IDENTIFICATION

Product Code:	DEC-12-ZR7B-D
Product Name:	DIAL-MS Editor Program Description
Date Created:	December 1, 1970
Maintainer:	Software Services

LAP6-DIAL is an editor, filing system and assembler for use with the PDP-12 computer. The editor and filing portions are derived from the basic LINC program LAP6[1] by Mary Allen Wilkes of Washington University. The assembly portion is derived from several programs used the the PDP-8 computer including PAL-D[2].

The Digital Equipment Corporation wishes to express to the author, Mary Allen Wilkes (Clark), and the Computer Research Laboratory of Washington University, St. Louis, Missouri, its appreciation for the development set forth in LAP6 as well as its thanks for permission to use parts of the LAP6 program.

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[1]M. A. Wilkes, LAP6 Handbook, Computer Research Laboratory Tech. Rep. No. 2, Washington University, St. Louis, May 1, 1967.

[2]PAL-D Assembler Programmer's Reference Manual DEC-D8-ASAA-D.

1.0 PROGRAM OVERVIEW

1.1 Introduction

The Editor is that LAP6-DIAL program that allows the user to develop, modify and edit a source program. The Editor also has the secondary function of interpreting monitor commands and dispatching calls to the rest of the DIAL system. On the scope, the Editor displays line numbers as well as an editing cursor in the form of an inverted T.

The DIAL-MS Editor is a combination of the DIAL-V2 Editor (DEC-12-ZW7A-D) and the DIAL-V2 program Add Program (DEC-12-ZW8A-D). (Add Program is merely a special overlay for the Editor and is discussed in Section 2.0.) The DIAL-MS Editor is logically and functionally the same as its DIAL-V2 counterpart, with the exception that all I/O is done through the DIAL-MS routines. All commands which reference any device, except the Working Area, have been replaced by the identical function in calls to the DIAL-MS routines; those that reference the Working Area (such as the string slides, etc.) have been left intact. However, they are preceded by a subroutine call to the routine GOODY which looks at what follows the subroutine call and does a logical transformation to the equivalent DIAL-MS call.

1.2 SYSTEM PARAMETERS

The system parameters are those Editor symbols that are used in the Editor and/or other system programs that define the nature and configuration of the DIAL system. These parameters are listed and explained below.

APTBLK - The first tape block of Add Program.

ASTBLK - The first tape block of the Assembler that is read in by the Editor.

A6 - The first core location of the DSC grid table.

BB - The first core location of the Editor's buffer block input buffer.

BLKST - The core location that holds the first tape block of a source program for assembly.

B12VAL - Pointer to the core locations in the Editor's pointer tape block that hold the knob to switches patch for a PDP-12B.

CB - The first core location of the Editor's continuation block input buffer.

DELTA - The value that determines the maximum number of pointers that can be stored in the Editor's pointer tape block.

DIALST - The first tape block of the DIAL System and also the first tape block of the Editor.

DIALU - The tape unit that holds the resident DIAL System.

DXTBLK - The first tape block of Display Index.

D6 - The first core location of the control table.

D6VAL - The pointer to the first core location in the Editor's pointer tape block where the control table is saved.

EXTMTP - The value that determines the Editor's extended tape operations.

E6 - Pointer to the Editor's monitor command parameter table.

FCSA - The core location in Filecoms which the Editor references to execute calls to Filecoms.

FCTBLK - The first tape block of Filecoms.

FILE - The first tape block above the Working Area that is available for file storage.

FREE - The first tape block of the free area and the first tape block below the Working Area that is available for file storage.

INDEX - The first tape block of the index.

KBDOPR - The first core location of the Editor's keyboard input conversion routines.

LNHC - The initial horizontal coordinate for display of line numbers in the scope routines.

LOTBLK - The first tape block of the Loader.

MAXNUM - The maximum number of allowable characters on a line.

MCHC - The initial horizontal coordinate for display of a monitor command in the scope routines.

MCVC - The vertical coordinate for display of a monitor command.

MKHC - The horizontal coordinate for display of the marker.

PTADDR - The pointer to the core locations in the Editor's pointer tape block that hold the addresses of all the Editor's pointers.

PTBLK - The first tape block of the Editor's pointer tape block.

PTEXIT - The pointer to the core locations in the Editor's pointer tape block that hold the values of the Editor's pointer upon system exit.

PTINIT - The pointer to the core locations in the Editor's pointer tape block that hold the initialization values for the Editor's pointers.

PT12B - The pointer to the core locations in the Editor where the patch for a PDP-12B will go.

PXTBLK - The first tape block of Print Index.

SBTBLK - The first tape block of Save Binary.

SPCHAR - The first core location of the Editor's special character table.

SPFCNS - The value that determines the Editor's special functions whenever an ESF is executed.

TXTHC - The initial horizontal coordinate for display of text in the scope subroutines.

UNITNO - The core location relative to which arguments are stored for the assembler.

WA - First tape block of Working Area.

WAEND - Last tape block of the Working Area.

WAUNIT - The tape unit that contains the Working Area.

WB - First core location of the Editor's Working block input buffer.

Y6 - The last core location of the monitor command table.

Z6 - The first core location of the monitor command table.

1.3 SYMBOLIC CHARACTER CODES

A number of DIAL characters are symbolically defined in the Editor. Any change in the DIAL character code itself or in the structure of tables which use the symbolic codes would require a redefinition of the following symbols.

SYMBOL	VALUE	DIAL CHAR	DIAL CODE
AM	36	Alt Mode	4036
AM1	3600	Alt Mode	4036
BF	21	Q	21
BL	27	W	27
COMA	54	,	54
COMA1	5400	,	54
CR	43	Carriage Return	43
CR1	4300	Carriage Return	43
EOF	0000	End of File	00
EOF1	0000	End of File	00

SYMBOL	VALUE	DIAL CHAR	DIAL CODE
FF	6100	1	61
FL	6200	2	62
KOM	57	/	57
KOM1	5700	/	57
LF	37	Line-Feed	37
LF1	3700	Line-Feed	37
PCODE	2000	P	20
LCODE	1400	L	14
RC	04	D	04
RL	1400	L	14
RO	37	Rubout	4037
RO1	3700	Rubout	4037
RR	22	R	22
SP	40	Space	40
SP1	4000	Space	40
TB	47	Tab	47
TB1	4700	Tab	47

1.4 THE EDITOR'S TABLES

The Editor utilizes seven different tables which are explained below:

1.4 1 Control Table

The control table is located in LDF 1 and covers locations D6-2 (2235) through E6-1 (2370) inclusive. the function of the table is to facilitate those routines that execute locate requests. The first two locations of the table (D6-1, D6-2) must always have zeroes in them. The rest of the control table is used for storing line numbers. The table sets up a one-to-one correspondence between line numbers and tape blocks used in the Working Area. The first core location of the control table (D6) contains the line number of the last line of input in the first tape block of the Working Area. The second location in the table contains the line number of the last line of input on the second tape block of the Working Area, Etc. For example, if lines 1-54 filled up the first tape block of the Working Area, then location D6 (2235) would contain 54. The locate routines use the information in the control table for locating line numbers and finding appropriate tape blocks.

1.4.2 Grid Table

The grid table is located in LDF 1 at locations A6 (2001) through locations Z6-1 (2200) inclusive and is used for character display (DSC). Every displayable DIAL character is in the grid table. Each DIAL character is allotted two contiguous locations in the table which is exactly the number needed to display a character. For each character the two core locations contain the bit configuration required to "reproduce" it on the scope. The order in which the characters appear in the table is important because the scope routines access these grid configurations by an algorithm that relates the DIAL character codes to locations in the table. The marker appears in the first two locations, although this is not a rigid requirement. The grid configurations for A, B, C,.....,=,>, ? come next by core location pairs and in ascending DIAL code order. Note that the DIAL codes for these characters are 1, 2, 3,....., 75, 76, 77 respectively. If the DIAL code for any character is changed then that character must be repositioned in the grid table.

1.4.3 Keyboard Input Conversion Table

The keyboard input conversion table runs from locations TABLE (7517) through CHAR (7534) inclusive. It holds the codes for all the special and illegal DIAL characters. The keyboard input conversion routine scans this table every time it processes a character from the keyboard. Every incoming character is stored in the next to last and last locations of the table (the tags ENDTAB and CHAR). If a given character is in the table at location P, the following format applies. The high order four bits of location P contain a micro address that is used to generate a jump instruction to a routine that is appropriate to that character. The low order eight bits of location P contain the ASCII for the given character. The low order six bits of location P+1 contain the DIAL code for the given character. Except for those characters that are special, the low order six bits of any ASCII character is the DIAL code for that character. A match between the incoming character and the keyboard table will always occur because the incoming character is always stored at the end of the table. Thus, if a special character is not selected, a "normal" one is selected by default. The special characters in the table are tab, apostrophe, line feed, left arrow, carriage return, number sign, ASR33 ALT MODE, KSR 35 ALT MODE, RUBOUT, LEFT ARROW, ESCAPE ALT MODE, and at sign,in that order. Consider the first two locations of the table:

```
TABLE, 1ØØØ + 211        /TAB
       Ø4ØØ + 247        /APOSTROPHE
```

The high order four bits is the micro address for a tab, the low order 8 bits is the ASCII for tab and the low order six bits of the next word is the DIAL code for tab (47).

1.4.4 Monitor Command Table

The monitor command table is located at locations Z6 (2201) through Y6 (2234) inclusive. The monitor command table has the following format:

X_1X_2
JMP DOX_1X_2

X_3X_4
JMP DOX_3X_4

.
.
.
.
.

X_mX_{m+1}

JMP DOX_mX_{m+1}

X_iX_{i+1} is the DIAL code for a given command and JMP DOX_iX_{i+1} is a call to a subroutine that will handle the command X_iX_{i+1}. In particular, X_1X_2= 0120, A=01, and P=20, the DIAL codes for A and P. The routines that decode a monitor command load the user requested command pair and the corresponding DIAL code, say YZ, into the AC. The table is then scanned for equality with the AC. If a match is found at location P of the table, then the jump instruction at location P+1 of the table is executed.

1.4.5 Special Character Table

The special character table contains the DIAL codes for all those characters that can indicate a special command to the Editor. Those characters are tab, linefeed, ALT MODE, carriage return, comment, comma, rubout, 1, 2, Q, W, R, L, D. The special character table is utilized by the DIAL code interpretive routines which are called prior to a character being input to the Editor's buffers. The special character table is compared by half words to every incoming character. For a given situation, only the appropriate portion of the special character table is

compared to the incoming character. If an incoming character matches one in the special character table, then the routine that will implement the request of the special character is called. The special character table is always checked for rubout, but the characters 1, 2, Q, W, which are also in the table, are only checked for if the previously typed key was an ALT MODE and input was to a fresh line.

1.4.6 Monitor Command Parameter Table

The monitor command parameter table runs from location E6 (2371) to location E6+6 (2377) inclusive. Whenever a monitor command is issued, the arguments accompanying the command, if any, are stored in the parameter table. Arguments for a command are any legal combination of the following: line numbers, file name, tape block number, and tape unit number. The monitor command parameter table has the following structure:

LOCATION	CONTENTS
E6	first line number or tape block number
E6+1	second line number
E6+2 - E6+5	file name
E6+6	tape unit number

The MC parameter table also holds at locations E6 and E6+1 the load and go arguments during a Save Binary command (see DEC-12-ZW5A-D).

1.4.7 Tab Table

The tab table runs from locations FLDTAB(6774) to ENDTB(7000) inclusive. The table is used by the scope routines to display tabs as a complement of eight scope spaces; it is merely a table of horizontal coordinates with each succeeding entry eight scope

spaces larger than the previous one. Whenever a tab is encountered during display, beta 1 holds the horizontal coordinates of the last displayed character. At this point the table is scanned to find the smallest entry in the table that is larger than the current horizontal coordinate; beta 1 is then reset to that value. The table is defined relative to the symbolic tags TABSET (the length of a tab) and TXTHC (the initial horizontal coordinate of the first character on a line). A scope line can be thought of as divided into three fields: the tag field, the instruction field, and the comment field. The tag field is the first eight scope spaces, the instruction field is the next sixteen and the comment field is the last sixteen (a scope line is forty scope spaces or characters long). The first entry in the tab table is the horizontal coordinate for the start of the instruction field; the next entry is the coordinate for the middle of the instruction field; the third entry is the coordinate for the start of the comment field; the fourth entry is the coordinate for the middle of the comment field; and the last entry is zero. The last entry is used as a terminator to indicate that a tab extends beyond a scope line and routines must be called to modify the vertical as well as the horizontal coordinate.

1.5 MONITOR COMMAND DECODE ROUTINES

Whenever the carriage return key is typed, the Editor sets a pointer, beta 7, to the first character of the current line, then checks that character for a line feed code (37). If the character is a line feed, the current line is a monitor command request and the Editor calls routines to decode it. The first routine it calls dispositions the type of monitor command (AS, AP, etc.). The routine looks at the second character of the command; if it is a number code for 0-7 the locate request routines are called. If the second character is not an octal numeric code and if the command has a legitimate format, the

second and third characters correspond to a word in the monitor command table (see Monitor Command Table).

If a monitor command is not a locate, the second and third characters of the current line are loaded into the Accumulator. A pointer is set to the start of the monitor command table and a counter is set to its length. The table is scanned one word at a time and checked for equality with the AC. As a matter of table structure, the jump instructions are compared to the AC, but they are of the form 6XXX or 7XXX and would never match a legitimate monitor command which is of the form 1XXX, 2XXX,or 3XXX. If the table is scanned before a match is found, the command is illegal; it is deleted and control is returned to the display routines. If a match is found, the word subsequent to the one in the table that matched is loaded into the AC, then stored at p+1; i.e., the corresponding jump instruction is planted.

All monitor commands, except EX, CL, PI, ZE and locate, require decoding of the command string - characters 3, 4, 5, ... up to carriage return of the monitor command - and setting up of the monitor parameter table prior to execution. The monitor parameter table is seven words long starting at PDP-8 location 2371 (E6+2ØØØ). The first two words are for line numbers; the next four are used for the name; and the

last one is used for the unit number. The command string decode routines initially set the words for line and unit numbers to zero, and the words for name to 7777. A check is first made for numeric codes; if they exist, they are converted to a number and stored as the first line number in the monitor command parameter table. If numeric codes in the command string are not followed by a comma, the corresponding line number word in the monitor command parameter table is reset to Ø; otherwise the command string is checked and decoded for the second line number. After a second comma is encountered or a no comma condition as described above, pointers are set for the name sector of the command string and monitor command parameter table. Characters are transferred from the command string to the name sector of the parameter table. If, before a comma is encountered, a carriage return code is detected or the number of characters transferred exceeds eight, the command string is improperly formatted. The command is then deleted from the WMBLK and control is returned to the display routines. When a comma is encountered, the pointer to the monitor command parameter table is set to the unit number word. The unit number is decoded from the command string and put in the parameter table. A check is then made to see if the unit number is in the range 0 - 7. If it is, the decoding routine returns to P+2; otherwise, the command is deleted

from the WMBLK and control is returned to the display routines.

The routine to convert codes to numbers accesses the command string via the pointer beta 6. It converts codes in the command string sequentially. Each code is converted to a 3-bit octal digit and packed in one word (T4). The routine exits when the first non-octal numeric code in the command string is encountered. Arguments of more than four octal digits will be improperly converted, but no error condition will be detected.

1.6 EDITOR POINTER TAPE BLOCK

Whenever the Editor is fired up from a DIAL tape, initialized by the command line feed CL, or is exited from by a monitor command, the Editor's pointers are read from or written onto the Editor's pointer tape block (320). When the pointer tape block is in core, it resides in memory block five of LINC data field 1 (2400-2777); it is divided into six sectors: pointer addresses (PTADDR), pointer initialization values (PTINIT), pointer exit values (PTEXIT), pointer PDP-12-B addresses (PT12B), PDP-12-B values (B12VAL); and control table values (D6VAL). The PTADDR sector holds the addresses of all the Editor's pointers; they are sprinkled throughout segment two. The PTINIT sector holds the values that the Editor's pointers

are to be set to upon initialization. The PTEXIT sector holds the values of the Editor's pointers at the time of the last exit of the Editor. The PT12B sector holds the addresses of the Editor's knob subroutines. The B12VAL sector holds the patch to the knob subroutines to make them run off the right and left switches for DIAL users with a PDP-12-B. The D6VAL sector holds the control table values upon exit from the Editor. The primary purpose of the pointer tape block is to preserve the Editor's pointers upon exit without generating a core image of the Editor on the DIAL Tape.

1.7 INPUT BUFFERS

The Editor's input buffers take up memory blocks 5, 6, and 7 of LDF 1 and are named respectively as the buffer memory block, working memory block, and continuation memory block. All editing and display is done with respect to these buffers. Whenever a given section of the Working Area is requested, by a locate for instance, the Editor determines where in the Working Area the requested source is located and reads the pertinent blocks into the input buffers and displays them on the scope. The last scope character is defined as the last logical character in the working memory block (unless the working memory block is empty, in which case the last scope

character is in the last half-word of the buffer MBLK). Between the last logical character of the working MBLK (depending upon the state of the art, the last logical character can be anywhere in the working MBLK) and the first logical character of the continuation MBLK, there is a gap or void (LAP-6 calls it a playground) to facilitate editing. The first logical character of the continuation MBLK is the first character that would be displayed on the scope if an ALT MODE 1 were requested.

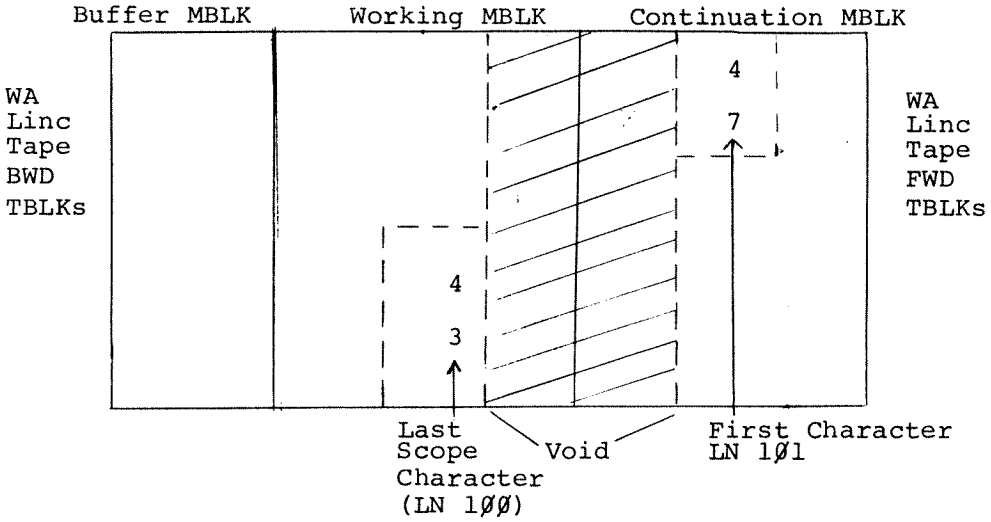


Figure A

The input buffers can be thought of as an extension in core of the Working Area. The source should be considered as continuous from the start of the Working Area (TBLK37Ø) up to the last logical character of the working MBLK and from the first logical character of the continuation block to the end of the source. The working MBLK and buffer MBLK are used for scope display and editing. The continuation MBLK is used for locate and ALT MODE requests only. If the numbers of characters in the scope display exceed the number of characters in the working MBLK, the display is continued back into the buffer MBLK. The scope display routines determine the characters to be displayed by starting from the last logical character in the working MBLK and counting back a predetermined number of characters. Since editing or input can be performed relative to any scope character, it follows that all editing is reflected by changes in the buffer MBLK or working MBLK. Addition of characters compresses the void between the working MBLK and continuation MBLK by increasing the number of characters in the buffer MBLK working MBLK area. Deletion of characters similarly expands the void area. Whenever the working MBLK becomes full, it is written out on tape along with the buffer MBLK and pointers are reset for a fresh working MBLK. The continuation MBLK is not affected. Whenever the working MBLK becomes empty, the buffer MBLK is

(core) transferred into the working MBLK and a backward TBLK (Fig. A) is read into the buffer MBLK.

The void or playground allows modification of a source without constant packing. Whenever a source id modified, the input buffers are no longer an image of their corresponding TBLKs in the Working Area and the tape is said to be in a not o.k. status. The only way to make the tape o.k. is to pack the Working Area. The Working Area as a matter of general usage is not packed but is updated by writing out the input buffers at appropriate times. When the tape is not o.k. the input buffers always contain information that must go out on tape sooner or later. As long as there is a void in the input buffers, the Working Area need only be updated TBLK by TBLK as editing proceeds. Once the source is expanded by 512 characters the playground is full and there is no more room in the input buffers for editing; the source must be packed.

The continuation MBLK is used during locate requests primarily to minimize tape transfer. When a locate forward is requested, a transfer is made character by character and line by line from the continuation MBLK to the working MBLK until the proper line is located. If the continuation block is emptied during the transfer, the next forward tape block of the Working Area is read into the continuation MBLK and

the transfer continues. For locating backwards, the same logic is employed but in this case the transfer is from the working MBLK to the continuation MBLK. Locate requests require tape transfers only when the continuation or working MBLKs become full or empty.

Subroutine GOODY is called whenever the Editor wants to read or write anything from the Working Area and is always called from segment 2. The general call is:

```
LIF       3        GOODY resides in segment 3,
DJR                DJR is enabled to save zero.
LDA I              The AC contains a JMP to the
JMP       .+2      tape instruction to be executed.
JMP       GOODY    Call GOODY.
RDC                The desired tape operation (read
xxxx               or write) and the block number.
YYYY               GOODY will return here with all
                   7's in the AC.
```

GOODY looks at the block number and determines where the operation is to occur (the range is 2ØØØ-5777). Next, it decodes the block number into a DIAL-MS block number and calls DIAL-MS to perform the operation. GOODY then returns to the caller.

1.8 THE EDITOR'S POINTERS

The following is a description of the Editor's key pointers. Beta registers 2-6 of segment 2 are crucial and must be left entirely to the Editor.

A. BETA 2 - holds the half word address in the input buffers of the last scope character. If the last two characters in the scope display were AB, for instance, and B2 held the value 7010 then the contents of location 3010 would be 0102 (DIAL Code for AB). The only time that B2 does not point to a HALF word address in the working MBLK is when that MBLK is empty; then it holds the address of the last half word of the buffer MBLK (6777). Beta 2 is used in all editing and LINCtape routines that affect the working MBLK and there are not too many that do not affect this MBLK.

B. BETA 3 - points to the half word address of the first character on the current line. The first character on the current line may be anywhere in the buffer or working MBLK. Beta 3 is used after a carriage return to determine if a monitor command has been requested and to set pointers to the monitor command if it was requested. Beta 3 is also used to determine whether editing is occurring above or below the current line. All input and a number of LINCtape routines address this beta register.

C. BETA 4 - points to the first logical character in the continuation memory block. It is utilized during the execution of ALT MODE and locate requests and for storing end of file during an exit.

D. BETA 5 - points to the control table. Any access to the control table during locate requests, for instance, go through beta 5.

E. BETA 6 - during input beta 6 is used as a counter for the number of characters on the current line. A carriage return at the end of the current line would, for example, cause beta 6 to be set to the value MAXNUM (the maximum number of characters allowable on a line). When beta 6 goes to 7777, a carriage return is automatically inserted on the current line. During execution of a monitor command, beta 6 of segment 3 is used as a pointer to the command.

The following symbols in segments two and three define core locations that are also crucial to the Editor.

BBTBLK - the core location in segment 2 that holds the TBLK in the Working Area that corresponds to the buffer MBLK. The contents of this location always has the form 5\XXX.

CBTBLK - the core location in segment 2 that holds the TBLK in the Working Area that corresponds to the continuation MBLK. Its contents are of the form 7\XXX.

CURLN - the core location in segment 2 whose contents hold the current line number.

CURPTR - the core location in segment 3 that points to the cursor character in the display routines. Each character that is displayed has its address compared with CURPTR. When a match occurs, the cursor is displayed.

CURPT2 - the core location in segment 2 that points to the cursor character for the edit routines (it differs from CURPTR by one-half word). Beta 2 and CURPT2 are the Editor's most active pointers. All editing, input, and most LINCtape routines reference this pointer.

FIRSWD - the core location in segment 3 that points to the first character in the scope display and is used by the scope display.

MAXBLK - the core location in segment 2 that holds the largest tape block used in the Working Area.

MAXLN - the core location in segment 2 that holds the largest line of the source in the Working Area.

TBLKCB - a core location in segment 2 which is conceptually identical to CBTBLK above. CBTBLK is used during read instructions and TBLKCB is used during write instructions.

TOPPTR - located in segment 2, TOPPTR is identical to FIRSWD but is used by the editing routines as a boundary value.

WBTBLK - the core location in segment 2 that holds the tape block in the Working Area that corresponds to the working MBLK.

2.0 ADD PROGRAM

Add Program is used to add a program to the Working Area starting at the current line number. A program may be retrieved from the file area by name from any unit or by block number from any unit and added to the Working Area. Line number arguments may be specified provided that the Add Program is by name; note that Add Program assumes the line number arguments are in ascending order.

The manner in which a program is added to the Editor is very similar to the manner in which the Editor accepts input from the keyboard. The only real difference is that the DIAL code interpretive subroutines are not utilized during Add Program because no special characters are being input.

When Add Program is called, it determines the first tape block of the source. All necessary information for the request is stored in the monitor command parameter table at locations E6 (2371) through E6 + 6. Add Program first looks at the name sector of the parameter table (E6 + 2 -E6 + 5). If the left half of E6 + 2 is 77, then the request is by block number. No file name should begin with question mark (DIAL code for ? = 77) because Add Program will never be able to retrieve it by name.

If a name has been requested, Add Program gets the unit number at E6 + 6 and thenchecks to see if that unit contains an index. A unit is said to have an index if the first ten words of the first tape block of the index area (TBLK 346) contain 5757 (//).[1] If no index is found, Add

[1]For a full description of index structure, see FILE COMMANDS, DEC-12-ZW9A-D.

Program displays "NO". If the requested unit has an index, each name in the index is compared with the requested name until a match is found. A no name match condition will cause Add Program to display "NO". If a match is found, Add Program further checks to see if the name corresponds to binary only and, if so, again displays "NO". If the name match has a source, then the starting tape block is retrieved from the index and stored at location TPWD (5553).

Add Program then checks the parameter table for line number arguments. If location E6 = location E6 + 1, Add Program assumes that the entire source has been requested and sets the line number arguments LN1 and LN2 to 1 and 7776 respectively. If E6 is not equal to E6 + 1, then LN1 is set equal to E6 and LN2 to E6 + 1. If the Add Program request is by tape block number, the requested block is at location E6 where it is retrieved by Add Program and stored at location TPWD. Once LN1 and LN2 have been set, the add program part of Add Program begins.

Add Program has its own input buffer, to wit, MBLK 2 of segment 2. During an Add Program, all LINCtape read instruction from the requested unit is executed by Add Program and placed in its input buffer (to include the index); however, the Editor does all the LINCtape instructions affecting the Working Area.

The Add Program transfer is executed in the following manner. Add Program gets the first TBLK from the requested source, and ignores the * 20 ↵ which is at the start of every source. If LN1 is not equal to 1, Add Program

calls the routine BYPASS which scans the requested source - always checking for end of file tape block by tape block until LN1 is equal to the current line of the requested source. When this occurs, control is turned over to the subroutine F8 which transfers characters one at a time from Add Program's input buffer to the Editor's input buffers. When the Add Program input buffer becomes empty, Add Program gets the next TBLK. After each character is transferred, control is turned over to the Editor, at which time the Editor checks its input buffers to see if they are full. When the Editor's input buffers become full, the Editor writes out on the Working Area, modifying its various arguments and pointers, and returns control to Add Program when it is finished.

Before Add Program passes a character to the Editor, it checks for end of file, exiting and returning control to the Editor upon finding it. After Add Program passes a character to the Editor it checks for carriage return. If the character was not a carriage return, the input buffers are checked and transfer of the next character is initiated. If the character was a carriage return, Add Program increments by one the Editor's arguments MAXLN (the last line of the source), CURLN (the current line of the source), and its own argument LN1. LN1 is then compared for equality with LN2; if the condition is met, the transfer is terminated. It should be noted that if LN1 is greater than LN2, Add Program will add from LN1 to the end of file since equality with LN2 will never occur.

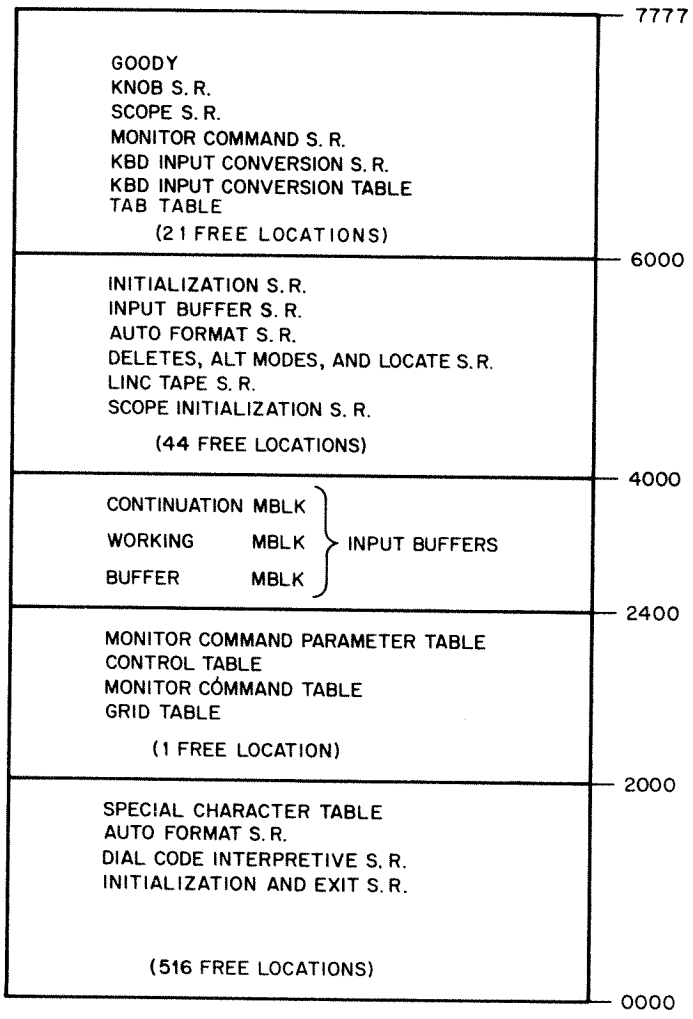
2.1 ENVIRONMENT

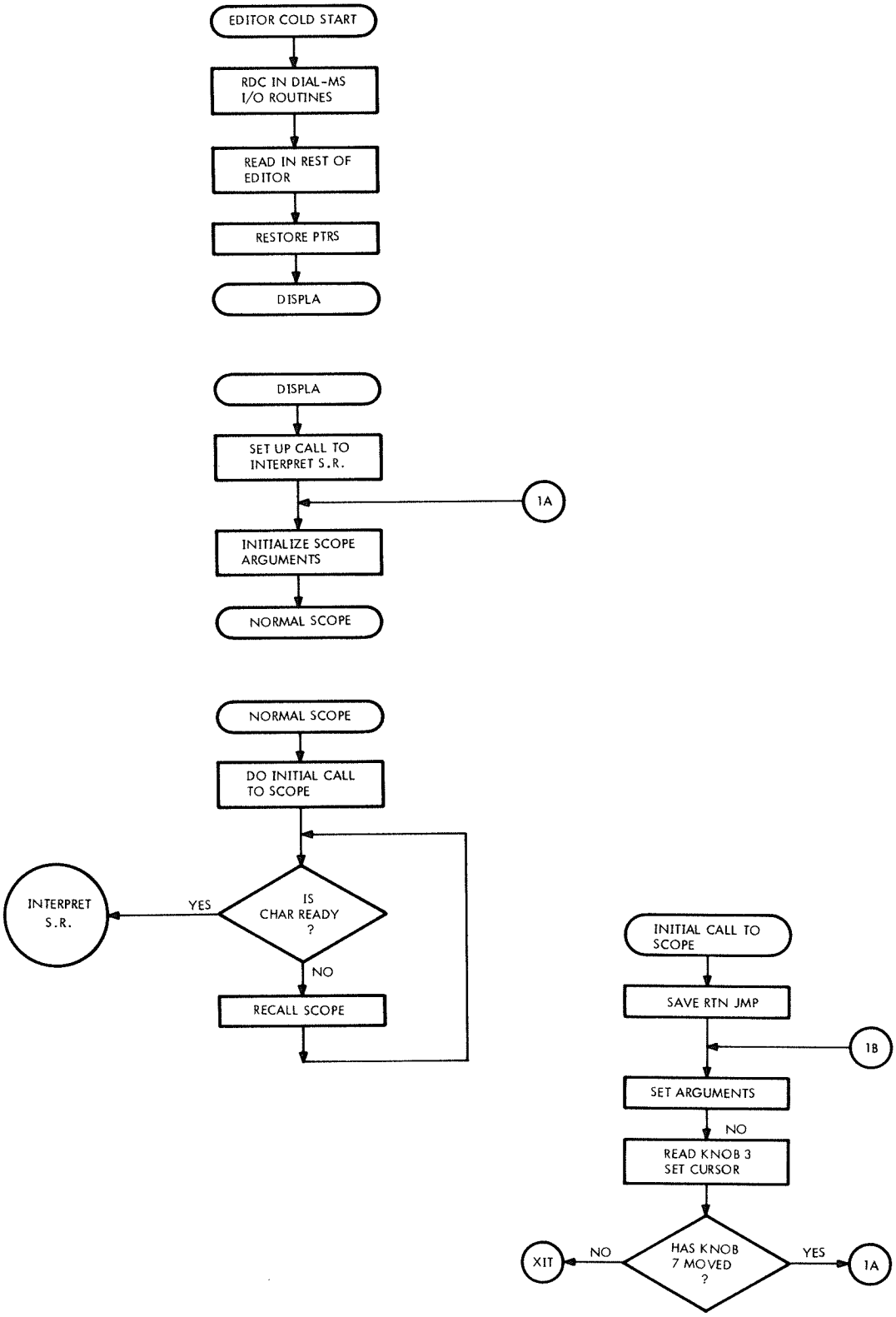
Add Program resides in tape block 321 and in locations 54ØØ-5777 when in core. Add Program is really an Editor subroutine because it requires that the Editor's LINCtape and input subroutines be resident with it and must be in MBLKs zero and one of segment two.

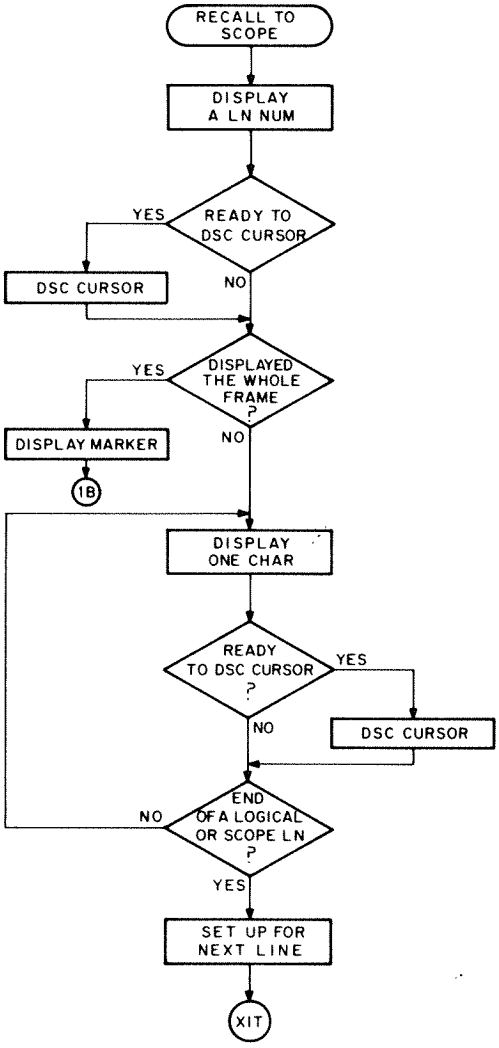
3.0 FLOW DIAGRAM (Attached)

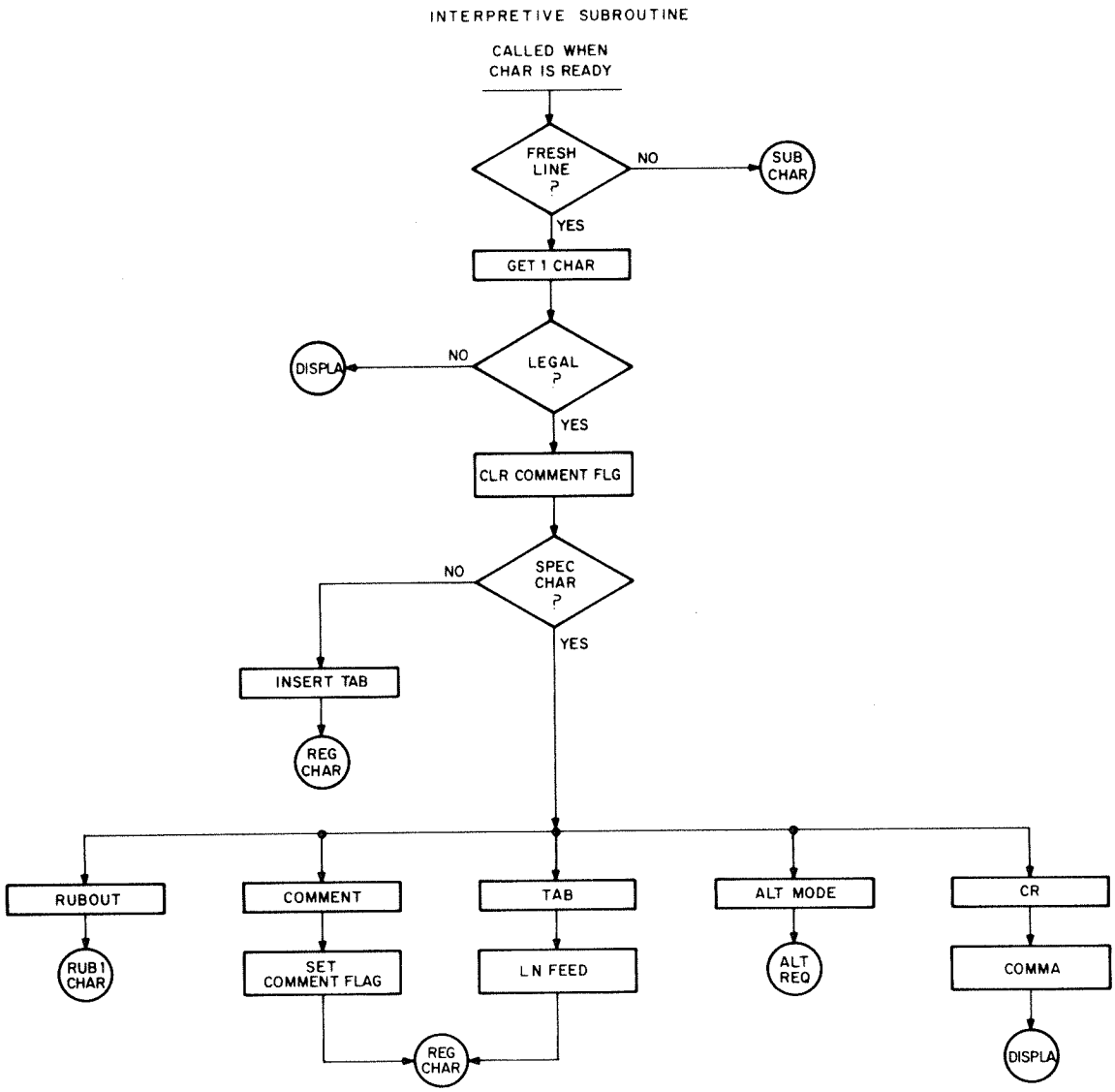
4.0 PROGRAM LISTING (Attached)

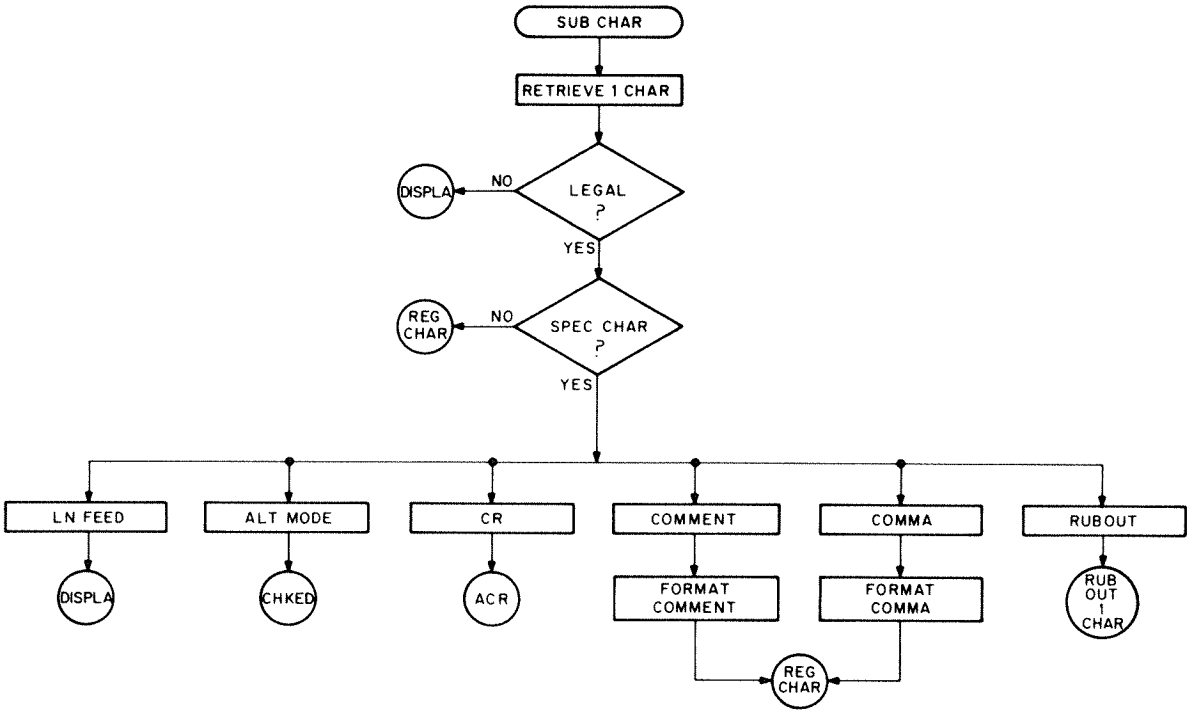
EDITOR MEMORY MAP

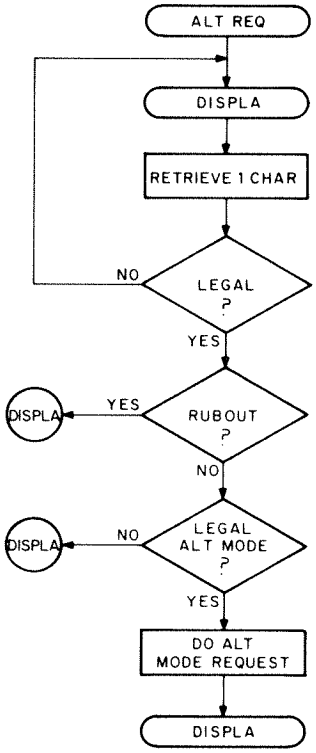


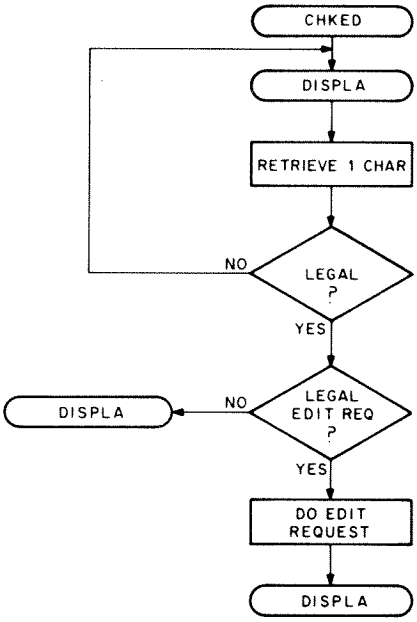

EDITOR COLD START
RDC IN DIAL-MS I/O ROUTINES
READ IN REST OF EDITOR
RESTORE PTRS
DISPLA
DISPLA
SET UP CALL TO INTERPRET S.R.
1A
INITIALIZE SCOPE ARGUMENTS
NORMAL SCOPE
NORMAL SCOPE
DO INITIAL CALL TO SCOPE
INTERPRET S.R.
YES
IS CHAR READY ?
NO
RECALL SCOPE
INITIAL CALL TO SCOPE
SAVE RTN JMP
1B
SET ARGUMENTS
NO
READ KNOB 3 SET CURSOR
XIT
NO
HAS KNOB 7 MOVED ?
YES
1A

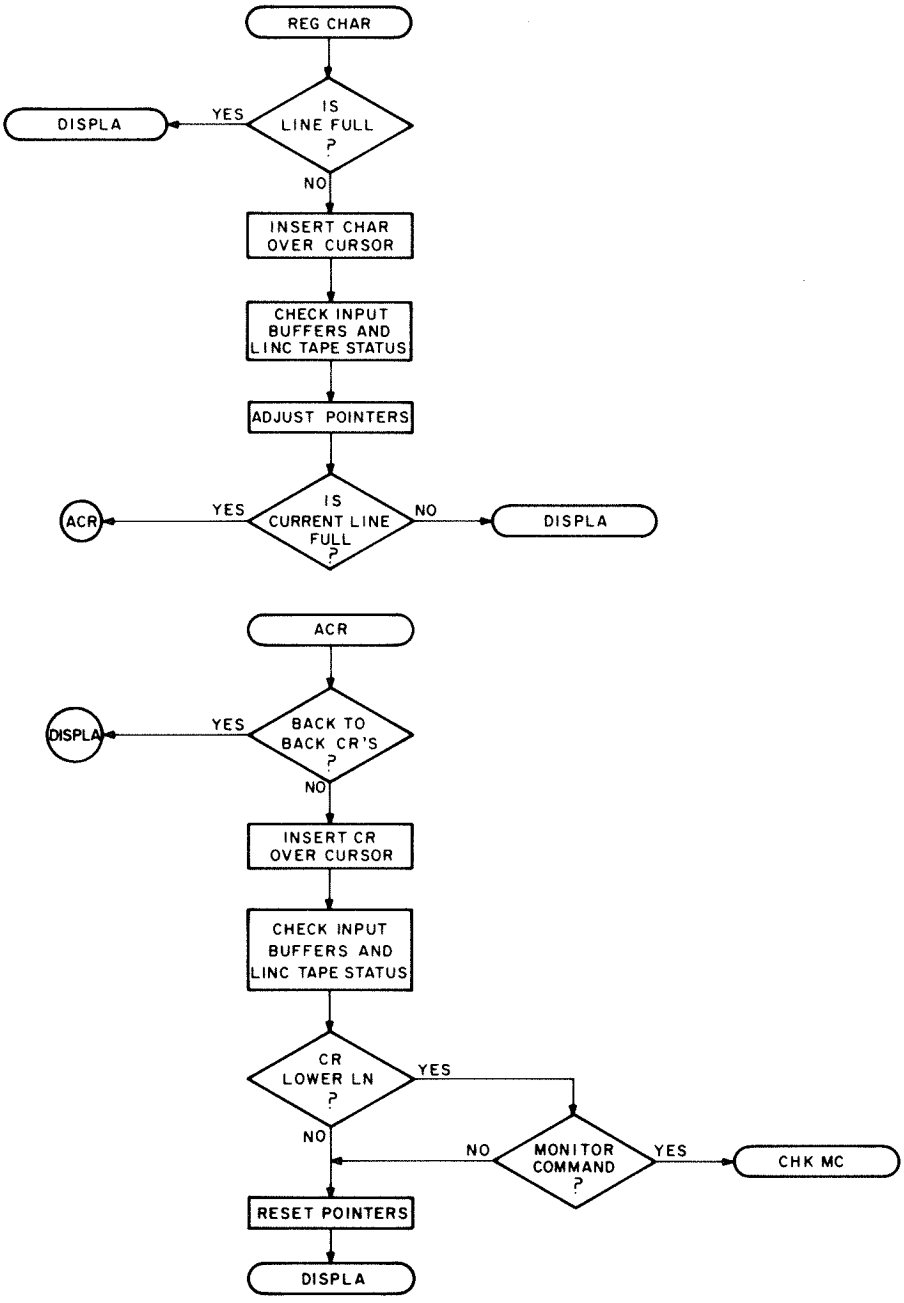

RECALL TO SCOPE
DISPLAY A LN NUM
READY TO DSC CURSOR
YES
NO
DSC CURSOR
DISPLAYED THE WHOLE FRAME ?
YES
NO
DISPLAY MARKER
1B
DISPLAY ONE CHAR
READY TO DSC CURSOR ?
YES
NO
DSC CURSOR
END OF A LOGICAL OR SCOPE LN ?
NO
YES
SET UP FOR NEXT LINE
XIT

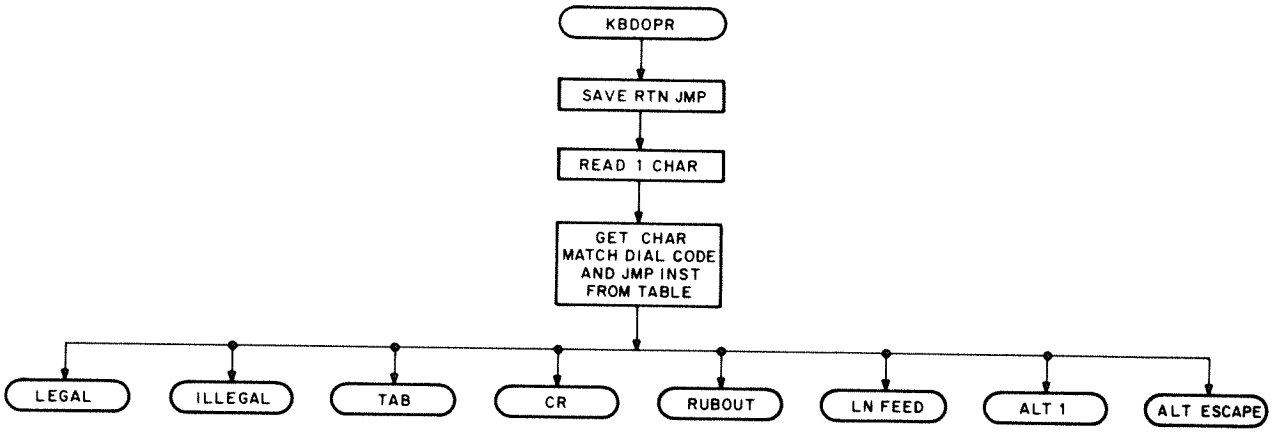

INTERPRETIVE SUBROUTINE
CALLED WHEN CHAR IS READY
FRESH LINE ?
NO
SUB CHAR
YES
GET 1 CHAR
LEGAL ?
NO
DISPLA
YES
CLR COMMENT FLG
SPEC CHAR ?
NO
YES
INSERT TAB
REG CHAR
RUBOUT
COMMENT
TAB
ALT MODE
CR
RUB1 CHAR
SET COMMENT FLAG
LN FEED
ALT REQ
COMMA
REG CHAR
DISPLA

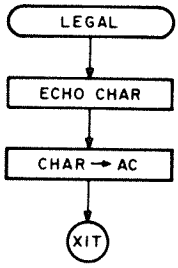

SUB CHAR
RETRIEVE 1 CHAR
DISPLA
NO
LEGAL ?
YES
REG CHAR
NO
SPEC CHAR ?
YES
LN FEED
ALT MODE
CR
COMMENT
COMMA
RUBOUT
DISPLA
CHKED
ACR
FORMAT COMMENT
FORMAT COMMA
RUB OUT 1 CHAR
REG CHAR

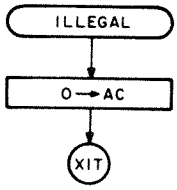

ALT REQ
DISPLA
RETRIEVE 1 CHAR
NO
LEGAL ?
YES
DISPLA
YES
RUBOUT ?
NO
DISPLA
NO
LEGAL ALT MODE ?
YES
DO ALT MODE REQUEST
DISPLA

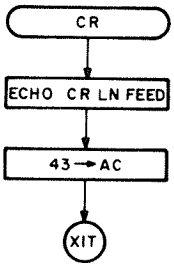

CHKED
DISPLA
RETRIEVE 1 CHAR
NO
LEGAL ?
YES
DISPLA
NO
LEGAL EDIT REQ ?
YES
DO EDIT REQUEST
DISPLA

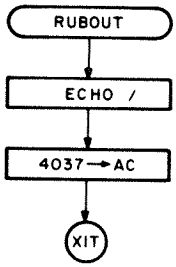

REG CHAR
IS LINE FULL ?
YES
DISPLA
NO
INSERT CHAR OVER CURSOR
CHECK INPUT BUFFERS AND LINC TAPE STATUS
ADJUST POINTERS
IS CURRENT LINE FULL ?
YES
ACR
NO
DISPLA
ACR
BACK TO BACK CR'S ?
YES
DISPLA
NO
INSERT CR OVER CURSOR
CHECK INPUT BUFFERS AND LINC TAPE STATUS
CR LOWER LN ?
YES
NO
MONITOR COMMAND ?
NO
YES
CHK MC
RESET POINTERS
DISPLA

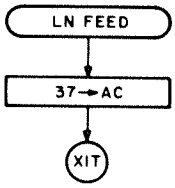

KBDOPR
SAVE RTN JMP
READ 1 CHAR
GET CHAR
MATCH DIAL CODE
AND JMP INST
FROM TABLE
LEGAL
ILLEGAL
TAB
CR
RUBOUT
LN FEED
ALT 1
ALT ESCAPE

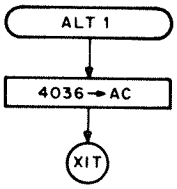

LEGAL
ECHO CHAR
CHAR → AC
XIT

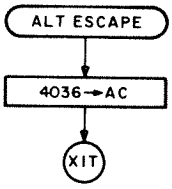

ILLEGAL
0 → AC
XIT

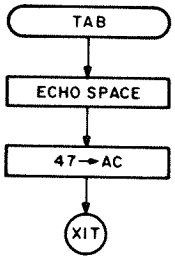

CR
ECHO CR LN FEED
43 → AC
XIT

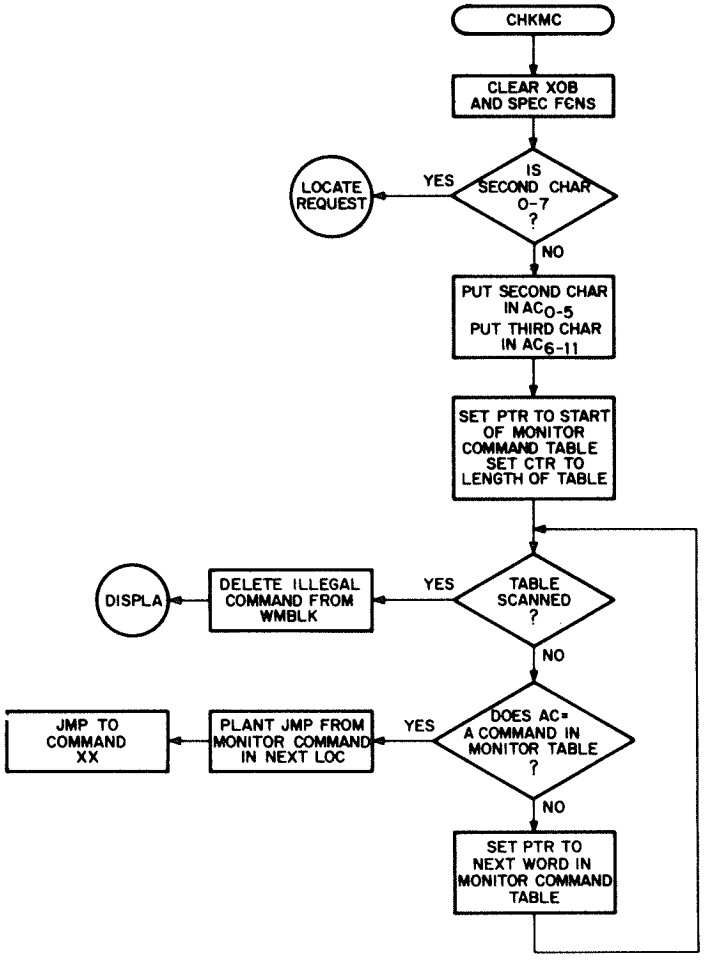

RUBOUT
ECHO /
4037 → AC
XIT

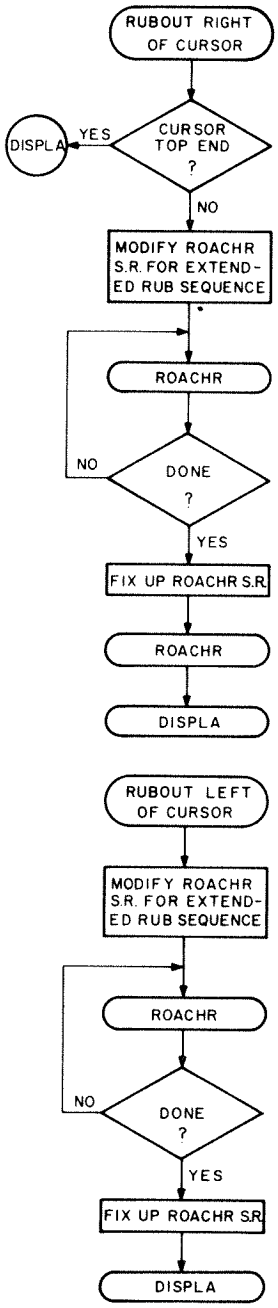

LN FEED
37 → AC
XIT

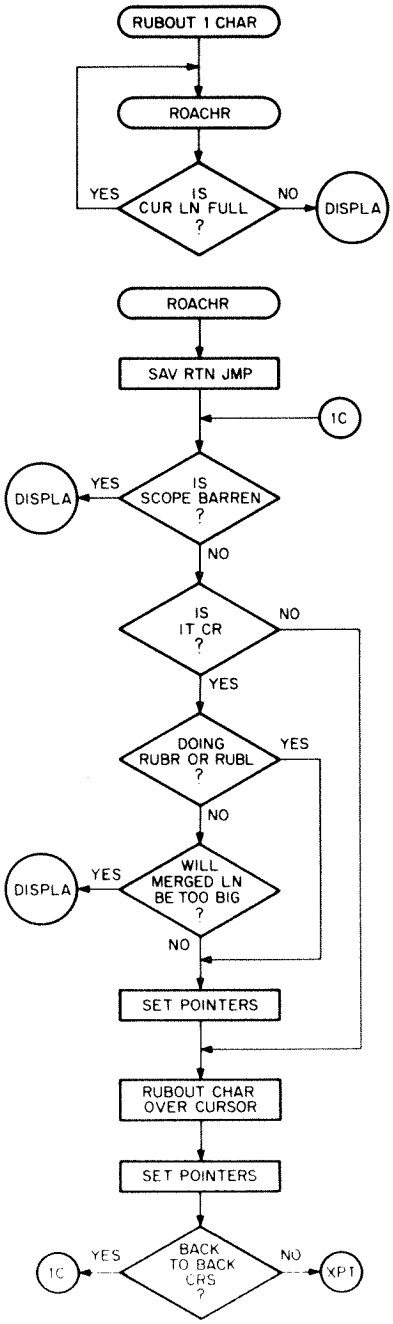

ALT 1
4036 → AC
XIT

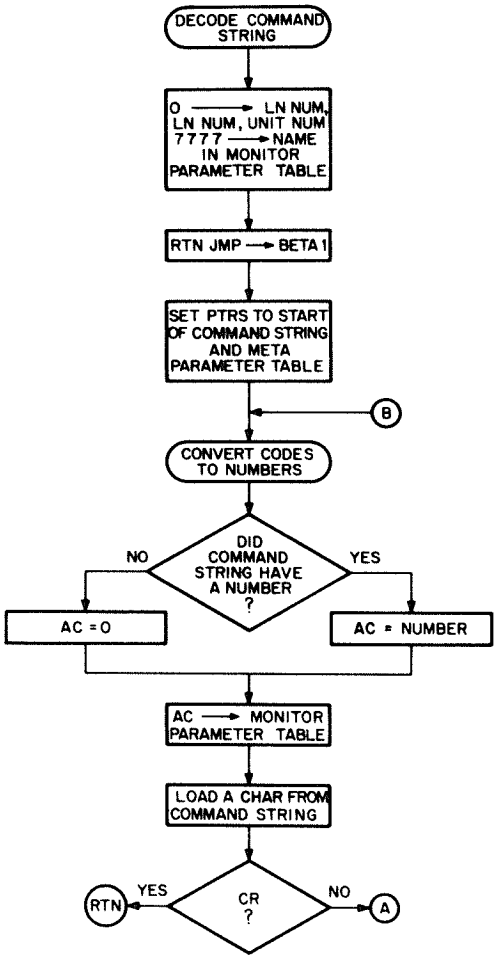

ALT ESCAPE
4036 → AC
XIT

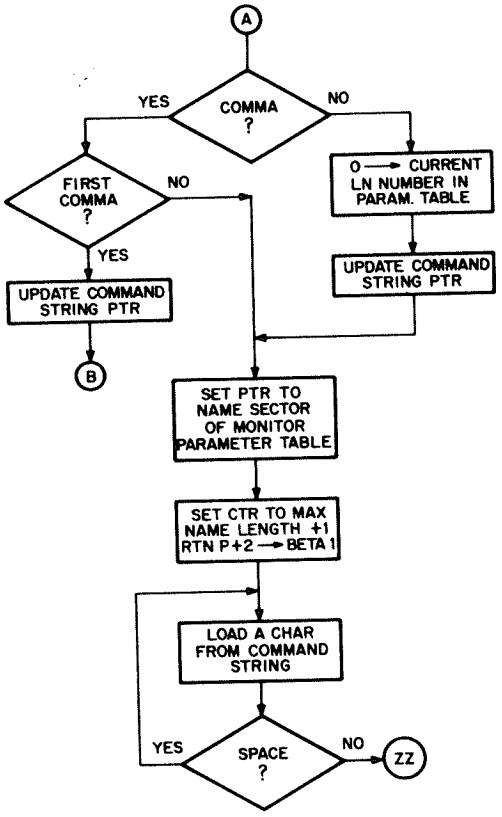

TAB
ECHO SPACE
47 → AC
XIT

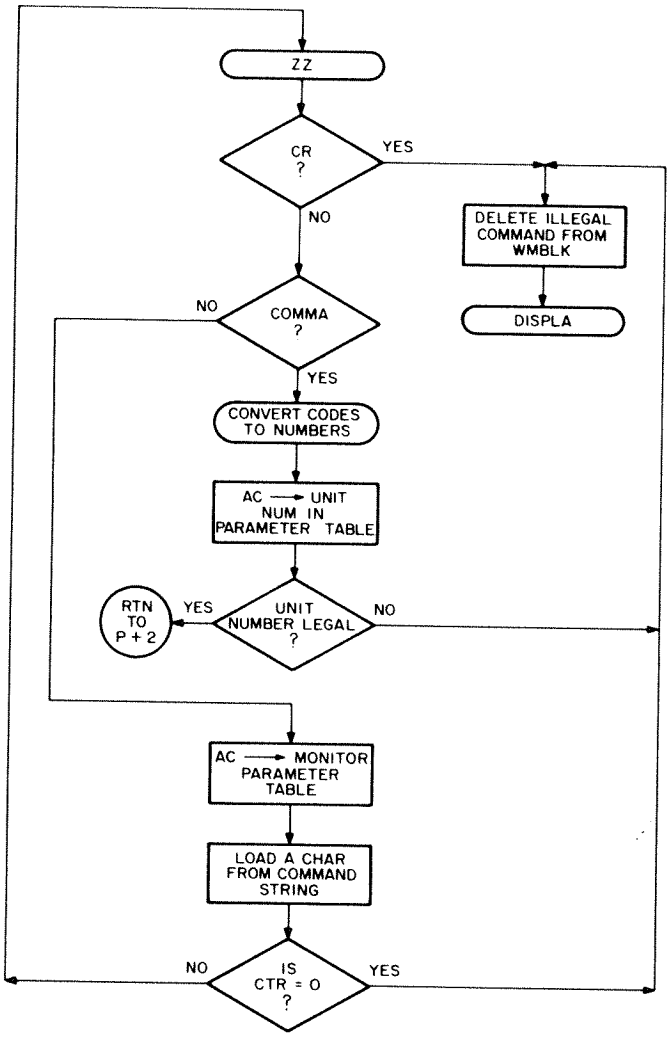

CHKMC
CLEAR XOB AND SPEC FCNS
IS SECOND CHAR 0-7 ?
YES
LOCATE REQUEST
NO
PUT SECOND CHAR IN AC0-5
PUT THIRD CHAR IN AC6-11
SET PTR TO START OF MONITOR COMMAND TABLE
SET CTR TO LENGTH OF TABLE
TABLE SCANNED ?
YES
DELETE ILLEGAL COMMAND FROM WMBLK
DISPLA
NO
DOES AC= A COMMAND IN MONITOR TABLE ?
YES
PLANT JMP FROM MONITOR COMMAND IN NEXT LOC
JMP TO COMMAND XX
NO
SET PTR TO NEXT WORD IN MONITOR COMMAND TABLE

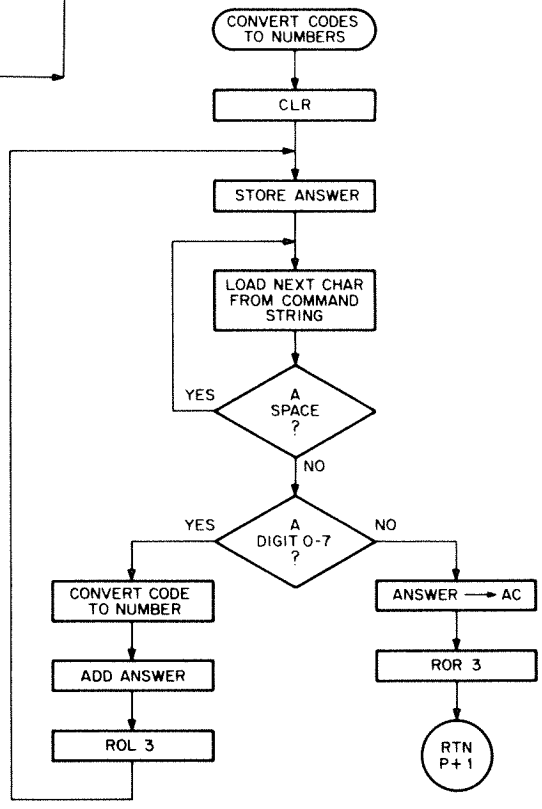

RUBOUT RIGHT OF CURSOR
CURSOR TOP END ?
YES
DISPLA
NO
MODIFY ROACHR S.R. FOR EXTENDED RUB SEQUENCE
ROACHR
DONE ?
NO
YES
FIX UP ROACHR S.R.
ROACHR
DISPLA
RUBOUT LEFT OF CURSOR
MODIFY ROACHR S.R. FOR EXTENDED RUB SEQUENCE
ROACHR
DONE ?
NO
YES
FIX UP ROACHR S.R.
DISPLA

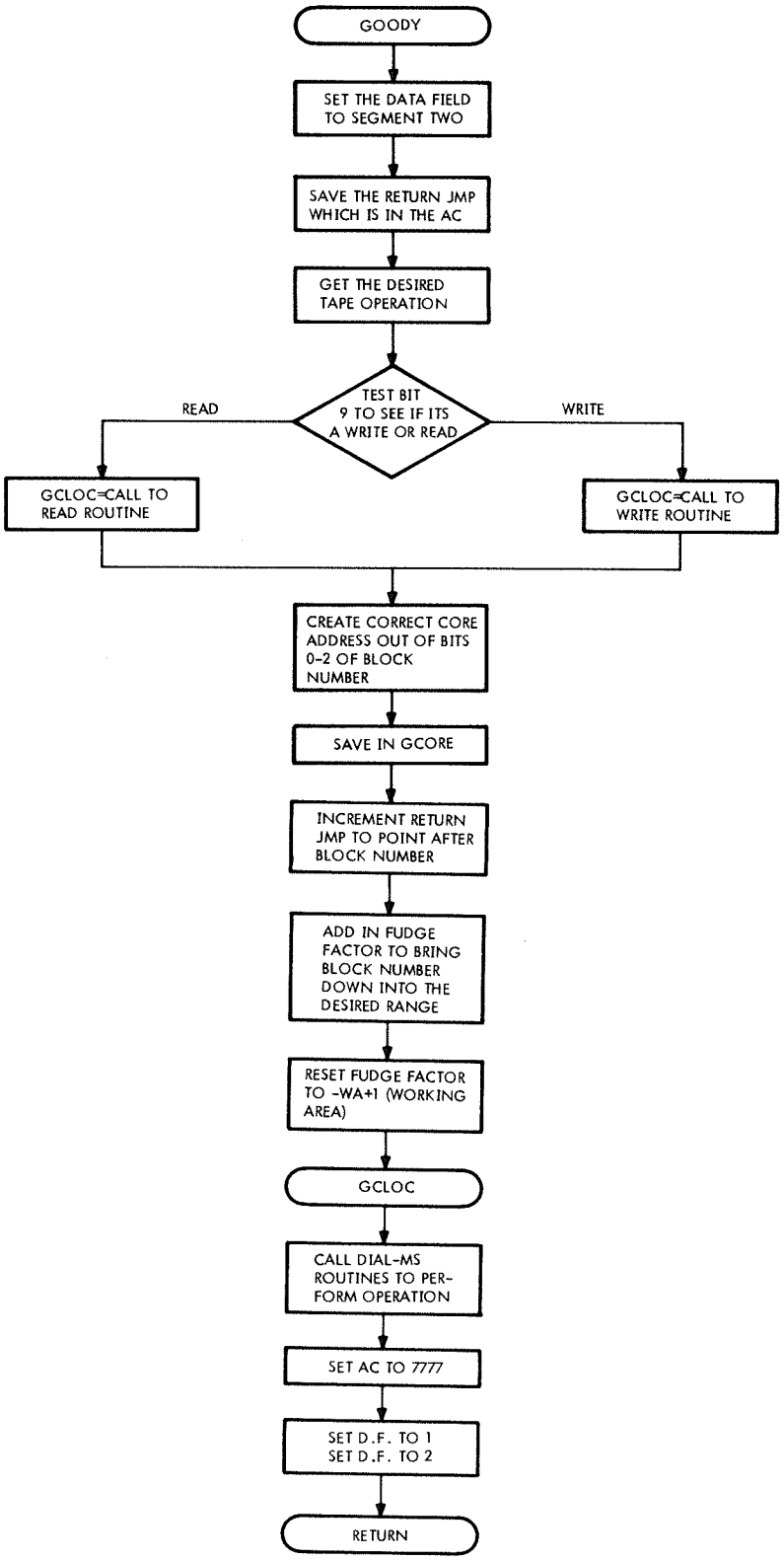

RUBOUT 1 CHAR
ROACHR
IS CUR LN FULL ?
YES
NO
DISPLA
ROACHR
SAV RTN JMP
1C
IS SCOPE BARREN ?
YES
DISPLA
NO
IS IT CR ?
NO
YES
DOING RUBR OR RUBL ?
YES
NO
WILL MERGED LN BE TOO BIG ?
YES
DISPLA
NO
SET POINTERS
RUBOUT CHAR OVER CURSOR
SET POINTERS
BACK TO BACK CRS ?
YES
1C
NO
XPT

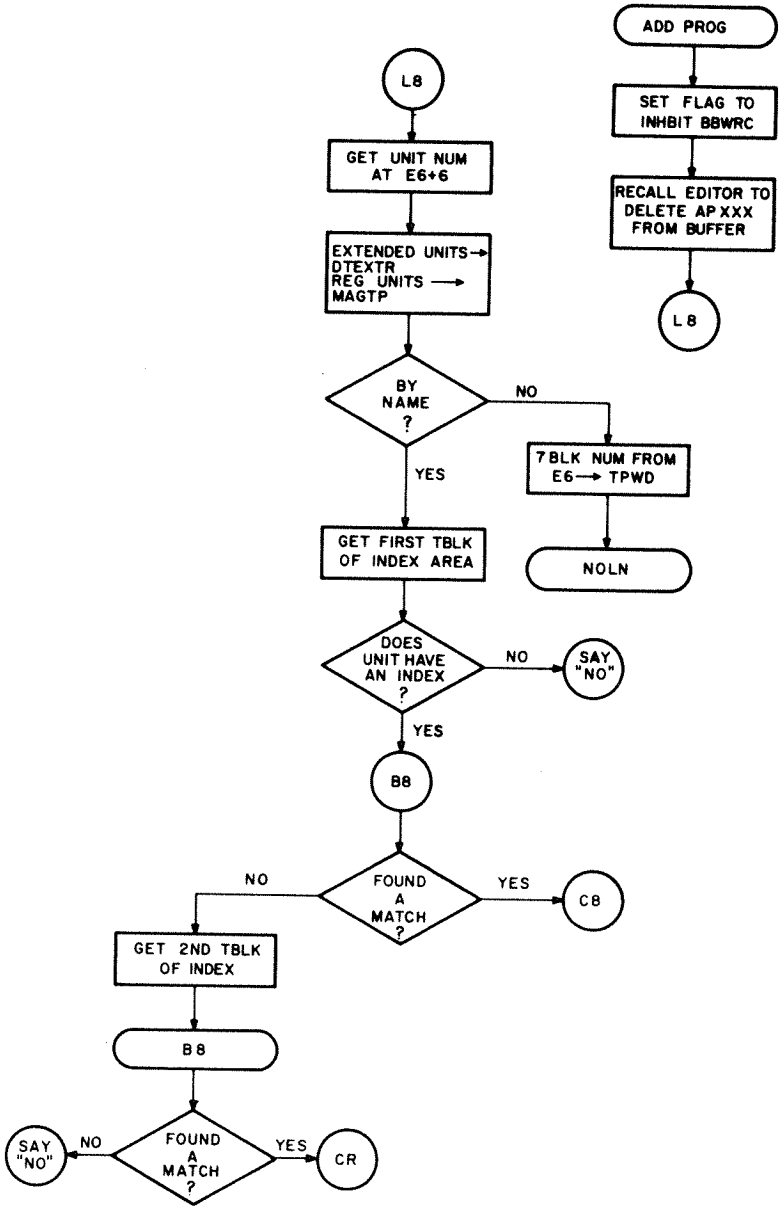

DECODE COMMAND STRING
0 → LN NUM, LN NUM, UNIT NUM 7777 → NAME IN MONITOR PARAMETER TABLE
RTN JMP → BETA 1
SET PTRS TO START OF COMMAND STRING AND META PARAMETER TABLE
B
CONVERT CODES TO NUMBERS
DID COMMAND STRING HAVE A NUMBER ?
NO
YES
AC = 0
AC = NUMBER
AC → MONITOR PARAMETER TABLE
LOAD A CHAR FROM COMMAND STRING
CR ?
YES
NO
RTN
A

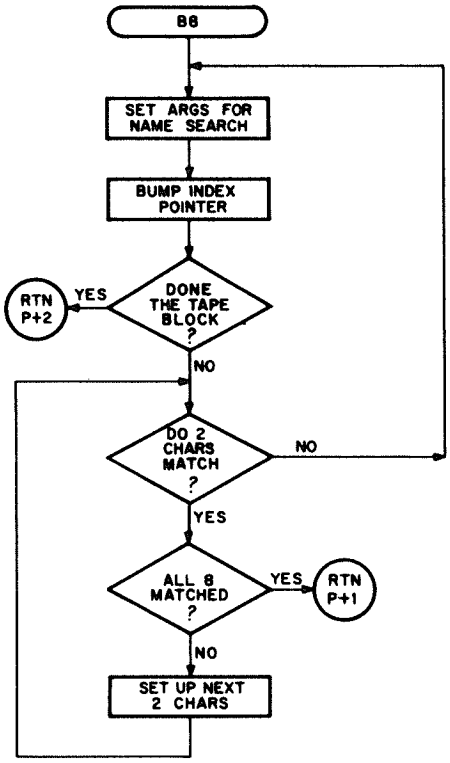

A
COMMA ?
YES
NO
FIRST COMMA ?
NO
YES
0 → CURRENT LN NUMBER IN PARAM. TABLE
UPDATE COMMAND STRING PTR
UPDATE COMMAND STRING PTR
B
SET PTR TO NAME SECTOR OF MONITOR PARAMETER TABLE
SET CTR TO MAX NAME LENGTH +1 RTN P+2 → BETA 1
LOAD A CHAR FROM COMMAND STRING
SPACE ?
YES
NO
ZZ

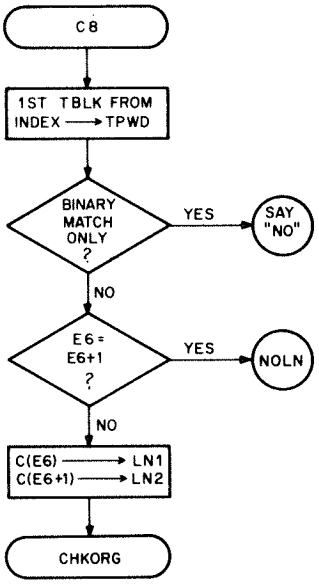

ZZ
CR ?
YES
NO
DELETE ILLEGAL COMMAND FROM WMBLK
DISPLA
NO
COMMA ?
YES
CONVERT CODES TO NUMBERS
AC → UNIT NUM IN PARAMETER TABLE
RTN TO P+2
YES
UNIT NUMBER LEGAL ?
NO
AC → MONITOR PARAMETER TABLE
LOAD A CHAR FROM COMMAND STRING
NO
IS CTR = 0 ?
YES

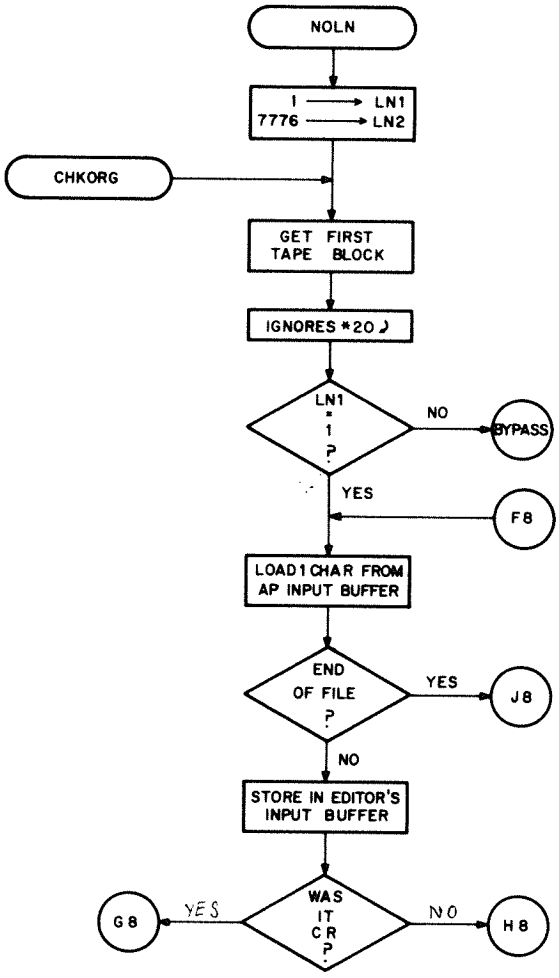

CONVERT CODES TO NUMBERS
CLR
STORE ANSWER
LOAD NEXT CHAR FROM COMMAND STRING
YES
A SPACE ?
NO
YES
A DIGIT 0-7 ?
NO
CONVERT CODE TO NUMBER
ADD ANSWER
ROL 3
ANSWER → AC
ROR 3
RTN P+1

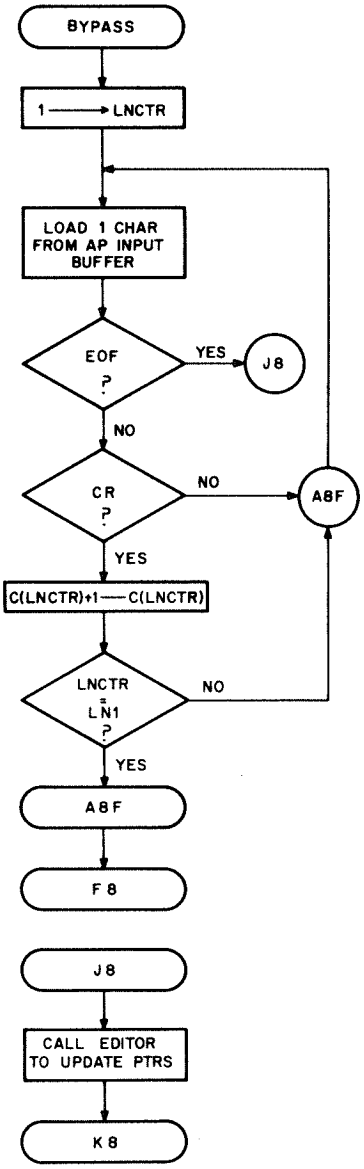

GOODY
SET THE DATA FIELD TO SEGMENT TWO
SAVE THE RETURN JMP WHICH IS IN THE AC
GET THE DESIRED TAPE OPERATION
TEST BIT 9 TO SEE IF ITS A WRITE OR READ
READ
WRITE
GCLOC=CALL TO READ ROUTINE
GCLOC=CALL TO WRITE ROUTINE
CREATE CORRECT CORE ADDRESS OUT OF BITS 0-2 OF BLOCK NUMBER
SAVE IN GCORE
INCREMENT RETURN JMP TO POINT AFTER BLOCK NUMBER
ADD IN FUDGE FACTOR TO BRING BLOCK NUMBER DOWN INTO THE DESIRED RANGE
RESET FUDGE FACTOR TO -WA+1 (WORKING AREA)
GCLOC
CALL DIAL-MS ROUTINES TO PER-FORM OPERATION
SET AC TO 7777
SET D.F. TO 1
SET D.F. TO 2
RETURN

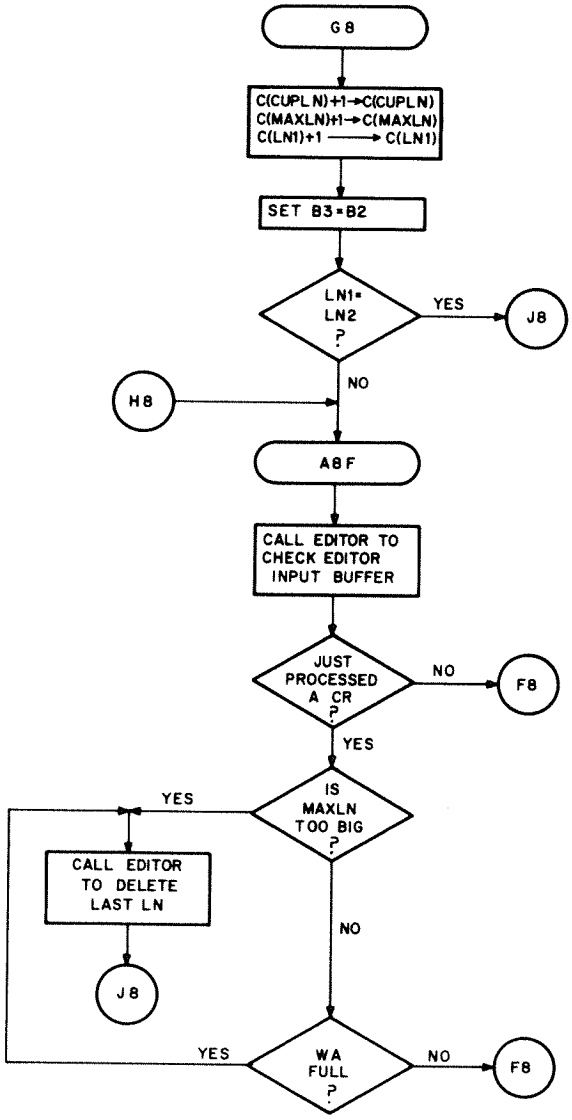

ADD PROG
SET FLAG TO INHBIT BBWRC
RECALL EDITOR TO DELETE AP XXX FROM BUFFER
L8
L8
GET UNIT NUM AT E6+6
EXTENDED UNITS → DTEXTR
REG UNITS → MAGTP
BY NAME ?
NO
YES
7 BLK NUM FROM E6 → TPWD
NOLN
GET FIRST TBLK OF INDEX AREA
DOES UNIT HAVE AN INDEX ?
NO
SAY "NO"
YES
B8
FOUND A MATCH ?
NO
YES
C8
GET 2ND TBLK OF INDEX
B8
FOUND A MATCH ?
NO
SAY "NO"
YES
CR

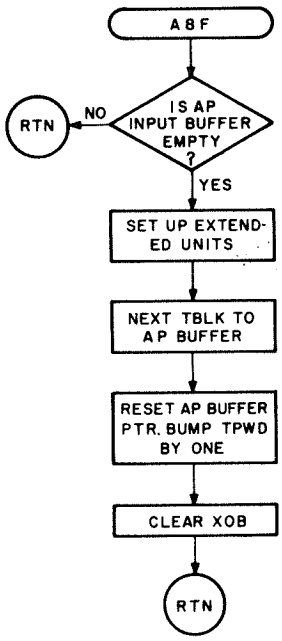

B8
SET ARGS FOR NAME SEARCH
BUMP INDEX POINTER
DONE THE TAPE BLOCK ?
YES
RTN P+2
NO
DO 2 CHARS MATCH ?
NO
YES
ALL 8 MATCHED ?
YES
RTN P+1
NO
SET UP NEXT 2 CHARS


C8
1ST TBLK FROM INDEX ⟶ TPWD
BINARY MATCH ONLY ?
YES
SAY "NO"
NO
E6 = E6+1 ?
YES
NOLN
NO
C(E6) ⟶ LN1
C(E6+1) ⟶ LN2
CHKORG

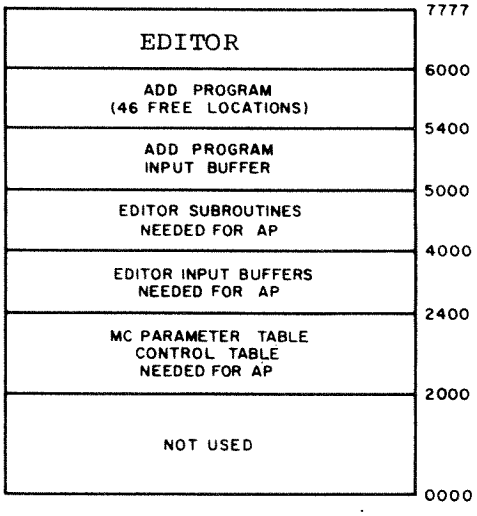

NOLN
1 → LN1
7776 → LN2
CHKORG
GET FIRST TAPE BLOCK
IGNORES *20 J
LN1 = 1 ?
NO
BYPASS
YES
F8
LOAD1CHAR FROM AP INPUT BUFFER
END OF FILE ?
YES
J8
NO
STORE IN EDITOR'S INPUT BUFFER
WAS IT CR ?
YES
G8
NO
H8


BYPASS
1 → LNCTR
LOAD 1 CHAR FROM AP INPUT BUFFER
EOF ?
YES
J8
NO
CR ?
NO
A8F
YES
C(LNCTR)+1 → C(LNCTR)
LNCTR = LN1 ?
NO
YES
A8F
F8
J8
CALL EDITOR TO UPDATE PTRS
K8


G8
C(CUPLN)+1→C(CUPLN)
C(MAXLN)+1→C(MAXLN)
C(LN1)+1 ⟶ C(LN1)
SET B3=B2
LN1=
LN2
?
YES
J8
NO
H8
A8F
CALL EDITOR TO
CHECK EDITOR
INPUT BUFFER
JUST
PROCESSED
A CR
?
NO
F8
YES
IS
MAXLN
TOO BIG
?
YES
CALL EDITOR
TO DELETE
LAST LN
J8
NO
WA
FULL
?
YES
NO
F8


A8F
IS AP INPUT BUFFER EMPTY ?
NO
RTN
YES
SET UP EXTEND-ED UNITS
NEXT TBLK TO AP BUFFER
RESET AP BUFFER PTR. BUMP TPWD BY ONE
CLEAR XOB
RTN

ADD PROGRAM MEMORY MAP



```
0000                    *20
0001                    /DIAL-MS EDITOR
0002                    /EDITOR
0003                    /UPDATE
0004                    /15 DEC 69
0005                    /UPDATED TO CHAINING 5/14/70
0006                    /
0007                    /
0010                    /       UPDATED FOR MULTIPLE RK08S 8/11/70
0011                    /
0012                    /
0013                    /
0014                    /
0015                    /
0016                    /
0017                    /
0020                    /
0021                    /
0022                            EJECT
-
```

```
0023                              SEGMNT 3
0024                              LMODE
0025                              *20
0026                                                  /KNOB S.R.
0027      0020  0103  SAM3,       SAM 3               /CURSOR
0030      0021  1120              ADA I
0031      0022  6777              -1000
0032      0023  0342              SCR 2
0033      0024  4016              STC CURVAL
0034      0025  6000              JMP 0
0035      0026  0107  SAM7,       SAM 7               /LNS PER FRAME
0036      0027  0346              SCR 6
0037      0030  2035              ADD P10
0040      0031  6000              JMP 0
0041      0032  0016              NOP
0042      0033  0016              NOP
0043      0034  0016              NOP
0044      0035  0010  P10,        10
0045      0036  1000  DSCCUR,     LDA
0046      0037  0000              0
0047      0040  4073              STC SCPRTN
0050      0041  0044              SET 4
0051      0042  0014              14
0052      0043  1324              LDH I 4
0053      0044  1460              SAE I
0054      0045  0037              LF
0055      0046  6054              JMP BYMC
0056      0047  1000              LDA
0057      0050  0014              14
0060      0051  1440              SAE
0061      0052  0002              2
0062      0053  6712              JMP Y5
0063                                                  /DISPLAY CURSOR
0064                    /
0065                    /
0066      0054  0072  BYMC,       SET I   12          /SET CURSOR POINTER TO POINT TO
0067      0055  0076              CURSOR              /GRID PATRN ADDR
0070      0056  7762              JMP     JBTMT       /SET STATUS NOW OF FLICKER INDICATOR.
0071      0057  1020              LDA I               /CURSOR VC IS BELOW
0072      0060  7767  JBM10,     -10                 /CURSOR LN
0073      0061  2765              ADD VCOORD          /VC OF CURSOR LN
0074      0062  1040              STA
0075      0063  0074              CURVC               /CURSOR VC
0076      0064  1752              DSC 12
0077      0065  1772              DSC I 12
0100      0066  0011              CLR
0101      0067  4075              STC CURFLG          /SET FLAG TO 0
0102      0070  2060              ADD     JBM10       /RESET HC TO INHIB GAP BETWEEN CHARACTERS.
0103      0071  1140              ADM
0104      0072  0001  POS1,       1
0105      0073  0000  SCPRTN,     0                   /RTN
0106      0074  0000  CURVC,      0
0107      0075  0000  CURFLG,     0
0110      0076  7717  CURSOR,     7717                /THESE LOCS DET.
0111      0077  1777              1777                /CURSOR PATTERN
0112      0100  0000  GAPARG,     0
0113      0101  0500  DOCL,       IOB                         /WAIT FOR TTY FREE BEFORE
0114                              PMODE
0115      6102  6041              TSF                         /CLEARING THE WORKING AREA
0116                              LMODE
0117      0103  6101              JMP     DOCL                /HANG
0120      0104  0602              LIF     2                   /SET UP THE PROPER I.F.
0121      0105  6041              JMP CLWA
```

```
0122    0106  0072  DOPI,   SET I 12          /GET PIP
0123    0107  2372          E6+1+2000         /NAME SECTOR OF
0124                                          /MC PARAM TABLE
0125    0110  1020          LDA I             /PUT P I P IN TABLE
0126    0111  2011          2011              /PI
0127    0112  1072          STA I 12
0130    0113  1020          LDA I
0131    0114  2077          2077              /P77 (77 TERMINATES
0132    0115  1072          STA I   12                /NAME)
0133    0116  1020          LDA I                     /FILL OUT REST OF NAMES WITH 77S
0134    0117  7777          7777
0135    0120  1072          STA I   12                /WORD NUMBER 3
0136    0121  1072          STA I   12                /WORD NUMBER 4
0137    0122  0647          LDF     7                 /PREPARE TO PICK UP UNIT PARAMETER TABLE
0140    0123  1000          LDA
0141    0124  7341          DSYS!2000                 /GET THE DISK BITS(10 IF THERE,7777 IF NOT)
0142    0125  0641          LDF     1                 /RESET TO E6 SEGMNT
0143    0126  0470          AZE I                     /IF ITS ZERO(7777) MAKE IT 0000
0144    0127  0011          CLR                       /ELSE, LEAVE IT THE WAY IT IS (10)
0145    0130  1040          STA
0146    0131  2377          E6+6+2000         /UNIT SECTOR
0147    0132  6422          JMP DOLO+2        /NOW DO AN
0150                                          /LO PIP,0
0151    0133  1020  DOQL,   LDA I             /HERE FOR QUICK LIST
0152    0134  7777          7777              /THIS VALUE TELLS
0153                                          /ASSEMBLER TO QL
0154    0135  0642          LDF 2
0155    0136  1040          STA
0156    0137  2774  UNITNO+2000=3             /=7777 FOR QL ,NE.
0157                                          /7777 FOR LI
0160                                          /NO MATTER FOR AS
0161    0140  0641          LDF 1
0162    0141  1040          STA
0163    0142  2000          2000
0164    0143  1020          LDA I
0165    0144  5000          5000
0166    0145  6152          JMP BYAS
0167    0146  0011  DOLI,   CLR
0170    0147  6135          JMP DOQL+2
0171    0150  1020  DOAS,   LDA I
0172    0151  5002          5002              /SA FOR AS
0173    0152  4240  BYAS,   STC LIORCV
0174    0153  6242          JMP W2
0175    0154  7607          JMP ECON
0176    0155  7275          JMP CHKMT
0177    0156  7051          JMP ERRXIT
0200    0157  1020          LDA I
0201    0160  0110          DISKS
0202    0161  0642          LDF 2
0203    0162  1040          STA
0204    0163  2777          UNITNO+2000
0205    0164  1020          LDA I
0206    0165  0000          0000                      /START OF THE WORKING AREA WITH REF TO 110
0207    0166  4241  RDCASM, STC BLKST
0210    0167  0641          LDF 1
0211    0170  0011          CLR
0212    0171  1440          SAE
0213    0172  2372          2000+E6+1
0214    0173  6177          JMP .+4
0215    0174  1440          SAE
0216    0175  2371          2000+E6
0217    0176  7051          JMP ERRXIT
0220    0177  1000          LDA
```

```
0221    0200  2371          2000+E6
0222    0201  0642          LDF 2
0223    0202  1040          STA
0224    0203  2775          2000+UNITNO-2
0225    0204  0017          COM
0226    0205  0641          LDF 1
0227    0206  1100          ADA
0230    0207  2372          2000+E6+1
0231    0210  1200          LAM
0232    0211  2371          2000+E6
0233    0212  0452          LZE
0234    0213  7051          JMP ERRXIT
0235    0214  0642          LDF 2
0236    0215  1040          STA
0237    0216  2776          2000+UNITNO-1
0240    0217  0002          PDP
0241                        PMODE
0242    6220  6212          CIF     10
0243    6221  4421          JMS I   READ
0244    6222  0527          JBAS2
0245    6223  6212          CIF     10
0246    6224  4421          JMS I   READ
0247    6225  0523          JBAS1
0250    6226  6141          LINC
0251                        LMODE
0252    0227  0642          LDF     2
0253    0230  1000          LDA
0254    0231  0241          BLKST
0255    0232  1620          BSE I
0256    0233  1000          1000
0257    0234  1040          STA
0260    0235  2002          2002
0261    0236  0002          PDP
0262                        PMODE
0263    6237  5640          JMP I .+1
0264                        LMODE
0265    0240  0000  LIORCV, 0
0266    0241  0370  BLKST,  WA
0267    0242  0051  W2,     SET 11
0270    0243  0000          0
0271    0244  7076          JMP DECODE
0272    0245  6251          JMP .+4
0273    0246  0602          LIF 2
0274    0247  7744          JMP T2
0275    0250  6011          JMP 11
0276    0251  0602          LIF 2
0277    0252  7744          JMP T2
0300    0253  0231          XSK I 11
0301    0254  6011          JMP 11
0302    0255  0642  CHKMC3, LDF 2             /EXECUTE MC COMMAND
0303    0256  0046          SET 6
0304    0257  2007          2007
0305    0260  6266          JMP CLRALL
0306    0261  0641          LDF 1
0307    0262  1326          LDH I 6
0310    0263  6321          JMP NUMCHK        /IS FIRST CHAR 0-7 ?
0311    0264  6270          JMP M8
0312    0265  6311          JMP LOCATE        /YES DO LOC REQUEST
0313                                          /SEARCH MONITOR
0314                                          /COMMAND TABLE
0315                                          /CLR NO PAS AND TRAP
0316    0266  0011  CLRALL, CLR
0317    0267  6000          JMP 0
```

```
0320    0270  1306  M8,     LDH 6
0321    0271  0246          ROL 6
0322    0272  4000          STC 0
0323    0273  1326          LDH I 6
0324    0274  2000          ADD 0           /COMMAND XX IS IN AC
0325    0275  0061          SET I 1
0326    0276  2200          Z6-1+2000       /PTR TO MC TABLE
0327    0277  0067          SET I 7
0330    0300  7735          Z6-Y6-3         /LENGTH
0331    0301  0227          XSK I 7         /TABLE SCANNED ?
0332    0302  0456          SKP             /NO
0333    0303  7046          JMP XITERR      /YES DELETE
0334                                        /ILLEGAL COMMAND
0335    0304  1461  N1,     SAE I 1         /FOUND A MATCH ?
0336    0305  6301          JMP .-4         /NO DO SOME MORE
0337    0306  1021          LDA I 1         /LOAD A JMP INST
0340    0307  4310          STC .+1
0341    0310  0000          0               /TO META
0342                                        /LOCATE LN XXXX
0343    0311  1020  LOCATE, LDA I            /RESET PTR TO
0344    0312  3777          -HBIT           /START OF
0345    0313  1140          ADM             /COMMAND
0346    0314  0006  P6,     6               /STRING
0347    0315  6333          JMP P56         /CONVERT CODES
0350                                        /TO LN NUMBERS
0351    0316  0641          LDF 1
0352    0317  0602          LIF 2
0353    0320  6214          JMP LOKATE
0354                                        /DIGIT CHK
0355    0321  1120  NUMCHK, ADA I            /IS CHAR CODE
0356    0322  7710          -67             /,GT, 67
0357    0323  0471          APO I           /NO
0360    0324  6000          JMP 0           /YES  IS NOT A NUM
0361    0325  1120          ADA I
0362    0326  0010          10
0363    0327  0451          APO             /,GT, 57 ?
0364    0330  6000          JMP 0
0365    0331  0220          XSK I 0
0366    0332  6000          JMP 0           /YES IT IS A NUM
0367                                        /DECODE MONITOR
0370                                        /COMMAND STRING
0371    0333  0056  P56,     SET 16          /SAV RTN JMP
0372    0334  0000          0
0373    0335  0011          CLR             /SET NUM TO 0
0374    0336  4354          STC T4          /STORE RESULT
0375    0337  1326          LDH I 6
0376    0340  1420          SHD I
0377    0341  4000          SP1
0400    0342  6337          JMP .-3         /IGNORE SPACES
0401    0343  6321          JMP NUMCHK      /DIGIT ?
0402    0344  6353          JMP T4-1        /NO EXIT
0403    0345  1306          LDH 6
0404    0346  1560          BCL I
0405    0347  7770          7770            /0-7 TO AC
0406    0350  2354          ADD T4
0407    0351  0243          ROL 3
0410    0352  6336          JMP P56+3       /DO SOME MORE
0411    0353  1020          LDA I
0412    0354  0000  T4,     0               /NUMBER TO MOVE
0413    0355  0303          ROR 3
0414    0356  6016          JMP 16
0415    0357  7076  DOMC,   JMP DECODE
0416    0360  7046          JMP XITERR
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0417    0361  7305          JMP E2
0420    0362  0600          LIF 0
0421    0363  7661  AAA4S3,  JMP KDOMC
0422                                      /ADD PROGRAM
0423    0364  0047  DOAP,    SET 7
0424    0365  0006          6
0425    0366  1327          LDH I 7
0426    0367  1420          SHD I
0427    0370  4300          CR1
0430    0371  7046          JMP XITERR
0431    0372  7076          JMP DECODE
0432    0373  6375          JMP .+2           /BY BLOCK NUM
0433    0374  6400          JMP .+4           /BY NAME
0434    0375  1000          LDA
0435    0376  2372          E6+1+2000         /UNIT NUM
0436    0377  7177          JMP U2+3          /PUT IN UNIT
0437                                      /NUM WD OF PARAM TABLE
0440    0400  0002          PDP
0441                        PMODE
0442    6401  6212          CIF     10
0443    6402  4421          JMS I   READ
0444    6403  0533          JBAP1
0445    6404  6141          LINC
0446                        LMODE
0447    0405  0641          LDF     1
0450    0406  0602          LIF     2
0451    0407  7400          JMP     1400
0452                /
0453                /
0454    0410  0002  APRTN,    PDP
0455                        PMODE
0456    6411  6212          CIF     10
0457    6412  4421          JMS I   READ
0460    6413  0537          JBAP2
0461    6414  6141          LINC
0462                        LMODE
0463    0415  0641          LDF     1
0464    0416  0602          LIF 2
0465    0417  7042          JMP C1            /GO DISPLAY
0466                                      /LOAD BINARY
0467    0420  7076  DOLO,    JMP DECODE
0470    0421  0016          NOP
0471    0422  7305          JMP E2
0472    0423  0002          PDP
0473                        PMODE
0474    6424  6212          CIF     10
0475    6425  4421          JMS I   READ      / read in loader
0476    6426  0547          JBLO
0477    6427  6141          LINC
0500                        LMODE
0501    0430  0606          LIF     6               /PREPARE TO CALL THE LOADER NOW.
0502    0431  6020          JMP     20              /START THE LOADER GOING NOW
0503    0432  0000  CURPTR,0
0504    0433  0241  SCOPE,   ROL 1
0505    0434  4620          STC LNFOR
0506                                      /PRESET ONCE
0507                                      /PER FRAME
0510    0435  0642          LDF 2
0511    0436  1000          LDA
0512    0437  2010          2000+10
0513    0440  1040          STA
0514    0441  0602          FIRSWD
0515    0442  0042          SET 2
```

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0516    0443  2002          2000+2
0517    0444  6603          JMP SCPSTR      /NORMAL CALL
0520    0445  6553          JMP IWAIT       /TO SCOPE
0521    0446  6445          JMP .-1         /NOT READY
0522    0447  0641  XIT1,    LDF 1           /READY GET A
0523    0450  0602          LIF 2           /CHAR
0524    0451  6017          JMP 17
0525    0452  1000  GETCUR,  LDA             /FIND CURSOR
0526    0453  0000          0               /CHAR
0527    0454  4552          STC CURRTN
0530    0455  0642          LDF 2
0531    0456  0070          SET I 10
0532    0457  7774          -3
0533    0460  6020          JMP SAM3
0534    0461  6466          JMP CURGO
0535    0462  4541          STC TEMPB
0536    0463  4542          STC ENDFLG
0537    0464  2541          ADD TEMPB
0540    0465  6544          JMP OUTCUR
0541    0466  1000  CURGO,  LDA
0542    0467  0000          0
0543    0470  4543          STC XITCUR
0544    0471  1000          LDA
0545    0472  0002          2
0546    0473  1440          SAE
0547    0474  0014          14
0550    0475  0456          SKP
0551    0476  6543          JMP XITCUR
0552    0477  0216          XSK CURVAL
0553    0500  0456          SKP
0554    0501  6543          JMP XITCUR
0555    0502  1120  CURSET, ADA I
0556    0503  3777          -HBIT
0557    0504  0236          XSK I CURVAL
0560    0505  0456          SKP
0561    0506  6543          JMP XITCUR
0562    0507  1440          SAE
0563    0510  0014          14
0564    0511  6502          JMP CURSET
0565    0512  0230          XSK I 10
0566    0513  0456          SKP
0567    0514  6543          JMP XITCUR
0570    0515  1000          LDA
0571    0516  0542          ENDFLG
0572    0517  0470          AZE I
0573    0520  6525          JMP CNTALL
0574    0521  0056          SET CURVAL      /KNOB 3 TOO FAR
0575    0522  0541          TEMPB
0576    0523  6466          JMP CURGO
0577    0524  6544          JMP OUTCUR      /FREEZE CURSOR
0600    0525  1000  CNTALL, LDA
0601    0526  0002          2
0602    0527  1040          STA
0603    0530  0542          ENDFLG
0604    0531  0241          ROL 1
0605    0532  0017          COM
0606    0533  4541          STC TEMPB
0607    0534  2014          ADD 14
0610    0535  0241          ROL 1
0611    0536  2541          ADD TEMPB
0612    0537  4541          STC TEMPB
0613    0540  6000          JMP 0
0614    0541  0000  TEMPB,  0
-
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0615    0542  0000  ENDFLG, Ø
0616    0543  0000  XITCUR, Ø
0617    0544  1040  OUTCUR, STA
0620    0545  0432          CURPTR
0621    0546  1120          ADA I
0622    0547  4000          HBIT
0623    0550  1040          STA
0624    0551  2026          2000+CURPT2
0625    0552  0000  CURRTN, Ø
0626    0553  0045  IWAIT,  SET 5
0627    0554  0000          Ø
0630    0555  6574          JMP OUTSCP+1    /GO SCOPE
0631    0556  0600          LIF Ø
0632    0557  6400          JMP MODKBD      /CHK DUBL BUFR
0633    0560  0225          XSK I 5         /CHAR READY
0634    0561  6005          JMP 5           /EMPTY OR MTP
0635    0562  6603  NOPAS,  JMP SCPSTR      /NO PAUSE CALL
0636    0563  6553          JMP IWAIT       /TO SCOPE
0637    0564  0016          NOP
0640    0565  0456          SKP
0641    0566  6563          JMP NOPAS+1     /LOOP TILL DUN
0642    0567  0600          LIF Ø           /RTN TO
0643                /       JMP TRPRTN      /TRAP SR
0644                /                       PREVIOUS INSTRUCTION WAS REMOVED BECAUSE TRAP HANDLER IS NO ONGER PRESENT.
0645    0570  4601          STC SVACC       /SCP SR EXIT
0646    0571  2000          ADD Ø
0647    0572  4600          STC DSCRTN
0650    0573  0000  OUTSCP, Ø               /RTN JMP TO CALL
0651    0574  1000          LDA
0652    0575  0000          Ø
0653    0576  4573          STC OUTSCP
0654    0577  2601          ADD SVACC
0655    0600  0000  DSCRTN, Ø               /RTN JMP TO SCP
0656    0601  0000  SVACC,  Ø
0657    0602  0000  FIRSWD, Ø
0660    0603  1000  SCPSTR, LDA
0661    0604  0000          Ø
0662    0605  4573          STC OUTSCP
0663    0606  0054          SET 14
0664    0607  0602          FIRSWD
0665    0610  6452  JGC,    JMP GETCUR
0666    0611  0641          LDF 1
0667    0612  3023          ADD EOFRAM
0670    0613  4075          STC CURFLG
0671    0614  3023          ADD EOFRAM
0672    0615  4074          STC CURVC
0673    0616  4100          STC GAPARG
0674    0617  1020          LDA I
0675    0620  0000  LNFOR,  Ø               /LN-1 FOR DISPLAY
0676    0621  5060          STC K5+1
0677    0622  1020          LDA I
0700    0623  0000  MAXVC,  Ø
0701    0624  4765          STC VCOORD
0702                                        /ONCE PER LN
0703    0625  6026  F5,     JMP SAM7        /RTN WITH NUM LNS
0704                                        /PER FRAME
0705    0626  1460          SAE I
0706    0627  0000  OLDSAM, Ø               /HAS KNOB 7 MOVED ?
0707    0630  0456          SKP
0710    0631  6634          JMP .+3
0711    0632  0602          LIF 2
0712    0633  7535          JMP SAMARG
0713    0634  6570          JMP OUTSCP-3
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0714                                        /DISPLAY A LN NUM
0715                                        /DO NOT DISPLAY
0716                                        /LEADING ZEROES
0717    0635  0061  H5,     SET I 1
0720    0636  1013          LNHC
0721                                        /NUM
0722    0637  1020          LDA I
0723    0640  0002          2
0724    0641  3060          ADD K5+1
0725    0642  5060          STC K5+1
0726    0643  7057          JMP K5          /GET GRID PTR FOR
0727                                        /DIGIT IN LN NUM
0730    0644  0450          AZE             /IS IT A LEADING Ø ?
0731    0645  6654          JMP J5          /NO DISPLAY FIRST NON
0732                                        /ZERO DIGIT
0733    0646  1120          ADA I           /YES INCREASE H COORD
0734    0647  0012          12
0735    0650  2001          ADD 1
0736    0651  4001          STC 1
0737    0652  7054          JMP K5-3        /AND GET NEXT DIGIT
0740    0653  6644          JMP .-7         /CHK FOR LEADING ZERO
0741    0654  1120  J5,     ADA I
0742    0655  0140          140
0743    0656  6761          JMP DSCCHR+1    /DISPLAY A DIGIT
0744    0657  7054          JMP K5-3        /GET PTR NEXT DIGIT
0745    0660  6654  AAA7S3, JMP J5
0746                                        /COME HERE TO
0747                                        /DISPLAY THE LN
0750    0661  0061  DISTXT, SET I 1
0751    0662  1157          TXTHC           /INIT H COORD FOR
0752                                        /FIRST CHAR OF A LN
0753    0663  7023          JMP EOFRAM      /CHK FOR END
0754                                        /OF FRAME
0755    0664  1334          LDH I 14
0756    0665  1420          SHD I
0757    0666  4700          TB1             /TAB ?
0760    0667  6722          JMP FLDSET
0761    0670  1420          SHD I
0762    0671  3700          LF1
0763    0672  6712          JMP Y5
0764    0673  6760  P5,     JMP DSCCHR
0765    0674  7023          JMP EOFRAM
0766    0675  1334          LDH I 14
0767    0676  1420          SHD I
0770    0677  4700          TB1
0771    0700  6722          JMP FLDSET
0772    0701  1460          SAE I
0773    0702  0043          CR
0774    0703  6673          JMP P5
0775    0704  1020          LDA I
0776    0705  1157          TXTHC
0777    0706  1440          SAE
1000    0707  0001          1
1001    0710  6774          JMP W5
1002    0711  6625          JMP F5
1003    0712  1020  Y5,     LDA I           /SET FOR MC
1004    0713  7420          MCVC
1005    0714  4765          STC VCOORD
1006    0715  0061          SET I 1
1007    0716  1051          MCHC
1010    0717  1020          LDA I
1011    0720  0037          LF
1012    0721  6000          JMP Ø
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1013    0722  0070  FLDSET, SET I 10        /SET FOR TAB
1014    0723  0752          FLDTAB-1
1015    0724  1030  GOTAB,  LDA I 10
1016    0725  1440          SAE
1017    0726  0757          ENDTB
1020    0727  6742          JMP ENDSKP
1021    0730  1020          LDA I
1022    0731  6120          -COMTB
1023    0732  2001          ADD 1
1024    0733  4736          STC CARTB
1025    0734  6774          JMP W5
1026    0735  1020          LDA I
1027    0736  0000  CARTB,  0
1030    0737  1140          ADM
1031    0740  0001          1
1032    0741  6674          JMP P5+1
1033    0742  0017  ENDSKP, COM
1034    0743  2001          ADD 1
1035    0744  0471          APO I
1036    0745  6724          JMP GOTAB
1037    0746  0470          AZE I
1040    0747  6724          JMP GOTAB
1041    0750  1010          LDA 10
1042    0751  4001          STC 1
1043    0752  6674          JMP P5+1
1044    0753  1277  FLDTAB, TAGTB
1045    0754  1417          INSTB1
1046    0755  1537          INSTB2
1047    0756  1657          COMTB
1050    0757  0000  ENDTB,  0
1051                TABSET=120
1052                TXTHC=1157
1053                TAGTB=TXTHC+TABSET
1054                INSTB1=TAGTB+TABSET
1055                INSTB2=INSTB1+TABSET
1056                COMTB=INSTB2+TABSET
1057                                        /DSC 1 CHAR ACCORDING
1060                                        /TO C(AC) AND RTN
1061    0760  0241  DSCCHR, ROL 1
1062    0761  1120          ADA I
1063    0762  2000  M5,     A6=1+2000
1064    0763  4012          STC 12
1065    0764  1120          ADA I
1066    0765  0000  VCOORD, 0
1067    0766  2100          ADD GAPARG
1070    0767  1772          DSC I 12
1071    0770  1772          DSC I 12
1072    0771  0221          XSK I 1
1073    0772  0221          XSK I 1
1074    0773  6000          JMP 0
1075    0774  0011  W5,     CLR             /SET VC
1076    0775  0052          SET 12          /FOR NXT SCP LN
1077    0776  0000          0
1100    0777  1440          SAE
1101    1000  0075          CURFLG
1102    1001  7005          JMP .+4
1103    1002  1020          LDA I
1104    1003  7767          -10
1105    1004  4100          STC GAPARG
1106    1005  1020          LDA I
1107    1006  7760          -17
1110    1007  1200          LAM
1111    1010  0765          VCOORD
-
```

```
1112    1011  1560          BCL I
1113    1012  7020          7020
1114    1013  0061          SET I 1
1115    1014  1157          TXTHC
1116    1015  6570          JMP OUTSCP-3
1117    1016  1460          SAE I
1120    1017  0360          360
1121    1020  6012          JMP 12
1122                                    /MOVE DISPLAY TO
1123                                    /TOP OF SCOPE
1124    1021  4623          STC MAXVC
1125    1022  6012          JMP 12
1126                                    /CHK END OF FRAME
1127    1023  1000  EOFRAM, LDA
1130    1024  0000          0
1131    1025  5040          STC RTNEOF
1132    1026  1000          LDA
1133    1027  0014          14
1134    1030  1440          SAE
1135    1031  0432          CURPTR
1136    1032  0456          SKP
1137    1033  6036          JMP OSCCUR
1140    1034  1000          LDA
1141    1035  0002          2               /PTR TO LAST CHAR
1142                                    /IN BUFFER
1143    1036  1440          SAE
1144    1037  0014          14              /PTR TO LST
1145                                    /DISPLAYED CHAR
1146    1040  0000  RTNEOF, 0
1147    1041  0011          CLR
1150    1042  0061          SET I 1
1151    1043  1763          MKHC
1152    1044  6761          JMP DSCCHR+1    /DISPLAY MARKER
1153    1045  6606          JMP SCPSTR+3
1154    1046  0500  XITERR, IOB
1155    1047  6244          6244
1156    1050  6210          JMP DELMC
1157                /
1160    1051  0002  ERRXIT, PDP
1161                        PMODE
1162    7052  5653          JMP I   .+1
1163    7053  7735          EANDZB
1164                        LMODE
1165                /
1166                                    /COUNT DIGITS
1167    1054  1520          SRO I
1170    1055  4210          4210
1171    1056  6661          JMP DISTXT      /EXEC THIS WHEN
1172                                    /LN NUM
1173                                    /HAS BEEN DISPLAYED
1174    1057  1020  K5,     LDA I
1175    1060  0000          0               /LN FOR DISPLAY
1176    1061  0243          ROL 3
1177    1062  1040          STA
1200    1063  1060          K5+1
1201    1064  1560          BCL I
1202    1065  7761          7761
1203    1066  6000          JMP 0
1204    1067  1000  KSAM7,  LDA
1205    1070  0000          0
1206    1071  5075          STC EGGSIT
1207    1072  6026          JMP SAM7
1210    1073  0500          IOB
-
```

```
1211    1074  6244          6244
1212    1075  0000  EGGSIT, 0
1213                                    /MONITOR COMMAND
1214                                    /STRING DECODE
1215                                    /LN,NAME,UNIT
1216    1076  0011  DECODE, CLR
1217    1077  0072          SET I 12
1220    1100  2371          E6+2000     /PTR TO MON
1221                                    /PARAMETER TABLE
1222                                    /CLEAR THE TABLE
1223    1101  1052          STA 12      /LN NUM
1224    1102  1072          STA I 12    /LN NUM
1225    1103  0017          COM
1226    1104  1072          STA I 12    /N
1227    1105  1072          STA I 12    /A
1230    1106  1072          STA I 12    /M
1231    1107  1072          STA I 12    /E
1232    1110  0011          CLR
1233    1111  1072          STA I 12    /UNIT NUM
1234    1112  0041          SET 1       /SAV RTN JMP
1235    1113  0000          0
1236                                    /LN NUM
1237    1114  0072          SET I 12
1240    1115  2370          E6=1+2000
1241    1116  0077          SET I 17
1242    1117  7775          -2          /COMMA CTR
1243    1120  0054          SET 14
1244    1121  0006          6
1245    1122  6333  F2,     JMP P56     /AND RTN WITH A
1246                                    /NUM IN AC
1247    1123  1072          STA I 12    /STORE A LN NUM
1250    1124  1306          LDH 6
1251    1125  1420          SHD I
1252    1126  4300          CR1
1253    1127  6001          JMP 1       /END OF COMMAND
1254    1130  1460          SAE I
1255    1131  0054          COMA
1256    1132  7136          JMP .+4     /NO
1257    1133  0237          XSK I 17    /FIRST COMMA ?
1260    1134  7120          JMP F2-2    /YES CHK FOR 2ND LN NUM
1261    1135  7142          JMP .+5
1262    1136  0011          CLR         /NO COMMA RESET
1263    1137  1052          STA 12      /NUM TO 0
1264    1140  0046          SET 6       /RESET COMMAND
1265    1141  0014          14          /STRING PTR
1266                                    /NAME
1267    1142  0072  N2,     SET I 12
1270    1143  6372          E6+4001+2000    /NAME SECTOR
1271    1144  0076          SET I 16
1272    1145  7766          -11         /NAME LENGTH CTR
1273    1146  0221          XSK I 1     /SET RTN TO P+2
1274    1147  1326          LDH I 6
1275    1150  1420          SHD I
1276    1151  4000          SP1
1277    1152  7147          JMP .-3
1300    1153  1420  REDO,   SHD I
1301    1154  4300          CR1
1302    1155  7046          JMP XITERR
1303    1156  1420          SHD I
1304    1157  5700          KOM1
1305    1160  7046          JMP XITERR
1306    1161  1420          SHD I
1307    1162  7700          QMARK1
-
```

```
1310    1163  7046          JMP XITERR
1311    1164  1420          SHD I
1312    1165  5400          COMA1
1313    1166  7174          JMP U2          /GET UNIT NUM
1314    1167  1372          STH I 12
1315    1170  1326          LDH I 6
1316    1171  0236          XSK I 16
1317    1172  7153          JMP REDO
1320    1173  7046          JMP XITERR      /NAME TOO LONG
1321                                        /UNIT
1322    1174  6333  U2,     JMP P56
1323    1175  0040          SET 0
1324    1176  0001          1
1325    1177  1040          STA
1326    1200  2377          E6+6+2000
1327    1201  1120          ADA I           /TEST FOR UNIT TOO LARGE.
1330    1202  7730          -47             /LARGEST UNIT
1331    1203  0451          APO             /IF POSITIVE THEN ITS WAY TOO LARGE (ABOVE 47)
1332    1204  6000          JMP 0           /GOOD UNIT.
1333    1205  7046          JMP XITERR      /ILLEGAL UNIT
1334                                        /SB,SR
1335    1206  7076  DOSB,   JMP DECODE
1336    1207  7046          JMP XITERR      /NO NAME
1337    1210  1306          LDH 6
1340    1211  1420          SHD I
1341    1212  4300          CR1
1342    1213  7264          JMP DUNSB
1343    1214  1460          SAE I
1344    1215  0054          COMA
1345    1216  7046          JMP XITERR
1346    1217  1326          LDH I 6
1347    1220  1420          SHD I
1350    1221  2000          PCODE
1351    1222  7227          JMP STPDP
1352    1223  1420          SHD I
1353    1224  1400          LCODE
1354    1225  7236          JMP STLINC
1355    1226  7046          JMP XITERR
1356    1227  1020  STPDP,  LDA I
1357    1230  0200          0200
1360    1231  1040          STA
1361    1232  2372          2000+E6+1
1362    1233  1020          LDA I
1363    1234  4400          4000+400+0
1364    1235  7244          JMP GETSA
1365    1236  1020  STLINC, LDA I
1366    1237  4020          4020
1367    1240  1040          STA
1370    1241  2372          2000+E6+1
1371    1242  1020          LDA I
1372    1243  0400          0+400+0
1373    1244  1040  GETSA,  STA
1374    1245  2371          2000+E6
1375    1246  1326          LDH I 6
1376    1247  1420          SHD I
1377    1250  4300          CR1
1400    1251  7264          JMP DUNSB
1401    1252  6321          JMP NUMCHK
1402    1253  7046          JMP XITERR
1403    1254  1306          LDH 6
1404    1255  1560          BCL I
1405    1256  7770          7770
1406    1257  1140          ADM
-
```

```
1407    1260  2371          2000+E6
1410    1261  6333          JMP P56
1411    1262  1040          STA
1412    1263  2372          2000+E6+1
1413    1264  7305  DUNSB,  JMP E2
1414    1265  0002          PDP
1415                        PMODE
1416    7266  6212          CIF     10
1417    7267  4421          JMS I   READ
1420    7270  0543          JBSB
1421    7271  6141          LINC
1422                        LMODE
1423    1272  0641          LDF     1
1424    1273  0602          LIF     2
1425    1274  6020          JMP     FCSA            /DO THE SAVE BINARY
1426                /
1427                /
1430                /
1431                                        /AS,SP
1432                                        /CHK FOR EMPTY WA
1433    1275  0642  CHKMT,  LDF 2
1434    1276  1000          LDA
1435    1277  2451          2000+MAXLN
1436    1300  0641          LDF 1
1437    1301  1460          SAE I
1440    1302  0001          1
1441    1303  0220          XSK I 0
1442    1304  6000          JMP 0
1443                                        /EXIT LOAD BINARY SR
1444    1305  0642  E2,     LDF 2
1445    1306  0011          CLR
1446    1307  1040          STA
1447    1310  2742          2000+X2+5
1450    1311  0500          IOB
1451    1312  6244          6244
1452    1313  7744          JMP T2
1453    1314  6000          JMP 0
1454                                        /SAVE PROG
1455    1315  7275  DOSP,   JMP CHKMT
1456    1316  7046          JMP XITERR
1457    1317  7076          JMP DECODE
1460    1320  7046          JMP XITERR      /NO NAME
1461    1321  7305          JMP E2
1462    1322  0642          LDF     2               /SET THE D.F. TO 2 TO PICK UP THE  OF BLOCKS.
1463    1323  1000          LDA                     /GET THE LAST BLOCK IN THE AC.
1464    1324  2533          SPTBLK!2000             /LAST BLOCK NUMBER
1465    1325  5335          STC     DOSPTP          /SAVE IN A TEMPORARY UNTIL PAST READ.
1466    1326  0002          PDP
1467                        PMODE
1470    7327  6212          CIF     10
1471    7330  4421          JMS I   READ
1472    7331  0543          JBSP
1473    7332  6141          LINC
1474                        LMODE
1475    1333  0602          LIF     2
1476    1334  1020          LDA I                   /RECALL THE LAST BLOCK NUMBER NOW
1477    1335  0000  DOSPTP, 0                       /TEMPORARY FOR THE LAST BLOCK NUMBER
1500    1336  6023          JMP FCSA+3
1501                                        /PRINT MS
1502    1337  6242  DOPS,   JMP W2
1503    1340  7343          JMP .+3
1504    1341  7275          JMP CHKMT
1505    1342  7051          JMP ERRXIT
-
```

```
1506    1343  0002          PDP
1507                        PMODE
1510    7344  6212          CIF     10
1511    7345  4421          JMS I   READ
1512    7346  0543          JBSP
1513    7347  6141          LINC
1514                        LMODE
1515    1350  0641          LDF     1
1516    1351  0602          LIF     2
1517    1352  6025          JMP FCSA+5
1520                        /PX
1521    1353  7574  DOPX,   JMP .-2
1522    1354  0002          PDP
1523                        PMODE
1524    7355  6212          CIF     10
1525    7356  4421          JMS I   READ
1526    7357  0553          JBPXDX
1527    7360  6141          LINC
1530                        LMODE
1531    1361  0641          LDF     1
1532    1362  0602          LIF     2
1533    1363  6020          JMP 20
1534                /
1535                /
1536                /
1537                /
1540                /
1541    1364  7076  DOAB,   JMP     DECODE      /DECODE THE COMMAND
1542    1365  7046          JMP     XITERR      /AN ERROR, REDO EDITOR
1543    1366  7305          JMP     E2          /FORCE THE EXIT NOW.
1544    1367  0002          PDP
1545                        PMODE               /GET OVER INTO THE WONDERFULL MODE
1546    7370  6212          CIF     10          /PREPARE TO CALL THE ROUTINES
1547    7371  4421          JMS I   READ        /CALL THEM IN NOW,
1550    7372  0543          JBFC2               /THEYRE BING CALLED IN NOW.
1551    7373  6141          LINC                /BACK TO THE CALLING SIDE
1552                        LMODE
1553    1374  0602          LIF     2           /SET UP THE CORRECT INSTRUCTION FIELD
1554    1375  6021          JMP     FCSA+1      /DO IT,BUBBY
1555                /
1556                /
1557                /
1560                /
1561                /
1562                /
1563                /
1564                /
1565                        EJECT
```

```
1566                    /
1567                    /
1570                    /
1571                    /
1572                    /
1573                    /
1574                    /
1575                    /
1576                    /
1577                    /
1600                            *7377
1601                    /
1602                    /
1603                    /
1604                    /
1605                    /                       THIS LOCATION IS A RETURN FROM FIELCOMS
1606                    /                       SO THAT "LI,AS, AND GL" WILL GO INTO
1607                    /                       THE EDITOR AND START THE ASSEMBLER GOING
1610                    /                       DO NOT REMOVE. ITS A NO-NO,
1611                    /
1612                    /
1613                    /
1614                    /
1615                    /
1616                    /
1617    1377    6166            JMP     RDCASM          /ASSEMBLER READ IN LOCATION,
1620                    /
1621                    /
1622                    /
1623                    /
1624                    /
1625                    /
1626                    /
1627                    /
1630                    /
1631                    /
1632                    /
1633                            EJECT
-
```

```
1634                    /KBD INPUT CONVERSION ROUTINES
1635                    /TABLE CONTAINS ASCII CODES OF ALL
1636                    /SPECIAL  AND ILLEGAL CHARS
1637                    /HIGH ORDER 4 BITS HOLDS A MICRO ADDR
1640                    /RELATIVE TO LOC KLEGAL
1641                    *1400
1642    1400  1000  KBDOPR, LDA
1643    1401  0000          Ø
1644    1402  5523          STC RTNJMP
1645    1403  0500          IOB             /GET THE CHAR
1646                        PMODE
1647    7404  6036          KRB                     /READ IN THE CHAR NOW
1650                        LMODE
1651    1405  1560          BCL I
1652    1406  7600          7600
1653    1407  1040          STA
1654    1410  1560          CHAR
1655    1411  5557          STC ENDTAB      /LAST CHAR IN TABLE
1656                                        /WILL GENERATE A MATCH
1657                                        /IN SCAN ROUTINE
1660                                        /UNLESS A SPECIAL
1661                                        /OR ILLEGAL CHAR
1662                                        /WAS STRUCK
1663    1412  0061          SET I 1
1664    1413  1542          TABLE-1
1665    1414  1021  SPYTAB, LDA I 1         /NEXT CHAR
1666    1415  1560          BCL I           /LOOK AT
1667    1416  7600          7600            /EVEN ASCII ONLY
1670    1417  2440          SAE             /FOUND A
1671    1420  2560          CHAR            /MATCH ?
1672    1421  7414          JMP SPYTAB      /NO DO SOME MORE
1673    1422  1301          LDH 1           /MICRO ADDR TO
1674    1423  0342          SCR 2           /LOW ORDER FOUR BITS
1675    1424  1120          ADA I           /MAKE A JMP INST
1676    1425  7433          JMP+KLEGAL      /RELATIVE TO KLEGAL
1677    1426  5432          STC AJMP
1700    1427  0221          XSK I 1         /DIAL CODE OF INPUT
1701    1430  1321          LDH I 1         /CHAR IS LOW ORDER
1702                                        /6 BITS OF LOC
1703                                        /FOLLOWING MATCH
1704    1431  5557          STC ENDTAB
1705    1432  0000  AJMP,    Ø               /GO TO S.R.
1706    1433  7443  KLEGAL, JMP LEGAL       /HERE FOR LEGAL CODE
1707    1434  7516          JMP ILEGAL
1710    1435  7471          JMP TAB
1711    1436  7475          JMP KCR
1712    1437  7477          JMP RUBOUT
1713    1440  7506          JMP LNFEED
1714    1441  7507          JMP ALTM
1715                    /FOR ADDITIONAL SPECIAL CHARS
1716    1442  7513          JMP ALTZ
1717    1443  3560  LEGAL,  ADD CHAR
1720    1444  1120          ADA I
1721    1445  7637          -140
1722    1446  0451          APO
1723    1447  7454          JMP .+5
1724    1450  1120          ADA I
1725    1451  7745          -32
1726    1452  0451          APO
1727    1453  7460          JMP .+5
1730    1454  1000          LDA
1731    1455  1560          CHAR
1732    1456  7534          JMP TYPE
-
```

```
1733    1457  7517          JMP EXIT
1734    1460  1000          LDA
1735    1461  1560          CHAR
1736    1462  1560          BCL I
1737    1463  0040          40
1740    1464  7534          JMP TYPE
1741    1465  3557          ADD ENDTAB
1742    1466  1560          BCL I
1743    1467  0040          40
1744    1470  7520          JMP EXIT+1
1745    1471  1020  TAB,     LDA I
1746    1472  0240          240                    /TYPE OUT A SPACE FOR A TAB
1747    1473  7534          JMP     TYPE
1750    1474  7517          JMP     EXIT           /AND THEN RETURN
1751    1475  7524  KCR,     JMP TYCAR
1752    1476  7517          JMP EXIT
1753    1477  1020  RUBOUT,  LDA I
1754    1500  0334          334
1755    1501  7534          JMP TYPE
1756    1502  3557          ADD ENDTAB
1757    1503  1620  ALTM1,   BSE I
1760    1504  4000          4000
1761    1505  7520          JMP EXIT+1
1762    1506  7517  LNFEED,  JMP EXIT
1763    1507  3557  ALTM,    ADD ENDTAB
1764    1510  1560          BCL I
1765    1511  0041          0041
1766    1512  7503          JMP ALTM1
1767    1513  1020  ALTZ,    LDA I
1770    1514  4036          4036
1771    1515  7520          JMP EXIT+1
1772    1516  5557  ILEGAL,  STC ENDTAB
1773    1517  3557  EXIT,    ADD ENDTAB
1774    1520  0500          IOB
1775    1521  6244          6244
1776    1522  0006          DJR
1777    1523  0000  RTNJMP,  0
2000    1524  1000  TYCAR,   LDA
2001    1525  0000          0
2002    1526  5533          STC RTN
2003    1527  3547          ADD CRCODE
2004    1530  7534          JMP TYPE
2005    1531  3545          ADD LFCODE
2006    1532  7534          JMP TYPE
2007    1533  0000  RTN,     0
2010    1534  0002  TYPE,    PDP                    /TYPE AC
2011                                               /AND RTN
2012                        PMODE
2013    7535  6041          TSF
2014    7536  5335          JMP .-1
2015    7537  6046          TLS
2016    7540  7200          CLA
2017    7541  6141          LINC
2020                        LMODE
2021    1542  6000          JMP 0
2022                /TABLE FORMAT IS :
2023                /XX00+0YYY
2024                /AAZZ WHERE:
2025                /XX= UNROTATED MICRO ADDRESS E.G.
2026                /1400 ROR 10=0003
2027                /AND C(KLEGAL+3) = JMP TAB
2030                /YYY= ASCII CODE
2031                /ZZ= DIAL CODE FOR YYY IF YYY IS A
-
```

```
2032                    /SPECIAL CHAR
2033
2034
2035
2036    1543  1211  TABLE,  1000+211          /TAB
2037    1544  0647          0400+247          /APOSTROPHE
2040    1545  2612  LFCODE, 2400+212
2041    1546  0737          0400+337          /LEFT ARROW
2042    1547  1615  CRCODE, 1400+215
2043    1550  0643          0400+243          /NUMBER SIGN
2044    1551  3375          3000+375          /ALT
2045    1552  3376          3000+376          /ALT
2046    1553  2377          2000+377          /RUBOUT
2047    1554  0737          0400+337          /LEFT ARROW
2050    1555  3633          3400+233          /ALT ESCAPE
2051    1556  0700          0400+300          /AT SIGN
2052    1557  0000  ENDTAB, 0                 /C(CHAR)
2053    1560  0000  CHAR,   0                 /LOC FOR INPUT CHAR
2054                                          /ABOVE 2 TAGS NOT
2055                                          /TO BE MOVED
2056                    /
2057                    /
2060                    /
2061                    /
2062    1561  7305  DOEX,   JMP E2           /EXIT
2063    1562  0000          HLT
2064    1563  0602          LIF 2
2065    1564  6020          JMP 20
2066    1565  7574  DODX,   JMP Z2
2067    1566  0002          PDP                     /GET OVER INTO 8 MODE TOREAD IN DX
2070                        PMODE
2071    7567  6212          CIF     10
2072    7570  4421          JMS I   READ
2073    7571  0553          JBPXDX
2074    7572  6141          LINC
2075                        LMODE
2076    1573  6447          JMP XIT1
2077    1574  1000  Z2,     LDA
2100    1575  0000          0
2101    1576  5606          STC P2T
2102    1577  7076          JMP DECODE
2103    1600  7602          JMP .+2
2104    1601  7046          JMP XITERR
2105    1602  1000          LDA
2106    1603  2372          E6+1+2000
2107    1604  7177          JMP U2+3
2110    1605  7305          JMP E2
2111    1606  0000  P2T,     0
2112    1607  0002  ECON,    PDP
2113                        PMODE
2114    7610  6212          CIF     10
2115    7611  4421          JMS I   READ
2116    7612  0543          JBFC2
2117    7613  6141          LINC
2120                        LMODE
2121    1614  0642          LDF     2
2122    1615  0602          LIF     2
2123    1616  6024          JMP FCSA+4
2124    1617  0000  AATTY3,  0
2125    1620  0642  GOODY,   LDF     2
2126    1621  4012          STC     12
2127    1622  1012          LDA     12
2130    1623  0302          ROR     2
-
```

```
2131    1624  1560          BCL I
2132    1625  7776          -1
2133    1626  1120          ADA I
2134                        PMODE
2135    7627  4421          JMS I   READ
2136                        LMODE
2137    1630  5661          STC     GCLOC&1777
2140    1631  1032          LDA I   12
2141    1632  1560          BCL I
2142    1633  7000          -777
2143    1634  5704          STC     GTOUT
2144    1635  1012          LDA     12
2145    1636  0243          ROL     3
2146    1637  1560          BCL I
2147    1640  7774          -3
2150    1641  1620          BSE I
2151    1642  0004          4
2152    1643  5703          STC     GCORE
2153    1644  1012          LDA     12
2154    1645  0017          COM
2155    1646  1560          BCL I
2156    1647  3777          -4000
2157    1650  0243          ROL     3
2160    1651  3703          ADD     GCORE
2161    1652  5703          STC     GCORE
2162    1653  0232          XSK I   12
2163    1654  0002          POP
2164                        PMODE
2165    7655  1301          TAD     WATAG           /GET WORKING AREA POINTER,
2166    7656  1304          TAD     GTOUT
2167    7657  3304          DCA     GTOUT
2170    7660  6212          CIF     10
2171    7661  4421  GCLOC,  JMS I   READ
2172    7662  7702          GCTWO
2173    7663  6141          LINC
2174                        LMODE
2175    1664  1020          LDA I
2176    1665  0110          DISKS
2177    1666  5702          STC     GCTWO&1777
2200    1667  1020          LDA I
2201    1670  7410          -WA+1
2202    1671  5701          STC     WATAG&1777
2203    1672  0641          LDF     1
2204    1673  0602          LIF     2
2205    1674  2012          ADD     12
2206    1675  5700          STC     .+3
2207    1676  0017          COM
2210    1677  0006          DJR
2211    1700  0000          0
2212                /
2213                /
2214                        PMODE
2215    7701  7410  WATAG,   -WA
2216                        LMODE
2217                /
2220    1702  0110  GCTWO,   DISKS
2221    1703  0000  GCORE,   0
2222    1704  0000  GTOUT,   0
2223    1705  0001          1
2224                /
2225                /
2226                /
2227                /
-
```

```
2230                    /
2231                    /
2232                    /
2233                    /
2234                    /
2235                    /
2236                    /
2237                    /
2240                    /
2241    1706    7305    ZERO,   JMP     E2              /THIS IS THE ZERO BINARY ROUTINE, DO AN EX.
2242    1707    0002            PDP                     /GET OVER INTO 8 MODE
2243                            PMODE                   /TEL ASSY WERE IN 8 MODE
2244    7710    7240            CLA CMA                 /PREPARE TO ZERO UPPER CORE
2245    7711    3010            DCA     10              /0-1
2246    7712    1362            TAD     ZM7000          /ZERO OUT 7000 WORDS OF UPPER CORE
2247    7713    3011            DCA     11              /SAVE IN A COUNTER
2250    7714    6211            CDF     10              /SET THE DATA FIELD TO POINT T UPPER CORE
2251    7715    3410            DCA I   10              /ZERO A WORD OF CORE
2252    7716    2011            ISZ     11              /DONE?
2253    7717    5315            JMP     .-2             /NOPE, LOOP
2254                    /
2255    7720    6201            CDF     0               /RESET THE DATA POINTER TO FIELD 0 FOR THE WRITE CALL
2256    7721    6212            CIF     10              /SET THE INSTRUCTION FIELD TO 1
2257    7722    4422            JMS I   WRITE           /WRITE AND ZEROTHE OUTPUT AREA
2260    7723    7740            ZP1
2261    7724    6212            CIF     10
2262    7725    4422            JMS I   WRITE
2263    7726    7744            ZP2
2264    7727    6212            CIF     10
2265    7730    4422            JMS I   WRITE
2266    7731    7752            ZP3                     /BINARY AREA SHOULD NOW BE ZERO
2267    7732    6212            CIF     10              /SET I,F. TO UPPER CORE FOR ONE MORE CALL
2270    7733    4422            JMS I   WRITE           /NOW ZERO OUT THE BIT MAP,
2271    7734    7756            ZP4                     /POINTS TO THE BIT MAP
2272    7735    6212    EANDZB, CIF     10              /NOW REBOOTSTRAP DIAL
2273    7736    5737            JMP I   .+1
2274    7737    7777            7777
2275                    /
2276                    /
2277                    /
2300                    /
2301    7740    0111    ZP1,    111
2302    7741    0020            20
2303    7742    0000            0
2304    7743    0016            16
2305                    /
2306                    /
2307                    /
2310                    /
2311    7744    0111    ZP2,    111
2312    7745    0020            20
2313    7746    0016            16
2314    7747    0016            16
2315                    /
2316                    /
2317                            *7752
2320                    /
2321    7752    0111    ZP3,    111
2322    7753    0020            20
2323    7754    0034            16+16
2324    7755    0004            40-16-16
2325                    /
2326                    /
-
```

```
2327                    /
2330      7756  0111    ZP4,    111
2331      7757  0020            20
2332      7760  0057            57                      /POINTS TO THE BIT MAP,
2333      7761  0001            1                       /ONE BLOCK FOR THE BIT MAP
2334                    /
2335                    /
2336                    /
2337                    /
2340                    /
2341                    /
2342                    /
2343                    /
2344                    /
2345                    /
2346                    /
2347                    /
2350                    /
2351                    /
2352                    /
2353                    /
2354                    /
2355                    /
2356                    /
2357                    /
2360                    /
2361                    /
2362                    /
2363                    /
2364                            LMODE                   /TELL ASSY WERE IN LMODE
2365                    /
2366                    /
2367                    /
2370                    /
2371                    /
2372                    /
2373      1762  1000    JBTMT,  LDA
2374      1763  1771            JBTMTS                  /GET THE SWITCH IN THE AC.
2375      1764  1660            BCO I                   /COMPLEMENT THE SKP BIT NOW.
2376      1765  0020            20
2377      1766  1520            SRO I                   /TEST FOR 12 TIMES THROUGH
2400      1767  4444            4444                    /ONE IN SIX COUNTER
2401      1770  5771            STC     JBTMTS          /SAVE AWAY NEW ONE
2402      1771  0456    JBTMTS, SKP                     /SKIPS SOMETIMES
2403      1772  6000            JMP     0               /RETURN SOMETIMES
2404      1773  0072            SET I   12              /SET CURSOR TO DISPLAY BLANKS,
2405      1774  1776            JBNULO
2406      1775  6000            JMP     0
2407                    /
2410                    /
2411                    /
2412      1776  0000    JBNULO, 0
2413      1777  0000            0
2414                    /
2415                    /
2416                    /
2417                    /
2420                    /
2421                    /
2422                    /
2423                    /
2424                    /
2425                            PMODE
-
```

```
2426                    /
2427                    /
2430                    /
2431                    /
2432                    /
2433                    /
2434                            ZM7000=JBTMT            /LDA IS A 1000 WHCIH IS -7000
2435                    /
2436                    /
2437                    /
2440                    /
2441                            *7750
2442                    /
2443                    /
2444                    /
2445        7750  7747            .-1
2446        7751  7751            .
2447                    /
2450                            LMODE
2451                    /
2452                    /
2453                    /
2454                    /
2455                    /
2456                            EJECT
.
```

```
2457                    /
2460                    /
2461                    /
2462                    /
2463                    /
2464                    /
2465                            CHAIN   "EDITOR2"
```

```
0000                    *20
0001                            EJECT
-
```

```
0002                    /
0003                    /
0004                    /
0005                    /
0006                    /
0007                    /
0010                    /
0011                    /
0012                    /
0013                    /
0014                    /
0015                            SEGMNT 2
0016                    /
0017                    /
0020                    /
0021                            *10
0022                    /
0023                    /
0024    0010    7774    BTREAD, 7774                    /ADDRESS OF THE READ ROUTINE,
0025    0011    0100    BTREC,  DISKD
0026    0012    0000            0
0027    0013    0010            DIALST*10=300
0030    0014    0010            10
0031                    /
0032                    /
0033                    /
0034                    /
0035                            *20
0036    0020    6022            JMP     .+2
0037    0021    6027            JMP     PASTL
0040    0022    0647    TEMP1,  LDF     7
0041    0023    0700    TEMP2,  RDC
0042    0024    6322    TEMP3,  6\SETUP1
0043    0025    0700    TOPPTR, RDC
0044    0026    7323    CURPT2, 7\SETUP2
0045                    /
0046    0027    0640    PASTL,  LDF     0
0047    0030    0002            PDP
0050                            PMODE
0051    4031    6212            CIF     10
0052    4032    4610            JMS I   BTREAD          /READ IN THE REST OF DIAL
0053    4033    4011            BTREC
0054                    /
0055    4034    6141            LINC
0056                            LMODE
0057    0035    0600    RETEX,  LIF 0           /RTN FROM EXIT
0060    0036    7033            JMP OLDPTR
0061    0037    6053            JMP INBUF
0062    0040    7042            JMP C1
0063    0041    0600    CLWA,   LIF 0           /CLR THE WA
0064    0042    6770            JMP INPTRS
0065    0043    6053            JMP INBUF
0066    0044    1020            LDA I
0067    0045    5262            5262
0070    0046    1062            STA I 2
0071    0047    1020            LDA I
0072    0050    6043            6000+CR
0073    0051    1062            STA I 2
0074    0052    7042            JMP C1
0075    0053    0046    INBUF,  SET     6               /SAVE RETURN
0076    0054    0000            0
0077    0055    0002            PDP
0100                            PMODE
-
```

```
0101    4056  6212          CIF     10
0102    4057  4421          JMS I   READ
0103    4060  0567          DINBUF
0104    4061  6141          LINC
0105                        LMODE
0106    0062  6771          JMP     INITLF
0107    0063  0011          CLR
0110    0064  4351          STC PLAFLG
0111    0065  0002          POP
0112                        PMODE
0113    4066  1275          TAD KHERE
0114    4067  3676          DCA I KBDIN
0115    4070  1275          TAD KHERE
0116    4071  3677          DCA I KBDOUT
0117    4072  3700          DCA I KCTR
0120    4073  6141          LINC
0121                        LMODE
0122    0074  6006          JMP     6               /RETURN
0123                        PMODE
0124    4075  0513  KHERE,  HERE
0125    4076  0506  KBDIN,  PTRIN
0126    4077  0507  KBDOUT, PTROUT
0127    4100  0502  KCTR,   CHRCTR
0130                        LMODE
0131    0101  1020  TBTOWB, LDA I           /INSERT TAB
0132    0102  4000          HBIT
0133    0103  1140          ADM
0134    0104  0026          CURPT2
0135    0105  1020          LDA I
0136    0106  0047          TB
0137    0107  1362  ACTOWB, STH I 2
0140    0110  0053  CHKBUF, SET 13           /CHK INPUT BUFRS
0141    0111  0000          0
0142    0112  6352          JMP CHKWBF
0143    0113  6372          JMP WBFULL
0144    0114  6166          JMP CHKPLA
0145    0115  6310          JMP PLAFUL
0146    0116  6013          JMP 13
0147    0117  1020  D1,     LDA I           /DELETE CUR LN
0150    0120  0001          1
0151    0121  1440          SAE
0152    0122  0451          MAXLN
0153    0123  6125          JMP .+2
0154    0124  6041          JMP     CLWA
0155    0125  1440          SAE
0156    0126  0447          CURLN
0157    0127  6131          JMP .+2
0160    0130  7044          JMP C1+2
0161    0131  1302          LDH 2
0162    0132  1460          SAE I
0163    0133  0043          CR
0164    0134  6143          JMP     EOBPST
0165    0135  1020  EOBLOP, LDA I
0166    0136  7776          -1
0167    0137  6504          JMP EOLFIX+2
0170    0140  2451          ADD MAXLN
0171    0141  4451          STC MAXLN
0172    0142  4146          STC     EOBWRD
0173    0143  6176  EOBPST, JMP     NOTOK
0174    0144  6152          JMP K1
0175    0145  1020          LDA I
0176    0146  0000  EOBWRD, 0
0177    0147  0450          AZE
-
```

```
0200    0150  6135          JMP     EOBLOP
0201    0151  7042          JMP C1            /GO DISPLAY
0202                /
0203    0152  0050  K1,      SET 10
0204    0153  0000          0
0205    0154  6551          JMP CHKWBE        /CHK WB EMPTY
0206    0155  1020          LDA I
0207    0156  7776  MINUS1,  -1
0210    0157  6170          JMP CHKPLA+2
0211    0160  4171          STC PLACTR
0212    0161  6611          JMP BUWB
0213    0162  6154          JMP K1+2
0214    0163  0043          SET 3
0215    0164  0002          2
0216    0165  6010          JMP 10
0217                                          /COUNT PLAYGRND
0220    0166  1020  CHKPLA,  LDA I            /DECREASE
0221    0167  0001  P1,      1                 /COUNT BY ONE
0222    0170  1160          ADM I
0223    0171  0000  PLACTR,  0
0224    0172  0450          AŽE               /IS PLAYGRND FULL ?
0225    0173  0220          XSK I 0           /NO
0226    0174  3072          ADD P1000
0227    0175  6000          JMP 0             /YES
0230                        /TAPE NOT OK
0231    0176  0011  NOTOK,   CLR
0232    0177  4742          STC X2+5          /CLEAR META EXIT
0233    0200  4203          STC     TPFLG
0234    0201  6000          JMP 0
0235    0202  1520  TPCHK,   SRO I
0236    0203  7777  TPFLG,   7777             /OK IF ONE
0237    0204  0220          XSK I 0           /OK
0240    0205  6000          JMP 0             /NOT OK
0241                                          /MONITOR COMMAND
0242                                          /CHECK
0243    0206  0603  CHKMC,   LIF 3
0244    0207  6255          JMP CHKMC3
0245    0210  6611  DELMC,   JMP BUWB
0246    0211  6152          JMP K1
0247    0212  7042          JMP C1
0250    0213  0000  KT4,     0
0251    0214  2167  LOKATE,  ADD P1            /LOCATE REQUEST
0252    0215  1040          STA
0253    0216  0213          KT4
0254    0217  4234          STC M4
0255                                          /DELETE REST OF
0256                                          /MONITOR COMMAND
0257    0220  6611          JMP BUWB          /DEL 1 CHAR
0260                                          /FROM WB
0261    0221  6152          JMP K1            /DELETE UNTIL DONE
0262    0222  0011          CLR
0263    0223  2447          ADD CURLN
0264    0224  0017          COM
0265    0225  1200          LAM
0266    0226  0213          KT4
0267    0227  6202          JMP TPCHK         /CHK TAPE STATUS
0270    0230  7675          JMP S4            /NOT OK
0271    0231  0472          LŽE I             /OK
0272    0232  7711          JMP L4
0273    0233  1020          LDA I
0274    0234  0000  M4,      0                 /REQD LINE
0275    0235  0017          COM
0276    0236  4242          STC .+4
-
```

```
0277    0237  0011          CLR
0300    0240  2451          ADD MAXLN
0301    0241  1220          LAM I
0302    0242  0017          0017              /CHECK MAX
0303    0243  1000          LDA
0304    0244  0451          MAXLN
0305    0245  0472          LZE I
0306    0246  4234          STC M4
0307    0247  7711          JMP L4
0310                                          /LOCATE FWD
0311                                          /FWD PAGE
0312    0250  1000  P4,       LDA
0313    0251  1547           LNSPER
0314    0252  2156           ADD MINUS1
0315    0253  0450           AZE
0316    0254  6257           JMP F4+2
0317                                          /FWD LN
0320    0255  0011  F4,       CLR
0321    0256  2167           ADD P1
0322    0257  4213           STC KT4
0323    0260  0050           SET 10
0324    0261  0203           TPFLG             /TAPE STATUS
0325    0262  6267           JMP H4
0326    0263  1000           LDA
0327    0264  0010           10
0330    0265  4203           STC TPFLG
0331    0266  7042           JMP C1            /GO DISPLAY
0332                                          /SLIDE FWD
0333    0267  0053  H4,       SET 13
0334    0270  0000           0
0335    0271  6446           JMP A3            /IS MAXLN=CURLN ?
0336    0272  6013           JMP 13            /YES RTN
0337    0273  6474           JMP CBTOWB        /NO TRANSFER 1
0340                                          /CHAR FROM CB TO WB
0341    0274  6300           JMP J4            /RTN HERE IF NON CR
0342    0275  6502           JMP EOLFIX
0343    0276  1140           ADM
0344    0277  0213           KT4
0345    0300  6433  J4,       JMP CBMT
0346    0301  6352           JMP CHKWBF
0347    0302  6372           JMP WBFULL
0350    0303  1000           LDA
0351    0304  0213           KT4
0352    0305  0450           AZE
0353    0306  6271           JMP H4+2
0354    0307  6013           JMP 13
0355                                          /PLAYGRND FULL
0356    0310  0057  PLAFUL,   SET 17
0357    0311  0000           0
0360    0312  6446           JMP A3            /MAXLN=CURLN ?
0361    0313  6017           JMP 17            /YES
0362    0314  6622           JMP     BBWRC             /WRITE IT OUT
0363    0315  2705           ADD     BBTBLK            /AC IS ZERO ON ENTRY HERE
0364    0316  4461           STC F3
0365    0317  2167           ADD P1
0366    0320  4351           STC PLAFLG
0367    0321  0054           SET 14
0370    0322  0002           2
0371    0323  1324  R3,       LDH I 4
0372    0324  1420           SHD I
0373    0325  0000           EOF1
0374    0326  6334           JMP S3
0375    0327  1362           STH I 2
-
```

```
0376    0330  6433          JMP CBMT
0377    0331  6352          JMP CHKWBF
0400    0332  0016          NOP
0401    0333  6323          JMP R3
0402    0334  1362  S3,     STH I 2
0403    0335  6635          JMP WBWRC
0404    0336  6671          JMP BBFWD
0405    0337  0042          SET 2
0406    0340  0014          14                  /NOTE
0407    0341  2454          ADD MAXBLK
0410    0342  4770          STC CURBLK
0411    0343  4351          STC PLAFLG
0412    0344  6456          JMP F3-3
0413    0345  1020  T3,     LDA I
0414    0346  0700          RDC WAUNIT
0415    0347  6650          JMP WBRDC
0416    0350  6017          JMP 17
0417    0351  0000  PLAFLG, 0
0420                                      /MS INPUT ROUTINES
0421                                      /CHK WB FULL
0422    0352  0055  CHKWBF, SET 15         /RTN JMP
0423    0353  0000          0             /TO P+1
0424    0354  0220          XSK I 0       /RTN TO P+2
0425    0355  1020          LDA I
0426    0356  7377          HBIT+CB-1
0427    0357  1440          SAE
0430    0360  0002          2
0431    0361  6000          JMP 0         /IF WB IS NOT FULL
0432    0362  6635          JMP WBWRC     /DO STRING SLIDE
0433    0363  6671          JMP BBFWD
0434    0364  6176          JMP NOTOK     /TAPE NOT OK
0435    0365  0062          SET I 2
0436    0366  6777          HBIT+WB-1
0437    0367  6446          JMP A3        /WA FULL
0440    0370  4770          STC CURBLK
0441    0371  6015  AAA4S2, JMP 15
0442                                      /WB FULL FIX
0443                                      /BPL AND BB
0444    0372  0055  WBFULL, SET 15
0445    0373  0000          0
0446    0374  1020          LDA I
0447    0375  7377          -400
0450    0376  2026          ADD CURPT2
0451    0377  4026          STC CURPT2
0452    0400  2375          ADD .-3
0453    0401  2003          ADD 3
0454    0402  4003          STC 3
0455    0403  2447          ADD CURLN
0456    0404  1045          STA 5
0457    0405  0225          XSK I 5
0460                                      /WB TO BB
0461    0406  0076          SET I 16
0462    0407  2777          WB=1
0463    0410  0074          SET I 14
0464    0411  2377          BB=1
0465    0412  0072          SET I 12
0466    0413  7377          -400
0467    0414  1036          LDA I 16
0470    0415  1074          STA I 14
0471    0416  0232          XSK I 12
0472    0417  6414          JMP .-3
0473    0420  1000          LDA
0474    0421  0005          5
-
```

```
0475    0422  1460          SAE I             /IS CNTRL TABLE
0476    0423  2371          E6+2000           /FULL ?
0477    0424  6015          JMP 15
0500    0425  1020          LDA I             /YES
0501    0426  6176          JMP NOTOK         /MAKE TAPE ALWAYS
0502    0427  4523          STC     TPSTAT    /NOT OK
0503    0430  0065          SET I 5           /TO START
0504    0431  2243          D6+2000           /OF CNTRL TABLE
0505    0432  6015          JMP 15
0506                                          /CHK CB EMPTY
0507    0433  0055  CBMT,    SET 15
0510    0434  0000          0
0511    0435  1000          LDA               /BETA 4
0512    0436  0004          4                 /IS CB PTR
0513    0437  0450          AZE
0514    0440  6000          JMP 0
0515    0441  6707          JMP CBFWD         /CB IS EMPTY
0516    0442  6715          JMP CBRDC
0517    0443  0064          SET I 4
0520    0444  7377          HBIT+CB-1
0521    0445  6015          JMP 15
0522                                          /CHK CONTINUATION
0523    0446  1020  A3,      LDA I
0524    0447  0000  CURLN,   0
0525    0450  1460          SAE I
0526    0451  0000  MAXLN,   0
0527    0452  0220          XSK I 0
0530    0453  1020          LDA I
0531    0454  0000  MAXBLK,  0                 /BIGGEST USED
0532                                          /IN WA
0533    0455  6000          JMP 0
0534                                          /FIX BNS
0535    0456  0055          SET 15
0536    0457  0000          0
0537    0460  1020          LDA I
0540    0461  0000  F3,      0                 /BQBN SAVED
0541    0462  1440          SAE
0542    0463  0705          BBTBLK
0543    0464  6466          JMP ,+2
0544    0465  6541          JMP V3-4
0545    0466  1040          STA
0546    0467  0705          BBTBLK
0547    0470  4664          STC WBTBLK
0550    0471  6677          JMP BBRDC
0551    0472  2705          ADD BBTBLK
0552    0473  6534          JMP V3-11         /RDC CQ
0553                                          /CB TO WB
0554    0474  1324  CBTOWB,  LDH I 4
0555    0475  1362          STH I 2
0556    0476  1420          SHD I
0557    0477  4300          CR1
0560    0500  0220          XSK I 0
0561    0501  6000          JMP 0
0562                                          /EOL FIXES
0563    0502  1020  EOLFIX,  LDA I
0564    0503  0001          1
0565    0504  2447          ADD CURLN
0566    0505  4447          STC CURLN
0567    0506  0043          SET 3
0570    0507  0002          2
0571    0510  2156          ADD MINUS1
0572    0511  6000          JMP 0
0573                                          /MAKE TAPE OK
-
```

```
0574    0512  0055  L3,     SET 15
0575    0513  0000          0
0576    0514  0044          SET 4
0577    0515  0002          2
0600    0516  1020          LDA I
0601    0517  0000          EOF
0602    0520  1364          STH I 4
0603    0521  1020          LDA I
0604    0522  7777          7777
0605    0523  4203  TPSTAT, STC     TPFLG   /THIS LOCATION CHANGED TO JMP NOTOK
0606                                        /WHEN TAPE NOT OK
0607    0524  2447          ADD CURLN
0610    0525  1045          STA 5
0611    0526  1020          LDA I
0612    0527  0724  WZ,     WRC I WAUNIT
0613    0530  6635          JMP     WBWRC           /DIAL POST VERSION TWO PATCH 2/19/70
0614    0531  2705          ADD BBTBLK
0615    0532  1060          STA I
0616    0533  0000  SPTBLK, 0
0617    0534  1620          BSE I
0620    0535  2000          2000
0621    0536  4723          STC CBTBLK
0622    0537  6707          JMP CBFWD
0623    0540  6715          JMP CBRDC
0624    0541  1020          LDA I
0625    0542  0400  P400,    400
0626    0543  2002          ADD 2
0627    0544  4004          STC 4
0630    0545  1020  V3,     LDA I
0631    0546  6777          HBIT+WB-1
0632    0547  4171          STC PLACTR
0633    0550  6367          JMP CHKWBF+15
0634                                        /CHK WB EMPTY
0635    0551  0055  CHKWBE, SET 15
0636    0552  0000          0
0637    0553  1020          LDA I
0640    0554  6777          HBIT+WB-1
0641    0555  1440          SAE
0642    0556  0002          2
0643    0557  6000          JMP 0
0644    0560  6622          JMP BBWRC
0645    0561  1020          LDA I
0646    0562  7776          -1
0647    0563  6673          JMP BBBWD
0650    0564  6677          JMP BBRDC       /RTN WITH -0 IN AC
0651    0565  2717          ADD CBRDC+2
0652    0566  6650          JMP WBRDC
0653    0567  0062          SET I 2
0654    0570  7377          HBIT+CB-1
0655    0571  2005          ADD 5
0656    0572  1460          SAE I           /CNTRL TABLE NOT MT
0657    0573  2243          D6+2000
0660    0574  2156          ADD MINUS1
0661    0575  4005          STC 5
0662    0576  2542          ADD P400
0663    0577  2025          ADD TOPPTR
0664    0600  4025          STC TOPPTR
0665    0601  2542          ADD P400
0666    0602  2026          ADD CURPT2
0667    0603  4026          STC CURPT2
0670    0604  6367          JMP CHKWBF+15
0671                                        /LOWER PSA,PFA
0672    0605  1020  BUCBWB, LDA I
-
```

```
0673    0606  3777          -HBIT
0674    0607  2004          ADD 4
0675    0610  4004          STC 4
0676    0611  1020  BUWB,    LDA I
0677    0612  3777          -HBIT
0700    0613  2002          ADD 2
0701    0614  4002          STC 2
0702    0615  1302          LDH 2
0703    0616  1420          SHD I
0704    0617  4300          CR1
0705    0620  0220          XSK I 0
0706    0621  6000          JMP 0
0707                                    /STRING SLIDES
0710                                    /WB FWD OR BWD
0711    0622  1000  BBWRC,   LDA
0712    0623  0705          BBTBLK
0713    0624  4633          STC .+7
0714    0625  0603          LIF     3
0715    0626  0006          DJR
0716    0627  1020          LDA I
0717    0630  6632          JMP     .+2
0720    0631  7620          JMP     GOODY
0721    0632  0704          WRC WAUNIT
0722    0633  0000          0
0723    0634  6000          JMP 0
0724    0635  0051  WBWRC,   SET 11
0725    0636  0000          0
0726    0637  1020          LDA I
0727    0640  0001          1
0730    0641  1440          SAE
0731    0642  0351          PLAFLG
0732    0643  6622          JMP BBWRC
0733    0644  0040          SET 0
0734    0645  0011          11
0735    0646  1020          LDA I
0736    0647  0704  WT,      WRC WAUNIT
0737    0650  4663  WBRDC,   STC .+13                 /SOMETIMES COMES HERE
0740                                    /WITH RDC IN AC
0741    0651  1020          LDA I             /ADD 1 TO
0742    0652  1001          1001              /MBLK AND TBLK
0743    0653  1140          ADM
0744    0654  0664          .+10
0745    0655  4454          STC MAXBLK        /WA TBLK
0746    0656  0603          LIF     3
0747    0657  0006          DJR
0750    0660  1020          LDA I
0751    0661  6663          JMP     .+2
0752    0662  7620          JMP     GOODY
0753    0663  0000          0                 /TAPE INSTRUCTION
0754    0664  0000  WBTBLK,  0                 /MBLK6\TBLK
0755    0665  1000          LDA
0756    0666  0705          BBTBLK
0757    0667  4664          STC .-3
0760    0670  6000  AAA7S2,  JMP 0
0761                                    /BB RDC FWD OR BWD
0762    0671  1020  BBFWD,   LDA I
0763    0672  0001          1
0764                                    /SOMETIMES COMES HERE
0765                                    /WITH -1 IN AC
0766    0673  1140  BBBWD,   ADM
0767    0674  0705          .+11              /ADD +OR- 1 TO TBLK
0770    0675  4664          STC WBTBLK
0771    0676  6000          JMP 0
-
```

```
0772    0677  0603  BBRDC,  LIF     3
0773    0700  0006          DJR
0774    0701  1020          LDA I
0775    0702  6704          JMP     .+2
0776    0703  7620          JMP     GOODY
0777    0704  0700          RDC     WAUNIT
1000    0705  0000  BBTBLK,  0
1001    0706  6000          JMP 0
1002                                      /CB FIX
1003    0707  1020  CBFWD,   LDA I
1004    0710  0001          1
1005                                      /SOMETIMES COMES HERE
1006                                      /WITH -1 IN AC
1007    0711  1140  CBBWD,   ADM
1010    0712  0723          CBTBLK
1011    0713  4733          STC TBLKCB
1012    0714  6000          JMP 0
1013                                      /FWD
1014    0715  0603  CBRDC,   LIF     3
1015    0716  0006          DJR
1016    0717  1020          LDA I
1017    0720  6722          JMP     .+2
1020    0721  7620          JMP     GOODY
1021    0722  0700          RDC WAUNIT
1022    0723  0000  CBTBLK,  0                 /MBLK7\TBLK
1023    0724  6000          JMP 0
1024                                      /CB WRC BWD
1025    0725  0603  CBWRC,   LIF     3
1026    0726  0006          DJR
1027    0727  1020          LDA I
1030    0730  6732          JMP     .+2
1031    0731  7620          JMP     GOODY
1032    0732  0704          WRC WAUNIT
1033    0733  0000  TBLKCB,  0                 /MBLK7\TBLK
1034    0734  6000          JMP 0
1035    0735  0041  X2,      SET 1             /MC EXIT
1036    0736  0000          0
1037    0737  6611          JMP BUWB
1040    0740  6152          JMP K1
1041    0741  1520          SRO I
1042    0742  0000          0
1043    0743  6747          JMP WP
1044    0744  1020          LDA I
1045    0745  7777          -0
1046    0746  4742          STC .-4
1047    0747  0002  WP,      PDP
1050                        PMODE
1051    4750  6212          CIF     10
1052    4751  4422          JMS I   WRITE
1053    4752  0567          DINBUF
1054    4753  6212          CIF     10
1055    4754  4421          JMS I   READ
1056    4755  0563          WRL2
1057    4756  6141          LINC
1060                        LMODE
1061    0757  0600          LIF 0
1062    0760  7010          JMP OUTPTR
1063    0761  1000  XIT2,    LDA
1064    0762  0001          1
1065    0763  4767          STC RJMP
1066    0764  0641          LDF 1
1067    0765  0603          LIF 3
1070    0766  0006          DJR
```

```
1071    0767  0000  RJMP,   0
1072    0770  6370  CURBLK, 6\WA
1073                /
1074                /
1075                /
1076                /
1077    0771  1020  INITLF, LDA I
1100    0772  0212          212
1101    0773  0500          IOB
1102                        PMODE
1103    4774  6046          TLS
1104                        LMODE
1105    0775  0641          LDF     1
1106    0776  6000          JMP     0
1107                /
1110                /
1111    0777  1020  BU1C,   LDA I
1112    1000  3777          -HBIT
1113    1001  1140          ADM
1114    1002  0010          10
1115    1003  1460          SAE I
1116    1004  0000  D5,     0
1117    1005  6000          JMP     0
1120    1006  0220          XSK I   0
1121    1007  1310          LDH     10
1122    1010  1460          SAE I
1123    1011  0043          CR
1124    1012  6000          JMP     0
1125    1013  7576          JMP     BYALN
1126                /
1127                /
1130                /
1131                /
1132                /
1133                /
1134    1014  0047  CRSET,  SET 7           /UPDATE CR
1135    1015  0000          0               /ARGUMENTS
1136    1016  1020          LDA I
1137    1017  0001          1
1140    1020  2447          ADD CURLN
1141    1021  4447          STC CURLN
1142    1022  2167          ADD P1
1143    1023  2451          ADD MAXLN
1144    1024  4451          STC MAXLN
1145    1025  6110          JMP CHKBUF
1146    1026  1000          LDA
1147    1027  0451          MAXLN
1150    1030  0470          AZE I
1151    1031  7037          JMP     EOBERR
1152    1032  1020          LDA I
1153    1033  1311          2000-WAEND
1154    1034  2770          ADD     CURBLK
1155    1035  0451          APO
1156    1036  6007          JMP 7
1157    1037  2167  EOBERR, ADD     P1
1160    1040  4146          STC     EOBWRD
1161    1041  6117          JMP     D1
1162    1042  0066  C1,     SET I 6
1163    1043  7607          -MAXNUM
1164    1044  7531          JMP DISPLA      /GO DISPLAY
1165                                        /CALLS TO
1166                                        / KEYBRD INPUT
1167                                        /INTERPRETIVE SR
-
```

```
1170    1045  0600          LIF 0
1171    1046  7174          JMP A88
1172    1047  7531  ALTSET, JMP DISPLA
1173    1050  0600          LIF 0
1174    1051  7262          JMP ALTREQ+2
1175    1052  7531  EDSET,  JMP DISPLA
1176    1053  0600          LIF 0
1177    1054  7312          JMP CHKED+2
1200    1055  7531  SUBSET, JMP DISPLA
1201    1056  0600          LIF 0
1202    1057  7322          JMP SUBCHR+2
1203    1060  4022          STC TEMP1
1204    1061  6101          JMP TBTOWB
1205    1062  0226          XSK I 6
1206    1063  0456          SKP
1207    1064  4022  REGCHR, STC TEMP1       /INSERT A CHAR
1210    1065  7256          JMP CHKPOS
1211    1066  7071          JMP ,+3
1212    1067  0600          LIF 0
1213    1070  7572          JMP CHKCNT
1214    1071  7202          JMP INSERT
1215    1072  1000  P1000,  LDA
1216    1073  0022          TEMP1
1217    1074  6107          JMP ACTOWB
1220    1075  7761          JMP CHKNOK
1221    1076  7256          JMP CHKPOS
1222    1077  7102          JMP UP6
1223    1100  1323  UP3,    LDH I 3         /PTR TO 1ST CHR
1224                                        /ON CUR LN
1225    1101  7044          JMP C1+2
1226    1102  0226  UP6,    XSK I 6         /CHAR CTR CUR LN
1227    1103  7044          JMP C1+2
1230    1104  7160          JMP ACR2
1231    1105  1327  CRLOW,  LDH I 7         /CR ON CUR LN
1232    1106  1420          SHD I
1233    1107  3700          LF1
1234    1110  6206          JMP CHKMC
1235    1111  6000          JMP 0
1236    1112  7351  RUB,    JMP ROACHR      /RUB OUT 1 CHAR
1237    1113  7761          JMP CHKNOK
1240    1114  1000          LDA
1241    1115  0006          6
1242    1116  0450          AZE
1243    1117  7044          JMP C1+2
1244    1120  3251          ADD     MHBIT
1245    1121  2026          ADD CURPT2
1246    1122  4026          STC CURPT2
1247    1123  7112          JMP RUB
1250    1124  4010  COMRTN, STC 10
1251    1125  6101          JMP TBTOWB
1252    1126  0230          XSK I 10
1253    1127  7125          JMP ,-2
1254    1130  1020          LDA I
1255    1131  0057          KOM
1256    1132  0640          LDF 0
1257    1133  1040          STA
1260    1134  3374          2000+COMFLG
1261    1135  0641          LDF 1
1262    1136  7064          JMP REGCHR
1263    1137  6101  CMARTN, JMP TBTOWB
1264    1140  7102          JMP UP6
1265    1141  7246  ACR,    JMP CHKEND      /HERE FOR CR
1266    1142  7160          JMP ACR2
-
```

```
1267    1143  4007          STC 7
1270    1144  1020          LDA I
1271    1145  0043          CR
1272    1146  1427          SHD I 7
1273    1147  7044          JMP C1+2
1274    1150  1427          SHD I 7
1275    1151  0456          SKP
1276    1152  7160          JMP ACR2
1277    1153  1000          LDA
1300    1154  0007          7
1301    1155  7250          JMP CHKEND+2
1302    1156  7160          JMP ACR2
1303    1157  7044          JMP C1+2
1304    1160  1020  ACR2,   LDA I
1305    1161  0043          CR
1306    1162  4022          STC TEMP1
1307    1163  7202          JMP INSERT
1310    1164  1000          LDA
1311    1165  0022          TEMP1
1312    1166  1362          STH I 2
1313    1167  7761          JMP CHKNOK
1314    1170  0047          SET 7
1315    1171  0003          3
1316    1172  7256          JMP CHKPOS
1317    1173  7177          JMP ,+4
1320    1174  7447          JMP SET6N3
1321    1175  7014  CRHI,    JMP CRSET       /CR ABOVE
1322    1176  7044          JMP C1+2        /CUR LN
1323    1177  7447          JMP SET6N3
1324    1200  7105          JMP CRLOW
1325    1201  7175          JMP CRHI
1326    1202  0057  INSERT,  SET 17          /INSERT CHAR
1327    1203  0000          0               /OVER CURSOR
1330    1204  7246          JMP CHKEND
1331    1205  6017          JMP 17
1332    1206  1120          ADA I
1333    1207  4000          HBIT
1334    1210  1440          SAE
1335    1211  0002          2
1336    1212  0456          SKP
1337    1213  6017          JMP 17
1340    1214  1040          STA
1341    1215  0012          12
1342    1216  4007          STC 7
1343    1217  1332          LDH I 12
1344    1220  4023          STC TEMP2
1345    1221  1000  MAKGAP, LDA
1346    1222  0002          2
1347    1223  1440          SAE
1350    1224  0012          12
1351    1225  0456          SKP
1352    1226  7237          JMP DUNGAP
1353    1227  1332          LDH I 12
1354    1230  4024          STC TEMP3
1355    1231  2023          ADD TEMP2
1356    1232  1352          STH 12
1357    1233  1000          LDA
1360    1234  0024          TEMP3
1361    1235  4023          STC TEMP2
1362    1236  7221          JMP MAKGAP
1363    1237  1000  DUNGAP, LDA
1364    1240  0022          TEMP1
1365    1241  1367          STH I 7
-
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```
1366    1242  1000          LDA
1367    1243  0023          TEMP2
1370    1244  4022          STC TEMP1
1371    1245  6017          JMP 17
1372    1246  1000  CHKEND, LDA             /IS CURSOR
1373    1247  0026          CURPT2          /FULL RIGHT ?
1374    1250  1120          ADA I
1375    1251  3777  MHBIT,  -HBIT
1376    1252  1440          SAE
1377    1253  0002          2
1400    1254  0220          XSK I 0         /NO
1401    1255  6000          JMP 0           /YES
1402    1256  1000  CHKPOS, LDA             /IS CURSOR
1403    1257  0026          CURPT2          /ON CUR LN ?
1404    1260  0241          ROL 1
1405    1261  0017          COM
1406    1262  4023          STC TEMP2
1407    1263  1000          LDA
1410    1264  0003          3
1411    1265  0241          ROL 1
1412    1266  2023          ADD TEMP2
1413    1267  0471          APO I
1414    1270  0220          XSK I 0         /NO
1415    1271  6000          JMP 0           /YES
1416    1272  7246  RORIT,  JMP CHKEND      /RUB OUT TO
1417    1273  7044          JMP C1+2        /RIGHT OF CURSOR
1420    1274  1020          LDA I
1421    1275  7306          JMP DUNRIT
1422    1276  5366          STC OK-1
1423    1277  1020          LDA I
1424    1300  7361          JMP EXTRUB
1425    1301  5354          STC ROACHR+3
1426    1302  3370          ADD OK+1
1427    1303  5364          STC OK-3
1430    1304  7351          JMP ROACHR
1431    1305  7304          JMP ,-1
1432    1306  7312  DUNRIT, JMP FIXUP
1433    1307  7351          JMP ROACHR
1434    1310  7761          JMP CHKNOK
1435    1311  7044          JMP C1+2
1436    1312  1020  FIXUP,  LDA I
1437    1313  7044          JMP C1+2
1440    1314  5366          STC OK-1
1441    1315  3464          ADD RESET+4
1442    1316  5364          STC OK-3
1443    1317  3401          ADD NOTACR+2
1444    1320  5354          STC ROACHR+3
1445    1321  6000          JMP 0
1446    1322  7246  ROLEF,  JMP CHKEND      /RUB OUT TO
1447    1323  4026          STC CURPT2      /LEFT OF CURSOR
1450    1324  1020          LDA I
1451    1325  0026          CURPT2
1452    1326  5362          STC OK-5
1453    1327  1020          LDA I
1454    1330  7343          JMP DUNLEF
1455    1331  5366          STC OK-1
1456    1332  1020          LDA I
1457    1333  7361          JMP EXTRUB
1460    1334  5354          STC ROACHR+3
1461    1335  7351  DOLEF,  JMP ROACHR
1462    1336  1020          LDA I
1463    1337  3777          -HBIT
1464    1340  2026          ADD CURPT2
-
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```
1465    1341  4026          STC CURPT2
1466    1342  7335          JMP DOLEF
1467    1343  1020  DUNLEF, LDA I
1470    1344  0002          2
1471    1345  5362          STC OK-5
1472    1346  7312          JMP FIXUP
1473    1347  7761          JMP CHKNOK
1474    1350  7044          JMP C1+2
1475    1351  1000  ROACHR, LDA                 /RUB OUT 1 CHAR
1476    1352  0000          0
1477    1353  5441          STC XITRO
1500    1354  1020          LDA I
1501    1355  0001          1
1502    1356  1440          SAE
1503    1357  0447          CURLN
1504    1360  7367          JMP OK
1505    1361  1000  EXTRUB, LDA
1506    1362  0002          2
1507    1363  1440          SAE
1510    1364  0025          TOPPTR
1511    1365  0456          SKP
1512    1366  7044          JMP C1+2
1513    1367  0052  OK,     SET 12
1514    1370  0026          CURPT2
1515    1371  7246          JMP CHKEND
1516    1372  4012          STC 12
1517    1373  1312          LDH 12
1520    1374  1420          SHD I
1521    1375  4300          CR1
1522    1376  7502  NOADJ,  JMP LASTCR
1523    1377  7246  NOTACR, JMP CHKEND
1524    1400  7414          JMP ENDRUB
1525    1401  1020          LDA I
1526    1402  3777          -HBIT
1527    1403  2012          ADD 12
1530    1404  4001          STC 1
1531    1405  1332  BWDCHR, LDH I 12
1532    1406  1361          STH I 1
1533    1407  1000          LDA
1534    1410  0001          1
1535    1411  1440          SAE
1536    1412  0002          2
1537    1413  7405          JMP BWDCHR
1540    1414  6551  ENDRUB, JMP CHKWBE
1541    1415  1020          LDA I
1542    1416  7776          -1
1543    1417  6170          JMP CHKPLA+2
1544    1420  4171          STC PLACTR
1545    1421  6611          JMP BUWB
1546    1422  0016  ANOP,    NOP
1547    1423  7447          JMP SET6N3
1550    1424  1020          LDA I
1551    1425  3777          -HBIT
1552    1426  2026          ADD CURPT2
1553    1427  1040          STA
1554    1430  0007          7
1555    1431  7250          JMP CHKEND+2
1556    1432  7441          JMP XITRO
1557    1433  1307          LDH 7
1560    1434  1460          SAE I
1561    1435  0043          CR
1562    1436  7441          JMP XITRO
1563    1437  1427          SHD I 7
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```
1564    1440  0456          SKP
1565    1441  0000  XITRO,  0
1566    1442  1000          LDA
1567    1443  0007          7
1570    1444  7250          JMP CHKEND+2
1571    1445  7441          JMP XITRO
1572    1446  7354          JMP ROACHR+3
1573    1447  1000  SET6N3, LDA
1574    1450  0000          0
1575    1451  5501          STC RTNSET
1576    1452  0050          SET 10
1577    1453  0002          2
1600    1454  0061          SET I 1
1601    1455  0000          0
1602    1456  1322          LDH I 2
1603    1457  0456          SKP
1604    1460  0221  RESET,  XSK I 1
1605    1461  1000          LDA
1606    1462  0002          2
1607    1463  1440          SAE
1610    1464  0025          TOPPTR
1611    1465  0456          SKP
1612    1466  7471          JMP .+3
1613    1467  6611          JMP BUWB
1614    1470  7460          JMP RESET
1615    1471  0043          SET 3
1616    1472  0002          2
1617    1473  0042          SET 2
1620    1474  0010          10
1621    1475  1020          LDA I
1622    1476  7607          -MAXNUM
1623    1477  2001          ADD 1
1624    1500  4006          STC 6
1625    1501  0000  RTNSET, 0
1626    1502  0051  LASTCR, SET 11
1627    1503  0000          0
1630    1504  1000          LDA
1631    1505  1366          OK-1
1632    1506  1460          SAE I
1633    1507  7044          JMP C1+2
1634    1510  7521          JMP NOCNT
1635    1511  1000          LDA
1636    1512  0012          12
1637    1513  1440          SAE
1640    1514  0002          2
1641    1515  0456          SKP
1642    1516  7521          JMP NOCNT
1643    1517  0600          LIF 0
1644    1520  7572          JMP CHKCNT
1645    1521  1020  NOCNT,  LDA I
1646    1522  7776          -1
1647    1523  2447          ADD CURLN
1650    1524  4447          STC CURLN
1651    1525  3522          ADD .-3
1652    1526  2451          ADD MAXLN
1653    1527  4451          STC MAXLN
1654    1530  6011          JMP 11
1655                                      /DISPLAY
1656                                      /ONCE PER ENTRY
1657    1531  0057  DISPLA, SET 17        /SAVE RTN JMP
1660    1532  0000          0           /SET INITIAL
1661    1533  0603          LIF 3       /SCOPE ARGUMENTS
1662    1534  7067          JMP KSAM7
-
```

```
1663    1535  0643  SAMARG,  LDF 3
1664    1536  1040           STA
1665    1537  2627           OLDSAM+2000
1666    1540  1040           STA
1667    1541  1547           LNSPER
1670    1542  0244           ROL 4
1671    1543  1040           STA
1672    1544  2623           MAXVC+2000
1673    1545  0641           LDF 1
1674    1546  1020  B5,      LDA I
1675    1547  0000  LNSPER,  0
1676    1550  0017           COM
1677    1551  4014           STC 14
1700    1552  2447           ADD CURLN
1701    1553  5612           STC DISLN
1702    1554  0050           SET 10
1703    1555  0002           2
1704    1556  1020  DOWN,    LDA I
1705    1557  3536           -D6+2-4000
1706    1560  2002           ADD 2
1707    1561  5004           STC D5
1710    1562  0004           ESF                 /ENABLE SPECIAL FCNS
1711    1563  1310  KGO,     LDH     10
1712    1564  1420           SHD I
1713    1565  4300           CR1
1714    1566  7607  KBU1LN,  JMP BU1LN           /BU LN TO BE
1715                                              /DISPLAYED BY 1
1716                                              /UNLESS AT FIRST
1717                                              /LN OF DISPLAY
1720    1567  6777           JMP     BU1C
1721    1570  7563           JMP     KGO
1722    1571  6777  DOBU,    JMP     BU1C
1723    1572  1310           LDH     10
1724    1573  1460           SAE I
1725    1574  0043           CR
1726    1575  7571           JMP     DOBU
1727    1576  1020  BYALN,   LDA I
1730    1577  7776           -1
1731    1600  3612           ADD DISLN
1732    1601  4022  GOSCP,   STC TEMP1
1733    1602  2010           ADD 10
1734    1603  4025           STC TOPPTR
1735    1604  2022           ADD TEMP1
1736    1605  0603           LIF 3
1737    1606  6433           JMP SCOPE
1740                                              /CR LOWER LN
1741    1607  1020  BU1LN,   LDA I
1742    1610  7776           -1
1743    1611  1160           ADM I               /BACK UP
1744    1612  0000  DISLN,   0                   /LN FOR DISPLAY
1745    1613  0470           AZE I               /LN 1 ?
1746    1614  7601           JMP     GOSCP       /YES
1747    1615  0234           XSK I 14            /TOP LOGICAL LN ?
1750    1616  6000           JMP 0
1751    1617  7601           JMP     GOSCP       /YES
1752                                              /BWD PAGE
1753    1620  1000  Q4,      LDA
1754    1621  1547           LNSPER
1755    1622  2156           ADD MINUS1
1756    1623  0450           AZE
1757    1624  7627           JMP B4+2
1760                                              /BWD LN
1761    1625  0011  B4,      CLR
-
```

```
1762    1626  2167          ADD P1
1763    1627  4213          STC KT4
1764    1630  6202          JMP TPCHK
1765    1631  7633          JMP .+2
1766    1632  7641          JMP BWDSLD
1767    1633  6446          JMP A3
1770    1634  6512          JMP L3
1771                                    /BWD SLIDE
1772    1635  1000  KBWD,    LDA
1773    1636  0213          KT4
1774    1637  0470          AŻE I
1775    1640  7042          JMP C1
1776    1641  1020  BWDSLD,  LDA I
1777    1642  0001          1
2000    1643  1440          SAE
2001    1644  0447          CURLN
2002    1645  7647          JMP .+2
2003    1646  7042          JMP C1
2004    1647  6551          JMP CHKWBE
2005                                    /CHK CB FULL
2006    1650  1020  WBTOCB,  LDA I
2007    1651  7377          HBIT+CB-1
2010    1652  1440          SAE
2011    1653  0004          4
2012    1654  7661          JMP E4
2013    1655  6725          JMP CBWRC
2014    1656  4004          STC 4             /7777 TO BETA 4
2015    1657  3666          ADD NEG1
2016    1660  6711          JMP CBBWD
2017    1661  1302  E4,      LDH 2
2020    1662  1344          STH 4
2021    1663  6605          JMP BUCBWB
2022    1664  7647          JMP WBTOCB-1
2023    1665  1020          LDA I
2024    1666  7776  NEG1,    -1
2025    1667  6504          JMP EOLFIX+2
2026    1670  1140          ADM
2027    1671  0213          KT4
2030    1672  0450          AŻE
2031    1673  7641          JMP BWDSLD
2032    1674  7042          JMP C1
2033                                    /LOCATE TP NOT OK
2034    1675  0452  S4,      LŻE               /CARRY ON LAM ?
2035    1676  6256          JMP F4+1          /YES
2036    1677  0017          COM
2037    1700  4213          STC KT4
2040    1701  2523          ADD     TPSTAT
2041    1702  1460          SAE I
2042    1703  4203          STC     TPFLG
2043    1704  7635          JMP     KBWD
2044    1705  6446          JMP A3            /MAXLN=CURLN ?
2045    1706  7710          JMP .+2           /YES
2046    1707  7635          JMP KBWD
2047    1710  6512          JMP L3
2050                                    /FIND REQUEST
2051                                    /IN CNTRL BLK
2052    1711  0011  L4,      CLR
2053    1712  4705          STC BBTBLK        /SET WRONG BB , CB
2054    1713  0065          SET I 5
2055    1714  2241          D6=2+2000
2056    1715  2167          ADD P1
2057    1716  4213          STC KT4
2060    1717  1005          LDA 5
-
```

```
2061    1720  4447          STC CURLN
2062    1721  1025          LDA I 5
2063    1722  0017          COM
2064    1723  5727          STC     .+4
2065    1724  0011          CLR
2066    1725  2234          ADD M4
2067    1726  1220          LAM I
2070    1727  0000          0
2071    1730  0452          LZE
2072    1731  7715          JMP L4+4
2073    1732  1020  G4,     LDA I
2074    1733  3124          5000+WA-D6-1-2000
2075    1734  2005          ADD 5
2076    1735  4461          STC F3
2077    1736  6456          JMP F3-3
2100    1737  0062          SET I 2
2101    1740  6777          HBIT+WB-1
2102    1741  0064          SET I 4
2103    1742  7377          HBIT+CB-1
2104    1743  6260          JMP F4+3
2105                                      /TP FIX
2106    1744  0041  T2,     SET 1
2107    1745  0000          0
2110    1746  6611          JMP BUWB
2111    1747  6152          JMP K1          /FROM WMBLK
2112    1750  6202          JMP TPCHK
2113    1751  7753          JMP .+2         /NOT OK
2114    1752  6741          JMP X2+4        /OK
2115    1753  1020          LDA I
2116    1754  7776          7776
2117    1755  4213          STC KT4
2120    1756  6267          JMP H4
2121    1757  6512          JMP L3
2122    1760  6744          JMP X2+7
2123    1761  0041  CHKNOK, SET 1
2124    1762  0000          0
2125    1763  0047          SET 7
2126    1764  0003          3
2127    1765  1327          LDH I 7
2130    1766  1460          SAE I
2131    1767  0037          LF
2132    1770  6176          JMP NOTOK
2133    1771  7256          JMP CHKPOS
2134    1772  6001          JMP 1
2135    1773  6176          JMP NOTOK
2136    1774  6001          JMP 1
2137                /
2140                /
2141    1775  6771  RESTRT, JMP     INITLF
2142    1776  7044          JMP     C1+2
2143                /
2144                /
2145                /
2146                /
2147                      EJECT
-
```

```
2150                    /
2151                            SEGMNT  1
2152                            *1                      /GRID TABLE
2153                                                    /FOR DSC
2154        0001    0101    A6,     0101                /MARKER
2155        0002    0101            0101
2156        0003    4477            4477    /1,A
2157        0004    7744            7744
2160        0005    5177            5177    /2,B
2161        0006    2651            2651
2162        0007    4136            4136    /3,C
2163        0010    2241            2241
2164        0011    4177            4177    /4,D
2165        0012    3641            3641
2166        0013    4577            4577    /5,E
2167        0014    4145            4145
2170        0015    4477            4477    /6,F
2171        0016    4044            4044
2172        0017    4136            4136    /7,G
2173        0020    2645            2645
2174        0021    1077            1077    /10,H
2175        0022    7710            7710
2176        0023    7741            7741    /11,I
2177        0024    0041            0041
2200        0025    4142            4142    /12,J
2201        0026    4076            4076
2202        0027    1077            1077    /13,K
2203        0030    4324            4324
2204        0031    0177            0177    /14,L
2205        0032    0301            0301
2206        0033    3077            3077    /15,M
2207        0034    7730            7730
2210        0035    3077            3077    /16,N
2211        0036    7706            7706
2212        0037    4177            4177    /17,O
2213        0040    7741            7741
2214        0041    4477            4477    /20,P
2215        0042    3044            3044
2216        0043    4276            4276    /21,Q
2217        0044    0376            0376
2220        0045    4477            4477    /22,R
2221        0046    3146            3146
2222        0047    5121            5121    /23,S
2223        0050    4651            4651
2224        0051    4040            4040    /24,T
2225        0052    4077            4077
2226        0053    0177            0177    /25,U
2227        0054    7701            7701
2230        0055    0176            0176    /26,V
2231        0056    7402            7402
2232        0057    0677            0677    /27,W
2233        0060    7701            7701
2234        0061    1463            1463    /30,X
2235        0062    6314            6314
2236        0063    0770            0770    /31,Y
2237        0064    7007            7007
2240        0065    4543            4543    /32,Z
2241        0066    6151            6151
2242        0067    4177            4177    /33,/
2243        0070    0000            0000
2244        0071    1020            1020    /34,\
2245        0072    0204            0204
2246        0073    0000            0000    /35,]
```

```
2247      0074  7741          7741
2250      0075  4710          4710    /36 UP ARROW
2251      0076  1047          1047
2252      0077  2504          2504    /LF
2253      0100  0416          0416
2254      0101  0000          0000    /40, SPACE
2255      0102  0000          0000
2256      0103  7500          7500    /41,!
2257      0104  0000          0000
2260      0105  6000          6000    /42,"
2261      0106  0060          0060
2262      0107  4020          4020    /43,CR
2263      0110  2055          2055
2264      0111  5721          5721    /DOLLAR SIGN
2265      0112  4671          4671
2266      0113  1446          1446    / PER CENT
2267      0114  6130          6130
2270      0115  5166          5166    /46,&
2271      0116  0526          0526
2272      0117  4020          4020    /47,
2273      0120  2055          2055
2274      0121  3600          3600    /50,(
2275      0122  0041          0041
2276      0123  4100          4100    /51,)
2277      0124  0036          0036
2300      0125  2050          2050    /52,-
2301      0126  0050          0050
2302      0127  0404          0404    /53,+
2303      0130  0437          0437
2304      0131  0500          0500    /54,,
2305      0132  0006          0006
2306      0133  0404          0404    /55,-
2307      0134  0404          0404
2310      0135  0001          0001    /56,.
2311      0136  0000          0000
2312      0137  0601          0601    /57,\
2313      0140  4030          4030
2314      0141  4536          4536    /60,0
2315      0142  3651          3651
2316      0143  2101          2101    /61,1
2317      0144  0177          0177
2320      0145  4523          4523    /62,2
2321      0146  2151          2151
2322      0147  4122          4122    /63,3
2323      0150  2651          2651
2324      0151  2414          2414    /64,4
2325      0152  0477          0477
2326      0153  5172          5172    /65,5
2327      0154  0651          0651
2330      0155  1506          1506    /66,6
2331      0156  4225          4225
2332      0157  4443          4443    /67,7
2333      0160  6050          6050
2334      0161  5126          5126    /70,10
2335      0162  2651          2651
2336      0163  5122          5122    /71,11
2337      0164  3651          3651
2340      0165  2200          2200    /72,:
2341      0166  0000          0000
2342      0167  2601          2601    /73,;
2343      0170  0000          0000
2344      0171  2410          2410    /74,<
2345      0172  0042          0042
-
```

```
2346    0173  1212          1212    /75,=
2347    0174  1212          1212
2350    0175  4200          4200    /76,>
2351    0176  1024          1024
2352    0177  4020          4020    /77,?
2353    0200  2055          2055
2354                                /MONITOR COMMANDS
2355    0201  0120  Z6,      0120    /AP
2356    0202  6364          JMP DOAP
2357    0203  0530          0530    /EX
2360    0204  7561          JMP DOEX
2361    0205  2320          2320    /SP
2362    0206  7315          JMP DOSP
2363    0207  0123          0123    /AS
2364    0210  6150          JMP DOAS
2365    0211  2302          2302    /SB
2366    0212  7206          JMP DOSB
2367    0213  1411          1411    /LI
2370    0214  6146          JMP DOLI
2371    0215  0430          0430    /DX
2372    0216  7565          JMP DODX
2373    0217  2011          2011    /PI
2374    0220  6106          JMP DOPI
2375    0221  2030          2030    /PX
2376    0222  7353          JMP DOPX
2377    0223  2023          2023    /PS
2400    0224  7337          JMP DOPS
2401    0225  0314          0314    /CL
2402    0226  6101          JMP DOCL
2403    0227  3205          3205    /ZERO
2404    0230  7706          JMP     ZERO
2405    0231  0102          0102    /AB
2406    0232  7364          JMP     DOAB
2407    0233  2114          2114    /QL
2410    0234  6133          JMP DOQL
2411    0235  1503          1503    /USER MC
2412    0236  6357          JMP DOMC
2413    0237  1417          1417    /LO
2414    0240  6420  Y6,     JMP DOLO
2415                                        /MUST HAVE TWO
2416                                        /ZEROES HERE
2417    0241  0000          0
2420    0242  0000          0
2421    0243  0000  D6,     0               /CNTRL TABLE
2422                                        /NOTE:  E6-D6 MUST BE >=LENGTH OF WORKING AREA.
2423                                        /
2424                                        /MONITOR
2425                                        /PARAMETER TABLE
2426                        *371
2427    0371  0000  E6,     0               /LN NUM
2430    0372  0000          0               /LN NUM
2431    0373  0000          0               /N
2432    0374  0000          0               /A
2433    0375  0000          0               /M
2434    0376  0000          0               /E
2435    0377  0000          0               /UNIT
2436                        EJECT
-
```

```
2437                            SEGMNT  Ø
2440                    /
2441                    /
2442                    /
2443                    /
2444                            *21
2445    0021    0000    READ,   Ø
2446    0022    0000    WRITE,  Ø
2447                    /
2450                    /
2451                    //
2452                            *400
2453    0400    1000    MODKBD, LDA             /DUBL BUFFERED
2454    0401    0000            Ø               /KEYBRD INPUT SR
2455    0402    0002            PDP
2456                            PMODE
2457    0403    3230            DCA RTNMOD
2460    0404    6031            KSF
2461    0405    5222            JMP TRYBUF
2462    0406    1302            TAD CHRCTR
2463    0407    1303            TAD M24
2464    0410    7650            SNA CLA
2465    0411    5231            JMP CHKMTP
2466    0412    6141            LINC
2467                            LMODE
2470    0413    0603            LIF 3
2471    0414    7400            JMP KBDOPR
2472    0415    0002            PDP
2473                            PMODE
2474    0416    3706            DCA I PTRIN
2475    0417    2302            ISZ CHRCTR
2476    0420    4237            JMS BUMPIT
2477    0421    0506            PTRIN
2500    0422    1302    TRYBUF, TAD CHRCTR
2501    0423    7640            SZA CLA
2502    0424    5231            JMP CHKMTP
2503    0425    2230            ISZ     RTNMOD
2504    0426    6141            LINC
2505    0427    0603            603             /LIF 3
2506    0430    0000    RTNMOD, Ø               /RTN TO P+1 IF
2507                                            /READY ; RTN TO
2510                                            /P+2 IF MTP
2511                                            /OR BUFR EMPTY
2512    0431    6141    CHKMTP, LINC
2513                            LMODE
2514    0432    0456            SKP
2515    0433    0456            SKP
2516    0434    6427            JMP .-5
2517    0435    0002            PDP
2520                            PMODE
2521    0436    5225            JMP .-11
2522    0437    0000    BUMPIT, Ø
2523    0440    1637            TAD I BUMPIT
2524    0441    3254            DCA TEMP5
2525    0442    1654            TAD I TEMP5
2526    0443    1312            TAD ENDBUF
2527    0444    7640            SZA CLA
2530    0445    5251            JMP .+4
2531    0446    1311            TAD STBUF
2532    0447    3654            DCA I TEMP5
2533    0450    7410            SKP
2534    0451    2654            ISZ I TEMP5
2535    0452    2237            ISZ BUMPIT
-
```

```
2536    0453  5637          JMP I BUMPIT
2537    0454  0000  TEMP5,   0
2540    0455  0000  GETCHR,  0                /GET A CHAR FROM
2541    0456  7200          CLA               /DUBL BUFFER
2542    0457  1707          TAD I PTROUT
2543    0460  3310          DCA SVCHR
2544    0461  4237          JMS BUMPIT
2545    0462  0507          PTROUT
2546    0463  7240          STA
2547    0464  1302          TAD CHRCTR
2550    0465  3302          DCA CHRCTR
2551    0466  1310          TAD SVCHR
2552    0467  1304          TAD     JBM47             /TEST FOR "TAB"
2553    0470  7650          SNA CLA
2554    0471  7346          CLA CMA CLL RTL           /YEP. BIG NUMBER
2555    0472  6141          LINC                      /TEST THE SENSE SWITCH ALSO.
2556                        LMODE
2557    0473  0440          SNS     0                 /DO AUTO FORMATING NOW?
2560    0474  0011          CLR                       /YEP. KEEP DOING IT.
2561    0475  0002          PDP                       /GET BACK INTO SUPER MODE
2562                        PMODE
2563    0476  7440          SZA                       /SKIP IF STILL FORMATTING.
2564    0477  3705          DCA I   FUDGEC            /TELL IT NOT TO DO FORMATTING.
2565    0500  1310          TAD     SVCHR
2566    0501  5655          JMP I GETCHR
2567    0502  0000  CHRCTR,  0
2570    0503  7776  M24,     -2
2571    0504  7731  JBM47,   -47
2572    0505  1374  FUDGEC,  COMFLG
2573    0506  0000  PTRIN,   0
2574    0507  0000  PTROUT,  0
2575    0510  0000  SVCHR,   0
2576    0511  0513  STBUF,   HERE
2577    0512  7263  ENDBUF,  -THERE
2600    0513  0000  HERE,    0
2601                        THERE=HERE+2
2602                        LMODE
2603                /
2604                        *THERE+2
2605                /
2606                /
2607                /
2610                /
2611                /
2612                /
2613                /
2614                /
2615                /
2616                /
2617                /
2620    0517  0100  INPT,    DISKD
2621    0520  0004          4
2622    0521  0014          DIALST+14-300
2623    0522  0001          1
2624                /
2625    0523  0100  JBAS1,   DISKD
2626    0524  0000          0
2627    0525  0030          ASTBLK-300
2630    0526  0011          11
2631                /
2632    0527  0100  JBAS2,   DISKD
2633    0530  0012          12
2634    0531  0044          ASTBLK-300+14
```

```
2635    0532  0001          1
2636                /
2637    0533  0100  JBAP1,   DISKD
2640    0534  0013          13
2641    0535  0021          APTBLK-300
2642    0536  0001          1
2643                /
2644    0537  0100  JBAP2,   DISKD
2645    0540  0013          13
2646    0541  0003          DIALST+3-300
2647    0542  0001          1
2650                /
2651    0543  0100  JBFC2,   DISKD
2652    0544  0010          10
2653    0545  0050          FCTBLK-300
2654    0546  0004          4
2655                /
2656    0547  0100  JBLO,    DISKD
2657    0550  0030          30
2660    0551  0054          LOTBLK-300
2661    0552  0002          2
2662                /
2663                          JBSB=JBFC2
2664                /
2665                          JBSP=JBFC2
2666                /
2667    0553  0100  JBPXDX,  DISKD
2670    0554  0010          10
2671    0555  0061          PXTBLK-300
2672    0556  0004          4
2673                /
2674    0557  0100  WRL1,    DISKD
2675    0560  0005          5
2676    0561  0015          DIALST+15-300
2677    0562  0001          1
2700                /
2701    0563  0100  WRL2,    DISKD
2702    0564  0005          5
2703    0565  0020          PTBLK-300
2704    0566  0001          1
2705                /
2706    0567  0100  DINBUF,  DISKD
2707    0570  0005          5
2710    0571  0015          DIALST-300+15
2711    0572  0003          3
2712                          .770
2713                /
2714                /
2715    0770  0002  INPTRS,  PDP
2716                          PMODE
2717    0771  6212          CIF       10
2720    0772  4421          JMS I     READ
2721    0773  0517          INPT
2722    0774  6212          CIF       10
2723    0775  4421          JMS I     READ
2724    0776  0563          WRL2
2725    0777  6141          LINC
2726                          LMODE
2727    1000  0641          LDF       1
2730    1001  0002          PDP
2731                          PMODE
2732    1002  7240          STA
2733    1003  4307          JMS SHIFT
-
```

```
2734    1004  2450          PTINIT
2735    1005  6141  RTNRTN, LINC
2736                        LMODE
2737    1006  0602          LIF 2
2740    1007  6000          JMP 0
2741    1010  0002  OUTPTR,  PDP               /EXIT SAVE
2742                        PMODE               /EDITOR PTRS
2743    1011  7200          CLA
2744    1012  4307          JMS SHIFT
2745    1013  2520          PTEXIT
2746    1014  4265          JMS CTLTAB
2747    1015  2241          D6PTR
2750    1016  2625          D6VAL
2751    1017  6141          LINC
2752                        LMODE
2753    1020  0002          PDP
2754                        PMODE
2755    1021  6212          CIF     10
2756    1022  4422          JMS I   WRITE
2757    1023  0563          WRL2
2760    1024  6212          CIF     10
2761    1025  4421          JMS I   READ
2762    1026  0557          WRL1
2763    1027  6141          LINC
2764                        LMODE
2765    1030  0641          LDF     1
2766    1031  0602          LIF 2
2767    1032  6000          JMP 0
2770    1033  0002  OLDPTR,  PDP
2771                        PMODE
2772    1034  6212          CIF     10
2773    1035  4421          JMS I   READ
2774    1036  0517          INPT
2775    1037  6212          CIF     10
2776    1040  4421          JMS I   READ
2777    1041  0563          WRL2
3000    1042  6141          LINC
3001                        LMODE
3002    1043  0641          LDF     1
3003    1044  0002          PDP
3004                        PMODE
3005    1045  7240          STA
3006    1046  4307          JMS SHIFT
3007    1047  2520          PTEXIT
3010    1050  4265          JMS CTLTAB
3011    1051  2625          D6VAL
3012    1052  2241          D6PTR
3013                                            /TEST FOR 12B OR 12A
3014    1053  4654          JMS I   .+1       /GO TO THE 12A-12B CHECKER
3015    1054  1705          TESTM
3016                /
3017                /
3020                /CHNG KNOB SR FOR 12B
3021    1055  1371          TAD KTAD
3022    1056  3316          DCA MOVEIT-3
3023    1057  7240          STA
3024    1060  4307          JMS SHIFT
3025    1061  2610          B12VAL
3026    1062  1372          TAD K2TAD
3027    1063  3316          DCA MOVEIT-3
3030    1064  5205          JMP RTNRTN
3031    1065  0000  CTLTAB,  0                 /FOR CONTROL
3032    1066  1665          TAD I CTLTAB
-
```

```
3033      1067  3101          DCA FROM
3034      1070  2265          ISZ CTLTAB
3035      1071  1665          TAD I CTLTAB
3036      1072  3103          DCA TO
3037      1073  2265          ISZ CTLTAB
3040      1074  1305          TAD D6CTR
3041      1075  3100          DCA SAVAC
3042      1076  1501  D6LOOP, TAD I FROM
3043      1077  3503          DCA I TO
3044      1100  2101          ISZ FROM
3045      1101  2103          ISZ TO
3046      1102  2100          ISZ SAVAC
3047      1103  5276          JMP D6LOOP
3050      1104  5665          JMP I CTLTAB
3051      1105  7650  D6CTR,  D6=2=E6
3052      1106  5205          JMP RTNRTN
3053      1107  0000  SHIFT,  0                   /CORE TRANSFER
3054      1110  3352          DCA SKPLIT          /SR USED FOR
3055      1111  1707          TAD I SHIFT         /SETTING PTRS
3056      1112  4341          JMS SKPCHK
3057      1113  3101          DCA FROM
3060      1114  7410          SKP
3061      1115  3103          DCA TO
3062      1116  1366          TAD KPTADR
3063      1117  3102          DCA TORF
3064      1120  2307          ISZ SHIFT
3065      1121  1502  MOVEIT, TAD I TORF
3066      1122  4341          JMS SKPCHK
3067      1123  3103          DCA TO
3070      1124  7410          SKP
3071      1125  3101          DCA FROM
3072      1126  1501          TAD I FROM
3073      1127  3503          DCA I TO
3074      1130  4341          JMS SKPCHK
3075      1131  2101          ISZ FROM
3076      1132  7410          SKP
3077      1133  2103          ISZ TO
3100      1134  2102          ISZ TORF
3101      1135  1502          TAD I TORF
3102      1136  7640          SZA CLA
3103      1137  5321          JMP MOVEIT
3104      1140  5707          JMP I SHIFT
3105      1141  0000  SKPCHK, 0
3106      1142  3100          DCA SAVAC
3107      1143  1352          TAD SKPLIT
3110      1144  7640          SZA CLA
3111      1145  5350          JMP .+3
3112      1146  2341          ISZ SKPCHK
3113      1147  2341          ISZ SKPCHK
3114      1150  1100          TAD SAVAC
3115      1151  5741          JMP I SKPCHK
3116                          SAVAC=100
3117                          FROM=101
3120                          TORF=102
3121                          TO=103
3122      1152  0000  SKPLIT, 0
3123      1153  1370  VIRGST, TAD P4002
3124      1154  3766          DCA I KPTADR
3125      1155  1367          TAD ATAD
3126      1156  3321          DCA MOVEIT
3127      1157  6212          CIF     10
3130      1160  4422          JMS I   WRITE
3131      1161  0563          WRL2
-
```

```
3132      1162  6141          LINC
3133                          LMODE
3134      1163  0641          LDF     1
3135      1164  0602          LIF 2
3136      1165  6041          JMP CLWA
3137                          PMODE
3140      1166  2400  KPTADR, PTADDR
3141      1167  1502  ATAD,   TAD I TORF
3142      1170  4002  P4002,  4002
3143      1171  1373  KTAD,   TAD KPT12
3144      1172  1366  K2TAD,  TAD KPTADR
3145      1173  2570  KPT12,  PT12B
3146                          LMODE
3147      1174  7233  A88,    JMP ENDCHK       /INTERPRET
3150      1175  0456          SKP              /DIAL CODES
3151      1176  7322          JMP SUBCHR+2
3152      1177  0642          LDF 2
3153      1200  0043          SET 3
3154      1201  2003          2003
3155      1202  0641          LDF 1
3156      1203  1440          SAE
3157      1204  0003          3
3160      1205  7322          JMP SUBCHR+2
3161      1206  0011          CLR              /FIRST CHAR
3162      1207  5374          STC COMFLG       /CUR LN
3163      1210  7556          JMP GETTTY
3164      1211  0470          AZE I
3165      1212  7245          JMP XIT2C1
3166      1213  0077          SET I 17
3167      1214  5562          SPCHAR-HBIT
3170      1215  1437          SHD I 17
3171      1216  7247          JMP XITREG
3172      1217  1437          SHD I 17
3173      1220  7254          JMP LFORRO
3174      1221  1437          SHD I 17
3175      1222  7251          JMP AMORUP
3176      1223  1437          SHD I 17
3177      1224  7245          JMP XIT2C1
3200      1225  1437          SHD I 17
3201      1226  7371          JMP COMSET
3202      1227  1437          SHD I 17
3203      1230  7245          JMP XIT2C1
3204      1231  0602          LIF 2
3205      1232  7060          JMP REGCHR-4
3206      1233  0642  ENDCHK, LDF 2
3207      1234  1000          LDA
3210      1235  2026          2000+CURPT2
3211      1236  1120          ADA I
3212      1237  3777          -HBIT
3213      1240  1440          SAE
3214      1241  2002          2000+2
3215      1242  0220          XSK I 0
3216      1243  0641          LDF 1
3217      1244  6000          JMP 0
3220      1245  0602  XIT2C1, LIF 2
3221      1246  7044          JMP C1+2
3222      1247  0602  XITREG, LIF 2
3223      1250  7064          JMP REGCHR
3224      1251  0471  AMORUP, APO I
3225      1252  7247          JMP XITREG
3226      1253  7260          JMP ALTREQ
3227      1254  0471  LFORRO, APO I
3230      1255  7247          JMP XITREG
-
```

```
3231    1256  0602          LIF 2
3232    1257  7112          JMP RUB
3233    1260  0602  ALTREQ, LIF 2           /ALT MODE REQ
3234    1261  7047          JMP ALTSET
3235    1262  7556          JMP GETTTY
3236    1263  0470          AZE I
3237    1264  7260          JMP ALTREQ
3240    1265  0077          SET I 17
3241    1266  5565          SPCHAR+2+HBIT
3242    1267  1437          SHD I 17
3243    1270  7245          JMP XIT2C1
3244    1271  1437          SHD I 17
3245    1272  7342          JMP BWDLN
3246    1273  1437          SHD I 17
3247    1274  7344          JMP FWDFR
3250    1275  1437          SHD I 17
3251    1276  7346          JMP BWDFR
3252    1277  1437          SHD I 17
3253    1300  7350          JMP FWDLN
3254    1301  1437  EDALT,  SHD I 17         /ALT MODE EDIT
3255    1302  7352          JMP RUBR
3256    1303  1437          SHD I 17
3257    1304  7354          JMP RUBL
3260    1305  1437          SHD I 17
3261    1306  7356          JMP RUBC
3262    1307  7245          JMP XIT2C1
3263    1310  0602  CHKED,  LIF 2
3264    1311  7052          JMP EDSET
3265    1312  7556          JMP GETTTY
3266    1313  0470          AZE I
3267    1314  7310          JMP CHKED
3270    1315  0077          SET I 17
3271    1316  1570          SPCHAR+5
3272    1317  7301          JMP EDALT
3273    1320  0602  SUBCHR, LIF 2           /LATER CHARS
3274    1321  7055          JMP SUBSET
3275    1322  7556          JMP GETTTY
3276    1323  0470          AZE I
3277    1324  7245          JMP XIT2C1
3300    1325  0077          SET I 17
3301    1326  1563          SPCHAR
3302    1327  1437          SHD I 17
3303    1330  7362          JMP LFCHK
3304    1331  1437          SHD I 17
3305    1332  7366          JMP CHKAM
3306    1333  1437          SHD I 17
3307    1334  7360          JMP XITCR
3310    1335  1437          SHD I 17
3311    1336  7414          JMP COMFMT
3312    1337  1437          SHD I 17
3313    1340  7464          JMP CMAFMT
3314    1341  7247          JMP XITREG
3315    1342  0602  BWDLN,  LIF 2
3316    1343  7625          JMP B4
3317    1344  0602  FWDFR,  LIF 2
3320    1345  6250          JMP P4
3321    1346  0602  BWDFR,  LIF 2
3322    1347  7620          JMP Q4
3323    1350  0602  FWDLN,  LIF 2
3324    1351  6255          JMP F4
3325    1352  0602  RUBR,   LIF 2
3326    1353  7272          JMP RORIT
3327    1354  0602  RUBL,   LIF 2
-
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3330      1355  7322          JMP ROLEF
3331      1356  0602  RUBC,   LIF 2
3332      1357  6117          JMP D1
3333      1360  0602  XITCR,  LIF 2
3334      1361  7141          JMP ACR
3335      1362  0471  LFCHK,  APO I
3336      1363  7245          JMP XIT2C1
3337      1364  0602          LIF 2
3340      1365  7112          JMP RUB
3341      1366  0471  CHKAM,  APO I
3342      1367  7247          JMP XITREG
3343      1370  7310          JMP CHKED
3344      1371  1040  COMSET, STA
3345      1372  1374          COMFLG
3346      1373  7247          JMP XITREG
3347      1374  0000  COMFLG, 0
3350      1375  0642  POSCHK, LDF 2
3351      1376  1000          LDA
3352      1377  2026          2000+CURPT2
3353      1400  0241          ROL 1
3354      1401  0017          COM
3355      1402  5413          STC TEMP4
3356      1403  1000          LDA
3357      1404  2003          2003
3360      1405  0241          ROL 1
3361      1406  3413          ADD TEMP4
3362      1407  0471          APO I
3363      1410  0220          XSK I 0
3364      1411  0641          LDF 1
3365      1412  6000          JMP 0
3366      1413  0000  TEMP4,  0
3367      1414  7375  COMFMT, JMP POSCHK       /FORMAT COMMENT
3370      1415  7420          JMP .+3
3371      1416  1317          LDH 17
3372      1417  7247          JMP XITREG
3373      1420  1000          LDA
3374      1421  1374          COMFLG
3375      1422  0450          AZE
3376      1423  7462          JMP XITCOM
3377      1424  0642          LDF 2
3400      1425  0052          SET 12
3401      1426  2003          2003
3402      1427  0042          SET 2
3403      1430  2002          2002
3404      1431  0641          LDF 1
3405      1432  0061          SET I 1
3406      1433  7767          -10
3407      1434  0070          SET I 10
3410      1435  7774          -3
3411      1436  1332  SRTAB,  LDH I 12
3412      1437  1420          SHD I
3413      1440  4700          TB1
3414      1441  7456          JMP TABCNT
3415      1442  0221          XSK I 1
3416      1443  0456          SKP
3417      1444  7456          JMP TABCNT
3420      1445  1000  TABEND, LDA
3421      1446  0012          12
3422      1447  1440          SAE
3423      1450  0002          2
3424      1451  7436          JMP SRTAB
3425      1452  1000          LDA
3426      1453  0010          10
-
```

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3427    1454  0602          LIF 2
3430    1455  7124          JMP COMRTN
3431    1456  0061  TABCNT, SET I 1
3432    1457  7767          -10
3433    1460  0230          XSK I 10
3434    1461  7445          JMP TABEND
3435    1462  1317  XITCOM, LDH 17
3436    1463  7371          JMP COMSET
3437    1464  0642  CMAFMT, LDF 2             /FORMAT COMA
3440    1465  0043          SET 3
3441    1466  2003          2003
3442    1467  0042          SET 2
3443    1470  2002          2002
3444    1471  0046          SET 6
3445    1472  2006          2006
3446    1473  0641          LDF 1
3447    1474  0054          SET 14
3450    1475  0003          3
3451    1476  1334          LDH I 14
3452    1477  1420          SHD I
3453    1500  3700          LF1
3454    1501  7554          JMP XITCMA
3455    1502  1460          SAE I
3456    1503  0047          TB
3457    1504  7554          JMP XITCMA
3460    1505  1000          LDA
3461    1506  1374          COMFLG
3462    1507  0450          AZE
3463    1510  7554          JMP XITCMA
3464    1511  7233          JMP     ENDCHK          /FIXED JUNE 10,1970
3465    1512  0456          SKP
3466    1513  7554          JMP XITCMA
3467    1514  1020          LDA I
3470    1515  0161          MAXNUM-7
3471    1516  2006          ADD 6
3472    1517  1120          ADA I
3473    1520  0010          10
3474    1521  0017          COM
3475    1522  4001          STC 1
3476    1523  0070          SET I 10
3477    1524  7770          -7
3500    1525  0052          SET 12
3501    1526  0003          3
3502    1527  1000  CMACHK, LDA
3503    1530  0012          12
3504    1531  1440          SAE
3505    1532  0002          2
3506    1533  0456          SKP
3507    1534  7542          JMP SHUFLE-2
3510    1535  1332          LDH I 12
3511    1536  1417          SHD 17
3512    1537  7245          JMP XIT2C1
3513    1540  0230          XSK I 10
3514    1541  7527          JMP CMACHK
3515    1542  0052          SET 12
3516    1543  0003          3
3517    1544  1334  SHUFLE, LDH I 14
3520    1545  1372          STH I 12
3521    1546  0221          XSK I 1
3522    1547  7544          JMP SHUFLE
3523    1550  1317          LDH 17
3524    1551  1342          STH 2
3525    1552  0602          LIF 2
-
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3526    1553  7137          JMP CMARTN
3527    1554  1317  XITCMA, LDH 17
3530    1555  7247          JMP XITREG
3531    1556  0002  GETTTY, PDP
3532                        PMODE
3533    1557  4762          JMS I KGET
3534    1560  6141          LINC
3535    1561  6000          6000              /JMP 0
3536    1562  0455  KGET,   GETCHR
3537                        LMODE
3540    1563  4737  SPCHAR, TB1+LF            /SPECIAL CHAR
3541    1564  3643          AM1+CR            /TABLE
3542    1565  5754          KOM1+COMA
3543    1566  3727          RO1+BL
3544    1567  6121          FF+BF
3545    1570  6222          FL+RR
3546    1571  1404          RL+RC
3547    1572  1000  CHKCNT, LDA
3550    1573  0000          0
3551    1574  5660          STC CNTOUT
3552    1575  0642          LDF 2             /CHK ILLEGAL
3553    1576  0056          SET 16            /LENGTH
3554    1577  2026          CURPT2+2000
3555    1600  7233          JMP ENDCHK
3556    1601  4016          STC 16
3557    1602  0642          LDF 2
3560    1603  0057          SET 17
3561    1604  2025          TOPPTR+2000
3562    1605  0055          SET 15
3563    1606  0016          16
3564    1607  0053          SET 13
3565    1610  2002          2002
3566    1611  0074          SET I 14
3567    1612  0000          0
3570    1613  0641          LDF 1
3571    1614  7630          JMP     DFFIXR
3572    1615  0234  GOCNT,  XSK I 14
3573    1616  1000          LDA
3574    1617  0015          15
3575    1620  1440          SAE
3576    1621  0017          17
3577    1622  0456          SKP
3600    1623  7634          JMP DUNHI
3601    1624  1020          LDA I
3602    1625  3777          -HBIT
3603    1626  2015          ADD 15
3604    1627  4015          STC 15
3605    1630  1315  DFFIXR, LDH     15
3606    1631  1460          SAE I
3607    1632  0043          CR
3610    1633  7615          JMP GOCNT
3611    1634  1000  DUNHI,  LDA
3612    1635  0016          16
3613    1636  1440          SAE
3614    1637  0013          13
3615    1640  0456          SKP
3616    1641  7647          JMP DUNLO
3617    1642  0234          XSK I 14
3620    1643  1336          LDH I 16
3621    1644  1460          SAE I
3622    1645  0043          CR
3623    1646  7634          JMP DUNHI
3624    1647  1020  DUNLO,  LDA I
-
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3625    1650  7607          -MAXNUM
3626    1651  2014          ADD 14
3627    1652  0470          AŻE I
3630    1653  7656          JMP ERROR
3631    1654  0451          APO
3632    1655  7657          JMP GOOD
3633    1656  7245  ERROR,  JMP XIT2C1
3634    1657  0602  GOOD,   LIF 2
3635    1660  0000  CNTOUT, 0
3636    1661  0011  KDOMC,  CLR
3637    1662  1000          LDA
3640    1663  2377          E6+2006
3641    1664  0002          PDP
3642                        PMODE
3643    1665  6212          CIF     10
3644    1666  3272          DCA     JBMET
3645    1667  4421          JMS I   READ
3646    1670  1672          .+2
3647    1671  5276          JMP     .+5
3650    1672  0000  JBMET,  0
3651    1673  0010          10
3652    1674  0270          270
3653    1675  0001          1
3654    1676  6141          LINC
3655                        LMODE
3656    1677  0641          LDF     1
3657    1700  1000          LDA
3660    1701  2373          E6+2002
3661    1702  0643          LDF 3
3662    1703  0602          LIF 2
3663    1704  6020          JMP 20
3664                /
3665                /
3666                /
3667                        PMODE
3670                /
3671    1705  0000  TESTM,  0
3672    1706  2305          ISZ     TESTM           /BOP PAST PHOONEY POINTER
3673    1707  6141          LINC
3674                        LMODE
3675    1710  0053          SET     13              /SAVE 0, WE BASH IT
3676    1711  0000          0
3677    1712  0074          SET I   14              /SET 14 TO A SAM 0-1
3700    1713  0100          SAM     0               /THE SAMPLE INSTRUCTION(0-17)
3701    1714  0075          SET I   15              /SET 15 TO THE RETURN JUMP
3702    1715  6000          JMP     0
3703    1716  0076          SET I   16              /SET UP THE COUNTER NOW
3704    1717  7757          -20                     /A SAMPLE OF 16 CHANNELS.
3705    1720  0100          SAM     0               /GET AN INITIAL VALUE
3706    1721  1560          BCL I
3707    1722  0017          -7760                   /JUST LEAVE THE HIGH BITS
3710    1723  5731          STC     COMPEAR         /SAVE IN THE COMPARITOR
3711    1724  6014  LOOP,   JMP     14              /DO A SAMPLE NOW
3712    1725  0234          XSK I   14              /BOP TO THE NEXT CHANNEL
3713    1726  1560          BCL I
3714    1727  0017          -7760                   /CHOP OFF THE MISC, CRAP.
3715    1730  1460          SAE I
3716    1731  0000  COMPEAR,0                      /TEST AGAINST OUR FIRST SAMPLE
3717    1732  7742          JMP     WGA12A          /WE-GOT-A-12-A
3720    1733  0236          XSK I   16              /BOP THE COUNT
3721    1734  7724          JMP     LOOP            /ITS THE SAME, CHECK THE NEXT CHANNEL
3722    1735  0040          SET     0               /RESTORE 0 NOW
3723    1736  0013          13
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3724    1737  0011          CLR                     /ALL THE SAME, ITS A B. HES CHEAP
3725    1740  0002          PDP
3726                        PMODE
3727    1741  5705          JMP I   TESTM           /RETURN TO THE CALLER
3730                  /
3731                  /
3732                  /
3733                        LMODE
3734                  /
3735                  /
3736    1742  0011  WGA12A,  CLR                     /CLEAR THE AC NOW
3737    1743  0040          SET     0               /RESTORE 0
3740    1744  0013          13
3741    1745  0002          PDP
3742                        PMODE                   /GET INTO THE GOOD MODE
3743    1746  5747          JMP I   .+1
3744    1747  1005          RTNRTN                  /RETURN TO THE CALLER
3745                  /
3746                  /
3747                  /
3750                  /
3751                        LMODE
3752                  /
3753                  /
3754                  /
3755                  /
3756                  /
3757    1750  0000  AASEG0,  0
3760                        EJECT
-
```

```
3761                                    /SYSTEM
3762                                    /PARAMETERS
3763                    DISKD=100
3764                    DISKS=110
3765                    SETUP1=322
3766                    SETUP2=323
3767                    DSYS=7341               /POINTS TO NEXT FREE SPOT ON SYSTEM DEVICE TABLE
3770            /
3771            /
3772                    UNITNO=777
3773                    WA=370
3774                    ASTBLK=330
3775                    WAUNIT=0                /WA UNIT
3776                    WAEND=467
3777                    FILE=WAEND+1
4000                    FREE=270
4001                    DIALST=300              /START OF DIAL
4002                    DIALU=0                 /DIAL UNIT
4003                    INDEX=346
4004                    FCTBLK=350
4005                    APTBLK=321
4006                    LOTBLK=354
4007                    SBTBLK=356
4010                    DXTBLK=361
4011                    PXTBLK=DXTBLK
4012                    FCSA=20
4013                    SPFCNS=1400
4014                    EXTMTP=10
4015                    BB=2400
4016                    WB=3000
4017                    HBIT=4000
4020                    CB=3400
4021                    CURVAL=16
4022                    LF1=3700
4023                    LF=37
4024                    TB1=4700
4025                    TB=47
4026                    CR1=4300
4027                    CR=43
4030                    EOF1=0
4031                    EOF=0
4032                    AM1=3600
4033                    AM=36
4034                    RO1=3700
4035                    RO=37
4036                    SP1=4000
4037                    SP=40
4040                    COMA1=5400
4041                    XOA=21
4042                    COMA=54
4043                    KOM1=5700
4044                    KOM=57
4045                    LNHC=1013
4046                    MCVC=-357
4047                    MKHC=1763
4050                    MCHC=1051
4051                    BL=27
4052                    FF=6100
4053                    BF=21
4054                    FL=6200
4055                    RR=22
4056                    RL=1400
4057                    RC=04
-
```

```
4060                    DELTA=50
4061                    PTADDR=2400
4062                    PTINIT=PTADDR+DELTA
4063                    PTEXIT=PTINIT+DELTA
4064                    PT12B=PTEXIT+DELTA
4065                    B12VAL=PT12B+20
4066                    D6VAL=B12VAL+15
4067                    D6PTR=2000+D6-2
4070                    MAXNUM=170
4071                    PCODE=2000
4072                    LCODE=1400
4073                    QMARK1=7700
4074                    PTBLK=320
4075            /THIS IS THE DIAL EDITOR V2
4076            /15 DEC 69
4077                    EJECT
-
```

```
4100                    /APNPTRV2
4101                    /10 DEC 69
4102                    /EDITOR V2 POINTERS TBLK 320
4103                    /INITIAL VALUES EXIT VALUES
4104                    /AND ADDRESSES
4105                            LMODE
4106                            SEGMNT 5
4107                            *PTADDR
4110                            PMODE
4111    2400    1121            MOVEIT          /BECOMES 4002
4112                            LMODE           /AFT VIRGIN RUN
4113                                            /BETA 2 IS PTR
4114                                            /TO WB
4115    0401    4003            4003            /PTR TO 1ST CHAR
4116                                            /OF CUR LN
4117    0402    4004            4004            /PTR TO CB
4120    0403    4005            4005            /PTR TO CONTROL
4121                                            /TABLE (D6)
4122    0404    4006            4006            /CHAR CTR CURLN
4123    0405    4705            4000+BBTBLK
4124    0406    4664            4000+WBTBLK
4125    0407    4770            4000+CURBLK
4126    0410    4533            4000+SPTBLK
4127    0411    4200            4000+NOTOK+2
4130    0412    4742            4000+X2+5
4131    0413    4447            4000+CURLN
4132    0414    4451            4000+MAXLN
4133    0415    4203            4000+TPFLG
4134    0416    4171            4000+PLACTR
4135    0417    4454            4000+MAXBLK
4136    0420    4723            4000+CBTBLK
4137    0421    4733            4000+TBLKCB
4140    0422    4020            4000+20
4141    0423    4523            4000+TPSTAT
4142    0424    0000            0
4143                            *PTINIT
4144    0450    6777            HBIT+WB-1
4145    0451    7001            HBIT+WB+1
4146    0452    0000            0
4147    0453    2243            D6+2000
4150    0454    7607            -MAXNUM
4151    0455    5367            5\WA-1
4152    0456    5367            5\WA-1
4153    0457    6367            6\WA-1
4154    0460    5367            5\WA-1
4155    0461    4203            STC TPFLG
4156    0462    0000            0
4157    0463    0001            1
4160    0464    0001            1
4161    0465    7777            7777
4162    0466    0000            0
4163    0467    0000            0
4164    0470    0000            0
4165    0471    0000            0
4166    0472    7775            JMP RESTRT
4167    0473    4203            STC     TPFLG
4170    0474    0000            0
4171                            *PTEXIT
4172                            PMODE
4173    2520    5353            VIRGST&177+5200
4174                            LMODE
4175    0521    7001            HBIT+WB+1
4176    0522    0000            0
```

```
4177    0523  2243          D6+2000
4200    0524  7607          -MAXNUM
4201    0525  5367          5\WA=1
4202    0526  5367          5\WA=1
4203    0527  6367          6\WA=1
4204    0530  5367          5\WA=1
4205    0531  4203          STC TPFLG
4206    0532  0000          0
4207    0533  0001          1
4210    0534  0001          1
4211    0535  7777          7777
4212    0536  0000          0
4213    0537  0000          0
4214    0540  0000          0
4215    0541  0000          0
4216    0542  7775          JMP RESTRT
4217    0543  6203          JMP     TPFLG
4220    0544  0000          0
4221                        *PT12B          /ADDR OF KNOB SR
4222    0570  6020          6000+SAM3       /THE KNOB SUB RT
4223                                        /ARE CHANGED
4224                                        /FOR A 12B
4225    0571  6021          6000+SAM3+1
4226    0572  6022          6000+SAM3+2
4227    0573  6023          6000+SAM3+3
4230    0574  6024          6000+SAM3+4
4231    0575  6025          6000+SAM3+5
4232    0576  6026          6000+SAM3+6
4233    0577  6027          6000+SAM3+7
4234    0600  6030          6000+SAM3+10
4235    0601  6031          6000+SAM3+11
4236    0602  6032          6000+SAM3+12
4237    0603  6033          6000+SAM3+13
4240    0604  6034          6000+SAM3+14
4241    0605  0000          0
4242                        *B12VAL         /KNOB SR FOR 12A
4243    0610  0517          LSW             /ARE REPLACED BY
4244    0611  1560          BCL I           /THE FF
4245    0612  4000          4000            /SWITCH SR
4246    0613  0017          COM             /FOR A 12 B
4247    0614  4016          STC CURVAL      /LSW 1-11
4250    0615  6000          JMP 0           /CONTROLS CURSOR
4251    0616  0516          RSW             /RSW 8-11
4252    0617  1560          BCL I           /CONTROLS LNS
4253    0620  7760          7760            /PER FRAME
4254    0621  0450          AZE
4255    0622  6000          JMP 0
4256    0623  2072          ADD POS1
4257    0624  6000          JMP 0
4260                                        /ADD PROGRAM V2
4261                                        /TBLK 321
4262                        SEGMNT 6
4263                        *1400
4264    1400  1020          LDA I           /DISABLE BB WRC
4265    1401  0001          1               /SUB RT BY
4266    1402  4351          STC PLAFLG      /SETTING THIS WD
4267    1403  6611          JMP BUWB        /DELETE AP COM
4270    1404  6152          JMP K1          /FROM WB
4271    1405  7636          JMP L8          /AP BY NAME
4272                                        /OR TBLK NUM ?
4273    1406  7434          JMP E8          /BLK NUM
4274    1407  1030  C8,     LDA I 10        /BY NAME
4275    1410  1620          BSE I
-
```

```
4276    1411  2000          MBLK2
4277    1412  5601          STC TPWD
4300    1413  1030          LDA I 10        /BINARY OR
4301                                        /PROG NAME
4302    1414  0451          APO             /MATCH ?
4303    1415  7665          JMP SAYNO       /BINARY ONLY
4304    1416  1000          LDA             /AP BY LN NUMS
4305    1417  2371          2000+E6
4306    1420  1440          SAE
4307    1421  2372          2000+E6+1
4310    1422  0456          SKP
4311    1423  7447          JMP NOLN
4312    1424  1000          LDA
4313    1425  2371          2000+E6
4314    1426  5765          STC LN1
4315    1427  1000          LDA
4316    1430  2372          2000+E6+1
4317    1431  3753          ADD AONE
4320    1432  5766          STC LN2
4321    1433  7455          JMP CHKORG
4322    1434  1000  E8,     LDA             /AP BY BLK NUM
4323    1435  2371          E6+2000         /BLK NUM TO AC
4324    1436  1560          BCL I
4325    1437  0777          -7000           /TOO BIG [BLK NO.>777] ?
4326    1440  0450          AZE
4327    1441  7702          JMP     K8      /YEP
4330    1442  1000          LDA
4331    1443  2371          E6+2000         /RECALL IT AGAIN.
4332    1444  1620          BSE I
4333    1445  2000          MBLK2
4334    1446  5601          STC TPWD
4335    1447  1020  NOLN,   LDA I
4336    1450  0001          1
4337    1451  1040          STA
4340    1452  1765          LN1
4341    1453  0017          COM
4342    1454  5766          STC LN2
4343    1455  7570  CHKORG, JMP MAGTP-10    /GET 1ST TBLK
4344    1456  1030          LDA I 10        /DO NOT PUT
4345    1457  1460          SAE I           /*20 CR IN
4346    1460  5262          5262            /WITH AP
4347    1461  7722          JMP K88         /RESTORE 10
4350    1462  1030          LDA I 10
4351    1463  1460          SAE I
4352    1464  6043          6000+CR
4353    1465  7722          JMP K88
4354    1466  1020          LDA I
4355    1467  0001          1
4356    1470  1440          SAE
4357    1471  1765          LN1
4360    1472  7742          JMP BYPASS
4361    1473  1330  F8,     LDH I 10        /TRANSFER 1 CHAR
4362    1474  1420          SHD I
4363    1475  0000          EOF1            /ARE WE DUN ?
4364    1476  7550          JMP J8          /YES
4365    1477  1362          STH I 2         /NO GIVE 1 CHAR
4366                                        /TO EDITOR
4367    1500  1460          SAE I           /WAS IT A CR ?
4370    1501  0043          CR
4371    1502  7512          JMP H8          /NO CHK BUFFERS
4372    1503  6502  G8,     JMP EOLFIX      /YES UPDATE
4373    1504  0017          COM             /BETA 3, CURLN
4374    1505  2451          ADD MAXLN       /AND MAXLN
-
```

```
4375    1506  4451          STC MAXLN
4376    1507  3753          ADD AONE
4377    1510  1140          ADM
4400    1511  1765          LN1
4401    1512  7554  H8,     JMP A8F          /CHK AP INPUT
4402                                         /BUFFER
4403    1513  6110          JMP CHKBUF       /CHK EDITOR
4404                                         /INPUT BUFFERS
4405                /
4406    1514  1020          LDA I
4407    1515  0001          1
4410    1516  4551          STC     PLAFLG          /MAKE SURE THE ADD PROGRAM SWITCH IS OK,
4411                /
4412    1517  1000          LDA              /HAVE WE JUST
4413    1520  0003          3                /PROCESSED A
4414    1521  1440          SAE              /CR ?
4415    1522  0002          2
4416    1523  7543          JMP      CHKEF8  /NO. CHECK END
4417    1524  1000          LDA              /YES CHK FOR
4420    1525  0451          MAXLN            /WA TOO FULL
4421    1526  0470          AZE I            /TOO MANY LNS ?
4422    1527  7535          JMP .+6          /YES END OF AP
4423    1530  1000          LDA              /TOO MANY BLKS ?
4424    1531  0770          CURBLK
4425    1532  1460          SAE I
4426    1533  6467          6\WAEND
4427    1534  7543          JMP      CHKEF8  /NO. CHECK END
4430    1535  1020          LDA I            /WA IS FULL
4431    1536  7776          -1               /DELETE LAST LN
4432                                         /AND RTN
4433                                         /TO EDITOR
4434    1537  6504          JMP EOLFIX+2
4435    1540  2451          ADD MAXLN
4436    1541  4451          STC MAXLN
4437    1542  6152          JMP K1
4440                /
4441    1543  1000  CHKEF8, LDA
4442    1544  1765          LN1
4443    1545  1440          SAE
4444    1546  1766          LN2
4445    1547  7473          JMP      F8      /NOT END. GET NEXT CHAR.
4446                /
4447    1550  6176  J8,     JMP NOTOK        /COME HERE
4450                                         /WHEN DONE
4451    1551  6446          JMP A3
4452    1552  6512          JMP L3
4453    1553  7702          JMP K8
4454    1554  1000  A8F,    LDA              /IS AP INPUT
4455    1555  0010          10               /BUFFER EMPTY ?
4456    1556  1460          SAE I
4457    1557  5377          5377
4460    1560  6000          JMP 0            /NO
4461    1561  1000          LDA              /TEST FOR END OF DEVICE.
4462    1562  1601          TPWD
4463    1563  1560          BCL I
4464    1564  0777          -7000            /CHOP OFF BLOCK NUMBER
4465    1565  1460          SAE I
4466    1566  2000          MBLK2            /STILL THERE [NO OVERFLOW] ?
4467    1567  7550          JMP      J8      /OVERFLOW. END OF INPUT.
4470    1570  0041          SET 1
4471    1571  0000          0
4472    1572  7730          JMP DTEXTR-1     /GET EXTENDED
4473    1573  0603          LIF      3
-
```

```
4474    1574  0006          DJR
4475    1575  1020          LDA I
4476    1576  7600          JMP      .+2
4477    1577  7620          JMP      GOODY
4500                                      /TAPE UNITS
4501    1600  0700  MAGTP,   RDC
4502    1601  2346  TPWD,    MBLK2+INDEX   /INITIALLY HOLDS
4503                                      /INDEX TPWORD
4504                                      /HOLDS TBLKS
4505                                      /DURING AP
4506    1602  0070          SET I 10
4507    1603  4777          4777          /INITIAL ADDR
4510                                      /OF AP INPUT
4511                                      /BUFFER
4512    1604  2167          ADD P1        /BUMP TBLK
4513    1605  3601          ADD TPWD
4514    1606  5601          STC TPWD
4515    1607  6001          JMP 1
4516    1610  0041  B8,      SET 1         /SEARCH INDEX
4517    1611  0000          0             /FOR NAME MATCH
4520                                      /1 TBLK ONLY
4521    1612  0072          SET I 12      /LENGTH OF NAME
4522    1613  7773          -4
4523    1614  0073          SET I 13      /NAME SECTOR OF
4524    1615  2372          E6+1+2000     /MC TABLE
4525    1616  1000          LDA
4526    1617  0010          10            /PTR TO INDEX
4527    1620  1620          BSE I
4530    1621  0007          7             /NEXT NAME
4531    1622  1460          SAE I
4532    1623  5377          5377          /DUN A BLK ?
4533    1624  7627          JMP .+3       /NO
4534    1625  0221          XSK I 1       /YES RTN
4535    1626  6001          JMP 1         /TO P+2
4536    1627  4010          STC 10
4537    1630  1030          LDA I 10      /ALL 4 WORDS
4540    1631  1473          SAE I 13      /MUST MATCH
4541    1632  7612          JMP B8+2      /OR WE TRY NEXT
4542                                      /NAME
4543    1633  0232          XSK I 12      /4 MATCHES ?
4544    1634  7630          JMP .-4       /NO DO SOME MORE
4545    1635  6001          JMP 1         /YES NAME MATCH
4546    1636  0057  L8,      SET 17
4547    1637  0000          0
4550    1640  7714          JMP SETS      /GET UNIT NUM
4551    1641  5731          STC DTEXTR    /SAVE EXTENDED
4552                                      /UNITS
4553    1642  0264          ROL I 4       /UNIT BIT TO AC
4554    1643  3600          ADD MAGTP
4555    1644  5600          STC MAGTP
4556    1645  1300          LDH           /CHK FOR AP
4557    1646  2373          E6+2+2000     /BY NAME
4560    1647  1420          SHD I
4561    1650  7700          7700
4562    1651  6017          JMP 17        /ITS BY TBLK NUM
4563    1652  0237          XSK I 17      /ITS BY NAME
4564    1653  7570          JMP MAGTP-10  /GET INDEX
4565    1654  1030          LDA I 10      /IS IT AN INDEX
4566    1655  1460          SAE I
4567    1656  5757          5757
4570    1657  7665          JMP SAYNO     /NO INDEX
4571    1660  7610          JMP B8        /SEARCH 1ST
4572                                      /TBLK OF INDEX
-
```

```
4573    1661  6017          JMP 17            /FOUND A MATCH
4574    1662  7570          JMP MAGTP-10      /GET 2ND TBLK
4575                                          /OF INDEX
4576    1663  7610          JMP B8            /SEARCH AGAIN
4577    1664  6017          JMP 17            /FOUND A MATCH
4600    1665  0011  SAYNO,   CLR              /COME FOR NO
4601    1666  0061          SET I 1           /PROG, NO INDEX
4602    1667  0340          340               /OR NO MATCH
4603    1670  0072          SET I 12
4604    1671  2035          A6+34+2000        /GRID ADDR
4605    1672  1752          DSC 12
4606    1673  1772          DSC I 12
4607    1674  0061          SET I 1
4610    1675  0352          352
4611    1676  1772          DSC I 12
4612    1677  1772          DSC I 12
4613    1700  0415          KST               /LOOP UNTIL KBD
4614    1701  7665          JMP SAYNO
4615    1702  0011  K8,      CLR
4616    1703  4551          STC PLAFLG
4617    1704  0002          PDP
4620                        PMODE
4621    5705  6212          CIF     10
4622    5706  4421          JMS I   READ
4623    5707  5770          JPLAF
4624    5710  6141          LINC
4625                        LMODE
4626    1711  0641          LDF     1
4627    1712  0603          LIF 3
4630    1713  6410          JMP APRTN
4631    1714  0011  SETS,    CLR               /GET UNIT
4632    1715  1000          LDA               /NUM
4633    1716  2377          E6+6+2000
4634    1717  1560          BCL I
4635    1720  7000          -777
4636    1721  6000          JMP 0
4637    1722  1000  K88,     LDA
4640    1723  0010          10
4641    1724  1120          ADA I
4642    1725  7776          -1
4643    1726  4010          STC 10
4644    1727  6000          JMP     0                 /RETURN NOW. DONT GO TO THE DTEXTR,
4645    1730  1020          LDA I
4646    1731  0000  DTEXTR, 0
4647    1732  0643          LDF     3
4650    1733  1040          STA
4651    1734  3702          GCTWO&1777!2000
4652    1735  0011          CLR
4653    1736  1040          STA
4654    1737  3701          WATAG&1777+2000
4655    1740  0641          LDF     1
4656    1741  6000          JMP 0
4657    1742  5767  BYPASS, STC LNCTR
4660    1743  1330          LDH I 10
4661    1744  1420          SHD I
4662    1745  0000          EOF1
4663    1746  7550          JMP J8
4664    1747  1460          SAE I
4665    1750  0043          CR
4666    1751  7763          JMP BYEOL
4667    1752  1020          LDA I
4670    1753  0001  AONE,    1
4671    1754  1140          ADM
```

```
4672    1755  1767          LNCTR
4673    1756  1440          SAE
4674    1757  1765          LN1
4675    1760  7763          JMP BYEOL
4676    1761  7554          JMP A8F
4677    1762  7473          JMP F8
4700    1763  7554  BYEOL,   JMP A8F
4701    1764  7743          JMP BYPASS+1
4702    1765  0000  LN1,     0
4703    1766  0000  LN2,     0
4704    1767  0000  LNCTR,   0
4705                        PMODE
4706                        MSLK2=2000
4707                /
4710                /
4711    5770  0100  JPLAF,   DISKD
4712    5771  0012          12
4713    5772  0002          DIALST+2-300
4714    5773  0001          1
4715                /
4716                /
4717                /
4720                /
4721                /
4722                /
4723                /
4724                /
4725                /
4726                        EJECT
```

4727 /
4730 /
4731 /

NO ERRORS

```
SYMBOL   VALUE  DEF   REFERENCES

AAA4S2   4371   0441
AAA4S3   6363   0421
AAA7S2   4670   0760
AAA7S3   6660   0745
AASEG0   1750   3757
AATTY3   7617   2124
ACR      5141   1265   3334
ACR2     5160   1304   1230 1266 1276 1302
ACTOWB   4107   0137   1217
AJMP     7432   1705   1677
ALTM     7507   1763   1714
ALTM1    7503   1757   1766
ALTREQ   1260   3233   1174 3226 3237
ALTSET   5047   1172   3234
ALTZ     7513   1767   1716
AM       0036   4033
AMORUP   1251   3224   3175
AM1      3600   4032   3541
ANOP     5422   1546
AONE     5753   4670   4317 4376
APRTN    6410   0454   4630
APTBLK   0321   4005   2641
ASTBLK   0330   3774   2627 2634
ATAD     1167   3141   3125
A3       4446   0523   0335 0360 0437 1767 2044 4451
A6       2001   2154   1063 4604
A8F      5554   4454   4401 4676 4700
A88      1174   3147   1171
BB       2400   4015   0464
BBBWD    4673   0766   0647
BBFWD    4671   0762   0404 0433
BBRDC    4677   0772   0550 0650
BBTBLK   4705   1000   0363 0542 0546 0551 0614 0712 0756 2053 4123
BBWRC    4622   0711   0362 0644 0732
BF       0021   4053   3544
BL       0027   4051   3543
BLKST    6241   0266   0207 0254
BTREAD   4010   0024   0052
BTREC    4011   0025   0053
BUCBWB   4605   0672   2021
BUMPIT   0437   2522   2476 2523 2535 2536 2544
BUWB     4611   0676   0212 0245 0257 1037 1545 1613 2110 4267
BU1C     4777   1111   1720 1722
BU1LN    5607   1741   1714
BWDCHR   5405   1531   1537
BWDFR    1346   3321   3251
BWDLN    1342   3315   3245
BWDSLD   5641   1776   1766 2031
BYALN    5576   1727   1125
BYAS     6152   0173   0166
BYEOL    5763   4700   4666 4675
BYMC     6054   0066   0055
BYPASS   5742   4657   4360 4701
B12VAL   2610   4065   3025 4066 4242
B4       5625   1761   1757 3316
B5       5546   1674
B8       5610   4516   4541 4571 4576
CARTB    6736   1027   1024
CB       3400   4020   0426 0520 0654 2007 2103
CBBWD    4711   1007   2016
CBFWD    4707   1003   0515 0622
```

```
SYMBOL  VALUE  DEF   REFERENCES

CBMT    4433   0527  0345 0376
CBROC   4715   1214  0516 0623 0651
CBTBLK  4723   1022  0621 1010 4136
CBTOWB  4474   0554  0337
CBWRC   4725   1025  2013
CHAR    7560   2053  1654 1671 1717 1731 1735
CHKAM   1365   3341  3305
CHKBUF  4117   2140  1145 4403
CHKCNT  1572   3547  1213 1644
CHKED   1310   3263  1177 3267 3343
CHKEFB  5543   4441  4416 4427
CHKEND  5246   1372  1265 1301 1330 1416 1446 1515 1523 1555 1570
CHKMC   4206   0243  1234
CHKMC3  6255   0302  0244
CHKMT   7275   1433  0176 1455 1504
CHKMTP  0431   2512  2465 2502
CHKNOK  5761   2123  1220 1237 1313 1434 1473
CHKORG  5455   4343  4321
CHKPLA  4166   0220  0144 0210 1543
CHKPOS  5256   1402  1210 1221 1316 2133
CHKWBE  4551   0635  0205 1540 2004
CHKWBF  4352   0422  0142 0346 0377 0633 0670
CHRCTR  0502   2567  0127 2462 2475 2500 2547 2550
CLRALL  6266   0316  0305
CLWA    4041   0063  0121 0154 3136
CMACHK  1527   3502  3514
CMAFMT  1464   3437  3313
CMARTN  5137   1263  3526
CNTALL  6525   0600  0573
CNTOUT  1660   3635  3551
COMA    0054   4042  1255 1344 3542
COMA1   5400   4040  1312
COMFLG  1374   3347  1260 2572 3162 3345 3374 3461
COMFMT  1414   3367  3311
COMPEA  1731   3716  3710
COMRTN  5124   1250  3430
COMSET  1371   3344  3201 3436
COMTB   1657   1056  1022 1047
CR      0043   4027  0773 0072 0163 1123 1271 1305 1561 1725 3541 3607 3622 4352 4370 4665
CRCODE  7547   2042  2003
CRHI    5175   1321  1325
CRLOW   5105   1231  1324
CRSET   5014   1134  1321
CR1     4300   4026  0427 1252 1301 1341 1377 0557 0704 1521 1713
CTLTAB  1063   3031  2746 3010 3032 3034 3035 3037 3050
CURBLK  4770   1072  0410 0440 1154 4125 4424
CURFLG  6075   0107  0101 0670 1101
CURGO   6466   0541  0534 0576
CURLN   4447   0524  0156 0263 0455 0565 0566 0607 1140 1141 1503 1647 1650 1700 2001 2061 4131
CURPTR  6432   0503  0620 1135
CURPT2  4026   0044  0624 0134 0450 0451 0666 0667 1245 1246 1373 1403 1447 1451 1464 1465 1514 1552 3210 3352 3554
CURRTN  6552   0625  0527
CURSET  6502   0555  0564
CURSOR  6076   0110  0067
CURVAL  0016   4021  0033 0552 0557 0574 4247
CURVC   6074   0106  0075 0672
C1      5042   1162  0465 0062 0074 0160 0201 0247 0331 1225 1227 1243 1273 1303 1322 1417 1435 1437 1474 1512 1633 1775 2003 2032
                     2142 3221
C8      5407   4274
DECODE  7076   1216  0271 0415 0431 0467 1335 1457 1541 2102
DELMC   4210   0245  1156
DELTA   0050   4060  4062 4063 4064
```

```
SYMBOL   VALUE  DEF   REFERENCES

DFFIXR   1632   3605  3571
DIALST   0300   4001  0027 2622 2646 2676 2710 4713
DIALU    2002   4002
DINBUF   0567   2726  0103 1053
DISKD    0100   3763  0025 2620 2625 2632 2637 2644 2651 2656 2667 2674 2701 2706 4711
DISKS    0112   3764  0201 2176 2220
DISLN    5612   1744  1701 1731
DISPLA   5531   1657  1164 1172 1175 1200
DISTXT   6661   0750  1171
DOAB     7364   1541  2406
DOAP     6364   0423  2356
DOAS     6152   0171  2364
DOBU     5571   1722  1726
DOCL     6101   0113  0117 2402
DOOX     7565   2066  2372
DOEX     7561   2062  2360
DOLEF    5335   1461  1466
DOLI     6146   0167  2370
DOLO     6420   0467  0147 2414
DOMC     6357   0415  2412
DOPI     6106   0122  2374
DOPS     7337   1502  2400
DOPX     7353   1521  2376
DOQL     6133   0151  0170 2410
DOSB     7206   1335  2366
DOSP     7315   1455  2362
DOSPTP   7335   1477  1465
DOWN     5556   1704
DSCCHR   6760   1061  0743 0764 1152
DSCCUR   6036   0045  1137
DSCRTN   6620   0655  0647
DSYS     7341   3767  0141
DTEXTR   5731   4646  4472 4551
DUNGAP   5237   1363  1352
DUNHI    1634   3611  3600 3623
DUNLEF   5343   1467  1454
DUNLO    1647   3624  3616
DUNRIT   5306   1432  1421
DUNSB    7264   1413  1342 1400
DXTBLK   0361   4010  4011
D1       4117   0147  1161 3332
D5       5004   1116  1707
D6       2243   2421  0504 0657 1705 2055 2074 3051 4067 4147 4177
D6CTR    1105   3051  3040
D6LOOP   1076   3042  3047
D6PTR    2241   4067  2747 3012
D6VAL    2625   4066  2750 3011
EANDZB   7735   2272  1163
ECON     7607   2112  0175
EDALT    1301   3254  3272
EDSET    5052   1175  3264
EGGSIT   7075   1212  1206
ENDBUF   0512   2577  2526
ENDCHK   1233   3206  3147 3464 3555
ENDFLG   6542   0615  0536 0571 0603
ENDRUB   5414   1540  1524
ENDSKP   6742   1033  1020
ENDTAB   7557   2052  1655 1704 1741 1756 1763 1772 1773
ENDTB    6757   1050  1017
EOSERR   5037   1157  1151
EOBLOP   4135   0165  0200
EQBPST   4143   0173  0164
```

```
SYMBOL  VALUE  DEF   REFERENCES

EOBWRD  4146   0176  0172 1160
EOF     0000   4031  0601
EOFRAM  7023   1127  0667 0671 0753 0765
EOF1    0000   4030  0373 4363 4662
EOLFIX  4502   0563  0167 0342 2025 4372 4434
ERROR   1656   3633  3630
ERRXIT  7051   1160  0177 0217 0234 1505
EXIT    7517   1773  1733 1744 1750 1752 1761 1762 1771
EXTMTP  0010   4014
EXTRUB  5361   1505  1424 1457
F2      7305   1444  0417 0471 1413 1461 1543 2062 2110 2241
F4      5661   2017  2012
F6      2371   2427  0123 0146 0213 0216 0221 0230 0232 0435 1220 1240 1270 1326 1361 1370 1374 1407 1412 2106 0476 3051 3640 3660
                     4305 4307 4313 4316 4323 4331 4524 4557 4633
F8      5434   4322  4273
FCSA    0020   4012  1425 1500 1517 1554 2123
FCTBLK  0350   4004  2653
FF      6100   4052  3544
FILE    0470   3777
FIRSWD  6602   0657  0514 0664
FIXUP   5312   1436  1432 1472
FL      6200   4054  3545
FLDSET  6722   1013  0760 0771
FLDTAB  6753   1044  1014
FREE    0270   4000
FROM    0101   3117  3033 3042 3044 3057 3071 3072 3075
FUDGEC  0505   2572  2564
FWDFR   1344   3317  3247
FWDLN   1350   3323  3253
F2      7122   1245  1260
F3      4461   0540  0364 0412 2076 2077
F4      4255   0320  0316 2035 2104 3324
F5      6625   0703  1002
F8      5473   4361  4445 4677
GAPARG  6100   0112  0673 1067 1105
GCLOC   7661   2171  2137
GCORE   7703   2221  2152 2160 2161
GCTWO   7702   2220  2172 2177 4651
GETCHR  0455   2540  2566 3536
GETCUR  6452   0525  0665
GETSA   7244   1373  1364
GETTTY  1556   3531  3163 3235 3265 3275
GOCNT   1615   3572  3610
GOOD    1657   3634  3632
GOODY   7620   2125  0720 0752 0776 1020 1031 4477
GOSCP   5601   1752  1746 1751
GOTAB   6724   1015  1036 1040
GTOUT   7704   2222  2143 2166 2167
G4      5732   2073
G8      5503   4372
HBIT    4000   4017  0344 0556 0622 0132 0426 0436 0520 0631 0640 0654 0673 0677 1112 1333 1375 1463 1526 1551 2007 2101 2103 3167
                     3212 3241 3602 4144 4145 4175
HERE    0513   2600  0124 2576 2601
H4      4267   0333  0325 0353 2120
H5      6635   0717
H8      5512   4401  4371
ILEGAL  7516   1772  1707
INBUF   4053   0075  0061 0065
INDEX   0346   4003  4502
INITLF  4771   1077  0106 2141
INPT    0517   2620  2721 2774
INPTRS  0770   2715  0064
```

```
SYMBOL  VALUE  DEF   REFERENCES

INSERT  5202  1326  1214 1307
INSTB1  1417  1054  1045 1055
INSTB2  1537  1055  1046 1056
IWAIT   6553  0626  0520 0636
JBAP1   0533  2637  0444
JBAP2   0537  2644  0460
JBAS1   0523  2625  0247
JBAS2   0527  2632  0244
JBFC2   0543  2651  1550 2116 2663 2665
JBLO    0547  2656  0476
JBMET   1672  3650  3644
JBM10   6060  0072  0102
JBM47   0504  2571  2552
JBNULO  7776  2412  2405
JBPXDX  0553  2667  1526 2073
JBSB    0543  2663  1420
JBSP    0543  2665  1472 1512
JBTMT   7762  2373  0070 2434
JBTMTS  7771  2402  2374 2401
JGC     6610  0665
JPLAF   5770  4711  4623
J4      4300  0345  0341
J5      6654  0741  0731 0745
J8      5550  4447  4364 4467 4663
KBDIN   4076  0125  0114
KBDOPR  7400  1642  2471
KBDOUT  4077  0126  0116
KBU1LN  5566  1714
KBWD    5635  1772  2043 2046
KCR     7475  1751  1711
KCTR    4100  0127  0117
KDOMC   1661  3636  0421
KGET    1562  3536  3533
KGO     5563  1711  1721
KHERE   4075  0124  0113 0115
KLEGAL  7433  1706  1676
KOM     0057  4044  1255
KOM1    5700  4043  1304 3542
KPTADR  1166  3140  3062 3124 3144
KPT12   1173  3145  3143
KSAM7   7067  1204  1662
KTAD    1171  3143  3021
KT4     4213  0250  0253 0266 0322 0344 0351 1763 1773 2027 2037 2057 2117
K1      4152  0203  0174 0213 0246 0261 1040 2111 4270 4437
K2TAD   1172  3144  3026
K5      7057  1174  0676 0724 0725 0726 0737 0744 1200
K8      5702  4615  4327 4453
K88     5722  4637  4347 4353
LASTCR  5502  1626  1522
LCODE   1400  4072  1353
LEGAL   7443  1717  1706
LF      0037  4023  0054 1011 2131 3540
LFCHK   1362  3335  3303
LFCODE  7545  2040  2005
LFORRO  1254  3227  3173
LF1     3700  4022  0762 1233 3453
LIORCV  6240  0265  0173
LNCTR   5767  4704  4657 4672
LNFEED  7506  1762  1713
LNFOR   6620  0675  0505
LNHC    1013  4045  0720
LNSPER  5547  1675  0313 1667 1754
```

```
SYMBOL   VALUE  DEF   REFERENCES

LN1      5765   4702  4314 4340 4357 4400 4442 4674
LN2      5766   4703  4320 4342 4444
LOCATE   6311   0343  0312
LOKATE   4214   0251  0353
LOOP     1724   3711  3721
LOTBLK   0354   4006  2660
L3       4512   0574  1770 2047 2121 4452
L4       5711   2052  0272 0307 2072
L8       5636   4546  4271
MAGTP    5600   4501  4343 4554 4555 4564 4574
MAKGAP   5221   1345  1362
MAXBLK   4454   0531  0407 0745 4135
MAXLN    4451   0526  1435 0152 0170 0171 0300 0304 1143 1144 1147 1652 1653 4132 4374 4375 4420 4435 4436
MAXNUM   0170   4070  1163 1622 3470 3625 4150 4200
MAXVC    6623   0700  1124 1672
MBLK2    2000   4706  4276 4333 4466 4502
MCHC     1051   4050  1007
MCVC     7420   4046  1004
MHBIT    5251   1375  1244
MINUS1   4156   0207  0314 0571 0660 1755
MKHC     1763   4047  1151
MODKBD   0400   2453  0632
MOVEIT   1121   3065  3022 3027 3103 3126 4111
M24      0503   2570  2463
M4       4234   0274  0254 0306 2066
M5       6762   1063
M8       6270   0320  0311
NEG1     5666   2024  2015
NOADJ    5376   1522
NOCNT    5521   1645  1634 1642
NOLN     5447   4335  4311
NOPAS    6562   0635  0641
NOTACR   5377   1523  1443
NOTOK    4176   0231  0173 0434 0501 2132 2135 4127 4447
NUMCHK   6321   0355  0310 0401 1401
N1       6304   0335
N2       7142   1267
OK       5367   1513  1422 1426 1427 1440 1442 1452 1455 1471 1504 1631
OLDPTR   1033   2770  0060
OLDSAM   6627   0706  1665
OUTCUR   6544   0617  0540 0577
OUTPTR   1010   2741  1062
OUTSCP   6573   0650  0630 0653 0662 0713 1116
PASTL    4027   0046  0037
PCODE    2000   4071  1350
PLACTR   4171   0223  0211 0632 1544 4134
PLAFLG   4351   0417  0110 0366 0411 0731 4266 4410 4616
PLAFUL   4310   0356  0145
POSCHK   1375   3350  3367
POS1     6072   0104  4256
PTADDR   2400   4061  3140 4062 4107
PTBLK    0320   4074  2703
PTEXIT   2520   4063  2745 3007 4064 4171
PTINIT   2450   4062  2734 4063 4143
PTRIN    0506   2573  0125 2474 2477
PTROUT   0507   2574  0126 2542 2545
PT12B    2570   4064  3145 4065 4221
PXTBLK   0361   4011  2671
P1       4167   0221  0251 0321 0365 1142 1157 1762 2056 4512
P10      6035   0044  0037
P1000    5072   1215  0226
P2T      7606   2111  2101
```

```
SYMBOL  VALUE  DEF  REFERENCES

P4      4252  0312  3320
P4Ø0    4542  0625  0662 0665
P4ØØ2   1172  3142  3123
P5      6673  0764  0774 1032 1243
P56     6333  0371  0347 0410 1245 1322 1410
P6      6314  0346
QMARK1  7722  4273  1307
Q4      5622  1753  3322
RC      0024  4057  3546
RDCASM  6166  0207  1617
READ    0021  2445  0243 0246 0443 0457 0475 1417 1471 1511 1525 1547 2072 2115 2135 2171 0102 1055 2720 2723 2761 2773 2776 3645
                    4622
REDO    7153  1300  1317
REGCHR  5064  1207  1262 3205 3223
RESET   5462  1604  1441 1614
RESTRT  5775  2141  4166 4216
RETEX   4035  0057
RJMP    4767  1071  1065
RL      1400  4056  3546
RO      0037  4035
ROACHR  5351  1475  1236 1425 1430 1433 1444 1460 1461 1572
ROLEF   5322  1446  3330
RORIT   5272  1416  3326
RO1     3700  4034  3543
RR      0022  4055  3545
RTN     7533  2007  2002
RTNEOF  7040  1146  1131
RTNJMP  7523  1777  1644
RTNMOD  0430  2506  2457 2503
RTNRTN  1005  2735  3030 3052 3744
RTNSET  5501  1625  1575
RUB     5112  1256  1247 3232 3340
RUBC    1356  3331  3261
RUBL    1354  3327  3257
RUBOUT  7477  1753  1712
RUBR    1352  3325  3255
RX      4323  0371  0401
SAMARG  5535  1663  0712
SAM3    6020  0027  0533 4222 4225 4226 4227 4230 4231 4232 4233 4234 4235 4236 4237 4240
SAM7    6026  0035  0703 1207
SAVAC   0100  3116  3041 3046 3106 3114
SAYNO   5665  4600  4303 4570 4614
SBTBLK  0356  4007
SCOPE   6433  0504  1737
SCPRTN  6073  0105  0047
SCPSTR  6623  0660  0517 0635 1153
SETS    5714  4631  4550
SETUP1  0322  3765  0042
SETUP2  0323  3766  0044
SET6N3  5447  1573  1320 1323 1547
SHIFT   1107  3053  2733 2744 3006 3024 3055 3064 3104
SHUFLE  1544  3517  3507 3522
SKPCHK  1141  3105  3056 3066 3074 3112 3113 3115
SKPLIT  1152  3122  3054 3107
SP      0040  4037
SPCHAR  1563  3540  3167 3241 3271 3301
SPFCNS  1400  4013
SPTBLK  4533  0616  1464 4126
SPYTAB  7414  1665  1672
SP1     4002  4036  0377 1276
SRTAB   1436  3411  3424
STBUF   0511  2576  2531
```

```
SYMBOL   VALUE  DEF   REFERENCES

STLINC   7236   1365  1354
STPDP    7227   1356  1351
SUBCHR   1320   3273  1202 3151 3160
SUBSET   5055   1200  3274
SVACC    6601   0656  0645 0654
SVCHR    0510   2575  2543 2551 2565
S3       4334   0402  0374
S4       5675   2034  0270
TAB      7471   1745  1710
TABCNT   1456   3431  3414 3417
TABEND   1445   3420  3434
TABLE    7543   2036  1664
TABSET   0120   1051  1053 1054 1055 1056
TAGTB    1277   1053  1044 1054
TB       0047   4025  0136 3456
TBLKCB   4733   1033  1011 4137
TBTOWB   4101   0131  1204 1251 1263
TB1      4700   4024  0757 0770 3413 3540
TEMPB    6541   0614  0535 0537 0575 0606 0611 0612
TEMP1    4022   0040  1203 1207 1216 1306 1311 1364 1370 1732 1735
TEMP2    4023   0041  1344 1355 1361 1367 1406 1412
TEMP3    4024   0042  1354 1360
TEMP4    1413   3366  3355 3361
TEMP5    0454   2537  2524 2525 2532 2534
TESTM    1705   3671  3015 3672 3727
THERE    0515   2601  2577 2604
TO       0103   3121  3036 3043 3045 3061 3067 3073 3077
TOPPTR   4025   0043  0663 0664 1510 1610 1734 3561
TORF     0102   3120  3063 3065 3100 3101 3141
TPCHK    4202   0235  0267 1764 2112
TPFLG    4203   0236  0233 0324 0330 0605 2042 4133 4155 4167 4205 4217
TPSTAT   4523   0605  0502 2040 4141
TPWD     5601   4502  4277 4334 4462 4513 4514
TRYBUF   0422   2500  2461
TXTHC    1157   1052  0751 0776 1053 1115
TYCAR    7524   2000  1751
TYPE     7534   2010  1732 1740 1747 1755 2004 2006
T2       5744   2106  0274 0277 1452
T3       4345   0413
T4       6354   0412  0374 0402 0406
UNITNO   0777   3772  0156 0204 0224 0237
UP3      5100   1223
UP6      5102   1226  1222 1264
U2       7174   1322  0436 1313 2107
VCOORD   6765   1066  0073 0701 1005 1111
VIRGST   1153   3123  4173
V3       4545   0630  0544 0552
WA       0370   3773  0266 2201 2215 1072 2074 4151 4152 4153 4154 4201 4202 4203 4204
WAEND    0467   3776  1153 3777 4426
WATAG    7701   2215  2165 2202 4654
WAUNIT   0000   3775  0414 0612 0721 0736 0777 1021 1032
WB       3000   4016  0436 0462 0631 0640 2101 4144 4145 4175
WBFULL   4372   0444  0143 0347
WBRDC    4650   0737  0415 0652
WBTBLK   4664   0754  0547 0770 4124
WBTOCB   5650   2006  2022
WBWRC    4635   0724  0403 0432 0613
WGA12A   1742   3736  3717
WP       4747   1047  1043
WRITE    0022   2446  2257 2262 2265 2270 1052 2756 3130
WRL1     0557   2674  2762
WRL2     0563   2701  1056 2724 2757 2777 3131
```

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SYMBOL   VALUE  DEF   REFERENCES

WT       4647   0736
WŻ       4527   0612
W2       6242   0267   0174 1502
W5       6774   1075   1001 1025
XITCMA   1554   3527   3454 3457 3463 3466
XITCOM   1462   3435   3376
XITCR    1360   3333   3307
XITCUR   6543   0616   0543 0551 0554 0561 0567
XITERR   7046   1154   0333 0416 0430 1302 1305 1310 1320 1333 1336 1345 1355 1402 1456 1460 1542 2104
XITREG   1247   3222   3171 3225 3230 3314 3342 3346 3372 3530
XITRO    5441   1565   1477 1556 1562 1571
XIT1     6447   0522   2076
XIT2     4761   1063
XIT2C1   1245   3220   3165 3177 3203 3243 3262 3277 3336 3512 3633
X2       4735   1035   1447 0252 2114 2122 4130
Y5       6712   1003   0062 0763
Y6       2240   2414   0330
ŻERO     7706   2241   2404
ŻM7000   7762   2434   2246
ŻP1      7740   2301   2260
ŻP2      7744   2311   2263
ŻP3      7752   2321   2266
ŻP4      7756   2330   2271
Ż2       7574   2077   1521 2066
Ż6       2201   2355   0326 0330
```