

CN-LINE TAPE LIBRARY

I. OVERVIEW

TAPELIB provides interactive access to information on an site's tape library. It was written to be simple, easy-to-use and low in resource usage. Normally, the program would be run as a job to provide the operator with access through the REPLY command. It can also be run in a session by System or Account Managers. Information on the single sequential file can be read and updated. The Console Operator and System Manager have access to all commands; Account Managers use a subset of the commands. Mass changes can be made with EDITOR and listings in different sequences can be made with SCRT.

Commands allow the user to find tapes by number, account, account and group, or tape label. The operator can find scratches to be used and can update the library to reflect the use. The user can scratch tapes by number or find it first by account then scratch it. The Operator and System Manager can scratch any tape. Account Managers can only scratch tapes belonging to their accounts.

TAPELIB was designed to be used on a system with 300 to 400 small and large reels which are used to backup the system and store files off-line. The features of TAPELIB reflect this design but allow tailoring to any type of system.

Three of four digit tape numbers can be used. The first character of the tape number can designate the reel size by using different ranges of numbers for each size or different letters for each size. For example, we use 100 and 200 reel numbers for seven inch reels. Eleven inch reels are numbered 400 and 500. This system will handle a large variety of numbering schemes such as:

- a. Large reels are 0001 thru 1999, small reels are 2000 thru 3999.
- b. Large reels are three digits with first digit even, small reels are three digits with the first digit odd.
- c. Large reels only, three digits, many different ranges (use 4 digit tape numbers with a lead-

ing zero).

Accounts and groups are eight characters each. Tape labels can be up to sixteen characters. Each tape has an associated creation date and sequential reel number, i.e. 1 of 3, 2 of 3, 3 of 3.

When a tape is scratched, a scratch code and scratch date are added to the entry. The data file is ASCII with no integer or packed fields, so editing can be done easily.

II. THE DATA FILE

The file is fixed, ASCII and 64 bytes. The fields are:

FIELD	POS.	LEN.	CONTENTS
TAPENO	0	4	TAPE NUMBER, LEFT JUSTIFIED
ACCT	6	8	ACCOUNT NAME
GRP	15	8	GROUP NAME
IBL	24	16	TAPE LABEL
CREATEDATE	41	6	TAPE CREATION DATE
REELNO	49	2	REEL NUMBER OF TAPE IN SET (12 = REEL 1 OF 2)
SORN	55	1	SCRATCH TAPE (S OR BLANK)
SCRATCHDATE	57	6	SCRATCH DATE (or BLANK)

The data file is created with EDITOR. SET LENGTH=64.

III. OPERATING PROCEDURES

SESSION MODE:

The program is initiated with :RUN TAPELIB.
Commands available to the user are

ALPHA(AL)	- LISTS TAPES BY ACCOUNT AND GROUP
EXIT(EX)	- TERMINATES THE PROGRAM
HELP(HE)	- LISTS COMMANDS AND DESCRIPTIONS
LABEL EQUALS(LE)	- LISTS ALL TAPES WITH GIVEN LABEL
NUMBER(NU)	- LISTS A TAPE BY ITS NUMBER
SCRATCH(SC)	- SCRATCHES A TAPE

JOB MODE:

The CP entry point must be used to provide a console request, so :RUN TAPELIB,OP.
Commands available to the Console Operator or System

Manager are

LARGE SCRATCH(LS) - LISTS 4 LARGE SCRATCH TAPES
SMALL SCRATCH(SS) - LISTS 4 SMALL SCRATCH TAPES
USE(US) - SAVES SCRATCH WITH NEW LABEL

IV. CHANGES WITH EDITOR

When a large number of changes are necessary the ASCII file can be TEXTED with EDITOR, even while TAPELIB is running in JCB mode. A sample EDITOR session would look like this:

:EDITOR (Note: lines shortened to fit page.)

```
/TEXT TAPELIB.DATA,UNN
/FIND "123";MODIFY
  24 123 SYS PUB FULL-DUMP 780601 12 S 780620
MODIFY 24
123 SYS PUB FULL-DUMP 780601 12 S 780620
  RFUTURA TYPE DAILY STORE 780624
123 FUTURA TYPE DAILY STORE 780624
```

```
/FIND "448";M
  221 448 HABAND MAIL EAST-LIST 780522
MODIFY 221
448 HABAND MAIL EAST-LIST 780522
                                     RS 780624
448 HABAND MAIL EAST-LIST 780522   S 780624
```

```
/FQ1
/F "400"
  180 400 NESTER PUB 780413
/GQ 180/LAST TO 1000
/CQ FIRST/179 TO 2000
/GQ 2000/LAST TO 100
/GQ 1000/LAST TO 400
/LIST 400.
  400 400 NESTER PUB 780413
/LIST 123
  123 123 FUTURA TYPE DAILY STORE 780624
/K TAPELIB.DATA,UNN
```

/EXIT

END OF SUBSYSTEM

:

The above EDITOR was used to find a few tapes by number and change them. Then the tapes were renumbered with

the GATHER command. Since our tapes are numbered 100-188 and 400-490, each group was gathered high and gathered again low to make the line number and tape number match. A USE file containing these commands helps the operator text, renumber, and list a few lines to verify the match. From that point, modifying a tape by number will get the needed line for that tape: see LIST 123 above.

V. USING SORT TO GET LISTINGS

It has been helpful to have alphabetic and numeric listing of the tape library file each day. We use two sequences:

- | | | | | |
|----|---------|---------|----|--------|
| 1. | SORN | - major | 2. | TAPENO |
| | ACCOUNT | | | |
| | GROUP | | | |
| | LABEL | | | |
| | DATE | | | |
| | REEL | - minor | | |

The first sequence places all scratches at the end of the list then groups the rest of the list by account, group, etc. The second provides a numeric list by tape number for verifying the library. Output from the sort goes directly to the printer. The SORT parameters are:

- ```
1. !FILE TAPELIBA;DEV=LP
 !RUN SORT.PUB.SYS
 >INPUT TAPELIB.DATA
 >OUTPUT *TAPELIBA
 >KEY 55,1,BYTE;6,45,BYTE
 >END

2. !FILE TAPELIBN;DEV=LP
 !RUN SORT.PUB.SYS
 >INPUT TAPELIB.DATA
 >OUTPUT *TAPELIEN
 >KEY 1,4,BYTE
 >END
```

## VI. INSTALLING TAPELIB

To install TAPELIB use this procedure:

Number your tape library with three or four digit numbers. Using EDITOR, key in one entry for each tape; use the format in Section II.

Use GETFILE to retrieve TAPELIB.PUB and TAPELIB.JCB from the contributed library.  
Do any of the tailoring listed in Section VII.  
Run the program or stream the job.

## VII. TAILORING TAPELIB

The current but changable limitations of TAPELIB are:

|                                 |                     |
|---------------------------------|---------------------|
| name of the tape library file   | "TAPELIB.DATA.LIB3" |
| length of the tape number       | = 3                 |
| number of scratch tape numbers  |                     |
| in sorted array                 | = 100               |
| starting number for small reels | "1" and "2"         |
| starting number for large reels | "4" and "5".        |

Each of these parameters can be changed by altering the DEFINES and EQUATES in the source file. The imposed limits are:

|                           |                          |
|---------------------------|--------------------------|
| name of tape library file | limited only by MPE      |
| length of tape number     | 3 or 4                   |
| number of scratches       | unlimited                |
| starting number for small |                          |
| or large reels            | up to 5 different digits |

To make changes, find the block of EQUATES and DEFINES in the source.

Replace the existing LIBNAME with your library file name.

Replace the existing contents of LARGENO and SMALLNO with the starting digits of your library.

If your library uses 4 digit tape numbers, equate TAPENOLEN to 4, TAPENODATEIEN to 10, and SCRSIZE to 10 times the equated value of NOSCR.

If 100 scratches is too large or too small, equate NOSCR to the desired number.

Series I users need to set the conditional compile switch X1=ON to replace CLOCK and CALENDAR with CHRONOS.