IDENTIFICATION: Executive Equipment Configuration Test (Select)

AUTHOR: Systems Engineering Laboratories

ACCEPTED: March 2, 1968

PURPOSE: To provide an executive control routine for the SEL 810A/B
                    peripheral equipment diagnostic test program. package.

REQUIRED
CONFIGURATION: SEL 810A/B Computer and ASR Teletypewriter

PREREQUISITE: 810A/B Computer and ASR Teletypewriter exercisers have
                    run successfully. This probram is not relocatable.

GENERAL: This executive routine is oriented toward the development
                    of an efficient diagnostic package for computer peripheral
                    equipment. The ground rules listed below establish pro-
                    cedures for all future diagnostic programs.

OBJECTIVES: 1. General purpose assignment of peripheral interrupt
                    and BTC locations.

                    2. Minimum use of sense switch/manual entries.

                    3. Operation option to run fixed tests/operator
                        generated tests.

                    4. English language directives for all operator input.

                    5. Real-time monitor of operator directives.

LOADING
PROCEDURE: 1. Load the relocatable 810A Standard Load/Dump
                    Package (catalog number 300001) into memory above
                    location '5777.

                    2. Enter the starting location of the loader into program
                    counter.

LOADING PROCEDURE: (CONT'D)

    3. Clear the A register.

    4. Enter '300 into the B register.

    5. Set the read device option.

        Sense Switch 0 Set: High Speed Paper Tape
        Sense Switch 0 Reset: ASR Paper Tape

    6. Place the SELECT object tape in reader.

    7. Depress START twice.

       When tape is successfully read in:

    8. Place the test program (GRAPE, FDSK, etc.) into the reader.

    9. Depress START.

       When tape is successfully read in:

   10. Depress MASTER CLEAR.

   11. Depress STEP

   12. Depress START twice

The program will type-out SELECT, a date and the title of Test program. The
date should correspond to the date in the listing.

OPERATING PROCEDURES:

The program may be re-initialized by typing in the directive SELECT or by exe-
cuting steps 10-12 of the LOADING PROCEDURE.

Program Control Directives

The program is controlled by directives entered by means of the control device, IE.
The ASR typewriter, ASR paper tape reader or the high-speed paper tape reader.

OPERATING PROCEDURES: (Cont'd)

The control device will accept as many as 80 characters or five parameters before an error is indicated.   The carriage return indicates the end of a directive.   A type-in of a DELETE code causes the directive being typed in to be deleted.   A space, comma or period is interpreted as a delimiter and will cause the next parameter to be started.

The directive name must contain the characters underlined.   A four character name may be extended for sake of clarity.

Example:

DUMP

ASSIGN

The parameters may be alphabetic, a six digit octal number of four digit decimal number is permitted.

Example:

DUMP '003760 '4000

ASSIGN TYPEWRITER 1

A statement number from 1-9 may be entered before the directive name.   This statement will be used by the test program to enable the operator to store a program of operational directives and refer to them by number.

1.	FDTK	Set Track and Sector
	FDWT	Wrote
	FDRD	Read
	FDPP	Check Area Protect Switches

OPERATING PROCEDURES: (Cont'd)

2. FDRD   Read again
    GOTO 1   Start at 1 again
    REPEAT 2, 20   Repeat 2 20 times
    END

Operational Directives

Operational directives are interpreted by the test program and are stored for execution when the operator types in the directive END causing execution to begin. See the example above.

Immediate Directives

Immediate directives are those which are executed as the directives are typed-in. DUMP and ASSIGN are examples of immediate directives.

The following commands are the immediate commands associated with SELECT. The underlined characters are required.

ASSIGN Parameter 1 Parameter 2 - This parameter is used for assigning device numbers to devices or the control device to the ASR Paper Tape Reader, High Speed Paper Tape or Teletypewriter. The assignments required by the test program are defined in the individual test documentation. Assignment of the control input devices is accomplished by means of the following directives:

ASSIGN CONTROL TYPEWRITER C/R

ASSIGN CONTROL ASR C/R

ASSIGN CONTROL FASTPAPERTAPE C/R

OPERATING PROCEDURES (Cont'd)

Assignment of a control unit number (if it is different from the standard assignment) may be accomplished by using the following directives:

        ASSIGN TYPEWRITER n C/R

        ASSIGN FASTPAPERTAPE n C/R

        ASSI FAST n C/R

Where n is a decimal or octal number defining the unit Number.

DUMP From To - Dump will cause an octal printout of the locations specified by the "from" and "to" parameters on the assigned typewriter.

Example:

        DUMP '00000 '000010 C/R (dump first 8 locations)

        DUMP '0 '10 C/R

        DUMP 0 8 C/R

MODIFY Location Contents - This Directive will cause the "location" specified to be changed to the "contents".

Example:

        MODIFY   '100   128 C/R

        MODIFY   64   '200 C/R

        MODIFY   '101   HI C/R

OPERATING PROCEDURES (Cont'd)

NOTE

In the case of alphabetic "contents" only the first two
characters will be used.

HALT - This Directive will cause a machine halt to be executed. This directive is
used if changes to the program are required or if the program needs to be reini-
tialized. If the HALT directive is not used for reinitialization there is a chance
that the task control section of the program will destroy the contents of the task
temporary storage so that reloading the program will be necessary. (See execu-
tive task control). The initialization procedure is as follows:

1. Depress MASTER CLEAR.

2. Depress STEP.

3. Depress START twice.

SELECT - This directive causes automatic initialization of the SELECT program.

Sense Switch Control

The program maintains a location that contains the conditions of the SENSE
SWITCHES. (SS). SS0 is used to cause the transfer of the contents of the switches
to this location (S8SS). This allows operator control of when the new setting will
be interpreted. The standard assignments of the switches are as follows:

Sense Switch	Meaning
0 = OFF	Do not change S8SS.
0 = ON	Change S8SS to current condi- tion of Sense Switches.
1 = OFF	Type out all error messages.
1 = ON	Do not type out error messages.

OPERATING PROCEDURES (Cont'd)

2 = OFF	Halt after detection of error.
2 = ON	Inhibit halt on error.
3 = OFF	Loop on test after error.
3 = ON	Go to next test after error.
4 = OFF	Continue to next test after first success.
4 = ON	Loop on current test.

<u>SET</u> Switch - This directive will cause the switch selected to be set in the pseudo sense switch location (STEM). If switch = 0, the contents of the pseudo sense switch location will be transferred into the test program sense switch location (S8SS).

Example:

SET 1 C/R

SET 2 C/R

SET 3 C/R

The above directives will cause the pseudo sense switch locations (STEM) to be changed to '070000 assuming it was '000000 before the directives. However, the test program sense switch location will remain unchanged.

<u>SET</u> 0 C/R

This directive will cause bit zero to be set in the pseudo sense switch location (STEM) = '170000 and the contents to be transferred to the test program sense switch location (S8SS) = '170000.

SUCCESS INDICATION AND PROCEDURES:

The success indications and procedures of the test programs are covered in the documentation for the test programs.

ERROR INDICATIONS AND PROCEDURES:

The error indications and procedures of the test programs are covered in the documentations for the test programs.   The command processor checks for the following errors and types the message indicated.

Message	Error	Recovery
"TO"	TASK OVERFLOW	Program is reinitialized
"CO"	CHARACTER OVERFLOW (Over 80 received)	Program does not process directive. It will process the next directive available from the assigned control device.
"PO"	PARAMETER-OVERFLOW (Over 5 received)	Same as "CO" above
"CWE"	KEYWORD ERROR (Directive command word not found)	Same as "CO" above

OPERATION SUMMARY:

Load with A = 0 B = '300.

Initialization

Type in "SELECT" if typewriter control is available.   Depress MASTER CLEAR, STEP, and START (twice).

OPERATION SUMMARY: (Cont'd)

Sense Switch Settings

     0 = 1 Read sense switches.

     1 = 1 Inhibit typeout of error message.

     2 = 1 Inhibit HLT after error is detected.

     3 = 1 Go to next test after error.

     4 = 1 Loop on current test (no error).

Directives

SELECT C/R - Reinitialize SELECT executive.

HALT C/R - Stop executive for changes so reinitialization may be done without destroying a part of the program.

ASSIGN CONTROL TYPEWRITER C/R - Type in directives.

ASSIGN CONTROL ASR C/R - Read paper tape on ASR.

ASSIGN CONTROL FAST C/R - Read paper tape on high speed paper tape.

ASSIGN TYPEWRITER Unit C/R - Assign ASR to another unit number.

ASSIGN FAST Unit C/R - Assign high speed paper tape to another unit number.

DUMP from to C/R - Type out specified locations on assigned typewriter (ASR).

MODIFY Location Contents C/R - Change "location" to "contents".

SET Switch C/R - Set the pseudo sense switch specified.

RESET Switch C/R - Reset the pseudo sense switch specified.

SET or RESET 0 C/R - Transfer pseudo sense switch settings to test program sense switch location.

PROGRAM DESCRIPTION:

General:

The main executive is a user controlled time sharing executive capable of allowing ten programs to share computer time. After control is transferred to the using program, control is maintained by the using program until it releases control.
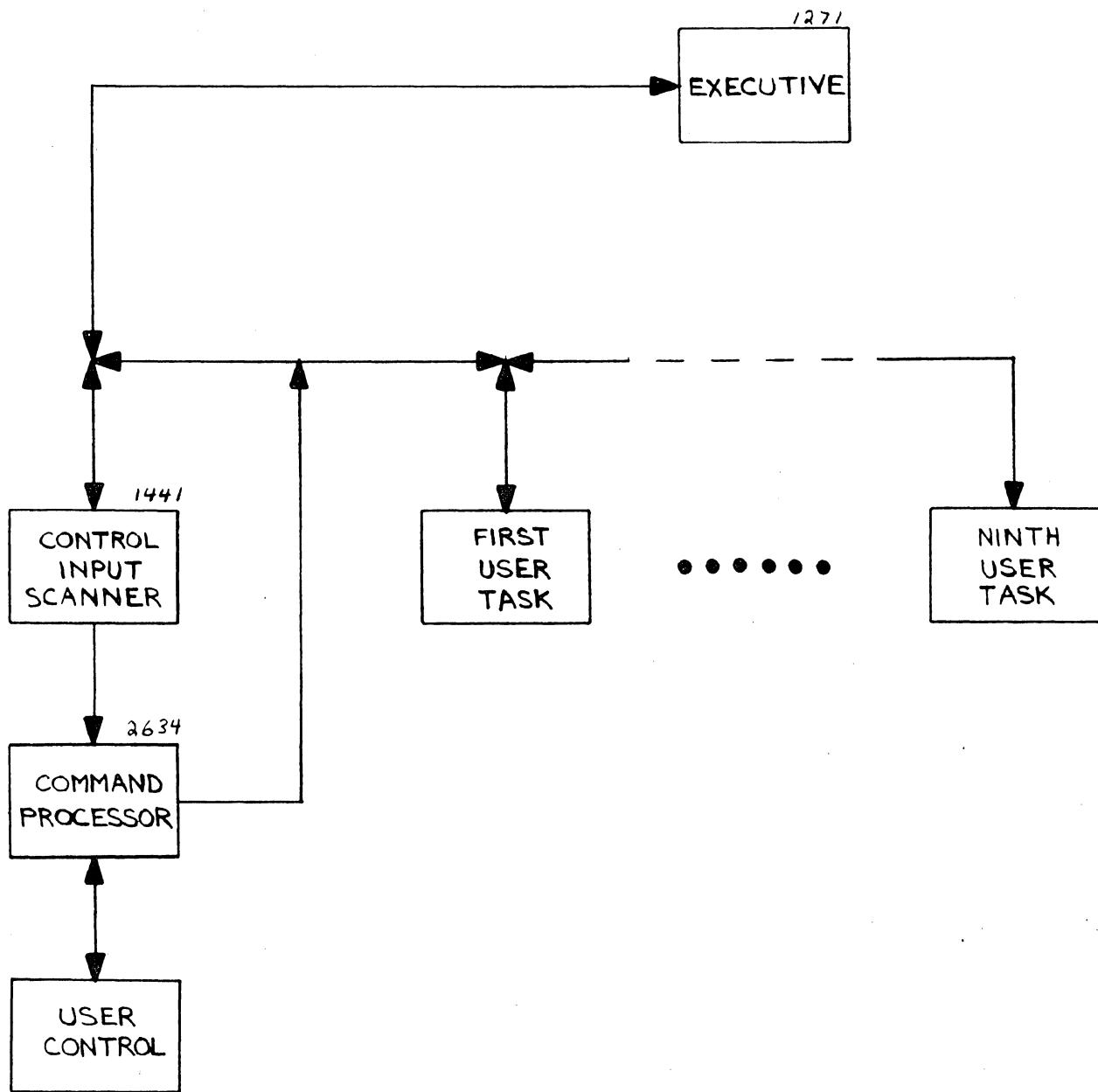
The Control Input Scanner is one of the ten users of the time sharing executive and is in the executive Task Table except when a directive is being processed. Control Input from paper tape or ASR keyboard is preprocessed by the scanner for user control statements.

Figure 1 is a block diagram of the basic system. Note that the User Control section does not transfer control to any of the User Tasks. The executive considers the control section of the program as one of the ten tasks and the User Control must operate under the same restrictions.

Time Sharing Executive

Figures 2 and 3 are flow charts of the Executive Task Scanner. Each time the routine is entered via symbol E8R or COMR, the program checks the sense switches and if sense switch 0 is set, stores the contents into the users sense switch location (S8SS).

The task pointed to by the Task Pointer is examined to determine whether the task is filled (a minus one in the table indicates that the task is not filled) and the Task Pointer is incremented. If the Task Pointer has passed the end of the list it is reset to the beginning of the list. If the Task has been found to be filled ($\neq$ 1) it is assumed that the TASK is an address and this address is saved as the Task in Progress (COM).

E8R
COMR

IS
SSO SET   *1272*

No

STORE SS
CONTENTS
INTO S8SS   *1274*

BRING UP
TASK FROM
TABLE   *1277*

B

INCREMENT
TASK
POINTER

FIG.
3-A

FIGURE 2

A

WAS
THIS END OF
TASK   *1300*

RTP *1305*

RESET
TASK
POINTER

FIG
2-B

No

IS
THIS TASK
FILLED   *1307*

SET UP
A & B FROM
USER TABLE   *1315*

GO TO
ADDRESS
IN USER
TABLE
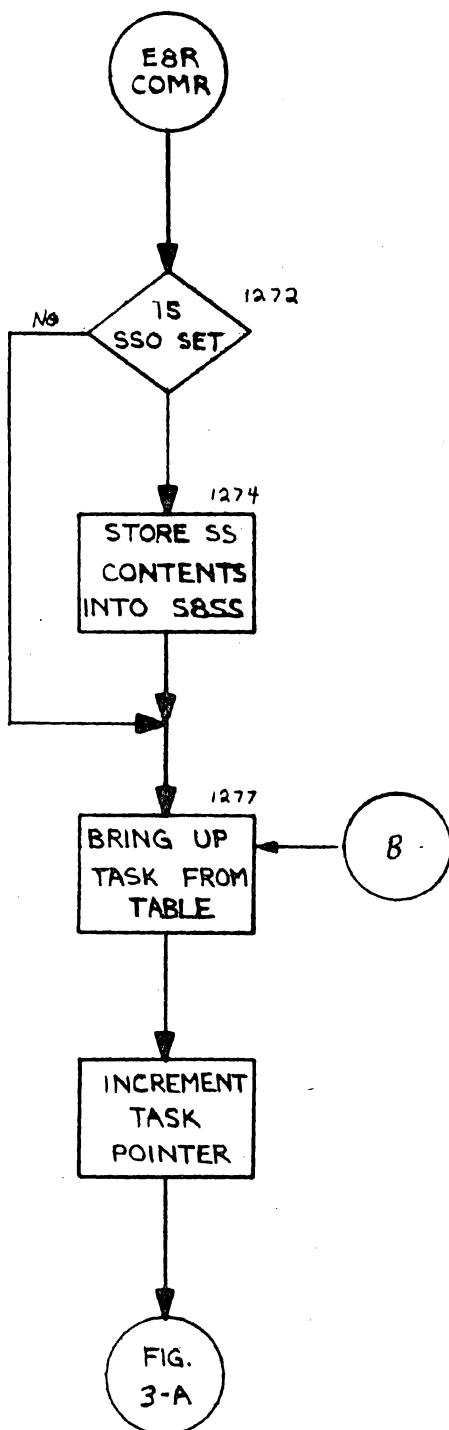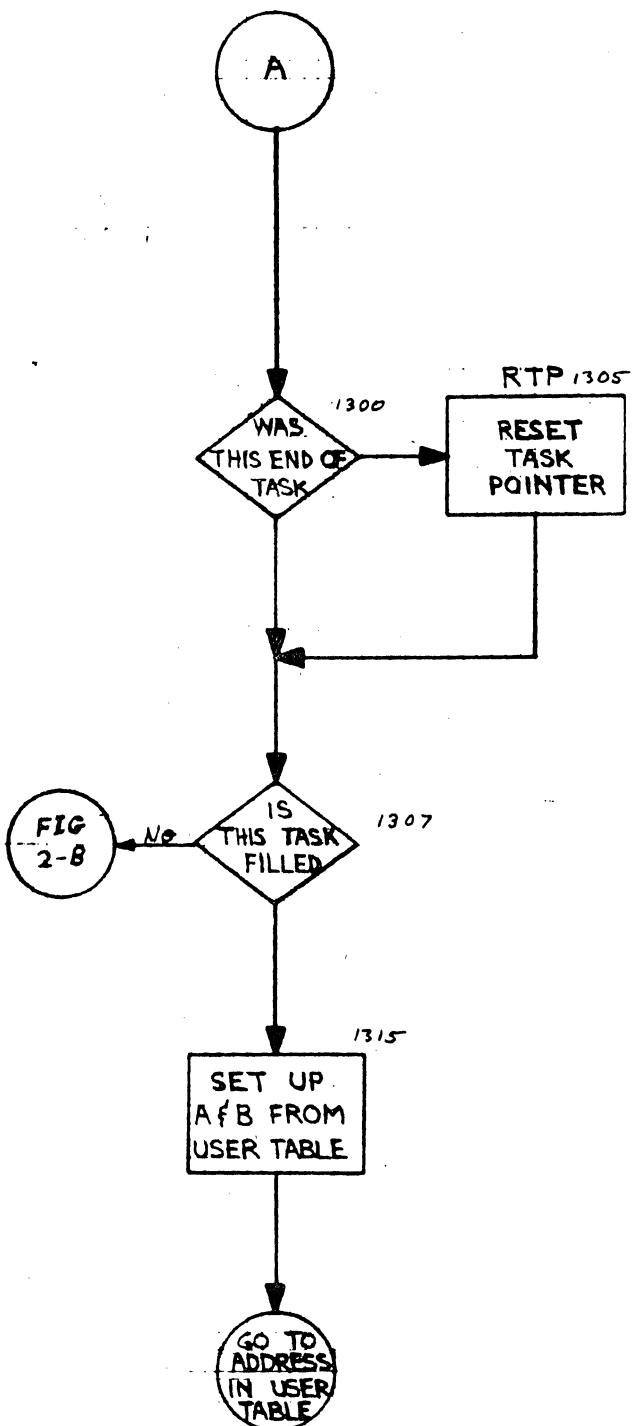
FIGURE 3

PROGRAM DESCRIPTION: (Cont'd)

User Task Storage Table

The Task Scanner requires a three word table for each user task. This table is used for storage of A and B Accumulators and program counter while another task is being processed. (See figure 5). The contents of Task in Progress (COM) will point to this table and the scanner loads the A and B Accumulators from the table and branches to the location specified by the third word of the table.

Three auxiliary entrances are provided for maintaining the User Task Storage Table in the executive.

SPB T8M2 - This calling sequence will cause the A and B Accumulators to be saved in the first two locations of the User Task Storage Table, the contents of T8M2-3 to be saved in the third location.

SPB T8M1 - Same as T8M2 except the contents of T8M1-2 are saved in the third location.

SPB T8P1 - Same as T8M2 except the contents of T8P1 are saved in the third location.

Figures 5 and 6 are a sample task to copy paper tape sharing the computer main-frame with other devices by means of the Skip Mode of the input/output commands CEU, AIP and AOP. An example of the use of the entrance T8M2, T8M1, and T8P1 are included in the sample task. Each time one of these entrances is used another task is given time for processing. Note that if none of these returns to the executive are made, no time sharing is possible.

LOC.	OPER.	ADDRESS, INDEX	
*		PROGRAM TO COPY PAPER TAPE	1
	REL		2
	NAME	ELL,ELL	3
	NAME	ASGN,ASGN	4
	DATA	' ' COPY ' '	5
	DAC	COPY	6
ELL	DAC	*	7
	DATA	' ' COPY PAPER TAPE ' '	8
*			9
COPY	LAA	=HSP ADD COPY TASK TO EXECUTIVE TASK TABLE	10
	SPB	T8A	11
*			12
	LAA	=HSPO INITIALIZE USER TASK TABLE	13
	STA	HSP+2	14
*			15
	BRU	C8R REQUIRED RETURN TO COMMAND PROCESSOR	16
*			17
ASGN	BRU	C8R NO ASSIGNMENT DESIGNATED	18
*			19
*			20

LOC.	OPER.	ADDRESS, INDEX		
*				21
*		TASK TO COPY PAPER TAPE		22
*		1 FRAME AT A TIME		23
*				24
*		THREE WORD USER TASK STORAGE TABLE		25
*				26
HSP	***	**	SAVE A IN THIS LOCATION	27
	***	**	SAVE B IN THIS LOCATION	28
	***	**	SAVE PROGRAM COUNTER IN THIS LOCATION	29
*				30
HSPO	GEU	2	GEU TO START PUNCH MOTOR AND READ	31
	DATA	'5000		32
	SPB	T8M2	RETURN TO EXECUTIVE IF IT DOESNT SKIP	33
*			EXECUTIVE WILL SAVE A AND B IN HSP AND HSP+1	34
*			IT WILL SUBTRACT 3 FROM CONTENTS OF T8M2	35
*			AND SAVE IN HSP+2. IT WILL SEARCH TASK TABLE	36
*			AND PROCESS ALL OTHER TASKS AND THEN RETURN	37
*			THIS TASK AT HSPO.	38
*				39
				40

LOC.	OPER.	ADDRESS, INDEX		
*				41
HSP1	AIP	2	READ 1 CHARACTER	42
	SPB	T8M1	RETURN TO EXECUTIVE IF IT DOESNT SKIP.	43
*			SAME AS T8M2 EXCEPT IT WILL SUBTRACT 2 FROM	44
*			CONTENTS OF T8M1 CAUSE A RETURN TO HSP1.	45
*				46
	LSL	8	SHIFT IT OVER.	47
	AOP	2	PUNCH IT OUT.	48
	SPB	T8M1	SEE CEU AND AOP COMMENTS.	49
*				50
	SPB	T8P1	RETURN TO EXECUTIVE	51
*			EXECUTIVE WILL RETURN TO HSP2 ON NEXT PASS	52
*			THROUGH TASK TABLE.	53
*				54
*			USER MAINTENANCE OF TABLE HSP	55
HSP2	STA	HSP	SAVE A	56
	STB	HSP+1	SAVE B	57
	LAA	=HSP1	SET PROGRAM COUNTER ON NEXT PASS TO	58
	STA	HSP+2	START AT HSP1	59
	BRU	E8R	RETURN TO EXECUTIVE	60

PROGRAM DESCRIPTION: (Cont'd)

Executive Task Control

Three subroutines are provided to service the Executive Task Table.

             LAA = address of User Task Storage Table
             SPB T8A

This calling sequence will cause the task to be added to the list in a position not containing a task.   There is no test to determine whether this task is already included, therefore, it is possible to include a task more than once in the table. An excess of tasks entered into the table will cause a typout of "TO" (task overflow) and the task table will be cleared and the program will be re-initialized.

             LAA = address of User Task Storage Table
             SPB T8D

This calling sequence will cause all tasks of the address contained in the A accumulator to be deleted from the Task Table.
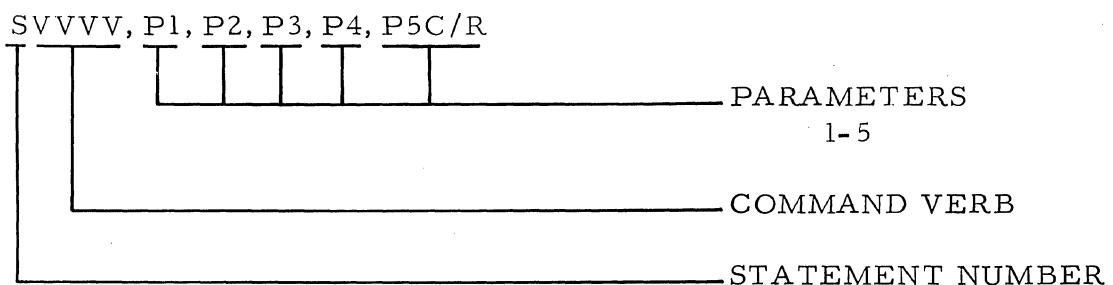
             SPB T8C

This calling sequence will cause all tasks to be cleared from the task table except the Control Input Scanner.

Control Input Scanner

The Control Input Scanner (CIS) and Command Processor can be considered as permanent resident of the Executive Task Table.   Provisions are made so that the CIS shares the computer with other tasks while awaiting data from the Control Input Device (CID).

PROGRAM DESCRIPTION: (Cont'd)

Input Format

SVVVV, P1, P2, P3, P4, P5C/R

PARAMETERS
1-5

COMMAND VERB

STATEMENT NUMBER

Statement Number - If the first character is between 1 and 9 it will be interpreted as a statement number and will be stored in the symbolic location S8SN for use by user control subroutine.

Command Verb - The first four alphabetic characters are interpreted as the command verb as used to determine which command processing subroutine is used. (See Command Processor)

Parameters - After the first delimeter (space, comma or period) the parameters are processed. The parameters may be a six digit octal number, a four digit decimal number, or an alphabetic entry. Associated with each parameter is a pointer. The symbolic names for the pointers are C81 - parameter 1, C82 - parameter two C83 - parameter 3, C84 - parameter 4 and C85 - parameter 5.

Control Input Buffer (C8IB) - The program receives data from the control device and packs the characters in the buffer one character per word. Each time a delimiter is typed in the associated parameter pointer (C8(1-5)) is set to the start of the new parameter. When the C/R is typed in the program packs the alphabetic data two characters per word and converts the octal and decimal parameters. The "before" and "after" C/R configurations of the control input buffer are shown as follows:

PROGRAM DESCRIPTION: (Cont'd)

Directive: DUMPE, 32, '100

LOCATION	BEFORE C/R	AFTER C/R
41	' 000304	'142325
42	' 000325	'146720
43	' 000315	'142400
44	' 000320	'000320
45	' 000254	'000254
46 = C81	' 000263	'000040
47	' 000262	'000262
50	' 000254	'000254
51 = C82	' 000247	'000100
52	' 000261	'000261
53	' 000260	'000260
54	' 000260	'000260
55 = C83	' 000215	'000215

Figures 7, 8 and 9 are flow charts showing the normal flow of the Control Input Scanner.
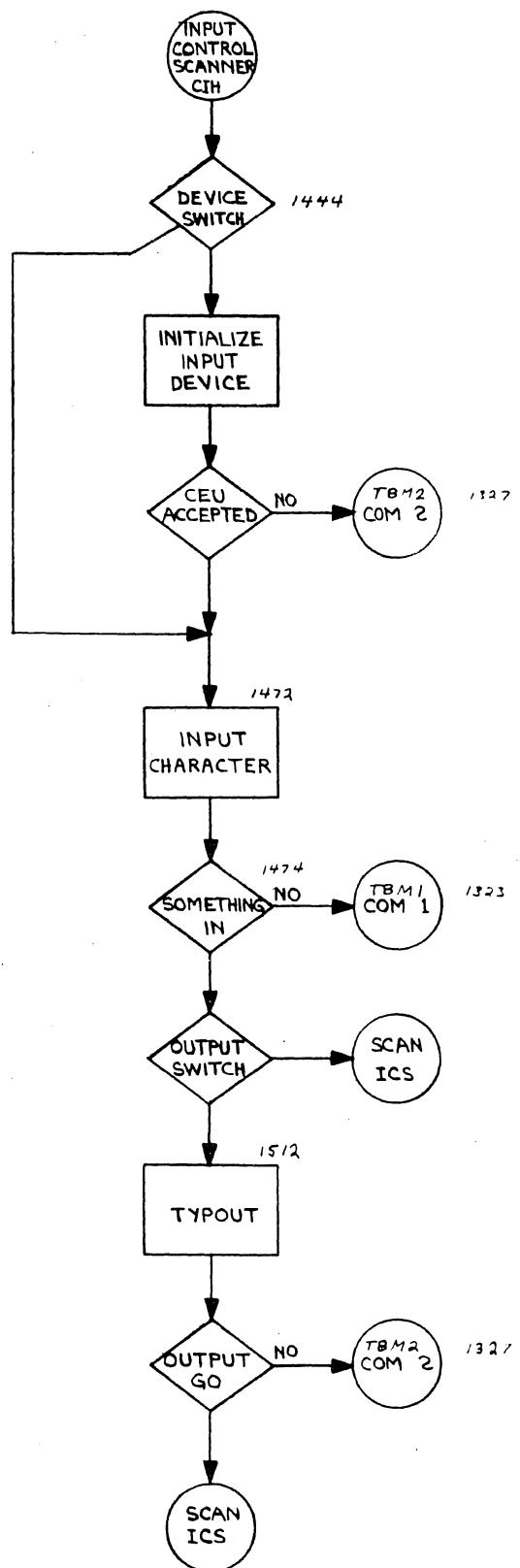
FIGURE 7

INPUT CONTROL SCANNER 1
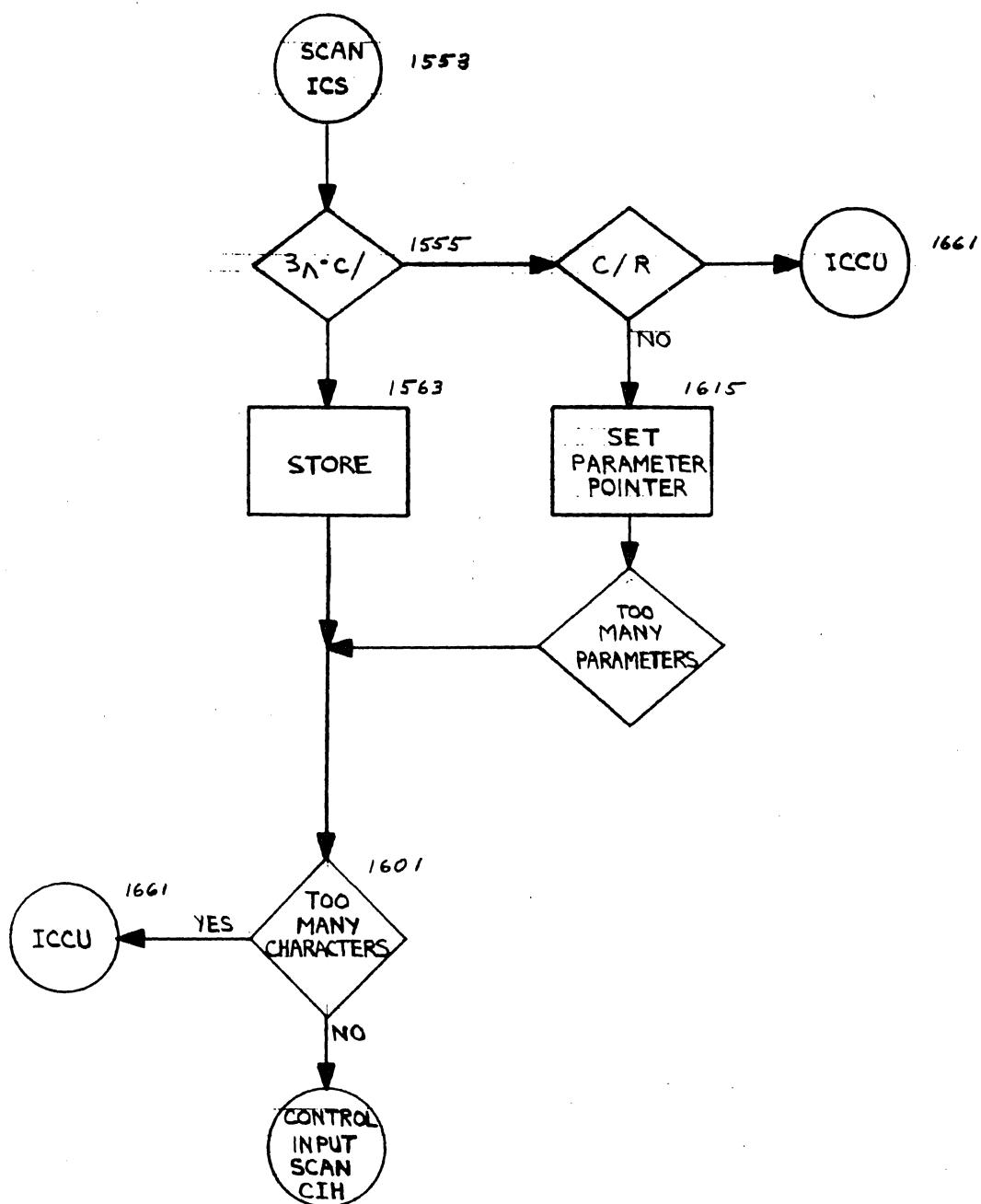
FIGURE 8

CONTROL INPUT SCANNER (SCAN)
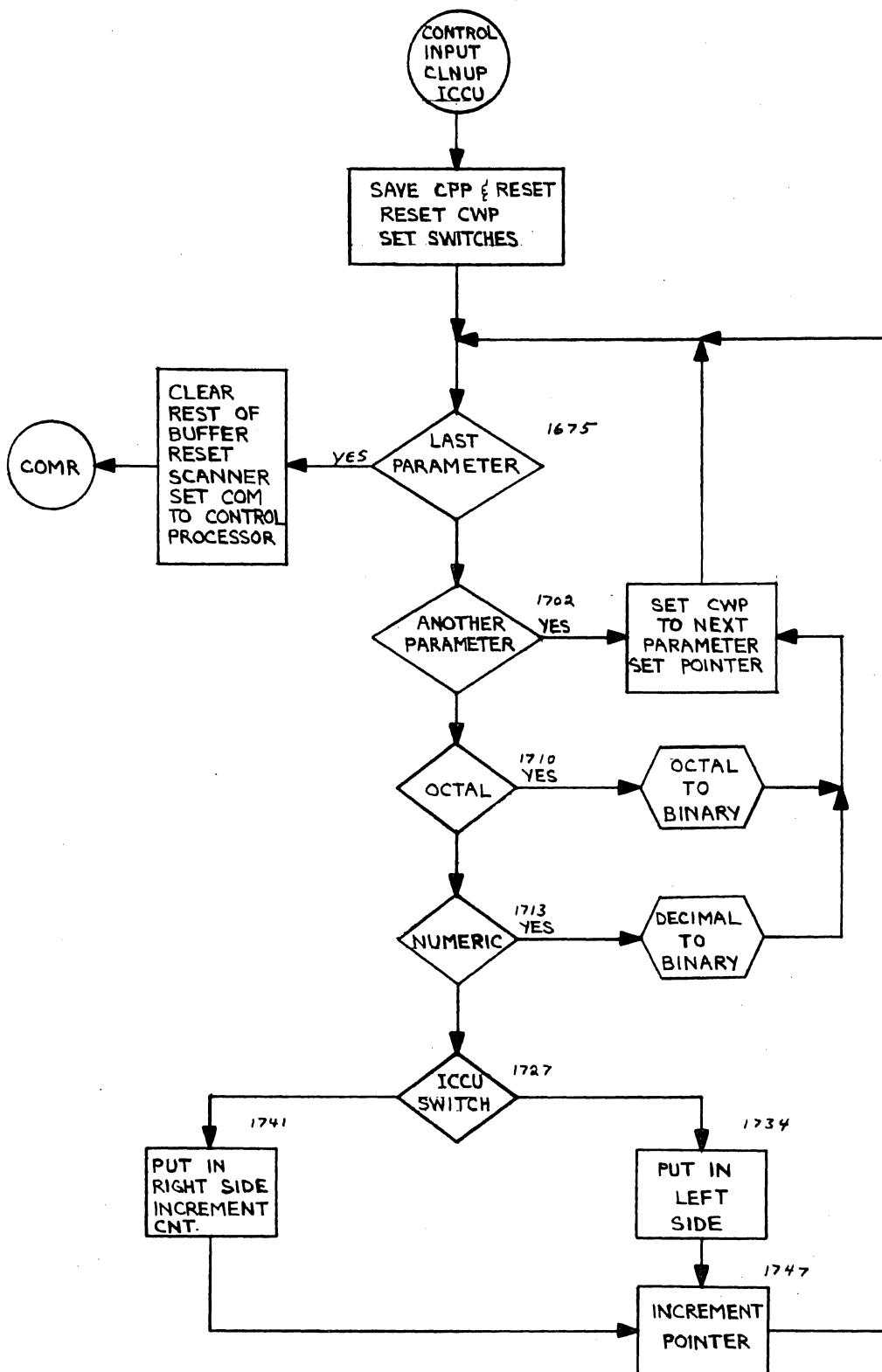
FIGURE 9

CONTROL INPUT SCANNER WRAPUP

CONTROL PROCESSOR COMMAND VERB DICTIONARY:

After the Control Input Scanner has converted and packed the directive, the program searches the dictionary for the command verb. The dictionary is loaded at the end of SELECT and the beginning of the test program forming a continuous table. The last entry in the table is an external reference so that SELECT may determine the end of the table. That location (ELL) must contain its own address. The entries in the dictionary consist of three words. The first two are the four ASCII character command verb and the third is the address of command servicing subroutine of the test program. (See Figure 4 for an example of Test Program set up.)

When test program interpretation is complete a return must be made to the Command Return address (C8R, see Figure 4, Line 16) to allow inputting of another directive.

Figure 10 is a flow chart of the Control Processor Flow. The block "Set up Parameters and Task Table" is the users control section if the directive is not one of those reserved by SELECT.

CONTROL
PROCESSOR
CP

2637

SET
INDEX TO
KEYWORD

CPS

KEYWORD
FROM
LIST

CPS1   2644

INCREMENT
KEYWORD
LIST

2641, 2662

IS
THIS
KEYWORD   YES

SET UP
PARAMETERS
& TASK TABLE   (USER PROGRAM)

NO

C8R   24

NO   IS THIS
END OF   2646
LIST

1296

KEY ERROR

C8R
OR
CPR   24
2670

SET COM TO
CIH FOR NEW
COMMAND

E8R   0
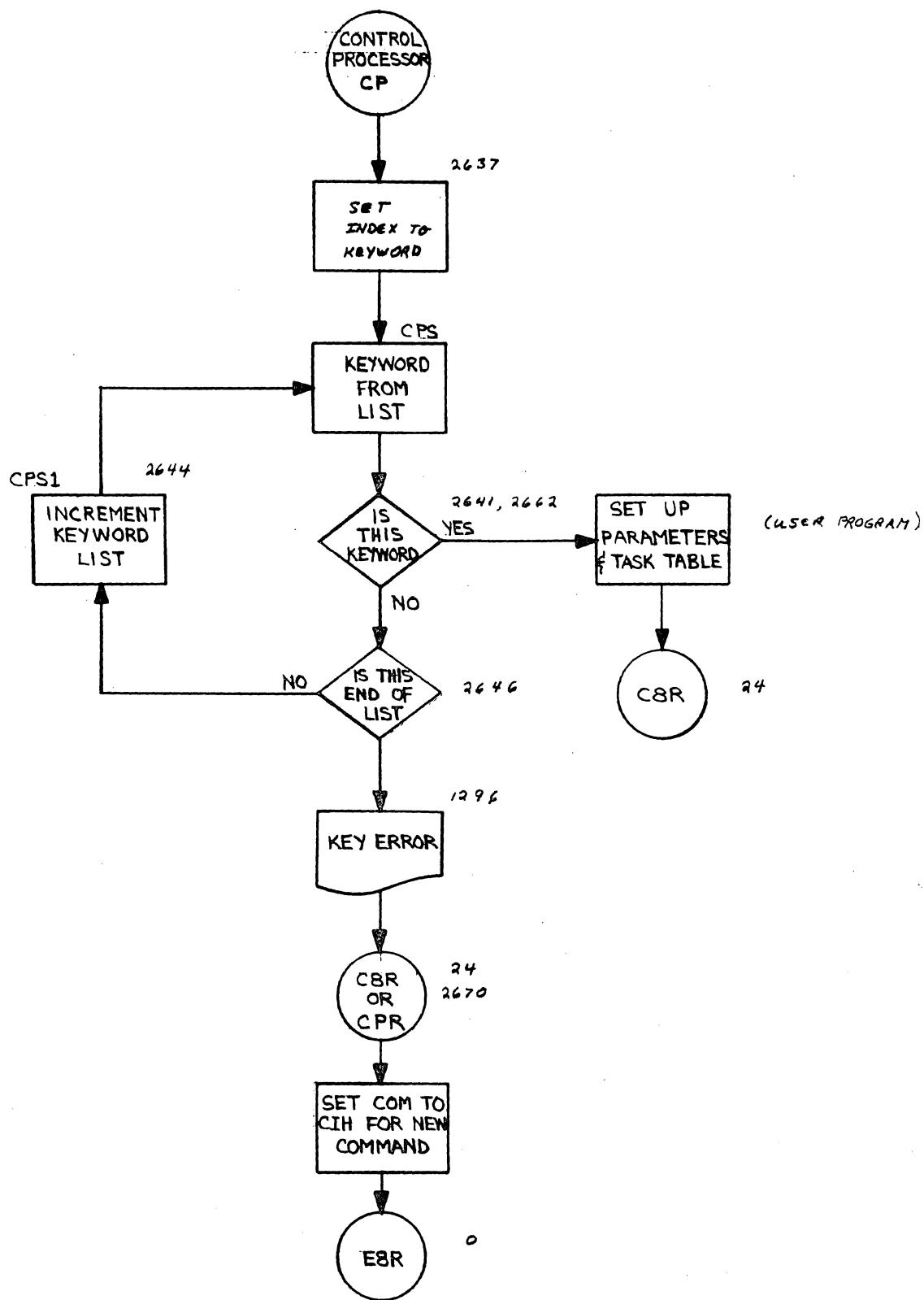
FIGURE 10

CONTROL PROCESSOR COMMAND VERB DICTIONARY: (Cont'd)

Assign Entry - Each test program must provide an entry for the ASSIGN directive.
If the second parameter of the ASSIGN directive is not found in the assign table of
SELECT a BRU instruction will be executed to the external symbol ASGN which is
in the test program.   (See figure 4, lines 4 and 18.).   After the test program has
interpreted the directive return must be made to Control Return (C8 R).

Executive Services - Typout - The typout routine may be used by using the following
call:

                              SPB   S8TY

                              DAC   address of two character per word buffer

                              DATA   number of words

Location S8TY will equal zero if it is not busy with another task.   If the routine is
busy it will complete the message before servicing the new message.

Dump - The octal dump subroutine may be used by the following call:

                              SPB   S8D

                              DAC   first address to be dumped

                              DAC   last address to be dumped

Keysearch - This subroutine compares two words to a list containing a two word
key and address and if equality is found executes a BRU to the address:

      Call:

                              SPB   S8K

                              DAC   address of two words

                              DAC   address of first word in the list

                              DATA   number of entries in the list

                              RETURN HERE   if one equality is found

CONTROL PROCESSOR COMMAND VERB DICTIONARY: (Cont'd)

Communication Location Assignment - The following is a table of the standard
assignments of the SELECT communication locations:

STANDARD COMMUNICATION LOCATIONS

LOCATION SYMBOL

0	FBR	EXECUTIVE RETURN
1	EBI	EXECUTIVE INITIALIZATION
2	T8M2	ENTRY TO CAUSE EXEC TO RETURN TO PLACE - 2
4	T8M1	ENTRY TO CAUSE EXEC TO RETURN TO PLACE - 1
6	T8P1	ENTRY TO CAUSE EXEC TO RETURN TO PLACE + 1
11	C81	CONTROL PARAMETER ADDRESS FOR 1
12	C82	2
13	C83	3
14	C84	4
15	C85	5
17	S8SN	STATEMENT NUMBER
20	T8D	DELETE TASK
22	T8A	ADD TASK
24	C8R	CONTROL RETURN TO EXEC
26	S8TY	TYPOUT SERVICE ROUTINE
30	S8D	DUMP SERVICE ROUTINE
32	S8SS	SENSE SWITCH CONTENTS

CONTROL SWITCH STANDARD ASSIGNMENTS

	0 = 2N	CAUSES SS WORD TO BE CHANGED
	1 2N	INHIBIT REPORTING ERROR
	2 2N	INHIBIT HALT ON ERROR
	3 2N	GO TO NEXT TEST AFTER ERROR
	4 2N	LOOP ON CURRENT TEST
34	T8C	TASK-CLEAR TABLE
36	S8K	KEYSEARCH SUBROUTINE
41	C8IB	CONTROL INPUT BUFFER

PROGRAM LISTING:

The program listing that appears on the following pages details the contents of the
SELECT program.

```
     0002   00000 00000000 *                                                                                0002
     0003   00000 00000000 *      SYSTEMS ENGINEERING LABORATORIES EQUIPMENT CONFIGURATION TEST             0003
     0004   00000 00000000 *                                                                                0004
     0005   00000 00000000 *                        SELECT                                                  0005
     0006   00000 00000000 *                     FELIX F BEARDEN                                             
     0007   00000 00000000 *                     MARCH 2 1968                                                
     0008   00000 00000000 *                                                                                
     0009   00000 00000000 *   THIS VERSION INCLUDES A HALT FOR              FEB 03/02/68          *B
     0010   00000 00000000 *       OCCURRANCE OF SPURIOUS INTERRUPTS         FEB 03/02/68          *B
     0011   00000 00000000 *   AND CORRECTION TO THE SERVICE ROUTINE         FEB 03/02/68          *B
     0012   00000 00000000 *   SBTY TO CORRECT LOGIC                         FEB 03/02/68          *B
     0013   00000 00000000 *
     0014   00000 00000000 *                                                                                0008
     0015   00000 00000000 *                      OPERATION SUMMARY                                          0009
     0016   00000 00000000 *                                                                                0010
     0017   00000 00000000 *   LOADING PROCEDURE                                                            0011
     0018   00000 00000000 *                                                                                0012
     0019   00000 00000000 *       USE RELOCATABLE LOADER (300001)                                          0013
     0020   00000 00000000 *                                                                                0014
     0021   00000 00000000 *       1 LOAD A WITH 0                                                           0015
     0022   00000 00000000 *       2 LOAD B WITH '230                                                        0016
     0023   00000 00000000 *       3 LOAD PC WITH STARTING ADDRESS OF RELOCATABLE LOADER                    0017
     0024   00000 00000000 *       4 SET LOADER CONTROLS OR SWITCHES                                        0018
     0025   00000 00000000 *       5 PUT TAPE IN READER                                                     0019
     0026   00000 00000000 *       6 DEPRESS START TWICE                                                    0020
     0027   00000 00000000 *                                                                                0021
     0028   00000 00000000 *       WHEN LOAD IS SUCCESSFUL                                                  0022
     0029   00000 00000000 *                                                                                0023
     0030   00000 00000000 *       7 LOAD DESIRED TEST (GRAPE,FDSC)                                         0024
     0031   00000 00000000 *       8 DEPRESS START                                                          0025
     0032   00000 00000000 *                                                                                0026
     0033   00000 00000000 *   INITIALIZATION                                                               0027
     0034   00000 00000000 *                                                                                0028
     0035   00000 00000000 *       1. DEPRESS MASTER CLEAR                                                  0029
     0036   00000 00000000 *       2. DEPRESS STEP                                                          0030
     0037   00000 00000000 *       3. DEPRESS START TWICE                                                   0031
```

```
0038    00000 00000000 *                                                              0033
0039    00000 00000000 *   SENSE SWITCH SETTINGS                                      0034
0040    00000 00000000 *       SS                                                     0035
0041    00000 00000000 *       0=1            READ SWITCHES                           0036
0042    00000 00000000 *       1=1            INHIBIT ERROR TYPOUTS                   0037
0043    00000 00000000 *       2=1            INHIBIT HLT AFTER ERROR                 0038
0044    00000 00000000 *       3=1            GO TO NEXT TEST AFTER ERROR             0039
0045    00000 00000000 *       4=1            LOOP ON CURRENT TEST (UNCONDITIONAL)    0040
0046    00000 00000000 *                                                              0041
0047    00000 00000000 *   DIRECTIVES                                                 0042
0048    00000 00000000 *                                                              0043
0049    00000 00000000 *       SELECT                                                 0044
0050    00000 00000000 *       HALT                                                   0045
0051    00000 00000000 *       ASSIGN CONTROL TYPE                                    0046
0052    00000 00000000 *       ASSIGN CONTROL ASR                                     0047
0053    00000 00000000 *       ASSIGN CONTROL FAST                                    0048
0054    00000 00000000 *       ASSIGN TYPEWRITER (UNIT NUMBER)                        0049
0055    00000 00000000 *       ASSIGN FAST (UNIT NUMBER)                              0050
0056    00000 00000000 *       DUMP (FROM) (TO)                                       0051
0057    00000 00000000 *       MODIFY (ADDRESS) (CONTENTS)                            0052
0058    00000 00000000 *       SET (SENSE SWITCH NUMBER)                              0053
0059    00000 00000000 *       RESET (SENSE SWITCH NUMBER)                            0054
0060    00000 00000000 *                                                              0055
0061    00000 00000000 *   ERROR TYPOUTS                                              0056
0062    00000 00000000 *                                                              0057
0063    00000 00000000 *       TYPOUT         INDICATION                              0058
0064    00000 00000000 *       TO             TASK OVERFLOW                           0059
0065    00000 00000000 *       CO             INPUT CHARACTER OVERFLOW                0060
0066    00000 00000000 *       PO             PARAMETER OVERFLOW                       0061
0067    00000 00000000 *       CWE            COMMAND WORD ERROR                      0062
0068    00000 00000000 *                                                              0063
0069    00000 00000000 *                                                              0065
0070    00000 00000000 *                                                              0066
0071    00000 00000000 *                   STANDARD COMMUNICATION LOCATIONS           0067
0072    00000 00000000 *                                                              0068
0073    00000 00000000 *   LOCATION SYMBOL                                            0069
0074    00000 00000000 *                                                              0070
```

```
0075    00000 00000000 *  0        E8R          EXECUTIVE RETURN                                           0071
0076    00000 00000000 *  1        EBI          EXECUTIVE INITIALIZATION                                   0072
0077    00000 00000000 *  2        T8M2         ENTRY TO CAUSE EXEC TO RETURN TO PLACE - 2                 0073
0078    00000 00000000 *  4        T8M1         ENTRY TO CAUSE EXEC TO RETURN TO PLACE - 1                 0074
0079    00000 00000000 *  6        T8P1         ENTRY TO CAUSE EXEC TO RETURN TO PLACE + 1                 0075
0080    00000 00000000 *  11       C81          CONTROL PARAMETER ADDRESS FOR 1                            0076
0081    00000 00000000 *  12       C82                                        2                            0077
0082    00000 00000000 *  13     . C83                                        3                            0078
0083    00000 00000000 *  14       C84                                        4                            0079
0084    00000 00000000 *  15       C85                                        5                            0080
0085    00000 00000000 *  17       S8SN         STATEMENT NUMBER                                           0081
0086    00000 00000000 *                                                                                   0082
0087    00000 00000000 *  20       T80          DELETE TASK                                                0083
0088    00000 00000000 *  22       T8A          ADD TASK                                                   0084
0089    00000 00000000 *  24       C8R          CONTROL RETURN TO EXEC                                     0085
0090    00000 00000000 *  26       S8TY         TYPOUT SERVICE ROUTINE                                     0086
0091    00000 00000000 *  30       S80          DUMP SERVICE ROUTINE                                       0087
0092    00000 00000000 *  32       S8SS         SENSE SWITCH CONTENTS                                      0088
0093    00000 00000000 *                                                                                   0089
0094    00000 00000000 *                        CONTROL SWITCH STANDARD ASSIGNMENTS                        0090
0095    00000 00000000 *                                                                                   0091
0096    00000 00000000 *           0=ON         CAUSES SS WORD TO BE CHANGED                               0092
0097    00000 00000000 *           1 ON         INHIBIT REPORTING ERROR                                    0093
0098    00000 00000000 *           2 ON         INHIBIT HALT ON ERROR                                      0094
0099    00000 00000000 *           3 ON         GO TO NEXT TEST AFTER ERROR                                0095
0100    00000 00000000 *           4 ON         LOOP ON CURRENT TEST                                       0096
0101    00000 00000000 *                                                                                   0097
0102    00000 00000000 *  34       T8C          TASK-CLEAR TABLE                                           0098
0103    00000 00000000 *  36       S8K          KEYSEARCH SUBROUTINE                                       0099
0104    00000 00000000 *  41       C8IB         CONTROL INPUT BUFFER                                       0100
0105    00000 00000000 *                                                                                   0102
0106    00000 60000000            ORG  0                                                                   0103
0107    00000 11001271 E8R        BRU  COMR      EXEC RETURN                                                0104
0108    00001 11001200 EBI        BRU  STRT      EXEC INIT                                                  0105
0109    00002 00000000 T8M2 ***   **            PLACE MINUS 2                                               0106
0110    00003 11001327            BRU  C042                                                                 0107
0111    00004 00000000 T8M1 ***   **            PLACE MINUS 1                                               0108
```

```
0112   00005 11001323           BRU   COM1                                                     0109
0113   00006 00000000 T8P1 ***  **              PLACE PLUS 1                                    0110
0114   00007 11001333           BRU   COP1                                                      0111
0115   00010 60000010           ORG   '10                                                       0112
0116   00010 00000000 CPP  ***  **              CONTROL PARAMETER POINTER                       0113
0117   00011 00000000 C81  ***  **              CONTROL PARAMETER POINTERS                      0114
0118   00012 00000000 C82  ***  **                                                              0115
0119   00013 00000000 C83  ***  **                                                              0116
0120   00014 00000000 C84  ***  **                                                              0117
0121   00015 00000000 C85  ***  **                                                              0118
0122   00016 00000000      ***  **                                                              0119
0123   00017 00177777 S8SN DATA  -1              STATEMENT NUMBER                               0120
0124   00020 60000020           ORG   '20                                                       0121
0125   00020 00000000 T8D  ***  **              TASK DELETE                                     0122
0126   00021 11001353           BRU   DTAS                                                      0123
0127   00022 00000000 T8A  ***  **              TASK ADD                                        0124
0128   00023 11001367           BRU   ATAS                                                      0125
0129   00024 11002673 C8R  BRU   CPR                                                            0126
0130   00025 00000000      DATA  0                     TYPE                                     0127
0131   00026 00000000 S8TY ***  **              TYPE ROUTINE                                    0128
0132   00027 11002277           BRU   TYPE                                                      0129
0133   00030 00000000 S8D  ***  **              DUMP ROUTINE                                    0130
0134   00031 11002340           BRU   DMP                                                       0131
0135   00032 00000000 S8SS DATA  0                                                              0132
0136   00033 00000000      DATA  0                                                              0133
0137   00034 00000000 T8C  ***  **                                                              0134
0138   00035 11001410           BRU   CTSK                                                      0135
0139   00036 00000000 S8K  ***  **              KEYSEARCH                                       0136
0140   00037 11002243           BRU   KSS                                                       0137
0141   00040 25400000 CWP  DAC   **              CONTROL WORD POINTER                           0138
0142   00041 00000117 C81B BSS   79                                                             0139
0143   00160 00000041 CWR  EQU   C81B                                                           0140
0144   00160 00000000 CWM  DATA  0              LAST CONTROL WORD                               0141
0145   00161 00000000 *                                                                         0142
0146   00161 00000001 TYPC EQU   1                                                              0143
0147   00161 00000001 CONC EQU   1                                                              0144
0148   00161 00000002 HPTC EQU   2                                                              0145
```

```
0149   00161 00000000  *                               ASSIGNMENT LOCATIONS                               0147
0150   00161 00000001  TYP  DATA TYPC                                                                     0148
0151   00162 00000001  CON  DATA CONC                  CONTROL DEVICE ASSIGNMENT                          0149
0152   00163 00000002  HPT  DATA HPTC                                                                     0150
0153   00164 00000000  COM  DATA 0                                                                        0151
0154   00165 00176030  MIX3 DATA -1000                                                                    0152
0155   00166 00177766  M10  DATA -10                                                                      0153
0156   00167 00177767  M9   DATA -9                                                                       0154
0157   00170 00177772  M6   DATA -6                                                                       0155
0158   00171 00177773  M5   DATA -5                                                                       0156
0159   00172 00177774  M4   DATA -4                                                                       0157
0160   00173 00177775  M3   DATA -3                                                                       0158
0161   00174 00177776  M2   DATA -2                                                                       0159
0162   00175 00177777  M1   DATA -1                                                                       0160
0163   00176 00000001  P1   DATA 1                                                                        0161
0164   00177 00000002  P2   DATA 2                                                                        0162
0165   00200 00000003  P3   DATA 3                                                                        0163
0166   00201 00000007  P7   DATA 7                                                                        0164
0167   00202 00000077  P63  DATA 63                                                                       0165
0168   00203 00007640  P4X3 DATA 4000                                                                     0166
0169   00204 00140000  D3T2 DATA '140000                                                                  0167
0170   00205 00100000  B0   DATA '100000                                                                  0168
0171   00206 00040000  B1   DATA '040000                                                                  0169
0172   00207 00020000  B2   DATA '020000                                                                  0170
0173   00210 00010000  B3   DATA '010000                                                                  0171
0174   00211 00000004  B13  DATA '000004                                                                  0172
0175   00212 00000002  B14  DATA '000002                                                                  0173
0176   00213 00000000  *                                                                                  0175
0177   00213 00000000  *                                                                                  0176
0178   00213 25401553  EICS DAC  ICS                   CONTROL SCANNER                                    0177
0179   00214 25402637  ECP  DAC  CP                    CONTROL PROCESSOR                                  0178
0180   00215 25400160  ECWM DAC  CWM                                                                      0179
0181   00216 25400041  ECWB DAC  CWB                                                                      0180
0182   00217 25400011  EPPS DAC  CPP+1                                                                    0181
0183   00220 00000000  *                                                                                  0181
0184   00220 00000000  SIHL ***  **                                         FEB 03/02/68       *B
0185   00221 00000035       TOI                                             FEB 03/02/68       *B
```

```
0186   00222 11200223      BRU*  *+1                                    FEB 03/02/68         *B
0187   00223 25400224      DAC   *+1                                    FEB 03/02/68         *B
0188   00224 00000000      HLT                                          FEB 03/02/68         *B
0189   00225 00000000 *                         SPURIOUS INTERRUPT HAS  FEB 03/02/68         *B
0190   00225 00000000 *                         OCCURRED                FEB 03/02/68         *B
0191   00225 11000224      BRU   *-1                                    FEB 03/02/68         *B
0192   01000 60001000      ORG   '1000                                  FEB 03/02/68         *B
0193   01000 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0194   01001 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0195   01002 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0196   01003 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0197   01004 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0198   01005 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0199   01006 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0200   01007 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0201   01010 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0202   01011 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0203   01012 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0204   01013 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0205   01014 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0206   01015 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0207   01016 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0208   01017 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0209   01020 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0210   01021 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0211   01022 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0212   01023 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0213   01024 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0214   01025 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0215   01026 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0216   01027 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0217   01030 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0218   01031 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0219   01032 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0220   01033 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0221   01034 25400220      DAC   SIHL                                   FEB 03/02/68         *B
0222   01035 25400220      DAC   SIHL                                   FEB 03/02/68         *B
```

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0223   01036 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0224   01037 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0225   01040 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0226   01041 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0227   01042 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0228   01043 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0229   01044 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0230   01045 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0231   01046 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0232   01047 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0233   01050 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0234   01051 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0235   01052 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0236   01053 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0237   01054 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0238   01055 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0239   01056 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0240   01057 25400220      DAC   SIHL                                        FEB 03/02/68        *B
0241   01200 60001200      ORG   '1200                                                          0183
0242   01200 00000000   *                                                                       0184
0243   01200 00000000   *                           EXECUTIVE                                    0185
0244   01200 00000000   *                                                                       0186
0245   01200 00001200 STRT EQU   *                                                              0187
0246   01200 00000000   *                           SET UP STANDARD ASSIGNMENTS                 0188
0247   01200 00130101      CEU   1,W                                                            0189
0248   01201 00001000      DATA  '001000                                                        0190
0249   01202 02000172      LBA   M4                                                             0191
0250   01203 01401425      LAA   STYP+4,1                                                       0192
0251   01204 03400165      STA   TYP+4,1                                                        0193
0252   01205 00000026      IBS                                                                  0194
0253   01206 11001203      BRU   *-3                                                            0195
0254   01207 00000000   *                           SET UP INITIALIZATION TASK                  0196
0255   01207 00000003      CLA                                                                  0197
0256   01210 03002335      STA   STY4                                                           0198
0257   01211 01001234      LAA   SRT+3                                                          0199
0258   01212 03001233      STA   SRT+2                                                          0200
0259   01213 12000034      SPB   T8C                                                            0201
```

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0260    01214 01001766     LAA   CCIH                                              0202
0261    01215 12000020     SPB   T8D                                               0203
0262    01216 01001235     LAA   SRT+4                                             0204
0263    01217 12000022     SPB   T8A                                              0205
0264    01220 01001446     LAA   CSW1          INITIALIZE CONTROL SCANNER          0206
0265    01221 03001445     STA   CSW                                               0207
0266    01222 01000216     LAA   FCWB                                              0208
0267    01223 03000040     STA   CWP                                               0209
0268    01224 01000217     LAA   FPPS                                              0210
0269    01225 03000010     STA   CPP                                               0211
0270    01226 00000000  *                                                          0212
0271    01226 01001767     LAA   FCIH                                              0213
0272    01227 03001443     STA   CIH+2                                             0214
0273    01230 11001271     BRU   COMR                                              0215
0274    01231 00000000 SRT ***   **                                               0217
0275    01232 00000000     ***   **                                               0218
0276    01233 25401236     DAC   SRTA                                             0219
0277    01234 00000000  *                                                         0220
0278    01234 25401236     DAC   SRTA                                             0221
0279    01235 25401231     DAC   SRT                                              0222
0280    01236 00000000  *                         TASK TO INITIALIZE PROGRAM      0223
0281    01236 00001236 SRTA EQU  *                                               0224
0282    01236 12002231     SPB   CCIB                                            0225
0283    01237 12002010     SPB   CRLA                                            0226
0284    01240 12002010     SPB   CRLA                                            0227
0285    01241 12002010     SPB   CRLA                                            0228
0286    01242 00000000  *                         TYPE OUT TITLE                 0229
0287    01242 12000026     SPB   S8TY                                            0230
0288    01243 25401261     DAC   MSIN                                            0231
0289    01244 00000010     DATA  8                                               0232
0290    01245 12002010     SPB   CRLA                                            0233
0291    01246 00000000  *                         TYPE OUT TEST TITLE            0234
0292    01246 40500000     LAA   $ELL                                            0235
0293    01247 05000176     AMA   P1                                              0236
0294    01250 03001252     STA   *+2                                             0237
0295    01251 12000026     SPB   S8TY                                            0238
0296    01252 00000000     ***   **                                              0239
```

```
0297   01253 00000010    DATA  8                                            0240
0298   01254 12002010    SPB   CRLA                                         0241
0299   01255 00000000 *                                                     0242
0300   01255 01001234    LAA   SRT+3                                        0243
0301   01256 03001233    STA   SRT+2                                        0244
0302   01257 12000034    SPB   T8C                                          0245
0303   01260 11001271    BRU   COMR                                         0246
0304   01261 00000000 *                                                     0247
0305   01261 00151705 MSIN DATA **SELECT **                                 0248
0305   01262 00146305
0305   01263 00141724
0305   01264 00120240
0306   01265 00130263    DATA  **03-02-68**
0306   01266 00126660
0306   01267 00131255
0306   01270 00133270
0307   01271 00001271 COMR EQU   *                                         0251
0308   01271 00000000 *                          CHECK SENSE SWITCH SETTING 0252
0309   01271 00000031    LCS                                               0253
0310   01272 00000023    SAN                                               0254
0311   01273 11001276    BRU   *+3                                         0255
0312   01274 03002625    STA   STEM                                        0256
0313   01275 03000032    STA   SBSS                                        0257
0314   01276 00000000 *                          TASK POINTER CONTROL      0258
0315   01276 00000000 *                                                     0259
0316   01276 02001440    LBA   CTP             UPDATE COM                  0260
0317   01277 01201437    LAA*  CTA                                         0261
0318   01300 00000026    IBS                     INCREMENT TASK POINTER    0262
0319   01301 11001303    BRU   *+2                                         0263
0320   01302 11001305    BRU   RTP                                         0264
0321   01303 04001440    STB   CTP                                         0265
0322   01304 11001307    BRU   *+3                                         0266
0323   01305 00000000 *                                                     0267
0324   01305 02000166 RTP  LBA   M10             RESET TASK POINTER        0268
0325   01306 04001440    STB   CTP                                         0269
0326   01307 00000000 *                                                     0270
0327   01307 00000024    SAP                     IS TASK FILLED            0271
```

```
0328    01310  11001271      BRU   COMR                                                        0272
0329    01311  03000164      STA   COM                                                         0273
0330    01312  00000000  *                             FIX RETURN ADDRESS                      0274
0331    01312  02000164      LBA   COM                                                         0275
0332    01313  02400002      LBA   2,1                                                         0276
0333    01314  04001322      STB   TSA                                                         0277
0334    01315  00000000  *                                                                     0278
0335    01315  01200164      LAA*  COM             LOAD A REGISTER                             0279
0336    01316  14000164      IMS   COM                                                         0280
0337    01317  02200164      LBA*  COM                    B REGISTER                           0281
0338    01320  14000164      IMS   COM                                                         0282
0339    01321  11201322      BRU*  TSA                                                         0283
0340    01322  00000000  *                                                                     0284
0341    01322  00000000  TSA  ZZZ   **                                                         0285
0342    01323  00000000  *                             PROCESS RETURN MINUS 1                  0287
0343    01323  00001323  COM1  EQU   *                                                         0288
0344    01323  04001351      STB   CSB                                                         0289
0345    01324  02000004      LBA   TBM1                                                        0290
0346    01325  16000174      AMB   M2                                                          0291
0347    01326  11001335      BRU   CCOM                                                        0292
0348    01327  00000000  *                                                                     0293
0349    01327  00000000  *                             PROCESS RETURN MINUS 2                  0294
0350    01327  00001327  COM2  EQU   *                                                         0295
0351    01327  04001351      STB   CSB                                                         0296
0352    01330  02000002      LBA   TBM2                                                        0297
0353    01331  16000173      AMB   M3                                                          0298
0354    01332  11001335      BRU   CCOM                                                        0299
0355    01333  00000000  *                                                                     0300
0356    01333  00000000  *                             PROCESS RETURN PLUS 1                   0301
0357    01333  00001333  COP1  EQU   *                                                         0302
0358    01333  04001351      STB   CSB                                                         0303
0359    01334  02000006      LBA   TBP1                                                        0304
0360    01335  00000000  *                                                                     0305
0361    01335  00000000  *                             STORE RETURN,A AND B IN TASK RETURN TABLE  0306
0362    01335  03001350  CCOM STA   CSA                                                        0307
0363    01336  00000006      IAB                                                               0308
0364    01337  02000164      LBA   COM                                                         0309
```

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0365   01340 16000174     AMB  M2                                                 0310
0366   01341 03400002     STA  2,1                          B REGISTER            0311
0367   01342 01001350     LAA  CSA                                                0312
0368   01343 03400000     STA  0,1            STORE RETURN                        0313
0369   01344 01001351     LAA  CSB                                                0314
0370   01345 03400001     STA  1,1                          A REGISTER            0315
0371   01346 04000164     STB  COM                                                0316
0372   01347 11001271     BRU  COMR                                               0317
0373   01350 00000000  *                                                         0318
0374   01350 00000000 CSA DATA 0                                                  0319
0375   01351 00000000 CSB DATA 0                                                  0320
0376   01352 00000000 CSC DATA 0                                                  0321
0377   01353 00000000  *                      DELETE TASK                        0323
0378   01353 00000000  *           A = TASK ADDRESS                              0324
0379   01353 00000000  *                                                         0325
0380   01353 00001353 DTAS EQU  *                                                0326
0381   01353 03001420     STA  ATT                                               0327
0382   01354 02000166     LBA  M10                                               0328
0383   01355 01201437 DTAA LAA* CTA                                              0329
0384   01356 15001420     CMA  ATT            IS THIS THE ONE                    0330
0385   01357 11001361     BRU  DTAB           NO                                 0331
0386   01360 11001364     BRU  DTAC           YES                                0332
0387   01361 00000026 DTAB IBS                NO TRY NEXT 1                      0333
0388   01362 11001355     BRU  DTAA                                              0334
0389   01363 11200020     BRU* TBD                                               0335
0390   01364 00000000  *                                                         0336
0391   01364 01000175 DTAC LAA  M1             FILL TASK ADDRESS WITH -1         0337
0392   01365 03201437     STA* CTA                                               0338
0393   01366 11001355     BRU  DTAA                                              0339
0394   01367 00000000  *                      ADD TASK                          0341
0395   01367 00000000  *                      A= TASK ADDRESS                    0342
0396   01367 00001367 ATAS EQU  *                                               0343
0397   01367 03001420     STA  ATT                                              0344
0398   01370 02000166     LBA  M10                                              0345
0399   01371 01201437     LAA* CTA                                              0346
0400   01372 00000023     SAN                 IS THIS ON OPENING                 0347
0401   01373 11001377     BRU  *+4            NO                                 0348
```

```
0402   01374 01001420        LAA   ATT            YES                                              0349
0403   01375 03201437        STA*  CTA                                                             0350
0404   01376 11200022        BRU*  T8A                                                             0351
0405   01377 00000000  *                                                                           0352
0406   01377 00000026        IBS                  INCREMENT AND CHECK TASK POINTER                 0353
0407   01400 11001371        BRU   ATAS+2                                                          0354
0408   01401 12002010        SPB   CRLA                                                            0355
0409   01402 12000026        SPB   SBTY                                                            0356
0410   01403 25401407        DAC   TØFM                                                            0357
0411   01404 00000001        DATA  1                                                               0358
0412   01405 12002010        SPB   CRLA                                                            0359
0413   01406 11000024        BRU   CBR                                                             0360
0414   01407 00000000  *                                                                           0361
0415   01407 00152317  TØFM  DATA  ''TØ''                                                          0362
0416   01410 00000000  *                                                                           0363
0417   01410 00000000  *                           TASK ØVERFLØW ERRØR                             0364
0418   01410 00000000  *                                                                           0365
0419   01410 00000000  *                                                                           0366
0420   01410 00000000  *                           CLEAR TASK TABLE                                0367
0421   01410 00000000  *                                                                           0368
0422   01410 00001410  CTSK  EQU   *                                                               0369
0423   01410 02000166        LBA   M10                                                             0370
0424   01411 01000175        LAA   M1                                                              0371
0425   01412 03201437        STA*  CTA                                                             0372
0426   01413 00000026        IBS                                                                   0373
0427   01414 11001411        BRU   *-3                                                             0374
0428   01415 01001766        LAA   CCIH                                                            0375
0429   01416 03001425        STA   TSK                                                             0376
0430   01417 11200034        BRU*  T8C                                                             0377
0431   01420 00000000  *                                                                           0378
0432   01420 00000000  ATT   DATA  0                                                               0379
0433   01421 00000000  *                                                                           0381
0434   01421 00000000  *                           STANDARD TØ ASSIGNMENTS                         0382
0435   01421 00000001  STYP  DATA  TYPC                                                            0383
0436   01422 00000001        DATA  CØNC                                                            0384
0437   01423 00000002        DATA  HPTC                                                            0385
0438   01424 25401441        DAC   CIH                                                             0386
```

```
0439   01425 00000000 *                          SET COMMUTATOR TO CONTROL SCANNER         0387
0440   01425 00000000 *                                                                    0389
0441   01425 00000000 *                          EXECUTIVE TASK PROCESSING LIST            0390
0442   01425 00000000 *                                                                    0391
0443   01425 25401441 TSK   DAC   CIH                                                      0392
0444   01426 00177777       DATA  -1                                                       0393
0445   01427 00177777       DATA  -1                                                       0394
0446   01430 00177777       DATA  -1                                                       0395
0447   01431 00177777       DATA  -1                                                       0396
0448   01432 00177777       DATA  -1                                                       0397
0449   01433 00177777       DATA  -1                                                       0398
0450   01434 00177777       DATA  -1                                                       0399
0451   01435 00177777       DATA  -1                                                       0400
0452   01436 00177777       DATA  -1                                                       0401
0453   01437 00000000 *                                                                    0402
0454   01437 25601437 CTA   DAC   TSK+10,1           TASK ADDRESS                          0403
0455   01440 00177766 CTP   DATA  -10                                                      0404
0456   01441 00000000 *                          CONTROL INPUT HANDLER                     0406
0457   01441 00000000 CIH   DATA  0              A REGISTER SAVE                            0407
0458   01442 00000000       DATA  0              B REGISTER SAVE                            0408
0459   01443 25401444       DAC   CIH+3                                                    0409
0460   01444 00000000 *                          CONTROL INPUT HANDLER                     0410
0461   01444 11201445       BRU*  CSW                                                      0411
0462   01445 00000000 *                          SWITCH AND SETTINGS                       0412
0463   01445 25401452 CSW   DAC   TMOD                                                     0413
0464   01446 25401452 CSW1  DAC   TMOD                                                     0414
0465   01447 25401530 CSW2  DAC   PMOD                                                     0415
0466   01450 25401541 CSW3  DAC   HSRM                                                     0416
0467   01451 25401471 CSW4  DAC   CIN                                                      0417
0468   01452 00000000 *                          TYPE IN HANDLER INITIALIZATION            0418
0469   01452 00001452 TMOD  EQU   *                                                        0419
0470   01452 00000000 *                          FIX UP CEU                                0420
0471   01452 01001520       LAA   BCEU                                                     0421
0472   01453 02000161       LBA   TYP                                                      0422
0473   01454 00000030       ABA                                                            0423
0474   01455 03001456       STA   *+1                                                      0424
0475   01456 00130000       CEU   0                                                        0425
```

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0476   01457 00002000        DATA  !002000                                        0426
0477   01460 12000002        SPB   T8M2                                            0427
0478   01461 00000000 *                            FIX SWITCHES                    0428
0479   01461 01001504        LAA   CSW5                                            0429
0480   01462 03001503        STA   CSWA                                            0430
0481   01463 02000161        LBA   TYP                                             0431
0482   01464 00000000 *                            FIX AIP                         0432
0483   01464 01001521 CIHA   LAA   RAIP                                            0433
0484   01465 00000030        OBA                                                   0434
0485   01466 03001472        STA   CAIP                                            0435
0486   01467 01001451        LAA   CSW4                                            0436
0487   01470 03001445        STA   CSW                                             0437
0488   01471 00000000 *                                                            0438
0489   01471 00000003 CIN    CLA                                                   0440
0490   01472 00170200 CAIP   AIP   0                                              0441
0491   01473 12000004        SPB   T8M1                                            0442
0492   01474 00000022        SAZ                   NOTHING IN                      0443
0493   01475 11001477        BRU   *+2             NO-DO SOMETHING WITH IT         0444
0494   01476 11001473        BRU   *-3             YES-GET OUT OF HERE             0445
0495   01477 03001523        STA   IBUF                                            0446
0496   01500 00001016        LSL   8                                               0447
0497   01501 03001517        STA   OBUF                                            0448
0498   01502 11201503        BRU*  CSWA                                            0449
0499   01503 00000000 *                                                            0450
0500   01503 00000000 *                            SWITCH FOR TYPIN CONTROL        0451
0501   01503 25401553 CSWA   DAC   ICS                                             0452
0502   01504 25401506 CSW5   DAC   CIHT                                            0453
0503   01505 25401553 CSW6   DAC   ICS                                             0454
0504   01506 00000000 *                            TYPE IT OUT                     0455
0505   01506 01001522 CIHT   LAA   RMOP                                            0456
0506   01507 02000161        LBA   TYP                                             0457
0507   01510 00000030        OBA                                                   0458
0508   01511 03001512        STA   CMOP                                            0459
0509   01512 00172401 CMOP   MOP*  1                                              0460
0510   01513 25401517        DAC   OBUF                                            0461
0511   01514 12000002        SPB   T8M2                                            0462
0512   01515 11001553        BRU   ICS                                             0463
```

```
0513   01516 00000000 *                                                              0444
0514   01516 00000000 LCWP DATA 0                                                    0465
0515   01517 00000000 ØBUF DATA 0                                                    0466
0516   01520 00130000 RCEU CEU  0                                                    0467
0517   01521 00170200 BAIP AIP  0                                                    0448
0518   01522 00172400 RMØP MØP* 0                                                    0469
0519   01523 00000000 IBUF DATA 0                                                    0470
0520   01524 00000000 MSB  DATA 0                                                    0471
0521   01525 25401506 CSW7 DAC  CIHT                                                 0472
0522   01526 00000000 SCWP DATA 0                                                    0473
0523   01527 00000000 SCSW DATA 0                                                    0474
0524   01530 00000000 *                          ASR INPUT INITIALIZATION           0476
0525   01530 00000000 *                                                             0477
0526   01530 00001530 RMØD EQU  *                                                   0478
0527   01530 01001520      LAA  RCEU                                                0479
0528   01531 05000161      AMA  TYP                                                 0480
0529   01532 03001533      STA  *+1                                                 0481
0530   01533 00130000      CEU  0                                                   0482
0531   01534 00004000      DATA '004000                                            0493
0532   01535 12000002      SPB  TBM2                                               0484
0533   01536 00000000 *                          FIX SWITCH                        0485
0534   01536 01001505      LAA  CSW6                                               0496
0535   01537 03001503      STA  CSWA                                               0487
0536   01540 11001463      BRU  CIHA-1                                             0498
0537   01541 00000000 *                                                            0499
0538   01541 00000000 *                          HIGH SPEED READER INITIALIZATION  0490
0539   01541 00000000 *                                                            0491
0540   01541 00001541 HSRM EQU  *                                                  0492
0541   01541 01001520      LAA  RCEU                                               0493
0542   01542 05000163      AMA  HPT                                                0494
0543   01543 03001544      STA  *+1                                                0495
0544   01544 00130000      CEU  0                                                  0496
0545   01545 00001000      DATA '001000                                           0497
0546   01546 12000002      SPB  TBM2                                               0498
0547   01547 00000000 *                          FIX SWITCH                        0499
0548   01547 01001505      LAA  CSW6                                               0500
0549   01550 03001503      STA  CSWA                                               0501
```

```
0550    01551 02000163          LBA   HPT                                                                    0502
0551    01552 11001464          BRU   CIHA                                                                   0503
0552    01553 00000000 *                                                                                     0505
0553    01553 00000000 *                            INPUT CONTROL SCANNER                                    0506
0554    01553 00000000 *                                                                                     0507
0555    01553 00001553 ICS  EQU    *                                                                         0508
0556    01553 02000172          LBA   M4                                                                     0509
0557    01554 01001523          LAA   IBUF                                                                   0510
0558    01555 00000000 *                            CHECK FOR DELETE                                         0511
0559    01555 15002037          CMA   ICC+7                                                                  0512
0560    01556 11001560          BRU   *+2                                                                    0513
0561    01557 00000000 *                            START NEW STATEMENT GO                                   0514
0562    01557 11001653          BRU   ICDL                                                                   0515
0563    01560 00000000 *                            IGNORE LINE FEED                                         0516
0564    01560 15002040          CMA   ICC+8                                                                  0517
0565    01561 11001563          BRU   *+2                                                                    0518
0566    01562 11001444          BRU   CIH+3                                                                  0519
0567    01563 03200040          STA*  CWP                                                                    0520
0568    01564 14000040          IMS   CWP                                                                    0521
0569    01565 15402034          CMA   ICC+4,1        CHECK FOR , .C/R                                        0522
0570    01566 11001570          BRU   *+2                                                                    0523
0571    01567 11001615          BRU   ICSA                                                                   0524
0572    01570 00000026          IBS                                                                          0525
0573    01571 11001565          BRU   *-4                                                                    0526
0574    01572 00000000 *                            CHECK FOR STATEMENT NUMBER                               0527
0575    01572 01000040          LAA   CWP                                                                    0528
0576    01573 06000175          AMA   M1                                                                     0529
0577    01574 15000216          CMA   FCWB                                                                   0530
0578    01575 00000000          HLT                  ILLEGAL CWP SETTING                                     0531
0579    01576 11001641          BRU   ICSN                                                                   0532
0580    01577 00000000 *                            CHECK WORD COUNT AND GO TO NEXT CHARACTER                0534
0581    01577 01001523 ICSC LAA    IBUF                                                                      0535
0582    01600 01000040 ICSB LAA    CWP                                                                       0536
0583    01601 15000215          CMA   FCWM            TOO MAY WORDS                                          0537
0584    01602 11001605          BRU   *+3             NO                                                     0538
0585    01603 11001605          BRU   *+2             NO                                                     0539
0586    01604 11001606          BRU   *+2                                                                    0540
```

```
0587   01605 11001444      BRU   CIH+3                                                        0541
0588   01606 00000000  *                          TYPE OUT TOO MANY WORDS AND RESTART         0542
0589   01606 12002010      SPB   CRLA                                                         0543
0590   01607 12000026      SPB   SBTY                                                         0544
0591   01610 25401614      DAC   COFM                                                         0545
0592   01611 00000001      DATA  1                                                            0546
0593   01612 12002010      SPB   CRLA                                                         0547
0594   01613 11001653      BRU   ICDL                                                         0548
0595   01614 00000000  *                                                                      0549
0596   01614 00141717  COFM DATA  ''CO''                                                      0550
0597   01615 00000000  *                                                                      0552
0598   01615 01000040  ICSA LAA   CWP                                                         0553
0599   01616 03200010      STA*  CPP                                                          0554
0600   01617 00000000  *                                                                      0555
0601   01617 01002033      LAA   ICC+3                                                        0556
0602   01620 15001523      CMA   IBUF                                                         0557
0603   01621 11001623      BRU   *+2                                                          0558
0604   01622 11001661      BRU   ICCU          YES - GO TO CLEAN UP                           0559
0605   01623 01000040      LAA   CWP           NO                                             0560
0606   01624 03200010      STA*  CPP                                                          0561
0607   01625 14000010      IMS   CPP                                                          0562
0608   01626 01000010      LAA   CPP                                                          0563
0609   01627 15001660      CMA   FLP                                                          0564
0610   01630 11001600      BRU   ICSB                                                         0565
0611   01631 00000033      NOP                                                                0566
0612   01632 12002010      SPB   CRLA                                                         0567
0613   01633 12000026      SPB   SBTY                                                         0568
0614   01634 25401640      DAC   POFM                                                         0569
0615   01635 00000001      DATA  1                                                            0570
0616   01636 12002010      SPB   CRLA                                                         0571
0617   01637 11001653      BRU   ICDL                                                         0572
0618   01640 00000000  *                                                                      0573
0619   01640 00150317  POFM DATA  ''PO''                                                      0574
0620   01641 00000000  *                                                                      0576
0621   01641 00000000  *                          CHECK FOR STATEMENT NUMBER                  0577
0622   01641 01001523  ICSN LAA   IBUF                                                        0578
0623   01642 15002035      CMA   ICC+5                                                        0579
```

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0624   01643 11001650        BRU   *+5                                              0580
0625   01644 00000033        NØP                                                    0581
0626   01645 15002036        CMA   ICC+6                                            0582
0627   01646 00000033        NØP                                                    0583
0628   01647 11001651        BRU   *+2                                              0584
0629   01650 11001577        BRU   ICSC                                             0585
0630   01651 00000000 *                           FIX UP STATEMENT NUMBER           0586
0631   01651 06002035        SMA   ICC+5                                            0587
0632   01652 03000017        STA   SBSN                                             0588
0633   01653 00000000 *                           RESTART STATEMENT                 0589
0634   01653 01000216 ICDL   LAA   FCWB                                             0590
0635   01654 03000040        STA   CWP                                             0591
0636   01655 12002000        SPB   CARR                                             0592
0637   01656 12002231        SPB   CCIB                                             0593
0638   01657 11001444        BRU   CI4+3                                            0594
0639   01660 25400017 ELP    DAC   CPP+7                                            0595
0640   01661 00000000 *                                                             0597
0641   01661 00000000 *                           INPUT CØNTRØL SCANNER CLEANUP     0598
0642   01661 00000000 *                                                             0599
0643   01661 00001661 ICCU   EQU   *               INITIALIZATION                   0600
0644   01661 02200010        LBA*  CPP                                              0601
0645   01662 01001523        LAA   IBUF                                             0602
0646   01663 03400000        STA   0,1                                              0603
0647   01664 01000010        LAA   CPP                                              0604
0648   01665 03002043        STA   ISCP                                             0605
0649   01666 01002045        LAA   FISE                                             0606
0650   01667 03002044        STA   ICSW                                             0607
0651   01670 01000217        LAA   FPPS                                            0608
0652   01671 03000010        STA   CPP                                              0609
0653   01672 01000216        LAA   FCWB                                             0610
0654   01673 03000040        STA   CWP                                             0611
0655   01674 03002047        STA   CWPA                                             0612
0656   01675 00000000 *                                                             0613
0657   01675 00001675 ICCA   EQU   *                                                0614
0658   01675 00000000 *                                                             0615
0659   01675 00000000 *                           IS THIS THE NED ØF THE STATEMENT  0616
0660   01675 01200040        LAA*  CWP                                              0617
```

```
0661    01676  15002033     CMA   ICC+3                                              0618
0662    01677  11001701     BRU   *+2                                                0619
0663    01700  11001752     BRU   ICCX                                               0620
0664    01701  00000000  *                        ANOTHER PARAMETER                  0621
0665    01701  02000172     LBA   M4                                                 0622
0666    01702  15402034     CMA   ICC+4,1                                            0623
0667    01703  11001705     BRU   *+2                                                0624
0668    01704  11001770     BRU   ICCE                                               0625
0669    01705  00000026     IBS                                                      0626
0670    01706  11001702     BRU   *-4                                                0627
0671    01707  00000000  *                                                           0628
0672    01707  00001707  ICCB EQU  *                                                 0629
0673    01707  01200040     LAA*  CWP                                                0630
0674    01710  15002034     CMA   ICC+4        OCTAL PARAMETER                       0631
0675    01711  11001713     BRU   *+2          NO                                    0632
0676    01712  11002050     BRU   OCTP                                               0633
0677    01713  15002035     CMA   ICC+5        NUMERIC 0 OR MORE                     0634
0678    01714  11001721     BRU   *+5          NO                                    0635
0679    01715  00000033     NOP                                                      0636
0680    01716  15002036     CMA   ICC+6        9 OR LESS                             0637
0681    01717  11002056     BRU   FDTB         YES                                   0638
0682    01720  11002056     BRU   FDTB              YES                              0639
0683    01721  15002041     CMA   ICC+9        IS THIS A PLUS                        0640
0684    01722  11001724     BRU   *+2          NO                                    0641
0685    01723  11001747     BRU   ICCC         YES                                   0642
0686    01724  15002042     CMA   ICC+10       IS THIS A MINUS                       0643
0687    01725  11001727     BRU   *+2          NO                                    0644
0688    01726  11001730     BRU   SGNM         YES                                   0645
0689    01727  11202044     BRU*  ICSW                                               0646
0690    01730  00000000  *                                                           0647
0691    01730  01002064  SGNM LAA  SGNS+1                                            0648
0692    01731  03002063     STA   SGNS                                               0649
0693    01732  14000040     IMS   CWP                                                0650
0694    01733  11001675     BRU   ICCA                                               0651
0695    01734  00000000  *                        STORE IN EVEN SIDE                 0653
0696    01734  00001734  ISE  EQU  *                                                 0654
0697    01734  00001016     LSL   8                                                  0655
```

```
0698   01735 03202047      STA* CWPA                                              0656
0699   01736 02002046      LBA  FIS0                                              0657
0700   01737 04002044      STB  ICSW                                              0658
0701   01740 11001747      BRU  ICCC                                              0659
0702   01741 00000000 *                        STORE IN ODD SIDE                  0660
0703   01741 00001741 IS0  EQU  *                                                 0661
0704   01741 05202047      AMA* CWPA                                              0662
0705   01742 03202047      STA* CWPA                                              0663
0706   01743 14002047      TMS  CWPA                                              0664
0707   01744 00000033      NOP                                                    0665
0708   01745 01002045      LAA  FISE                                              0666
0709   01746 03002044      STA  ICSW                                              0667
0710   01747 14000040 ICCC TMS  CWP                                              0668
0711   01750 00000033      NOP                                                    0669
0712   01751 11001675      BRU  ICCA                                              0670
0713   01752 00000000 *                        FILL CONTROL BUFFER WITH NITHINGS  0671
0714   01752 00001752 ICCX EQU  *                                                 0672
0715   01752 12002000      SPB  CARR                                              0673
0716   01753 01000216      LAA  ECWB            RESET COMMAND WORD POINTER        0674
0717   01754 03000040      STA  CWP                                               0675
0718   01755 01001766      LAA  CCIH                                              0676
0719   01756 12000020      SPB  T8D                                               0677
0720   01757 01000214      LAA  FCP             SET COMMUTATOR TO CONTROL PROCESSOR 0678
0721   01760 12000022      SPB  T8A                                               0679
0722   01761 01001767      LAA  FCIH                                              0680
0723   01762 03001443      STA  CIH+2           BEGIN NEW COMMAND                 0681
0724   01763 01002705      LAA  FCP3                                              0682
0725   01764 03002641      STA  CP+2                                              0683
0726   01765 11001271      BRU  COMR                                              0684
0727   01766 00000000 *                                                           0685
0728   01766 25401441 CCIH DAC  CIH                                               0686
0729   01767 25401444 ECIH DAC  CIH+3                                             0687
0730   01770 00000000 *                                                           0689
0731   01770 00000000 *                        SET CWP TO NEXT PARAMETER         0690
0732   01770 00000000 *                                                           0691
0733   01770 00001770 ICCE EQU  *                                                 0692
0734   01770 01200010      LAA* CPP                                               0693
```

```
 0735   01771 03002047        STA   CWPA                                              0694
 0736   01772 03000040        STA   CWP                                               0695
 0737   01773 14000010        IMS   CPP                                               0696
 0738   01774 01002045        LAA   EISE                                              0697
 0739   01775 03002044        STA   ICSW                                              0698
 0740   01776 00000033        NOP                                                     0699
 0741   01777 11001675        BRU   ICCA                                              0700
 0742   02000 00000000 *                                                              0701
 0743   02000 00000000 *                                                              0703
 0744   02000 00000000 *                        IF CONTROL DEVICE IS TYPWRITER        0704
 0745   02000 00000000 *                        C/R,LINE ADVANCE,AND DING             0705
 0746   02000 00000000 CARR ***    **                                                 0706
 0747   02001 01001503        LAA   CSWA                                              0707
 0748   02002 15001504        CMA   CSW5                                              0708
 0749   02003 11002006        BRU   *+3                                               0709
 0750   02004 11002006        BRU   *+2                                               0710
 0751   02005 11202000        BRU*  CARR                                              0711
 0752   02006 12002010        SPB   CRLA                                              0712
 0753   02007 11202000        BRU*  CARR                                              0713
 0754   02010 00000000 *                        ISSUE CARRAIGE RETURN, LINEADVANCE, RING BEL   0714
 0755   02010 00000000 CRLA ***    **                                                 0715
 0756   02011 02000173        LBA   M3                                                0716
 0757   02012 01001512        LAA   CMOP                                              0717
 0758   02013 03002014        STA   *+1                                               0718
 0759   02014 00172400        MOP*  0                                                 0719
 0760   02015 25602030        DAC   CRET+3,1                                          0720
 0761   02016 12000002        SPB   TB42                                              0721
 0762   02017 00000026        IBS                                                     0722
 0763   02020 11002014        BRU   *-4                                               0723
 0764   02021 00000000 *                                                              0724
 0765   02021 00000000 *                        RESTORE ENTRANCE TO INDICATE NOT IN USE   0725
 0766   02021 02002010        LBA   CRLA                                              0726
 0767   02022 00000003        CLA                                                     0727
 0768   02023 03002010        STA   CRLA                                              0728
 0769   02024 11400000        BRU   0,1                                               0729
 0770   02025 00000000 *                                                              0730
 0771   02025 00000000 *                        TABLE OF TYPEWRITER CONSTANTS         0732
```

```
0772    02025 00000000        FORM 8,8                                                            0733
0773    02025 00106400 CRFT   FDAT '215,0                                                         0734
0774    02026 00105000        FDAT '212,0                                                         0735
0775    02027 00103400        FDAT '207,0                                                         0736
0776    02030 00000254 ICC    DATA '000254                                                        0737
0777    02031 00000256        DATA '000256                                                        0738
0778    02032 00000240        DATA '000240                                                        0739
0779    02033 00000215        DATA '000215                                                        0740
0780    02034 00000247        DATA '000247           *                                            0741
0781    02035 00000260        DATA '000260           0                                            0742
0782    02036 00000271        DATA '000271           9                                            0743
0783    02037 00000377        DATA '000377           DELETE CODE                                  0744
0784    02040 00000212        DATA '000212           LINE FEED                                    0745
0785    02041 00000253        DATA '000253           +                                            0746
0786    02042 00000255        DATA '000255           -                                            0747
0787    02043 00000000 ISCP   DATA 0                                                              0748
0788    02044 25401734 ICSW   DAC  ISE              CLEAN UP SWITCH                               0749
0789    02045 25401734 EISE   DAC  ISE                                                            0750
0790    02046 25401741 EISO   DAC  ISO                                                            0751
0791    02047 25400041 CWPA   DAC  CWB                                                            0752
0792    02050 00000000 *                                                                          0754
0793    02050 00000000 *                            OCTAL TO BINARY                               0755
0794    02050 00000000 *                   FIRST SIX CHAR FROM CWP OR TO NEXT PARAMETER           0756
0795    02050 00000000 *                            CORRECTIONS TO OCTP                           0757
0796    02050 00002050 OCTP   EQU  *                                                              0758
0797    02050 14000040        IMS  CWP                                                            0759
0798    02051 01000175        LAA  M1                                                             0760
0799    02052 12002073        SPB  F6D                                                            0761
0800    02053 12002141        SPB  OTB                                                            0762
0801    02054 25402123        DAC  OB                                                             0763
0802    02055 11202063        BRU* SGNS                                                           0764
0803    02056 00000000 *                                                                          0765
0804    02056 00000000 *                            CORRECTIONS TO FDTB                           0766
0805    02056 00002056 FDTB   EQU  *                                                              0767
0806    02056 01000175        LAA  M1                                                             0768
0807    02057 12002073        SPB  F6D                                                            0769
0808    02060 12002174        SPB  DTB                                                            0770
```

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0809   02061 25402125        DAC   0B+2                                                              0771
0810   02062 11202063        BRU*  SGNS                                                              0772
0811   02063 00000000 *                                                                              0773
0812   02063 25402067 SGNS   DAC   *+4                                                               0774
0813   02064 25402066        DAC   *+2                                                               0775
0814   02065 25402067        DAC   *+2                                                               0776
0815   02066 00000000 *                                                                              0777
0816   02066 00000002        NEG                                                                     0778
0817   02067 03202047        STA*  CWPA                                                              0779
0818   02070 01002065        LAA   SGNS+2                                                            0780
0819   02071 03002063        STA   SGNS                                                              0781
0820   02072 11001770        BRU   ICCE                                                              0782
0821   02073 00000000 *                        SUBROUTINE TO FORMAT TABLE FOR 0TB OF DTB             0784
0822   02073 00000000 F6D    ***   **                                                                0785
0823   02074 03002137        STA   FDR+5                                                             0786
0824   02075 02000170        LBA   M6                                                                0787
0825   02076 04002131        STB   0CC                                                               0788
0826   02077 00000003        CLA                                                                     0789
0827   02100 03402131        STA   0B+6.1                                                            0790
0828   02101 00000026        IBS                                                                     0791
0829   02102 11002100        BRU   *-2                                                               0792
0830   02103 00000000 *                        FIX LENGTH OF INPUT                                   0793
0831   02103 01200010        LAA*  CPP                                                               0794
0832   02104 06000040        SMA   CWP                                                               0795
0833   02105 00000033        NOP                                                                     0796
0834   02106 00000033        NOP                                                                     0797
0835   02107 05002137        AMA   FDR+5                                                             0798
0836   02110 00000002        NEG                                                                     0799
0837   02111 00000005        TAB                                                                     0800
0838   02112 00000000 *                                                                              0801
0839   02112 00000000 *                        FORMAT FOR 0TB OR DTB                                 0802
0840   02112 00002112 0CA    EQU   *                                                                 0803
0841   02112 01200040        LAA*  CWP                                                               0804
0842   02113 03402131        STA   0B+6.1                                                            0805
0843   02114 14000040        IMS   CWP                                                               0806
0844   02115 14002131        IMS   0CC                                                               0807
0845   02116 11002120        BRU   *+2                                                               0808
```

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0846    02117 11002122      BRU   0CB                                                    0809
0847    02120 00000026      IBS                                                          0810
0848    02121 11002112      BRU   0CA                                                    0811
0849    02122 00000000 *                          ALL DONE                              0812
0850    02122 11202073 0CB  BRU*  F6D                                                    0813
0851    02123 00000000 *                          6 WORD BUFFER                         0814
0852    02123 00000006 0B   BSS   6                                                      0815
0853    02131 00000000 0CC  ***   **                                                     0816
0854    02132 00000005 FDB  BSS   5                                                      0817
0855    02137 00000000 FDC  DATA  0                                                      0818
0856    02140 00002140 FDA  DATA  *                                                      0819
0857    02141 00000000 *                          OCTAL (ASCII) TO BINARY               0821
0858    02141 00000000 0TB  ***   **                                                     0822
0859    02142 01202141      LAA*  0TB                                                    0823
0860    02143 14002141      IMS   0TB                                                    0824
0861    02144 03002173      STA   0TCT                                                   0825
0862    02145 02000170      LBA   M6                                                     0826
0863    02146 00000003      CLA                                                          0827
0864    02147 03002172      STA   0TMP                                                   0828
0865    02150 01402172 0TBA LAA   0TI+6,1          PICK UP SHIFT INSTRUCTION            0829
0866    02151 03002154      STA   0TIP                                                   0830
0867    02152 01202173      LAA*  0TCT                                                   0831
0868    02153 00001516      LSL   13               CLEAR OUT ASCII                      0832
0869    02154 00001515 0TIP RSL   13                                                     0833
0870    02155 05002172      AMA   0TMP             MERGE OLD AND NEW                    0834
0871    02156 03002172      STA   0TMP                                                   0835
0872    02157 14002173      IMS   0TCT                                                   0836
0873    02160 00000033      NOP                                                          0837
0874    02161 00000026      IBS                    ALL DONE                             0838
0875    02162 11002150      BRU   0TBA                                                   0839
0876    02163 00000000 *                                                                 0840
0877    02163 11202141      BRU*  0TB              YES                                  0841
0878    02164 00000000 *                                                                 0842
0879    02164 00002164 0TI  EQU   *                                                      0843
0880    02164 00000216      LSL   2                                                      0844
0881    02165 00000115      RSL   1                                                      0845
0882    02166 00000415      RSL   4                                                      0846
```

```
0883   02167 00000715       RSL  7                                                          0847
0884   02170 00001215       RSL  10                                                         0848
0885   02171 00001515       RSL  13                                                         0849
0886   02172 00000000 *                                                                     0850
0887   02172 00000000 ØTMP DATA 0                                                           0851
0888   02173 00000000 ØTCT DATA 0                                                           0852
0889   02174 00000000 *                                                                     0854
0890   02174 00000000 *                          DECIMAL TØ BINARY                          0855
0891   02174 00000000 *                                                                     0856
0892   02174 00000000 *     SPB  DTB                                                        0857
0893   02174 00000000 *     DAC  BUFFER WITH 4 RIGHT JUSTIFIED CHARACTERS 4 WØRD EACH        0858
0894   02174 00000000 *                                                                     0859
0895   02174 00000000 *                                                                     0860
0896   02174 00000000 DTB  777  **                                                          0861
0897   02175 04002230       STB  DTSB                                                       0862
0898   02176 01202174       LAA* DTB                                                        0863
0899   02177 14002174       IMS  DTB                                                        0864
0900   02200 03002227       STA  DTC                                                        0865
0901   02201 00000003       CLA                                                             0866
0902   02202 03002226       STA  TAC                                                        0867
0903   02203 02000173       LBA  M3                                                         0868
0904   02204 01202227 DTB1 LAA* DTC                                                         0869
0905   02205 00001416       LSL  12                                                         0870
0906   02206 00001415       RSL  12                                                         0871
0907   02207 05002226       AMA  TAC                                                        0872
0908   02210 00000316       LSL  3                                                          0873
0909   02211 03002226       STA  TAC                                                        0874
0910   02212 00000215       RSL  2                                                          0875
0911   02213 05002226       AMA  TAC                                                        0876
0912   02214 03002226       STA  TAC                                                        0877
0913   02215 14002227       IMS  DTC                                                        0878
0914   02216 00000026       IBS                                                             0879
0915   02217 11002204       BRU  DTB1                                                       0890
0916   02220 01202227       LAA* DTC                                                        0881
0917   02221 00001416       LSL  12                                                         0882
0918   02222 00001415       RSL  12                                                         0883
0919   02223 05002226       AMA  TAC                                                        0884
```

```
0920    02224 02002230      LBA   DTSB                                                   0885
0921    02225 11202174      BRU*  DTB                                                    0886
0922    02226 00000000 TAC  DATA  0                                                      0887
0923    02227 00000000 DTC  DATA  0                                                      0888
0924    02230 00000000 DTSB DATA  0                                                      0889
0925    02231 00000000 *                         CLEAR CONTROL INPUT BUFFER             0891
0926    02231 00000000 CCIB ***   **                                                    0892
0927    02232 01000217      LAA   EPPS                                                   0893
0928    02233 03000010      STA   CPP                                                    0894
0929    02234 00000003      CLA                                                          0895
0930    02235 02002242      LBA   M80                                                    0896
0931    02236 03400161      STA   CBIB+80,1                                             0897
0932    02237 00000026      IRS                                                          0898
0933    02240 11002236      BRU   *-2                                                    0899
0934    02241 11202231      BRU*  CCIB                                                   0900
0935    02242 00000000 *                                                                0901
0936    02242 00177660 M80  DATA  -80                                                   0902
0937    02243 00000000 *                         KEYSEARCH SUBROUTINE                   0904
0938    02243 00000000 *              WORD 1 AND 2 COMPARISON KEY,                      0905
0939    02243 00000000 *              WORD 1 AND 2 COMPARISON KEY WORD 3 ADDRESS TO GO TO ON COM   0906
0940    02243 00000000 *                         SPP   KSS                              0907
0941    02243 00000000 *                         DAC   ADDRESS OF 2 WORD KEY            0908
0942    02243 00000000 *                         DAC   ADDRESS OF FIRST WORD IN TABLE   0909
0943    02243 00000000 *                         DATA  NUMBER OF ENTRIES IN TABLE       0910
0944    02243 00000000 *                         RETURN HERE IF NOTHING COMPARES        0911
0945    02243 00002243 KSS  EQU   *                                                     0912
0946    02243 01200036      LAA*  SBK                                                   0913
0947    02244 03002275      STA   KSSA                                                  0914
0948    02245 14000036      IMS   SBK                                                   0915
0949    02246 02200036      LBA*  SBK                                                   0916
0950    02247 14000036      IMS   SBK                                                   0917
0951    02250 01200036      LAA*  SBK                                                   0918
0952    02251 00000002      NEG                                                         0919
0953    02252 03002276      STA   KSSB                                                  0920
0954    02253 14000036      IMS   SBK                                                   0921
0955    02254 00000000 *                                                                0922
0956    02254 00000000 *                         CHECK FIRST 2 CHARACTERS               0923
```

```
0957    02254 01400000 KSS1 LAA   0,1                                              0924
0958    02255 15202275      CMA*  KSSA                                             0925
0959    02256 11002260      BRU   *+2                                             0926
0960    02257 11002264      BRU   KSS3         THIS IS IT                         0927
0961    02260 00000000 *                                                          0928
0962    02260 16000200 KSS2 AMB   03           GO TO NEXT ENTRY IN THE LIST       0929
0963    02261 14002276      IMS   KSSB         ALL ENTRIES CHECKED                0930
0964    02262 11002254      BRU   KSS1         NO                                 0931
0965    02263 11200036      BRU*  SBK                                             0932
0966    02264 00000000 *                                                          0933
0967    02264 00000000 *                 CHECK WORD 2                             0934
0968    02264 01400001 KSS3 LAA   1,1                                             0935
0969    02265 14002275      IMS   KSSA                                            0936
0970    02266 15202275      CMA*  KSSA                                            0937
0971    02267 11002271      BRU   *+2                                             0938
0972    02270 11600002      BRU*  2,1                                             0939
0973    02271 00000000 *                                                          0940
0974    02271 01002275      LAA   KSSA                                            0941
0975    02272 05000175      AMA   M1                                             0942
0976    02273 03002275      STA   KSSA                                            0943
0977    02274 11002260      BRU   KSS2                                            0944
0978    02275 00000000 *                                                          0945
0979    02275 00000000 KSSA ***   **                                             0946
0980    02276 00000000 KSSB ***   **                                             0947
0981    02277 00000000 *                                                          0949
0982    02277 00000000 *                 TYPOUT ROUTINE                           0950
0983    02277 00000000 *    TO CALL                                              0951
0984    02277 00000000 *                                                          0952
0985    02277 00000000 *    SPB   S8TY                                           0953
0986    02277 00000000 *    DAC   ADDRESS OF FIRST WORD TO BE TYPED              0954
0987    02277 00000000 *    DATA  WORD COUNT                                     0955
0988    02277 00000000 *          S8TY WILL CONTAIN O IF TYPE ROUTINE AVAILABLE  0956
0989    02277 00000000 *                                                          0957
0990    02277 00002277 TYPE EQU   *                                              0958
0991    02277 01002335      LAA   STY4                                           0959
0992    02300 00000022      SAZ                                                   0960
0993    02301 12000002      SPB   TBM2                                           0961
```

```
0994   02302 01000026      LAA   S8TY                              FEB 03/02/68        *B
0995   02303 03002336      STA   STY5                              FEB 03/02/68        *B
0996   02304 01202336      LAA*  STY5                              FEB 03/02/68        *B
0997   02305 03002335      STA   STY4
0998   02306 14002336      IMS   STY5                              FEB 03/02/68        *B
0999   02307 01202336      LAA*  STY5                              FEB 03/02/68        *B
1000   02310 00000002      NEG                                                           0966
1001   02311 00000005      TAB                                                           0967
1002   02312 14002336      IMS   STY5                              FEB 03/02/68        *B
1003   02313 00000000 *                                                                  0969
1004   02313 01002337      LAA   S80P                                                    0970
1005   02314 05000161      AMA   TY2                                                     0971
1006   02315 03002320      STA   STY2                                                    0972
1007   02316 03002323      STA   STY3                                                    0973
1008   02317 01202335 STY1 LAA*  STY4                                                    0974
1009   02320 00170000 STY2 A0P   0                                                       0975
1010   02321 12000004      SPB   T8M1                                                    0976
1011   02322 00001016      LSL   8                                                       0977
1012   02323 00170000 STY3 A0P   0                                                       0978
1013   02324 12000004      SPB   T8M1                                                    0979
1014   02325 14002335      IMS   STY4                                                    0980
1015   02326 00000026      IBS                                                           0981
1016   02327 11002317      BRU   STY1                                                    0982
1017   02330 02002336      LBA   STY5                              FEB 03/02/68        *B
1018   02331 00000003      CLA                                                           0984
1019   02332 03000026      STA   S8TY                                                    0985
1020   02333 03002335      STA   STY4                                                    0986
1021   02334 11400000      BRU   0,1                                                     0987
1022   02335 00000000 *                                                                  0988
1023   02335 00000000 STY4 ***   **                                                      0989
1024   02336 00000000 STY5 ***   **                               FEB 03/02/68        *B
1025   02337 00170000 S80P A0P   0                                                       0990
1026   02340 00000000 *                                                                  0992
1027   02340 00000000 *                       OCTAL DUMP ROUTINE                         0993
1028   02340 00000000 *                                                                  0994
1029   02340 00000000 *                       SET UP FOR COMMUNICATIONS ENTRANCE         0995
1030   02340 00002340 DMP  EQU   *                                                       0996
```

```
1031    02340 01200030        LAA*  S8D                                                                  0997
1032    02341 03002450        STA   NDX1                                                                 0998
1033    02342 14000030        IMS   S8D                                                                  0999
1034    02343 01200030        LAA*  S8D                                                                  1000
1035    02344 03002452        STA   NDX3                                                                 1001
1036    02345 14000030        IMS   S8D                                                                  1002
1037    02346 12002363        SPB   DMPY                                                                 1003
1038    02347 02000030        LBA   S8D                                                                  1004
1039    02350 00000003        CLA                                                                        1005
1040    02351 03000030        STA   S8D                                                                  1006
1041    02352 11400000        BRU   0,1                                                                  1007
1042    02353 00000000 *                                                                                 1009
1043    02353 00000000 *                        SET UP FOR DIRECTIVE CALL                                1010
1044    02353 00002353 DUMP EQU  *                                                                       1011
1045    02353 01200011        LAA*  C81                                                                  1012
1046    02354 03002360        STA   *+4                                                                  1013
1047    02355 01200012        LAA*  C82                                                                  1014
1048    02356 03002361        STA   *+3                                                                  1015
1049    02357 12000030        SPB   S8D                                                                  1016
1050    02360 00000000        ***   **                                                                   1017
1051    02361 00000000        ***   **                                                                   1018
1052    02362 11000024        BRU   C8R                                                                  1019
1053    02363 00000000 *                                                                                 1020
1054    02363 00000000 *                        MAIN DUMP ROUTINE                                        1021
1055    02363 00000000 DMPY ***   **                                                                     1022
1056    02364 12002010 DMP1 SPB   CRLA                                                                   1023
1057    02365 01002414        LAA   DMP5         SPACES                                                  1024
1058    02366 03002460        STA   MX19                                                                 1025
1059    02367 01002454        LAA   P4                                                                   1026
1060    02370 02002450        LBA   NDX1                                                                 1027
1061    02371 12002415        SPB   DMPX                                                                 1028
1062    02372 01002453        LAA   M8                                                                   1029
1063    02373 03002456        STA   LPX                                                                  1030
1064    02374 01002454 DMP2 LAA   P4                                                                     1031
1065    02375 02202450        LBA*  NDX1                                                                 1032
1066    02376 12002415        SPB   DMPX                                                                 1033
1067    02377 01002450        LAA   NDX1                                                                 1034
```

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1068    02400 06002452        SMA   NDX3                                                      1035
1069    02401 00000000   *                                                                    1036
1070    02401 00000023        SAN                                                             1037
1071    02402 11002407        BRU   DMP3                                                      1038
1072    02403 14002450        IMS   NDX1                                                      1039
1073    02404 14002456        IMS   LPX         CHECK FOR END OF LINE                         1040
1074    02405 11002374        BRU   DMP2                                                      1041
1075    02406 11002364        BRU   DMP1                                                      1042
1076    02407 00000000   *                                                                    1043
1077    02407 12000026  DMP3  SPB   S8TY                                                      1044
1078    02410 00002413        DATA  DMP4.1                                                    1045
1078    02411 00000001                                                                        
1079    02412 11202363        BRU*  DMPY                                                      1046
1080    02413 00000000   *                                                                    1047
1081    02413 00105215  DMP4  DATA  '105215                                                   1048
1082    02414 00120377  DMP5  DATA  '120377                                                   1049
1083    02415 00000000   *                                                                    1050
1084    02415 00000000   *                                                                    1052
1085    02415 00000000  DMPX  ***    **                                                       1053
1086    02416 03002424        STA   DMP6                                                      1054
1087    02417 01002423        LAA   EX19                                                      1055
1088    02420 06000176        AMA   P1                                                        1056
1089    02421 12002426        SPB   FRMX                                                      1057
1090    02422 12000026        SPB   S8TY                                                      1058
1091    02423 25402460  EX19  DAC   MX19                                                      1059
1092    02424 00000000  DMP6  ***    **                                                       1060
1093    02425 11202415        BRU*  DMPX                                                      1061
1094    02426 00000000   *                                                                    1062
1095    02426 00000000  FRMX  ***    **                                                       1063
1096    02427 03002451        STA   NDX2                                                      1064
1097    02430 01000173        LAA   M3                                                        1065
1098    02431 03002457        STA   LPX1                                                      1066
1099    02432 00000003        CLA                                                             1067
1100    02433 00000113        FLL   1                                                         1068
1101    02434 11002436        BRU   *+2                                                       1069
1102    02435 00000000   *                                                                    1070
1103    02435 00000313  FRM1  FLL   3                                                         1071
```

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1104   02436 00000516        LSL  6                                                         1072
1105   02437 00000313        FLL  3                                                         1073
1106   02440 05002447        AMA  FRDT                                                      1074
1107   02441 03202451        STA* NDX2                                                      1075
1108   02442 00000003        CLA                                                            1076
1109   02443 14002451        IMS  NDX2                                                      1077
1110   02444 14002457        IMS  LPX1                                                      1078
1111   02445 11002435        BRU  FRM1                                                      1079
1112   02446 11202426        BRU* FRMX                                                      1080
1113   02447 00000000 *                                                                     1082
1114   02447 00130260 FRDT DATA '130260                                                     1083
1115   02450 00000000 NDX1 DATA 0                                                           1084
1116   02451 00000000 NDX2 DATA 0                                                           1085
1117   02452 00000000 NDX3 ***  **                                                          1086
1118   02453 00177770 M8   DATA -8                                                          1087
1119   02454 00000004 P4   DATA 4                                                           1088
1120   02455 00000005 P5   DATA 5                                                           1089
1121   02456 00000000 LPX  ***  **                                                          1090
1122   02457 00000000 LPX1 ***  **                                                          1091
1123   02460 00120240 MX19 DATA ''              ''                                          1092
1123   02461 00120240                                                                       
1123   02462 00120240                                                                       
1123   02463 00120240                                                                       
1123   02464 00120240                                                                       
1124   02465 00105215        DATA '105215                                                   1093
1125   02466 00000000 *                      ASSIGN PROCESSOR                               1095
1126   02466 00000000 *                                                                     1096
1127   02466 00000000 *        CAUSES UNIT ASSIGNMENTS TO BE MADE IN IO                     1097
1128   02466 00000000 *                                                                     1098
1129   02466 00000000 *           ASSIGN CONTROL TYPEWRITER                                 1099
1130   02466 00000000 *           ASSI CONT TYPW                                            1100
1131   02466 00000000 *           ASSI TYPW 1                                               1101
1132   02466 00000000 *           ASSI FAST PAPERTAPE 2                                     1102
1133   02466 00000000 *           ASSI CONT FAST                                            1103
1134   02466 00000000 *           ASSI CONT ASR                                             1104
1135   02466 00000000 *                                                                     1105
1136   02466 00000000 *     ANY UNDEFINED CONTROL WORD IN FIRST PARAMETER WILL CAUSE        1106
```

```
1137   02466 00000000 *          THE PROGRAM TO BRU $ASGN IN THE TEST PROGRAM                    1107
1138   02466 00000000 *          EXAMPLE:                                                        1108
1139   02466 00000000 *                                                                          1109
1140   02466 00000000 *                    ASSI CRT 14                                           1110
1141   02466 00000000 *                    ASSI DISC '16                                         1111
1142   02466 00000000 *                                                                          1112
1143   02466 00002466 ASSI EQU  *                                                                1113
1144   02466 01000011      LAA  C81         PICKUP ADDRESS OF FIRST PARAMETER                    1114
1145   02467 03002471      STA  *+2                                                              1115
1146   02470 00000000 *                                                                          1116
1147   02470 12000036      SPB  $8K                                                              1117
1148   02471 00000000 ***  **                                                                    1118
1149   02472 25402475      DAC  APW                                                              1119
1150   02473 00000003      DATA 3                                                                1120
1151   02474 00000000 *                     NOT AN EXECUTIVE ASSIGNMENT                          1121
1152   02474 44500000      BRU  $ASGN       GO TO TEST PROGRAM                                   1122
1153   02475 00000000 *                                                                          1124
1154   02475 00000000 *                     EXEC ASSIGN PARAMETER WORDS                          1125
1155   02475 00000000 *                                                                          1126
1156   02475 00002475 APW  EQU  *                                                                1127
1157   02475 00141717      DATA ''CONT''                                                         1128
1157   02476 00147324                                                                            
1158   02477 25402510      DAC  ACON                                                             1129
1159   02500 00152331      DATA ''TYPE''                                                         1130
1159   02501 00150305                                                                            
1160   02502 25402560      DAC  TYPA                                                             1131
1161   02503 00143301      DATA ''FAST''                                                         1132
1161   02504 00151724                                                                            
1162   02505 25402551      DAC  PTA                                                              1133
1163   02506 25402506 EEAP DAC  *                                                                1134
1164   02507 25402475 EAPW DAC  APW                                                              1135
1165   02510 00000000 *                     ASSIGN CONTROL INPUT DEVICE                          1137
1166   02510 00000000 *                                                                          1138
1167   02510 00002510 ACON EQU  *                                                                1139
1168   02510 01000012      LAA  C82                                                              1140
1169   02511 03002513      STA  *+2                                                              1141
1170   02512 00000000 *                                                                          1142
```

```
1171   02512 12000036        SPB   SBK                                              1143
1172   02513 00000000        ***   **                                              1144
1173   02514 25402521        DAC   ACLS                                            1145
1174   02515 00000003        DATA  3                                               1146
1175   02516 00000000        HLT                                                   1147
1176   02517 00000033        NOP                                                   1148
1177   02520 00000000  *                                                           1149
1178   02520 00000000  *                      ILLEGAL ASSIGNMENT                   1150
1179   02520 00000000  *                                                           1151
1180   02520 11002673        BRU   CPR                                             1152
1181   02521 00000000  *                                                           1154
1182   02521 00000000  *                      ASSIGN CONTROL LIST                  1155
1183   02521 00000000  *                                                           1156
1184   02521 00002521 ACLS   EQU   *                                              1157
1185   02521 00152331        DATA  ''TYPE''                                        1158
1185   02522 00150305                                                             
1186   02523 25402532        DAC   ATYP                                            1159
1187   02524 00143301        DATA  ''FAST''                                        1160
1187   02525 00151724                                                             
1188   02526 25402537        DAC   APT                                             1161
1189   02527 00140723        DATA  ''AS''                                          1162
1190   02530 00000000        FORM  8,8                                             1163
1191   02530 00151000        FDAT  '' R'',0                                        1164
1192   02531 25402544        DAC   AASR                                            1165
1193   02532 00000000  *                                                           1166
1194   02532 00000000  *                      ASSIGN TYPWRITER TO CONTROL          1167
1195   02532 00000000  *                                                           1168
1196   02532 00002532 ATYP   EQU   *                                              1169
1197   02532 01001446        LAA   CSW1                                            1170
1198   02533 03001445        STA   CSW                                             1171
1199   02534 01000161        LAA   TYP                                             1172
1200   02535 03000162        STA   CON                                             1173
1201   02536 11000024        BRU   CBR                                             1174
1202   02537 00000000  *                                                           1175
1203   02537 00000000  *                      ASSIGN PAPER TAPE TO CONTROL         1176
1204   02537 00000000  *                                                           1177
1205   02537 00002537 APT    EQU   *                                              1178
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1206   02537 01001450      LAA   CSW3                                                    1179
1207   02540 03001445      STA   CSW                                                     1180
1208   02541 01000163      LAA   HPT                                                     1181
1209   02542 03000162      STA   CON                                                     1182
1210   02543 11000024      BRU   C8R                                                     1183
1211   02544 00000000 *                        ASSIGN ASR TO CONTROL                     1185
1212   02544 00000000 *                                                                  1186
1213   02544 00002544 AASR EQU   *                                                       1187
1214   02544 01001447      LAA   CSW2                                                    1188
1215   02545 03001445      STA   CSW                                                     1189
1216   02546 01000161      LAA   TYP                                                     1190
1217   02547 03000162      STA   CON                                                     1191
1218   02550 11000024      BRU   C8R                                                     1192
1219   02551 00000000 *                                                                  1193
1220   02551 00000000 *             ASSIGN UNIT NUMBER TO HIGH SPEED PAPER TAPE          1194
1221   02551 00000000 *                                                                  1195
1222   02551 00002551 PTA  EQU   *                                                       1196
1223   02551 01200012      LAA*  C82                                                     1197
1224   02552 15000202      CMA   P63                                                     1198
1225   02553 11002556      BRU   PTB                                                     1199
1226   02554 00000000      HLT                                                           1200
1227   02555 00000000 *                                                                  1201
1228   02555 00000000 *                        UNIT NUMBER TOO HIGH                      1202
1229   02555 00000000 *                                                                  1203
1230   02555 11000024      BRU   C8R                                                     1204
1231   02556 03000163 PTB  STA   HPT                                                     1205
1232   02557 11000024      BRU   C8R                                                     1206
1233   02560 00000000 *                                                                  1207
1234   02560 00000000 *                        ASSIGN UNIT NUMBER TO TYPEWRITER          1208
1235   02560 00000000 *                                                                  1209
1236   02560 00002560 TYPA EQU   *                                                       1210
1237   02560 01200012      LAA*  C82                                                     1211
1238   02561 15000202      CMA   P63                                                     1212
1239   02562 00000033      NOP                                                           1213
1240   02563 11002566      BRU   TYPB                                                    1214
1241   02564 00000000      HLT                                                           1215
1242   02565 00000000 *                                                                  1216
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1243    02565 00000000 *                              UNIT NUMBER TOO LARGE                          1217
1244    02565 00000000 *                                                                             1218
1245    02565 11000024            BRU  C8R                                                           1219
1246    02566 03000161 TYPB STA   TYP                                                                1220
1247    02567 11000024            BRU  C8R                                                           1221
1248    02570 00000000 *                              MODIFY.LOCATION,ENTRY                          1223
1249    02570 00000000 *                                                                             1224
1250    02570 00002570 MODI EQU   *                                                                  1225
1251    02570 02200011            LBA* C81                                                           1226
1252    02571 01200012            LAA* C82                                                           1227
1253    02572 03400000            STA  0,1                                                           1228
1254    02573 11000024            BRU  C8R                                                           1229
1255    02574 00000000 *                                                                             1230
1256    02574 00002574 SELE EQU   *                                                                  1231
1257    02574 11000001            BRU  F81                                                           1232
1258    02575 00000000 *                              SET SENSE SWITCHES                             1234
1259    02575 00002575 SET  EQU   *                                                                  1235
1260    02575 01002620            LAA  SSW1                                                          1236
1261    02576 03002617            STA  SSW                                                           1237
1262    02577 01200011            LAA* C81                                                           1238
1263    02600 00000022            SAZ                                                                1239
1264    02601 11002607            BRU  SET2                                                          1240
1265    02602 01000205            LAA  R0                                                            1241
1266    02603 02002625            LBA  STEM                                                          1242
1267    02604 00000030            QRA                                                                1243
1268    02605 03000032 SET1 STA   SBSS                                                               1244
1269    02606 11000024            BRU  C8R                                                           1245
1270    02607 00000000 *                              GET CORRECT BIT INTO A                         1246
1271    02607 00000002 SET2 NEG                                                                      1247
1272    02610 00000005            TAB                                                                1248
1273    02611 01000205            LAA  R0                                                            1249
1274    02612 00000115            RSL  1                                                             1250
1275    02613 00000026            IBS                                                                1251
1276    02614 11002612            BRU  *-2                                                           1252
1277    02615 02002625            LBA  STEM                                                          1253
1278    02616 00000000 *                              SET OR RESETO                                  1254
1279    02616 11202617            BRU* SSW                                                           1255
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1280   02617 00000000 SSW    ***    **                                                                1256
1281   02620 25402622 SSW1 DAC    SET3                SET                                              1257
1282   02621 25402631 SSW2 DAC    RES1                RESET                                            1258
1283   02622 00000000 *                                                                               1259
1284   02622 00000000 *                                TURN BIT ON                                     1260
1285   02622 00000030 SET3 OBA                                                                        1261
1286   02623 03002625      STA    STEM                                                                1262
1287   02624 11000024      BRU    CBR                                                                 1263
1288   02625 00000000 STEM ***    **                                                                  1264
1289   02626 00000000 *                                PROCESS RESET STATEMENT                         1266
1290   02626 00000000 *                                                                               1267
1291   02626 00002626 RESE EQU    *                                                                   1268
1292   02626 01002621      LAA    SSW2                                                                1269
1293   02627 03002617      STA    SSW                                                                 1270
1294   02630 11002577      BRU    SET+2                                                               1271
1295   02631 00000000 *                                TURN BIT OFF                                    1272
1296   02631 00000002 RES1 NEG                                                                        1273
1297   02632 05000175      AMA    M1                                                                  1274
1298   02633 00000027      ABA                                                                        1275
1299   02634 11002623      BRU    SET3+1                                                              1276
1300   02635 00000000 *                                                                               1277
1301   02635 00000000 *                                PROCESS HALT                                    1278
1302   02635 00002635 HALT EQU    *                                                                   1279
1303   02635 00000000      HLT                                                                        1280
1304   02636 11000024      BRU    CBR                                                                 1281
1305   02637 00000000 CP   DATA   0                                                                   1283
1306   02640 00000000      DATA   0                                                                   1284
1307   02641 25402642      DAC    *+1                                                                 1285
1308   02642 00000000 *                                                                               1286
1309   02642 02002706      LBA    FLIS                                                                1287
1310   02643 01400000 CPS  LAA    0,1                  SET X TO KEYWORD LIST                           1288
1311   02644 15000041      CMA    CWB                  IS THIS FIRST HALF OF KEYWORD                   1289
1312   02645 11002647      BRU    *+2                  NO                                              1290
1313   02646 11002664      BRU    CPS2                 YES                                             1291
1314   02647 16000200 CPS1 AMB    P3                                                                  1292
1315   02650 00000004      TBA                                                                        1293
1316   02651 46500000      CMA    FELL                                                                1294
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1317   02652 11002643        BRU   CPS                                              1295
1318   02653 12002010        SPB   CRLA                                             1296
1319   02654 12000026        SPB   S8TY                                             1297
1320   02655 25402661        DAC   CPEM                                             1298
1321   02656 00000002        DATA  2                                                1299
1322   02657 12002010        SPB   CRLA                                             1300
1323   02660 00000000 *                                                             1301
1324   02660 11000024        BRU   C8R                                              1302
1325   02661 00000000 *                                                             1303
1326   02661 00141727 CPEM DATA  ''CW''                                             1304
1327   02662 00000000        FORM  8,8                                              1305
1328   02662 00142607        FDAT  ''EE'','207                                      1306
1329   02663 11001444        BRU   CIH+3                                            1308
1330   02664 01400001 CPS2 LAA   1,1          TRY SECOND WORD                       1309
1331   02665 15000042        CMA   CWB+1                                            1310
1332   02666 11002647        BRU   CPS1                                             1311
1333   02667 11002671        BRU   *+2                                             1312
1334   02670 11002647        BRU   CPS1                                             1313
1335   02671 00000000 *                                                             1314
1336   02671 02400002        LBA   2,1                                              1315
1337   02672 11400000        BRU   0,1                                              1316
1338   02673 00000000 *                                                             1317
1339   02673 01002705 CPR  LAA   ECP3                                              1318
1340   02674 03002641        STA   CP+2                                             1319
1341   02675 01000175        LAA   M1                                               1320
1342   02676 03000017        STA   S8SN                                             1321
1343   02677 12002231        SPB   CCIB                                             1322
1344   02700 01000214        LAA   FCP                                              1323
1345   02701 12000020        SPB   T8D                                              1324
1346   02702 01001766        LAA   CCIH                                             1325
1347   02703 12000022        SPB   T8A                                              1326
1348   02704 11000000        BRU   F8R                                             1327
1349   02705 00000000 *                                                             1328
1350   02705 25402642 ECP3 DAC   CP+3                                              1329
1351   02706 25402753 ELIS DAC   LIS                                               1330
1352   02707 00000000 *                                                             1332
1353   02707 00000000 *                    KEYWORD LIST                             1333
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1354   02707 00000000 *                          WORDS 1+2     KEYWORD                          1334
1355   02707 00000000 *                          WORDS 1+2     KEYWORD                          1335
1356   02707 00000000 *                          WORD 3        ADDRESS OF KEYED ROUTINE         1336
1357   02707 00000000 *                                                                        1337
1358   02753 60002753            ORG  *2753                                                    1338
1359   02753 00002753 LIS        EQU  *                                                        1339
1360   02753 00000000 *                                        SELECT                           1340
1361   02753 00151705            DATA ''SELE''                                                 1341
1361   02754 00146305                                                                          
1362   02755 25402574            DAC  SELE                                                     1342
1363   02756 00000000 *                                        DUMP                             1343
1364   02756 00142325            DATA ''DUMP''                                                 1344
1364   02757 00146720                                                                          
1365   02760 25402353            DAC  DUMP                                                     1345
1366   02761 00000000 *                                        ASSIGN                           1346
1367   02761 00140723            DATA ''ASSI''                                                 1347
1367   02762 00151711                                                                          
1368   02763 25402466            DAC  ASSI                                                     1348
1369   02764 00000000 *                                        MODIFY                           1349
1370   02764 00146717            DATA ''MODI''                                                 1350
1370   02765 00142311                                                                          
1371   02766 25402570            DAC  MODI                                                     1351
1372   02767 00000000 *                                        SET SENSE SWITCH                 1352
1373   02767 00000000            FORM 8,8                                                      1353
1374   02767 00151705            DATA ''SE''                                                   1354
1375   02770 00152000            FDAT '' T'',0                                                 1355
1376   02771 25402575            DAC  SET                                                      1356
1377   02772 00000000 *                                        RESET SENSE SWITCH               1357
1378   02772 00151305            DATA ''RESE''                                                 1358
1378   02773 00151705                                                                          
1379   02774 25402626            DAC  RESE                                                     1359
1380   02775 00000000 *                                                                        1360
1381   02775 00144301            DATA ''HALT''                                                 1361
1381   02776 00146324                                                                          
1382   02777 25402635            DAC  HALT                                                     1362
1383   03000 00000000 *                                                                        1363
1384   03000 60401200            END  STRT                                                     1364
```