROM TABULAR INPUT	A
03.0.022	BINARY AUTOMATIC MULTIPLY SUBROUTINE /BAMS/	A
09.2.022	FLOOD PLAIN ANALYSIS PROGRAM	A
10.3.004	SDT 3 FOR THE IBM 1401 DATA PROCESSING SYSTEM	A
10.3.031	MODE NUMBERING	A

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CATALOG OF PROGRAMS FOR IBM 1240, 1401, 1420, 1440 and 1460
DATA PROCESSING SYSTEMS - February 1968 Supplement

This publication is a Supplement to the "Catalog of Programs for IBM 1240, 1401, 1420, 1440 and 1460 Data Processing Systems", Form No. C20-1601-7.

Complete instructions for using the KWIC Index and for ordering programs are included in the Catalog. Programs will not be supplied by authors and should not be requested from them.

It is possible to obtain card decks for one or more card programs on a single reel of magnetic tape. The decks will be copied in card image format. The tape supplied must be a full reel (2400 feet) and in a standard tape container.

This Supplement contains information about changes in the status of the libraries since the publication of the December, 1967 Catalog, (Form No. C20-1601-7). It incorporates the changes that have occurred since then. It consists of the following sections:

1. Abstracts for the new and revised programs.
2. A list of Types III and IV program corrections and modifications (if applicable).
3. A list of program deletions (if applicable).

The following codes appear at the extreme right end of the title line for each abstract that is new or that has been revised in this issue of the Supplement:

*N - This symbol indicates a new program.

*M - This symbol indicates that the title of the program has been modified when it appears only at the extreme right end of the title line.

*M - This symbol indicates that the text of the abstract has been modified when an additional *M or * alone appears at the extreme right end of each line of the abstract that has been modified.

*R - This symbol indicates that the entire text of the abstract has been revised.

IBM Corporation, Program Information Department, 40 Saw Mill River Road, Hawthorne, N.Y. 10532

Contributed Programs

1401

1401-14-0.026 REAL ESTATE TAX BILL SYSTEM
FOR THIRD CLASS PENNSYLVANIA COUNTIES
AVAILABLE 1ST QUARTER 1968.
SPECIFY FILE NUMBER 1401-14-0.026

AUTHOR...J.G. WALTERICK

DIRECT INQUIRIES TO...
J.G. WALTERICK,IBM CORP.,413 W. STATE ST.,TRENTON, N.J.

THIS PROGRAM CALCULATES AND PRINTS REAL ESTATE TAX BILLS
GIVEN THE ASSESSMENT AND MILLAGE RATES TO PROVIDE SUMMARY
CARDS DURING CALCULATION TIME FOR LATER GENERATION OF
MONTHLY REPORTS.

SOURCE LANGUAGE- AUTOCODER.

MINIMUM SYSTEM REQUIREMENTS- 1401, 4K, 1403, 1402,
ADVANCED PROGRAMMING.

NOTE- THE BASIC PROGRAM MATERIAL CAN BE OBTAINED IN CARD FORM.

1401-14-0.027 EXTENDED PERFORMANCE
COMPUTER ASSISTED INSTRUCTION OPERATING SYSTEM FOR 1401-1026
AVAILABLE 1ST QUARTER 1968.
SPECIFY FILE NUMBER 1401-19.0.027

AUTHORS..JUDITH MILLER MR. W.S. WENGERT

DIRECT INQUIRIES TO...
JUDITH MILLER,IBM CORP.,1825 K ST., N.W.,
WASHINGTON, D.C. 20036

THIS SYSTEM OF AUTOCODER PROGRAMS IS AN EXPANSION OF THE
IBM 1401, 1440 OR 1460 CAT OPERATING SYSTEM PROVIDING
EXTENDED CAPABILITIES FOR COURSE GENERATION AND SYSTEM CONTROL,
INCLUDING SUPPORT FOR AUDIO/VISUAL DEVICES, ADDITIONAL
LANGUAGE FEATURES, A CARD INPUT SYSTEM, ADDITIONAL
ADMINISTRATIVE CONTROL AND IMPROVED SYSTEM PERFORMANCE.
THE SYSTEM INCLUDES ALL SUPPORT PROGRAMS NECESSARY TO GENERATE
THE SYSTEM PACK, INITIALIZE THE SYSTEM, EXTRACT AND PRINT
RECORDINGS AND PERFORM VARIOUS OFF-LINE OPERATIONS SUCH AS
PRINTING COURSE MATERIAL AND/OR STUDENT INFORMATION.

MINIMUM CONFIGURATION IS A 12K 1401-1026 WITH ADVANCED
PROGRAMMING, BIT TEST, HIGH-LOW-EQUAL COMPARE, AND SENSE
SWITCHES. ONE 1311 DISK DRIVE, DIRECT SEEK, ONE 1026 AND 1 1050.

ALL PROGRAMS ARE CODED IN THE DISK AUTOCODER SOURCE
LANGUAGE. TWO 1311 DISK DRIVES WILL BE REQUIRED IF THE
MAIN PROGRAM IS RECOMPILED.

BASIC PROGRAM MATERIAL- CAN BE OBTAINED IN CARD FORM
OR ON ONE 7-TRACK DTR. THE DTR WILL BE SUPPLIED BY PID -
NO TAPE SUBMITTAL IS REQUIRED.

OPTIONAL PROGRAM MATERIAL- AVAILABLE ON ONE 7-TRACK
REEL OF MAGNETIC TAPE.

NOTES- THE TAPE REQUIRED MAY BE ORDERED FROM YOUR IBM
REPRESENTATIVE OR SUPPLIED. THE TAPE PROVIDED MUST BE
2400 FEET IN LENGTH. IF THE TRACK REQUIREMENT IS NOT INDICATED
9-TRACK WILL BE FORWARDED. OPTIONAL MATERIAL DESIRED MUST
BE ITEMIZED ON THE ORDER CARD.

1440

1440-02.3.002 ONE CARD 80-80 CARD TO
PRINTER PROGRAM WITH BRANCH ON OVERFLOW
AVAILABLE 4TH QUARTER 1965.
SPECIFY FILE NUMBER 1440-02.3.002

AUTHOR...J.G. OREILLY
155 HONEY LANE
WALTHAM ABBEY
ESSEX
ENGLAND

DIRECT INQUIRIES TO AUTHOR

THIS PROGRAM LISTS CARDS AND BRANCHES TO CHANNEL ONE ON
SENSING CHANNEL TWELVE. STORAGE REQUIREMENTS- 181 POSITIONS.
EQUIPMENT SPECIFICATIONS- 1440 WITH 1443 AND 1442/1402.

List of Program Corrections and Revisions

*N

ORDER NUMBER	MACHINE AREA	DATE
DOCUMENTATION CHANGE ONLY		
02.3.002	1440	1-08-68

List of Program Deletions

ALPHABETIC KEY TO REASONS FOR REMOVAL.

*N

- A. THIS PROGRAM HAS BEEN DELETED BECAUSE OF LOW USAGE.
- C. THIS PROGRAM HAS BEEN DELETED BECAUSE OF LIMITED USEFULNESS.
- D. THIS PROGRAM IS OBSOLETE AND REPLACED BY ORDER NUMBER -----.
- F. THIS PROGRAM HAS BEEN WITHDRAWN BY THE AUTHOR.

Deletions Appearing for the First Time

ORDER NUMBER	TITLE	REASON FOR DELETION
1401 DELETIONS		
01.1.006	FULL MAST /FULL MINNEAPOLIS OF SPS-2/ /REVISED/	A
01.1.013	TWO TAPE MINNEAPOLIS ASSEMBLY OF SPS TWO	A
01.1.040	1401/1410 CROSS REFERENCE LISTING PROGRAM	A
01.1.045	SPS PRE-LIST	A
01.1.049	PATCH GENERATOR FOR AUTOCODER TESTING	A
01.1.050	1401 ASAP	A
01.1.054	CROSS-REFERENCE PHASE OF 1401 AUTOCODER	A
01.2.007	AUTO-LODER 8K, 12K, 16K	A
01.2.009	SEQUE TO SEQUENCE CHECK A FILE OF CARDS ALPHA NUMERICALLY AND/OR NUMERICALLY	A
01.2.019	SORT 71-SORT 7 WITH THREE TAPE UNBALANCED SORT CAPABILITY	A
01.3.016	GENERAL PURPOSE PROGRAMS FOR DATA REDUCTION ON THE IBM 1401 TAPE SYSTEM	A
01.3.017	DOWGO LOAD AND GO REPORT GENERATOR	A
01.4.038	STORAGE PUNCHOUT PROGRAM	A
01.4.048	SINGLE CARD LIST WITH SKIP	A
01.4.050	MEMORY ANNOTATION, POST-TEST	A
01.4.052	PROGRAM TAPE EXECUTIVE ROUTINE	A
01.4.064	MEMORY-DUMP IN WORDS	A
01.4.065	TO 1410 SYMBOLIC ANALYZER	A
01.4.098	RANDOM ADDRESS TRANSFORMATION EVALUATION PROGRAM	A
01.4.163	FORM WRITING SUBROUTINE	A
02.0.023	TAPE FARGO FOR IBM 1401	A
02.0.029	BCDIC/EBBCDIC/BCDIC CHARACTER TRANSLATION PROGRAM	A
06.0.019	LGC SCALE VERSUS TIME SCALE GRAPHICAL PRINTOUT	A
10.3.027	LESS NODE NUMBERING PROGRAM	A
10.3.038	LESS AND DATE CONVERSION PROGRAM	A
10.3.040	BOND INVENTORY OR VALUATION	A
10.3.043	DETERMINATION OF PAYROLL HOURS FROM 357 JOB-IN AND CLOCK-OUT CARDS	A
10.3.045	SYNTRAN AN INDEXING ABSTRACTING AND RETRIEVAL SYSTEM	A
10.3.048	SYSTEM FOR INFORMATION STORAGE, RETRIEVAL, AND DISSEMINATION	A
10.3.058	ORDER RECEIVING SYSTEM	A
10.3.060	CIRCULATION SYSTEM	A
10.3.061	SERVICE INFORMATION SYSTEM	A
10.3.062	HISTORY REPORTING SYSTEM LIBRARY ACTIVITY DATA STATISTICAL RECAP	A
14.0.005	F A P I PROGRAM /FOURTEEN-0-ONE AUTOMATIC PLOTTER I/	A
14.0.014	LEASE-VS. ANALYSIS, BOB CIRCULAR A-54	A
14.0.015	1401/360 TIMING CALCULATION AID PROGRAM	A
14.0.016	AUTOMATIC EDITING AND LINE LENGTH MODIFICATION OF RUNNING TEXT	A

1440 DELETIONS

02.4.001	ONE CARD INVALID CHARACTER DETECTION PROGRAM	A
02.7.006	SELF-LOADING CORE DUMP	A
02.9.001	NAME AND ADDRESS FILE MAINTENANCE PROGRAM	A
09.3.001	SPS TO AUTOCODER CONVERSION PROGRAM	A
09.3.001	VENDOR ANALYSIS RATING SYSTEM	A

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File Number 1401/1440-20

Re: Form No. C20-1601-9

This Newsletter No. N20-0013-18

Date June 1, 1969

Previous Newsletter Nos. None

CATALOG OF PROGRAMS FOR IBM 1240, 1401, 1420, 1440, 1450 and 1460
DATA PROCESSING SYSTEMS — June 1969 Supplement

This publication is a Supplement to the "Catalog of Programs for IBM 1240, 1401, 1420, 1440 and 1460 Data Processing Systems", Form No. C20-1601-9.

Complete instructions for using the KWIC Index and for ordering programs are included in the Catalog. Programs will not be supplied by authors and should not be requested from them.

LIST OF PROGRAM DELETIONS

Alphabetic key to reasons for removal.

- A. This program will be deleted because of low usage.
- B. This program will be deleted at user organization direction.
- C. This program will be deleted because of limited usefulness.
- D. This program is obsoleted and replaced by order number ---.
- F. This program has been deleted by the author.

IBM Corporation, Program Information Department, 40 Saw Mill River Road, Hawthorne, N.Y. 10532

PLANNED DELETIONS

PAGE 1

The following Type I Programming Systems will be withdrawn by the Program Information Department on July 3, 1969. Until that date, orders for these programs will be accepted by PID.

Program No.	Program Name	Code
1401-IO-077	IBM INPUT/OUTPUT CONTROL PROGRAM /IOCP/ FOR IBM 1401/1440/1460 WITH 1285 OPTICAL READER	A
1401-IO-152	7040/44- 1401 INPUT/OUTPUT CONTROL PROGRAM	A
1401-LM-062	1401/1460 SORT 5 AND 6 TIMING PROGRAM	A
1401-LM-077	SORT 13 AND 14 TIMING PROGRAM FOR 1401/1460	A
1401-LM-079	1401/1460 TIMING PROGRAM FOR BPS S/360	A
1401-LM-080	SORT MERGE PROGRAM 8K DISK 1401/1460 TIMING PROGRAM FOR S/360 BASIC PROGRAM SUPPORT TAPE SORT/MERGE PROGRAM /FOR THE 2415/	A
1401-PR-925	PERIPHERAL INTEGRATED PROCESSING SYSTEM	A
1401-SM-029	SORT 1	A
1401-SM-046	SORT 3 PROGRAM	A
1401-SM-047	SORT 4	A
1401-SM-065	SORT 63	A
1401-SP-133	ASSEMBLY PROGRAM FOR 7750 USING THE IBM 1401	A
1401-SP-156	1401/7740 ASSEMBLY PROGRAM USING THE IBM 1401	A
1401-UT-066	UTILITY PROGRAMS FOR THE 1401-1009	A
1401-UT-067	HYPER TAPE UTILITY PROGRAMS	A
1401-UT-069	TAPE UTILITY SYSTEM FOR THE 7710	A
1401-UT-076	DATA COMMUNICATIONS UTILITY PROGRAM IBM 1009	A
1401-UT-153	7040/44 - 1401 AUXILIARY PROGRAMS	A
1420-AU-001	BASIC AUTOCODER	A
1420-IO-010	IOCP WITHOUT PROCESS OVERLAP	A
1420-IO-011	OVERLAP IOCP	A
1440-AT-060	AUTO-TEST 16K	A
1440-AU-006	BASIC AUTOCODER 2K	A
1440-IO-011	COMMUNICATIONS IOCS FOR THE 1449 / DIRECT DATA CHANNEL	A
1440-MI-701	STERLING SUBROUTINES	A
1440-MI-702	1440 STERLING MACRO INSTRUCTIONS	A
1440-OS-090	OPERATING SYSTEM COMPUTER ASSISTED INSTRUCTION COURSEWRITER LANGUAGE	A
1440-OS-091	1440-1026 OPERATING SYSTEM COMPUTER ASSISTED INSTRUCTION	A
1440-RG-021	BASIC REPORT PROGRAM	A
1440-RG-024	REPORT PROGRAM GENERATOR 2K	A
1440-RG-720	1440/1311 STERLING REPORT PROGRAM DEVELOPMENT	A
1440-RG-721	1440 STERLING BASIC REPORT PROGRAM GENERATOR A	A
1440-SM-036	IBM 1440 SORT 13	A
1440-SM-037	IBM 1440 SORT 13	A
1440-SV-090	1440-1070 PROCESS COMMUNICATION MONITOR FOR 1401/40/60 AUTOCODER /ON DISK/	A
1440-SV-091	1440-1070 PROCESS COMMUNICATION MONITOR FOR 1440 BASIC AUTOCODER	A
1460-IO-011	1460/1401 COMMUNICATIONS IOCS /1448-DDC/	A
1460-SM-068	IBM SORT 14	A
1460-SM-069	IBM 1460 SORT 14	A
1460-SV-090	1460-1070 PROCESS COMMUNICATION MONITOR FOR 1401 AUTOCODER /ON TAPE/	A
1460-SV-091	1460-1070 PROCESS COMMUNICATION MONITOR FOR 1401 BASIC AUTOCODER 2K	A

The functions of the following additional programs being deleted are included in other programs that are currently available in the same system type.

Program No.	Program Name	Code
1240-SM-030	BANK DOCUMENT SORT PROGRAM	A
1401-AT-072	AUTO-TEST	A
1401-AT-082	1401/1311 AUTO-TEST 16K	A
1401-FO-050	FORTTRAN	A
1401-IO-040	TAPE READING WRITING SUBROUTINES	A
1401-IO-074	TAPE PUNCH ROUTINES FOR THE 1401-1012	A
1401-LM-010	IBM 1401/60 TIMING PROGRAM FOR DOS/360 AND TOS/360 TAPE SORT/MERGE PROGRAM	A

CONTINUED FROM PRIOR COLUMN

1401-LM-012	1401/1460 TIMING PROGRAM FOR SYSTEM/360 DISK AND TAPE OPERATING SORT/MERGE PROGRAMS	A
1401-LM-060	SORT 7 TIMING PROGRAM FOR 1401/1460	A
1401-LM-078	1401/1460 TIMING PROGRAM FOR S/360 BASIC PROGRAM SUPPORT TAPE SORT/MERGE PROGRAMS /2401 THROUGH 2404/	A
1401-SM-064	SORT 62	A
1401-SM-066	SORT 64	A
1401-SM-067	SORT 61	A
1401-SP-021	SYMBOLIC PROGRAMMING SYSTEM 1 /SPS-1/	A
1401-UT-019	MULTIPLE TAPE UTILITY PROGRAM /120-CHARACTER LABEL/	A
1401-UT-039	MULTIPLE UTILITY PROGRAM FOR IBM 1401 TAPE SYSTEM	A
1401-UT-051	FILE UTILITIES	A
1401-UT-057	FILE ORGANIZATION ROUTINES	A
1440-AT-061	AUTO-TEST 8K	A
1440-AU-001	BASIC AUTOCODER	A
1440-CB-073	COBOL FOR IBM 1440/1460	A
1440-SM-032	SORT 52	A
1440-SM-033	SORT 53	A
1440-SM-034	SORT 54	A
1440-SM-035	SORT 51	A
1440-UT-043	TAPE UTILITY PROGRAMS	A

The following Type III Contributed Programs will be withdrawn by the Program Information Department on July 3, 1969. Until that date, orders for these programs will be accepted by PID.

Program No.	Program Name	Code
1401-01.4.097	SYMBOLIC BLOCK DIAGRAMMING SYSTEM	A
1401-01.4.134	PROGRAM TO LOAD AUTOCODER CONDENSED PROGRAM	A
1401-01.4.139	TAPE TEST PROGRAM, 4K	A
1401-01.4.141	SYMBOLIC CORE DUMP	A
1401-01.4.150	1401/407 SIMULATION UTILITY PROGRAM	A
1401-01.4.223	DOCUMENT AND TESTING AIDS FOR COBOL	A
1401-06.0.015	TIME SERIES ANALYSIS + DATA REDUCTION PROGRAM	A
1401-10.3.053	LESS IV	A
1401-14.0.026	REAL ESTATE TAX BILL SYSTEM FOR THIRD CLASS PENNSYLVANIA COUNTIES	A
1440-02.1.001	1440/1311 CARD-TO-DISK CONSECUTIVE LOAD PROGRAM	A

The following Type IV Contributed Programs will be retired by the Program Information Department on July 3, 1969. Until that date, orders for these programs will be accepted by PID. After that date, only the documentation associated with these programs, recorded on microfiche cards, will be available from PID.

Program No.	Program Name	Code
1401-01.4.010	ESCAPE / EFFORTLESS SYSTEM OF CALCULATING AND PRINTING EVERYTHING	A
1401-01.4.022	TAPE UPDATE UTILITY PROGRAM	A
1401-01.4.227	VARILIST	A
1401-09.2.007	HIGHWAY EARTHWORKS QUANTITIES AND DESIGN DATA	A
1440-01.4.001	RADIO-RANDOM DISK INPUT/OUTPUT SUBROUTINE	A



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READER'S COMMENT FORM

Catalog of Programs for IBM 1240, 1401, 1420, -
1440, and 1460 Data Processing Systems,
December, 1966

Form C20-1601-5

Your comments, listed below, will help us produce better publications for your use. Please give specific page and line references with your comments when appropriate. If you wish a reply, be sure to include your name and address. Comments and suggestions become the property of IBM

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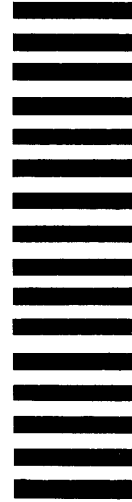
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