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PROCEDURES MANUAL OF SDI PROGRAMS FOR PROCESSING NUCLEAR SCIENCE ABSTRACTS TAPES ON A CDC-6600 COMPUTER

Gloria L. Smith, Marcus R. Raymond, Robert N. Healey

October 1, 1969

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PROCEDURES MANUAL OF SDI PROGRAMS FOR PROCESSING NUCLEAR SCIENCE ABSTRACTS TAPES ON A CDC-6600 COMPUTER

Gloria L. Smith, Marcus R. Raymond, Robert N. Healey

Lawrence Radiation Laboratory
University of California
Berkeley, California

U. S. Atomic Energy Commission contract W-7405-eng-48.

1 October 1969

1 February 1971

TO: Procedures Manual Recipients
TYDE SYM Tape Users

FROM: Information Research Group, Technical Information Division

SUBJECT: UCRL Report No. 19249
Procedures Manual of SDI Programs for Processing Nuclear Science Abstracts on a CDC-6600 Computer

Attached, you will find revisions and additions to the SDI Procedures Manual, which you received from the Information Research Group last year.

Please replace the following items with the enclosed revised copy:

INTRODUCTION
Program LISTR (NO. 1)
Program TIDES (NO. 2)

Please insert the following new additions to the manual:

Program TIDER (NO. 4.1)
Program RETSER (NO. 4.2)
Program SNOMAN (NO. 5.1)
Program REPRT (NO. 14.1)

If you have any questions regarding either the revisions or the new additions to the manual, please contact our office.

Gloria Smith
Bldg. 50B, Room 4206

LGJ

INTRODUCTION

UCRL-19249
Rev.
1 February 1971

INTRODUCTION

This manual describes the tape-handling procedures of the Information Research Group at Lawrence Radiation Laboratory, Berkeley, California, for use in the processing of computer tapes of Nuclear Science Abstracts citations and their EURATOM keyword indexing.

A separate section for each of these IRG programs provides details on the purpose of the program, input required, output to be obtained, and a graphic representation of the arrangement of each program deck. These procedures pertain specifically to the Control Data Corporation CDC-6600 system in operation at LRL-Berkeley during 1969-70. The programs, written in the SCOPE version of FORTRAN-IV, are directed toward using NSA tapes for selective dissemination of information and for retrospective searching. Even though this manual has limited use outside Berkeley, other NSA tape subscribers may find it helpful in documenting their own procedures.

The manual is divided into four sections, as distinguished by the side tabs of different colors. Our updating service for the manual pages is limited to organizations that have been furnished tape copies of the LRL programs.*

YELLOW SECTION

The yellow section contains introductory material and the descriptions of two short programs that enable NSA tape users to gain access to the programs recorded on the TYDE SYM 2 tape. Program LISTR lists the contents of the TYDE SYM 2 tape, and Program TIDES allows tab cards to be punched for any or all of the taped programs.

A card with a 7-8-9 multiple punch in column 1 is the last card of each program deck punched from the TYDE SYM 2 tape. There are no control cards on the tape -- they may be punched (starting in column 1) as shown in the listings following each program description.

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*Requests for the program tape (called TYDE SYM 2) should be forwarded to the authors. Recipients of the TYDE SYM 2 tape are requested to copy it or punch cards from it immediately and to return the tape to the LRL Information Research Group within a month of receipt.

GREEN SECTION

The green section is composed of the seven basic programs for SDI: TIDEX, TIDE, TIDER, RETSER, NOMAN, SNOMAN, and WORDS. TIDEX prepares a search tape and NOMAN translates numerically coded profiles into English text. SNOMAN is a restricted version of NOMAN, used for running a limited number of profiles (maximum of 477 terms per run). If TIDEX and NOMAN (or SNOMAN) produce acceptable output, any of the three search programs (TIDE, TIDER, or RETSER) may then be run with the user profile deck to produce notifications for SDI patrons. TIDE scans the search tape once for every 10 profiles; as encountered, hits are written onto a sort tape. TIDER performs the same function as TIDE; however, this version of the search program utilizes a faster random access disk sort for hits. RETSER is used exclusively for single-profile searching, and is extremely useful for individual retrospective searches. WORDS provides an up-to-date authority file of selector terms. Its tape output (ISSUE tape) functions as an input tape for NOMAN, and its printed output provides alphabetical listings, along with selector codes and frequency counts, of all terms.

RED SECTION

The programs in the red section should be attempted only after considerable experience has been obtained in coping with the foibles of the basic SDI programs, NSA tapes from Oak Ridge, and computer operating systems.

Program MAKIT is used at Berkeley to add cumulated frequency numbers to the most recent quarterly selector authority tape obtained from Oak Ridge, and Program FLIST provides a print tape that lists selectors both alphabetically and in descending order of frequency.

Program RETRO, which is a condensed version of TIDEX, saves tape-handling time when retrospective searches are requested. RETRO reduces the number of tapes to be searched from 24 (each issue) to 6 (four issues of data on each tape).

Program LINGO is used to select for specified data in the language field on the search tape.

Program QUIPS prints out the complete entry file, and keyword file information as it is represented on the NSA tape, including the field count data.

Program PICKY, selecting solely on abstract number, provides a printout of bibliographic and indexing formation.* This program is useful only if the requestor has some prior knowledge of the contents of the documents or series of documents to be selected.

Program DLETE is a "last resort" method for eliminating parts of the search tapes that repeatedly cause computer searches to abort.

Program AUTHY provides a cumulative author index referring to abstract numbers processed to date. Program REPRT provides a cumulative report number listing referring to abstract numbers processed to date.

SUMMARY OF LRL COMPUTER PROCEDURES

The preceding discussion is a preliminary explanation of the pages that follow. The new user of NSA tapes is admonished to proceed with caution through this yellow section, and to call us on FTS 415-843-6368 (programmer Bob Healey is on extension 6094), or contact us by mail, if some parts are unclear. The LRL commercial telephone number is 415-843-2740, ext. 6368. The green section is the "go-ahead-and try-it" section; the red section may be attempted later by tape users who want further refinements that have been found useful at Berkeley. A "white paper" is added as Appendices A, B, and C. Appendix A gives instructions for the preparation of user profiles to be matched with the search tapes of Nuclear Science Abstracts, Appendix B displays the output print format of major programs, and Appendix C give information on the running time and comparative costs of various programs.

The profiler will soon discover (or reinforce his long-held opinion) that the success of an SDI system is mainly dependent on profiling. Through careful profile constructions and disciplined follow-up on user feedback, the profiler should be able to provide a useful current awareness service at very little cost.

Additional information about the work of the LRL Information Research Group appears in the following reference:

G. L. Smith, J. J. Herr, and R. K. Wakerling, "An SDI System Based on NSA Magnetic Tapes. User Profiling and the Implications of Decentralized Indexing," in Handling of Nuclear Information (Proceedings of the symposium held at Vienna, Austria, Feb. 16-20, 1970) (International Atomic Energy Agency, Vienna, Austria, 1970), pp. 251-265.

Reprints are available from the authors.

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*The LRL-IRG version of PICKY (not on the TYDE SYM 2 tape) has an option for the preparation of input to another LRL program which will produce a KWOC index for the selected citations.

1. LISTR

Program LISTR

PURPOSE

Program LISTR allows the new tape user to scan the program listings before punching decks for the programs described in this manual.

INPUT

1. TYDE SYM 2 tape.

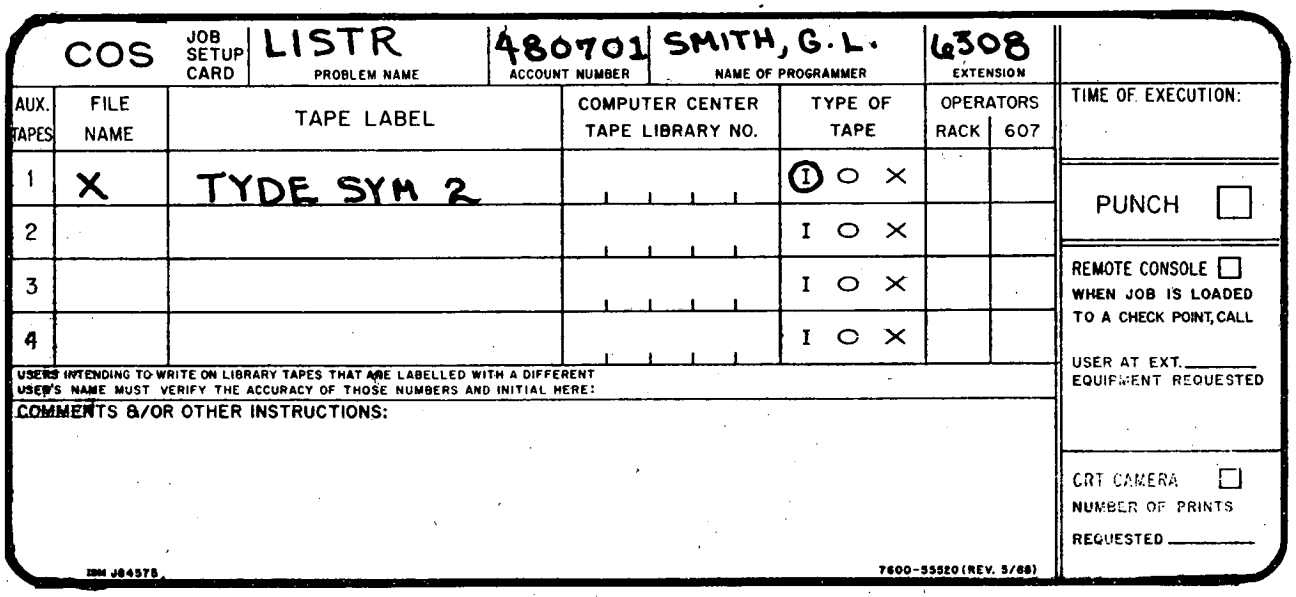
2. A deck of cards punched as follows:

```
LISTR,7,10,4000.480701,SMITH,G.L.
FLOOR(3)
REQUEST TAPE1. TYDE SYM 2
REWIND(TAPE1)
COPYSBF(TAPE1,OUTPUT)
UNLOAD(TAPE1)
```

OUTPUT

A listing of all CDC-6600 programs stored on the TYDE SYM 2 tape.

JOB SETUP CARD EXAMPLE FOR PROGRAM LISTR



COS	JOB SETUP CARD	LISTR (PROBLEM NAME)	480701 (ACCOUNT NUMBER)	SMITH, G.L. (NAME OF PROGRAMMER)	6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	X	TYDE SYM 2		(I) O X		
2				I O X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J64578 7600-55520 (REV. 5/68)

Program TIDES

PURPOSE

Program TIDES is essentially a punch-card routine utilizing the TYDE SYM 2 tape as the basic input and producing a program deck [binary (packed display code) or BCD (binary coded decimal) version] for any or all of the SDI programs stored on the TYDE SYM 2 tape. The following sixteen programs have been stored: 1) TIDEX, 2) TIDE, 3) TIDER, 4) RETSER, 5) NOMAN, 6) SNOMAN, 7) WORDS, 8) MAKIT, 9) FLIST, 10) RETRO, 11) LINGO, 12) QUIPS, 13) PICKY, 14) DLETE, 15) AUTHY, and 16) REPRT.

INPUT

1. TYDE SYM 2 tape.
2. A deck of program control cards.

OUTPUT

1. Desired set(s) of program cards.

Note: When running TIDES, care must be taken to properly prepare and arrange the control cards.

1. The number of the desired program will be entered onto the card immediately preceding the punch-request card. The number entered will always be the number associated with the desired program (see above) minus 1. Thus, if Program NOMAN is to be punched, the number will be 5 minus 1, i.e., 4 (see Example 1). When more than one but less than all programs are to be punched, as many sets of the COPYBR cards as the number of programs to be punched will also be required.

2. If the first seven basic SDI programs are to be punched, the control cards in Example 2 must be used.

3. When all programs stored on the TYDE SYM 2 tape are to be punched, the COPYBR(X, N-1) card will be withdrawn from the control cards deck and the remaining punch request card will have the following format: COPYBF(X, PUNCHB). (See Example 3).

4. When binary (i.e., packed display code) is requested, the control card stipulating the punch will have the following format: COPYBR(X, PUNCHB) (see Examples 2 and 3).

5. When a BCD (binary coded decimal) deck is requested, omit the last B in the above control card statement (see Example 1).

JOB SETUP CARD EXAMPLE FOR PROGRAM TIDES

COS JOB SETUP CARD | TIDES (PROBLEM NAME) | 480701 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	X	TYDE SYM 2		(I) O X		
2				I O X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 3/68)

The amount of cards punched when all SDI programs are requested will be approximately one box for the Packed Display Code version and 3 full boxes for the BCD version.

Example 1. Requesting a BCD deck for Program NOMAN.

```
TIDES,7,10,4000.480701,SMITH,G.L.
FLOOR(3)
REQUEST X.  TYDE SYM 2
REWIND (X)
COPYBR(X,NULL,4)
COPYBR(X,PUNCH)
UNLOAD (X)
```

Example 2. Requesting binary decks for the first seven programs on the tape.

```
TIDES,7,10,4000.480701,SMITH,G.L.
FLOOR(3)
REQUEST X.  TYDE SYM 2
REWIND (X)
COPYBR(X,PUNCHB,7)
UNLOAD (X)
```

Example 3. Requesting binary decks for all programs stored on the TYDE SYM 2 tape.

```
TIDES,7,10,4000.480701,SMITH,G.L.
FLOOR(3)
REQUEST X.  TYDE SYM 2
REWIND (X)
COPYBF(X,PUNCHB)
UNLOAD (X)
```

Program TIDEX

PURPOSE

TIDEX converts the twice-monthly NSA tape to a binary search tape that concentrates all information from a particular document onto one file. This conversion is required because the original NSA tape contains two separate files -- one for bibliographical information and one for selector terms.

INPUT

1. The most recent NSA ("one issue") tape (T1). This is the tape sent from Oak Ridge, labeled "NSA Entry and Selector File."*

2. Insert between the program deck and the category deck one of the optional cards mentioned below under OUTPUT. Option 2 is the normal deck setup.

OUTPUT

The three options for processing TIDEX produce three different outputs:

1. Dayfile, SRCH tape, and A/W tape. In this case the option card (the card immediately preceding the category deck) will have no punch in the first twenty columns. When this option is used, remove the card REQUEST TAPE3. and leave the third line blank on the COS card.

2. Dayfile, SRCH tape, A/W tape, plus Author Index for the issue, and Document Listing with selector terms. In this case the option card will be punched in the first twenty columns LIB PRINT WITH WORDS .

3. Dayfile, SRCH tape, A/W tape, plus Author Index for the issue, and Document Listing <u>without</u> selector terms. In this case the option card will be punched in the first ten columns LIBRARY ; it will have no punch in columns 11 - 20.

---

*The format of the entries on this BCD tape is displayed in the examples shown on p. 11-5.

DISPOSITION OF OUTPUT

1. The SRCH tape is entered into the tape library and later serves as input to Program TIDE, which matches user profiles with document indexing. When four consecutive SRCH tapes have been accumulated, they are merged, using the IBM-1401 computer, onto one tape which is placed in the tape library under the label BAK_ _ _ _ _ _. It is in this form (4 SRCH tapes concentrated upon one BAK tape) that the individual SRCH tapes become permanent retrospective search tapes. The four original SRCH tapes, used for SDI, are then released. The BAK tapes are numbered according to the following pattern: BAK 69-04, BAK 69-08, BAK 69-12, etc.

2. The A/W tape, composed of two files, returns from the computer room and is later used as input for Program AUTHY (q.v.), and Program WORDS (q.v.). File 1 (A) is a binary representation of all author names on the NSA tape, and File 2 (W) is a binary representation of all selectors and their identification numbers. File 2 also carries along the NSA section/subsection codes for cumulation on the WORDS program.

3. The principal feature of TIDEX from the user's point of view is the library printout it produces. This printout contains complete bibliographical information and an author index. Since it is available approximately one month before Nuclear Science Abstracts is received, it is placed in a binder and retained at the library reference desk until its corresponding issue of the published NSA appears. It is then returned to the IRG office for possible study and is eventually discarded.

4. The TIDEX dayfile supplies an on-line printing of information about the number of each of the seven types of documents contained on the NSA tapes, as well as a table of languages and their respective document count. The dayfile is added to a TIDEX dayfile binder in the IRG office. Copies of the above statistics are forwarded to DTIE along with other pertinent editorial printout, such as:

   CATEGORY 2833 from ABS. NO. 35785 NOT FOUND

   This message indicates that there is a keypunching error in the DTIE section/subsection code input.

   Since the program checks for consecutive abstract numbers, the dayfile indicates gaps where the same items are missing from both the Entry and the Keyword file.

   When a document is represented on only only one file, the following type of message will appear:

   ENTRY FILE (16465) DOES NOT MATCH KEYWORD FILE (16466)----SKIPPING TO NEXT ENTRY FILE

JOB SETUP CARD EXAMPLE FOR PROGRAM TIDEX

Options 2 and 3

COS JOB SETUP CARD | TIDEX (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	NSA 23/5		I ○ ×		
2	T2	SRCH 23/5		I ◎ ×		
3	T3	PRINT		I ◎ ×		
4	T4	A/W 23/5		I ◎ ×		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/66)

TIDEX — PROBLEM NAME | TAPE UNIT

DENSITY 200 556 (800)

A/W — IDENTIFICATION | 23/5

(BIN) BCD — MODE | 3

4807-01 — ACCOUNT NO. | SMITH, G.L. — PROGRAMMER

RL 3218

ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
4807-01	SMITH, G.L.	4807-01	SMITH, G.L.

PRINT ☐ PROGRAM CONTROL ☐ SINGLE SPACE

PAPER TYPE: REGULAR

TIDEX LIBRARY PRINT

148877

3

PUNCH ☐ CARD TYPE:

RL-2714 (REV. 7/67)

TAPE UNIT: | DATE & TIME | 3

NO. FILES 1 NO. CARDS _____

148877

TIDEX LIBRARY PRINT

DENSITY 200 556 (800)

LIBRARY TAPE FILE CARD EXAMPLE

Option 2 and 3 (Continued)

TAPE FILE

User's Name SMITH, G.L. Acct. # 4807-01 Bldg. 50B Room 4206 Ext. 6308
Last Name, Initial

Tape Name:
SRCH 23/5 e.g.
(Limited to 10 spaces)

Operator Use:
Assigned Reel # _____ Date/Time
If tape is a previously existing Data Tape, Check: ☐
Tape Manufacturer Code _____ Certification code _____

INACTIVE LIBRARY
If this tape is to be placed into the inactive library for archival storage, check here. ☐

When requesting this tape, please refer to it by this number. When you no longer wish to save this tape, sign here _____ and return this card to the input room.

Tapes that are not used for six consecutive months must be released or placed in the inactive library.

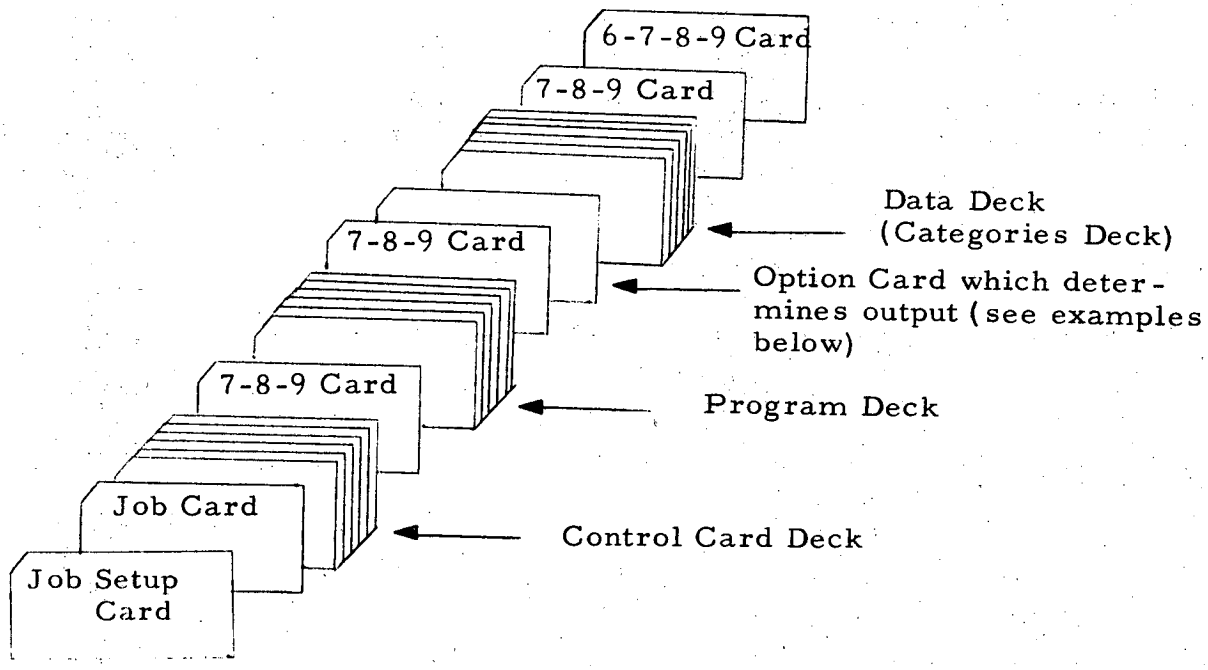
7600-55692(Rev.2/69)

LIBRARY TAPE LABEL EXAMPLE

TIDEX
PROBLEM NAME — TAPE UNIT
DENSITY 200 556 (800)
SRCH 23/5
IDENTIFICATION
(BIN) BCD
MODE
4807-01 SMITH, G. L.
ACCOUNT NO. — RL 3218 PROGRAMMER

GENERAL CARD SETUP FOR PROGRAM TIDEX

```
TIDEX,5,500,123000.480701,SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT --NSA
DENSITY TAPE1,5.
REQUEST TAPE2. OUTPUT--SRCH
REQUEST TAPE3. OUTPUT--PRINT
REQUEST TAPE4. OUTPUT--A/W TAPE
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
REWIND(OUT,OUTPUT)
COPYBF(OUTPUT,OUT)
REWIND(OUT)
COPYBF(OUT,OUTPUT)
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE3,TAPE4)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```



Option 1 NO PUNCH IN FIRST 20 GIVES SEARCH TAPE ONLY
Option 2 LIBRARY PRINT WITH WORDS
Option 3 LIBRARY

Program TIDE

PURPOSE

Program TIDE scans the SRCH or BAK tape, selects documents according to user profiles, prints notifications, and provides statistical data for each user.* Each profile contains a number of questions constructed of coded Boolean statements with selector numbers as basic input items. Before TIDE is run the profiles should be verified on Program NOMAN (see NOMAN and Appendix A).

Profiles are read into the computer in groups of ten and matched against the SRCH or BAK tape. Hits are written on a SORT tape. When all documents have been scanned, the hits are sorted by user profile and user notifications are written on a PRINT tape.

INPUT

1. Three tapes are required: two scratch tapes and the most recent SRCH tape or the desired BAK tape (T3).

2. The date card (at the beginning of the profile deck) should be updated for each search. For SRCH tapes the number of documents is set at 4000; for BAK tapes at 100,000. The volume no., issue no., documents searched, month, day, and year are punched in free format as shown by the following example for the issue of Oct. 31, 1969.

   23 20 4000 10 31 69

3. A deck of data cards containing the coded profiles for each user. The "END ALL PROFILES" card, which is not punched in the first 10 columns, should follow the last profile.

---

*One set of data shows which question retrieved which document. This information is important for the notification and improvement of profiles.

Another set of data shows computer time for searching, sorting, and startup. For each 10 users a table is printed which shows the number of questions and terms in each user profile and the number of hits obtained. The central processing (CP) and peripheral processing (PP) search and sort times are given for each user. See Appendix C for information on how relative costs may be calculated from these figures.

OUTPUT

1. Dayfile and on-line print of hit statistics.

2. Print tape (T3) and a printout of 2 copies of user notifications from the print tape.

DISPOSITION OF OUTPUT

1. The dayfile is added to the TIDE dayfile binder. The figures recorded are thus available for computation of the searching and processing costs per user.

2. One copy of each notification listing is mailed to the user, and another copy is filed in his user folder in the IRG office.

JOB SETUP CARD EXAMPLE FOR PROGRAM TIDE

COS JOB SETUP CARD | TIDE (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	SORT 1		I ○ ⊗		
2	T2	SORT 2		I ○ ⊗		
3	T3	SRCH or BAK		I ○ ×		
4	T32	NOTE PRINT		I ○ ×		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

NOTE: THIS JOB MAY WRITE MORE THAN 1 T32.

Omit this note on Voress run.

IBM J84575 7600-55520 (REV. 5/68)

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

Use these when running LRL profiles.

ACCOUNT 4807-01 | PROGRAMMER SMITH, G. L. | ACCOUNT 4807-01 | PROGRAMMER SMITH, G. L.

PRINT ☐ PROGRAM CONTROL MONITOR ☐ SINGLE SPACE

PAPER TYPE: 1-PLY FOG PRINT TWICE (1 of)

148880 POSITION PAPER LINE 82-OK TO PRINT OVER HOLES.

PUNCH ☐ CARD TYPE: (3)

RL-2714 (REV. 7/67)

TAPE UNIT: | DATE & TIME (1 of)

NO. FILES 1 NO. CARDS _____

148880 (3)

DENSITY 200 556 (800)

ACCOUNT 4807-01 | PROGRAMMER SMITH, G. L. | ACCOUNT 4807-01 | PROGRAMMER SMITH, G. L.

PRINT ☐ PROGRAM CONTROL MONITOR ☐ SINGLE SPACE

PAPER TYPE: 1-PLY FOG. PRINT TWICE (2 of)

148879 POSITION PAPER LINE 82-OK TO PRINT OVER HOLES.

PUNCH ☐ CARD TYPE: (3)

RL-2714 (REV. 7/67)

TAPE UNIT: | DATE & TIME (2 of)

NO. FILES 1 NO. CARDS _____

148879 (3)

DENSITY 200 556 (800)

Use this when running Voress.

ACCOUNT 4807-01 | PROGRAMMER SMITH, G. L. | ACCOUNT 4807-01 | PROGRAMMER SMITH, G. L.

PRINT ☐ PROGRAM CONTROL MONITOR ☐ SINGLE SPACE

PAPER TYPE: REGULAR, UNLINED PAPER-NEW, BLACK RIBBON

148881 FOR REPRODUCTION (3)

PUNCH ☐ CARD TYPE: VORESS

RL-2714 (REV. 7/67)

TAPE UNIT: | DATE & TIME

NO. FILES 1 NO. CARDS _____

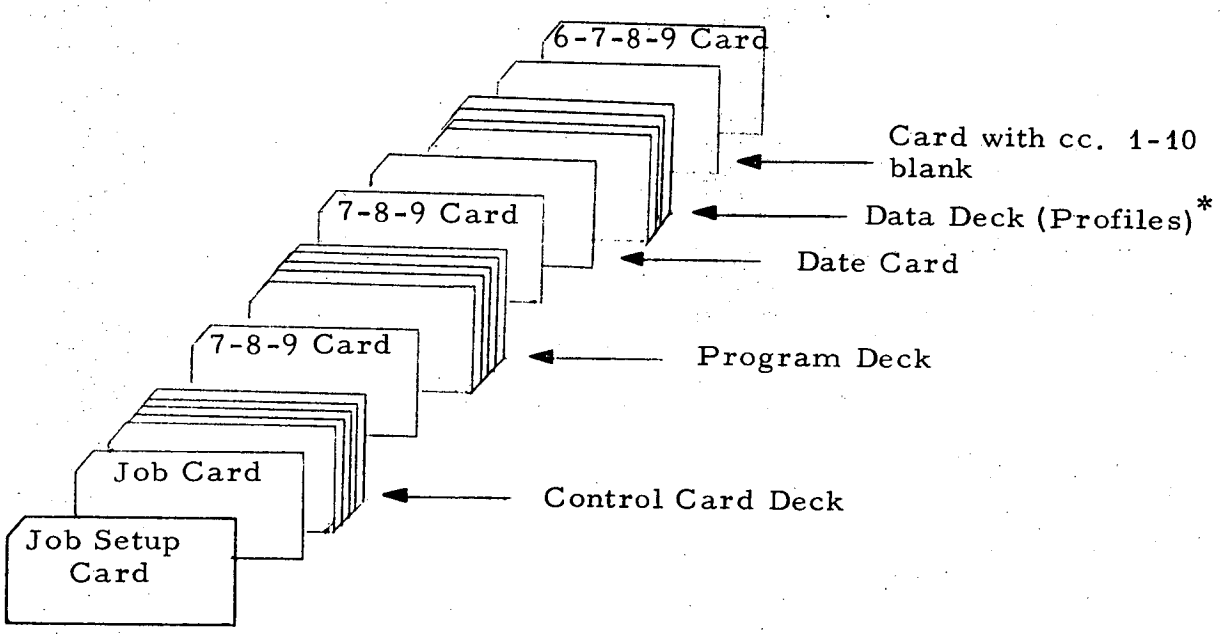
148881 VORESS (3)

DENSITY 200 556 (800)

OUTPUT PRINT options: The notification are printed on 8-1/2×11"(FOG) paper for LRL users and on regular 11×15" paper for Voress at DTI. The options are designated on the green print label.

GENERAL CARD SETUP FOR PROGRAM TIDE

```
TIDE,5,2000,51000.480701,SMITH
(
(   3
(
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1.   I/O -- SORT 1
REQUEST TAPE2.   I/O -- SORT 2
REQUEST TAPE3.   INPUT  SRCH
REQUEST TAPE32.  PRINT
REWIND(TAPE1,TAPE2,TAPE3,TAPE32)
LODE(I=LGO,M=MAPFILE,O=DROPLDR,F=0)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2,TAPE3,TAPE32)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```



*See Appendix A: "Profile Preparation and Keypunching Format for User-Profile Data Deck."

PROGRAM TIDER

PURPOSE

Program TIDER scans the SRCH or BAK tape and selects documents according to user profiles. It provides a print tape for notifications, as well as on-line statistical data. Each profile contains a number of questions constructed of coded Boolean statements with selector numbers as basic input items. Before TIDER is run, the user profiles can be verified on Program NOMAN (see Program NOMAN).

User profiles are read into the computer, and the input tape (T1) is scanned once for up to 150 profiles; as encountered, each separate hit is written on disk storage and its disk address stored on tape (T2) linearly, together with the user I. D. number. When the tape-scanning is completed, the program sorts the tape file of hit addresses by user number and records the newly-ordered table in core. It then accesses (or writes) directly from disk onto T2, which is now used as a print tape to print user notifications.

INPUT

1. The required single tape: either the most recent SRCH tape or the desired BAK tape (T1).

2. The date card (at the beginning of the profile deck), which should be updated for each tape search. For SRCH tapes the number of documents is set at 4000; for BAK tapes, the number of documents is set at 100,000. The volume number, issue number, documents searched, month, day, and year are punched in free format as shown in the following example for the issue of May 15, 1970:

   24 09 4000 05 15 70

3. A deck of data cards containing the coded profiles for each user. The "END ALL PROFILES" card (no punch in the first 10 columns) should follow the last profile in the deck.

OUTPUT

1. Dayfile with an on-line printout of:
   a. Listing of user names and addresses (this listing, and user tables c and d, are arranged in user number order).
   b. Summary of hits within each NSA section/subsection.
   c. Tables of hits for each user, showing which question retrieved which document.

OUTPUT (cont.)

d. Table of statistics for all users, showing the number of questions and terms in each user profile and the number of hits obtained. The central processing (CP) and peripheral processing (PP) search and sort times are given for each user. See Appendix C for information on how relative costs may be calculated from these figures.

2. Print tape (T2) which is used to print out a notification set for each user in the data deck.

DISPOSITION OF OUTPUT

1. The dayfile is added to the TIDER dayfile binder. The figures recorded are thus available for computation of the searching and processing costs per user.

2. The search output, which is the heart of the SDI operation, is sent to the user. Each set of notifications contains the user's identifying information, issue identifying information, and–for each item retrieved–descriptive cataloging and all selector terms assigned by the document indexer. Selectors from the user's profile are marked with a plus sign as a reminder that these selectors are responsible for the document being chosen.

   Normally, the notifications are printed twice from the print tape. One set is immediately sent to the user so that he can scan and evaluate the hits on citations he has received, and later he returns the evaluation sheet to the SDI staff for updating and improvement of individual profiles. A duplicate notification set is placed in the user's folder in the IRG office.

JOB SETUP CARD EXAMPLE FOR PROGRAM TIDER

COS JOB SETUP CARD | TIDER (PROBLEM NAME) | 480701 (ACCOUNT NUMBER) | G. L. SMITH (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	SRCH or BAK		(I) O X		
2	T2	SORT/PRINT		I (O) X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

NOTE: THIS JOB MAY WRITE MORE THAN 1 T2.

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

ACCOUNT 480701 | PROGRAMMER G.L.SMITH | ACCOUNT 480701 | PROGRAMMER G.L.SMITH

OFF LINE PRINT (1 of 2) | LOGICAL | LOGICAL | DATE & TIME (1 of 2)

☒ MONITOR ☐ STANDARD

USE 1-PLY FOG PRINT TWICE

078069 (3rd) | NO. LINES OUTPUT 078069 (3rd)

1 FILES _____ PART PAPER | DENSITY 200 556 (800)

RL-2714 (REV. 9/62)

ACCOUNT 480701 | PROGRAMMER G.L.SMITH | ACCOUNT 480701 | PROGRAMMER G.L.SMITH

OFF LINE PRINT (2 of 2) | LOGICAL | LOGICAL | DATE & TIME (2 of 2)

☒ MONITOR ☐ STANDARD

USE 1-PLY FOG PRINT TWICE

078070 (3rd) | NO. LINES OUTPUT 078070 (3rd)

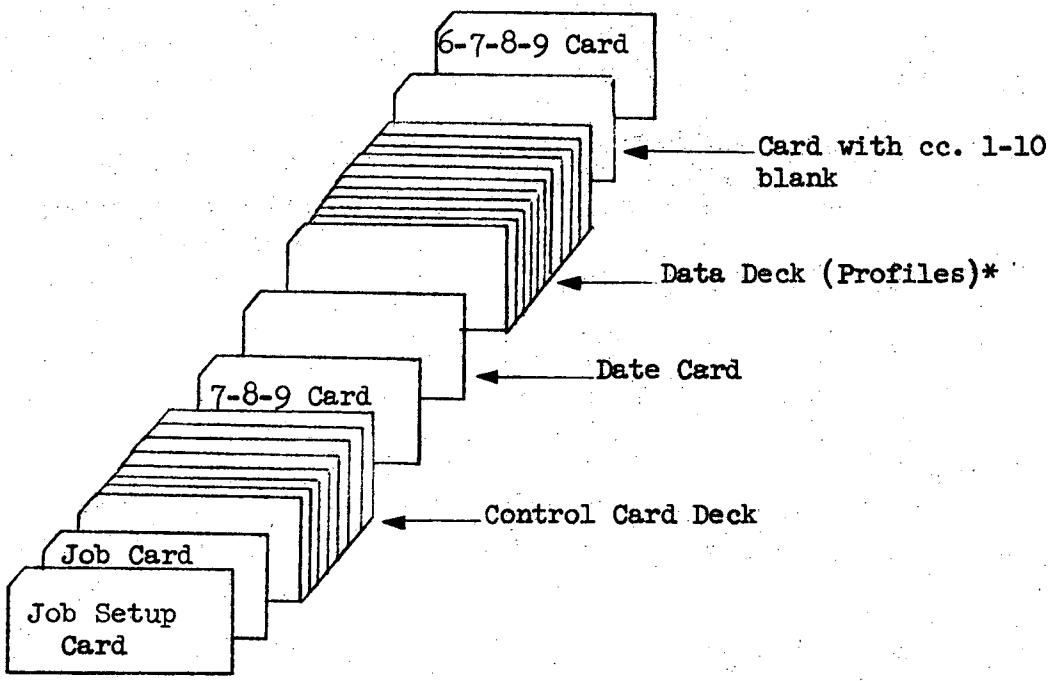
1 FILES _____ PART PAPER | DENSITY 200 556 (800)

RL-2714 (REV. 9/62)

OUTPUT PRINT options: The notifications from Program TIDER may be printed on 8-1/2 x 11" paper or on regular 11 x 15" paper. This option should be designated on the green print label.

GENERAL CARD SETUP FOR PROGRAM TIDER

```
TIDER,5,2000,77000,480701,SMITH
FLOOR(3)
LIBCOPY(SDI,TIDER,TIDER)
REQUEST TAPE1. INPUT -- SRCH
REQUEST TAPE2. OUTPUT -- SORT/PRINT
REWIND(TAPE1,TAPE2,TIDER)
TIDER.
EXIT.
DMP.
DMP(77000)
FIN.
UNLOAD(TAPE1,TAPE2)
-
```



*See Appendix A: "Profile Preparation and Keypunching Format for User-Profile Data Deck."

PROGRAM RETSER

PURPOSE

Program RETSER scans the SRCH or BAK tapes and selects documents according to the user profile. This program is used exclusively for single-profile searching. One of its major uses is retrieval of documents in retrospective searches.

A single profile is read into the computer and matched against a SRCH tape for current document retrieval or against a BAK tape for individual retrospective searching. Hits are written onto a print tape as encountered. They are then printed out in a user notification format.

INPUT

1. The required single tape: either the most recent SRCH tape or the desired BAK tape (T1).

2. The data card (at the beginning of the individual profile deck), which should be updated for each search. (For format specifications and document number limitations, see writeup for Program TIDER).

3. A deck of data cards containing the coded profile for the individual user, plus an "END ALL PROFILES" card with no punches in cc. 1-10.

OUTPUT

1. Dayfile, with an on-line printout of the user's identifying information, number of terms and questions in his profile, and a list of abstract numbers for the items hit.

2. Print tape (T2) which is used to print out a set of selected notifications for the series of NSA entries searched.

DISPOSITION OF OUTPUT

See instructions for Program TIDER.

NOTE: The plus (+) flag for profile selectors does not appear in the RETSER printout of notifications.

JOB SETUP CARD EXAMPLE FOR PROGRAM RETSER

COS JOB SETUP CARD | PROBLEM NAME: RETSER | ACCOUNT NUMBER: 480701 | NAME OF PROGRAMMER: G. L. SMITH | EXTENSION: 6308

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	SRCH or BAK		(I) O X		
2	T2	PRINT		I (O) X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/66)

ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
480701	G.L.SMITH	480701	G.L.SMITH

OFF LINE PRINT

☒ MONITOR ☐ STANDARD

USE 1-PLY FOG PRINT TWICE

078071

1 FILES _____ PART PAPER

RL-2714 (REV. 9/62)

LOGICAL | LOGICAL | DATE & TIME

NO. LINES OUTPUT 078071

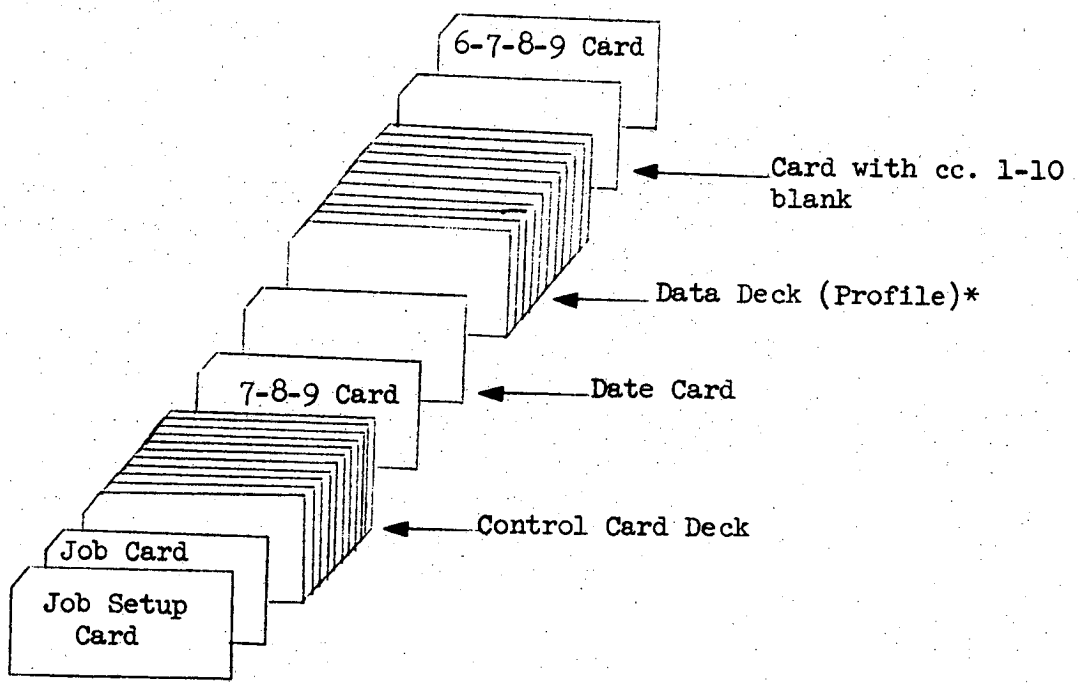
DENSITY 200 556 (800)

3rd 3rd

OUTPUT PRINT options: The notification from Program RETSER may be printed on 8-1/2 x 11" paper or on regular 11 x 15" paper. This option should be designated on the green print label.

GENERAL CARD SETUP FOR PROGRAM RETSER

```
RETSER,7,200,34000.480701,SMITH
FLOOR(3)
LIBCOPY(SDI,RETSER,RETSER)
REQUEST TAPE1. SRCH
REQUEST TAPE2. PRINT
REWIND(TAPE1,TAPE2,RETSER)
RETSER.
EXIT.
DMP.
DMP(34000)
FIN.
UNLOAD(TAPE1,TAPE2)
-
```



*See Appendix A: "Profile Preparation and Keypunching Format for User-Profile Data Deck."

5. NOMAN

Program NOMAN

PURPOSE

Program NOMAN is used to verify the correctness and accuracy of the Englist text and of the Boolean structure of individual SDI profiles. (See Appendix A for instructions on profile preparation.)

The program supplies for each punched I. D. number the following information:

1. The "spelled-out" selector or category.

2. The term-type (whether 1 - General-purpose keywords
   2 - Chemical compounds and alloys
   3 - Nuclides
   4 - EURATOM additional terms
   9 - DTIE additional terms).

3. Term absolute count.

4. Term average count/issue.

From this information the usability of a given term for profile construction can be estimated.

There is only one real limit for Program NOMAN: The number of terms used per question is 1977. The number of questions per profile and the number of profiles contained within the system are virtually limitless.

INPUT

1. The most recent ISSUE tape (T1), which contains the term authority file and its related statistics.

2. A deck of data cards containing the coded profiles for each user. The "END ALL PROFILES" card, which is not punched in the first 10 columns, should follow the last profile.

OUTPUT

There are two options controlling the number of copies of the NOMAN output:

1. Dayfile and on-line print of data deck listing, category listing, and full text for each user profile (as described above, under PURPOSE).

2. Dayfile, on-line print, print tape, and a printout from the print tape. The print tape may be run later to make any number of copies of the printout of user profiles.

When running option 1, proper care must be taken to remove from the control card deck the card reading REQUEST TAPE3. PRINT TAPE (see job setup card examples for requesting either option).

OUTPUT WITH INDEX

There are two alternatives concerning the bulkiness of the NOMAN printout. The option in this case is the "reversible" card following the program deck, which has "X-REF" punched within its first 10 columns.

1. When the card is used with the punching on the left (first 10 columns), an index of selectors will be printed following the profile printout. This section, with the header "USER-TERM CROSS REFERENCE," lists under each selector the user who has that selector in his profile. (In addition to the user's name and user number, the actual question number within a user's profile is designated).

2. When the card is reversed, the punching will be on the right (thus, the first 10 columns are blank), and no selector index will be printed.

The index has several benefits:

1. It shows the total vocabulary of the user population (total number of different terms of interest to local users, terms most heavily used, etc.).

2. It can also serve as a user interest file available both to the library staff and to other scientists.

3. It shows, in a large sense, a "site profile" that could eventually be used for selection of searchable items from the incoming tape. This cannot be acted upon, of course, until a good cross section of all potential user fields is included in the system.

DISPOSITION OF OUTPUT

1. Put the on-line print in a binder, mark the issue of the input tape on the spine, and keep it intact until the next run. This is the reference copy, accessible by user number.

2. The off-line print (dark ink on unlined paper) initially should be reproduced in 2 copies on the continuous-flow Xerox 2400, Mod. 4. This machine provides single sheets of 8-1/2"×11" size photoreduced from the unwieldy 11"×14" computer-page unburst copy.*

   Send one profile copy to each user, and put the corresponding copy in his work folder in the IRG office.

3. Each profiler should be responsible for updating his own set of user profiles. Each time he submits changes or additions for the interim small runs of NOMAN he should see that updated printouts are distributed as above. His penciled corrections will suffice for the bound reference copy.

POLICY FOR HANDLING NOMAN

1. Run it at least quarterly for all users, just after receiving the most recent authority tape.

2. In between large runs, run it for just those users who have had changes made in their profiles, or for new users entering the system. The control cards listed on page 5-4 will print the output twice on line, thus eliminating the necessity of making a print tape.

---

*In the absence of continuous-flow photoreduction equipment, submit the print tape for one more computer print, after first checking for possible errors. This "late" print can be burst and distributed to user work folders.

Option 1. Output printed only on dayfile.

```
NOMAN,5,1000,110000.480701,SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT -- ISSUE
REWIND(TAPE1,TAPE2,TAPE3)
COPYBF(INPUT,TAPE2)
REWIND(INPUT,TAPE2)
COPYBR(INPUT,NULL,2)
LOAD(LGO)
EXECUTE.
SFL(10000)
REWIND(TAPE3)
COPYCF(TAPE3,OUTPUT)
REWIND(TAPE3)
COPYCF(TAPE3,OUTPUT)
EXIT.
DMP.
DMP(110000)
REWIND(Q)
COPYBF(Q,OUTPUT)
UNLOAD(TAPE1)
FIN.
UNLOAD(TAPE3)
CXIT.
REWIND(Q)
COPYBF(Q,OUTPUT)
```

JOB SETUP CARD EXAMPLE FOR PROGRAM NOMAN

COS JOB SETUP CARD | NOMAN (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G.L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	ISSUE 19		(I) O X		
2				I O X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

Option 2. Print tape desired.

```
NOMAN,5,1000,110000.480701,SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT -- ISSUE
REQUEST TAPE3. PRINT
REWIND(TAPE1,TAPE2,TAPE3)
COPYBF(INPUT,TAPE2)
REWIND(INPUT,TAPE2)
COPYBR(INPUT,NULL,2)
LOAD(LGO)
EXECUTE.
SFL(10000)
REWIND(TAPE3)
COPYCF(TAPE3,OUTPUT)
EXIT.
DMP.
DMP(110000)
REWIND(Q)
COPYBF(Q,OUTPUT)
UNLOAD(TAPE1)
FIN.
UNLOAD(TAPE3)
CXIT.
REWIND(Q)
COPYBF(Q,OUTPUT)
```

JOB SETUP CARD EXAMPLE FOR PROGRAM NOMAN

COS JOB SETUP CARD | NOMAN (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G.L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	ISSUE 19		(I) O X		
2	T3	PRINT		I (O) X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
4807-01	SMITH, G.L.	4807-01	SMITH, G.L.

PRINT ☒ PROGRAM CONTROL MONITOR ☐ SINGLE SPACE

PAPER TYPE: REGULAR, UNLINED NEW BLACK RIBBON

138010 NOMAN

PUNCH ☐ CARD TYPE: (3)

TAPE UNIT: DATE & TIME

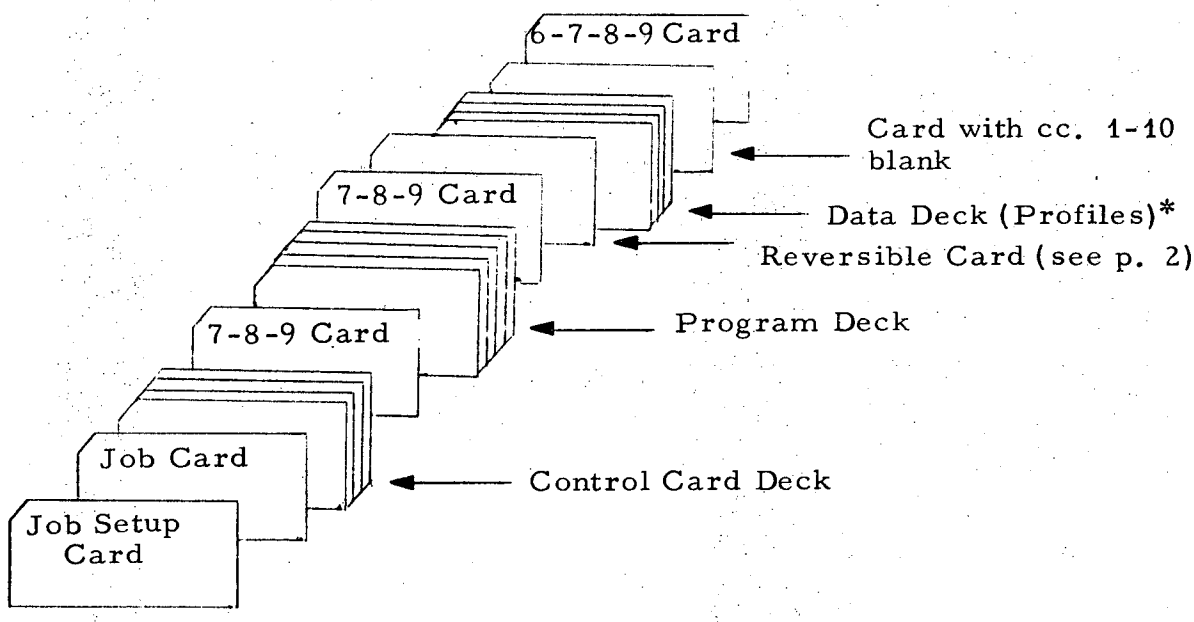
NO. FILES 1 NO. CARDS (3)

138010 NOMAN

DENSITY 200 556 (800)

RL-2714 (REV. 7/67)

GENERAL CARD SETUP FOR PROGRAM NOMAN



*See Appendix A: "Profile Preparation and Keypunching Format for User-Profile Data Deck."

PROGRAM SNOMAN

PURPOSE

See Program NOMAN. Program SNOMAN serves the same purpose as Program NOMAN, and produces the same kind of printout. However, SNOMAN is designed to handle a limited number of profiles. SNOMAN is a reduced version of NOMAN, and falls within the definition of a "small job." It is processed under a priority 7* at the Lawrence Radiation Laboratory computer facility.

There is one limitation for Program SNOMAN: The number of terms used per run must not exceed 477. (Several small profiles can be run at the same time using SNOMAN; only one or two of the larger profiles can be run if this abbreviated version of NOMAN is used.)

```
SNOMAN,7,100,50000.480701,SMITH,G.L.
FLOOR(3)
LIBCOPY(SDI,NOMAN,SNOMAN)
REQUEST TAPE1. INPUT
REQUEST TAPE3. PRINT TAPE
REWIND(TAPE1,TAPE2,TAPE3,NOMAN)
COPYBF(INPUT,TAPE2)
REWIND(INPUT,TAPE2)
COPYBR(INPUT,NULL)
NOMAN.
SFL(10000)
REWIND(TAPE3)
COPYCF(TAPE3,OUTPUT)
REWIND(TAPE3)
COPYCF(TAPE3,OUTPUT)
EXIT.
DMP.
DMP(105000)
FIN.
UNLOAD(TAPE3)
```

*Regular jobs (such as Program NOMAN) are processed under a priority 5. Small jobs such as SNOMAN may be classified at the Lawrence Radiation Laboratory as "Quickies" and run under a priority 7. In order to qualify as a "Quickie" a job must carry a time limit of 100 seconds and use no more core than 40K.

Program WORDS

PURPOSE

Program WORDS produces the most recent ISSUE tape, i.e., updates the previous ISSUE tape from file 2 of the latest A/W tape. The updated ISSUE tape is then used as basic input when running program NOMAN. Program WORDS makes possible a rigorous monitoring of the selector terms and categories used on any given NSA tape.

INPUT

1. Tapes: Two tapes are required.
   a. T1 -- The most recent A/W tape.
   b. T2 -- The current ISSUE tape (old).

2. Data: No data required.

OUTPUT

1. Dayfile containing the following information:
   a. Changes in selector numbers, listing old and new I. D. numbers assigned to the same selector.
   b. List of selectors appearing for the first time on the NSA tape.
   c. Summary of categories -- the count on the current issue, cumulated count for the year, and average count per issue.
   d. Selector frequency count -- in alphabetical order and indicating selector number, selector type, issue of first appearance, cumulated count, and average count per issue (since first appearance).
   e. Cumulated alphabetical listing of new selector words -- these are selectors added since the last AUTHORITY tape was received from DTIE (after issues 6, 12, 18, and 24). AUTHORITY tapes are processed quarterly on Program MAKIT.
   f. Table displaying the number of selectors within each selector type.

2. T3 -- The updated ISSUE tape (new).

DISPOSITION OF OUTPUT

1. The dayfile is kept in a binder in the IRG office and is discarded when a new WORDS dayfile replaces it. It serves as a reference tool for profiling, since it is the most up-to-date listing of selector terms available. Profilers should regularly scan the list of new terms appearing for the first time, using the list as an aid in monitoring existing user profiles.

2. Each ISSUE tape is entered into the tape library as it is produced. The ISSUE tape immediately preceding it remains in the library as a back-up file, but any other ISSUE tapes should be released.

JOB SETUP CARD EXAMPLE

COS JOB SETUP CARD | WORDS (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	A/W XX/XX		(I) O X		
2	T2	ISSUE XX (OLD)		(I) O X		
3	T3	ISSUE XX (NEW)		I (O) X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

LIBRARY TAPE LABEL EXAMPLE

WORDS
PROBLEM NAME | TAPE UNIT

DENSITY 200 556 (800)

ISSUE XX (NEW)
IDENTIFICATION

(BIN) BCD
MODE

4807-01 ACCOUNT NO. | SMITH, G. L. PROGRAMMER

RL 3218

LIBRARY TAPE FILE CARD EXAMPLE

TAPE FILE

User's Name SMITH, G. L. (Last Name, Initial) Acct. # 4807-01 Bldg. 50B Room 4206 Ext. 6308

Tape Name: ISSUE XX (NEW)
(Limited to 10 spaces)

Operator Use:
Assigned Reel # _____ Date/Time
If tape is a previously existing Data Tape, Check: ☐
Tape Manufacturer Code _____ Certification code _____

INACTIVE LIBRARY
If this tape is to be placed into the inactive library for archival storage, check here. ☐

When requesting this tape, please refer to it by this number. When you no longer wish to save this tape, sign here _____ and return this card to the input room.

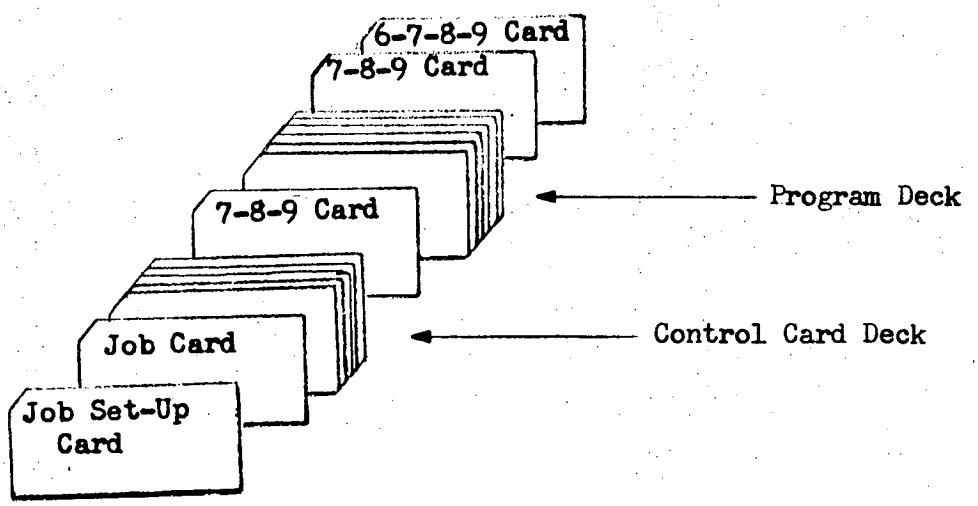
3

Tapes that are not used for six consecutive months must be released or placed in the inactive library.

7600-55692 (Rev. 2/69)

GENERAL CARD SETUP FOR PROGRAM WORDS

```
WORDS,5,1000,110000.480701,SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT --A/W TAPE
REQUEST TAPE2. INPUT --ISSUE(OLD)
REQUEST TAPE3. OUTPUT--ISSUE(NEW)
REWIND(TAPE1,TAPE2,TAPE3)
COPYBF(TAPE1,NULL)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
SFL(4000)
REWIND(TAPE4)
COPYBF(TAPE4,OUTPUT)
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```



Program MAKIT

PURPOSE

Program MAKIT is used for two distinct purposes:

1. Quarterly: To produce an updated ISSUE tape in accordance with each quarterly AUTHORITY tape. Selector terms removed from the AUTHORITY tape are deleted from the new ISSUE tape and printed out on the dayfile. Selector terms appearing for the first time on the AUTHORITY tape are added to the new ISSUE tape and are equally printed out on the dayfile. The new ISSUE tape will then be run with Program WORDS when the next NSA tape is processed.

2. Once yearly: At the beginning of each new year MAKIT is used to produce ISSUE O (ZERO) tape which sets the cumulative frequency count to zero. The ISSUE O tape is then run with Program WORDS on NSA tape 1 to produce new ISSUE tape 1.

INPUT

1. Tapes: Two tapes are required.
   a. T1 -- NSA AUTHORITY tape.
   b. T3 -- The most recent ISSUE tape.

2. Category deck: is inserted behind the Data card at the end of the program deck.

3. Data card options. Run both options with January authority tape.
   a. Quarterly updating: Use card with "0" punched in c. 5.
   b. End of year (setting to zero): Use card with "1" punched in c. 5.

OUTPUT

1. Tapes:
   a. New ISSUE tape (labeled "A" to indicate that the frequency count accumulated at LRL has been added to the AUTHORITY tape from DTIE).

2. Dayfile containing the following information:
   a. Categories added, categories deleted.
   b. Selector words not on old ISSUE tape (but on the new AUTHORITY tape).
   c. Changes in selector numbers, listing old and new I. D. numbers assigned to the same selector.
   d. Selector words not on the new AUTHORITY tape (but on the old ISSUE tape).
   e. Duplicated entries for a selector and its I. D. number.
   f. Selectors that have been discarded (changed to Type 5, forbidden words) by DTIE. These selectors are printed with their I. D. numbers in three columns per page.

3. List of selectors arranged in numerical order by selector I. D. number.

DISPOSITION OF OUTPUT

1. The numerically-ordered list of selectors is kept in a binder in the IRG office and is discarded when a new MAKIT printout replaces it. It serves as a look-up table for selectors when only I. D. numbers are known. One application might be for the proofchecking of the keypunching of new profile cards.

2. The dayfile is inspected, and inconsistencies from one authority tape to the next are reported to DTIE, Oak Ridge (for example, a selector listed twice under two different I. D. numbers).

3. During 1969-70, LRL-Berkeley will provide the "new" quarterly ISSUE tapes to organizations using Berkeley programs for the CDC-6600. These tapes should be returned to Berkeley as soon as they are copied or processed on Program WORDS.

Procedure to be followed for quarterly (cumulative) runs:

JOB SETUP CARD EXAMPLE FOR MAKIT

COS JOB SETUP CARD | MAKIT (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G.L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	AUTHORITY		(I) ○ ×		
2	T2	ISSUE 24A (NEW)		I (○) ×		
3	T3	ISSUE 24 (OLD)		(I) ○ ×		
4	T3	PRINT		I (○) ×		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

LIBRARY TAPE LABEL EXAMPLE

ACCOUNT 4807-01 | PROGRAMMER SMITH, G.L.

PRINT ☒ PROGRAM CONTROL ☐ SINGLE SPACE

PAPER TYPE: 1-PLY FOG

148883

PUNCH ☐ CARD TYPE:

3

RL-2714 (REV. 7/67)

ACCOUNT 4807-01 | PROGRAMMER SMITH, G.L.

TAPE UNIT: | DATE & TIME

NO. FILES 1 NO. CARDS

148883

AUTHORITY PRINT

DENSITY 200 556 (800)

3

MAKIT — PROBLEM NAME | TAPE UNIT

DENSITY 200 556 (800)

ISSUE 24A — IDENTIFICATION

(BIN) BCD — MODE | FROM: AUTHORITY FILE

4807-01 — ACCOUNT NO. | SMITH, G. L. — PROGRAMMER

RL 3218

LIBRARY TAPE FILE CARD EXAMPLE

TAPE FILE

User's Name SMITH, G.L. (Last Name, Initial) Acct. # 4807-01 Bldg. 50B Room 4206 Ext. 6308

Tape Name: ISSUE 24 A (NEW)

(Limited to 10 spaces)

INACTIVE LIBRARY

If this tape is to be placed into the inactive library for archival storage, check here. ☐

3

Operator Use:

Assigned Reel # _____ Date/Time

If tape is a previously existing Data Tape, Check: ☐

Tape Manufacturer Code _____ Certification code _____

When requesting this tape, please refer to it by this number. When you no longer wish to save this tape, sign here _____ and return this card to the input room.

Tapes that are not used for six consecutive months must be released or placed in the inactive library.

7600-55692 (Rev. 2/69)

Procedure to be followed for "end of year" (setting to zero) runs.

JOB SETUP CARD EXAMPLE FOR PROGRAM MAKIT

COS JOB SETUP CARD | MAKIT (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	AUTHORITY FILE		(I) O X		
2	T2	ISSUE 0		I (O) X		
3	T3	PRINT		I (O) X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

LIBRARY TAPE LABEL EXAMPLE

ACCOUNT: 4807-01 | PROGRAMMER: SMITH, G. L.

PRINT ☒ PROGRAM CONTROL ☐ SINGLE SPACE

PAPER TYPE: 1-PLY FOG

126494

PUNCH ☐ CARD TYPE:

3

RL-2714 (REV. 7/67)

ACCOUNT: 4807-01 | PROGRAMMER: SMITH, G. L.

TAPE UNIT: | DATE & TIME

NO. FILES 1 NO. CARDS

126494

AUTHORITY PRINT

DENSITY 200 556 (800)

3

MAKIT — PROBLEM NAME | TAPE UNIT

DENSITY 200 556 (800)

ISSUE 0 — IDENTIFICATION

(BIN) BCD — MODE | FROM: AUTHORITY FILE

4807-01 — ACCOUNT NO. | SMITH, G. L. — PROGRAMMER

RL 8218

LIBRARY TAPE FILE CARD EXAMPLE

TAPE FILE

User's Name SMITH, G.L. (Last Name, Initial) Acct. # 4807-01 Bldg. 50B Room 4206 Ext. 6308

Tape Name: ISSUE 0 (Limited to 10 spaces)

Operator Use:

Assigned Reel # _____ Date/Time

If tape is a previously existing Data Tape, Check: ☐

Tape Manufacturer Code _____ Certification code _____

INACTIVE LIBRARY

If this tape is to be placed into the inactive library for archival storage, check here. ☐

When requesting this tape, please refer to it by this number. When you no longer wish to save this tape, sign here _____ and return this card to the input room.

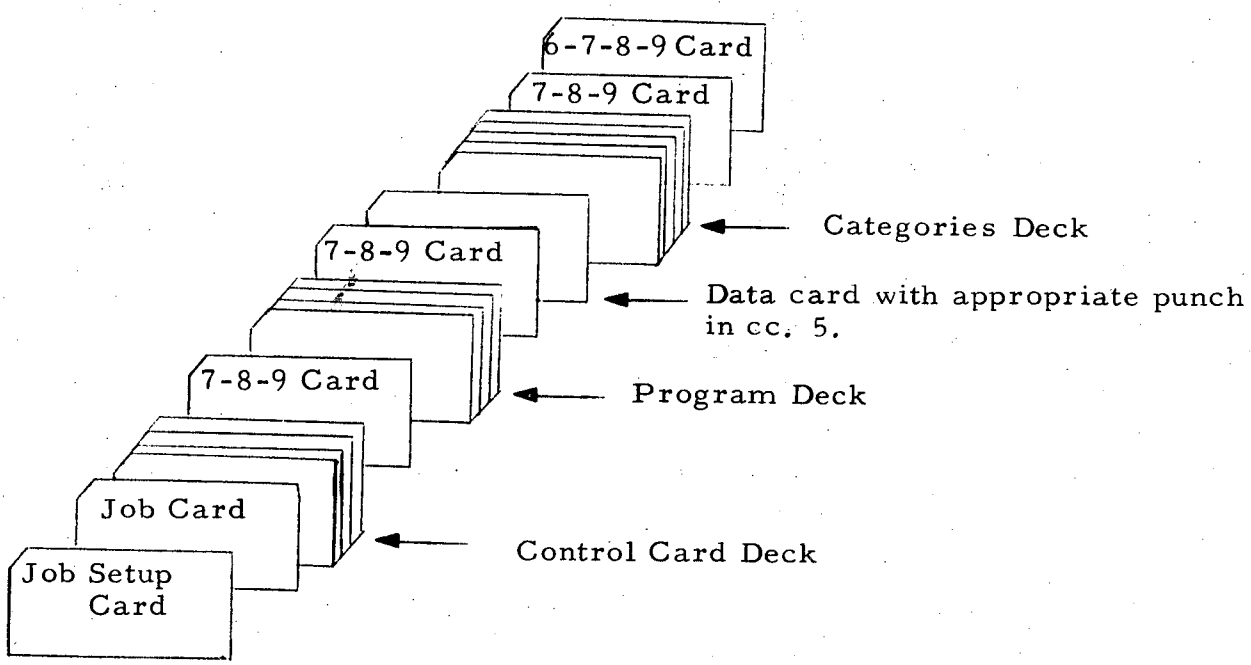
Tapes that are not used for six consecutive months must be released or placed in the inactive library.

3

7600-55692 (Rev. 2/69)

GENERAL CARD SETUP FOR PROGRAM MAKIT

```
MAKIT,5,3000,330000.480701,SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT --AUTHORITY FILE
DENSITY TAPE1,5.
REQUEST TAPE2. OUTPUT--ISSUE(NEW)
REQUEST TAPE3. INPUT --ISSUE(OLD)
REWIND(TAPE1,TAPE2,TAPE3)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
REWIND(TAPE4)
COPYBF(TAPE4,OUTPUT)
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2,TAPE3)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```



Program FLIST

PURPOSE

Program FLIST is a print routine listing the frequency count of selector terms and categories. It can be run on any ISSUE tape, but is usually run only quarterly on the updated tape output from Program MAKIT.

INPUT

1. Tapes: Only one tape is required: T1 -- ISSUE.

2. Data: Desired frequency limit is entered in columns 1 to 5 (right-adjusted) of the data card. The limit requested can go from 1 up to any desired frequency. A blank or the punch of 0 to 1 in columns 1 to 5 will set the limit at 1.

OUTPUT

1. Print tape containing the following information:
   a. List of categories with their cumulative and average count.
   b. Selector frequency count -- in alphabetical order and indicating selector number, selector type, issue of first appearance, cumulated count, and average count per issue (since first appearance).
   c. If FLIST is run on an ISSUE tape other than the quarterly updated ISSUE tape (the "A" tapes of issues 6, 12, 18, and 24), it produces an alphabetical list of the new selectors accumulated since the last AUTHORITY tape was run.
   d. Table displaying the number of selectors within each selector type.
   e. List of selectors with the stipulated average usage in descending order.

DISPOSITION OF OUTPUT

The quarterly printout is spot-checked for completeness. If there are no serious print errors, additional copies are made of both tape and paper for distribution to the IRG mailing list of frequency-list users.

JOB SETUP CARD EXAMPLE

COS JOB SETUP CARD

PROBLEM NAME	ACCOUNT NUMBER	NAME OF PROGRAMMER	EXTENSION
FLIST	4807-01	SMITH, G.L.	6308

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	ISSUE 18A		(I) O X		
2	T2	PRINT		I (O) X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
4807-01	SMITH, G.L.	4807-01	SMITH, G.L.

PRINT ☒ PROGRAM CONTROL MONITOR
☐ SINGLE SPACE

PAPER TYPE: REGULAR UNLINED
NEW BLACK RIBBON

138011
FLIST

PUNCH ☐ CARD TYPE: (3)

TAPE UNIT: DATE & TIME

NO. FILES 1 NO. CARDS _____

138011
FLIST

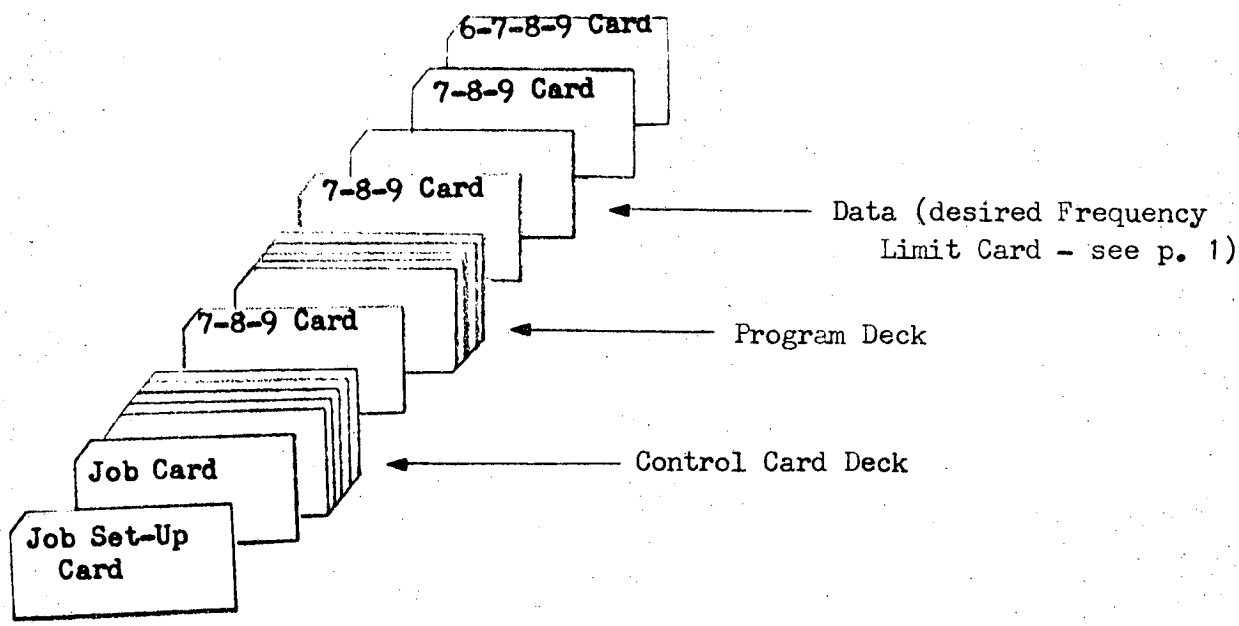
(3)

DENSITY 200 556 (800)

RL-2714 (REV. 7/67)

GENERAL CARD SETUP FOR PROGRAM FLIST

```
FLIST,5,200,74000.480701.SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT --ISSUE
REQUEST TAPE2. OUTPUT--PRINT
REWIND(TAPE1,TAPE2)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE2)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```



Program RETRO

PURPOSE

Program RETRO is in its basic intent and structure equivalent to Program TIDEX (q. v.) whose function is to produce the SRCH tape which is then used as principal input for Program TIDE (q. v.). However, RETRO's input is a cumulated (four issues) NSA tape from which a single "search" tape (called BAK) is to be produced.* It can be convenient to recall here that the input for TIDEX is a single, i. e., one-issue NSA tape from which a single "search" tape (called SRCH) is produced. RETRO differs from TIDEX in one other respect: There is no provision in Program RETRO for TIDEX output — options 2 and 3 (see Program TIDEX); the only output is the "search" tape — i. e., TIDEX output, option 1).

INPUT

1. Any NSA cumulated (four issues) tape (T1).

2. Data: Categories deck. Since the NSA section/subsection array changes somewhat each year, care must be taken to use the proper categories deck, i. e., 1967, 68, 69, etc., for each cumulated tape. Copies of the categories decks for each year may be obtained on request from the authors.

OUTPUT

1. Dayfile and BAK tape (T2). For the number pattern of BAK tapes see instruction sheet for Program TIDEX.

---

*This program was produced at LRL-Berkeley for "short-cut" processing of archival NSA tapes that had never been run on the present version of TIDEX. Program RETRO is of value to organizations just starting their computer search service, who wish to extend their files back to the beginning of the current volume, or even back to the very eary tapes which began with NSA 20(13) for July 15, 1966. Permission to borrow archival four-issue tapes must be obtained from E. J. Brunenkant, DTI, Washington, D. C. On his written approval, the compacted tapes will then be released from the Computing Technology Center at Union Carbide Corp., Oak Ridge, Tennessee.

INPUT/OUTPUT

1. ENTRY File (T8).

2. KWORD File (T9).

T8 and T9 are tested scratch tapes used instead of the disk for write-on. They are maintained in the library, and periodically replaced, to insure greater reliability.

JOB SETUP CARD EXAMPLE FOR PROGRAM RETRO

COS JOB SETUP CARD | RETRO (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	NSA 22/1-4		I ○ ×		
2	T2	BAK 68-04		I ◎ ×		
3	T8	ENTRY FILE		I ◎ ×		
4	T9	KWORD FILE		I ◎ ×		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

LIBRARY TAPE FILE CARD EXAMPLE

TAPE FILE

User's Name SMITH, G.L. (Last Name, Initial) Acct. # 4807-01 Bldg. 50B Room 4206 Ext. 6308

Tape Name: BAK 68-04 (Limited to 10 spaces)

Operator Use:

Assigned Reel # _____ Date/Time

If tape is a previously existing Data Tape, Check: ☐

Tape Manufacturer Code _____ Certification code _____

INACTIVE LIBRARY

If this tape is to be placed into the inactive library for archival storage, check here. ☐

When requesting this tape, please refer to it by this number. When you no longer wish to save this tape, sign here _____ and return this card to the input room.

Tapes that are not used for six consecutive months must be released or placed in the inactive library.

3

7600-55692 (Rev. 2/69)

LIBRARY TAPE LABEL EXAMPLE

RETRO — PROBLEM NAME — TAPE UNIT

DENSITY 200 556 800

BAK 68-04 — IDENTIFICATION

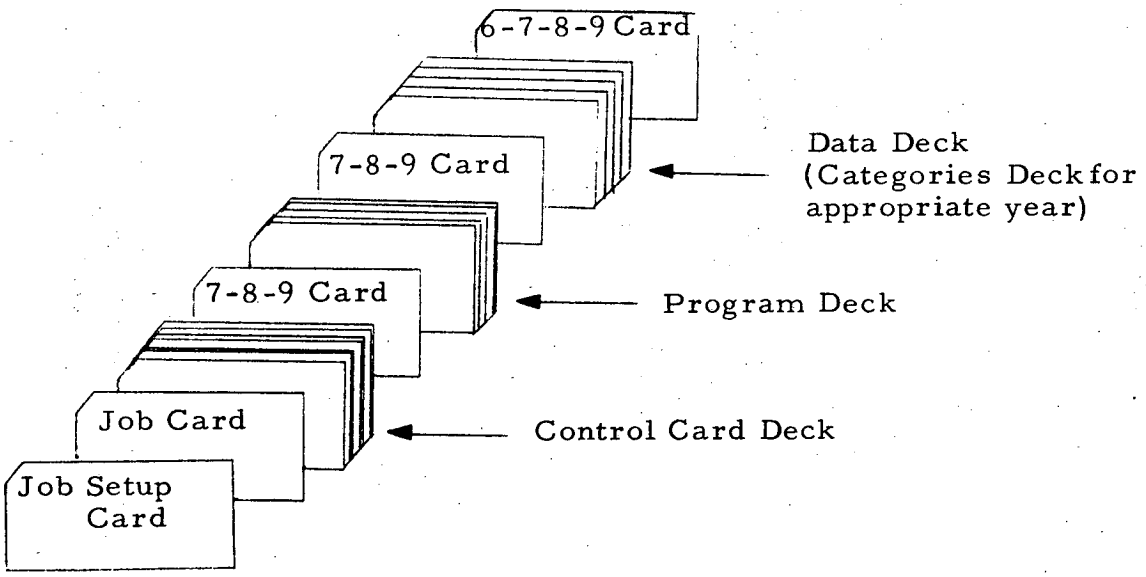
BIN BCD — MODE

4807-01 — ACCOUNT NO.

SMITH, G.L. — RL 3218 PROGRAMMER

GENERAL CARD SETUP FOR PROGRAM RETRO

```
RETRO,5,1000,50000.480701,SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT --NSA
DENSITY TAPE1,5.
REQUEST TAPE2. OUTPUT--BAK
REQUEST TAPE8. I/O -- ENTRY FILE
REQUEST TAPE9. I/O -- KWORD FILE
REWIND(TAPE1,TAPE2,TAPE8,TAPE9)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2,TAPE8,TAPE9)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```



10. LINGO

Program LINGO

PURPOSE

Program LINGO scans the current SRCH or retrospective BAK tapes and identifies the NSA documents which have in their language delimiters language information specified on the data cards. The program is run for these reasons:

(a) to obtain abstract numbers for later input to Program QUIPS when questionable data is found in the language table produced by Program TIDEX, and

(b) to list abstract numbers for all documents in a specific language.

INPUT

1. Tapes: SRCH or BAK tapes.

2. Data:

   a. The first data card will have an integer number punched in cc. 1-5, right-adjusted. This number will be equal to the number of languages entered on the following data card(s).

   b. The second and subsequent cards will have alphanumeric language information punched in columns of ten, left-adjusted. Eight items of language information can thus be entered on one card.

OUTPUT

Dayfile with the following information:

1. The languages searched for will be printed out in the order they were punched on the data card(s).

2. The tape (SRCH or BAK) searched will be identified and the abstract numbers of the documents with the pertinent language information with be printed out in an ascending order.

3. The range of the documents checked will be indicated.

JOB SETUP CARD EXAMPLE FOR PROGRAM LINGO

COS	JOB SETUP CARD	LINGO PROBLEM NAME	4807-01 ACCOUNT NUMBER	SMITH, G.L. NAME OF PROGRAMMER	6308 EXTENSION

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	SRCH or BAK		(I) O X		
2				I O X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

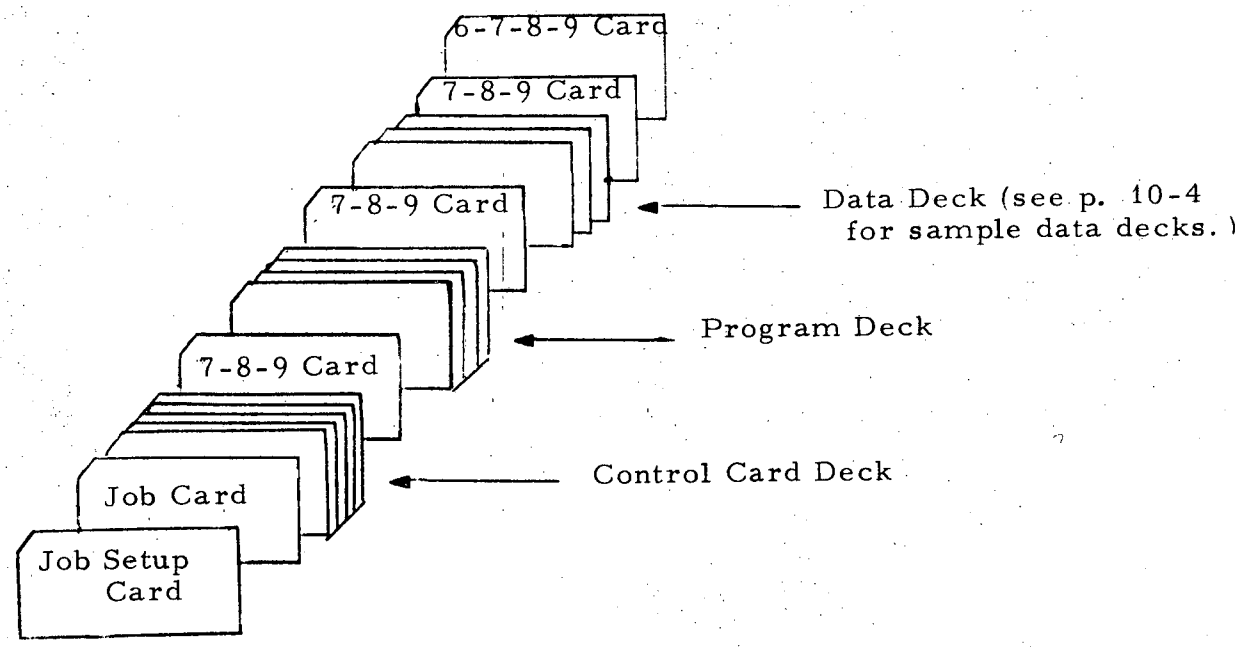
REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

GENERAL CARD SETUP FOR PROGRAM LINGO

```
LINGO,5,200,50000.480701,SMITH
FLOOR(3)
RUNF(S,22000,,,Q,,1000000,,XREF)
REQUEST TAPE1. SRCH
REWIND(TAPE1)
LOAD(LGO)
EXECUTE.
EXIT.
DMP.
DMP(22000)
REWIND(Q)
COPYBF(Q,OUTPUT)
FIN.
UNLOAD(TAPE1)
CXIT.
REWIND(Q)
COPYBF(Q,OUTPUT)
```



EXAMPLE A

```
   10
ITALAIN   JAPANNEASERENCH     USSIAN    DC--7593  F-660633--NA,      RITY
RU-MANIAN TALIAN
```

EXAMPLE B

```
   6
ENGLISH   RUSSIAN   GERMAN   FRENCH   SPANISH   JAPANESE
```

The listings shown above are examples of the kinds of data cards which may be punched for Program LINGO.

Example A contains: (1) a card designating the number of entries found on the following data cards, and (2) cards containing alphanumeric language information. This kind of information is useful when locating the abstract numbers for questionable data found on the TIDEX-produced language table.

Example B contains: (1) a card designating the number of languages entered on the following data cards, and (2) a card containing entries for legitimate languages. This data is useful in obtaining abstract numbers for all documents in a specific language.

II. QUIPS

Program QUIPS

PURPOSE

Program QUIPS is used to print complete bibliographic and selector data for specified documents from the NSA tapes. The NSA tapes, written in BCD, contain "directory" information (showing the unit count of fields to be encountered later in the tape). If other SDI programs, such as LINGO, indicate the possibility of errors on the original NSA tape, QUIPS is the means of inspecting the data entered on the original tape. QUIPS thus gives a selective tape dump.

INPUT

1. Tapes: NSA Entry and Selector [keyword] File tape, or the cumulated NSA archival tape.

2. Data: (see example on p. 11-4)

   a. On the first data card in column 5, punch a number indicating which issue on the tape is to be searched. When regular (twice-monthly) NSA tapes are searched, this number is 1. When the NSA archival tapes are searched, the number can be either 1, 2, 3, or 4, since there are four issues of NSA stored on one archival tape.

      In column 6 of the first data card, punch "E" or "K" to indicate whether the entry file or the keyword file is to be searched. When both files are requested, each of these file-designating cards must be followed by a set of data cards described in b and c, below.

   b. On the second data card within each E or K file, punch a number (right-adjusted to column 5) specifying the quantity of documents to be selected. As many as 250 documents are allowed.

   c. On the third data card, right-adjusted to the fifth column within fields of 10 columns, punch the abstract numbers of the documents whose citations are to be printed out. Eight document numbers can be punched on one data card. The numbers may be entered on the data card in any order, but leading zeros must be punched to build each number into a 5-digit unit. For example, abstract no. 20 is punched as 00020.

   d. On the last data card, punch a zero in column 5 to end the search.

OUTPUT (see example on p. 11-5)

Dayfile, displaying the selected information just as it is recorded on the NSA tape. The control cards shown on p. 11-3 furnish two copies of the output on the dayfile.

JOB SETUP CARD EXAMPLE FOR PROGRAM QUIPS

COS JOB SETUP CARD | QUIPS (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	NSA (CURRENT or ARCHIVAL)		(I) O X		
2				I O X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

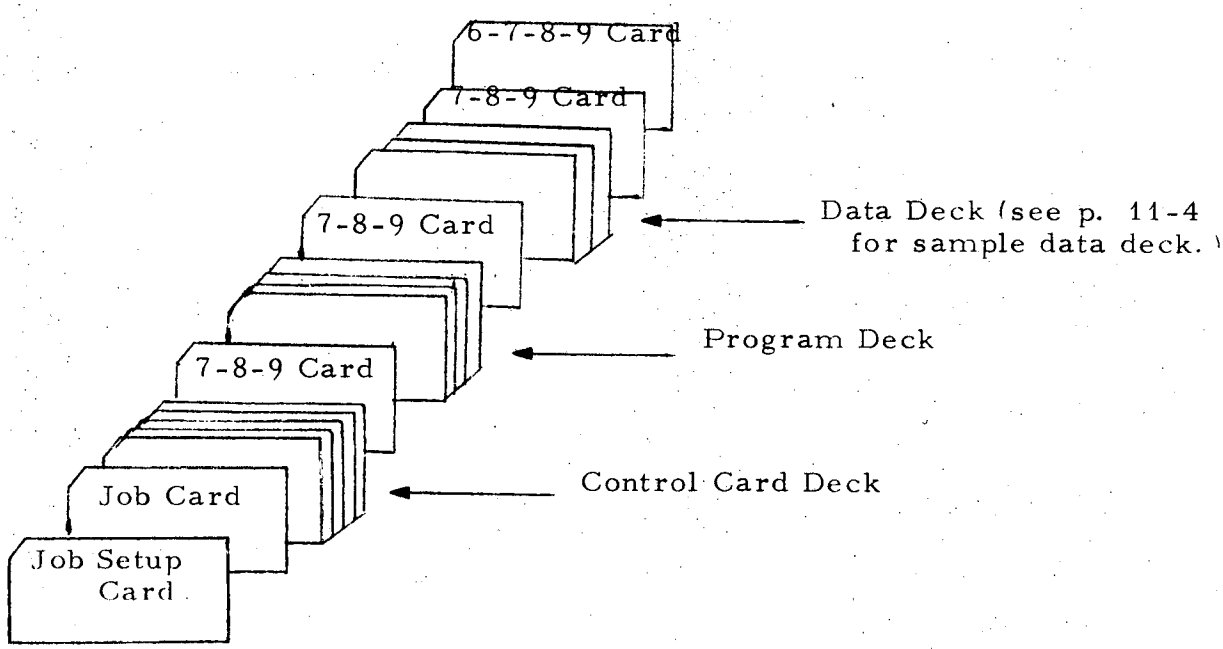
CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/60)

GENERAL CARD SETUP FOR PROGRAM QUIPS

```
QUIPS,5,200,50000.480701,SMITH
FLOOR(3)
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. NSA
DENSITY TAPE1,5.
REWIND(TAPE1)
LGO.
SFL(10000)
REWIND(OUTPUT,OUT)
COPYBF(OUTPUT,OUT)
REWIND(OUT)
COPYBF(OUT,OUTPUT)
EXIT.
DMP.
DMP(50000)
REWIND(Q)
COPYBF(Q,OUTPUT)
FIN.
UNLOAD(TAPE1)
CXIT.
REWIND(Q)
COPYBF(Q,OUTPUT)
```

This card must be removed if the input tape is an NSA archival tape cumulated at a density of 800 bit per inch; that is, the card is used only for 556 bpi.



EXAMPLE

```
First      2E     ISSUE ON TAPE
Set        11     NUMBER OF DOCUMENTS
       26325      27902     27927     27930     27963     27975     28035     28050
       28141      28193     28194
Second     3K     ISSUE ON TAPE
Set         2     NUMBER OF DOCUMENTS
       30848      30923
Third      4E     ISSUE ON TAPE
Set         5     NUMBER OF DOCUMENTS
       32606      32609     32611     32621     32623
Fourth     4K     ISSUE ON TAPE
Set         3     NUMBER OF DOCUMENTS
       32606      32609     32629
           0        ISSUE ON TAPE        ZERO INDICATES END OF RUN
```

The listing shown above is an example of the kinds of data cards which may be punched for Program QUIPS. (Note that the first issue on the tape was passed over; it is not necessary to select from each tape.)

The first four data cards show: (1) a search within the entry file of the second issue on an archival tape; (2) 11 documents to be selected from the file; and (3 and 4) the abstract numbers of the documents to be selected.

The next set of three data cards calls for the selection of 2 documents from the keyword file of the third issue on the tape.

The next set of three data cards calls for the selection of 5 documents from the entry file of the fourth issue.*

The last set of three cards calls for the selection of 3 documents from the keyword file of the fourth issue.*

(The last card of the data set must always contain a zero in cc. 5 to terminate the search.)

---

*A copy of the printout resulting from a search using these data cards is shown on the next page.

EXAMPLE OF OUTPUT FOR PROGRAM QUIPS

LOOKING FOR 5 DOCUMENTS

32606 32609 32611 32621
32623

31273 IS THE FIRST DOCUMENT ON THIS FILE

32606

691623326060430303412R NSA000000000000018132050 4]MNv34 P UNCL 0040180050420060180070600120120140240200060220000230240240180250120260240270060310360320120330 12]NEVIS--169)]CHARGE ASYMMETRY IN K/SUB E3/ DECAY.] SAAL, HARRY J.](COLUMBIA UNIV., IRVINGTON-ON-HUDSON, N. Y. NEVIS LABS.).]APR. 1969.]CONTRACT AT(30-1)-1932.]97P.] (CU--273- R-663).]DEP. CFSTI.]THESIS.]PHYSICS (PARTICLE)]20H]CHARGE ASYMMETRY IN K/SUB E3/ DECAY] 215 1000]DTIE- US]

32609

691623326090522743412J NSA000000000000000840492100508400613200800001400001504202200002300002500002600003107803301203400 6]ENERGY SPECTRUM OF THE PI/SUP +/ IN K/SUP +/ YIELDS PI/SUP +/PI/SUP 0/PI/SUP 0/.]DAVISON, D. (UNIV. OF CALIFORNIA, RIVERSIDE)- BARKAS, W. H.- EVANS, D. A.- FUNG, S.-Y.- PORTER, L. E.- POE, R. T.- GREINER, D.]PHYS. REV., 180- 1333-8(APR. 25, 1969).]ENERGY SPECTRUM OF PI/SUP +/ IN K/SUP +/ YIELDS PI/SUP +/PI/SUP 0/PI/SUP 0/]DTIE- US] PHRVA] IS.]PH

32611

691623326110522723412J NSA000000000000000840360100503000610200800001400001504202200002300002500002600003103003301203400 6]STUDY OF K/SUB E4/ DECAYS.]ELY, ROBERT P. JR. (UNIV. OF CALIFORNIA, BERKELEY)- GIDAL, GEORGE- HAGOPIAN, VASKEN- (AND OTHERS).]PHYS. REV., 180- 1319-30(APR. 25, 1969).]STUDY OF K/SUB E4/ DECAYS]DTIE- US]PHRVA]

32621

691623326210520793414R NSA000000000000018132080 4]MNv34 P UNCL 0040180050780061980070480120180140000200060220000230180240180250720260240270060310780320240330 12]BNL--13681)]FURTHER EVIDENCE FOR Y/SUB 1/*(1616) FROM 3.9 GEV/C K/SUP -/N INTERACTIONS.]CRENNELL, DAVID J.- KARSHON, URI- LAI, KWAN WU- O*NEALL, JOHN S.- SCARR, J. MICHAEL (BROOKHAVEN NATIONAL LAB., UPTON, N. Y.)- BAUMEL, PHILIP- LEA, ROBERT M.- SCHUMANN, THOMAS G.- URVATER, ERNEST M.](CITY COLL., NEW YORK. DEPT. OF PHYSICS).]MAY 20, 1969.]19P.](CONF-690608--1).]DEP. CFSTI.]FROM INTERNATIONAL CONFERENCE ON ELEMENTARY PARTICLES, LUND, SWEDEN.]PHYSICS (PARTICLE)]20H]FURTHER EVIDENCE FOR Y/SUB 1/*(1616) FROM 3.9 GEV/C K/SUP -/N INTERACTIONS]140 1000- 202 8400]DTIF- US] 469]F 118

32623

691623326230508983414J NSA000000000000000840468100507200613200800001400001504202200002300002500002600003106603301203400 6]DOUBLE-RESONANCE PRODUCTION BY 5 GEV/C K/SUP +/ MESONS ON PROTONS.]DE BAERE, W. (LABORATOIRE INTERUNIVERSITAIRE BELGE DES HAUTES ENERGIES, BRUSSELS)- DEBAISIEUX, J.- DUFOUR, P.- (AND OTHERS).]NUOVO CIM., 61A- 397-420(JUNE 1, 1969).]DOUBLE-RESONANCE PRODUCTION BY 5 GEV/C K/SUP +/ MESONS ON PROTONS]DTIE- BE]NCIAA]

PROCESSING OF FILE 4E COMPLETE

33140 IS THE LAST DOCUMENT ON THIS FILE

SEARCHING FILE 4K

LOOKING FOR 3 DOCUMENTS

32606 32609 32629

31273 IS THE FIRST DOCUMENT ON THIS FILE

32606

691623326060430300R 3412 0300] 112ANNIHILATION00186] 106DECAY 01292] 112ELECTRONS 01483] 106KAONS 02416] 106MUONS 03011] 118PARTICLE MODELS 03448] 106PIONS 03548] 112POSITRONS 03718] 112PRODUCTION 03803] 124 SCINTILLATION COUNTERS 04333] 918KAONS-NEUTRAL 07430]

32609

691623326090522740J 3412 0300] 118BUBBLE CHAMBERS 00696] 106DECAY 01292] 106ENERGY01500] 106KAONS 02416] 112MEASUREMENT 02812] 118NUCLEAR EMULSIONS 03265] 106PIONS 03548] 112SPECTRA 04543] 812KAONS-PLUS 02418] 812PIONS-PLUS 03550] 918PIONS-NEUTRAL 06809]

32629

691623326290511750J 3414 0276] 112GEV RANGE 05689] 112INTERACTIONS02262] 106KAONS 02416] 118LAMBDA PARTICLES 02481] 106MESONS02895] 112NEUTRONS 03132] 106PIONS 03548] 112RESONANCE 04062] 818BETA RESONANCES 01554] 812KAONS-MINUS 02417]

PROCESSING OF FILE 4K COMPLETE

33140 IS THE LAST DOCUMENT ON THIS FILE

Program PICKY

PURPOSE

Program PICKY is essentially a document retrieval and printout routine which can be used both with SDI SRCH tapes and SDI BAK retrospective tapes. PICKY is different from the TIDE search program in that it searches only for specified abstract numbers from the numerically arranged tape file. The completeness of the printout can vary according to the options described below:

INPUT

1. Tapes: Any SRCH or BAK tape (T1).

2. Data:

   a. The first data card will indicate the completeness expected for the requested citations. A number from one to four, punched in column 15, will provide the following information:

PUNCH =	INFORMATION
1	Title and first author
2	Title and first author plus NSA section/subsection line
3	Title, first author, NSA section/subsection line plus selector words
4	Title, first author, NSA section/subsection line selector words plus selector I. D. number

   b. The subsequent data cards will contain abstract numbers punched in free format in ascending order. "Scattered" abstract numbers are punched as positive numbers separated by a blank, and the string is terminated by a "C". No more than 1 000 separate numbers can be entered on the data cards. Inclusive numbers are handled by punching: a minus sign (-) immediately before the first abstract number desired, blank, a minus sign followed by the last abstract number desired, blank, and "C". For example, four separate citations can be printed by punching (for abstract number 33704 through 33707)

-3370400 -3370799 C

The "00" and "99" digits are added to pick up all separately indexed parts of the documents ("splits").

When all splits for a given abstract number are desired, the data must be punched in the following format:

-3370400 -3370499C

When specific splits are desired, the numerical designation of the split must be encoded. For example, a request for split 9938D and split 10432B would be punched as:

993804 1043202 C

c. The last data card should have a zero punched in column 15.

OUTPUT

1. Dayfile with the following information:

   a. Printout of the citations requested, in abstract number order.

   b. A listing of the abstract numbers on the data card input, followed by the abstract number of the first document on the search tape, and a message identifying documents with parity errors (if any).

2. Print tape and printout (when requested -- see options 1 and 3, below).

PRINT OPTIONS

The overall options available in the program are specified by the deck setup of the control cards and data cards. The print option alternatives are concerned with whether the documents are to be listed as a single set or several sets of citations; and whether or not a print tape is to be made. Below are examples of four common print options:

Print Option 1. Single set, with a print tape and a reproducible copy from the print tape (see example, page 12-5)

1. a. The PICKY file is read only one time, and one continuous series of citations is printed.

   b. The "REQUEST TAPE2. PRINT" card, and the "EXECUTE." card must be in the set of control cards.

Print Option 2. Single set, output printed only on dayfile (see example, page 12-6).

2. a. Same as 1. a.

   b. The "REQUEST TAPE2. PRINT" card must be removed from the control cards, and the "EXECUTE(, OUTPUT)" card inserted in place of the "EXECUTE." card.

Print Option 3. Multiple sets, with a print tape and a reproducible copy from the print tape (see example, page 12-5).

3. a. The requested documents are printed out in several distinct sets, one for each user. For example, if two sets of data are requested, the data cards are arranged as follows:

Set A	Card with a 1, 2, 3, or 4 punched in column 15. Card(s) of abstract numbers.
Set B	Card with a 1, 2, 3, or 4 punched in column 15. Card(s) of abstract numbers.

End of run: Card with a zero punched in column 15.

Any number of separate printouts may be requested in this manner.

   b. Same as 1. b.

Print Option 4. Multiple sets, output printed only on dayfile (see example, page 12-6).

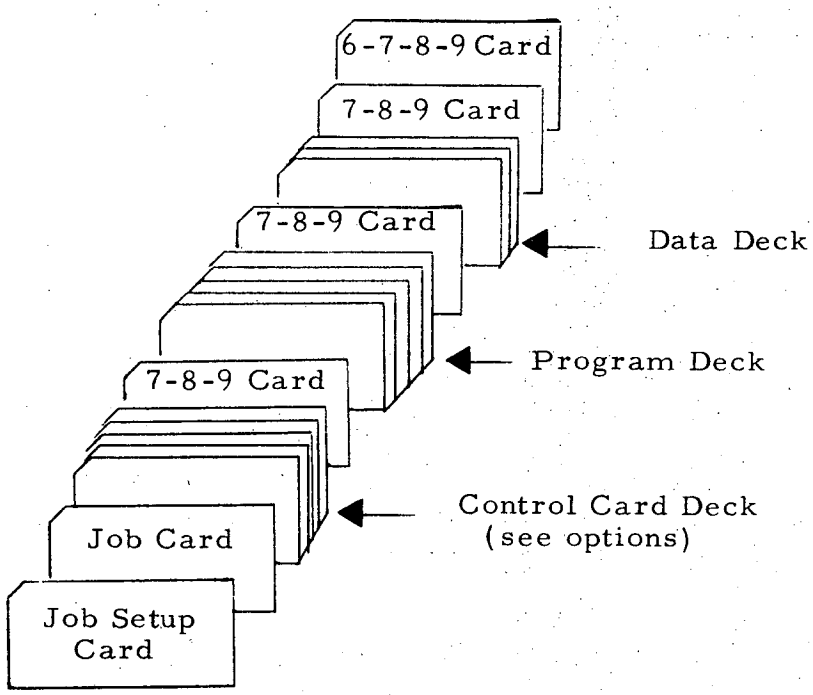
4. a. Same as 3. a.

   b. Same as 2. b.

DISPOSITION OF OUTPUT

If PICKY was run at the request of a user, the distribution of printout follows the procedures set forth in Program TIDE.

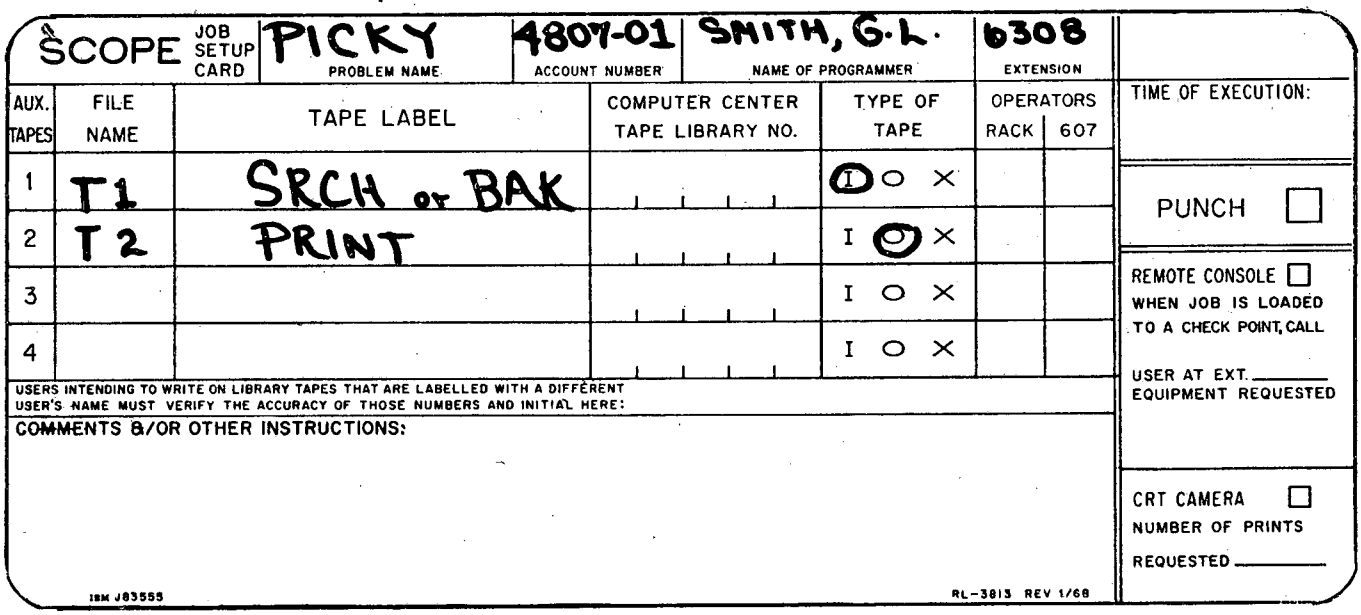
GENERAL CARD SETUP FOR PROGRAM PICKY

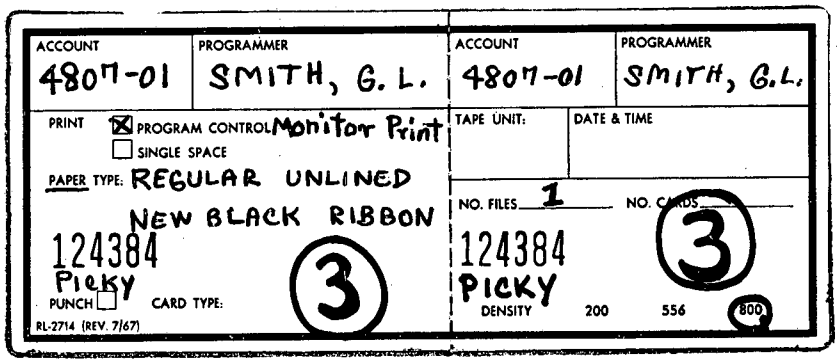


Options 1 and 3. Print tape desired.

```
PICKY,5,200,50000.480701,SMITH
FLOOR(3)
RUNF(S,,,,,,100000)
REQUEST TAPE1. BAK OR SRCH
REQUEST TAPE2. PRINT
REWIND(TAPE1,TAPE2)
LOAD(LGO)
EXECUTE.
SFL(10000)
REWIND(TAPE2)
COPYCF(TAPE2,OUTPUT)
EXIT.
DMP.
DMP(32000)
FIN.
UNLOAD(TAPE1,TAPE2)
```

JOB SETUP CARD EXAMPLE





Options 2 and 4. Output printed only on dayfile.

```
PICKY,5,200,50000.480701,SMITH
FLOOR(3)
RUNF(S,,,,,,100000)
REQUEST TAPE1. BAK OR SRCH
REWIND(TAPE1,TAPE2)
LOAD(LGO)
EXECUTE.
SFL(10000)
REWIND(TAPE2)
COPYCF(TAPE2,OUTPUT)
REWIND(TAPE2)
COPYCF(TAPE2,OUTPUT)
EXIT.
DMP.
DMP(32000)
FIN.
UNLOAD(TAPE1,TAPE2)
```

JOB SETUP CARD EXAMPLE

COS JOB SETUP CARD | PICKY (PROBLEM NAME) | 4807-01 (ACCOUNT NUMBER) | SMITH, G.L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	SRCH or BAK		(I) O X		
2				I O X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

Program DLETE

PURPOSE

Program DLETE can be run on any SRCH or BAK tape. It permits the elimination of any desired document or an inclusive set of documents from the tape.

INPUT

1. The SRCH or BAK tape to be corrected.

2. Data (abstract numbers).
   Cards are punched in free format and inserted between the two 7-8-9 cards at the end of the program deck. "Scattered" abstract numbers are punched as positive numbers separated by a blank and the string is terminated by a "C". No more than 200 numbers can be entered on the data cards. Inclusive numbers are handled by punching: a minus sign (-) immediately before the number of the first abstract to be eliminated, blank, a minus sign followed by the number of the last abstract to be eliminated, blank, "C". Two zeros (00) will be added to each data value assuring that, in case a split document is encountered, only the specified split will be deleted. For more detailed discussion of the data arrangement see instruction sheets for Program PICKY.

OUTPUT

1. New SRCH (NSRCH) or BAK (NBAK) tape. This tape, after having been successfully tested, is to be substituted for the corresponding old SRCH or BAK tape and the old tape released. The substitution is done upon request at the Computer I/O desk.

JOB SETUP CARD EXAMPLE FOR PROGRAM DLETE

COS JOB SETUP CARD

PROBLEM NAME	ACCOUNT NUMBER	NAME OF PROGRAMMER	EXTENSION
DLETE	4807-01	SMITH, G.L.	6308

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	SRCH or BAK		1 ○ ×		
2	T2	NSRCH or NBAK		I ◎ ×		
3				I ○ ×		
4				I ○ ×		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

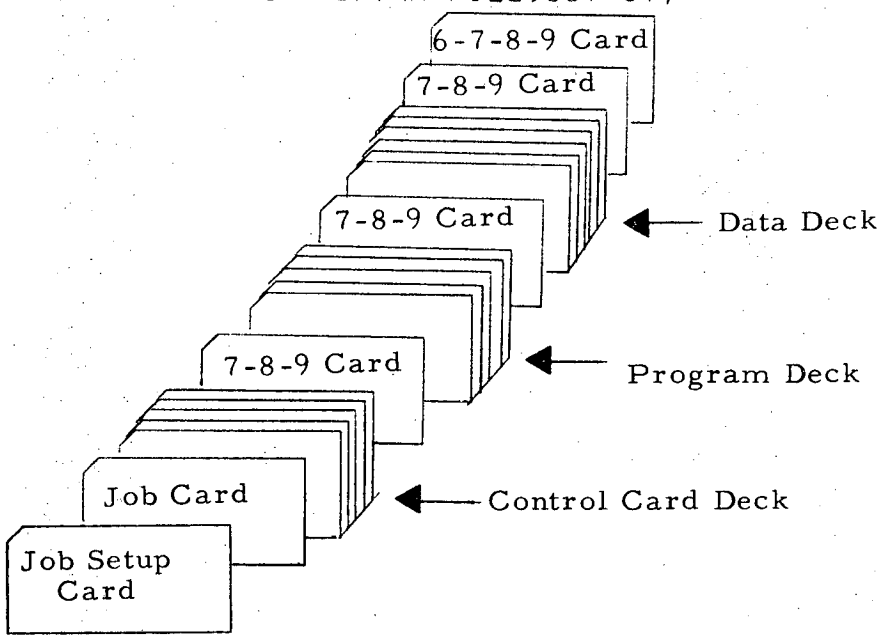
IBM J84575 7600-55520 (REV. 5/68)

TAPE LABEL EXAMPLE

DLETE PROBLEM NAME	TAPE UNIT
DENSITY 200 556 (800)	
NSRCH or NBAK IDENTIFICATION	
(BIN) BCD MODE	3
4807-01 ACCOUNT NO.	SMITH, G.L. RL3218 PROGRAMMER

GENERAL CARD SETUP FOR PROGRAM DLETE

```
DLETE,7,100,50000.480701,SMITH
(
(   3
(
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. INPUT
REQUEST TAPE2. OUTPUT
REWIND(TAPE1,TAPE2)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```



14. AUTHY

Program AUTHY

PURPOSE

The program is designed to accumulate authors' names for any specific number of issues. The accumulation is simply a tape merge of File 1 of the current A/W tape (generated by Program TIDEX) with the previously accumulated author tape.

ADVANTAGE

The advantage of this cumulation is to provide a continuously up-to-date author index for the current volume of Nuclear Science Abstracts. A new cumulative tape may be started at any time, such as semi-annually. Semi-annual cumulations are less costly to run, and are less likely to have processing failures than annual cumulations.

INPUT

1. Tapes: One or two tapes are required.
   a. T1 -- The most recent A/W tape.
   b. T2 -- The old author tape (unless T1 is for the beginning issue of a new tape cumulation -- see options 1 and 2 below). Author tapes are designated as either ALPHA, BETA, or GAMMA.
2. Data card, punched according to options below.

OUTPUT

1. T3: New author tape.
2. T4: Print tape and printout (if desired -- see options 1 and 3 below).

OPTIONS

Four options are available in the program, Option 3 is the usual deck setup.

Option 1. First issue, print desired (job setup card no. 1)

1. a. When a new author tape is started at the beginning of a cumulation, no old author tape will be needed. The "REQUEST TAPE2." card will, therefore, be removed from the set of control cards. The DATA input card must have a punch anywhere in cc. 1-10.

b. If a print tape is desired, the "REQUEST TAPE4. OUTPUT--PRINT" card must be in the set of control cards, and the DATA input card will have a punch anywhere in cc. 11-20.

Option 2. First issue of a new cumulation, no print (job setup card no. 2)

2. a. Same as 1. a.

b. If no print tape is desired, the "REQUEST TAPE4. OUTPUT--PRINT" card must be removed from the control cards, and cc. 11-20 of the DATA input card must be left blank.

Option 3. Issues 2-12 and 14-24, print desired (job setup card no. 3)*

3. a. When a new A/W tape adds author names to the existing author tape, the "REQUEST TAPE2." card must be in place in the control card set. The DATA card will be blank in cc. 1-10.

b. Same as 1. b.

Option 4. Issues 2-12 and 14-24, no print (job setup card no. 4)*

4. a. Same as 3. a.

b. Same as 2. b.

DISPOSITION OF OUTPUT

1. New author tape (see p. 14-4).

2. Printout: The author accumulation is kept in a 3-hole notebook binder on the library reference shelf with Nuclear Science Abstracts.

Replace the last index with the most recent output from Program AUTHY. Start a new notebook with Issue 13.

*This option can be used on issues 2-24 if a continuous annual cumulation is desired.

Note that the Issue 12 cumulation may be discarded completely when its corresponding published version arrives around November. Also, the index for the second half of the year (which could be computer-produced around Dec. 1) may be discarded when the published annual index arrives in April.

Explanation of the sequence in which tapes are accumulated

To avoid costly tape errors three author tapes have been placed in the library:

ALPHA 23	#2459
BETA 23	#5940
GAMMA 23	#2065

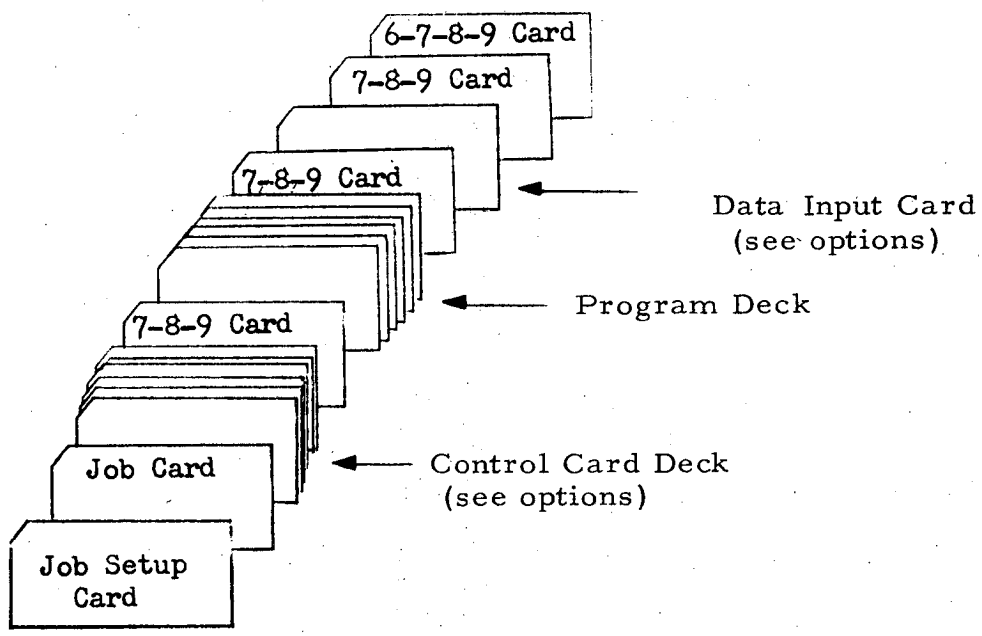
These tapes will be rotated -- both as Input and Output tapes -- so that when ISSUE N has been run on AUTHY and the output tape is, for example, BETA 23, the ISSUE N-1 will be on ALPHA 23 and ISSUE N-2 will be on GAMMA-23. If the output tape, i.e., BETA 23 has bad spots or print errors, then a new BETA 23 will be assigned to the library and ISSUE N will be rerun. If the input tape, ALPHA 23 has bad spots, a new ALPHA 23 will be assigned and ISSUE N-1 will be re-run before ISSUE N is run.*

For clarification and simplification, the following rotation schedule has been established:

VOL. 23	ISSUE	INPUT (T2)	OUTPUT (T3)
	13	NO INPUT TAPE	ALPHA 23
	14	ALPHA 23	BETA 23
	15	BETA 23	GAMMA 23
	16	GAMMA 23	ALPHA 23
	17	ALPHA 23	BETA 23
	18	BETA 23	GAMMA 23
	19	GAMMA 23	ALPHA 23
	20	ALPHA 23	BETA 23
	21	BETA 23	GAMMA 23
	22	GAMMA 23	ALPHA 23
	23	ALPHA 23	BETA 23
	24	BETA 23	GAMMA 23
VOL. 24	1	NO INPUT TAPE	ALPHA 24
	2	ALPHA 24	BETA 24
	3	BETA 24	GAMMA 24
	4	GAMMA 24	ALPHA 24
	5	ALPHA 24	BETA 24
	6	BETA 24	GAMMA 24
	7	GAMMA 24	ALPHA 24
	8	ALPHA 24	BETA 24
	9	BETA 24	GAMMA 24
	10	GAMMA 24	ALPHA 24
	11	ALPHA 24	BETA 24
	12	BETA 24	GAMMA 24

*Note that the "no print" options 2 and 4 are to be used only in the case of reruns with clean new library tapes.

GENERAL CARD SETUP FOR PROGRAM AUTHY



Option 1. Starting a new author tape, with print.

```
AUTHY,5,200,50000.480701,SMITH
(
(   3
(
RUNF(S,,,,Q,,1000000,,XREF)
REQUES, TAPE1. A/W TAPE
REQUEST TAPE3. OUTPUT --
REQUEST TAPE4.  PRINT
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2,TAPE3,TAPE4)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```

JOB SETUP CARD EXAMPLE

COS JOB SETUP CARD — PROBLEM NAME: AUTHY — ACCOUNT NUMBER: 4807-01 — NAME OF PROGRAMMER: SMITH, G. L. — EXTENSION: 6308

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	A/W		(I) O X		
2	T3	ALPHA 24	2459	(I) (O) X		
3	T4	PRINT		I (O) X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:
PUT RING IN T3

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 — 7600-55520 (REV. 5/68)

ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
4807-01	SMITH, G. L.	4807-01	SMITH, G. L.

PRINT ☐ PROGRAM CONTROL MONITOR ☐ SINGLE SPACE

PAPER TYPE: 1-PLY FOG

148863 (3)

PUNCH ☐ CARD TYPE:

RL-2714 (REV. 7/67)

TAPE UNIT: DATE & TIME

NO. FILES 1 NO. CARDS

148863 (3)

DENSITY 200 556 (800)

Option 2. Starting a new author tape, no print.

```
AUTHY,5,200,50000.480701,SMITH
(
(   3
(
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. A/W TAPE
REQUEST TAPE3. OUTPUT --
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2,TAPE3,TAPE4)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```

JOB SETUP CARD EXAMPLE

COS JOB SETUP CARD — PROBLEM NAME: AUTHY — ACCOUNT NUMBER: 4807-01 — NAME OF PROGRAMMER: SMITH, G.L. — EXTENSION: 6308

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	A/W		(I) O X		
2	T3	ALPHA 24	2459	(I) (O) X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:
PUT RING IN T3

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

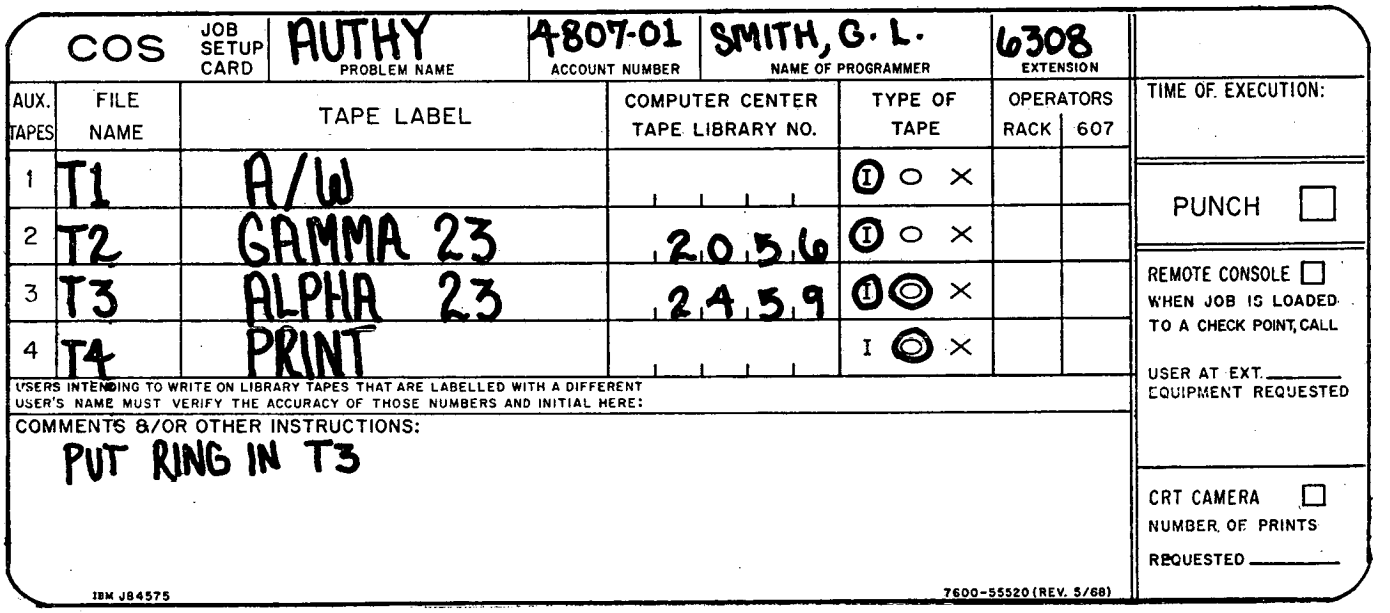
CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 — 7600-55520 (REV. 5/68)

Option 3. Adding new names to author tape, with print.

```
AUTHY,5,200,50000.480701,SMITH
(
(   3
(
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. A/W TAPE
REQUEST TAPE2. INPUT --
REQUEST TAPE3. OUTPUT --
REQUEST TAPE4.  PRINT
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2,TAPE3,TAPE4)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```

JOB SETUP CARD EXAMPLE



COS JOB SETUP CARD | PROBLEM NAME: AUTHY | ACCOUNT NUMBER: 4807-01 | NAME OF PROGRAMMER: SMITH, G. L. | EXTENSION: 6308

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	A/W		I ○ ×		
2	T2	GAMMA 23	2056	I ○ ×		
3	T3	ALPHA 23	2459	I ◎ ×		
4	T4	PRINT		I ◎ ×		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:
PUT RING IN T3

TIME OF EXECUTION:

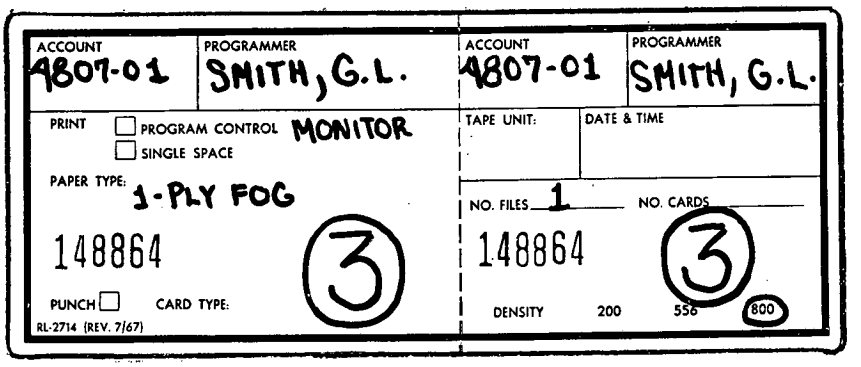
PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)



ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
4807-01	SMITH, G.L.	4807-01	SMITH, G.L.

PRINT ☐ PROGRAM CONTROL MONITOR
☐ SINGLE SPACE

PAPER TYPE: 1-PLY FOG

148864 3

PUNCH ☐ CARD TYPE:

RL-2714 (REV. 7/67)

TAPE UNIT:

DATE & TIME

NO. FILES 1 NO. CARDS

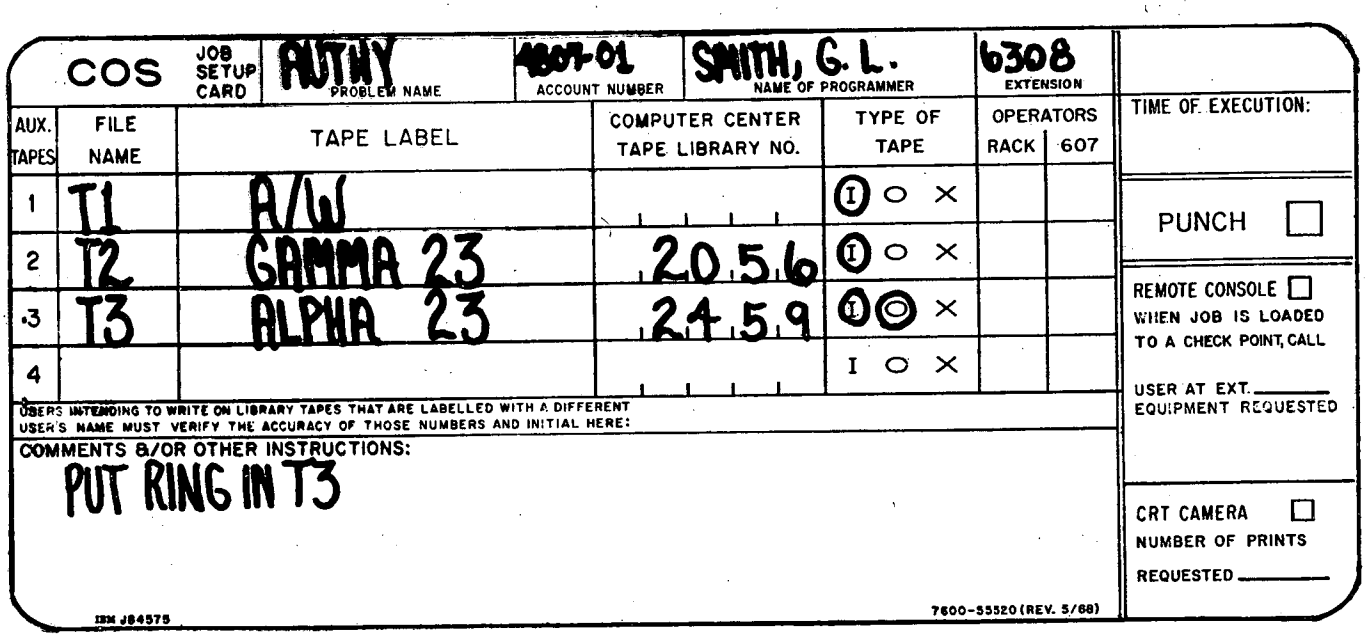
148864 3

DENSITY 200 556 800

Option 4. Adding new names to author tape, no print.

```
AUTHY,5,200,50000.480701,SMITH
(
(   3
(
RUNF(S,,,,Q,,1000000,,XREF)
REQUEST TAPE1. A/W TAPE
REQUEST TAPE2. INPUT --
REQUEST TAPE3. OUTPUT --
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LODE(I=LGO,M=MAPFILE,O=DROPLDR)
XEQ.
EXIT.
DMP.
WBR(11,350000)
DMPS.
REWIND(MAPFILE,Q)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
FIN.
UNLOAD(TAPE1,TAPE2,TAPE3,TAPE4)
CXIT.
REWIND(Q,MAPFILE)
COPYBF(Q,OUTPUT)
COPYBF(MAPFILE,OUTPUT)
```

JOB SETUP CARD EXAMPLE



COS JOB SETUP CARD — PROBLEM NAME: AUTHY — ACCOUNT NUMBER: 4807-01 — NAME OF PROGRAMMER: SMITH, G. L. — EXTENSION: 6308

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T1	A/W		(I) O X		
2	T2	GAMMA 23	2056	(I) O X		
3	T3	ALPHA 23	2459	(I) (O) X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:
PUT RING IN T3

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐
WHEN JOB IS LOADED TO A CHECK POINT, CALL
USER AT EXT. _____
EQUIPMENT REQUESTED

CRT CAMERA ☐
NUMBER OF PRINTS REQUESTED _____

IBM J84575 — 7600-55520 (REV. 5/68)

EXAMPLE OF OUTPUT FOR PROGRAM AUTHY

2533-->AABERG, B.
2334-->ABDEL-GAWAD, A. S.
902-->ABDUSAMATOV, H. I.
2348-->ABOOD, KARIN A.
2157-->ABRAHAM, JOHN
3276-->ABRAMOVICH, M.
3272-->ABRAMS, G. S.
3757-->ABUL-MAGD, A. Y.
3329-->ACHARYA, R.
2244-->ACHMATOWICZ-SZMARJKE, TERESA
189-->ACKERHALT, R. E.
773-->ADACHI, G.
3857-->ADAMSKI, J.
3501-->ADAMS, J. B.
2482-->ADAM, G.
875-->ADGIE, R. L.
454-->ADITYA, P. K.
1025-->ADITYA, P. K.
1734-->AFANAS≠EV, N. G.
3615-->AFANAS≠EV, N. G.
1050-->AGARWAL, D. C.
2081-->AGASYAN, P. K.
150-->AGGARWAL, K. S.
575-->AGRANAT, V. Z.
2841-->AGRINIER, B.
3423-->AHARONY, A.
1584-->AHMED, M. A.
3374-->AHMED, M. A.
3150-->AIHARA, SHUKO
1-->AITKEN, E. A.
2842-->AIZU, KO
1274-->AKIMCHENKO, I. P.
235-->AKKI, S. B.
3152-->ALANAKYAN, YU. R.
695-->ALBERTS, L.
3541-->ALBRECHT, R. W.
1746-->ALBRECHT, K.
3302-->ALBRIGHT, C. H.
3248-->ALBROW, M. G.
625-->ALDERTON, J. P.
3640-->ALDRIDGE, ANN MARSHALL.
1439-->ALEKSANDROV, YU. A.
3159-->ALEKSIN, V. F.
1667-->ALENITSKII, YU. G.
461-->ALET, IRENEE
3263-->ALEXANDER, G.
2332-->ALEXANDROV, S.
3660-->ALEY, R.
1669-->ALGER, DONALD L.
2138-->ALIMARIN, I. P.
1466-->ABARBANEL, HENRY D. I.
2334-->ABDEL-RASSOUL, A. A.
1605-->ABERS, ERNEST
3224-->ABOU-ELNASR, T. Z. A.
748-->ABRAKHIMOV, U.
1407-->ABRAMS, G. S.
2401-->ABRAMYAN, E. A.
594-->ACETO, HENRY JR.
127-->ACHE, HANS J.
1073-->ACHTERMANN, F.
3509-->ACKER, ROBERT C.
3462-->ADACHI, TOSHIMI
55-->ADAMS, F.
635-->ADAMS, M. J.
3148-->ADAM, J.
2206-->ADIN, ANTHONY
455-->ADITYA, P. K.
524-->AFANAS≠EV, B. P.
3244-->AFANAS≠EV, N. G.
1734-->AFANAS≠EV, V. D.
1051-->AGASHE, V. V.
2722-->AGEEV, V. N.
1241-->AGNELLO, V.
1279-->AGRAWAL, M. D.
3287-->AGUILAR-BENITEZ, M.
2490-->AHLSTROM, J. C.
3373-->AHMED, M. A.
3613-->AHMED, M.
947-->AIKIN, A. C.
3152-->AIVAZYAN, YU. M.
2345-->AKIBA, KENICHI
2484-->AKIYAMA, HIROMITSU
546-->AKOVBIANTZ, A.
950-->ALBEE, A. L.
1329-->ALBERTS, L.
1363-->ALBRECHT, W.
1876-->ALBRECHT, L.
1421-->ALBRIGHT, J. R.
3262-->ALBROW, M. G.
1977-->ALDRICH, P. H.
1291-->ALECU, I. D.
484-->ALEKSEEVA, Z. M.
2681-->ALEKSYUK, M. M.
3589-->ALESSI, VICTOR ELLIOT.
957-->ALEXANDER, E. C. JR.
3921-->ALEXANDER, W. K.
3056-->ALEXEFF, I.
2383-->ALFREDSON, P. G.
1269-->ALIEV, A. A.
2199-->ALIMARIN, I. P.

Program REPRT

PURPOSE

Program REPRT is designed to accumulate report numbers in numerical order for any specific number of NSA issues. This report number listing is created by merging report numbers from the most current SRCH tape (generated by Program TIDEX) with the previous SRCH tape.

Program REPRT actually consists of two programs. The sort program extracts report numbers from the current SRCH tape, places them in numerical order, and prepares a file that contains the new report number listing. A second auxiliary program merges the new file with previously accumulated numbers.

ADVANTAGE

This cumulation of report numbers provides the user with an up-to-date listing of report numbers for the current volume of Nuclear Science Abstracts. A new cumulative tape may be started at any time. Semi-annual listings may be of most use to the tape user.

INPUT

1. Tapes: One or two tapes are required.
   a. T7 -- The most recent SRCH tape.
      T2 -- The old REPORT tape (unless T7 is for the beginning issue of a new tape cumulation -- see options 1 and 2). Tapes which are used with Program REPRT are designated as either REPORT1, REPORT2, or REPORT3.

2. Data card, punched according to options listed on the following page.

OUTPUT

1. T3: New REPORT tape.

2. T4: Print tape and printout (if desired -- see options 1 and 3).

OPTIONS

Four options are available in the program. Option 3 is the usual deck setup.

Option 1. First issue of new volume, printed out requested (job setup card no. 1)

1. a. When a new report tape is started at the beginning of a cumulation, no old report tape will be required as input. The "REQUEST TAPE2." card should be removed from the control card set. The DATA input card must have a punch anywhere in cc. 1-10.

   b. When a print tape is required, the "REQUEST TAPE4. OUTPUT -- PRINT" card must be in the control card set, and the DATA input card must have a punch anywhere in cc. 11-20.

Option 2. First issue of a new volume, no printout (job setup card no. 2)

2. a. Same as 1.a.

   b. If no print tape is requested, the "REQUEST TAPE4. OUPUT -- PRINT" card should be removed from the control card set; cc. 11-20 of the DATA input card must be left blank.

Option 3. Issues 2-12 and 14-24, printout requested (job setup card no. 3)*

3. a. When a new SRCH tape adds report numbers to the existing report tape, the "REQUEST TAPE2." card must be in place in the control card set; cc. 1-10 of the DATA card must be left blank.

   b. Same as 1.b.

Option 4. Issues 2-12 and 14-24, no printout (job setup card no. 4)*

4. a. Same as 3.a.

   b. Same as 2.b.

---

*This option can be used on issues 2-24 if a continuous annual cumulation is desired.

DISPOSITION OF OUTPUT

1. New report tape (see p. 14.1-4).

2. Printout: The report number accumulation is filed on the library reference shelf with Nuclear Science Abstracts. Report number listings should be replaced regularly with the most recent output from Program REPRT.

3. If report number listings are cumulated on a semiannual basis, the first 12 issues' cumulation may be discarded completely when the printed version of the semiannual index of Nuclear Science Abstracts is received. The cumulative report number index for the second half of the year may also be discarded when the published annual index is received.

Explanation of the sequence in which tapes are accumulated

To avoid tape-processing errors when running Program REPRT, three special tapes should be reserved in the library, to be used exclusively for the cumulation of the report number listings. These tapes can be labeled:

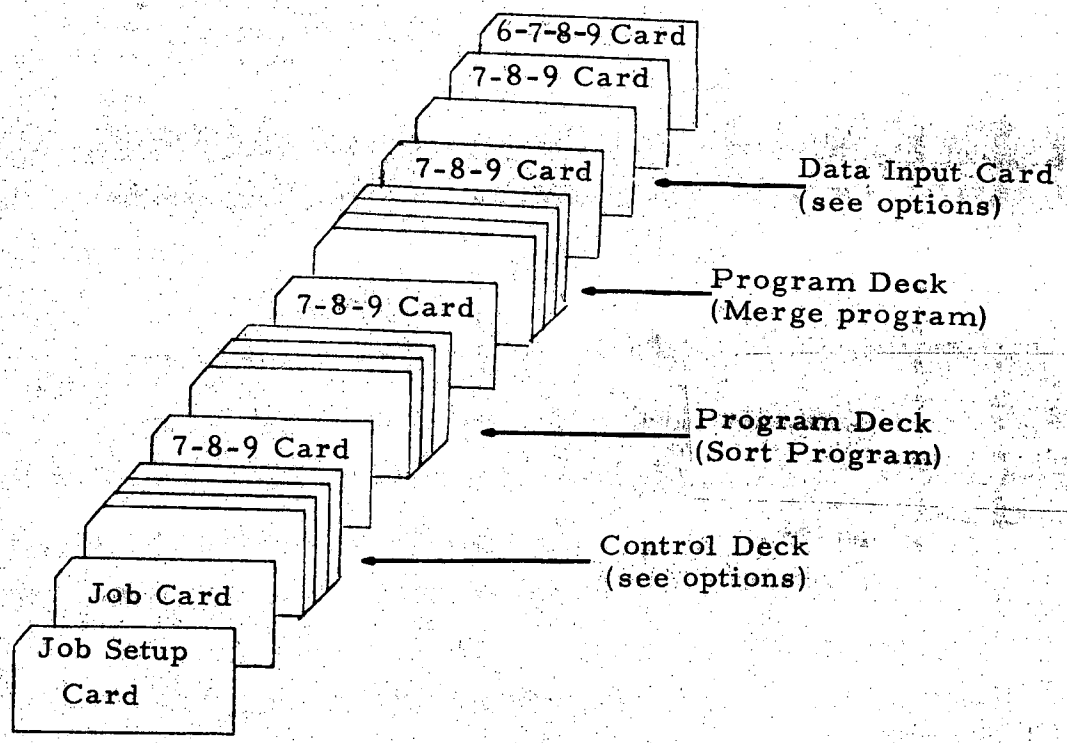
REPORT1
REPORT2
REPORT3

These tapes can be rotated -- both as input and output tapes. At the beginning of a new volume the REPORT1 tape will be used as an output tape. In this instance no "old" input REPORT tape is necessary, since this run is the first in a cumulation. When the second issue of the volume is processed, REPORT2 will serve as the output tape. When the third issue of the volume is processed, REPORT3 will serve as the output tape.

For clarification, the following rotation schedule for use with the REPORT tapes has been established:

VOL. 25	ISSUE	INPUT(2)	OUTPUT(3)
	1	NO INPUT TAPE	REPORT1
	2	REPORT1	REPORT2
	3	REPORT2	REPORT3
	4	REPORT3	REPORT1
	5	REPORT1	REPORT2
	6	REPORT2	REPORT3
	7	REPORT3	REPORT1
	8	REPORT1	REPORT2
	9	REPORT2	REPORT3
	10	REPORT3	REPORT1
	11	REPORT1	REPORT2
	12	REPORT2	REPORT3
	13	NO INPUT TAPE	REPORT1
	14	REPORT1	REPORT2
	15	REPORT2	REPORT3
	16	REPORT3	REPORT1
	17	REPORT1	REPORT2
	18	REPORT2	REPORT3
	19	REPORT3	REPORT1
	20	REPORT1	REPORT2
	21	REPORT2	REPORT3
	22	REPORT3	REPORT1
	23	REPORT1	REPORT2
	24	REPORT2	REPORT3

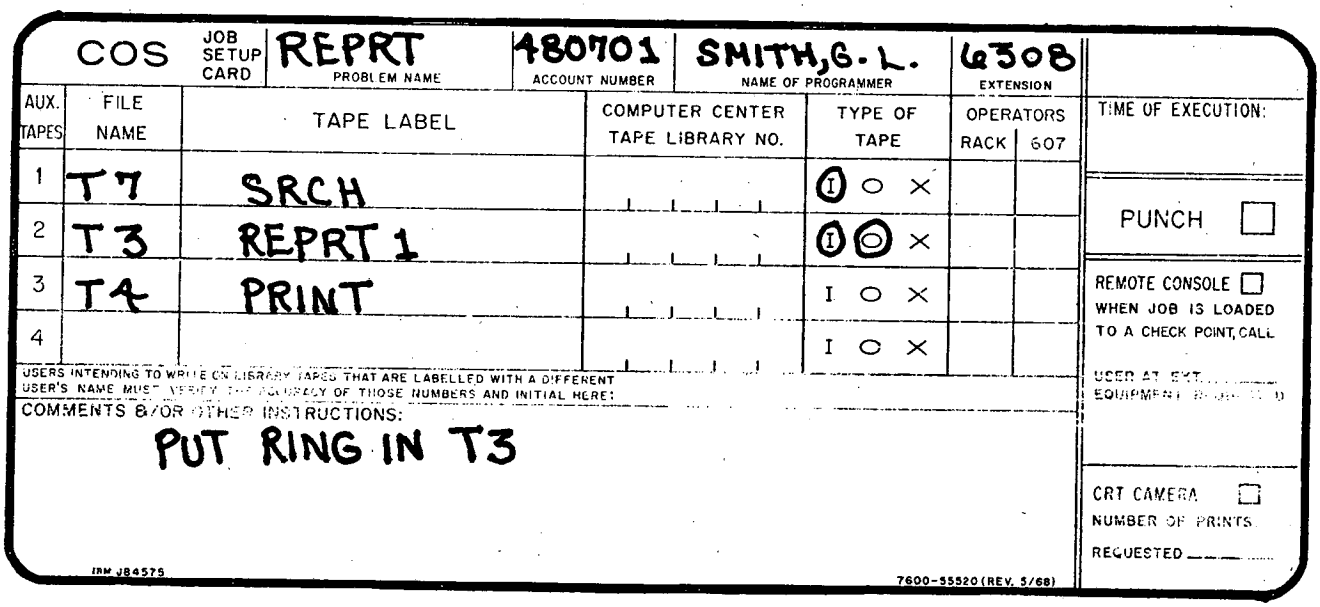
GENERAL CARD SETUP FOR PROGRAM REPRT



Option 1. Starting a new report tape, with print.

```
REPRT,5,4000,50000.480701,SMITH,G.L.
FLOOR(3)
RUNF(S)
RUNF(S)
REQUEST TAPE7.  SRCH
REWIND(TAPE7)
LOAD(LGO)
EXECUTE.
RETURN(TAPE7)
REQUEST TAPE3.  REPRT  INPUT/OUTPUT
REQUEST TAPE4.  PRINT  OUTPUT
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LOAD(LGO)
EXECUTE.
EXIT.
DMP.
DMP(22000)
FIN.
UNLOAD(TAPE2,TAPE3,TAPE4)
```

JOB SETUP CARD EXAMPLE



COS JOB SETUP CARD | REPRT (PROBLEM NAME) | 480701 (ACCOUNT NUMBER) | SMITH,G.L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T7	SRCH		I ○ ×		
2	T3	REPRT 1		I ○ ×		
3	T4	PRINT		I ○ ×		
4				I ○ ×		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

PUT RING IN T3

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

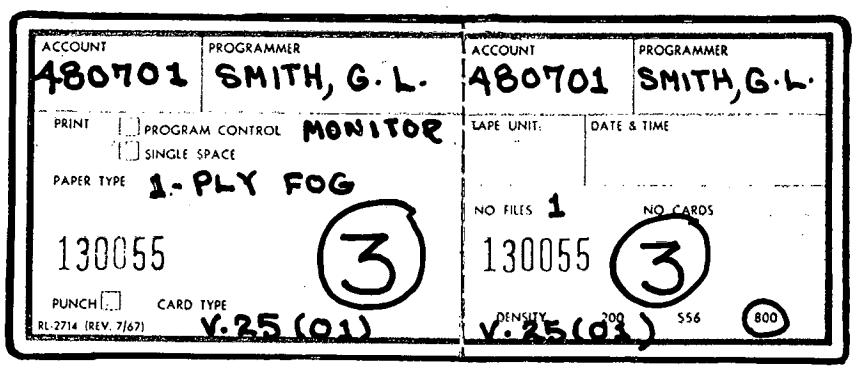
USER AT EXT. ____

EQUIPMENT REQUIRED

CRT CAMERA ☐

NUMBER OF PRINTS REQUESTED ____

IBM J84575 7600-55520 (REV. 5/68)



ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
480701	SMITH, G. L.	480701	SMITH, G.L.

PRINT ☐ PROGRAM CONTROL MONITOR ☐ SINGLE SPACE

PAPER TYPE 1-PLY FOG

130055 3

PUNCH ☐ CARD TYPE V.25 (01)

RL-2714 (REV. 7/67)

TAPE UNIT: DATE & TIME

NO FILES 1 NO CARDS

130055 3

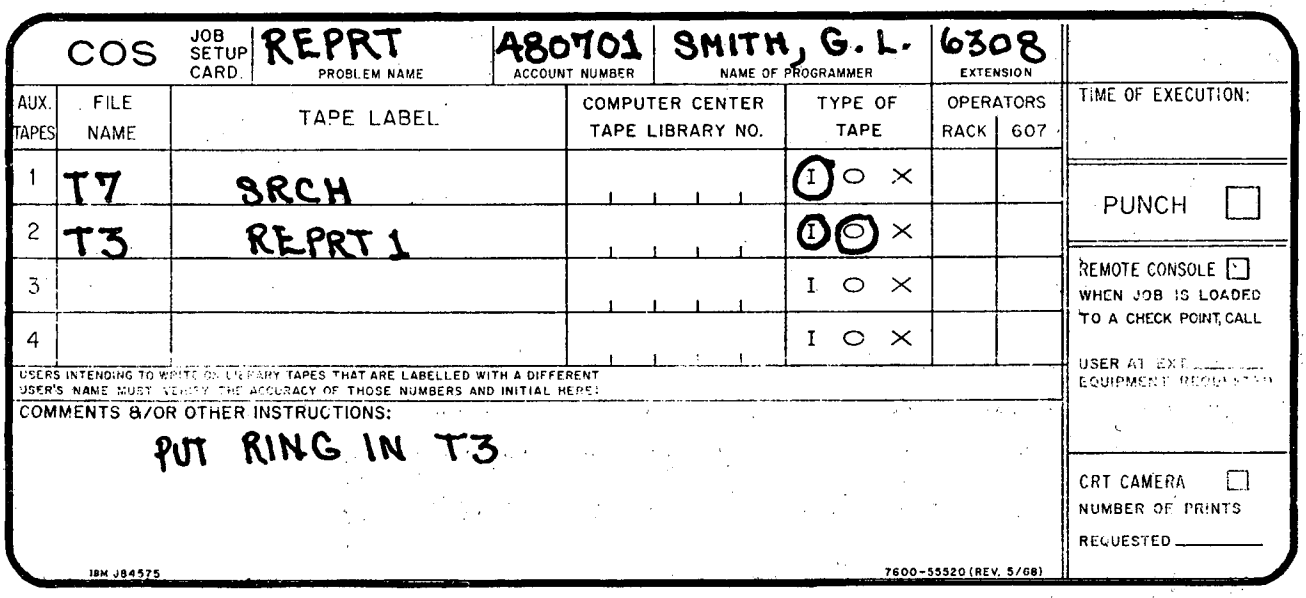
DENSITY 200 556 800

V.25 (03)

Option 2. Starting a new report tape, no print.

```
REPRT,5,4000,50000.480701,SMITH,G.L.
FLOOR(3)
RUNF(S)
RUNF(S)
REQUEST TAPE7.  SRCH
REWIND(TAPE7)
LOAD(LGO)
EXECUTE.
RETURN(TAPE7)
REQUEST TAPE3.  REPRT  INPUT/OUTPUT
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LOAD(LGO)
EXECUTE.
EXIT.
DMP.
DMP(22000)
FIN.
UNLOAD(TAPE2,TAPE3,TAPE4)
```

JOB SETUP CARD EXAMPLE



COS JOB SETUP CARD. REPRT (PROBLEM NAME) 480701 (ACCOUNT NUMBER) SMITH, G. L. (NAME OF PROGRAMMER) 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T7	SRCH		I O X		
2	T3	REPRT 1		I O X		
3				I O X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

PUT RING IN T3

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. _____ EQUIPMENT REQUESTED _____

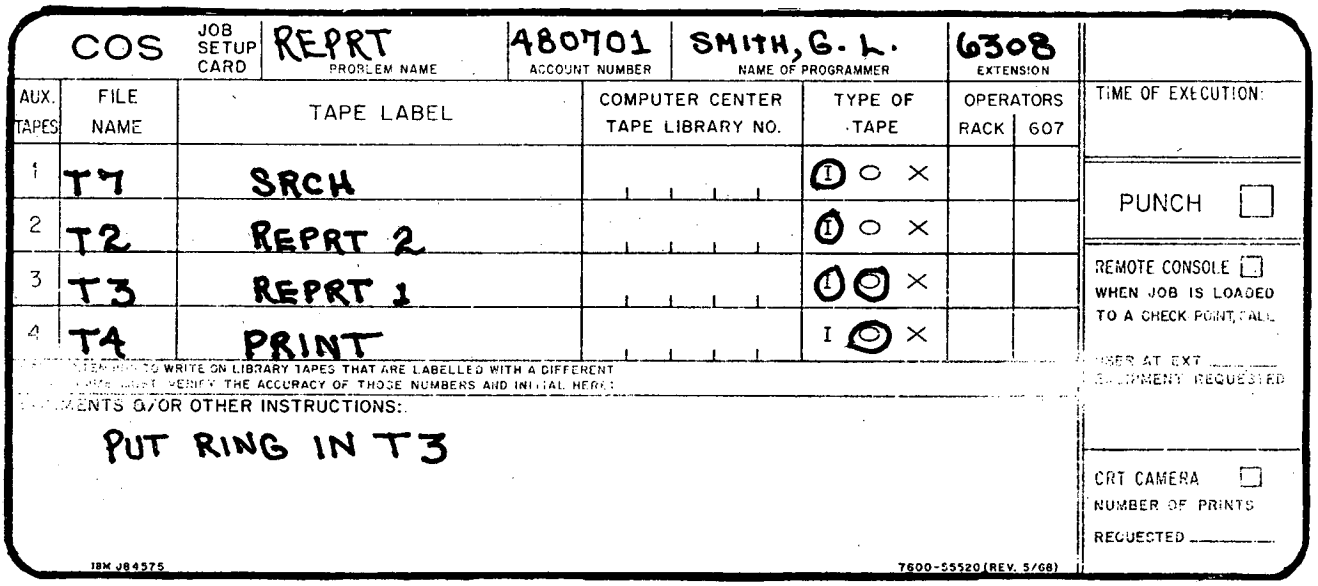
CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/68)

Option 3. Adding new report numbers to report tape, with print.

```
REPRT,5,4000,50000.480701,SMITH,G.L.
FLOOR(3)
RUNF(S)
RUNF(S)
REQUEST TAPE7.  SRCH
REWIND(TAPE7)
LOAD(LGO)
EXECUTE.
RETURN(TAPE7)
REQUEST TAPE2.  REPRT INPUT
REQUEST TAPE3.  REPRT  INPUT/OUTPUT
REQUEST TAPE4.  PRINT  OUTPUT
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LOAD(LGO)
EXECUTE.
EXIT.
DMP.
DMP(22000)
FIN.
UNLOAD(TAPE2,TAPE3,TAPE4)
```

JOB SETUP CARD EXAMPLE



COS JOB SETUP CARD | REPRT (PROBLEM NAME) | 480701 (ACCOUNT NUMBER) | SMITH, G. L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T7	SRCH		I ○ ×		
2	T2	REPRT 2		I ○ ×		
3	T3	REPRT 1		I ○ ×		
4	T4	PRINT		I ○ ×		

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

NUMBER AT EXT ____ EQUIPMENT REQUESTED

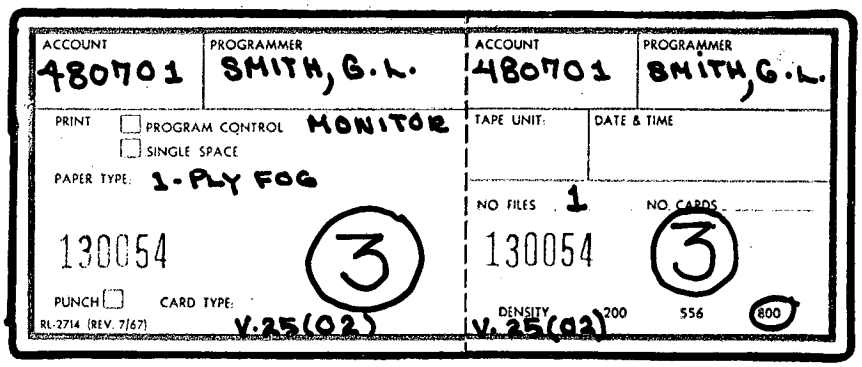
CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED ____

ITEMS TO WRITE ON LIBRARY TAPES THAT ARE LABELLED WITH A DIFFERENT NUMBER MUST VERIFY THE ACCURACY OF THOSE NUMBERS AND INITIAL HERE:

COMMENTS AND/OR OTHER INSTRUCTIONS:

PUT RING IN T3

IBM J84575 7600-55520 (REV. 5/68)



ACCOUNT	PROGRAMMER	ACCOUNT	PROGRAMMER
480701	SMITH, G.L.	480701	SMITH, G.L.

PRINT ☐ PROGRAM CONTROL MONITOR ☐ SINGLE SPACE

PAPER TYPE: 1-PLY FOG

TAPE UNIT: DATE & TIME

NO FILES 1 NO. CARDS

130054 3 130054 3

PUNCH ☐ CARD TYPE: V.25(02) DENSITY 200 556 800 V.25(02)

RL-2714 (REV. 7/67)

Option 4. Adding new report numbers to report tape, no print.

```
REPRT,5,4000,50000.480701,SMITH,G.L.
FLOOR(3)
RUNF(S)
RUNF(S)
REQUEST TAPE7.  SRCH
REWIND(TAPE7)
LOAD(LGO)
EXECUTE.
RETURN(TAPE7)
REQUEST TAPE2.  REPRT INPUT
REQUEST TAPE3.  REPRT  INPUT/OUTPUT
REWIND(TAPE1,TAPE2,TAPE3,TAPE4)
LOAD(LGO)
EXECUTE.
EXIT.
DMP.
DMP(22000)
FIN.
UNLOAD(TAPE2,TAPE3,TAPE4)
```

JOB SETUP CARD EXAMPLE

COS JOB SETUP CARD | REPRT (PROBLEM NAME) | 480701 (ACCOUNT NUMBER) | SMITH, G.L. (NAME OF PROGRAMMER) | 6308 (EXTENSION)

AUX. TAPES	FILE NAME	TAPE LABEL	COMPUTER CENTER TAPE LIBRARY NO.	TYPE OF TAPE	OPERATORS RACK	OPERATORS 607
1	T7	SRCH		(I) O X		
2	T2	REPRT 2		(I) O X		
3	T3	REPRT 1		(I) (O) X		
4				I O X		

USERS INTENDING TO WRITE ON LIBRARY TAPES [illegible] LABELED WITH A DIFFERENT USER'S NAME MUST VERIFY THE ACCURACY OF [illegible] AND INITIAL HERE:

COMMENTS &/OR OTHER INSTRUCTIONS:

PUT RING IN T3

TIME OF EXECUTION:

PUNCH ☐

REMOTE CONSOLE ☐ WHEN JOB IS LOADED TO A CHECK POINT, CALL

USER AT EXT. ____ EQUIPMENT READY

CRT CAMERA ☐ NUMBER OF PRINTS REQUESTED _____

IBM J84575 7600-55520 (REV. 5/69)

EXAMPLE OF OUTPUT FOR PROGRAM REPRT

```
 298-->AAEC/E--208)
 363-->AAEC/TM--550)
 645-->AD--474255)
 646-->AD--476420)
 647-->AD--487419)
 410-->AD--704736)
1639-->AD--705548)
 701-->AD--706004)
1571-->AD--706833)
1480-->AD--706838)
1625-->AD--706881)
1594-->AD--706929)
1220-->AD--707116)
 702-->AD--707336)
1187-->AD--707347)
 882-->AD--707486)
 364-->AD--707706)
1360-->AD--708409)
 580-->AD--708431)
 762-->AD--708476)
 412-->AD--708877)
 883-->AD--709205)
 960-->AD--709258)
1663-->AD--709682)
 365-->AD--806313)
 627-->AD--821672)
 366-->AECL--3564)
 320-->AECL--3664)
1865-->AECL--3691)
1974-->AEC-TR--7027/6)
 295-->AEC-TR--7100)
1975-->AEC-TR--7194)
1877-->ANL-EBR--16)
1849-->ANL-TRANS--858)
1906-->ANL--7469)
1866-->ANL--7664)
1918-->ANL--7695)
1976-->ARLV--351-13)
 285-->AWRE-O--47/70)
1664-->BARC--459)
  38-->BHO--69-1)
1551-->BNL-TR--358)
1978-->BNL--15158)
1979-->BNL--15180)
1809-->BNWL-SA--2737)
 521-->BNWL--1341(APP.I)
 720-->BNWL--1349-2, PP 2.1-12)
 703-->BNWL--1349-2, PP 4.1-154)
 776-->BNWL--1349-2, PP 6.1-16)
 340-->BNWL--1349-2, PP 8.1-8)
 140-->AAEC/LIB/BIB--254)
 458-->AAEC/TM--557)
 740-->AD--474854)
 626-->AD--480455)
 648-->AD--487626)
 420-->AD--705505)
1496-->AD--705549)
 761-->AD--706221)
1438-->AD--706834)
 353-->AD--706853)
1429-->AD--706920)
 881-->AD--707102)
 293-->AD--707122)
1191-->AD--707346)
 294-->AD--707440)
1196-->AD--707676)
1709-->AD--707999)
 520-->AD--708428)
 411-->AD--708466)
 615-->AD--708573)
1171-->AD--709185)
1188-->AD--709230)
1216-->AD--709594)
 284-->AD--709735)
 494-->AD--806412)
 616-->AD--829844)
 741-->AECL--3655)
 197-->AECL--3684)
1973-->AEC-TR--7027/5)
 180-->AEC-TR--7027/7-8)
1197-->AEC-TR--7163)
 321-->AI-AEC--12939)
1878-->ANL-TRANS--857)
 112-->ANL-TRANS--859)
1710-->ANL--7641)
1867-->ANL--7686)
1848-->ANL--7742)
 113-->AWRE-O--37/70)
 649-->AWRE-O--49/70)
1977-->BDX--613-148)
1735-->BNL-TR--351)
1439-->BNL-TR--372)
1665-->BNL--15174)
   4-->BNWL-MA--76(REV.2))
1868-->BNWL--1260)
 628-->BNWL--1349-2)
 775-->BNWL--1349-2, PP 3.1-55)
 704-->BNWL--1349-2, PP 5.1-42)
 777-->BNWL--1349-2, PP 7.1-3)
 617-->BNWL--1349-2, PP 9.1-)
```

APPENDIX A

APPENDIX A

Profile Preparation and Keypunching Format for User Profile Data Deck

PROFILE PREPARATION

Suggestions on methods of gathering profile information are given in Rept. No. UCRL-19290. In the present write-up it is assumed that the profiler is familiar with the subject areas of interest of the user, and that he has translated these interests into the kinds of search elements that are available on the computer tape of Nuclear Science Abstracts. Each document has an identifying NSA abstract number. The main constituent of the tape file that distinguishes one document, or part of a document, from another is the array of selectors (EURATOM keywords and added terms) used in indexing the document. Also present on the tape file is a four-digit code representing the section and sub-section of NSA, as well as various elements of descriptive cataloging such as title, author, etc. The tape format is described in great detail in the paper "Magnetic Tape Formats for AEC Entry and Keyword Files," October, 1967. The "category" deck of NSA section/subsections was derived from the authority "Extended Subject Arrangement of Material in Nuclear Science Abstracts," Vol. 23, January, 1969. The distribution of descriptive cataloging delimiters among the seven different types of documents is shown in the table on p. 14 of TID-4577(Rev.3). Descriptive Cataloging Guide. Div. Tech. Info. Ext., USAEC, December, 1968.*

The profile deck for each SDI user is made up of his header card and followed by a card designating languages he will accept, followed by cards containing coded logical statements which reflect his interests and ask questions about search elements in the documents.

```
 99   LEFOG, LEROY L.   BLDG  50B RM  4206 X6308                          99000
ALL                                                                       99001
*1+3 *2+3 *6+2 *11+3 *12+3 S                                              99011
3925 3926 3930 599 2757 5059 2256 3559 2476 582 2757 5105 582 2757 C      99012
*1+3 S                                                                    99021
5676 11249 10842 C                                                        99022
* 1-1 S                          *END OF PROFILE$                        99100
```

* The first two papers are available from the USAEC Division of Technical Information Extension, P. O. Box 62, Oak Ridge, Tennessee 37830. The last can be obtained for $1.00 from CFSTI.

Since only identifying numbers are used, the profiler is spared the tedious task of spelling out long search terms (he does have the chore of looking up the numbers in a selector authority,* but this must be done in any case to verify the existence of a term). Profile revision often requires only the rearranging of the selector numbers.

In mechanized searching, Program TIDE compares the coded interests of each user with the indexing of each document. The computer "understands" the above listing very well, but in order for it to be intelligible to the profiler or user, the deck must be processed by a translating routine called Program NOMAN. NOMAN looks at each selector NO. and prints out the English equivalents for the "MAN" as Boolean statements.

The principle of selector matchings can best be explained by an example. Suppose a user is interested in the radiation effects on the bones and tissues of man. In searching through documents, we may ask the question: are the terms "radiations" or "radiation effects" or "radiation injuries" associated with "man" or "tissues" or "bones" in the document? The phrase "associated with" can be replaced by the distributive law and we can symbolize the logical statement:

$$(A_1 + A_2 + A_3) * (B_1 + B_2 + B_3)$$

In the first group we have the terms A_1 (radiation), A_2 (radiation effects), etc., and in the second group we have B_1 (man), etc. Also, we may want to reject the document if it refers to radiation effects on plants or insects; we can do this by adding the statement "and not C_1 (plants) or C_2 (insects)." Symbolizing the question we have:

$$\left[(A_1 + A_2 + A_3) * (B_1 + B_2 + B_3)\right] - (C_1 + C_2)$$

This statement, when properly formatted for NOMAN, would be printed out by the program as follows:

<u>Group 1</u>
RADIATION EFFECTS
RADIATION INJURIES
RADIATIONS

<u>Group 2</u>
BONES
MAN
TISSUES

<u>Group 6</u>
INSECTS
PLANTS

---

* FLIST, distributed quarterly by LRL, Berkeley.

Note the practice of listing the members of each group in alphabetical order. This is helpful in proofreading, because any term not in strict alphabetical order may be the result of an error in manual look-up or keypunching.

We may also be interested in the use of tracer techniques in the blood of man. Realizing that "labelling" is sometimes synonymous with "tracers" we could also submit two separate questions to the computer as:

Question 2	Question 3
Group 1 LABELLED COMPOUNDS	Group 1 TRACER TECHNIQUES
Group 2 BLOOD	Group 2 BLOOD
Group 3 MAN	Group 3 MAN

The above concepts are closely related to the concept in the previous example. There is a way to incorporate both queries into one question by using a further refinement in profile construction. Of further importance is the fact that considerable computer processing time can be saved by coalescing the queries into one Boolean statement. The complete statement could thus be symbolized as:

$$\left\{\left[(A_1 + A_2 + A_3) * (B_1 + B_2 + B_3) - (C_1 + C_2)\right]\right\} +$$
$$\left\{\left[D_1 * E_1 * B_2\right] + \left[F_1 * E_1 * B_2\right]\right\} .$$

The listing of the cards punched for this formation appeared on p. 1 of this section. On the following page is the translation, by Program NOMAN of the listing on p. 1.

The program provides for 15 groups. Groups 1-5 can be "anded" together in a positive request; groups 6-10 are available for negation, however, groups beyond 6 are seldom used; and groups 11-15 can be used to tack on simple term combinations in order to save program running time. An example of terms often found together would be NUCLEAR and CROSS SECTIONS. The sample questions 2 and 3 above, have been converted into groups 11 and 12 and added on to the main question as shown in p. 4.

KEYPUNCHING FORMAT

The profiles are punched in free format in cc. 1-72. Care must be taken to have at least one punch in cc. 1-10 because a blank in cc. 1-10 signals the end of all profiles, and thus the end of the run.

PROFILE 1 99 LEFOG, LEROY L. BLDG 50B RM 4206 X6308 99000

LANGUAGE ALL 99001

WORD	NO.	TYPE	COUNT	AVE.
QUESTION 1 HAS 14 TERMS				
GROUP 1 3 TERMS				
RADIATION EFFECTS	3925	1	4049	225
RADIATION INJURIES	3926	1	847	47
RADIATIONS	3930	1	1102	61
GROUP 2 3 TERMS				
BONES	599	1	320	18
MAN	2757	1	1660	92
TISSUES	5059	1	781	43
GROUP 6 2 TERMS				
INSECTS	2256	1	192	11
PLANTS	3559	1	475	26
GROUP 11 3 TERMS				
LABELLED COMPOUNDS	2476	1	401	22
BLOOD	582	1	257	14
MAN	2757	1	1660	92
GROUP 12 3 TERMS				
TRACER TECHNIQUES	5105	1	484	27
BLOOD	582	1	257	14
MAN	2757	1	1660	92
QUESTION 2 HAS 3 TERMS				
GROUP 1 3 TERMS				
ACETYLCHOLINE	5676	9	6	LT 1
CHOLINE	11249	9	9	LT 1
CHOLINESTERASE	10842	9	9	LT 1

-------END OF PROFILES-------

An individual profile is made up of five different kinds of cards. There can be as many as 99 different question formulation cards (each one followed by the appropriate data cards), and as many as 9 data cards for each question. If more than 9 data cards are needed, be sure to limit the total number of entries to 1977 (one LRL profile has 1079 terms in a question).

On all profile cards, columns 75-80 are not read by the computer but are sequentially numbered as a precautionary measure (if they are dropped on the floor they can be reassembled on a card sorter). When more than 9 data cards are needed the sequence number can "spill over" into the adjacent column earmarked for the question number, and it can be changed to keep the sequence running smoothly.

The five different kinds of cards are:

1) Header Card

cc. 1-72	Name, address, and other relevant information about the user
cc. 75-77	User number, right-adjusted to c. 77
cc. 78-79	Question number, right-adjusted to 79
cc. 80	Card sequence number within question

2) Language Card

The card following the header designates the language the user will accept. If he has no preference, punch the word ALL in cc. 1-3. If he wants to limit his output to items written only in English the language card should be blank. If he wants to designate languages other than English (he will get English too), those languages must be punched within the decades of card column numbers on the cards, beginning with column 1 of each decade. No language name is longer than 10 characters; for example, Serbo-Croatian is punched SERBO-CROA.

3) Question Formulation Card

This card designates the groups, which are generally "anded" together, and the number of terms which are "ored" together within each group. As an example, suppose a group card is punched

*1+4 *2+2 *6+2 S

This means that there are four terms in group 1, two terms in group 2, and two terms in group 6. Notice that the group numbers are preceded by asterisks and that the letter S terminates the list. Any data punched beyond column 72 will be ignored.

4) Question Data Card(s)

On the next card, or cards, are punched the term identification numbers in the order that they should fit into the groups formatted above. The data for the above formulation might be:

3925 3926 3927 3930 -2863 5059 2256 3559 C

The first four terms belong to group 1, the next two to group 2, and the next two to group 6. The letter C terminates the list and anything beyond column 72 is ignored. Notice the fifth term, -2863; the minus sign indicates that 2863 represents the name of a subsection of Nuclear Science Abstracts.

If the number of selectors mentioned on the group card is not the same as the number of selectors on the term card, an error message is printed and the question is not processed.

5) User Profile Termination Card

The last card in a profile deck must have -1 in group 1, thus:

* 1-1 S

This card terminates the list of questions for one profile, and the program will continue to the next profile. If there are no more profiles, a blank card is used as the last card in the data (blank in cc. 1-10). This will terminate the run.

SPECIAL SEARCH ELEMENTS

NSA sections and subsections

We have pointed out that NSA sections and subsections can be treated as search elements, provided their four-digit code numbers are preceded by a minus sign (to distinguish them from selectors). These sections can be searched to any level of specificity, for example, everything in Life Sciences (Code NO. -2800); or everything in Life Sciences/Medicine (Code NO. -2850); or everything in Life Sciences/Medicine/Radiotherapy (Code NO. -2854).

Language of original paper

The language restriction is described in item 2, above. Language is delimiter 22, as described in TID-4577(Rev. 3).

Corporate code

Unique corporate code numbers are given in the report, TID-5059(9th Rev.). Corporate Author Headings Used by the USAEC in Cataloging Reports. DTIE, USAEC, February, 1969.* These 7-digit numbers can be used as terms in a search question. When the search program encounters a 7-digit number, rather than a 5-digit selector number, it will automatically search delimiter 32 in the entry file rather than anything in the keyword file. The dictionary look-up for corporate codes can consist of only those entries in which the laboratory users are interested.

Country of affiliation

A dictionary look-up routine has been added to Program TIDEX which will allow searching on country of affiliation (delimiter 33). The two-alpha-character country codes described on p. 80 of TID-4577(Rev. 3) are given as Appendix C on p. 84. We have converted them to unique 4-digit numbers by using the CDC-6600 computer

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*Available from CFSTI for $3.00

display code for each letter. To distinguish these codes from selector codes we have added a "3" in front of the display code (to make the total number higher than the number of selectors in the system), and the result is a unique country code table as shown on the following pp. 8-9.

Journal title

CODEN codes are designated by delimiter 34, and are listed in the authority, TID-4579(2nd Ed.). Serial Titles Cited in Nuclear Science Abstracts. DTIE, USAEC, July, 1968.* The 5-letter codes can be changed into unique 10-digit numerical codes by using the computer display codes illustrated in the "country" scheme, above. Thus, J. Chem. Phys., which has a CODEN of JCPSA, has a 10-digit numerical code of 1203202301.

Examples of use of special search elements

The profiles in Appendix B, synthesized for Mr. Doe and Mr. Moe, illustrate all the important aspects of search strategy used in the Lawrence Radiation Laboratory system for Selective Dissemination of Information.

All of the special search elements are available on the current NSA tapes. For retrospective searching (of tapes prior to 1969) some profiles may require restructuring to match the terminology and the search elements available in the early years. If profiles contain questions that involve NSA section/subsection codes, those numbers should be verified (and changed if necessary) with the category data decks used for each volume in program RETRO.

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* Available from CFSTI for $3.00

Table A-1. Country Codes for Descriptive Cataloging and Serial Record

Numerical Code	Country	Alpha Code
30104	ADEN	AD
30106	AFGHANISTAN	AF
30102	ALBANIA	AB
30107	ALGERIA	AG
30116	ANGOLA	AN
30122	ARGENTINA	AR
30123	AUSTRALIA	AS
30124	AUSTRIA	AT
30210	BAHAMA ISLANDS	BH
30202	BARBADOS	BB
30223	BASUTOLAND	BS
30205	BELGIUM	BE
30215	BERMUDA	BM
30217	BOLIVIA	BO
30222	BRAZIL	BR
30225	BULGARIA	BU
30201	BURMA	BA
30301	CANADA	CA
30310	CHILE	CH
30311	CHINA (MAINLAND)	CI
32401	CHINA (TAIWAN)	TA
30317	COLOMBIA	CO
30314	CONGO, REPUBLIC	CL
30322	COSTA RICA	CR
30325	CUBA	CU
30332	CZECHOSLOVAKIA	CZ
30405	DENMARK	DE
30420	DOMINICAN REPUBLIC	DP
30503	ECUADOR	EC
	EGYPT (see UNITED ARAB REPUBLIC)	
30514	EL SALVADOR	EL
	ENGLAND (see UNITED KINGDOM)	
30524	ETHIOPIA	ET
30611	FINLAND	FI
30622	FRANCE	FR
30704	GERMANY (EAST)	GD
30706	GERMANY (WEST)	GF
30710	GHANA	GH
30722	GREECE	GR
30714	GREENLAND	GL
30725	GUATEMALA	GU
31017	HONDURAS	HO
31025	HUNGARY	HU
31103	ICELAND	IC
31116	INDIA	IN
31104	INDONESIA	ID
31122	IRAN	IR
	IRELAND, NORTHERN (see UNITED KINGDOM)	
31114	IRELAND, REPUBLIC	IL
31123	ISRAEL	IS
31124	ITALY	IT
31215	JAMAICA	JM
31201	JAPAN	JA
31217	JORDAN	JO

Table A-1. Country Codes for Descriptive Cataloging and Serial Record (Cont.)

Numerical Code	Country	Alpha Code
31305	KENYA	KE
31323	KOREA, SOUTH	KS
31316	KOREA, NORTH	KN
31405	LEBANON	LE
31411	LIECHTENSTEIN	LI
31430	LUXEMBOURG	LX
31501	MALAYSIA	MA
31530	MEXICO	MX
31516	MONACO	MN
31517	MOROCCO	MO
31605	NETHERLANDS	NE
31632	NEW ZEALAND	NZ
31601	NICARAGUA	NA
31611	NIGERIA	NI
31617	NORWAY	NO
32001	PAKISTAN	PA
32016	PANAMA	PN
32022	PARAGUAY	PR
32005	PERU	PE
32010	PHILIPPINES	PH
32017	POLAND	PO
32024	PORTUGAL	PT
32523	PUERTO RICO	US
32210	RHODESIA	RH
32225	RUMANIA	RU
	SCOTLAND (see UNITED KINGDOM)	
32313	SENEGAL, REPUBLIC	SK
32314	SIERRA LEONE WEST AFRICA	SL
32311	SINGAPORE	SI
32301	SOUTH AFRICA	SA
32320	SPAIN	SP
32327	SWEDEN	SW
32324	SWITZERLAND	ST
32331	SYRIA	SY
	TAIWAN (see CHINA TAIWAN)	
32416	TANZANIA	TN
32410	THAILAND	TH
32425	TUNISA	TU
32422	TURKEY	TR
32522	USSR	UR
32520	UNITED ARAB REPUBLIC	UP
32513	UNITED KINGDOM	UK
32523	UNITED STATES	US
32507	URUGUAY	UG
32603	VATICAN CITY STATE	VC
32605	VENEZUELA	VE
32616	VIET-NAM, NORTH	VN
32623	VIET-NAM, SOUTH	VS
	WALES (see UNITED KINGDOM)	
33125	YUGOSLAVIA	YU
33232	UNKNOWN	ZZ

APPENDIX B

APPENDIX B

Output Print Format for Major SDI Programs

Two sample profiles (for "users" Doe and Moe) were run against NSA 23(2), and their complete output printings are included here as a display of the format to be expected from the SDI programs. The profile translations were obtained from Program NOMAN, and the NSA/SDI Notification listings with evaluation sheets were printed from the Program TIDE print tape. Also included is a copy of the part of the TIDE dayfile that shows which user question retrieved which document. This on-line print can be scanned, along with the user's marked evaluation sheet, to identify useful and non-useful questions, and is particularly valuable when a user has many questions in his profile.

```
PROFILE 58      80   COE, J.Q.        BLDG  50B RM 4206   X6368                          80000

 LANGUAGE ALL

                        WORD                                    NO.      TYPE     COUNT      AVE.

QUESTION   1 HAS   4 TERMS
------------

                 GROUP  1        2 TERMS
                      ACCELERATORS                                3         1       188        16
                      34 PHYSICS (HI-ENG.) / 60 PARTICLE ACCELERATORS                                3460

                 GROUP  2        1 TERMS
                      AFFILIATION  UR                        32522

                 GROUP  6        1 TERMS
                      CODEN --- PRTEA                  2022240501

QUESTION   2 HAS   2 TERMS
------------

                 GROUP  1        1 TERMS
                      28 LIFE SCIENCES / 62 RADIATION EFFECTS ON ANIMALS / VERTEBRATES              2862

                 GROUP  2        1 TERMS
                      CORP. CODE ---    639000
```

NSA/SDI NOTIFICATION

LISTED BELOW ARE THE DOCUMENTS SELECTED FOR YOU BY SDI.
KEYWORDS PRECEDED BY (+) ARE THOSE YOU HAVE CHOSEN TO SELECT
DOCUMENTS. PLEASE FILL IN THE LAST PAGE OF THIS NOTIFICATION.

RO DOE, J.Q. BLDG 50B RM 4206 X6368
NSA 23(2) JANUARY 31, 1969

02919A NSA 23(02) REPORT (ANL--7409)

BIOLOGICAL AND MEDICAL RESEARCH DIVISION ANNUAL REPORT, 1967.
(ARGONNE NATIONAL LAB., ILL.). DEC. 1967. 300P. DEP. CFSTI.

+ CAT. 28 LIFE SCIENCES / 62 RADIATION EFFECTS ON ANIMALS / VERTEBRATES

AMINES
ANIMALS
DRUGS
ENVIRONMENT
HYDROXIDES
MITOSIS
ORGANIC NITROGEN COMPOUNDS
OXYGEN
RADIATION PROTECTION
TIME
UREA
MEA
ANTIMITOTIC DRUGS
CYCLOHEXIMIDE
HAMSTERS
IMIDES
RADIOPROTECTIVE SUBSTANCES
THYMIDINE
ANIMAL CELLS
ANTIBIOTICS
EFFICIENCY
ETHYL RADICALS
LOSSES
NUCLEOSIDES
ORGANIC SULFUR COMPOUNDS
RADIATION INJURIES
SURVIVAL TIME
ULTRAVIOLET RADIATION
X RADIATION
ACTINOMYCIN
CELL CULTURES
ESCHERICHIA COLI
HYPOXIA
IN VITRO
RODENTS

03856 NSA 23(02) TRANSLATION (AEC-TR--6949)

1000-GEV CYBERNETIC PROTON ACCELERATOR.
VASIL*EV, A. A. (ED.). TRANSLATION OF KIBERNETICHESKII USKORITEL* PROTONOV NA ENERGIYU 1000 GEV, RADIOTEKHNICHESKII INSTITUT, AKADEMIYA NAUK SSSR, MOSCOW, 1967. 349P. DEP. CFSTI.

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION

+ACCELERATORS
SYNCHROTRONS
PROTONS
TEV RANGE

03864 NSA 23(02) REPORT (NP--17608)

SOME QUESTIONS OF THE THEORY OF LINEAR ACCELERATION OF CHARGED PARTICLES.
KRASOVITSKII, V. B. (AKADEMIYA NAUK UKRAINSKOI SSR, KHARKOV. FIZIKO-TEKHNICHESKII INSTITUT). 1966. 68P. (IN RUSSIAN). DEP. THESIS.

* CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION
CHARGED PARTICLES
LINEAR ACCELERATORS
VELOCITY
ACCELERATION
CIRCUITS
MICROWAVES
WAVEGUIDES

03879 NSA 23(02) JOURNAL

ON SOME VARIANTS OF PARAMETER CHOICE OF CIRCULAR ACCELERATOR DRIVING AND FOCUSING SYSTEMS.
KOZUBOVSKAYA, I. G.- SHARSHANOV, A. A.- SHENDRIK, V. A. (KIEV INST. OF MATHEMATICS. KHARKOV INST. OF PHYSICS AND TECH.). UKR. FIZ. ZH., 13-1424-30(SEPT. 1968). (IN RUSSIAN).

* CAT. 34 PHYSICS (HI-ENG.) / 64 ACCELERATORS / ION OPTICS + FIELD CALC.
+ACCELERATORS
NUMERICALS
BEAM OPTICS
FOCUSING

03889 NSA 23(02) JOURNAL

4.5-MEV ELECTROSTATIC ACCELERATOR OF THE PHYSICAL-TECHNICAL INSTITUTE OF THE ACADEMY OF SCIENCES OF THE UKR.SSR AND ITS USE FOR NUCLEAR RESEARCH.
TSYGIKALO, A. A.- TSYTKO, S. P. AT. ENERG. (USSR), 25- 142-5(AUG. 1968). (IN RUSSIAN).

* CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION
DESIGN
MEV RANGE
ELECTROSTATIC GENERATORS
PROTONS

EVALUATION SHEET

80 DOE, J.Q. BLDG 50B RM 4206 X6368

VOL 23 ISS 2

LISTED BELOW IS A SUMMARY OF DOCUMENTS SELECTED FOR YOU BY SDI.
PLEASE CIRCLE ONE OF THE INTEREST CODES FOLLOWING EACH DOCUMENT NUMBER.
INTEREST CODE DEFINITIONS ARE--

M--MUCH INTEREST (DO NOT CHANGE PROFILE)
S--SOME INTEREST (DO NOT CHANGE PROFILE)
N-- NO INTEREST (CHANGE PROFILE TO ELIMINATE THESE DOCUMENTS)

02919A	M	S	N	03864	M	S	N	03889	M	S	N
03856	M	S	N	03879	M	S	N	*******	M	S	N

APPROX. HOW MANY DOCUMENTS DO YOU PLAN TO REQUEST FROM THE LIBRARY--------

PLEASE DETACH THIS PAGE AND SEND IT TO

SDI SERVICE
BLDG. 50B RM. 4206
LRL BERKELEY

ANY ADDED COMMENTS WILL BE APPRECIATED.
PLEASE NOTIFY GLORIA SMITH, X6308, OF ANY CHANGES YOU WISH
TO MAKE IN YOUR PROFILE. IF NO ANSWER LEAVE MESSAGE AT X5621

SELECTIONS FOR 8C DOE, J.Q. BLDG 50B RM 4206 X6368 80000

QUESTIONS → ABSTRACT 30 SELECTIONS

2-→02919A	2-→02919I	2-→02919O	2-→02919Y
2-→02919B	2-→02919J	2-→02919P	2-→02919Z
2-→02919C	2-→02919K	2-→02919S	1-→03856
2-→02919D	2-→02919L	2-→02919T	1-→03864
2-→02919E	2-→02919M	2-→02919U	1-→03879
2-→02919F	2-→02919N	2-→02919V	1-→03889
2-→02919G	2-→02919O	2-→02919W	0-→
2-→02919H	2-→02919P	2-→02919X	0-→

EVALUATION SHEET

80 DOE, J.Q. BLDG 50B RM 4206 X6368

VOL 23 ISS 2

LISTED BELOW IS A SUMMARY OF DOCUMENTS SELECTED FOR YOU BY SDI.
PLEASE CIRCLE ONE OF THE INTEREST CODES FOLLOWING EACH DOCUMENT NUMBER.
INTEREST CODE DEFINITIONS ARE--

M--MUCH INTEREST (DO NOT CHANGE PROFILE)
S--SOME INTEREST (DO NOT CHANGE PROFILE)
N-- NO INTEREST (CHANGE PROFILE TO ELIMINATE THESE DOCUMENTS)

02919A	M	S	N	03864	M	S	N	03889	M	S	N
03856	M	S	N	03879	M	S	N	*******	M	S	N

APPROX. HOW MANY DOCUMENTS DO YOU PLAN TO REQUEST FROM THE LIBRARY--------

PLEASE DETACH THIS PAGE AND SEND IT TO

SDI SERVICE
BLDG. 50B RM. 4206
LRL BERKELEY

ANY ADDED COMMENTS WILL BE APPRECIATED.
PLEASE NOTIFY GLORIA SMITH, X6308, OF ANY CHANGES YOU WISH
TO MAKE IN YOUR PROFILE. IF NO ANSWER LEAVE MESSAGE AT X5621

SELECTIONS FOR 8C DOE, J.Q. BLDG. 50B RM 4206 X6368 80000

QUESTIONS → ABSTRACT 30 SELECTIONS

2-→02919A	2-→02919I	2-→02919Q	2-→02919Y
2-→02919B	2-→02919J	2-→02919R	2-→02919Z
2-→02919C	2-→02919K	2-→02919S	1-→03856
2-→02919D	2-→02919L	2-→02919T	1-→03864
2-→02919E	2-→02919M	2-→02919U	1-→03879
2-→02919F	2-→02919N	2-→02919V	1-→03889
2-→02919G	2-→02919O	2-→02919W	0-→
2-→02919H	2-→02919P	2-→02919X	0-→

PROFILE 59 90 MOE, I.R. BLDG 50B RM 4206 X6368 90000

LANGUAGE ITALIAN RUSSIAN 90010

WORD	NO.	TYPE	COUNT	AVE.
QUESTION 1 HAS 6 TERMS				
GROUP 1 2 TERMS				
ACCELERATORS	3	1	188	16
34 PHYSICS (HI-ENG.) / 60 PARTICLE ACCELERATORS				3460
GROUP 2 2 TERMS				
PROTON BEAMS	3884	1	463	39
SYNCHROTRONS	4685	1	101	8
GROUP 11 2 TERMS				
PROTONS	3885	1	1292	108
BEAMS	444	1	289	24
QUESTION 2 HAS 3 TERMS				
GROUP 1 1 TERMS				
BIBLIOGRAPHY	523	1	279	23
GROUP 2 1 TERMS				
REACTOR SAFETY	4025	1	512	43
GROUP 3 1 TERMS				
CORP. CODE --- 6171000				

-------END OF PROFILES-------

NSA/SDI NOTIFICATION

LISTED BELOW ARE THE DOCUMENTS SELECTED FOR YOU BY SDI.
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90 MOE, I.R. BLDG 50B RM 4206 X6368
NSA 23(2) JANUARY 31, 1969

03856 NSA 23(02) TRANSLATION (AEC-TR--6949)

1000-GEV CYBERNETIC PROTON ACCELERATOR.
VASIL≠EV, A. A. (ED.). TRANSLATION OF KIBERNETICHESKII USKORITEL≠ PROTONOV NA ENERGIYU 1000 GEV, RADIOTEKHNICHESKII INSTITUT, AKADEMIYA NAUK SSSR, MOSCOW, 1967. 349P. DEP. CFSTI.

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION
+ACCELERATORS
+SYNCHROTRONS
+PROTONS
TEV RANGE

03859 NSA 23(02) REPORT (CERN--68-38)

FOURTH-ORDER COUPLING RESONANCE EXCITED BY SPACE-CHARGE FORCES IN A SYNCHROTRON.

MONTAGUE, B. W. (EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH, GENEVA (SWITZERLAND)). OCT. 29, 1968. 45P. DEP.

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION
+BEAMS
ELECTRIC CHARGES
+SYNCHROTRONS
CHARGED PARTICLES
RESONANCE
SPACE CHARGE

03860 NSA 23(02) REPORT (COO--1195-141)

THE ZGS 7/SUP 0/ NEUTRAL BEAM SURVEY. TECHNICAL REPORT 173.
FRANK, J. S.- GLAUBMAN, M. J.- THATCHER, R.- WATTENBERG, A. (ILLINOIS UNIV., URBANA. DEPT. OF PHYSICS). SEPT. 1968. 14P. DEP. CFSTI.

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION
BACKGROUND
KAONS
+BEAMS
MOMENTUM

NEUTRONS
SPECTRA
KAONS-NEUTRAL
+PROTONS
+SYNCHROTRONS
ZGS ACCELERATOR

03863 NSA 23(02) REPORT (LNF--68/55)

PROBLEMS OF SHIELDING CONNECTED WITH INCREASING THE INTENSITY OF THE FRASCATI ELECTRON SYNCHROTRON. NOTE NO. 415.
PELLICCIONI, M.- PICCHI, P.- VERRI, G. (COMITATO NAZIONALE PER L*ENERGIA NUCLEARE, FRASCATI (ITALY). LABORATORI NAZIONALI DI FRASCATI). SEPT. 19, 1968. 10P. (IN ITALIAN). DEP.

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION

ELECTRONS
NUMERICALS
+SYNCHROTRONS
GEV RANGE
SHIELDING
FRASCATI SYNCHROTRON

03865 NSA 23(02) REPORT (RHEL/M--112)

PRELIMINARY DATA FROM SHIELDING MEASUREMENTS USING THE NIMROD EXTERNAL PROTON BEAM.
SHAW, K. B.- LAWS, D.- THOMAS, R. H.- STEVENSON, G. R.- PERRY, D. R.- BURRELLS, W.- RADCLIFFE, D.- TOWERS, J. A. (RUTHERFORD HIGH ENERGY LAB., CHILTON (ENGLAND)). SEPT. 1966. 27P. DEP.

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION

MEASUREMENT
+PROTONS
+SYNCHROTRONS
+PROTON BEAMS
SHIELDING
NIMROD

03866 NSA 23(02) REPORT (RHEL/R--167)

NIMROD OPERATION AND DEVELOPMENT. QUARTERLY REPORT, JANUARY 1--MARCH 31, 1968.

GRAY, D. E. (ED.) (RUTHERFORD HIGH ENERGY LAB., CHILTON (ENGLAND)). MAY 1968. 26P. DEP. CFSTI. UK 4S. 6D.

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION

DESIGN
+PROTONS
NIMROD
OPERATION
+SYNCHROTRONS

03868 NSA 23(02) JOURNAL

MEASUREMENT OF THE POLARIZATION OF SYNCHROTRON RADIATION.
NAGAKURA, ICHIRO- ISHII, TAKEHIKO- ICHIKAWA, KOUICHI- MATSUOKA, GENYA- SAGAWA, TAKASI (TOHOKU UNIV., SENDAI). JAP. J. APPL. PHYS., 7- 1416(NOV. 1968).

+ CAT. 34 PHYSICS (HI-ENG.) / 64 ACCELERATORS / ION OPTICS + FIELD CALC.

ELECTRON BEAMS
POLARIZATION
RESONANCE
X RADIATION
FREQUENCY
RADIATIONS
+SYNCHROTRONS
CYCLOTRON RADIATION

03874 NSA 23(02) JOURNAL

HIGH-ENERGY ACCELERATORS- PRESENT STATUS AND FUTURE PROSPECTS.
FIORENTINI, PAOLA. COM. NAZ. ENERG. NUCL., NOTIZ., 14- NO. 10, 52-70(OCT. 1968). (IN ITALIAN).

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION

+ACCELERATORS
+SYNCHROTRONS
GEV RANGE

03876 NSA 23(02) PATENT

BEAM SPILL CONTROL FOR A SYNCHROTRON.
LOTHROP, FRED H. G. (TO UNITED STATES ATOMIC ENERGY COMMISSION). U. S. PATENT 3,412,337. NOV. 19, 1968.

+ CAT. 34 PHYSICS (HI-ENG.) / 63 ACCELERATORS / ION SOURCES, INJ., + EXTRACT.

BEAM OPTICS
+SYNCHROTRONS
CIRCUITS
BEAM EXTRACTION

03884 NSA 23(02) JOURNAL

OPTIMIZATION OF TOTAL ENERGY MEASUREMENTS OF SYNCHROTRON RADIATION.
YAKUSHIN, V. V. (INST. OF PHYSICS, MOSCOW). PRIB. TEKH. EKSP., NO. 4, 30-2(JULY-AUG. 1968). (IN RUSSIAN).

+ CAT. 34 PHYSICS (HI-ENG.) / 61 ACCELERATORS / DESIGN, DEV., + OPERATION

ANALYSIS
ERRORS
RADIATIONS
ENERGY
MEASUREMENT
+SYNCHROTRONS

03885 NSA 23(02) JOURNAL

AN APPARATUS FOR ORIENTATION OF A MONOCRYSTALLINE TARGET FOR AN ELECTRON SYNCHROTRON.
KUZ≠MIN, V. N.- SERTAKOV, YU. I.- EPANESHNIKOV, V. D. (SCIENTIFIC RESEARCH INST. OF NUCLEAR PHYSICS, ELECTRONICS, AND AUTOMATION, TOMSK, USSR). PRIB. TEKH. EKSP., NO. 4, 33-4(JULY-AUG. 1968). (IN RUSSIAN).

+ CAT. 34 PHYSICS (HI-ENG.) / 66 ACCELERATORS / EXPERIMENTAL FACILITIES

ANGULAR DISTRIBUTION
ELECTRONS
INSTRUMENTS
PERFORMANCE
VACUUM
TARGET
DESIGN
GEV RANGE
MONOCRYSTALS
+SYNCHROTRONS
GONIOMETERS

04275 NSA 23(02) REPORT (ORNL-NSIC--52)

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(OAK RIDGE NATIONAL LAB., TENN.). NOV. 1968. 414P. DEP. CFSTI.

CAT. 38 REACTOR TECHNOLOGY / 18 PWR. RCT. DEV. / SAFETY AND SITING

+BIBLIOGRAPHY
+REACTOR SAFETY

EVALUATION SHEET

90 MOE, I.R. BLDG 50B RM 4206 X6368

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03859	M	S	N	03866	M	S	N	03884	M	S	N
03860	M	S	N	03868	M	S	N	03885	M	S	N
03863	M	S	N	03874	M	S	N	04275	M	S	N

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1→03859	1→03866	1→03884	0→
1→03860	1→03868	1→03885	0→
1→03863	1→03874	2→04275	0→

APPENDIX C

APPENDIX C

Computer Time and Cost Statistics

COST DISTRIBUTION FOR SDI PROGRAMS

To process an individual NSA tape the Information Research Group in Berkeley uses the five following programs: TIDEX, WORDS, NOMAN, TIDE, and AUTHY. This is done twice monthly. Programs FLIST and MAKIT are run quarterly to correspond with the issuance of the NSA Authority Tape.

Time and Costs for NSA 23(20)

Below is a detailed analysis of time and costs for just one NSA tape. These figures are given to aid organizations outside of Berkeley in predicting costs based on the price structure of their own computer center. Computer times are given in seconds for each of the above enumerated programs. The times shown for TIDEX, WORDS, NOMAN, TIDE, and AUTHY refer to NSA 23/20; the times shown for FLIST and MAKIT refer to the NSA Authority Tape which was distributed at the same time as the tape for NSA 23(18). The numbers represent one run per program (except for TIDE which has separate runs for DTI-Washington users and for LRL users). Since tape 20 was particularly long -- 2722 documents vs. an average of 2164 documents/issue for 20 issues -- the totals below can be considered as a greater-than-average cost to be expected for running one issue with 54 profiles.

	TIDEX		WORDS		NOMAN		TIDE		AUTHY	
	CP	PP	CP	PP	CP	PP	CP	PP	CP	PP
Seconds	302.8	2604.6	480.6	479.8	71.8	509.4	1020.7	3294.2	107.4	1127.0

	MAKIT		FLIST	
	CP	PP	CP	PP
Seconds	79.24	339.40	37.09	375.71

These values can be transformed into dollar terms according to the following formula (the formula reflects $155/hour computer time cost at LRL – Berkeley):

$$\text{Dollars} = \left[CP + (0.3 \times PP)\right] \times 0.043^{*}$$

where CP and PP times are given in seconds.

	TIDEX	WORDS	NOMAN	TIDE	AUTHY	MAKIT	FLIST
Dollars	46.61	26.85	10.38	86.38	19.15	7.80	12.70

The above figures do not reflect reruns and thus do not give a true picture of the normal operating situation.

Total Costs for NSA 23(13-18)

The following table, compiled from the actual expenses of running six issues, gives a realistic perspective of costs since all reruns are included. Reruns, caused by a multiplicity of unpredictable factors, do occur frequently.

*It is the policy at LRL-Berkeley to calculate computer costs by multiplying the overhead rate by the sum of the full CP value (central processing time) but only 0.3 of the PP value (peripheral processing time). Central processing time is time used by the various hardware elements of CDC 6400/6600's central memory, i.e., registers, arithmetic units, etc.; peripheral processing time is time used by the various PP units to execute tape reads, writes, etc.

QUARTERLY SUMMARY FOR JULY– SEPTEMBER, 1969

NSA 23 Issue	No. of Items	No. of Users	TIDEX	WORDS	NOMAN[a]	TIDE	AUTHY[b]	MAKIT[c]	FLIST[c]	QUARTERLY TOTAL– SDI SYSTEM
13	2085	53	$ 24.20	$ 19.70	$24.10	$ 62.50	$15.00[b]			
14	2525	54	49.50	26.00		74.20	15.00[b]			
15	2599	56	42.60	27.40		53.70	15.00[b]			
16	1868	54	26.00	18.20	67.70[d]	69.00	13.50			
17	1829	53	58.90	17.00		67.30	15.70			
18	2900	54	50.10	26.80		70.00	16.70	$7.80	$12.70	
Total Costs			$251.30	$135.10	$91.70	$396.70	$90.90	$7.80	$12.70	$986.20
Cost/Issue			42.00	22.50	15.00	66.00	15.00	1.30	2.00	$164.00
% of Total			25.3	13.7	9.5	40.5	9.0	0.8	1.2	100

a Not run with every issue.
b Program recently introduced; cost for Issues 13, 14 and 15 is estimated only.
c Run once quarterly.
d Unusual difficulties with programming and operating system.

It can be seen from the preceding figures that three programs (TIDEX, WORDS, and TIDE) account for approximately 80% of the total cost. Among these three, program TIDE (the search program) is by far the most expensive to run.

All IRG programs except TIDE are "collective," i.e., the costs incurred by running them cannot be directly redistributed among the various SDI users. IRG program TIDE attempts to overcome this difficulty. An accounting system has been developed and integrated within this program which shows the influence of various factors on computer costs. A detailed analysis of the cost aspect of program TIDE is presented in the pages which follow. Here it will suffice to state the general trend: the number of hits sorted and printed out substantially influences the total cost; the number of terms per search unit* and the number of documents per NSA issue influence the cost somewhat less substantially; significant computer overhead, fairly constant, is an ever-present burden that can be reduced slightly by running the program at those hours (nights and weekends) when computer sharing is minimal.

From the preceding discussion the following cost-optimizing processing strategy would suggest itself: user profiles should be carefully constructed to minimize the retrieval of non-relevant items and the program should be run when demands upon the central computer are low.

COST DISTRIBUTION FOR PROGRAM TIDE

Computer time charged for processing NSA tapes on the principal program TIDE is the sum of two magnitudes: time for file-searching and time

*A set of ten profiles processed together. For further details see page C-5.

for hits-sorting and writing. A relatively negligible amount of general computer overhead time (start-up, tape manipulation, etc.) is added to this sum.

Though both the input (user profiles) and output (user notifications) statistics do appear individually, the internal organizing and executing structure of the program is based upon sets of ten profiles with the last set generally remaining unfilled; this structure is reflected equally in the accounting system used. The basic unit of analysis cannot, therefore, be an individual profile but rather the set of ten profiles which will be referred to in following pages as a "decade." This decade arrangement is a "happy medium" solution between the inefficiencies that would be incurred if single profiles were processed separately and, on the other hand, the penalties which would be the consequence of having the profiles packaged into units larger than ten, which would be extremely time-consuming when the SORT-WRITE routines are executed. As shown below, the program prints out statistics for each user in a decade of profiles.

STATISTICS FOR 10 USERS (APPROX. TIME IN SECS.)

			SEARCH			SORT	
ID.	QUEST.	TERMS	CP -	- PP	HITS	CP -	- PP
25	10	58	8.56	11.91	55	2.37	27.35
26	4	32	4.73	6.57	10	.43	4.97
27	4	23	3.40	4.72	39	1.68	19.39
28	4	144	21.26	29.57	43	1.85	21.38
30	6	41	6.05	8.42	38	1.64	18.89
31	1	5	.74	1.03	0	0.	0.
32	5	35	5.17	7.19	10	.43	4.97
33	5	55	8.12	11.29	27	1.16	13.43
34	3	47	6.94	9.65	29	1.25	14.42
36	3	32	4.73	6.57	51	2.20	25.36

10 USERS	TIMES FOR SEARCH	TIMES FOR SORT
45 QUESTIONS	CP= 69.697	CP= 13.012
472 TERMS	PP= 96.911	PP= 150.164

Search

Speaking broadly, the amount of CP time required for file-search is a function of both the file length (i.e., the number of documents per issue) and the number of terms per search unit (decade), plus a certain fairly constant (15-20 sec per decade) amount for effective computer overhead.* Given this constant overhead it is clear that some economy of scale is operating here: the more terms that are processed per decade the more thinly will the overhead be distributed across them; i.e., the term unit time** will be less. For this reason it is advisable to distribute the profiles among the decades so that approximately the same number of search terms are processed per decade. It is particularly important to put large profiles at the end of the run so that a "decade" of only 2 to 3 users will have a total number of terms roughly equivalent to the total terms in each preceding "filled" decade.

The average CP time per decade can be expected to be less than 100 sec. Expressed in discrete terms and taking into account the number of documents per NSA issue:

One term per "small" NSA issue (2000-plus docs.) = 0.11 - 0.12 sec.

One term per "large" NSA issue (3000-plus docs.) = 0.14 sec.

It must be understood that a portion of all these magnitudes is a constant, therefore the functional relationships indicated are far from perfect.

The PP time for the search operation tends to be fairly constant, a little over 100 sec per decade; no statistical relationship can be observed between either the PP time and the number of documents per issue or the

*Reading tape and associated functions, reading cards, and computation of statistics.

**CP time divided by number of terms, i.e., CP time per term.

number of terms per decade.

PP time is invariable. Obviously, the more terms there are in the decade, the more thinly will this constant burden be spread across the individual terms; therefore, the use of more rather than fewer terms per decade can be economically justified.

Sort–Write

When we turn to sorting and writing time we can observe two significant divergencies from the pattern which is characteristic of the search operation:

1) Sort-write CP time is significantly lower (only 20% of the search CP time) when compared with search CP time; it is also lower when compared with sort-write PP time. In searching, CP and PP times tend not to be too far apart, but in sorting, PP time is always more than 10 times larger than the associated CP time.

2) Although the PP time is relatively invariable for searching, it does vary for sorting and writing, and it does so in approximately the same amount and in the same direction as the sort CP time. The crucial factor in the CP and PP variation is the "sort-write" routine whose effect is reflected in the number of hits processed. The relationship here is closer, however, than that between the number of documents and/or number of terms and the CP time for searching. There seems to be very little independent effective "overhead" here; all computer functions as they are reflected in charged time are associated directly with the various elements of the "sort-write" routine.

Therefore, there is no constant overhead that would allow economy of scale as was the case in file searching. On the contrary, what perceptible tendency there is here points rather toward a certain diseconomy of scale: the hits processing unit time increases with the number of hits.

Summary of Search Costs and Sort-Write Costs in Program TIDE

Computer time cost charge at LRL is set at $155 per hour which is equivalent to $0.043 per sec. Peripheral processing time is about a third of the cost of central processing time.

Utilizing the formula on page C-2 we can construct, from figures gathered in running TIDE on 6 tapes, the cost picture of a statistically typical decade:

	SEARCH		SORT-WRITE	
	CP	PP	CP	PP
Seconds	100	100	20	200

Adding the two PP times and multiplying by 0.3, we get 90. To this we add the two CP times to get 210. Multiplying now by 0.043, we obtain 9.03, which is the dollar value for a typical decade. If we divide by 10 we get $0.90, which is the cost per person for processing an NSA issue on IRG's program TIDE. This figure obtained analytically agrees completely with the values obtained empirically with the help of data gathered through a prolonged monitoring of the computer charges incurred by the IRG while running program TIDE.

SUMMARY OF TOTAL AVERAGE COSTS

The cost for running the four basic SDI programs: TIDEX, TIDE, NOMAN and WORDS is on the average per issue of NSA: $42 for TIDEX, $23 for WORDS, $15 for NOMAN plus $0.90 per user for TIDE.

APPENDIX D

APPENDIX D

Although there is no Appendix D in the original printing, a tab is provided here for possible later use. The Information Research Group is presently developing a new search program that is expected to be much more efficient than Program TIDE. After it is debugged and tested, a new program description will be issued, and Appendix D will probably be used for some statistics on time and costs that can be compared with the data given in Appendix C.

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UNIVERSITY OF CALIFORNIA
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