



THE LIBRARIAN

Order No. HP 20237 (current version)

HEWLETT  PACKARD

11000 Wolfe Road
Cupertino, California 95014

Small Programs Manual
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THE LIBRARIAN

The LIBRARIAN is an absolute program that uses the SIO Drivers to modify, shorten, or lengthen relocatable subroutine libraries on punched paper tape. The user specifies the programs that are to be put on the updated library tape and their order. Program input is from the paper tape reader or mass storage; (programs are loaded into mass storage using PTS, *Prepare Tape System*, 02116-91751) program output is to the paper tape punch. The user communicates with the LIBRARIAN by means of commands typed in through the teleprinter.

ENVIRONMENT



The LIBRARIAN program operates in a 4K SIO environment with teleprinter, paper tape reader, and paper tape punch. Mass storage (disc or magnetic tape) is optional and requires 8K of memory.

OPERATING INSTRUCTIONS

1. Load the LIBRARIAN and configure it with the appropriate SIO Drivers.
2. Turn on all equipment.
3. Set SWITCH REGISTER bit 15 to a value of 1 (on) to invoke the optional "search" mode described below.
4. Start the LIBRARIAN at location 100_g.
5. LIBRARIAN punches leader on output tape, then waits for a command from the teleprinter.

6. The legal commands from the teleprinter are:

a. Mass Storage Mode

Format: /M

Purpose: Changes the program input unit from the paper tape reader to the mass storage device (magnetic tape or disc). The programs must have been placed on the second file of the mass storage unit previously using the Prepare Tape System. The LIBRARIAN stays in mass storage mode until it encounters a /S or /E command or is changed to paper tape mode by a /P command. When the LIBRARIAN is begun, it is always initially in paper tape mode. During automatic search mode, the LIBRARIAN itself switches from paper tape to mass storage mode automatically.

b. Paper Tape Mode

Format: /P

Purpose: Returns the LIBRARIAN to paper tape mode of program input from mass storage mode. Note that a /S or /E returns the LIBRARIAN to paper tape mode automatically.

c. Listing

Format: /L

Purpose: Causes the LIBRARIAN to read programs from the input unit and list the names found in their NAM records until it finds an end-of-tape. During the listing, the LIBRARIAN will also verify the input by performing a checksum on every record. When an error is discovered, this message is printed: CHECKSUM ERROR.

d. Program Transfer

Format: *name*

Purpose: Causes the LIBRARIAN to read from the input device until it finds the program named; it then punches out the program on the output tape. If the LIBRARIAN encounters an end-of-tape before it finds the program, it halts and prints out END-OF-TAPE. If the user has more tapes to be searched for the program, he must load the next tape into the input unit and press RUN. Then he must retype the program name on the teleprinter. Note that the LIBRARIAN transfers only those programs called by name; therefore, each program on the new library tape must be identified separately.



e. Stop

Format: /S

Purpose: Causes the LIBRARIAN to halt so that the user can place a new tape in the input unit. When the user presses RUN, the LIBRARIAN again accepts commands from the teleprinter.

f. End of Library

Format: /E

Purpose: Indicates the end of the new library tape and that no more programs are to be transferred. The LIBRARIAN punches out trailer feed frames on the output tape and halts.

AUTOMATIC SEARCH MODE

The Automatic Search Mode requires both a paper tape reader and a mass storage device. The subroutines are input from paper tape and the mass storage device (placed there by Prepare Tape System). The LIBRARIAN searches for each subroutine on the mass storage before looking at the paper tape. The output is a new library on punched tape.

At the initiation of the LIBRARIAN or after a /E or /S, if SWITCH REGISTER bit 15 is equal to 1 when the LIBRARIAN processes a /M command, the LIBRARIAN goes into automatic search mode. When a Program Transfer command is typed in (*name*), the LIBRARIAN searches for the program first on the mass storage device and if it cannot find it there, then on the paper tape input device.

EXAMPLES

1. Combining routines from mass storage and paper tape.

```
/M  
LINE  
XDIV  
NUMB  
XMPY  
/P  
PLOT  
/E
```

2. Interrupting transfer of programs from magnetic tape to change tapes.

```
/M  
XMPY  
/S  
/M  
PLOT  
/E
```

3. Listing programs on a paper tape.

/L

SCALE

LINE

AXIS

NUMB

SYMB

PLOT

END-OF-TAPE

/E



