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DECUS NO.	12-76
TITLE	TAPELOOK; CORELOOK; SEARCH
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SOURCE LANGUAGE	LINC CODE

"TAPELOOK" a DIAL tape examiner (super MAGSPY)

PROGRAM OPERATION

TAPELOOK requires 8 K of memory, is written in LINC code, and starts at location 4Ø2Ø. The initial display requests tape unit 1 or 0. Answering on the teletype (1 or Ø) presents the tapeblock request display. This display may be recalled at any time by hitting LINEFEED. A tapeblock number (Ø-777) and RETURN will display the block. The RUBOUT key works when typing numbers. The display is TEXT (T on teletype), lines of 4Ø characters of internal character code; PLOT (P), with words scaled right 3 places to avoid foldover; or LINC-CODE (L), which displays word number, word, linc-code translation for most instructions, and internal letter code. ANALOG CHANNEL Ø sets the number of lines displayed, and CHANNEL 4 sets where the display starts in the block. The block is changed by hitting N (NEXT) or B (BACK) or LINEFEED to choose a distant block.

Anytime after the tape unit is selected, hitting I displays the INDEX. ANALOG Ø and 4, control size and starting point of the display. A line map shows where SOURCE (above)and BINARY (below) are stored, showing how full the tape is. Any key exists to the 'block request display'.

If DIAL source is recognised, either from the INDEX or by the *2Ø at the beginning of a TEXT display, E (EDITOR DISPLAY) will display DIAL editor format. ANALOG CHANNEL Ø controls display size, and CHANNEL 7 controls the direction and speed of rolling of the display. This speed is shown in the lower left corner of the screen BK3, BK2, BK1, STOP, FW1, FW2, FW3. The display will roll forward to either the SOURCE terminator (ØØ) or the end of 2Ø blocks, and stop. It will roll back to the start, and stop. If EDITOR DISPLAY was started

at the beginning of a SOURCE program, the line numbers will be correct.

Programs longer than 2∅ blocks must be looked at in sections, and will have

incorrect line numbers.   Any key exits to the 'block request display'.

Any time after the tape unit is selected, D (DIAL) returns to DIAL.

SUMMARY

LINEFEED	Block request display
RETURN	Get block requested
T	TEXT
P	PLOT
L	LINC CODE
I	INDEX
E	EDITOR DISPLAY
D	DIAL return
ANALOG ∅	Size of display
ANALOG 4	Starting point of display
ANALOG 7	Roll speed and direction of EDITOR DISPLAY

PROGRAM CONSTRUCTION

Data is transferred from tape to the upper 4K of memory in 2∅ block chunks.

The index, when called, is stored in locations 2∅∅∅-2777, the index map in 3∅∅∅-

3777.   Display routines (XYSET to DMSG) and the tape handler (READTP) are

in IF=2, callable from any field.   The program starts with the "tape unit 1 or ∅?"

display.   Upon getting a 1 or ∅, it modifies the tape handler and the unit label, and

exits to BASKS.

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BASKS (block-ask-subroutine) requests a block number and accepts numbers from the teletype, (also I or D).   RETURN puts that block and the 16 following in the upper 4K of memory, then exits to OPSYS.

OPSYS (operating system) runs through several subroutines and recycles: VECTS (vector subroutine) selects either TEXTD (text display), PLOT, or DISASY (disassembly of LINC code) according to the number (1-3) in FNOW (function now); LABLS (label subroutine) displays unit and block number; and KTSTS (key test subroutine) which checks the teletype.

Other programs are IX (index display) in 1F=3, and EDITOR DISPLAY at 1F=0, * 1000.

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CORELOOK: a program for examining core (8K)

OPERATION

CORELOOK is written in LINC and starts at 2∅ in its instruction field. It is usually loaded into an unused instruction field by an ADD BINARY instruction. It is short enough to put in IF=7 without being clobbered by the DIAL loader that sits up there. With all SENSE SWITCHES at ∅, CORELOOK reads the LEFT SWITCHES for a starting address and ANALOG CHANNEL ∅ for the number of lines to display. SENSE SWITCH 5 calls the upper 4K, (the INSTRUCTION FIELD switches cannot be read by the program). Location, contents, LINC code and text (internal code) are displayed. SENSE SWITCH 1 displays only text. SENSE SWITCH ∅ displays a map of the field selected by the LEFT SWITCHES and SENSE SWITCH 5, marking all non-zero locations (nice for seeing where your program ends). A cursor, ANALOG CHANNEL 4, selects and displays any 1∅ locations as numbers, LINC code, and letters.

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SEARCH: a DIAL source working area search program

OPERATION

     SEARCH is written in LINC code and starts at location 4020 in an 8K machine. It starts by requesting a search word of up to 10 (octal) characters. The RUBOUT key will erase mistakes. Hitting RETURN starts the search. Each line which contains the search word is stored in a buffer of up to 40 characters, and after 40 characters the line is truncated. When the search is completed, or when the line buffer is full (76 lines), these lines are displayed with correct line numbers. ANALOG CHANNEL 4 selects which part of the line buffer is displayed. If the line buffer fills before the program is completely searched, a "linebuff full" sign comes on in the upper right of the display. Hitting N (NEXT) continues the search and displays the next 76 lines. A count of hits is kept (octal) and displayed.

Hitting S (START AGAIN) will ask another search word.

Hitting D (DIAL) returns to DIAL.

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