32 BIT SERIES 6A
MEMORY TEST

Consists of:

Program Description	B06-157M95R01A15
Bootstrap Object Tape (Part 1)	06-157F01M17R01
Bootstrap Object Tape (Part 2)	06-157F02M17R01
Program Listing (Part 1)	06-157F01M91R01A13
Program Listing (Part 2)	06-157F02M91R01A13

32-BIT SERIES, 6A MEMORY TEST PROGRAM DESCRIPTION

1 32-BIT S6A MEMORY TEST 06-157R01

1.1 Related Documents

Program Listing Part 1	06-157F01M91R01A13
Program Listing Part 2	06-157F02M91R01A13
Program Tape Part 1	06-157F01M17R01
Program Tape Part 2	06-157F02M17R01

1.2 Prerequisites

The following test programs must be run prior to loading this test:

1. <u>For all 32-Bit Processors</u>:

    Series 32 Processor Test

Part 1	06-154
Part 2	06-155
Part 3	06-178
Series 32 Memory Test	06-156

2. <u>For other Test Programs</u>:

Teletype Basic Confidence Test	06-004
CRT Test	06-146
Memory Access Controller Test	06-160

2 PURPOSE OF TEST

The 32-Bit Series 6A Memory Test tests the worstcase patterns of 16KB, 32KB, and 64KB memory modules. This test only runs on a 32-bit processor. This test supplements the Series 32 Memory Test 06-156 and it should be run along with Test 06-156 on 32-bit processors.

Part 1 is loaded into high core (ORG X'4000') and tests the low core locations (X'0000' - X'3FFF').

Part 2 is loaded into low core (ORG X'A00') and tests the high core locations (X'4000' - X'FFFFF').

Each part of this program is divided into 8 different subtests that test all core with specified worst case patterns in each subtest. The pattern depends on the type of memory being tested, 16KB memory modules, 32KB memory modules or 64KB memory modules. The pattern stored into a specific location is dependent upon the location address. The data pattern loaded depends on the condition of the addressing lines for the specific type of core mat being used. See Appendix 6 for specific patterns. The data loaded is either X'0000' or X'FFFF' in each halfword location.

Each pattern in Appendix 6 tests the core. Then the complement of the pattern is loaded into the same location, read back, and checked. The original pattern is then reloaded into the same location, read back, and checked.

3 MINIMUM HARDWARE REQUIRED

The following lists the minimum hardware required to perform this test:

1. Processor - Model 7/32 or 8/32

2. Minimum Memory - 32KB

3. Console Device (See Appendix 5)
   Teletype or CRT

4. Paper Tape Reader
   Teletype or High Speed Paper Tape Reader

5. Extended Display Panel

4 REQUIREMENTS OF MACHINE UNDER TEST

The 32-Bit Series, 6A Memory Test 06-157 assumes that the Series 32 Memory Test 06-156 has been run without detecting a failure.

For console device other than Teletype with a device address of X'02', see Appendix 5.

5 LOADING PROCEDURE

5.1 TEST TAPE FORMAT

The test tape format is absolute, nonzoned object tape (M17) with front-end boot loader. The test program occupies memory as follows:

Part 1 X'4000' - X'4BA0'
Part 2 X'A00' - X'197C'

5.2 NORMAL LOADING PROCEDURES

1. Manually enter the X'50' sequence shown below:

	LOCATION	CONTENTS
	X'30'	X'0000'
	X'32'	X'0000'
	X'34'	X'0000'
	X'36'	X'0050'
	X'50'	X'D500'
	X'52'	X'00CF'
	X'54'	X'4300'
	X'56'	X'0080'
for TTY	X'78'	X'0294'
for HSPTR	X'78'	X'0399'
for HSPTR/P	X'78'	X'1399'

2. Place the program tape 06-157F01M17R01 or 06-157F02M17R01 in the paper tape reader.

3. Execute at address X'30'.

4. When the processor halts, observe display registers D1 and D2. If they are zero, loading is complete; otherwise, repeat the loading procedure.

5. Refer to Appendix 4. Set up the address for the console input/ output device.

6. Address memory location X'4000' for Part 1, or X'A00' for Part 2 and execute. The following title is output to the Console Device:

32-BIT S6A MEMORY TEST 06-157F01R01

or

32-BIT S6A MEMORY TEST 06-157F02R01

6 OPERATING PROCEDURES

6.1 NORMAL TESTING PART 1

After the title and the available memory are printed, the test program asks what is the first memory location assigned to the memory access controller. Enter 0 (no MAC), 300, 500, or 900 followed by a carriage return (CR) depending upon where the MAC is located.

The test program then outputs "TYPE = " and waits for a valid type entry.

The valid type entries are:

0	FOR	16KB	35-491
1	FOR	32KB	32-198
2	FOR	32KB	32-206
3	FOR	64KB 1000NS	32-200
4	FOR	64KB 750NS	32-209

When the correct type number has been entered, the test then sets up the correct worst-case pattern. Only the first type entry is going to be used. Therefore, to run more than one type of worst-case patterns, the test should be restarted from X'4000', the starting address of the test. See Appendix 4.

The test program then outputs "Subtest", " * ", and waits for a subtest number (1-8). Each subtest can be run individually by depressing the numeric key for the subtest selected followed by a CR. All 8 subtests can be executed in sequence by selecting subtest 0.

6.2   OPTIONAL TESTING PART 1

Any test may be run continuously by depressing the key for the test number desired, followed by the "L" key on the console device. When this is done, all messages, with the exception of error messages, are inhibited. To terminate continuous test execution, depress the BREAK key on the console device.

To inhibit all printouts and to run a test continuously, the console device can be turned off. When this is done, the program counts the total times that the test is repeated in memory location labelled "TOTAL". If an error is detected, the count in memory location labelled "TOTALERR" is incremented.

The contents of TOTAL are copied into the display panel upon completion of the test. Should the error count reach Y'FFFFFFFF', the processor halts with Y'FFFFFFFF', on the display. The console device should then be turned on and the RUN switch on the display depressed. TOTAL and TOTALERR are then printed.

6.3   NORMAL TESTING PART 2

After the title is printed, a search for available memory is executed and the message "AVAILABLE MEMORY" is printed followed by a list of memory in the system available to the user. Refer to Appendix 2. When the available memory list is complete (Refer to Appendix 3.), the characters "TYPE = " are output to the console device. The correct type number should then be entered. The valid type numbers are:

0	FOR	16KB	35-491
1	FOR	32KB	32-198
2	FOR	32KB	32-206
3	FOR	64KB 1000NS	32-200
4	FOR	64KB 750NS	32-209

When the correct type number has been entered, the test then sets up the correct worst-case pattern. The test runs only the first worst-case pattern selected. To select a different worst-case pattern, re-start the test from X'A00', the starting address of the test, (See Appendix 4.) after a valid type number has been entered, the characters "SUBTEST" and " * " are printed. Subtests 1 through 8 are performed by depressing the numeric key ZERO (0) and the CR key. Each subtest may be individually executed by depressing the corresponding numeric key (1 through 8) and the CR key. If the subtest detects no errors, it prints the message "NO ERROR".

6.4 OPTIONAL TESTING PART 2

6.4.1 Low and High Limits

To reduce the test area, specify a low and a high limit by depressing the line feed key on the console device after the characters "SUBTEST" and " * " are printed. When this is done, the characters "LO = " are printed and the user may select the lower limit of the test area by depressing any numeric key 0 through 9 or keys A, B, C, D, E, or F. The entry must be terminated by the carriage return key. The input value is then compared with the list of available memory. If the memory is available for testing, the value is accepted as the low limit. If the memory is not available for testing, the message "MEMORY NOT AVAILABLE" is printed and another set of values must be selected.

High limit is entered in the same manner as low limit. If the entered high limit is less than the low limit, the message "LOW VALUE HIGH VALUE" is printed and the high and low limits must be reentered. After the high and low limits have been established, an asterisk (*) is printed and normal test execution can be continued. Refer to Section 7.

6.4.2 Parity Memory

If the system is equipped with the parity option, the option can be tested by removing a memory module from the system, after the memory table has been established, and executing the test from "PRTMSG". See listing 06-157F02M91R01A13. A parity error should be generated when the test reaches the nonexistent memory.

6.4.3 Continuous Testing

The test may be run continuously by selecting subtest 0 and depressing the "L" key on the console device. This causes subtests 1 through 8 to be run continuously; i.e., after subtest 8, the program performs subtest 1. Individual subtests may be executed continuously by depressing the corresponding numeric key (1 through 8) and depressing the L key. When running continuously, all messages with the exception of error messages are inhibited. To terminate continuous test execution, depress the BRK key on the console device. To inhibit all printouts and to run the test continuously, the console device can be turned off. When this is done, the program counts the total times the test is repeated in memory location, TOTAL . If an error is detected, the count in the memory location, TOTALERR is incremented, the contents of TOTAL are continuously copied into the console panel display. Should the error count reach Y'FFFFFFFF', the processor halts with Y'FFFFFFFF'on the display . The console device should then be turned on the RUN switch on the display depressed, TOTAL and TOTALERR are then printed.

6.5 ERROR PROCEDURES

1. If an error is detected in the data read from a location in memory, an error message is printed:

   TT XXXXX YYYYYYYY ZZZZZZZZ

   where:

   TT = the subtest where the error occurred.

   XXXXX = the location address under test.

   YYYYYYYY = the correct data expected at location XXXXX.

   ZZZZZZZZ = the incorrect data read from location XXXXX.

   To terminate the error printout at any time, depress the break key on the console device.

2. If a machine malfunction interrupt is generated due to a parity error, the following printout results:

   W TT XXXXX YYYYYYYY ZZZZZZZZ

   where:

   W = the condition code, CVGL, when the interrupt occurs. If bit 29 (V) is set, a data fetch parity error is detected. If bit 30 (G) is set, an instruction parity error is detected. In this case, YYYYYYYY and ZZZZZZZZ should be ignored.

   TT = the subtest being executed when the interrupt occurred.

   XXXXX = the location where the interrupt occurred.

   ZZZZZZZZ = the data read location from XXXXX.

   YYYYYYYY = the correct data expected at location XXXXX.

   Upon completion of the message, the processor is placed in the wait state.

   If the console device is off when the interrupt is generated; Y'AAAAAAAA' is written on the display; and the processor is placed in the wait state. To continue test execution, depress the RUN switch on the display.

3. If a machine malfunction interrupt is generated due to a power fail or initialization, this printout results:

   MACHINE MALFUNCTION

   X YYYYY

   where:

   X = the condition code, CVGL, when the interrupt occurred.

   YYYYY = the location where the interrupt occurred (power down).

   Upon completion of this message, the processor is placed in the wait state.

If the console device is off when the interrupt is generated Y'AAAAAAAA' is written on the display and the processor is placed in the wait state.

To continue test execution, depress the RUN switch on the display.

4. If an illegal instruction interrupt is generated, this printout results:

ILLEGAL INSTRUCTION

XXXXXXXX XXXXXXXX

where:

XXXXXXXX XXXXXXXX = the PSW when the interrupt occurred (status, location).

Upon completion of the message, the processor is placed in the wait state.

If the console device is off when the interrupt is generated, Y'55555555' is written on the display and the processor is placed in the wait state.

To continue test execution, depress the RUN switch on the display.

5. If a spurious external interrupt is generated, this printout results:

EXTINT XXXX

where:

XXXX = the interrupting device address

Upon completion of the message, the old PSW is loaded and test execution continues.

6. If a relocation and protection, arithmetic fault, system queue service, or supervisor call interrupt occurs, one of these printouts results:

MACINT
ARTFLT
SYSQUE
SVCINT

Upon completion of the message, the old PSW is loaded and test execution continues.

7 PROGRAMMING NOTES

7.1 PART 1

1. If the system is not equipped with a memory access controller, type "0", CR when MAC address is requested. If the system is equipped with a memory access controller, type the first memory location assigned to the MAC (300, 500, or 900) followed by a CR.

2. The incrementing display during test execution, indicates the location being tested at any given moment.

7.2 PART 2

1. The high and low values can be specified in any halfword increment and are forced to halfword boundaries.

2. The incrementing display during test execution indicates the location under test at any given moment.

APPENDIX 1

MEMORY LOADER

The memory loader must be loaded with the 50 sequence (described in Section 5.2.1). The memory loader resides in memory from X'80' to X'CF' and loads the memory test. While reading the program tape, each data-byte location is output to the display panel. While loading the test into memory, it performs an exclusive OR of each instruction to verify that the test loaded correctly. If the test did not load correctly, the loader halts the processor and the loading procedures in Section 5.2 must be repeated. If the test did load correctly, the display is zeroed and the processor is put in the wait state.

Start of Tape	Memory Loader	Memory Test
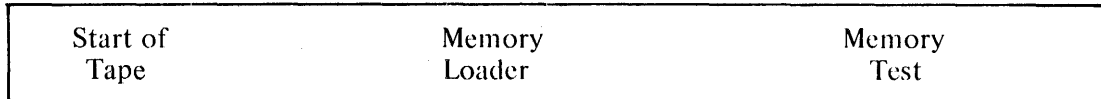
TAPE FORMAT
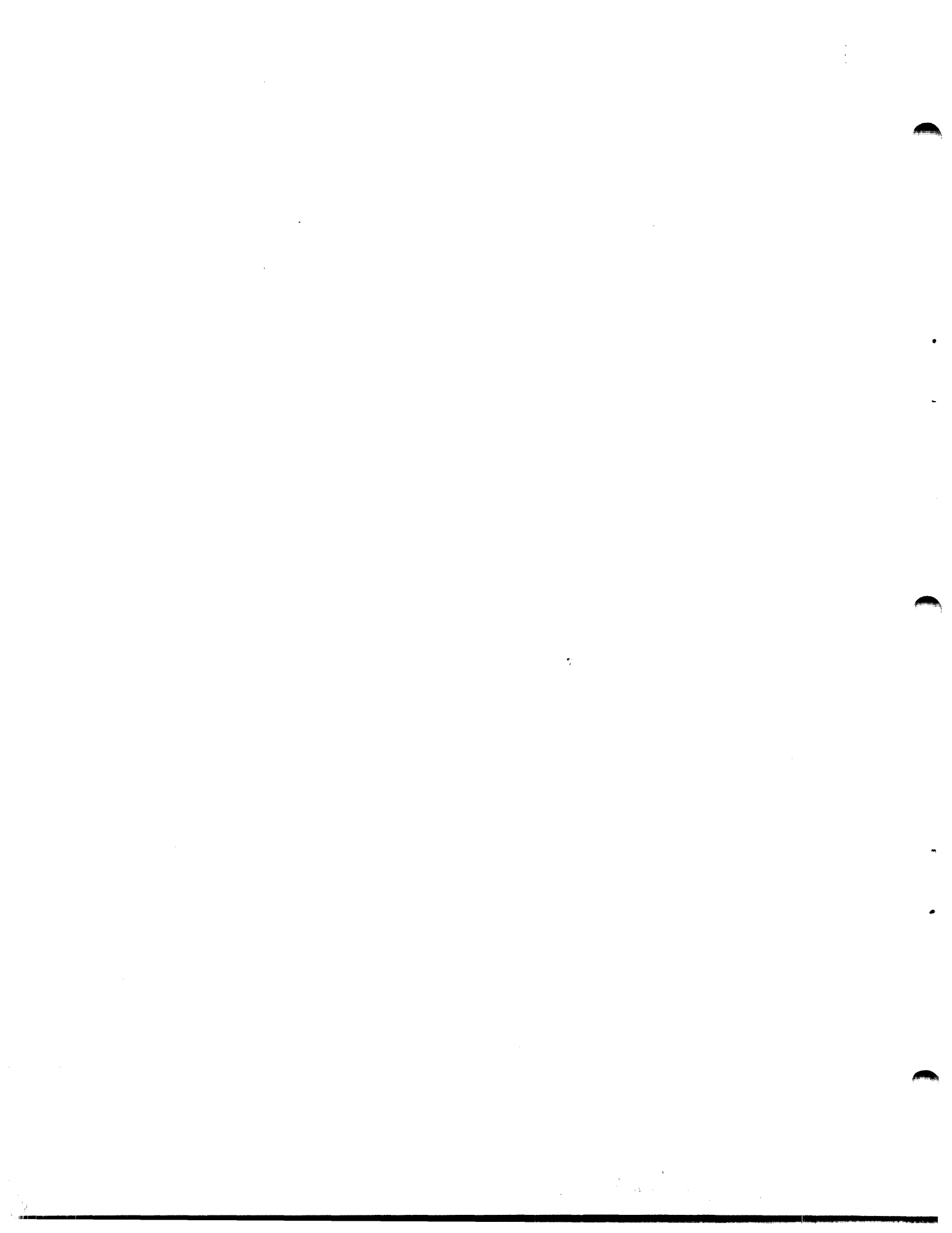
APPENDIX 2

AVAILABLE MEMORY SEARCH
(PART 2)

The available memory search is accomplished by writing data into the first addressable fullword of each 16KB of memory and then reading that location. If the data is read back correctly, the corresponding bit in the memory table is set. Since a memory failure could cause invalid data to be returned and should any known block of memory be omitted from the available memory list, this memory may be tested by manually setting the corresponding bit in the memory table and executing the program at the location labelled "RESTART2". Refer to listing 06-157R01F02M91A13. The table is established such that each bit represents 16KB of memory and each byte represents 128KB of memory. Each byte is labelled with the address of the first 16KB block it controls (i.e., KB016, etc.). If the user does not want the available memory list printed, the console device may be turned off and the processor halts when the memory table is established. The console device can be turned on and the test can be continued by depressing the RUN switch on the display panel.
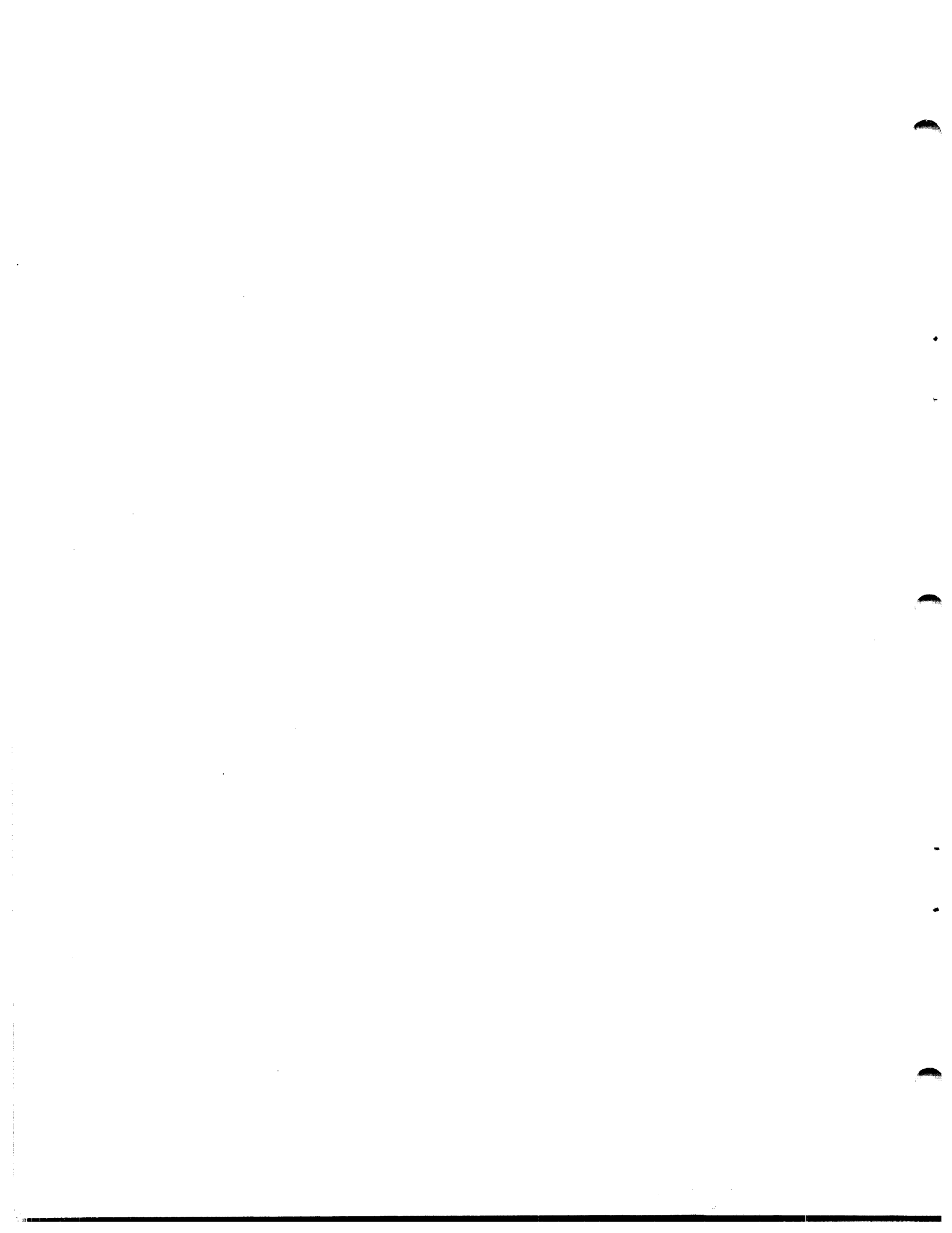
APPENDIX 3

EXAMPLES OF AVAILABLE MEMORY PRINTOUT

EXAMPLE 1 -   Available Memory Printout for Part 1

AVAILABLE MEMORY

00000-03FFF

EXAMPLE 2-   Available Memory Printout for Part 2 with 256K
bytes of memory.

AVAILABLE MEMORY

00000-3FFFF

EXAMPLE 3-   Available memory printout for Part 2 with 512K
bytes of memory split into two noncontiguous
blocks.

AVAILABLE MEMORY

00000-3FFFF

80000-BFFFF
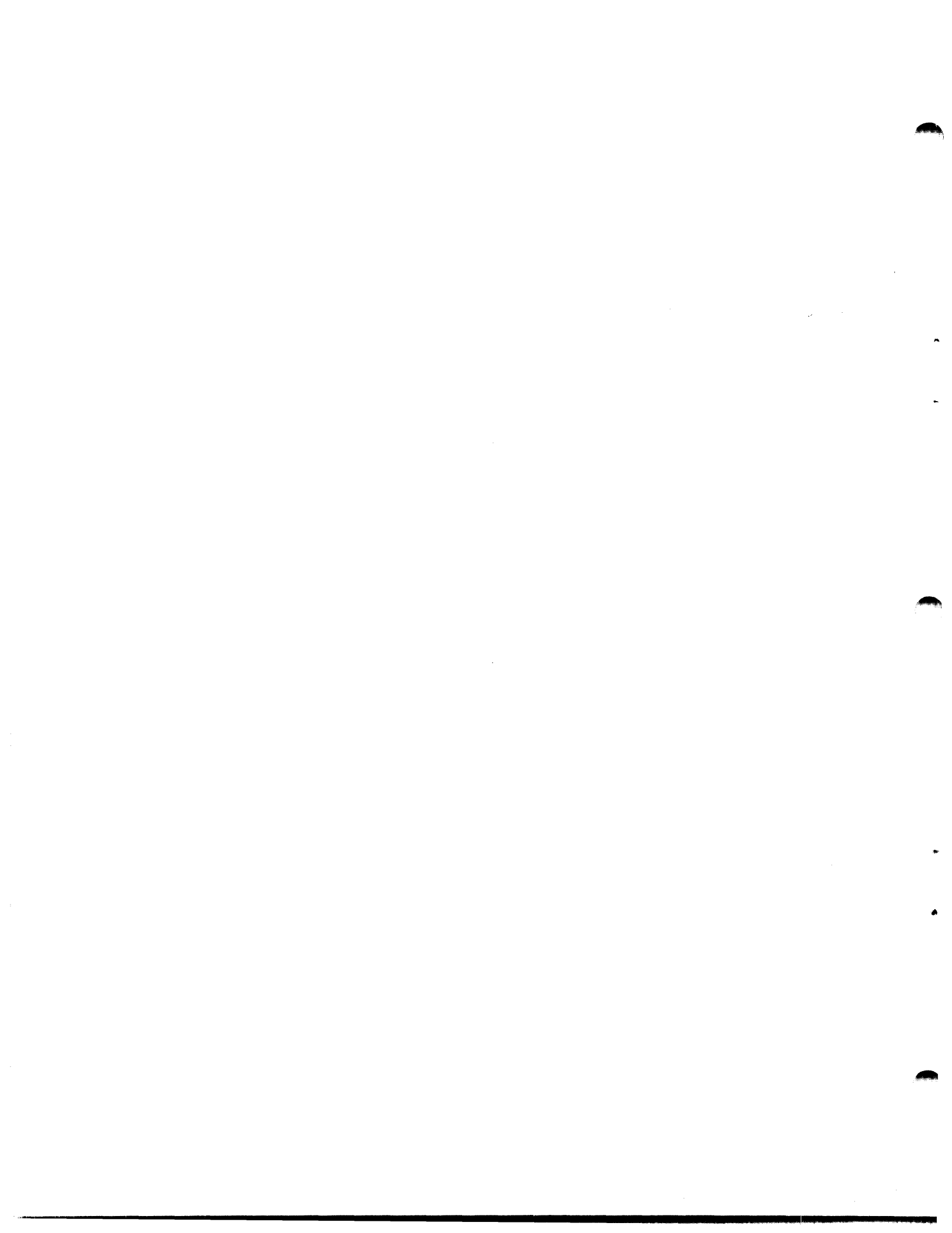
APPENDIX 4

EXAMPLES OF TYPE ENTRIES

EXAMPLE 1 -   Any valid entry from 0 through 4:

TYPE = 0   OR
TYPE = 1   OR
TYPE = 2   OR
TYPE = 3   OR
TYPE = 4

EXAMPLE 2 -   For any invalid entry:

TYPE = F
Valid entry numbers are:

TYPE = 0	FOR	35-491	16KB
TYPE = 1	FOR	32-198	32KB
TYPE = 2	FOR	32-206	32KB
TYPE = 3	FOR	32-200	64KB (1000NS)
TYPE = 4	FOR	32-209	64KB (750NS)

NOTE

After the valid type numbers are printed on the console, the correct type number should be entered.

To run more than one worst-case pattern, restart the test program from the starting address and enter the appropriate type number for the memory modules being tested.
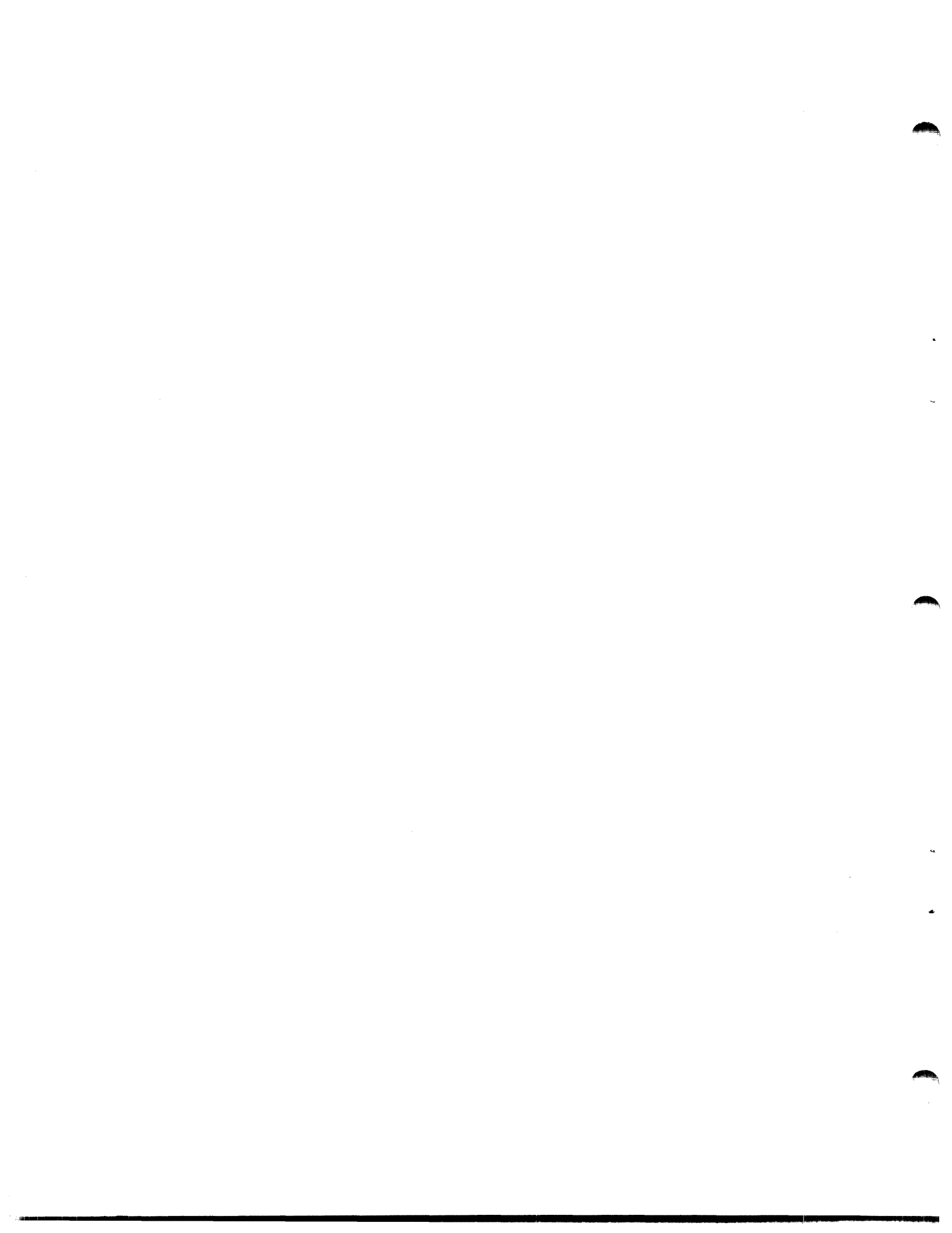
APPENDIX 5

CONSOLE DEVICE DEFINITION

The halfword labelled IO (See the listing.) has the default value for Teletype as the console device. If the configuration is different, it must be changed as follows:

```
0                        7  8                        15
┌─────────────────────────┬─────────────────────────┐
│    Console Device       │                         │
│ IO    identifier        │                         │
└─────────────────────────┴─────────────────────────┘
```
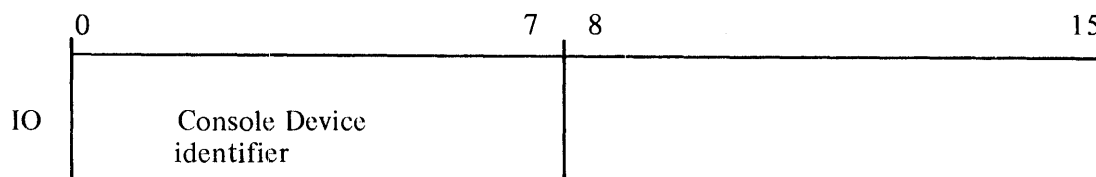
Console Device Identifier	Explanation
X'01'	GDT/CRT on PASLA/PALM interface, strapped for FDX and the highest baud rate.
X'02'	TTY on TTY interface GDT/CRT on current loop interface
0,X'03' - X'FF'	Reserved. The program defaults it to 2.

The Teletype or current loop interface, if used should be strapped for the device address of X'02'. If it is different, the halfword labelled TTYADR (See the listing.) must be changed accordingly.

The graphic display terminal (GDT) or CRT, if used on PASLA interface, should be strapped for the device address of X'10' and X'11' for the receiving and transmitting side respectively. If it is different, the halfword labelled CRTADR (See the listing.) must be changed accordingly.

APPENDIX 6

APPENDIX 6

TABLE 1: TEST PATTERNS

32-198 32-206 (32KB)	Exclusive OR of Bit 6 and 10 of the Address	Exclusive OR of Bit 11 and 13 of the Address	Data Written into that Address
32-209 (64KB)	Exclusive OR of Bit 11 and 14 of the Address	Exclusive OR of Bit 1 and 5 of the Address	Data Written into that Address
32-200 (64KB)	Exclusive OR of Bit 6 and 11 of the Address	Exclusive OR of Bit 0 and 5 of the Address	Data Written into that Address
32-198 & 32-206	Exclusive OR of Bit 6 and 10 of the Address	Exclusive OR of Bit 11 and 13 of the Address	Data Written into that Address
TEST NO	RESULT	RESULT	DATA WRITTEN
1 (A)	-	-	0
1 (B)	0 1 1	0 0 1	0 0 X'FFFF'
2 (A)	0 1 1	- 0 1	0 X'FFFF' 0
2 (B)	0 1	- -	0 X'FFFF'
3 (A)	0 0 1	0 1 -	0 X'FFFF' 0
3 (B)	- -	0 1	0 X'FFFF'
4 (A)	0 0 1 1	0 1 0 1	0 X'FFFF' X'FFFF' 0
4 (B)	0 0 1	0 1 -	0 X'FFFF' X'FFFF'
5 (A)	0 0 1	0 1 -	X'FFFF' 0 0
5 (B)	0 0 1 1	0 1 0 1	X'FFFF' 0 0 X'FFFF'

TABLE 1:   TEST PATTERNS (Continued)

32-198 32-206 (32KB)	Exclusive OR of Bit 6 and 10 of the Address	Exclusive OR of Bit 11 and 13 of the Address	Data Written into that Address
32-209 (64KB)	Exclusive OR of Bit 11 and 14 of the Address	Exclusive OR of Bit 1 and 5 of the Address	Data Written into that Address
32-200 (64KB)	Exclusive OR of Bit 6 and 11 of the Address	Exclusive OR of Bit 0 and 5 of the Address	Data Written into that Address
32-198 & 32-206	Exclusive OR of Bit 6 and 10 of the Address	Exclusive OR of Bit 11 and 13 of the Address	Data Written into that Address

TEST NO.	Result	Result	Data Written
6 (A)	- -	0 1	X'FFFF' 0
6 (B)	0 0 1	0 1 -	X'FFFF' 0 X'FFFF'
7 (A)	0 1	- -	X'FFFF' 0
7 (B)	0 1 1	- 0 1	X'FFFF' 0 X'FFFF'
8 (A)	0 1 1	- 0 1	X'FFFF' X'FFFF' 0
8 (B)	-	-	X'FFFF'

TABLE 2: WORST CASE PATTERN FOR 16KB (35-491)

TEST NUMBER	MA060 PAT 1	MA110 PAT 2	Data Written into that Address
1 (A)	-	-	0
1 (B)	0 1 1	- 0 1	0 0 X'FFFF'
2 (A)	0 1 1	- 0 1	0 X'FFFF' 0
2 (B)	0 1	- -	0 X'FFFF'
3 (A)	0 0 1	0 1 -	0 X'FFFF' 0
3 (B)	- -	0 1	0 X'FFFF'
4 (A)	0 0 1 1	0 1 0 1	0 X'FFFF' X'FFFF' 0
4 (B)	0 0 1	0 1 -	0 X'FFFF' X'FFFF'
5 (A)	0 0 1	0 1 -	X'FFFF' 0 0
5 (B)	0 0 1 1	0 1 0 1	X'FFFF' 0 0 X'FFFF'

TABLE 2: WORST CASE PATTERN FOR 16KB (35-491) (Continued)

TEST NUMBER	MA060 PAT 1	MA110 PAT 2	Data Written into that Address
6 (A)	- -	0 1	X'FFFF' 0
6 (B)	0 0 1	0 1 -	X'FFFF' 0 X'FFFF'
7 (A)	0 1	- -	X'FFFF' 0
7 (B)	0 1 1	- 0 1	X'FFFF' 0 X'FFFF'
8 (A)	0 1 1	- 0 1	X'FFFF' X'FFFF' 0
8 (B)	-	-	X'FFFF'

PROG= *NONE*   ASSEMBLED BY CAL 03-066R05-00   (32-BIT)
```
    1  **06157100                                                              M6A00010

    1  **06157100                                                              M6A00010
    2           CROSS                                                          M6A00020
    3           WIDTH 120                                                      M6A00030
    4           TARGT 32                                                       M6A00040
    5           NORX3                                                          M6A00050
    6           PROG  32 BIT SERIES 6A MEMORY TEST   06-157F01M91R01A13        M6A00060
    7  *                                                                       M6A00070
    8  * COPYRIGHT  INTERDATA, INC.              MARCH 1975                     M6A00080
    9  *                                                                       M6A00090
   10  * PROGRAM USES SERIES 32 INSTRUCTION SET.                               M6A00100
   11  *                                                                       M6A00110
   12  * PURPOSE OF THIS TEST:                                                 M6A00120
   13  *      THIS PROGRAM IS DESIGNED TO TEST 16 KB, 32 KB & 64 KB            M6A00130
   14  * MEMORY MODULES WITH WORST CASE PATTERNS.                              M6A00140
   15  * PART NUMBERS FOR THE MODULES SUPPOARTED ARE:                          M6A00150
   16  *     35-491 FOR 16 KB                                                  M6A00160
   17  *     32-198 FOR 32 KB                                                  M6A00170
   18  *     32-206 FOR 32 KB                                                  M6A00180
   19  *     32-200 FOR 64 KB (1000 NS)                                        M6A00190
   20  *     32-209 FOR 64 KB (750 NS)                                         M6A00200
   21  *                                                                       M6A00210
   22  *                                                                       M6A00220
   23  *         THE 06-157F01 LOADS INTO HIGH CORE AT X'4000' AND CHECKS      M6A00230
   24  * LOW CORE FROM X'0000' THROUGH X'3FFF'.                                M6A00240
   25  *                                                                       M6A00250
   26  * ASSUMPTIONS:                                                          M6A00260
   27  *         IT IS ASSUMED THAT THE FOLLOWING TESTS HAVE BEEN RUN          M6A00270
   28  * WITHOUT DETECTING AN ERROR PRIOR TO LOADING THE 32 BIT SERIES 6A      M6A00280
   29  * MEMORY TEST:                                                          M6A00290
   30  *                                                                       M6A00300
   31  *         SERIES 32 BASIC TEST            06-158                        M6A00310
   32  *                                                                       M6A00320
   33  *         SERIES 32 PROCESSOR TEST                                      M6A00330
   34  *             PART 1                      06-154                        M6A00340
   35  *             PART 2                      06-155                        M6A00350
   36  *             PART 3                      06-178                        M6A00360
   37  *                                                                       M6A00370
   38  *         SERIES 32 MEMORY TEST           06-156                        M6A00380
   39  *                                                                       M6A00390
   40  *     THE FOLLOWING TESTS ARE ALSO APPLICABLE:                          M6A00400
   41  *                                                                       M6A00410
   42  *         TELETYPE BASIC CONFIDENCE TEST 06-004                         M6A00420
   43  *         CRT TEST                       06-146                         M6A00430
   44  *         MEMORY ACCESS CONTROLLER TEST  06-160                         M6A00440
   45  *                                                                       M6A00450
   46  * LOADING PROCEDURE:                                                    M6A00460
   47  *         THE 06-157F01M17 PAPER TAPE IS LOADED USING THE STANDARD      M6A00470
   48  *  '50' SEQUENCE:                                                       M6A00480
   49  *                                                                       M6A00490
   50  *             LOC                 DATA                                  M6A00500
   51  *             X'0050'             X'D500'                               M6A00510
   52  *             X'0052'             X'00CF'                               M6A00520
   53  *             X'0054'             X'4300'                               M6A00530
```

```
 54  *              X'0056'              X'0080'                                      M6A00540
 55  *                                                                               M6A00550
 56  *    TTY      X'0078'              X'0294'                                      M6A00560
 57  *    HSPTR    X'0078'              X'0399'                                      M6A00570
 58  *    HSPTR/P  X'0078'              X'1399'                                      M6A00580
 59  *                                                                               M6A00590
 60  * NORMAL TESTING:                                                               M6A00600
 61  *         A TELETYPE MUST BE ATTACHED AT THE DEVICE ADDRESS X'02'. IF           M6A00610
 62  * THE TELETYPE IS ATTACHED AT A DIFFERENT ADDRESS, CHANGE THE LOCATION          M6A00620
 63  * LABELED "TTYADR" TO THE ACTUAL TELETYPE ADDRESS. IF A CRT ON PASLA            M6A00630
 64  * (FDX ONLY) IS TO BE USED FOR I/O, CHANGE LOCATION LABELED "IO" TO             M6A00640
 65  * X'0101'. PASLA DEVICE ADDRESSES ARE ASSUMED TO BE X'10' (READ SIDE)           M6A00650
 66  * AND X'11' (WRITE SIDE). IF PASLA ADDRESSES ARE DIFFERENT, CHANGE              M6A00660
 67  * LOCATION LABELED "CRTADR" TO THE ACTUAL PASLA ADDRESS.                        M6A00670
 68  *         AFTER STARTING THE PROGRAM EXECUTION AT LOC X'4000', "MAC             M6A00680
 69  * ADDRESS =" IS PRINTED ON THE CONSOLE DEVICE. ENTER THE FIRST                  M6A00690
 70  * ADDRESS ASSIGNED TO THE MEMORY ACCESS CONTROLLER, FOLLOWED BY A               M6A00700
 71  * CARRIAGE RETURN. IF NO MAC IS PRESENT, TYPE A ZERO (0) FOLLOWED               M6A00710
 72  * BY A CARRIAGE RETURN.                                                         M6A00720
 73  *     WHEN "TYPE= " IS PRINTED A VALID TYPE NUMBER MUST BE                       M6A00730
 74  * ENTERED. VALID TYPE NUMBERS ARE:                                             M6A00740
 75  *     0  FOR 16 KB 35-491                                                       M6A00750
 76  *     1  FOR 32 KB 32-198                                                       M6A00760
 77  *     2  FOR 32 KB 32-206                                                       M6A00770
 78  *     3  FOR 64 KB 32-200                                                       M6A00780
 79  *     4  FOR 64 KB 32-209                                                       M6A00790
 80  * THIS IS TO INSURE THAT THE CORRECT WORST CASE PATTERN IS                      M6A00800
 81  * RUN. TO RESET THE TYPE OF WORST CASE THE TEST MUST BE                         M6A00810
 82  * RESTARTED FROM THE STARTING ADDRESS X'4000'.                                  M6A00820
 83  *                                                                               M6A00830
 84  *         WHEN "SUBTEST","*" IS PRINTED, SUBTESTS 1 THROUGH 8 MAY BE            M6A00840
 85  * SELECTED INDIVIDUALLY OR ALL 8 SUBTESTS MAY BE RUN IN SUCESSION              M6A00850
 86  * BY SELECTING SUBTEST 0. ALL ENTRIES ARE TERMINATED WITH A CARRIAGE           M6A00860
 87  * RETURN (CR).                                                                  M6A00870
 88  *         ALL ERROR MESSAGES ARE PRINTED ON THE TELETYPE (OR CRT).             M6A00880
 89  *                                                                               M6A00890
 90  * OPTIONAL TESTING:                                                             M6A00900
 91  *         A SUBTEST MAY BE RUN CONTINUOUSLY BY DEPRESSING THE LETTER           M6A00910
 92  * "L" AFTER SELECTING THE DESIRED SUBTEST. DEPRESS "BREAK" TO HALT             M6A00920
 93  * THE SUBTEST AND RETURN TO THE SUBTEST SELECTION ROUTINE.                     M6A00930
 94  *                                                                               M6A00940
 95  * ERROR PROCEDURES:                                                             M6A00950
 96  *         UPON DETECTING AN ERROR, THE FOLLOWING ERROR MESSAGE IS              M6A00960
 97  * PRINTED ON THE CONSOLE DEVICE:                                                M6A00970
 98  *                                                                               M6A00980
 99  *         TT    XXXXX    YYYYYYYY    ZZZZZZZZ                                   M6A00990
100  *                                                                               M6A01000
101  *         WHERE:                                                                M6A01010
102  *         TT = THE SUBTEST NUMBER THE ERROR OCCURRED IN                         M6A01020
103  *         XXXXX = THE ADDRESS OF THE LOCATION UNDER TEST                        M6A01030
104  *         YYYYYYYY = THE CORRECT DATA EXPECTED                                  M6A01040
105  *         ZZZZZZZZ = THE INCORRECT DATA READ                                    M6A01050
106  *                                                                               M6A01060
107  ***********************************************************************         M6A01070
108  *                                                                               M6A01080
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                                  109  * NOTE:                                                          M6A01090
                                  110  *          BECAUSE OF THE DESTRUCTION OF LOW CORE DATA BY THIS TEST,   M6A01100
                                  111  * ALL OTHER ERRORS AND INTERRUPTS WILL YIELD UNPREDICTABLE RESULTS.    M6A01110
                                  112  *                                                                 M6A01120
        0000 0000                 113  R0        EQU   0                                                 M6A01130
        0000 0001                 114  R1        EQU   1                                                 M6A01140
        0000 0002                 115  R2        EQU   2                                                 M6A01150
        0000 0003                 116  R3        EQU   3                                                 M6A01160
        0000 0004                 117  R4        EQU   4              LOC BEING TESTED                   M6A01170
        0000 0005                 118  R5        EQU   5              *  DATA PATTERN                    M6A01180
        0000 0006                 119  R6        EQU   6              *                                  M6A01190
        0000 0007                 120  R7        EQU   7              *                                  M6A01200
        0000 0008                 121  R8        EQU   8              *                                  M6A01210
        0000 0009                 122  R9        EQU   9              DATA STORED IN LOC                 M6A01220
        0000 000A                 123  R10       EQU   10             DATA READ FROM LOC                 M6A01230
        0000 000B                 124  R11       EQU   11             CONSOLE DEVICE ADDRESS             M6A01240
        0000 000C                 125  R12       EQU   12                                                M6A01250
        0000 000D                 126  R13       EQU   13                                                M6A01260
        0000 000E                 127  RETRN     EQU   14             BAL REGISTER                       M6A01270
        0000 000F                 128  LINK      EQU   15             BAL REGISTER                       M6A01280
        0000 000A                 129  WORK      EQU   10                                                M6A01290
                                  130  *                                                                 M6A01300
                                  131  *                                                                 M6A01310
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0000001                    133              ORG     X'80'                                                            M6A01330
                           134     *                                                                                 M6A01340
                           135     *                                                                                 M6A01350
                           136     *                                                                                 M6A01360
                           137     *   BOOTLOADER WITH CHKSUM                                                        M6A01370
                           138     *                                                                                 M6A01380
000080                     139              ORG     X'80'                                                            M6A01390
                           140     *                                                                                 M6A01400
000080   2421              141              LIS     R2,1                                                             M6A01410
000082   2303              142              BS      BOOT                                                             M6A01420
000084   4BC0              143              DC      Z(PSWSAVE)           CURRENT PSW SAVE POINTER(32-BIT M/C)         M6A01430
000086   4BDC              144              DC      Z(RSAVE)             REGISTER SAVE POINTER(32-BIT M/C)            M6A01440
000088   C810 4000         145     BOOT     LHI     R1,ORIGIN1           R1 = ADR( FIRST BYTE OF TEST PROG )          M6A01450
00008C   C830 4BC1         146              LHI     R3,LNZB+1                                                        M6A01460
000090   4030 0022         147              STH     R3,X'22'                                                        M6A01470
000094   2731              148              SIS     R3,1                 R3 = ADR( LAST NON-ZERO BYTE )              M6A01480
000096   C860 0000         149     MN       LHI     R6,0                 R6 = CHKSUM BYTE = X'MN'                    M6A01490
00009A   D340 0078         150              LB      R4,X'78'             INPUT DEV ADR                               M6A01500
00009E   DE40 0079         151              OC      R4,X'79'                                                        M6A01510
0000A2   9D45              152     LEADER   SSR     R4,R5                                                            M6A01520
0000A4   2091              153              BTBS    9,1                  DU,BSY                                      M6A01530
0000A6   9B45              154              RDR     R4,R5                                                            M6A01540
0000A8   0855              155              LDAR    R5,R5                                                            M6A01550
0000AA   2234              156              BZS     LEADER               IGNORE LEADER                               M6A01560
0000AC   D251 0000         157     LOAD     STB     R5,0(R1)             STORE 1ST NON-ZERO & SUBSEQUENT BYTE        M6A01570
0000B0   D351 0000         158              LB      R5,0(R1)             FETCH BYTE AS STORRED                       M6A01580
0000B4   0765              159              XAR     R6,R5                GENERATE CHKSUM                             M6A01590
0000B6   9481              160              EXBR    R8,R1                                                            M6A01600
0000B8   9828              161              WHR     R2,R8                DISPLAY ADDRESS BEING LOADED                M6A01610
0000BA   9D45              162              SSR     R4,R5                                                            M6A01620
0000BC   2091              163              BTBS    9,1                  DU,BSY                                      M6A01630
0000BE   9B45              164              RDR     R4,R5                                                            M6A01640
0000C0   C110 00AC         165              BXLE    R1,LOAD              LOAD TILL LAST BYTE                         M6A01650
0000C4   9466              166              EXBR    R6,R6                                                            M6A01660
0000C6   9826              167              WHR     R2,R6                DISPLAY FINAL CHKSUM                        M6A01670
0000C8   2478              168     LDWT     LIS     R7,8                                                             M6A01680
0000CA   917C              169              SLHLS   R7,12                                                            M6A01690
0000CC   9557              170              EPSR    R5,R7                PSW = X'8000' (HALT)                        M6A01700
0000CE   2203              171              BS      LDWT                 HALT !                                      M6A01710
                           172     *                                                                                 M6A01720
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                                   174  *                                                                        M6A01740
                                   175  *                                                                        M6A01750
000000                             176            ORG    X'4000'                                                 M6A01760
                                   177  *                                                                        M6A01770
                                   178  *                                                                        M6A01780
004000    4300 8012 =004016        179  ORIGIN1  B      START              GO TO START OF TEST PROGRAM           M6A01790
                                   180  *                                                                        M6A01800
                                   181  *                                                                        M6A01810
004004    4300 80C6 =0040CE        182           B      ENABLE1            ENTRY HERE WILL ALLOW TYPE NUMBER TO  M6A01820
                                   183  *                                   BE SELECTED WITHOUT REESTABLISHING   M6A01630
                                   184  *                                   THE MAC ADDRESS*******               M6A01840
004008    4300 806C =004078        185           B      ENBMAC             ENTRY HERE ALLOWS NEW MAC ADDRESS     M6A01850
                                   186  *                                   WITHOUT LOW CORE SETUP****           M6A01860
00400C    4300 8006 =004016        187           B      START                                                   M6A01870
                                   188  *************************************************************************M6A01880
                                   189  *                                                                        M6A01890
004010    0202                     190  IO       DC     X'0202'            CONSOLE DEVICE NUMBER                 M6A01900
004012    1011                     191  CRTADR   DC     X'1011'            PASLA DEVICE ADDRESS                  M6A01910
004014    0202                     192  TTYADR   DC     X'0202'            TTY DEVICE ADDRESS                    M6A01920
                                   193  *                                                                        M6A01930
                                   194  *************************************************************************M6A01940
                                   195  *                                                                        M6A01950
                                   196  *                                                                        M6A01960
004016    C810 00F0                197  START    LHI    R1,X'00F0'         GET PSW FOR REG SET F                 M6A01970
00401A    9501                     198           EPSR   R0,R1              SWITCH TO REG SET F                   M6A01980
                                   199  *                                                                        M6A01990
                                   200  *                                                                        M6A02000
00401C    D300 FFF0 =004010        201  DEVCHK   LB     R0,IO              GET CONSOLE DEVICE NUMBER             M6A02010
004020    C500 0001                202           CLHI   R0,1                                                     M6A02020
004024    233D                     203           BES    CRT                BRANCH IF CRT ON PASLA                M6A02030
004026    7300 8924 =00494E        204  TTY      LHL    R0,READ2                                                 M6A02040
00402A    4000 87B2 =0047E0        205           STH    R0,READ1           SET UP TTY COMMANDS                   M6A02050
00402E    D300 FFE2 =004014        206           LB     R0,TTYADR                                                M6A02060
004032    D200 87A8 =0047DE        207           STB    R0,ADDRESS         SET UP TTY ADDRESS                    M6A02070
004036    0700                     208           XR     R0,R0                                                   M6A02080
004038    4000 8916 =004952        209           STH    R0,CRTFLG          ZERO PASLA FLAG                       M6A02090
00403C    230E                     210           BS     EXECUTE            BRANCH TO PROGRAM                     M6A02100
00403E    7300 890E =004950        211  CRT      LHL    R0,READ3                                                 M6A02110
004042    4000 879A =0047E0        212           STH    R0,READ1           SET UP PASLA COMMANDS                 M6A02120
004046    D300 FFC8 =004012        213           LB     R0,CRTADR                                                M6A02130
00404A    D200 8790 =0047DE        214           STB    R0,ADDRESS         SET UP PASLA ADDRESS                  M6A02140
00404E    DEB0 878D =0047DF        215           OC     R11,PADSET         SET UP PASLA SPEED                    M6A02150
004052    240F                     216           LIS    R0,X'F'                                                 M6A02160
004054    4000 88FA =004952        217           STH    R0,CRTFLG          SET PASLA FLAG                        M6A02170
                                   218  *                                                                        M6A02180
                                   219  *                                                                        M6A02190
          0000 4058                220  EXECUTE  EQU    *                                                        M6A02200
                                   221  *                                                                        M6A02210
                                   222  *                                                                        M6A02220
004058    41F0 85E0 =00463C        223  PRTTITLE BAL    LINK,PRINT         PRINT TITLE                           M6A02230
00405C    47E2                     224           DC     Z(TITLE)           START ADDRESS OF MESSAGE              M6A02240
00405E    4809                     225           DC     Z(ENDOF)           END ADDRESS OF MESSAGE                M6A02250
                                   226  *                                                                        M6A02260
                                   227  *                                                                        M6A02270
004060    41F0 85D8 =00463C        228  TOCS     BAL    LINK,PRINT         PRINT AVAILABLE MEMORY MESSAGE        M6A02280
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004064   480A                     229          DC    Z(MEMSG)          START ADDRESS OF MESSAGE         M6A02290
004066   4827                     230          DC    Z(END)            END ADDRESS OF MESSAGE          M6A02300
004068   2410                     231          LIS   R1,0                                              M6A02310
00406A   5010 88F2 =0049600       232          ST    R1,LOADR          SET LOADR = 0000                M6A02320
00406E   F810 0000 3FFE           233          LI    R1,Y'3FFE'                                        M6A02330
004074   5010 88EC =004964        234          ST    R1,HIADR          SET HIADR = 3FFE                M6A02340
                                  235   *                                                              M6A02350
                                  236   *                                                              M6A02360
004078   41F0 85C0 =00463C        237   ENBMAC BAL   LINK,PRINT        PRINT "MAC ADDRESS = "          M6A02370
00407C   4870                     238          DC    Z(MACMSG)                                         M6A02380
00407E   487F                     239          DC    Z(EOMACMSG)                                       M6A02390
004080   2410                     240          LIS   R1,0              ZERO HOLDING MAC LOC REGISTER   M6A02400
004082   24A0                     241          LIS   WORK,0            CLEAR CHARACTER COUNT REGISTER  M6A02410
004084   41F0 8604 =00468C        242   GOREAD BAL   LINK,READ         READ FROM CONSOLE DEVICE        M6A02420
004088   26A1                     243          AIS   WORK,1            INCREMENT CHARACTER COUNT       M6A02430
00408A   C570 000D                244          CLHI  R7,X'0D'          IS IT A "CR"?                   M6A02440
00408E   4330 801E =0040B0        245          BE    MACGO             YE  SO TE T INPUT               M6A02450
004092   CB70 0030                246          SHI   R7,X'30'          NO TEST FOR ASCII NUMBER        M6A02460
004096   208F                     247          BLS   ENBMAC            INVALID NUMBER SO ASK AGAIN     M6A02470
004098   C570 000A                248          CLHI  R7,X'A'           IS IT LESS THAN "A"?            M6A02480
00409C   4380 FFD8 =004078        249          BNL   ENBMAC            NO,ASK AGAIN                    M6A02490
0040A0   1114                     250          SLLS  R1,4              YES SHIFT AND ADD CHARACTER     M6A02500
0040A2   0A17                     251          AR    R1,R7             TO TEST REGISTER                M6A02510
0040A4   C5A0 0004                252          CLHI  WORK,X'4'         HAVE 3 CHARACTERS BEEN INPUT?   M6A02520
0040A8   4380 FFCC =004078        253          BNL   ENBMAC            NO 4 HAVE BEEN INPUT-ASK AGAIN  M6A02530
0040AC   4280 FFD4 =004084        254          BL    GOREAD            NO GET ONE MORE                 M6A02540
0040B0   0811                     255   MACGO  LR    R1,R1             IS THERE A MAC IN THE SYSTEM ?  M6A02550
0040B2   233C                     256          BZS   MACOK             NO, OK                          M6A02560
0040B4   C510 0300                257          CLHI  R1,X'300'         YES, IS MAC AT X'300' ?         M6A02570
0040B8   2339                     258          BES   MACOK             YES, OK                         M6A02580
0040BA   C510 0500                259          CLHI  R1,X'500'         NO, IS MAC AT X'500' ?          M6A02590
0040BE   2336                     260          BES   MACOK             YES, OK                         M6A02600
0040C0   C510 0900                261          CLHI  R1,X'900'         NO, IS MAC AT X'900' ?          M6A02610
0040C4   2333                     262          BES   MACOK             YES, OK                         M6A02620
0040C6   4300 FFAE =004078        263          B     ENBMAC            NO, RE-ENTER MAC LOC            M6A02630
0040CA   5010 889A =004968        264   MACOK  ST    R1,MACLOC                                         M6A02640
                                  265   *                                                              M6A02650
                                  266   *                                                              M6A02660
0040CE   C810 00F0                267   ENABLE1 LHI  R1,X'00F0'        GET REG SET F PSW               M6A02670
0040D2   9501                     268          EPSR  R0,R1             SWITCH TO REG SET F             M6A02680
0040D4   C810 0020                269          LHI   R1,C' '           CLEAR TYPE NUMBER BY            M6A02690
0040D8   D210 8773 =00484F        270          STB   R1,TYPNO          STORING A BLANK CAHRACTER       M6A02700
0040DC   41F0 855C =00463C        271          BAL   LINK,PRINT        PRINT "TYPE= "                  M6A02710
0040E0   4848                     272          DC    Z(TYPEMSG)                                        M6A02720
0040E2   484F                     273          DC    Z(TYPEND)                                         M6A02730
0040E4   41F0 80A4 =00418C        274   TYPESENS BAL LINK,TYPSENS      GO FIND OUT WHAT TYPE OF CORE MAT M6A02740
0040E8   0711                     275   PRTMSG XR    R1,R1                                             M6A02750
0040EA   D210 886A =004958        276          STB   R1,ERRFLG                                         M6A02760
0040EE   D210 8867 =004959        277          STB   R1,TTYFLG         ZERO TTY FLAG                   M6A02770
0040F2   D210 8864 =00495A        278          STB   R1,CONTFLG        ZERO CONTINUE FLAG              M6A02780
0040F6   41F0 8542 =00463C        279          BAL   LINK,PRINT        PRINT 'SUBTEST'                 M6A02790
0040FA   4880                     280          DC    Z(TSTMSG)         START ADDRESS OF MESSAGE        M6A02800
0040FC   488D                     281          DC    Z(TSTEND)         END ADDRESS OF MESSAGE          M6A02810
0040FE   D370 8857 =004959        282          LB    R7,TTYFLG                                         M6A02820
004102   0877                     283          LR    R7,R7             IS TTY FLAG SET ?               M6A02830
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004104    2335                          284            BZS   PRTMSG1          NO, CONTINUE                          M6A02840
004106·    F810 0000 80F0               285            LI    R1,Y'80F0'       YES, SO GET HALT PSW                  M6A02850
00410C    9501                          286            EPSR  R0,R1            NOW HALT PROCESSOR                    M6A02860
00410E    5010 885A =00496C             287  PRTMSG1   ST    R1,TOTAL         ZERO TOTAL COUNT                      M6A02870
004112    5010 885A =004970             288            ST    R1,TOTALERR      ZERO TOTAL ERROR COUNT                M6A02880
004116    41F0 8572 =00468C             289  SUBGET    BAL   LINK,READ        GET A CHARACTER                       M6A02890
00411A    CB70 0030                     290            SHI   R7,X'30'         IS IT AN ASCII NUMBER?                M6A02900
00411E    4280 8024 =004146             291            BL    READERR          NO SO ASK AGAIN                       M6A02910
004122    C570 0009                     292            CLHI  R7,X'9'          IS IT LESS THAN 9?                    M6A02920
004126    4380 801C =004146             293            BNL   READERR          NO SO ASK AGAIN                       M6A02930
00412A    D270 8829 =004957             294            STB   R7,SUBTST        VALID NUMBER SO SAVE IT               M6A02940
00412E    41F0 855A =00468C             295  LCHK      BAL   LINK,READ        GET ANOTHER CHARACTER                 M6A02950
004132    C570 004C                     296            CLHI  R7,C'L'          IS IT AN "L"?                         M6A02960
004136    2135                          297            BNES  CRCHK            NO IS IT A "CR"?                      M6A02970
004138    2471                          298            LIS   R7,1             YES- SO SET THE                       M6A02980
00413A    D270 881C =00495A             299            STB   R7,CONTFLG       CONTINUE FLAG                         M6A02990
00413E    230A                          300            BS    OKIN             OK SO  RUN THE TEST                   M6A03000
004140    C570 000D                     301  CRCHK     CLHI  R7,X'0D'         IS IT A "CR"?                         M6A03010
004144    2337                          302            BES   OKIN             YES SO RUN                            M6A03020
004146    41F0 84F2 =00463C             303  READERR   BAL   LINK,PRINT       PRINT THE ERRONEOUS                   M6A03030
00414A    4850                          304            DC    Z(QUEST)         INPUT                                 M6A03040
00414C    4857                          305            DC    Z(QUEND)         MESSAGE                               M6A03050
00414E    4300 FFC4 =004116             306            B     SUBGET           TRY AGAIN                             M6A03060
004152    41F0 84E6 =00463C             307  OKIN      BAL   LINK,PRINT       PRINT A "LF"                          M6A03070
004156    4827                          308            DC    Z(END)                                                 M6A03080
004158    4827                          309            DC    Z(END)                                                 M6A03090
00415A    D210 87F8 =004956             310  SELTST    STB   R1,TSTFLG        ZERO TEST FLAG                        M6A03100
00415E    D310 87F5 =004957             311  SUBSEL    LB    R1,SUBTST        LOAD R1 WITH SUBTEST SELECTED         M6A03110
004162    1111                          312            SLLS  R1,1             GENERATE CORRECT INDEX VALUE          M6A03120
004164    73E1 8012 =00417A             313            LHL   RETRN,SUB(R1)    LOAD ADDRS OF SUBTEST                 M6A03130
004168    50E0 888C =0049F8             314            ST    RETRN,REGSAV1E   SAVE BRANCH ADDRESS                   M6A03140
00416C    5040 8860 =0049D0             315            ST    R4,REGSAV14      SAVE TESTING LOC.                     M6A03150
004170    D000 880C =004980             316            STM   R0,REGSAV00      SAVE WORKING REGISTERS                M6A03160
004174    D100 8848 =0049C0             317            LM    R0,REGSAV10      PICKUP TESTING REGISTERS              M6A03170
004178    030E                          318            BR    RETRN            BRANCH TO SUBTEST SELECTED            M6A03180
00417A    42D4                          319  SUB       DC    Z(SUB0)                                                M6A03190
00417C    42DE                          320            DC    Z(SUB1)                                                M6A03200
00417E    4306                          321            DC    Z(SUB2)                                                M6A03210
004180    4332                          322            DC    Z(SUB3)                                                M6A03220
004182    435E                          323            DC    Z(SUB4)                                                M6A03230
004184    438A                          324            DC    Z(SUB5)                                                M6A03240
004186    43B6                          325            DC    Z(SUB6)                                                M6A03250
004188    43E2                          326            DC    Z(SUB7)                                                M6A03260
00418A    440E                          327            DC    Z(SUB8)                                                M6A03270
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                               329  *                                                            M6A03290
                               330  **************************************************            M6A03300
                               331  *    "TYPSENS" IS CALLED TO DETERMINE WHICH *                 M6A03310
                               332  *TYPE OF CORE MAT IS BEING TESTED:            *               M6A03320
                               333  *           -TYPE=0 FOR 35-491 (16 KB)        *               M6A03330
                               334  *           -TYPE=1 FOR 32-198 (32 KB 750NS)  *               M6A03340
                               335  *                          (32 KB 1000NS)     *               M6A03350
                               336  *           -TYPE=2 FOR 32-206 (32 KB 750NS)  *               M6A03360
                               337  *                          (32 KB 1000NS)     *               M6A03370
                               338  *           -TYPE=3 FOR 32-200 (64 KB 1000NS) *               M6A03380
                               339  *           -TYPE=4 FOR 32-209 (64 KB 750NS)  *               M6A03390
                               340  *ONCE THE CORRECT TYPE NUMBER HAS BEEN        *               M6A03400
                               341  *ENTERER THIS MODULE THEN SETS UP THE COR- *                 M6A03410
                               342  *RESPONDING WORST CASE PATTERN-IF REQUIRED.*                 M6A03420
                               343  * IT THEN RETURNS AND IS READY TO RUN THE   *                 M6A03430
                               344  *SUBTESTS.                                    *               M6A03440
                               345  **************************************************            M6A03450
00418C   08EF                  346  TYPSENS LR      RETRN,LINK          SAVE RETURN ADDRESS        M6A03460
00418E   41F0 84FA =00468C     347  TYPEGET BAL     LINK,READ           GET A CHARACTER FROM CONSOLE M6A03470
004192   C570 0030             348          CLHI    R7,C'0'             TYPE=0? (35-491)           M6A03480
004196   4330 802C =0041C6     349          BE      TYPSET0             YES,SET TYPEFLAG=0         M6A03490
00419A   C570 0031             350          CLHI    R7,C'1'             TYPE=1? (32-198)           M6A03500
00419E   4330 8032 =0041D4     351          BE      TYPSET1             YES,SET TYPEFLAG=1         M6A03510
0041A2   C570 0032             352          CLHI    R7,C'2'             TYPE=2? (32-206)           M6A03520
0041A6   4330 8038 =0041E2     353          BE      TYPSET2             YES,SET TYPEFLAG=2         M6A03530
0041AA   C570 0033             354          CLHI    R7,C'3'             TYPE=3? (32-200)           M6A03540
0041AE   4330 803E =0041F0     355          BE      TYPSET3             YES,SET TYPEFLAG=3         M6A03550
0041B2   C570 0034             356          CLHI    R7,C'4'             TYPE=4? (32-209)           M6A03560
0041B6   4330 8056 =004210     357          BE      TYPSET4             YES,SET TYPEFLAG=4         M6A03570
0041BA   41F0 847E =00463C     358          BAL     LINK,PRINT          INVALID TYPE NUMBER        M6A03580
0041BE   4898                  359          DC      Z(PARNOMSG)         PRINT VALID TYPE NUMBERS AND M6A03590
0041C0   494B                  360          DC      Z(PARNOEND)         CORRESPONDING PART NUMBERS. M6A03600
0041C2   4300 FFC8 =00418E     361          B       TYPEGET             LOOK FOR CORRECT TYPE NUMBER AGAIN M6A03610
0041C6   D270 8685 =00484F     362  TYPSET0 STB     R7,TYPNO            PUT TYPE NUMBER IN MESSAGE M6A03620
0041CA   C870 4534             363          LHI     R7,START0           GET START0 ADDRESS         M6A03630
0041CE   4070 87A6 =004978     364          STH     R7,TYPSTRT          SAVE START0 ADDRESS FOR TESTING M6A03640
0041D2   030E                  365          BR      RETRN               TYPE IS SET,RETURN TO SUBTEST INIT. M6A03650
0041D4   D270 8677 =00484F     366  TYPSET1 STB     R7,TYPNO            PUT TYPE NUMBER IN MESSAGE M6A03660
0041D8   C870 443A             367          LHI     R7,START1           GET START1 ADDRESS FOR TESTING M6A03670
0041DC   4070 8798 =004978     368          STH     R7,TYPSTRT          SAVE IT.                   M6A03680
0041E0   030E                  369          BR      RETRN               TYPE IS SET,RETURN TO SUBTEST INIT. M6A03690
0041E2   D270 8669 =00484F     370  TYPSET2 STB     R7,TYPNO            PUT TYPE NUMBER IN MESSAGE M6A03700
0041E6   C870 443A             371          LHI     R7,START2           GET START2 ADDRESS         M6A03710
0041EA   4070 878A =004978     372          STH     R7,TYPSTRT          SAVE START2 ADDRESS FOR TESTING M6A03720
0041EE   030E                  373          BR      RETRN               TYPE IS SET,RETURN TO SUBTEST INIT. M6A03730
0041F0   D270 865B =00484F     374  TYPSET3 STB     R7,TYPNO            PUT TYPE NUMBER IN MESSAGE M6A03740
0041F4   C870 443A             375          LHI     R7,START3           GET START3 ADDRESS         M6A03750
0041F8   4070 877C =004978     376          STH     R7,TYPSTRT          SAVE START3 ADDRESS FOR TESTING M6A03760
0041FC   C8A0 0210             377          LHI     WORK,X'0210'                                   M6A03770
004200   40A0 85D6 =0047DA     378          STH     WORK,PAT3           PAT3&PAT4 ARE USED FOR     M6A03780
004204   F8A0 0000 8400        379          LI      WORK,Y'8400'        THE WORST CASE PATTERN GENERATION M6A03790
00420A   40A0 85CE =0047DC     380          STH     WORK,PAT4           FOR ALL DIFFERENT CORE MATS M6A03800
00420E   030E                  381          BR      RETRN               TYPE&PAT ARE SET,SO RETURN M6A03810
004210   D270 863B =00484F     382  TYPSET4 STB     R7,TYPNO                                       M6A03820
004214   C870 443A             383          LHI     R7,START4                                      M6A03830
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004218  4070 875C =004978   384        STH    R7,TYPSTRT                                                         M6A03840
00421C  C8A0 0012           385        LHI    WORK,X'0012'                                                       M6A03850
004220  40A0 85B6 =0047DA   386        STH    WORK,PAT3                                                          M6A03860
004224  C8A0 4400           387        LHI    WORK,X'4400'                                                       M6A03870
004228  40A0 85B0 =0047DC   388        STH    WORK,PAT4                                                          M6A03880
00422C  030E                389        BR     RETRN            TYPE&PAT ARE SET,SO RETURN                        M6A03890
                            390        ****************************************************************************   M6A03900
                            391 *                                                                                M6A03910
00422E  41E0 846A =00469C   392 SUBCHK BAL    RETRN,TESTBRK    IS IT BREAK?                                      M6A03920
004232  D310 8722 =004958   393        LB     R1,ERRFLG                                                          M6A03930
004236  0811                394        LR     R1,R1            IS ERROR FLAG SET ?                               M6A03940
004238  2139                395        BNZS   TSTSEL           YES, CHECK FOR NEXT SUBTEST                       M6A03950
00423A  D310 871C =00495A   396        LB     R1,CONTFLG       IS CONTINUE FLAG SET ?                            M6A03960
00423E  0811                397        LR     R1,R1                                                              M6A03970
004240  2135                398        BNZS   TSTSEL           YES, CHECK FOR NEXT SUBTEST                       M6A03980
004242  41F0 83F6 =00463C   399        BAL    LINK,PRINT       NO, PRINT 'NO ERROR'                              M6A03990
004246  488E                400        DC     Z(NOERR)         START ADDRESS OF MESSAGE                          M6A04000
004248  4897                401        DC     Z(ERREND)        END ADDRESS OF MESSAGE                            M6A04010
00424A  0711                402 TSTSEL XR     R1,R1            ZERO REGISTER R1                                  M6A04020
00424C  D210 8708 =004958   403        STB    R1,ERRFLG        ZERO ERROR FLAG                                   M6A04030
004250  D330 8703 =004957   404        LB     R3,SUBTST        LOAD R3 WITH CURRENT SUBTEST                      M6A04040
004254  D310 86FE =004956   405        LB     R1,TSTFLG        LOAD R1 WITH TEST FLAG                            M6A04050
004258  0811                406        LR     R1,R1            IS TEST FLAG SET ?                                M6A04060
00425A  233A                407        BZS    SWTST            NO, READ DISPLAY SWITCH                           M6A04070
00425C  2631                408        AIS    R3,1             YES, INCREMENT SUBTEST NUMBER                     M6A04080
00425E  C530 0009           409        CLHI   R3,X'9'          HAVE ALL SUBTESTS BEEN RUN ?                      M6A04090
004262  2385                410        BNLS   STOP             YES, CHECK SWITCH 15                              M6A04100
004264  D230 86EF =004957   411 STRBYT STB    R3,SUBTST        NO, STORE SUBTEST TO BE EXECUTED NEXT             M6A04110
004268  4300 FEF2 =00415E   412        B      SUBSEL           SELECT ADDRESS OF SUBTEST                         M6A04120
00426C  2431                413 STOP   LIS    R3,1             START WITH SUBTEST ONE                            M6A04130
00426E  2411                414 SWTST  LIS    R1,1             LOAD R1 WITH DISPLAY PANEL ADRS                   M6A04140
004270  5110 86F8 =00496C   415        AM     R1,TOTAL         INCREMENT TOTAL COUNT                             M6A04150
004274  5840 86F4 =00496C   416        L      R4,TOTAL                                                           M6A04160
004278  41E0 839C =004618   417        BAL    RETRN,WRITE2     WRITE TOTAL ON DISPLAY                            M6A04170
00427C  41E0 841C =00469C   418        BAL    RETRN,TESTBRK    IS IT BREAK?                                      M6A04180
004280  D320 86D6 =00495A   419        LB     R2,CONTFLG                                                         M6A04190
004284  0822                420        LR     R2,R2            IS CONTINUE FLAG SET ?                             M6A04200
004286  2333                421        BZS    SENSE4           NO, BRANCH                                        M6A04210
004288  4300 FFD8 =004264   422        B      STRBYT           YES-SO REPEAT TEST                                M6A04220
00428C  9DBA                423 SENSE4 SSR    R11,R10          SENSE TTY STATUS                                  M6A04230
00428E  4210 FFD2 =004264   424        BM     STRBYT           BRANCH IF DU                                      M6A04240
004292  C4A0 000C           425        NHI    R10,X'0C'        MASK PASLA STATUS(EXAMINE&BSY)                    M6A04250
004296  C5A0 000C           426        CLHI   R10,X'0C'        IS IT PASLA DU?                                   M6A04260
00429A  4330 FFC6 =004264   427        BE     STRBYT           YES PASLA DU SO REPEAT TEST                       M6A04270
00429E  D3A0 86B7 =004959   428 TTYCHK LB     R10,TTYFLG                                                         M6A04280
0042A2  08AA                429        LR     R10,R10          HAS TTY BEEN TURNED OFF                           M6A04290
0042A4  4330 FE40 =0040E8   430        BZ     PRTMSG           NO, PRINT 'SUBTEST'                               M6A04300
0042A8  5890 86C0 =00496C   431 PRTTOT L      R9,TOTAL                                                           M6A04310
0042AC  41F0 841E =0046CE   432        BAL    LINK,CONVERT     YES, PRINT TOTAL & TOTAL ERROR                    M6A04320
0042B0  001C                433        DC     X'1C'            SHIFT INDEX                                       M6A04330
0042B2  4858                434        DC     Z(TOTALMSG)      STORE INDEX                                       M6A04340
0042B4  41F0 8384 =00463C   435        BAL    LINK,PRINT       PRINT TOTAL COUNT                                 M6A04350
0042B8  4858                436        DC     Z(TOTALMSG)      START ADDRESS OF MESSAGE                          M6A04360
0042BA  4867                437        DC     Z(TOTALEND)      END OF MESSAGE                                    M6A04370
0042BC  5890 86B0 =004970   438        L      R9,TOTALERR                                                        M6A04380
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0042C0    41F0 840A =0046CE    439            BAL    LINK,CONVERT       CONVERT TO ASCII CHARACTERS        M6A04390
0042C4    001C                 440            DC     X'1C'              SHIFT INDEX                        M6A04400
0042C6    4858                 441            DC     Z(TOTALMSG)        STORE INDEX                        M6A04410
0042C8    41F0 8370 =00463C    442            BAL    LINK,PRINT         PRINT TOTAL ERROR COUNT            M6A04420
0042CC    4858                 443            DC     Z(TOTALMSG)        START ADDRESS OF MESSAGE           M6A04430
0042CE    486F                 444            DC     Z(ERROREND)        END ADDRESS OF MESSAGE             M6A04440
0042D0    4300 FE14 =0040E8    445            B      PRTMSG             PRINT 'SUBTEST'                    M6A04450
                               446    *                                                                   M6A04460
                               447    ************************************************************************   M6A04470
                               448    *                                                                   M6A04480
0042D4    2411                 449 SUB0       LIS    R1,1               LOAD R1 WITH ONE                   M6A04490
0042D6    D210 867C =004956    450            STB    R1,TSTFLG          SET TEST FLAG TO RUN ALL TEST      M6A04500
0042DA    D210 8679 =004957    451            STB    R1,SUBTST          STORE SUBTEST NUMBER               M6A04510
                               452    *                                 START WITH SUBTEST 1               M6A04520
                               453    *                                                                   M6A04530
0042DE    41E0 844A =00472C    454 SUB1       BAL    RETRN,TSTNUM       PRINT TEST NUMBER                  M6A04540
0042E2    2450                 455            LIS    R5,0               R5=R6=R7=R8=0                      M6A04550
0042E4    0865                 456            LR     R6,R5                                                 M6A04560
0042E6    0875                 457            LR     R7,R5                                                 M6A04570
0042E8    0885                 458            LR     R8,R5                                                 M6A04580
0042EA    73D0 868A =004978    459            LHL    R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN      M6A04590
0042EE    01FD                 460            BALR   LINK,R13           NOW RUN THE CORRECT WORST CASE.    M6A04600
0042F0    2450                 461            LIS    R5,0               R5 = 0                             M6A04610
0042F2    0865                 462            LR     R6,R5              R6 = 0                             M6A04620
0042F4    0875                 463            LR     R7,R5              R7 = 0                             M6A04630
0042F6    F880 0000 FFFF       464            LI     R8,Y'FFFF'         R8 = FFFF                          M6A04640
0042FC    73D0 8678 =004978    465            LHL    R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN      M6A04650
004300    01FD                 466            BALR   LINK,R13           NOW RUN THE CORRECT WORST CASE.    M6A04660
004302    4300 FF28 =00422E    467            B      SUBCHK                                                M6A04670


004306    41E0 8422 =00472C    469 SUB2       BAL    RETRN,TSTNUM       PRINT TEST NUMBER                  M6A04690
00430A    F870 0000 FFFF       470            LI     R7,Y'FFFF'         R5=R6=0, R7 = FFFF                 M6A04700
004310    2480                 471            LIS    R8,0               R8=0                               M6A04710
004312    0868                 472            LR     R6,R8                                                 M6A04720
004314    0858                 473            LR     R5,R8                                                 M6A04730
004316    73D0 865E =004978    474            LHL    R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN      M6A04740
00431A    01FD                 475            BALR   LINK,R13           NOW RUN THE CORRECT WORST CASE.    M6A04750
00431C    F880 0000 FFFF       476            LI     R8,Y'FFFF'         R8=FFFF, R5=R6=0,R7=FFFF           M6A04760
004322    0878                 477            LR     R7,R8                                                 M6A04770
004324    2450                 478            LIS    R5,0                                                  M6A04780
004326    0865                 479            LR     R6,R5                                                 M6A04790
004328    73D0 864C =004978    480            LHL    R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN      M6A04800
00432C    01FD                 481            BALR   LINK,R13           NOW RUN THE CORRECT WORST CASE.    M6A04810
00432E    4300 FEFC =00422E    482            B      SUBCHK                                                M6A04820


004332    41E0 83F6 =00472C    484 SUB3       BAL    RETRN,TSTNUM       PRINT TEST NUMBER                  M6A04840
004336    F860 0000 FFFF       485            LI     R6,Y'FFFF'         R6=FFFF ,R5=0                      M6A04850
00433C    2470                 486            LIS    R7,0               R7=0                               M6A04860
00433E    0887                 487            LR     R8,R7              R8=0                               M6A04870
004340    0857                 488            LR     R5,R7                                                 M6A04880
004342    73D0 8632 =004978    489            LHL    R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN      M6A04890
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004346   01FD                      490          BALR   LINK,R13              NOW RUN THE CORRECT WORST CASE.           M6A04900
004348   F880 0000 FFFF            491          LI     R8,Y'FFFF'            R8=FFFF,R5=0,R6=FFFF,R7=0                 M6A04910
00434E   0868                      492          LR     R6,R8                                                          M6A04920
004350   2450                      493          LIS    R5,0                                                           M6A04930
004352   0875                      494          LR     R7,R5                                                          M6A04940
004354   73D0 8620 =004978         495          LHL    R13,TYPSTRT          GET ADRS OF WC TEST TO BE RUN             M6A04950
004358   01FD                      496          BALR   LINK,R13             NOW RUN THE CORRECT WORST CASE.           M6A04960
00435A   4300 FED0 =00422E         497          B      SUBCHK                                                         M6A04970


00435E   41E0 83CA =00472C         499   SUB4   BAL    RETRN,TSTNUM         PRINT TEST NUMBER                         M6A04990
004362   F870 0000 FFFF            500          LI     R7,Y'FFFF'           R7=FFFF, R5=0 ,R6=FFFF                    M6A05000
004368   0867                      501          LR     R6,R7                                                          M6A05010
00436A   2450                      502          LIS    R5,0                                                           M6A05020
00436C   0885                      503          LR     R8,R5                R8=0                                      M6A05030
00436E   73D0 8606 =004978         504          LHL    R13,TYPSTRT          GET ADRS OF WC TEST TO BE RUN             M6A05040
004372   01FD                      505          BALR   LINK,R13             NOW RUN THE CORRECT WORST CASE.           M6A05050
004374   F880 0000 FFFF            506          LI     R8,Y'FFFF'           R8=FFFF,R5=0,R6=FFFF,R7=FFFF              M6A05060
00437A   0868                      507          LR     R6,R8                                                          M6A05070
00437C   0878                      508          LR     R7,R8                                                          M6A05080
00437E   2450                      509          LIS    R5,0                                                          M6A05090
004380   73D0 85F4 =004978         510          LHL    R13,TYPSTRT          GET ADRS OF WC TEST TO BE RUN             M6A05100
004384   01FD                      511          BALR   LINK,R13             NOW RUN THE CORRECT WORST CASE.           M6A05110
004386   4300 FEA4 =00422E         512          B      SUBCHK                                                         M6A05120


00438A   41E0 839E =00472C         514   SUB5   BAL    RETRN,TSTNUM         PRINT TEST NUMBER                         M6A05140
00438E   F850 0000 FFFF            515          LI     R5,Y'FFFF'           5=FFFF                                    M6A05150
004394   2460                      516          LIS    R6,0                 R6=0                                      M6A05160
004396   0876                      517          LR     R7,R6                R7=0                                      M6A05170
004398   0886                      518          LR     R8,R6                R8=0                                      M6A05180
00439A   73D0 85DA =004978         519          LHL    R13,TYPSTRT          GET ADRS OF WC TEST TO BE RUN             M6A05190
00439E   01FD                      520          BALR   LINK,R13             NOW RUN THE CORRECT WORST CASE.           M6A05200
0043A0   F880 0000 FFFF            521          LI     R8,Y'FFFF'           R8=FFFF,R5=FFFF,R6=0,R7=0                 M6A05210
0043A6   0858                      522          LR     R5,R8                                                          M6A05220
0043A8   2460                      523          LIS    R6,0                                                          M6A05230
0043AA   0876                      524          LR     R7,R6                                                          M6A05240
0043AC   73D0 85C8 =004978         525          LHL    R13,TYPSTRT          GET ADRS OF WC TEST TO BE RUN             M6A05250
0043B0   01FD                      526          BALR   LINK,R13             NOW RUN THE CORRECT WORST CASE.           M6A05260
0043B2   4300 FE78 =00422E         527          B      SUBCHK                                                         M6A05270


0043B6   41E0 8372 =00472C         529   SUB6   BAL    RETRN,TSTNUM         PRINT TEST NUMBER                         M6A05290
0043BA   F870 0000 FFFF            530          LI     R7,Y'FFFF'           R7=FFFF,R5=FFFF,R6=0                      M6A05300
0043C0   0857                      531          LR     R5,R7                                                          M6A05310
0043C2   2460                      532          LIS    R6,0                                                          M6A05320
0043C4   0886                      533          LR     R8,R6                R8=0                                      M6A05330
0043C6   73D0 85AE =004978         534          LHL    R13,TYPSTRT          GET ADRS OF WC TEST TO BE RUN             M6A05340
0043CA   01FD                      535          BALR   LINK,R13             NOW RUN THE CORRECT WORST CASE.           M6A05350
0043CC   F880 0000 FFFF            536          LI     R8,Y'FFFF'           R8=FFFF,R5=FFFF,R6=0,R7=FFFF              M6A05360
0043D2   0878                      537          LR     R7,R8                                                          M6A05370
0043D4   0858                      538          LR     R5,R8                                                          M6A05380
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004306   2460                      539        LIS   R6,0                                                    M6A05390
004308   73D0 859C =004978         540        LHL   R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN         M6A05400
0043DC   01FD                      541        BALR  LINK,R13           NOW RUN THE CORRECT WORST CASE.       M6A05410
0043DE   4300 FE4C =00422E         542        B     SUBCHK                                                   M6A05420


0043E2   41E0 8346 =00472C         544  SUB7  BAL   RETRN,TSTNUM       PRINT TEST NUMBER                     M6A05440
0043E6   F860 0000 FFFF            545        LI    R6,Y'FFFF'         R6=FFFF,R5=FFFF                       M6A05450
0043EC   0856                      546        LR    R5,R6                                                    M6A05460
0043EE   2470                      547        LIS   R7,0               R7=0                                  M6A05470
0043F0   0887                      548        LR    R8,R7              R8=0                                  M6A05480
0043F2   73D0 8582 =004978         549        LHL   R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN         M6A05490
0043F6   01FD                      550        BALR  LINK,R13           NOW RUN THE CORRECT WORST CASE.       M6A05500
0043F8   F880 0000 FFFF            551        LI    R8,Y'FFFF'         R8=FFFF,R5=R6=FFFF,R7=0               M6A05510
0043FE   0858                      552        LR    R5,R8                                                    M6A05520
004400   0868                      553        LR    R6,R8                                                    M6A05530
004402   2470                      554        LIS   R7,0                                                     M6A05540
004404   73D0 8570 =004978         555        LHL   R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN         M6A05550
004408   01FD                      556        BALR  LINK,R13           NOW RUN THE CORRECT WORST CASE.       M6A05560
00440A   4300 FE20 =00422E         557        B     SUBCHK                                                   M6A05570


00440E   41E0 831A =00472C         559  SUB8  BAL   RETRN,TSTNUM       PRINT TEST NUMBER                     M6A05590
004412   F850 0000 FFFF            560        LI    R5,Y'FFFF'                                               M6A05600
004418   0875                      561        LR    R7,R5                                                    M6A05610
00441A   0865                      562        LR    R6,R5                                                    M6A05620
00441C   2480                      563        LIS   R8,0               R8=0                                  M6A05630
00441E   73D0 8556 =004978         564        LHL   R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN         M6A05640
004422   01FD                      565        BALR  LINK,R13           NOW RUN THE CORRECT WORST CASE.       M6A05650
004424   F850 0000 FFFF            566        LI    R5,Y'FFFF'                                               M6A05660
00442A   0865                      567        LR    R6,R5                                                    M6A05670
00442C   0875                      568        LR    R7,R5                                                    M6A05680
00442E   0885                      569        LR    R8,R5              R5 = R6 = R7 = R8 = FFFF              M6A05690
004430   73D0 8544 =004978         570        LHL   R13,TYPSTRT        GET ADRS OF WC TEST TO BE RUN         M6A05700
004434   01FD                      571        BALR  LINK,R13           NOW RUN THE CORRECT WORST CASE.       M6A05710
004436   4300 FDF4 =00422E         572        B     SUBCHK                                                   M6A05720
                                   573  *                                                                    M6A05730
                                   574  *                                                                    M6A05740
                                   575  *            LOAD THE DATA PATTERN IN ADDRESS SPECIFIED BY R4        M6A05750
                                   576  *            IF PAT3 = 0 & PAT4 = 0 , LOAD R5                        M6A05760
                                   577  *            IF PAT3 = 0 & PAT4 = 1 , LOAD R6                        M6A05770
                                   578  *            IF PAT3 = 1 & PAT4 = 0 , LOAD R7                        M6A05780
                                   579  *            IF PAT3 = 1 & PAT4 = 1 , LOAD R8                        M6A05790
                                   580  *                                                                    M6A05800
         0000 443A                 581  START1  EQU  *                 WORST CASE ALGORITHM FOR 32-198       M6A05810
         0000 443A                 582  START2  EQU  *                 WORST CASE ALGORITHM FOR 32-206       M6A05820
         0000 443A                 583  START3  EQU  *                 WORST CASE ALGORITHM FOR 32-200       M6A05830
         0000 443A                 584  START4  EQU  *                 WORST CASE ALGORITHM FOR 32-209       M6A05840
00443A   40F0 8536 =004974         585  ALGRM1  STH  LINK,NXTST        SAVE NEXT TEST LOC.                   M6A05850
00443E   73B0 8398 =0047DA         586  LODTAQ  LHL  R11,PAT3          PAT3 IN R11                           M6A05860
004442   73C0 8396 =0047DC         587          LHL  R12,PAT4          PAT4 IN R12                           M6A05870
004446   5840 8516 =004960         588          L    R4,LOADR          START LOADING AT LOC IN LOADR         M6A05880
00444A   0804                      589  LODTA0  LR   R0,R4                                                   M6A05890
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00444C   040B                     590            NR    R0,R11       BITS IN PAT3 BOTH 0 ?                   M6A05900
00444E   2334                     591            BZS   BT1ZRO                                               M6A05910
004450   050B                     592            CLR   R0,R11       BITS IN PAT3 BOTH 1 ?                   M6A05920
004452   4230 8016  =00446C       593            BNE   BT1ONE                                               M6A05930
004456   0804                     594   BT1ZRO   LR    R0,R4        EXCLUSIVE OR OF BITS IN PAT3 IS 0       M6A05940
004458   040C                     595            NR    R0,R12       BITS IN PAT4 BOTH 0 ?                   M6A05950
00445A   2134                     596            BNZS  BTOCH2                                               M6A05960
00445C   4054 0000                597   BT00     STH   R5,0(R4)     EXCLUSIVE OR OF BITS IN PAT4 IS 0       M6A05970
004460   2305                     598            BS    LDTA2                                                M6A05980
004462   050C                     599   BTOCH2   CLR   R0,R12       BITS IN PAT4 BOTH 1 ?                   M6A05990
004464   2234                     600            BES   BT00                                                 M6A06000
004466   4064 0000                601   BT01     STH   R6,0(R4)                                             M6A06010
00446A   2306                     602   LDTA2    BS    LDTA3                                                M6A06020
00446C   0804                     603   BT1ONE   LR    R0,R4        EXCLUSIVE OR OF BITS IN PAT3 IS 1       M6A06030
00446E   040C                     604            NR    R0,R12       BITS IN PAT4 BOTH 0 ?                   M6A06040
004470   2134                     605            BNZS  BT1CH2                                               M6A06050
004472   4074 0000                606   BT10     STH   R7,0(R4)     EXCLUSIVE OR OF BITS IN PAT4 IS 0       M6A06060
004476   2305                     607   LDTA3    BS    LOADED                                               M6A06070
004478   050C                     608   BT1CH2   CLR   R0,R12       BITS IN PAT4 BOTH 1 ?                   M6A06080
00447A   2234                     609            BES   BT10                                                 M6A06090
00447C   4084 0000                610   BT11     STH   R8,0(R4)     EXCLUSIVE OR OF BITS IN PAT4 IS 1       M6A06100
004480   2642                     611   LOADED   AIS   R4,2                                                 M6A06110
004482   08E4                     612            LR    RETRN,R4                                             M6A06120
004484   F4E0 0000 FF00           613            NI    RETRN,Y'FF00'    MASK LOC                            M6A06130
00448A   2337                     614            BZS   REVCHK1      IF LOC > '100', BRANCH                  M6A06140
00448C   55E0 84D8  =004968       615            CL    RETRN,MACLOC                                         M6A06150
004490   2134                     616            BNES  REVCHK1      IF LOC NOT = MACLOC, BRANCH             M6A06160
004492   FA40 0000 0100           617            AI    R4,Y'100'    IF LOC = MACLOC, ADD X'100'            M6A06170
004498   58E0 84C8  =004964       618   REVCHK1  L     RETRN,HIADR                                          M6A06180
00449C   05E4                     619            CLR   RETRN,R4                                             M6A06190
00449E   4380 FFA8  =00444A       620            BNL   LODTA0       WHEN R4 > HIADR, DONE                   M6A06200
                                  621   *                                                                  M6A06210
                                  622   *                                                                  M6A06220
0044A2   5840 84BA  =004960       623   CHKDTA   L     R4,LOADR     START CHECKING AT LOC IN LOADR          M6A06230
                                  624   *        LOADS EXPECTED DATA PATTERN IN R9 TO MATCH ADDRESS IN R4   M6A06240
0044A6   0895                     625   CHKDT1   LR    R9,R5        ASSUME PAT3 = 0 , PAT4 = 0             M6A06250
0044A8   0804                     626            LR    R0,R4                                                M6A06260
0044AA   040B                     627            NR    R0,R11                                               M6A06270
0044AC   2333                     628            BZS   DT1ZRO                                               M6A06280
0044AE   050B                     629            CLR   R0,R11                                               M6A06290
0044B0   2138                     630            BNES  DT1ONE                                               M6A06300
0044B2   0804                     631   DT1ZRO   LR    R0,R4        BIT 12 = 0                              M6A06310
0044B4   040C                     632            NR    R0,R12                                               M6A06320
0044B6   2334                     633            BZS   CHKA2        BRANCH IF PAT4 = 0                      M6A06330
0044B8   050C                     634            CLR   R0,R12                                               M6A06340
0044BA   2332                     635            BES   CHKA2        BRANCH IF BIT 34 = 0                    M6A06350
0044BC   0896                     636            LR    R9,R6        PAT4 = 1 SO R9 = R6                    M6A06360
0044BE   2308                     637   CHKA2    BS    CHKDTE                                               M6A06370
0044C0   0897                     638   DT1ONE   LR    R9,R7        PAT3 = 1 ASSUME PAT4 = 0               M6A06380
0044C2   0804                     639            LR    R0,R4        BRING ADDRESS FROM R4 TO R0            M6A06390
0044C4   040C                     640            NR    R0,R12                                               M6A06400
0044C6   2334                     641            BZS   CHKDTE       ASSUMPTION O.K.  R9 = R7               M6A06410
0044C8   050C                     642            CLR   R0,R12                                               M6A06420
0044CA   2332                     643            BES   CHKDTE                                               M6A06430
0044CC   0898                     644            LR    R9,R8        PAT4 = 1 SO R9 = R8                    M6A06440
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            0000 44CE          645  CHKDTE  EQU   *                  R9 = DATA EXPECTED           M6A06450
0044CE      73A4 0000          646          LHL   R10,0(R4)          R10 = DATA READ             M6A06460
0044D2      059A               647          CLR   R9,R10             IF R9 = R10 , NO ERROR      M6A06470
0044D4      2335               648          BES   COMP1              CHECK COMPLE. PATTERN       M6A06480
0044D6      41F0 8278 =004752  649          BAL   LINK,ERROR                                     M6A06490
0044DA      4300 802C =00450A  650          B     CHKDTG                                         M6A06500
0044DE      0809               651  COMP1   LR    R0,R9              STORE R9 TEMPORARILY        M6A06510
0044E0      F790 0000 FFFF     652          XI    R9,Y'FFFF'         R9 = COMPLE. PATTERN        M6A06520
0044E6      4094 0000          653          STH   R9,0(R4)                                       M6A06530
0044EA      73A4 0000          654          LHL   R10,0(R4)          CHECK LOC WITH COMPLE. PATTERN  M6A06540
0044EE      059A               655          CLR   R9,R10                                         M6A06550
0044F0      2334               656          BES   COMP2                                          M6A06560
0044F2      41F0 825C =004752  657          BAL   LINK,ERROR                                     M6A06570
0044F6      230A               658          BS    CHKDTG                                         M6A06580
0044F8      0890               659  COMP2   LR    R9,R0                                          M6A06590
0044FA      4094 0000          660          STH   R9,0(R4)           CHECK LOC WITH ORIGINAL PATTERN  M6A06600
0044FE      73A4 0000          661          LHL   R10,0(R4)                                      M6A06610
004502      059A               662          CLR   R9,R10                                         M6A06620
004504      2333               663          BES   CHKDTG                                         M6A06630
004506      41F0 8248 =004752  664          BAL   LINK,ERROR                                     M6A06640
00450A      41E0 810A =004618  665  CHKDTG  BAL   RETRN,WRITE2       DISPLAY LOC.                M6A06650
00450E      2642               666          AIS   R4,2               INCREMENT LOC               M6A06660
004510      08E4               667          LR    RETRN,R4                                       M6A06670
004512      F4E0 0000 FF00     668          NI    RETRN,Y'FF00'      MASK LOC                    M6A06680
004518      2337               669          BZS   REVCHK2            IF LOC > '100', BRANCH      M6A06690
00451A      55E0 844A =004968  670          CL    RETRN,MACLOC                                   M6A06700
00451E      2134               671          BNES  REVCHK2            IF LOC NOT = MACLOC, BRANCH M6A06710
004520      FA40 0000 0100     672          AI    R4,Y'100'          IF LOC = MACLOC, ADD X'100' M6A06720
004526      58E0 843A =004964  673  REVCHK2 L     RETRN,HIADR                                    M6A06730
00452A      05E4               674          CLR   RETRN,R4                                       M6A06740
00452C      4380 FF76 =0044A6  675          BNL   CHKDT1             WHEN R4 > HIADR , DONE      M6A06750
004530      4300 80DA =00460E  676          B     CHKEND             SEE IF W C IS DONE          M6A06760
                               677  *                                                            M6A06770
                               678  *        LOAD THE DATA PATTERNS INTO ALL OF MEMORY           M6A06780
                               679  *        IF PAT1 = 0 , PAT2 = 0 LOAD R5                      M6A06790
                               680  *        IF PAT1 = 0 , PAT2 = 1 , LOAD R6                    M6A06800
                               681  *        IF PAT1 = 1 , PAT2 = 0 , LOAD R7                    M6A06810
                               682  *        IF PAT1 = 1 , PAT2 = 1 , LOAD R8                    M6A06820
                               683  *                                                            M6A06830
            0000 4534          684  STARTO  EQU   *                  WORST CASE ALGORITHM FOR 35-491  M6A06840
004534      40F0 843C =004974  685  ALGRM2  STH   LINK,NXTST         SAVE NEXT TEST LOC.         M6A06850
004538      73B0 829A =0047D6  686  LODTA1  LHL   R11,PAT1           R11=CONTENTS OF PAT1        M6A06860
00453C      73C0 8298 =0047D8  687          LHL   R12,PAT2           R12=CONTNTS OF PAT2         M6A06870
004540      5840 841C =004960  688          L     R4,LOADR           START LOADING AT LOC IN LOADR  M6A06880
004544      0804               689  LODTA3  LR    R0,R4                                          M6A06890
004546      040B               690          NR    R0,R11             CHECK FOR PAT1 SET          M6A06900
004548      213A               691          BNZS  CHKBT3                                         M6A06910
00454A      0804               692  BT1ZR1  LR    R0,R4                                          M6A06920
00454C      040C               693          NR    R0,R12                                         M6A06930
00454E      2134               694          BNZS  BT011                                          M6A06940
004550      4054 0000          695  BT001   STH   R5,0(R4)           PAT1=0 ,PAT2=0 ,STORE R5    M6A06950
004554      2303               696          BS    LODTA4                                         M6A06960
004556      4064 0000          697  BT011   STH   R6,0(R4)           PAT1=0 ,PAT2=1 ,STORE R6    M6A06970
00455A      2309               698  LODTA4  BS    LOADE1                                         M6A06980
00455C      0804               699  CHKBT3  LR    R0,R4              PAT1=1 ,CHECK FOR PAT2      M6A06990
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00455E    040C              700           NR    R0,R12                                          M6A07000
004560    2134              701           BNZS  BT111                                           M6A07010
004562    4074 0000         702   BT101   STH   R7,0(R4)           PAT1=1 ,PAT2=0 ,STORE R7     M6A07020
004566    2303              703           BS    LOADE1                                          M6A07030
004568    4084 0000         704   BT111   STH   R8,0(R4)           PAT1=1 ,PAT2=1 ,STORE R8     M6A07040
00456C    2642              705   LOADE1  AIS   R4,2                                            M6A07050
00456E    08E4              706           LR    RETRN,R4                                        M6A07060
004570    F4E0 0000 FF00    707           NI    RETRN,Y'FF00'      MASK LOC                     M6A07070
004576    2337              708           BZS   REVCHK3            IF LOC > '100', BRANCH       M6A07080
004578    55E0 83EC =004968 709           CL    RETRN,MACLOC                                    M6A07090
00457C    2134              710           BNES  REVCHK3            IF LOC NOT = MACLOC, BRANCH  M6A07100
00457E    FA40 0000 0100    711           AI    R4,Y'100'          IF LOC = MACLOC, ADD X'100'  M6A07110
004584    58E0 83DC =004964 712   REVCHK3 L     RETRN,HIADR                                     M6A07120
004588    05E4              713           CLR   RETRN,R4                                        M6A07130
00458A    4380 FFB6 =004544 714           BNL   LODTA3             WHEN R4 > HIADR, DONE        M6A07140
                            715   *                                                            M6A07150
                            716   *                                                            M6A07160
00458E    5840 83CE =004960 717   CHKDT2  L     R4,LOADR           START CHECKING AT LOC IN LOADR M6A07170
004592    0895              718   CHKDT3  LR    R9,R5              R9 = R5   SET UP FOR PAT1=PAT2=0 M6A07180
004594    0804              719           LR    R0,R4                                           M6A07190
004596    040B              720           NR    R0,R11             CHECK FOR PAT1               M6A07200
004598    2136              721           BNZS  CHKDT4                                          M6A07210
00459A    0804              722           LR    R0,R4                                           M6A07220
00459C    040C              723           NR    R0,R12             CHECK FOR PAT2               M6A07230
00459E    2332              724           BZS   CHKDB1                                          M6A07240
0045A0    0896              725           LR    R9,R6              PAT1=0,PAT2=1,R9=R6          M6A07250
0045A2    2307              726   CHKDB1  BS    CHKDT6             PAT1 = 0 , PAT2 = 0 , R9 = R5 M6A07260
0045A4    0804              727   CHKDT4  LR    R0,R4              CHECK FOR PAT2 ,PAT1=1       M6A07270
0045A6    040C              728           NR    R0,R12                                          M6A07280
0045A8    2133              729           BNZS  CHKDT5                                          M6A07290
0045AA    0897              730           LR    R9,R7              BIT 1=1 ,PAT2=0, R9=R7       M6A07300
0045AC    2302              731           BS    CHKDT6                                          M6A07310
0045AE    0898              732   CHKDT5  LR    R9,R8                                           M6A07320
          0000 45B0         733   CHKDT6  EQU   *                  R9 = DATA EXPECTED           M6A07330
0045B0    73A4 0000         734           LHL   R10,0(R4)          R10 = DATA READ              M6A07340
0045B4    059A              735           CLR   R9,R10             IF R9 = R10 , NO ERROR       M6A07350
0045B6    2333              736           BES   COMP11             CHECK COMPLE. PATTERN        M6A07360
0045B8    41F0 8196 =004752 737           BAL   LINK,ERROR                                      M6A07370
0045BC    0809              738   COMP11  LR    R0,R9              STORE R9 TEMPORARILY         M6A07380
0045BE    F790 0000 FFFF    739           XI    R9,Y'FFFF'         R9 = COMPLE. PATTERN         M6A07390
0045C4    4094 0000         740           STH   R9,0(R4)                                        M6A07400
0045C8    73A4 0000         741           LHL   R10,0(R4)          CHECK LOC WITH COMPLE. PATTERN M6A07410
0045CC    059A              742           CLR   R9,R10                                          M6A07420
0045CE    2334              743           BES   COMP21                                          M6A07430
0045D0    41F0 817E =004752 744           BAL   LINK,ERROR                                      M6A07440
0045D4    230A              745           BS    CHKDT7                                          M6A07450
0045D6    0890              746   COMP21  LR    R9,R0                                           M6A07460
0045D8    4094 0000         747           STH   R9,0(R4)           CHECK LOC WITH ORIGINAL PATTERN M6A07470
0045DC    73A4 0000         748           LHL   R10,0(R4)                                       M6A07480
0045E0    059A              749           CLR   R9,R10                                          M6A07490
0045E2    2333              750           BES   CHKDT7                                          M6A07500
0045E4    41F0 816A =004752 751           BAL   LINK,ERROR                                      M6A07510
0045E8    41E0 802C =004618 752   CHKDT7  BAL   RETRN,WRITE2       DISPLAY LOC                  M6A07520
0045EC    2642              753           AIS   R4,2               INCREMENT ADDRESS            M6A07530
0045EE    08E4              754           LR    RETRN,R4                                        M6A07540
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0045F0   F4E0 0000 FF00    755          NI    RETRN,Y'FF00'      MASK LOC                              M6A07550
0045F6   2337              756          BZS   REVCHK4            IF LOC > '100', BRANCH                M6A07560
0045F8   55E0 836C =004968 757          CL    RETRN,MACLOC                                             M6A07570
0045FC   2134              758          BNES  REVCHK4            IF LOC NOT = MACLOC, BRANCH           M6A07580
0045FE   FA40 0000 0100    759          AI    R4,Y'100'          IF LOC = MACLOC, ADD X'100'           M6A07590
004604   58E0 835C =004964 760 REVCHK4  L     RETRN,HIADR                                              M6A07600
004608   05E4              761          CLR   RETRN,R4                                                 M6A07610
00460A   4380 FF84 =004592 762          BNL   CHKDT3             WHEN R4 > HIADR , DONE                M6A07620
                           763  *                                                                      M6A07630
                           764  *                                                                      M6A07640
00460E   41F0 80EC =0046FE 765 CHKEND   BAL   LINK,FWR           CHECK FOR BREAK IN CONT. MODE         M6A07650
004612   73E0 835E =004974 766          LHL   RETRN,NXTST                                              M6A07660
004616   030E              767          BR    RETRN              GO TO NEXT TEST                       M6A07670
                           768  *                                                                      M6A07680
                           769  * * * * * * * * * * * * * * * * * * * * * * * * * * * *                 M6A07690
                           770  *                                                *                     M6A07700
                           771  *                 W R I T E 2                    *                     M6A07710
                           772  *                                                *                     M6A07720
                           773  *   THIS ROUTINE WRITES TO THE DISPLAY PANEL (D1-D4)  *                 M6A07730
                           774  *       R4 = THE DATA TO BE WRITTEN               *                     M6A07740
                           775  *       RETRN = THE RETURN ADDRESS REGISTER       *                     M6A07750
                           776  *                                                *                     M6A07760
                           777  * * * * * * * * * * * * * * * * * * * * * * * * * * * *                 M6A07770
                           778  *                                                                      M6A07780
004618   40E0 835A =004976 779 WRITE2   STH   RETRN,RXTURN       SAVE RETURN ADDRESS                   M6A07790
00461C   24E1              780          LIS   RETRN,1            LOAD RETRN WITH DISPLAY ADRS          M6A07800
00461E   DEE0 832B =00494D 781          OC    RETRN,INCRMT       PUT DISPLAY IN INCREMENTAL MODE       M6A07810
004622   08F4              782          LR    LINK,R4            PUT ADRESS IN DISPLAY REG.            M6A07820
004624   94FF              783          EXBR  LINK,LINK          WRITE VALUE ON DISPLAY PANEL          M6A07830
004626   98EF              784          WHR   RETRN,LINK                                               M6A07840
004628   34FF              785          EXHR  LINK,LINK                                                M6A07850
00462A   94FF              786          EXBR  LINK,LINK                                                M6A07860
00462C   98EF              787          WHR   RETRN,LINK                                               M6A07870
00462E   DAE0 8325 =004957 788          WD    RETRN,SUBTST       WRITE SUBTEST NUMBER TO DISPLAY       M6A07880
004632   DEE0 8316 =00494C 789          OC    RETRN,NORM         PUT DISPLAY IN NORMAL MODE            M6A07890
004636   73F0 833C =004976 790          LHL   LINK,RXTURN                                              M6A07900
00463A   030F              791          BR    LINK               RETURN TO SUBTEST                     M6A07910
                           792  *                                                                      M6A07920
                           793  * * * * * * * * * * * * * * * * * * * * * * * * * * * *                 M6A07930
                           794  *                                                *                     M6A07940
                           795  *                 P R I N T                      *                     M6A07950
                           796  *                                                *                     M6A07960
                           797  * THIS ROUTINE PRINTS MESSAGES ON THE CONSOLE DEVICE. *                 M6A07970
                           798  * R12 = THE STARTING ADDRESS OF THE MESSAGE.     *                     M6A07980
                           799  * R13 = THE ENDING ADDRESS OF THE MESSAGE.       *                     M6A07990
                           800  * LINK = THE RETURN ADDRESS.                     *                     M6A08000
                           801  *                                                *                     M6A08010
                           802  * * * * * * * * * * * * * * * * * * * * * * * * * * * *                 M6A08020
                           803  *                                                                      M6A08030
00463C   D3B0 819E =0047DE 804 PRINT    LB    R11,ADDRESS        GET CONSOLE ADDRESS                   M6A08040
004640   9DBA              805          SSR   R11,R10            WHAT'S UP CONSOLE?                    M6A08050
004642   C4A0 000C         806          NHI   R10,X'0C'          MASK PASLA EXAMINE & BUSY             M6A08060
004646   C5A0 000C         807          CLHI  R10,X'0C'          ARE THEY SET?                         M6A08070
00464A   233B              808          BES   PRDU               YUP SO RETURN DU FLAG                 M6A08080
00464C   73A0 8302 =004952 809          LHL   R10,CRTFLG         IS CONSOLE DEVICE ON PASLA ?          M6A08090
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004650   2332                 810          BZS    CMD            NO, CONTINUE                              M6A08100
004652   26B1                 811          AIS    R11,1          YES, MODIFY ADDRESS                       M6A08110
004654   DEB0 8189 =0047E1    812  CMD     OC     R11,WRITE1     PUT IN WRITE MODE                         M6A08120
004658   9DBA                 813  SENSEW  SSR    R11,R10                                                  M6A08130
00465A   2081                 814          BTBS   8,SENSEW       WAIT FOR BUSY TO DROP                     M6A08140
00465C   2112                 815          BMS    PRDU           BRANCH ON  DU                  M6A        M6A08150
00465E   2305                 816          BS     CONT02         NOT DU SO CONTINUE                        M6A08160
004660   D2B0 82F5 =004959    817  PRDU    STB    R11,TTYFLG                                               M6A08170
004664   430F 0004            818          B      4(LINK)        RETURN ON DU                              M6A08180
004668   73CF 0000            819  CONT02  LHL    R12,0(LINK)    LOAD START ADDRESS OF MESSAGE             M6A08190
00466C   73DF 0002            820          LHL    R13,2(LINK)    LOAD END ADDRESS OF MESSAGE               M6A08200
004670   96BC                 821          WBR    R11,R12        WRITE MESSAGE TO CONSOLE DEVICE           M6A08210
004672   9DBA                 822          SSR    R11,R10                                                  M6A08220
004674   2081                 823          BTBS   8,1            WAIT FOR BUSY TO DROP                     M6A08230
004676   73A0 82D8 =004952    824          LHL    R10,CRTFLG     IS CONSOLE DEVICE ON PASLA ?              M6A08240
00467A   433F 0004            825          BZ     4(LINK)        NO, RETURN                                M6A08250
00467E   07AA                 826          XR     R10,R10                                                  M6A08260
004680   9ABA                 827          WDR    R11,R10        YES, WRITE A NULL CHAR.                   M6A08270
004682   9DBA                 828          SSR    R11,R10                                                  M6A08280
004684   2081                 829          BTBS   8,1            WAIT FOR BUSY TO DROP                     M6A08290
004686   27B1                 830          SIS    R11,1          RESTORE CONSOLE DEVICE ADDRESS            M6A08300
004688   430F 0004            831          B      4(LINK)        RETURN                                    M6A08310
                              832   *                                                                     M6A08320
                              833   * * * * * * * * * * * * * * * * * * * * * * * * * *                   M6A08330
                              834   *                                             *                       M6A08340
                              835   *                     R E A D                 *                       M6A08350
                              836   *                          .                  *                       M6A08360
                              837   * THIS ROUTINE READS ASCII CHARACTERS FROM THE TTY   *               M6A08370
                              838   * OR THE CONSOLE. IT ALSO STRIPS OFF THE PARITY BIT. *               M6A08380
                              839   * IT THEN RETURNS  ON LINK.                    *                      M6A08390
                              840   * R11 = THE TTY ADDRESS.                       *                      M6A08400
                              841   * R7 = THE HEX VALUE OF THE CHARACTER READ.    *                      M6A08410
                              842   *                                             *                       M6A08420
                              843   * * * * * * * * * * * * * * * * * * * * * * * * * *                   M6A08430
                              844   *                                                                     M6A08440
00468C   DEB0 8150 =0047E0    845  READ    OC     R11,READ1      READ=DISABLE UNBLOCK READ=X'A4'           M6A08450
004690   9DB7                 846  SENSER  SSR    R11,R7         SENSE CONSOLE STATUS                      M6A08460
004692   2081                 847          BCS    SENSER         BUSY SO SENSE AGAIN                       M6A08470
004694   9BB7                 848          RDR    R11,R7         READ A CHARACTER FROM CONSOLE             M6A08480
004696   C470 007F            849          NHI    R7,X'7F'       MASK OFF PARITY BIT                       M6A08490
00469A   030F                 850          BR     LINK           AND RETURN                                M6A08500
                              851   *********************************************                         M6A08510
                              852   *                                     *                               M6A08520
                              853   *      T E S T   B R E A K            *                               M6A08530
                              854   *                                     *                               M6A08540
                              855   *     CHECKS THE CONSOLE FOR A         *                               M6A08550
                              856   *     BREAK CONDITION..(PASLA OR       *                               M6A08560
                              857   *     CLI). IF NO BREAK KEY IS         *                               M6A08570
                              858   *     PRESSED IT RETURNS ON            *                               M6A08580
                              859   *     "RETRN"...IF BREAK EXISTS        *                               M6A08590
                              860   *     IT GOES TO COMMAND MODE.         *                               M6A08600
                              861   *                                     *                               M6A08610
                              862   *********************************************                         M6A08620
00469C   D3B0 813E =0047DE    863  TESTBRK LB     R11,ADDRESS    GET ADDRESS                               M6A08630
0046A0   9DBA                 864          SSR    R11,R10        WHAT'S UP CONSOLE?                        M6A08640
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0046A2   C3A0 0020              865              THI      R10,X'20'        IS IT BREAK?                          M6A08650
0046A6   033E                   866              BZR      RETRN            NO--RETURN                           M6A08660
0046A8   4820 82A6 =004952      867              LH       R2,CRTFLG        IS IT A PASLA?                       M6A08670
0046AC   4330 8012 =0046C2      868              BZ       CHECKR           NO,TEST IT AGAIN ANYWAY              M6A08680
0046B0   C3A0 0008              869              THI      R10,8            ALREADY ACKNOWLEDGED?                M6A08690
0046B4   023E                   870              BNZR     RETRN            YES RETURN                           M6A08700
0046B6   9BB2                   871              RDR      R11,R2           READ A CHARACTER FROM PASLA          M6A08710
0046B8   9DBA                   872   PASSENS    SSR      R11,R10          WHAT'S UP PAL(SA)?                   M6A08720
0046BA   2281                   873              BFBS     8,PASSENS        OH--YOU'RE BUSY ASK AGAIN?           M6A08730
0046BC   0822                   874              LR       R2,R2            NOT BUSY ANYMORE                     M6A08740
0046BE   023E                   875              BNZR     RETRN            AND GOT A FRAMING ERROR SO RETURN    M6A08750
0046C0   2305                   876              BS       TRUEBRK          GOT A NULL CHAR..VALID PASLA BREAK   M6A08760
0046C2   9DBA                   877   CHECKR     SSR      R11,R10          WHAT'S UP CONSOLE?                   M6A08770
0046C4   C3A0 0020              878              THI      R10,X'20'        IS IT BREAK?                         M6A08780
0046C8   2033                   879              BNZS     CHECKR           YES - WAIT FOR RELEASE OF KEY        M6A08790
0046CA   4300 FA1A =0040E8      880   TRUEBRK    B        PRTMSG           VALID BREAK- GOTO COMMAND MODE       M6A08800
                                881   *                                                                        M6A08810
                                882   *                                                                        M6A08820
                                883   * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *               M6A08830
                                884   *                                             *                          M6A08840
                                885   *                    C O N V E R T            *                          M6A08850
                                886   *                                             *                          M6A08860
                                887   * THE ROUTINE CONVERTS HEX CHARACTERS TO ASCII AND    *                  M6A08870
                                888   * STORES THE IN MEMORY.                        *                         M6A08880
                                889   * R7 = THE SHIFT INDEX (THE NUM OF  BITS IN THE HEX   *                  M6A08890
                                890   *      CHARACTER MINUS 4).                      *                         M6A08900
                                891   * R9 = THE HEX VALUE TO BE CONVERTED.          *                         M6A08910
                                892   * R12 = THE STARTING ADDRESS WHERE THE CHARACTER IS   *                  M6A08920
                                893   *        TO BE STORED.                         *                         M6A08930
                                894   * LINK = THE RETURN ADDRESS.                   *                         M6A08940
                                895   *                                             *                          M6A08950
                                896   * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *               M6A08960
                                897   *                                                                        M6A08970
0046CE   737F 0000              898   CONVERT    LHL      R7,0(LINK)       LOAD SHIFT INDEX                     M6A08980
0046D2   73CF 0002              899              LHL      R12,2(LINK)      LOAD ADRS INDEX                      M6A08990
0046D6   0869                   900   CONVERT1   LR       R6,R9            LOAD VALUE TO BE CONVERTED           M6A09000
0046D8   EC67 0000              901              SRL      R6,0(R7)         SHIFT DIGIT INTO PLACE               M6A09010
0046DC   C460 000F              902              NHI      R6,X'F'          MASK OFF ALL BUT LEAST SIGNIF DIGIT  M6A09020
0046E0   C660 0030              903              OHI      R6,X'30'         CONVERT TO ASCII                     M6A09030
0046E4   C560 003A              904              CLHI     R6,X'3A'         IS CHARACTER A NUMBER                M6A09040
0046E8   2182                   905              BLS      CONT9            YES, CONTINUE ROUTINE                M6A09050
0046EA   2667                   906              AIS      R6,7             NO, CONVERT TO ASCII LETTER          M6A09060
0046EC   D26C 0000              907   CONT9      STB      R6,0(R12)        STORE VALUE IN MESSAGE               M6A09070
0046F0   0877                   908              LR       R7,R7            IS CONVERSION COMPLETE               M6A09080
0046F2   433F 0004              909              BZ       4(LINK)          YES, RETURN TO SUBTEST              M6A09090
0046F6   2774                   910              SIS      R7,4             NO, DECREMENT SHIFT INDEX            M6A09100
0046F8   26C1                   911              AIS      R12,1            INCREMENT STORE INDEX                M6A09110
0046FA   4300 FFD8 =0046D6      912              B        CONVERT1         CONVERT NEXT HEX DIGIT               M6A09120
                                913   *                                                                        M6A09130
                                914   * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *               M6A09140
                                915   *                                             *                          M6A09150
                                916   *                    F W R                    *                          M6A09160
                                917   *                                             *                          M6A09170
                                918   *          DETECT BREAK IN CONTINUOUS MODE    *                          M6A09180
                                919   *                                             *                          M6A09190
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                                   920  *         LINK = THE RETURN ADDRESS                         *        M6A09200
                                   921  *                                                          *        M6A09210
                                   922  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A09220
                                   923  *                                                                   M6A09230
0046FE   D320 8258 =00495A         924  FWR      LB    R2,CONTFLG          IS CONTINUE FLAG SET ?            M6A09240
004702   0822                      925           LR    R2,R2                                                M6A09250
004704   033F                      926           BZR   LINK                NO, RETURN                        M6A09260
004706   D3A0 80D4 =0047DE         927           LB    WORK,ADDRESS                                         M6A09270
00470A   9DA2                      928           SSR   WORK,R2                                              M6A09280
00470C   C320 0020                 929           THI   R2,X'20'            YES, IS "BREAK" DEPRESSED ?       M6A09290
004710   033F                      930           BZR   LINK                NO, RETURN                        M6A09300
004712   7320 823C =004952         931           LHL   R2,CRTFLG           YES, IS CONSOLE DEV ON PASLA ?    M6A09310
004716   4330 800A =004724         932           BZ    TTYSNS              NO, BRANCH                        M6A09320
00471A   DEA0 80C2 =0047E0         933           OC    WORK,READ1          YES, CLEAR CHARACTER              M6A09330
00471E   9BA2                      934           RDR   WORK,R2                                              M6A09340
004720   4300 FB7A =00429E         935           B     TTYCHK             BRANCH                            M6A09350
004724   9DA2                      936  TTYSNS   SSR   WORK,R2             IS CONSOLE DEV IN SYSTEM ?        M6A09360
004726   2041                      937           BTBS  4,1                 NO, WAIT                          M6A09370
004728   4300 FB72 =00429E         938           B     TTYCHK             YES, BRANCH                       M6A09380
                                   939  *                                                                   M6A09390
                                   940  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A09400
                                   941  *                                                          *        M6A09410
                                   942  *                      T S T N U M                         *        M6A09420
                                   943  *                                                          *        M6A09430
                                   944  * THIS ROUTINE STORES THE CURRENT SUBTEST NUMBER IN        *        M6A09440
                                   945  * THE ERROR MESSAGE AND ALSO PRINTS IT ON THE TTY.         *        M6A09450
                                   946  * RETRN = THE RETURN ADDRESS.                              *        M6A09460
                                   947  *                                                          *        M6A09470
                                   948  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A09480
                                   949  *                                                                   M6A09490
00472C   D390 8227 =004957         950  TSTNUM   LB    R9,SUBTST           LOAD CURRENT SUBTEST NUMBER       M6A09500
004730   41F0 FF9A =0046CE         951           BAL   LINK,CONVERT        CONVERT TO ASCII CHARACTERS       M6A09510
004734   0004                      952           DC    X'4'                SHIFT INDEX                       M6A09520
004736   4844                      953           DC    Z(SUBNUM)           STORE INDEX                       M6A09530
004738   7390 8108 =004844         954           LHL   R9,SUBNUM           LOAD ASCII VALUE OF SUBTEST NUMBER M6A09540
00473C   4090 80E8 =004828         955           STH   R9,TT               STORE SUBTEST NUMBER IN ERROR MSG M6A09550
004740   D390 8216 =00495A         956           LB    R9,CONTFLG          IS CONTINUE FLAG SET              M6A09560
004744   0899                      957           LR    R9,R9                                                M6A09570
004746   023E                      958           BNZR  RETRN               YES, RETURN TO SUBTEST            M6A09580
004748   41F0 FEF0 =00463C         959           BAL   LINK,PRINT          NO, PRINT SUBTEST NUMBER          M6A09590
00474C   4844                      960           DC    Z(SUBNUM)           START ADRS OF MESSAGE             M6A09600
00474E   4847                      961           DC    Z(ENDMSG)           END ADRS OF MESSAGE               M6A09610
004750   030E                      962           BR    RETRN               RETURN TO SUBTEST                 M6A09620
                                   963  *                                                                   M6A09630
                                   964  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A09640
                                   965  *                                                          *        M6A09650
                                   966  *                       E R R O R                          *        M6A09660
                                   967  *                                                          *        M6A09670
                                   968  * THIS ROUTINE PRINTS THE FOLLOWING MESSAGE:               *        M6A09680
                                   969  *                                                          *        M6A09690
                                   970  *    TT   XXXXX   YYYYYYYY   ZZZZZZZZ                       *        M6A09700
                                   971  *                                                          *        M6A09710
                                   972  * TT = THE SUBTEST NUMBER THE ERROR OCCURED IN             *        M6A09720
                                   973  * XXXXX = THE ADDRESS OF THE LOCATION UNDER TEST           *        M6A09730
                                   974  * YYYYYYYY = THE CORRECT DATA EXPECTED                     *        M6A09740
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                                975  * ZZZZZZZZ = THE INCORRECT DATA READ                    *        M6A09750
                                976  *                                                        *        M6A09760
                                977  * R4 = MEMORY LOCATION UNDER TEST                        *        M6A09770
                                978  * R9 = EXPECTED DATA                                     *        M6A09780
                                979  * R10= DATA READ                                         *        M6A09790
                                980  * LINK = THE RETURN ADDRESS                              *        M6A09800
                                981  *                                                        *        M6A09810
                                982  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *         M6A09820
                                983  *                                                                M6A09830
004752   D000 826A =0049C0      984  ERROR    STM   R0,REGSAV10        SAVE TEST REGISTERS             M6A09840
004756   D3B0 8084 =0047DE      985           LB    R11,ADDRESS        LOAD CONSOLE DEVICE ADDRESS     M6A09850
00475A   24FF                   986           LIS   LINK,X'F'                                          M6A09860
00475C   D2F0 81F8 =004958      987           STB   LINK,ERRFLG        SET ERROR FLAG                  M6A09870
004760   24F1                   988           LIS   LINK,1                                             M6A09880
004762   51F0 820A =004970      989           AM    LINK,TOTALERR      INCREMENT ERROR COUNT           M6A09890
004766   238D                   990           BNCS  CONT7              CONTINUE UNTIL COUNT = X'FFFFFFFF'  M6A09900
004768   9DBA                   991           SSR   R11,R10            IS TTY DU ?                     M6A09910
00476A   21C2                   992           BTFS  12,QRZ                                             M6A09920
00476C   231A                   993           BNMS  CONT7              NO, CONTINUE WITH ROUTINE       M6A09930
00476E   2541                   994  QRZ      LCS   R4,1                                               M6A09940
004770   5040 81FC =004970      995           ST    R4,TOTALERR                                        M6A09950
004774   41E0 FEA0 =004618      996           BAL   RETRN,WRITE2       YES WRITE Y'FFFFFFFF' ON DISPLAY  M6A09960
004778   F810 0000 80F0         997           LI    R1,Y'80F0'         GET HALT PSW                    M6A09970
00477E   9501                   998           EPSR  R0,R1              HALT PROCESR,TEST HAS AN ERROR  M6A09980
004780   9DBA                   999  CONT7    SSR   R11,R10                                            M6A09990
004782   C3A0 0020              1000          THI   R10,X'20'                                          M6A10000
004786   4230 8032 =0047BC      1001          BNZ   BRKWAIT                                            M6A10010
00478A   5890 8242 =0049D0      1002          L     R9,REGSAV14        LOAD ADRS WHERE ERROR OCCURED   M6A10020
00478E   41F0 FF3C =0046CE      1003          BAL   LINK,CONVERT       CONVERT TO ASCII CHARACTERS     M6A10030
004792   0010                   1004          DC    X'10'              SHIFT INDEX                     M6A10040
004794   482C                   1005          DC    Z(XXXXX)           STORE INDEX                     M6A10050
004796   5890 824A =0049E4      1006          L     R9,REGSAV19        LOAD EXPECTED DATA              M6A10060
00479A   41F0 FF30 =0046CE      1007          BAL   LINK,CONVERT       CONVERT TO ASCII CHARACTERS     M6A10070
00479E   001C                   1008          DC    X'1C'              SHIFT INDEX                     M6A10080
0047A0   4834                   1009          DC    Z(YYYYYYYY)        STORE INDEX                     M6A10090
0047A2   5890 8242 =0049E8      1010          L     R9,REGSAV1A        LOAD DATA READ                  M6A10100
0047A6   41F0 FF24 =0046CE      1011          BAL   LINK,CONVERT       CONVERT TO ASCII CHARACTERS     M6A10110
0047AA   001C                   1012          DC    X'1C'              SHIFT INDEX                     M6A10120
0047AC   483E                   1013          DC    Z(ZZZZZZZZ)        STORE INDEX                     M6A10130
0047AE   41F0 FE8A =00463C      1014  RTN     BAL   LINK,PRINT         PRINT ERROR MESSAGE             M6A10140
0047B2   4828                   1015          DC    Z(TT)              START ADRS OF MESSAGE           M6A10150
0047B4   4847                   1016          DC    Z(ENDMSG)          END ADRS OF MESSAGE             M6A10160
0047B6   D100 8206 =0049C0      1017          LM    R0,REGSAV10        PICK UP TEST REGISTERS          M6A10170
0047BA   030F                   1018          BR    LINK               RETURN TO SUBTEST              M6A10180
0047BC   73E0 8192 =004952      1019  BRKWAIT LHL   RETRN,CRTFLG       IS CONSOLE DEV ON PASLA ?       M6A10190
0047C0   2335                   1020          BZS   BRKWAIT1           NO, BRANCH                      M6A10200
0047C2   DEB0 801A =0047E0      1021          OC    R11,READ1          YES, CLEAR CHARACTER            M6A10210
0047C6   9BBE                   1022          RDR   R11,RETRN                                          M6A10220
0047C8   2303                   1023          BS    RTN5                                               M6A10230
0047CA   9DBA                   1024  BRKWAIT1 SSR  R11,R10            WAIT FOR BUSY TO DROP           M6A10240
0047CC   2041                   1025          BTBS  4,1                                                M6A10250
0047CE   D100 81EE =0049C0      1026  RTN5    LM    R0,REGSAV10        PICK UP TESTING REGISTERS       M6A10260
0047D2   4300 FA58 =00422E      1027          B     SUBCHK             RETURN                          M6A10270
                                1028  ****************************************************************  M6A10280
                                1029  *                                                                M6A10290
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0047D6    0200                1030  PAT1    DC   X'200'                                      M6A10300
0047D8    0010                1031  PAT2    DC   X'10'                                       M6A10310
0047DA    0220                1032  PAT3    DC   X'220'                                      M6A10320
0047DC    0014                1033  PAT4    DC   X'14'                                       M6A10330
0047DE    00                  1034  ADDRESS DB   X'0'         CONSOLE DEV ADDRESS            M6A10340
0047DF    F8                  1035  PADSET  DB   X'F8'        PASLA SETUP COMMAND            M6A10350
0047E0    A498                1036  READ1   DC   X'A498'      CONSOLE DEV COMMANDS           M6A10360
          0000 47E1           1037  WRITE1  EQU  *-1                                         M6A10370
                              1038  *                                                        M6A10380
                              1039  **********************************************************************   M6A10390
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                                  1041  *                                                        M6A10410
                                  1042  * * * * * * * * * * * * * * * * * * * * * * * * * * *     M6A10420
                                  1043  *                                             *          M6A10430
                                  1044  *                 M E S S A G E S             *          M6A10440
                                  1045  *                                             *          M6A10450
                                  1046  * * * * * * * * * * * * * * * * * * * * * * * * * *       M6A10460
                                  1047  *                                                        M6A10470
0047E2  0D0A                      1048  TITLE     DC    X'0D0A',C'32 BIT S6A MEMORY TEST 06-157F01R01',X'0D0A'   M6A10480
0047E4  3332 2042 4954 2053
0047EC  3641 204D 454D 4F52
0047F4  5920 5445 5354 2030
0047FC  362D 3135 3746 3031
004804  5230 3120
004808  0D0A
        0000 4809                 1049  ENDOF     EQU   *-1                                       M6A10490
                                  1050  *                                                        M6A10500
                                  1051  *                                                        M6A10510
00480A  4156 4149 4C41 424C      1052  MEMSG     DC    C'AVAILABLE MEMORY',X'0D0A',C'0000-3FFF',X'0D0A'   M6A10520
004812  4520 4D45 4D4F 5259
00481A  0D0A
00481C  3030 3030 2D33 4646
004824  4620
004826  0D0A
        0000 4827                 1053  END       EQU   *-1                                       M6A10530
                                  1054  *                                                        M6A10540
                                  1055  *                                                        M6A10550
                                  1056  * ERROR MESSAGE    TT  XXXXX  YYYYYYYY  ZZZZZZZZ          M6A10560
                                  1057  *                                                        M6A10570
004828  0000 2020                1058  TT        DC    Y'2020'                                   M6A10580
00482C  0000 0000                1059  XXXXX     DC    Y'0',Y'2020'                              M6A10590
004830  0000 2020
004834  0000 0000                1060  YYYYYYYY  DC    Y'0',Y'0',X'2020'                         M6A10600
004838  0000 0000
00483C  2020
00483E  0000 0000                1061  ZZZZZZZZ  DC    Y'0',X'0'                                 M6A10610
004842  0000
004844  0000 0D0A                1062  SUBNUM    DC    Y'0D0A'                                   M6A10620
        0000 4847                1063  ENDMSG    EQU   *-1                                       M6A10630
                                  1064  *                                                        M6A10640
004848  0D0A                     1065  TYPEMSG   DC    X'0D0A',C'TYPE= '                         M6A10650
00484A  5459 5045 3D20
        0000 484F                1066  TYPEND    EQU   *-1                                       M6A10660
        0000 484F                1067  TYPNO     EQU   TYPEND                                    M6A10670
                                  1068  *                                                        M6A10680
                                  1069  *                                                        M6A10690
004850  0D0A                     1070  QUEST     DC    X'0D0A',C'? '         CR,LF,?,CR,LF        M6A10700
004852  3F20
004854  0D0A                     1071            DC    X'0D0A',C'* '         CR,LF,*              M6A10710
004856  2A20
        0000 4857                1072  QUEND     EQU   *-1                                       M6A10720
                                  1073  *                                                        M6A10730
                                  1074  *                                                        M6A10740
004858  0000 0000                1075  TOTALMSG  DC    0,0,C' TOTAL '                            M6A10750
00485C  0000 0000
004860  2054 4F54 414C 2020
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              0000 4867              1076  TOTALEND EQU   *-1                                          M6A10760
004868        4552 524F 5253         1077           DC    C'ERRORS',X'0D0A'                            M6A10770
00486E        0D0A
              0000 486F              1078  ERROREND EQU   *-1                                          M6A10780
                                     1079  *                                                          M6A10790
                                     1080  *                                                          M6A10800
                                     1081  *                                                          M6A10810
004870        0D0A                   1082  MACMSG   DC    X'0D0A',C'MAC ADDRESS = '                    M6A10820
004872        4D41 4320 4144 4452
00487A        4553 5320 3D20
              0000 487F              1083  EDMACMSG EQU   *-1                                          M6A10830
                                     1084  *                                                          M6A10840
                                     1085  *                                                          M6A10850
004880        0D0A                   1086  TSTMSG   DC    X'0D0A',C'SUBTEST',X'0D0A',C'*'              M6A10860
004882        5355 4254 4553 5420
00488A        0D0A
00488C        2A20
              0000 488D              1087  TSTEND   EQU   *-1                                          M6A10870
                                     1088  *                                                          M6A10880
                                     1089  *                                                          M6A10890
00488E        4E4F 2045 5252 4F52    1090  NOERR    DC    C'NO ERROR',X'0D0A'                          M6A10900
004896        0D0A
              0000 4897              1091  ERREND   EQU   *-1                                          M6A10910
004898        0D0A                   1092  PARNOMSG DC    X'0D0A'                                      M6A10920
00489A        5641 4C49 4420 5459    1093           DC    C'VALID TYPE NUMBERS ARE: ',X'0D0A'          M6A10930
0048A2        5045 204E 554D 4245
0048AA        5253 2041 5245 3A20
0048B2        0D0A
0048B4        2D54 5950 453D 3020    1094           DC    C'-TYPE=0 FOR 35-491 16KB ',X'0D0A'          M6A10940
0048BC        464F 5220 3335 2D34
0048C4        3931 2031 364B 4220
0048CC        0D0A
0048CE        2D54 5950 453D 3120    1095           DC    C'-TYPE=1 FOR 32-198 32KB ',X'0D0A'          M6A10950
0048D6        464F 5220 3332 2D31
0048DE        3938 2033 324B 4220
0048E6        0D0A
0048E8        2D54 5950 453D 3220    1096           DC    C'-TYPE=2 FOR 32-206 32KB ',X'0D0A'          M6A10960
0048F0        464F 5220 3332 2D32
0048F8        3036 2033 324B 4220
004900        0D0A
004902        2D54 5950 453D 3320    1097           DC    C'-TYPE=3 FOR 32-200 64KB(1000 NS)',X'0D0A' M6A10970
00490A        464F 5220 3332 2D32
004912        3030 2036 344B 4228
00491A        3130 3030 204E 5329
004922        0D0A
004924        2D54 5950 453D 3420    1098           DC    C'-TYPE=4 FOR 32-209 64KB(750 NS) ',X'0D0A' M6A10980
00492C        464F 5220 3332 2D32
004934        3039 2036 344B 4228
00493C        3735 3020 4E53 2920
004944        0D0A
004946        5459 5045 3D20         1099           DC    C'TYPE= '                                    M6A10990
              0000 494B              1100  PARNOEND EQU   *-1                                          M6A11000
                                     1101  *                                                          M6A11010
                                     1102  *                                                          M6A11020
                                     1103  *                                                          M6A11030
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                                  1104  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *     M6A11040
                                  1105  *                                                       *     M6A11050
                                  1106  *                  D A T A   C O N S T A N T S          *     M6A11060
                                  1107  *                                                       *     M6A11070
                                  1108  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *     M6A11080
                                  1109  *                                                             M6A11090
                                  1110  *           NOTE: CONSTANTS USED FOR I/O CONTROL              M6A11100
                                  1111  *                                                             M6A11110
00494C    80                      1112  NORM    DB    X'80'                                           M6A11120
00494D    40                      1113  INCRMT  DB    X'40'                                           M6A11130
00494E    A498                    1114  READ2   DC    X'A498'                                         M6A11140
004950    B9AB                    1115  READ3   DC    X'B9AB'                                         M6A11150
004952    0000                    1116  CRTFLG  DC    X'0'                                            M6A11160
004954    0000                    1117          DC    X'0'                                            M6A11170
                                  1118  *                                                             M6A11180
                                  1119  *           NOTE: FLAGS USED IN TEST AND I/O                  M6A11190
                                  1120  *                                                             M6A11200
004956    00                      1121  TSTFLG  DB    0                                               M6A11210
004957    00                      1122  SUBTST  DB    0                                               M6A11220
004958    00                      1123  ERRFLG  DB    0                                               M6A11230
004959    00                      1124  TTYFLG  DB    0                                               M6A11240
00495A    00                      1125  CONTFLG DB    0                                               M6A11250
00495B    00                      1126  TYPEFLG DB    0                                               M6A11260
00495C    0000                    1127          DC    X'0'                                            M6A11270
                                  1128  *                                                             M6A11280
                                  1129  *           NOTE: ADDRESS SAVE LOCATIONS USED IN THIS TEST    M6A11290
                                  1130  *                                                             M6A11300
004960                            1131          ALIGN 4                                               M6A11310
004960    0000 0000               1132  LOADR   DC    0                                               M6A11320
004964    0000 0000               1133  HIADR   DC    0                                               M6A11330
004968    0000 0000               1134  MACLOC  DC    0                                               M6A11340
00496C    0000 0000               1135  TOTAL   DC    0                                               M6A11350
004970    0000 0000               1136  TOTALERR DC   0                                               M6A11360
004974    0000                    1137  NXTST   DC    X'0'                                            M6A11370
004976    0000                    1138  RXTURN  DC    X'0'                                            M6A11380
004978    443A                    1139  TYPSTRT DC    Z(ALGRM1)          STARTING ADDRRESS OF WC TEST M6A11390
                                  1140  *                                                             M6A11400
                                  1141  *           NOTE: EIGHT SIMULATED REGISTER SETS               M6A11410
                                  1142  *                                                             M6A11420
004980                            1143          ALIGN 8                                               M6A11430
004980    0000 0000               1144  REGSAV00 DC   0                                               M6A11440
004984    0000 0000               1145  REGSAV01 DC   0                                               M6A11450
004988    0000 0000               1146  REGSAV02 DC   0                                               M6A11460
00498C    0000 0000               1147  REGSAV03 DC   0                                               M6A11470
004990    0000 0000               1148  REGSAV04 DC   0                                               M6A11480
004994    0000 0000               1149  REGSAV05 DC   0                                               M6A11490
004998    0000 0000               1150  REGSAV06 DC   0                                               M6A11500
00499C    0000 0000               1151  REGSAV07 DC   0                                               M6A11510
0049A0    0000 0000               1152  REGSAV08 DC   0                                               M6A11520
0049A4    0000 0000               1153  REGSAV09 DC   0                                               M6A11530
0049A8    0000 0000               1154  REGSAV0A DC   0                                               M6A11540
0049AC    0000 0000               1155  REGSAV0B DC   0                                               M6A11550
0049B0    0000 0000               1156  REGSAV0C DC   0                                               M6A11560
0049B4    0000 0000               1157  REGSAV0D DC   0                                               M6A11570
0049B8    0000 0000               1158  REGSAV0E DC   0                                               M6A11580
```

```
0049BC    0000 0000      1159    REGSAV0F DC    0                                    M6A11590
0049C0    0000 0000      1160    REGSAV10 DC    0                                    M6A11600
0049C4    0000 0000      1161    REGSAV11 DC    0                                    M6A11610
0049C8    0000 0000      1162    REGSAV12 DC    0                                    M6A11620
0049CC    0000 0000      1163    REGSAV13 DC    0                                    M6A11630
0049D0    0000 0000      1164    REGSAV14 DC    0                                    M6A11640
0049D4    0000 0000      1165    REGSAV15 DC    0                                    M6A11650
0049D8    0000 0000      1166    REGSAV16 DC    0                                    M6A11660
0049DC    0000 0000      1167    REGSAV17 DC    0                                    M6A11670
0049E0    0000 0000      1168    REGSAV18 DC    0                                    M6A11680
0049E4    0000 0000      1169    REGSAV19 DC    0                                    M6A11690
0049E8    0000 0000      1170    REGSAV1A DC    0                                    M6A11700
0049EC    0000 0000      1171    REGSAV1B DC    0                                    M6A11710
0049F0    0000 0000      1172    REGSAV1C DC    0                                    M6A11720
0049F4    0000 0000      1173    REGSAV1D DC    0                                    M6A11730
0049F8    0000 0000      1174    REGSAV1E DC    0                                    M6A11740
0049FC    0000 0000      1175    REGSAV1F DC    0                                    M6A11750
004A00    0000 0000      1176    REGSAV20 DC    0                                    M6A11760
004A04    0000 0000      1177    REGSAV21 DC    0                                    M6A11770
004A08    0000 0000      1178    REGSAV22 DC    0                                    M6A11780
004A0C    0000 0000      1179    REGSAV23 DC    0                                    M6A11790
004A10    0000 0000      1180    REGSAV24 DC    0                                    M6A11800
004A14    0000 0000      1181    REGSAV25 DC    0                                    M6A11810
004A18    0000 0000      1182    REGSAV26 DC    0                                    M6A11820
004A1C    0000 0000      1183    REGSAV27 DC    0                                    M6A11830
004A20    0000 0000      1184    REGSAV28 DC    0                                    M6A11840
004A24    0000 0000      1185    REGSAV29 DC    0                                    M6A11850
004A28    0000 0000      1186    REGSAV2A DC    0                                    M6A11860
004A2C    0000 0000      1187    REGSAV2B DC    0                                    M6A11870
004A30    0000 0000      1188    REGSAV2C DC    0                                    M6A11880
004A34    0000 0000      1189    REGSAV2D DC    0                                    M6A11890
004A38    0000 0000      1190    REGSAV2E DC    0                                    M6A11900
004A3C    0000 0000      1191    REGSAV2F DC    0                                    M6A11910
004A40    0000 0000      1192    REGSAV30 DC    0                                    M6A11920
004A44    0000 0000      1193    REGSAV31 DC    0                                    M6A11930
004A48    0000 0000      1194    REGSAV32 DC    0                                    M6A11940
004A4C    0000 0000      1195    REGSAV33 DC    0                                    M6A11950
004A50    0000 0000      1196    REGSAV34 DC    0                                    M6A11960
004A54    0000 0000      1197    REGSAV35 DC    0                                    M6A11970
004A58    0000 0000      1198    REGSAV36 DC    0                                    M6A11980
004A5C    0000 0000      1199    REGSAV37 DC    0                                    M6A11990
004A60    0000 0000      1200    REGSAV38 DC    0                                    M6A12000
004A64    0000 0000      1201    REGSAV39 DC    0                                    M6A12010
004A68    0000 0000      1202    REGSAV3A DC    0                                    M6A12020
004A6C    0000 0000      1203    REGSAV3B DC    0                                    M6A12030
004A70    0000 0000      1204    REGSAV3C DC    0                                    M6A12040
004A74    0000 0000      1205    REGSAV3D DC    0                                    M6A12050
004A78    0000 0000      1206    REGSAV3E DC    0                                    M6A12060
004A7C    0000 0000      1207    REGSAV3F DC    0                                    M6A12070
004A80    0000 0000      1208    REGSAV40 DC    0                                    M6A12080
004A84    0000 0000      1209    REGSAV41 DC    0                                    M6A12090
004A88    0000 0000      1210    REGSAV42 DC    0                                    M6A12100
004A8C    0000 0000      1211    REGSAV43 DC    0                                    M6A12110
004A90    0000 0000      1212    REGSAV44 DC    0                                    M6A12120
004A94    0000 0000      1213    REGSAV45 DC    0                                    M6A12130
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004A98	0000 0000	1214	REGSAV46	DC	0	M6A12140
004A9C	0000 0000	1215	REGSAV47	DC	0	M6A12150
004AA0	0000 0000	1216	REGSAV48	DC	0	M6A12160
004AA4	0000 0000	1217	REGSAV49	DC	0	M6A12170
004AA8	0000 0000	1218	REGSAV4A	DC	0	M6A12180
004AAC	0000 0000	1219	REGSAV4B	DC	0	M6A12190
004AB0	0000 0000	1220	REGSAV4C	DC	0	M6A12200
004AB4	0000 0000	1221	REGSAV4D	DC	0	M6A12210
004AB8	0000 0000	1222	REGSAV4E	DC	0	M6A12220
004ABC	0000 0000	1223	REGSAV4F	DC	0	M6A12230
004AC0	0000 0000	1224	REGSAV50	DC	0	M6A12240
004AC4	0000 0000	1225	REGSAV51	DC	0	M6A12250
004AC8	0000 0000	1226	REGSAV52	DC	0	M6A12260
004ACC	0000 0000	1227	REGSAV53	DC	0	M6A12270
004AD0	0000 0000	1228	REGSAV54	DC	0	M6A12280
004AD4	0000 0000	1229	REGSAV55	DC	0	M6A12290
004AD8	0000 0000	1230	REGSAV56	DC	0	M6A12300
004ADC	0000 0000	1231	REGSAV57	DC	0	M6A12310
004AE0	0000 0000	1232	REGSAV58	DC	0	M6A12320
004AE4	0000 0000	1233	REGSAV59	DC	0	M6A12330
004AE8	0000 0000	1234	REGSAV5A	DC	0	M6A12340
004AEC	0000 0000	1235	REGSAV5B	DC	0	M6A12350
004AF0	0000 0000	1236	REGSAV5C	DC	0	M6A12360
004AF4	0000 0000	1237	REGSAV5D	DC	0	M6A12370
004AF8	0000 0000	1238	REGSAV5E	DC	0	M6A12380
004AFC	0000 0000	1239	REGSAV5F	DC	0	M6A12390
004B00	0000 0000	1240	REGSAV60	DC	0	M6A12400
004B04	0000 0000	1241	REGSAV61	DC	0	M6A12410
004B08	0000 0000	1242	REGSAV62	DC	0	M6A12420
004B0C	0000 0000	1243	REGSAV63	DC	0	M6A12430
004B10	0000 0000	1244	REGSAV64	DC	0	M6A12440
004B14	0000 0000	1245	REGSAV65	DC	0	M6A12450
004B18	0000 0000	1246	REGSAV66	DC	0	M6A12460
004B1C	0000 0000	1247	REGSAV67	DC	0	M6A12470
004B20	0000 0000	1248	REGSAV68	DC	0	M6A12480
004B24	0000 0000	1249	REGSAV69	DC	0	M6A12490
004B28	0000 0000	1250	REGSAV6A	DC	0	M6A12500
004B2C	0000 0000	1251	REGSAV6B	DC	0	M6A12510
004B30	0000 0000	1252	REGSAV6C	DC	0	M6A12520
004B34	0000 0000	1253	REGSAV6D	DC	0	M6A12530
004B38	0000 0000	1254	REGSAV6E	DC	0	M6A12540
004B3C	0000 0000	1255	REGSAV6F	DC	0	M6A12550
004B40	0000 0000	1256	REGSAV70	DC	0	M6A12560
004B44	0000 0000	1257	REGSAV71	DC	0	M6A12570
004B48	0000 0000	1258	REGSAV72	DC	0	M6A12580
004B4C	0000 0000	1259	REGSAV73	DC	0	M6A12590
004B50	0000 0000	1260	REGSAV74	DC	0	M6A12600
004B54	0000 0000	1261	REGSAV75	DC	0	M6A12610
004B58	0000 0000	1262	REGSAV76	DC	0	M6A12620
004B5C	0000 0000	1263	REGSAV77	DC	0	M6A12630
004B60	0000 0000	1264	REGSAV78	DC	0	M6A12640
004B64	0000 0000	1265	REGSAV79	DC	0	M6A12650
004B68	0000 0000	1266	REGSAV7A	DC	0	M6A12660
004B6C	0000 0000	1267	REGSAV7B	DC	0	M6A12670
004B70	0000 0000	1268	REGSAV7C	DC	0	M6A12680

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004B74    0000 0000         1269  REGSAV7D DC    0                                                          M6A12690
004B78    0000 0000         1270  REGSAV7E DC    0                                                          M6A12700
004B7C    0000 0000         1271  REGSAV7F DC    0                                                          M6A12710
004B80    0000 0000         1272  REGSAVF0 DC    0                                                          M6A12720
004B84    0000 0000         1273  REGSAVF1 DC    0                                                          M6A12730
004B88    0000 0000         1274  REGSAVF2 DC    0                                                          M6A12740
004B8C    0000 0000         1275  REGSAVF3 DC    0                                                          M6A12750
004B90    0000 0000         1276  REGSAVF4 DC    0                                                          M6A12760
004B94    0000 0000         1277  REGSAVF5 DC    0                                                          M6A12770
004B98    0000 0000         1278  REGSAVF6 DC    0                                                          M6A12780
004B9C    0000 0000         1279  REGSAVF7 DC    0                                                          M6A12790
004BA0    0000 0000         1280  REGSAVF8 DC    0                                                          M6A12800
004BA4    0000 0000         1281  REGSAVF9 DC    0                                                          M6A12810
004BA8    0000 0000         1282  REGSAVFA DC    0                                                          M6A12820
004BAC    0000 0000         1283  REGSAVFB DC    0                                                          M6A12830
004BB0    0000 0000         1284  REGSAVFC DC    0                                                          M6A12840
004BB4    0000 0000         1285  REGSAVFD DC    0                                                          M6A12850
004BB8    0000 0000         1286  REGSAVFE DC    0                                                          M6A12860
004BBC    0000 0000         1287  REGSAVFF DC    0                                                          M6A12870
          0000 4BC0         1288  LNZB     EQU   *                                                          M6A12880
                            1289  *                                                                         M6A12890
                            1290  ****************************************************************************  M6A12900
                            1291  *                                                                         M6A12910
004BC0                      1292  PSWSAVE  DS    16                                                         M6A12920
004BD0                      1293  TABLE    DS    12                                                         M6A12930
004BDC                      1294  RSAVE    DS    128                                                        M6A12940
                            1295  *                                                                         M6A12950
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CHKSUM/M17 PUNCHER

```
004C5C    2400              1297  $CHKSUM  LIS   R0,0              PUNCH M17 TAPE WITH CHECKSUM        M6A12970
004C5E    9510              1298           EPSR  R1,R0             SELECT REG. SET 0 & CLEAR PSW  ***  M6A12980
                            1299  *                                                                  M6A12990
004C60    E610 F39C =004000 1300           LDAI  R1,ORIGIN1        LOAD START ADDRESS                 M6A13000
004C64    2421              1301           LIS   R2,1              LOAD INCREMENT VALUE               M6A13010
004C66    E630 FF56 =004BC0 1302           LDAI  R3,LNZB           LOAD FINAL ADDRESS                 M6A13020
004C6A    2440              1303           LIS   R4,0              INITIALIZE CHKSUM BYTE             M6A13030
                            1304  *                                                                  M6A13040
004C6C    D351 0000         1305  $GEN     LB    R5,0(R1)                                             M6A13050
004C70    0745              1306           XAR   R4,R5             CALCULATE CHKSUM BYTE              M6A13060
004C72    C110 FFF6 =004C6C 1307           BXLE  R1,$GEN                                              M6A13070
004C76    D240 0099         1308           STB   R4,MN+3           CHECKSUM BYTE TO BOOT LOADER       M6A13080
                            1309  *                                                                  M6A13090
004C7A    C810 0080         1310  $TAPE    LHI   R1,X'0080'                                           M6A13100
004C7E    9E21              1311           OCR   R2,R1             DISPLAY IN NORMAL MODE             M6A13110
004C80    9444              1312           EXBR  R4,R4                                                M6A13120
004C82    9824              1313           WHR   R2,R4             DISPLAY CHKSUM BYTE (TO D1)        M6A13130
004C84    9411              1314           EXBR  R1,R1                                                M6A13140
004C86    9501              1315           EPSR  R0,R1             HALT PROCESSOR.                    M6A13150
                            1316  *                                                                  M6A13160
                            1317  ****************************************************************    M6A13170
                            1318  *                                                                  M6A13180
004C88    D360 007A         1319  $PUNCH   LB    R6,X'7A'          GET BOUTDV (PUNCH) ADDRESS.        M6A13190
004C8C    DE60 007B         1320           OC    R6,X'7B'          START TAPE PUNCH                   M6A13200
004C90    9D60              1321           SSR   R6,R0                                                M6A13210
004C92    2081              1322           BTBS  8,1                                                  M6A13220
004C94    41F0 803E =004CD6 1323           BAL   LINK,$TAPL        PUNCH LEADER (256 CHARACTERS)      M6A13230
004C98    9411              1324           EXBR  R1,R1             (R1) = X'0080'                     M6A13240
004C9A    C830 00CF         1325           LHI   R3,X'CF'                                             M6A13250
                            1326  *                                                                  M6A13260
004C9E    DA61 0000         1327  $PNCH1   WD    R6,0(R1)          PUNCH BOOT LOADER                  M6A13270
004CA2    9D60              1328           SSR   R6,R0                                                M6A13280
004CA4    2081              1329           BTBS  8,1                                                  M6A13290
004CA6    C110 FFF4 =004C9E 1330           BXLE  R1,$PNCH1                                            M6A13300
004CAA    41F0 802E =004CDC 1331           BAL   LINK,$TAPL1       PUNCH ONE-FOLD GAP.                M6A13310
                            1332  *                                                                  M6A13320
004CAE    D340 0099         1333           LB    R4,MN+3           GET CHECKSUM BYTE                  M6A13330
004CB2    E610 F34A =004000 1334           LDAI  R1,ORIGIN1        (NORMALLY X'A00')                  M6A13340
004CB6    E630 FF06 =004BC0 1335           LDAI  R3,LNZB                                             M6A13350
                            1336  *                                                                  M6A13360
004CBA    D351 0000         1337  $PNCH2   LB    R5,0(R1)          PUNCH PROGRAM                      M6A13370
004CBE    0745              1338           XAR   R4,R5             (ORIGIN1 TO LNZB)                  M6A13380
004CC0    9A65              1339           WDR   R6,R5                                                M6A13390
004CC2    9401              1340           EXBR  R0,R1                                                M6A13400
004CC4    9820              1341           WHR   R2,R0             DISPLAY ADDRESS PUNCHED            M6A13410
004CC6    9D60              1342           SSR   R6,R0                                                M6A13420
004CC8    2081              1343           BTBS  8,1                                                  M6A13430
004CCA    C110 FFEC =004CBA 1344           BXLE  R1,$PNCH2                                            M6A13440
004CCE    41F0 8004 =004CD6 1345           BAL   LINK,$TAPL        PUNCH TRAILER.                     M6A13450
004CD2    4300 FFA4 =004C7A 1346           B     $TAPE             DISPLAY CHECKSUM, HALT PROCESSOR.  M6A13460
                            1347  *                                                                  M6A13470
004CD6    C800 0100         1348  $TAPL    LHI   R0,256            TO PUNCH BLANK LEADER              M6A13480
004CDA    2303              1349           BS    $TAPLP                                               M6A13490
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CHKSUM/M17 PUNCHER

```
                                1350  *                                                              M6A13500
004CDC   C800 0080              1351  $TAPL1   LHI   R0,128        TO PUNCH 1-FOLD GAP      ***       M6A13510
                                1352  *                                                              M6A13520
004CE0   2701                   1353  $TAPLP   SIS   R0,1                                            M6A13530
004CE2   032F                   1354           BNPR  LINK          RETURN                            M6A13540
004CE4   2430                   1355           LIS   R3,0                                            M6A13550
004CE6   9A63                   1356           WDR   R6,R3         PUNCH BLANK FRAME                 M6A13560
004CE8   9D68                   1357           SSR   R6,R8                                           M6A13570
004CEA   2081                   1358           BTBS  8,1                                             M6A13580
004CEC   2206                   1359           BS    $TAPLP        CONTINUE.                         M6A13590
                                1360  *                                                              M6A13600
004CEE                          1361           END                                                  M6A13610
```

CHKSUM/M17 PUNCHER

ASSEMBLED BY CAL 03-066R05-00   (32-BIT)

START OPTIONS: SCR,CRO,T=32

    NO CAL ERRORS
    NO CAL WARNINGS
    2 PASSES

```
$CHKSUM    0000 4C5C      1297*
$GEN       0000 4C6C      1305*  1307
$PNCH1     0000 4C9E      1327*  1330
$PNCH2     0000 4CBA      1337*  1344
$PUNCH     0000 4C88      1319*
$TAPE      0000 4C7A      1310*  1346
$TAPL      0000 4CD6      1323   1345   1348*
$TAPL1     0000 4CDC      1331   1351*
$TAPLP     0000 4CE0      1349   1353*  1359
ABSTOP     0000 4CEE
ADC        0000 0004
ADDRESS    0000 47DE       207    214    804    863    927    985   1034*
ALGRM1     0000 443A       585*  1139
ALGRM2     0000 4534       685*
BOOT       0000 0088       142    145*
BRKWAIT    0000 47BC      1001   1019*
BRKWAIT1   0000 47CA      1020   1024*
BT00       0000 445C       597*   600
BT001      0000 4550       695*
BT01       0000 4466       601*
BT011      0000 4556       694    697*
BTOCH2     0000 4462       596    599*
BT10       0000 4472       606*   609
BT101      0000 4562       702*
BT11       0000 447C       610*
BT111      0000 4568       701    704*
BT1CH2     0000 4478       605    608*
BT10NE     0000 446C       593    603*
BT1ZR1     0000 454A       692*
BT1ZR0     0000 4456       591    594*
CHECKR     0000 46C2       868    877*   879
CHKA2      0000 448E       633    635    637*
CHKBT3     0000 455C       691    699*
CHKDB1     0000 45A2       724    726*
CHKDT1     0000 44A6       625*   675
CHKDT2     0000 458E       717*
CHKDT3     0000 4592       718*   762
CHKDT4     0000 45A4       721    727*
CHKDT5     0000 45AE       729    732*
CHKDT6     0000 45B0       726    731    733*
CHKDT7     0000 45E8       745    750    752*
CHKDTA     0000 44A2       623*
CHKDTE     0000 44CE       637    641    643    645*
CHKDTG     0000 450A       650    658    663    665*
CHKEND     0000 460E       676    765*
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CHKSUM/M17 PUNCHER

CMD	0000 4654	810	812*										
COMP1	0000 44DE	648	651*										
COMP11	0000 45BC	736	738*										
COMP2	0000 44F8	656	659*										
COMP21	0000 45D6	743	746*										
CONT02	0000 4668	816	819*										
CONT7	0000 4780	990	993	999*									
CONT9	0000 46EC	905	907*										
CONTFLG	0000 495A	278	299	396	419	924	956	1125*					
CONVERT	0000 46CE	432	439	898*	951	1003	1007	1011					
CONVERT1	0000 46D6	900*	912										
CRCHK	0000 4140	297	301*										
CRT	0000 403E	203	211*										
CRTADR	0000 4012	191*	213										
CRTFLG	0000 4952	209	217	809	824	867	931	1019	1116*				
DEVCHK	0000 401C	201*											
DT1ONE	0000 44C0	630	638*										
DT1ZRO	0000 44B2	628	631*										
EDMACMSG	0000 487F	239	1083*										
ENABLE1	0000 40CE	182	267*										
ENBMAC	0000 4078	185	237*	247	249	253	263						
END	0000 4827	230	308	309	1053*								
ENDMSG	0000 4847	961	1016	1063*									
ENDOF	0000 4809	225	1049*										
ERREND	0000 4897	401	1091*										
ERRFLG	0000 4958	276	393	403	987	1123*							
ERROR	0000 4752	649	657	664	737	744	751	984*					
ERROREND	0000 486F	444	1078*										
EXECUTE	0000 4058	210	220*										
FWR	0000 46FE	765	924*										
GOREAD	0C00 4084	242*	254										
HIADR	0000 4964	234	618	673	712	760	1133*						
IMPTOP	0000 0000I												
INCRMT	0000 494D	781	1113*										
IO	0000 4010	190*	201										
LADC	0000 0002												
LCHK	0000 412E	295*											
LDTA2	0000 446A	598	602*										
LDTA3	0000 4476	602	607*										
LDWT	0000 00C8	168*	171										
LEADER	0000 00A2	152*	156										
LINK	0000 000F	128*	223	228	237	242	271	274	279	289	295	303	307	346
		347	358	399	432	435	439	442	460	466	475	481	490	496
		505	511	520	526	535	541	550	556	565	571	585	649	657
		664	685	737	744	751	765	782	783	783	784	785	785	786
		786	787	790	791	818	819	820	825	831	850	898	899	909
		926	930	951	959	986	987	988	989	1003	1007	1011	1014	1018
		1323	1331	1345	1354									
LNZB	0000 4BC0	146	1288*	1302	1335								
LOAD	0000 00AC	157*	165										
LOADE1	0000 456C	698	703	705*									
LOADED	0000 4480	607	611*										
LOADR	0000 4960	232	588	623	688	717	1132*						

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```
LODTA0    0000 444A   589*   620
LODTA1    0000 4538   686*
LODTA3    0000 4544   689*   714
LODTA4    0000 455A   696    698*
LODTAQ    0000 443E   586*
MACGO     0000 40B0   245    255*
MACLOC    0000 4968   264    615    670    709    757    1134*
MACMSG    0000 4870   238    1082*
MACOK     0000 40CA   256    258    260    262    264*
MEMSG     0000 480A   229    1052*
MN        0000 0096   149*   1308   1333
NOERR     0000 488E   400    1090*
NORM      0000 494C   789    1112*
NXTST     0000 4974   585    685    766    1137*
OKIN      0000 4152   300    302    307*
ORIGIN1   0000 4000   145    179*   1300   1334
PADSET    0000 47DF   215    1035*
PARNOEND  0000 494B   360    1100*
PARNOMSG  0000 4898   359    1092*
PASSENS   0000 46B8   872*   873
PAT1      0000 47D6   686    1030*
PAT2      0000 47D8   687    1031*
PAT3      0000 47DA   378    386    586    1032*
PAT4      0000 47DC   380    388    587    1033*
PRDU      0000 4660   808    815    817*
PRINT     0000 463C   223    228    237    271    279    303    307    358    399    435    442    804*   959
                      1014
PRTMSG    0000 40E8   275*   430    445    880
PRTMSG1   0000 410E   284    287*
PRTTITLE  0000 4058   223*
PRTTOT    0000 42A8   431*
PSWSAVE   0000 48C0   143    1292*
PURETOP   0000 0000P
QRZ       0000 476E   992    994*
QUEND     0000 4857   305    1072*
QUEST     0000 4850   304    1070*
R0        0000 0000   113*   198    201    202    204    205    206    207    208    208    209    211    212
                      213    214    216    217    268    286    316    317    589    590    592    594    595
                      599    603    604    608    626    627    629    631    632    634    639    640    642
                      651    659    689    690    692    693    699    700    719    720    722    723    727
                      728    738    746    984    998    1017   1026   1297   1298   1315   1321   1328   1340
                      1341   1342   1348   1351   1353
R1        0000 0001   114*   145    157    158    160    165    197    198    231    232    233    234    240
                      250    251    255    255    257    259    261    264    267    268    269    270    275
                      275    276    277    278    285    286    287    288    310    311    312    313    393
                      394    394    396    397    397    402    402    403    405    406    406    414    415
                      449    450    451    997    998    1298   1300   1305   1307   1310   1311   1314   1314
                      1315   1324   1324   1327   1330   1334   1337   1340   1344
R10       0000 000A   123*   423    425    426    428    429    429    646    647    654    655    661    662
                      734    735    741    742    748    749    805    806    807    809    813    822    824
                      826    826    827    828    864    865    869    872    877    878    991    999    1000
                      1024
R11       0000 000B   124*   215    423    586    590    592    627    629    686    690    720    804    805
```

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```
                        811    812    813    817    821    822    827    828    830    845    846    848    863
                        864    871    872    877    985    991    999   1021   1022   1024
R12       0000 000C     125*   587    595    599    604    608    632    634    640    642    687    693    700
                        723    728    819    821    899    907    911
R13       0000 000D     126*   459    460    465    466    474    475    480    481    489    490    495    496
                        504    505    510    511    519    520    525    526    534    535    540    541    549
                        550    555    556    564    565    570    571    820
R2        0000 0002     115*   141    161    167    419    420    420    867    871    874    874    924    925
                        925    928    929    931    934    936   1301   1311   1313   1341
R3        0000 0003     116*   146    147    148    404    408    409    411    413   1302   1325   1335   1355
                       1356
R4        0000 0004     117*   150    151    152    154    162    164    315    416    588    589    594    597
                        601    603    606    610    611    612    617    619    623    626    631    639    646
                        653    654    660    661    666    667    672    674    688    689    692    695    697
                        699    702    704    705    706    711    713    717    719    722    727    734    740
                        741    747    748    753    754    759    761    782    994    995   1303   1306   1308
                       1312   1312   1313   1333   1338
R5        0000 0005     118*   152    154    155    155    157    158    159    162    164    170    455    456
                        457    458    461    462    463    473    478    479    488    493    494    502    503
                        509    515    522    531    538    546    552    560    561    562    566    567    568
                        569    597    625    695    718   1305   1306   1337   1338   1339
R6        0000 0006     119*   149    159    166    166    167    456    462    472    479    485    492    501
                        507    516    517    518    523    524    532    533    539    545    546    553    562
                        567    601    636    697    725    900    901    902    903    904    906    907   1319
                       1320   1321   1327   1328   1339   1342   1356   1357
R7        0000 0007     120*   168    169    170    244    246    248    251    282    283    283    290    292
                        294    296    298    299    301    348    350    352    354    356    362    363    364
                        366    367    368    370    371    372    374    375    376    382    383    384    457
                        463    470    477    486    487    488    494    500    501    508    517    524    530
                        531    537    547    548    554    561    568    606    638    702    730    846    848
                        849    898    901    908    908    910
R8        0000 0008     121*   160    161    458    464    471    472    473    476    477    487    491    492
                        503    506    507    508    518    521    522    533    536    537    538    548    551
                        552    553    563    569    610    644    704    732   1357
R9        0000 0009     122*   431    438    625    636    638    644    647    651    652    653    655    659
                        660    662    718    725    730    732    735    738    739    740    742    746    747
                        749    900    950    954    955    956    957    957   1002   1006   1010
READ      0000 468C     242    289    295    347    845*
READ1     0000 47E0     205    212    845    933   1021   1036*
READ2     0000 494E     204   1114*
READ3     0000 4950     211   1115*
READERR   0000 4146     291    293    303*
REGSAV00  0000 4980     316   1144*
REGSAV01  0000 4984    1145*
REGSAV02  0000 4988    1146*
REGSAV03  0000 498C    1147*
REGSAV04  0000 4990    1148*
REGSAV05  0000 4994    1149*
REGSAV06  0000 4998    1150*
REGSAV07  0000 499C    1151*
REGSAV08  0000 49A0    1152*
REGSAV09  0000 49A4    1153*
REGSAV0A  0000 49A8    1154*
```

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```
REGSAV0B   0000 49AC        1155*
REGSAV0C   0000 49B0        1156*
REGSAV0D   0000 49B4        1157*
REGSAV0E   0000 49B8        1158*
REGSAV0F   0000 49BC        1159*
REGSAV10   0000 49C0         317     984    1017    1026    1160*
REGSAV11   0000 49C4        1161*
REGSAV12   0000 49C8        1162*
REGSAV13   0000 49CC        1163*
REGSAV14   0000 49D0         315    1002    1164*
REGSAV15   0000 49D4        1165*
REGSAV16   0000 49D8        1166*
REGSAV17   0000 49DC        1167*
REGSAV18   0000 49E0        1168*
REGSAV19   0000 49E4        1006    1169*
REGSAV1A   0000 49E8        1010    1170*
REGSAV1B   0000 49EC        1171*
REGSAV1C   0000 49F0        1172*
REGSAV1D   0000 49F4        1173*
REGSAV1E   0000 49F8         314    1174*
REGSAV1F   0000 49FC        1175*
REGSAV20   0000 4A00        1176*
REGSAV21   0000 4A04        1177*
REGSAV22   0000 4A08        1178*
REGSAV23   0000 4A0C        1179*
REGSAV24   0000 4A10        1180*
REGSAV25   0000 4A14        1181*
REGSAV26   0000 4A18        1182*
REGSAV27   0000 4A1C        1183*
REGSAV28   0000 4A20        1184*
REGSAV29   0000 4A24        1185*
REGSAV2A   0000 4A28        1186*
REGSAV2B   0000 4A2C        1187*
REGSAV2C   0000 4A30        1188*
REGSAV2D   0000 4A34        1189*
REGSAV2E   0000 4A38        1190*
REGSAV2F   0000 4A3C        1191*
REGSAV30   0000 4A40        1192*
REGSAV31   0000 4A44        1193*
REGSAV32   0000 4A48        1194*
REGSAV33   0000 4A4C        1195*
REGSAV34   0000 4A50        1196*
REGSAV35   0000 4A54        1197*
REGSAV36   0000 4A58        1198*
REGSAV37   0000 4A5C        1199*
REGSAV38   0000 4A60        1200*
REGSAV39   0000 4A64        1201*
REGSAV3A   0000 4A68        1202*
REGSAV3B   0000 4A6C        1203*
REGSAV3C   0000 4A70        1204*
REGSAV3D   0000 4A74        1205*
REGSAV3E   0000 4A78        1206*
REGSAV3F   0000 4A7C        1207*
```

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```
REGSAV40   0000 4A80      1208*
REGSAV41   0000 4A84      1209*
REGSAV42   0000 4A88      1210*
REGSAV43   0000 4A8C      1211*
REGSAV44   0000 4A90      1212*
REGSAV45   0000 4A94      1213*
REGSAV46   0000 4A98      1214*
REGSAV47   0000 4A9C      1215*
REGSAV48   0000 4AA0      1216*
REGSAV49   0000 4AA4      1217*
REGSAV4A   0000 4AA8      1218*
REGSAV4B   0000 4AAC      1219*
REGSAV4C   0000 4AB0      1220*
REGSAV4D   0000 4AB4      1221*
REGSAV4E   0000 4AB8      1222*
REGSAV4F   0000 4ABC      1223*
REGSAV50   0000 4AC0      1224*
REGSAV51   0000 4AC4      1225*
REGSAV52   0000 4AC8      1226*
REGSAV53   0000 4ACC      1227*
REGSAV54   0000 4AD0      1228*
REGSAV55   0000 4AD4      1229*
REGSAV56   0000 4AD8      1230*
REGSAV57   0000 4ADC      1231*
REGSAV58   0000 4AE0      1232*
REGSAV59   0000 4AE4      1233*
REGSAV5A   0000 4AE8      1234*
REGSAV5B   0000 4AEC      1235*
REGSAV5C   0000 4AF0      1236*
REGSAV5D   0000 4AF4      1237*
REGSAV5E   0000 4AF8      1238*
REGSAV5F   0000 4AFC      1239*
REGSAV60   0000 4B00      1240*
REGSAV61   0000 4B04      1241*
REGSAV62   0000 4B08      1242*
REGSAV63   0000 4B0C      1243*
REGSAV64   0000 4B10      1244*
REGSAV65   0000 4B14      1245*
REGSAV66   0000 4B18      1246*
REGSAV67   0000 4B1C      1247*
REGSAV68   0000 4B20      1248*
REGSAV69   0000 4B24      1249*
REGSAV6A   0000 4B28      1250*
REGSAV6B   0000 4B2C      1251*
REGSAV6C   0000 4B30      1252*
REGSAV6D   0000 4B34      1253*
REGSAV6E   0000 4B38      1254*
REGSAV6F   0000 4B3C      1255*
REGSAV70   0000 4B40      1256*
REGSAV71   0000 4B44      1257*
REGSAV72   0000 4B48      1258*
REGSAV73   0000 4B4C      1259*
REGSAV74   0000 4B50      1260*
```

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REGSAV75	0000 4B54	1261*											
REGSAV76	0000 4B58	1262*											
REGSAV77	0000 4B5C	1263*											
REGSAV78	0000 4B60	1264*											
REGSAV79	0000 4B64	1265*											
REGSAV7A	0000 4B68	1266*											
REGSAV7B	0000 4B6C	1267*											
REGSAV7C	0000 4B70	1268*											
REGSAV7D	0000 4B74	1269*											
REGSAV7E	0000 4B78	1270*											
REGSAV7F	0000 4B7C	1271*											
REGSAVF0	0000 4B80	1272*											
REGSAVF1	0000 4B84	1273*											
REGSAVF2	0000 4B88	1274*											
REGSAVF3	0000 4B8C	1275*											
REGSAVF4	0000 4B90	1276*											
REGSAVF5	0000 4B94	1277*											
REGSAVF6	0000 4B98	1278*											
REGSAVF7	0000 4B9C	1279*											
REGSAVF8	0000 4BA0	1280*											
REGSAVF9	0000 4BA4	1281*											
REGSAVFA	0000 4BA8	1282*											
REGSAVFB	0000 4BAC	1283*											
REGSAVFC	0000 4BB0	1284*											
REGSAVFD	0000 4BB4	1285*											
REGSAVFE	0000 4BB8	1286*											
REGSAVFF	0000 4BBC	1287*											
RETRN	0000 000E	127*	313	314	318	346	365	369	373	381	389	392	417	418
		454	469	484	499	514	529	544	559	612	613	615	618	619
		665	667	668	670	673	674	706	707	709	712	713	752	754
		755	757	760	761	766	767	779	780	781	784	787	788	789
		866	870	875	958	962	996	1019	1022					
REVCHK1	0000 4498	614	616	618*										
REVCHK2	0000 4526	669	671	673*										
REVCHK3	0000 4584	708	710	712*										
REVCHK4	0000 4604	756	758	760*										
RSAVE	0000 4BDC	144	1294*											
RTN	0000 47AE	1014*												
RTN5	0000 47CE	1023	1026*											
RXTURN	0000 4976	779	790	1138*										
SELTST	0000 415A	310*												
SENSE4	0000 428C	421	423*											
SENSER	0000 4690	846*	847											
SENSEW	0000 4658	813*	814											
START	0000 4016	179	187	197*										
START0	0000 4534	363	684*											
START1	0000 443A	367	581*											
START2	0000 443A	371	582*											
START3	0000 443A	375	583*											
START4	0000 443A	383	584*											
STOP	0000 426C	410	413*											
STRBYT	0000 4264	411*	422	424	427									
SUB	0000 417A	313	319*											

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SUB0	0000 42D4	319	449*										
SUB1	0000 42DE	320	454*										
SUB2	0000 4306	321	469*										
SUB3	0000 4332	322	484*										
SUB4	0000 435E	323	499*										
SUB5	0000 438A	324	514*										
SUB6	0000 43B6	325	529*										
SUB7	0000 43E2	326	544*										
SUB8	0000 440E	327	559*										
SUBCHK	0000 422E	392*	467	482	497	512	527	542	557	572	1027		
SUBGET	0000 4116	289*	306										
SUBNUM	0000 4844	953	954	960	1062*								
SUBSEL	0000 415E	311*	412										
SUBTST	0000 4957	294	311	404	411	451	788	950	1122*				
SWTST	0000 426E	407	414*										
TABLE	0000 48D0	1293*											
TESTBRK	0000 469C	392	418	863*									
TITLE	0000 47E2	224	1048*										
TOCS	0000 4060	228*											
TOTAL	0000 496C	287	415	416	431	1135*							
TOTALEND	0000 4867	437	1076*										
TOTALERR	0000 4970	288	438	989	995	1136*							
TOTALMSG	0000 4858	434	436	441	443	1075*							
TRUEBRK	0000 46CA	876	880*										
TSTEND	0000 488D	281	1087*										
TSTFLG	0000 4956	310	405	450	1121*								
TSTMSG	0000 4880	280	1086*										
TSTNUM	0000 472C	454	469	484	499	514	529	544	559	950*			
TSTSEL	0000 424A	395	398	402*									
TT	0000 4828	955	1015	1058*									
TTY	0000 4026	204*											
TTYADR	0000 4014	192*	206										
TTYCHK	0000 429E	428*	935	938									
TTYFLG	0000 4959	277	282	428	817	1124*							
TTYSNS	0000 4724	932	936*										
TYPEFLG	0000 495B	1126*											
TYPEGET	0000 418E	347*	361										
TYPEMSG	0000 4848	272	1065*										
TYPEND	0000 484F	273	1066*	1067									
TYPESENS	0000 40E4	274*											
TYPNO	0000 484F	270	362	366	370	374	382	1067*					
TYPSENS	0000 418C	274	346*										
TYPSET0	0000 41C6	349	362*										
TYPSET1	0000 41D4	351	366*										
TYPSET2	0000 41E2	353	370*										
TYPSET3	0000 41F0	355	374*										
TYPSET4	0000 4210	357	382*										
TYPSTRT	0000 4978	364	368	372	376	384	459	465	474	480	489	495	504	510
		519	525	534	540	549	555	564	570	1139*			
WORK	0000 000A	129*	241	243	252	377	378	379	380	385	386	387	388	927
		928	933	934	936								
WRITE1	0000 47E1	812	1037*										
WRITE2	0000 4618	417	665	752	779*	996							

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```
XXXXX       0000 482C       1005   1059*
YYYYYYYY    0000 4834       1009   1060*
ZZZZZZZZ    0000 483E       1013   1061*
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PROG= *NONE*   ASSEMBLED BY CAL 03-066R05-00   (32-BIT)

```
 1              CROSS                                                    M6A20010
 2              WIDTH 120                                               M6A20020
 3              TARGT 32                                                M6A20030
 4              NORX3                                                   M6A20040
 5              PROG  32 BIT SERIES 6A MEMORY TEST   06-157F02M91R01A13 M6A20050
 6  *                                                                   M6A20060
 7  * COPYRIGHT  INTERDATA, INC.        NOVEMBER 1977                   M6A20070
 8  *                                                                   M6A20080
 9  * PROGRAM USES SERIES 32 INSTRUCTION SET.                          M6A20090
10  *                                                                   M6A20100
11  * PURPOSE OF THIS TEST:                                            M6A20110
12  *        THIS PROGRAM IS DESIGNED TO TEST THE 16 ,32 & 64 KB CORE MEMORY M6A20120
13  *MODULES WITH THE WORST CASE PATTERNS.                             M6A20130
14  * PATTERNS (THIS IS A FUNCTION OF THE INTERNAL WIRING OF THE CORES). M6A20140
15  *        THE 06-157F02 LOADS INTO LOW CORE (X'A00') AND CHECKS HIGH M6A20150
16  * CORE FROM X'4000' TO THE TOP OF ALL AVAILABLE CORE.              M6A20160
17  *                                                                   M6A20170
18  * ASSUMPTIONS:                                                     M6A20180
19  *        IT IS ASSUMED THAT THE FOLLOWING TESTS HAVE BEEN RUN      M6A20190
20  * WITHOUT DETECTING AN ERROR PRIOR TO LOADING THE 32 BIT SERIES 6A M6A20200
21  * MEMORY TEST:                                                     M6A20210
22  *                                                                   M6A20220
23  *        SERIES 32 BASIC TEST           06-158                     M6A20230
24  *                                                                   M6A20240
25  *        SERIES 32 PROCESSOR TEST                                  M6A20250
26  *                PART 1                 06-154                     M6A20260
27  *                PART 2                 06-155                     M6A20270
28  *                PART 3                 06-178                     M6A20280
29  *                                                                   M6A20290
30  *        SERIES 32 MEMORY TEST          06-156                     M6A20300
31  *                                                                   M6A20310
32  *    THE FOLLOWING TESTS ARE ALSO APPLICABLE:                      M6A20320
33  *                                                                   M6A20330
34  *        TELETYPE BASIC CONFIDENCE TEST 06-004                     M6A20340
35  *        CRT TEST                       06-146                     M6A20350
36  *        MEMORY ACCESS CONTROLLER TEST  06-160                     M6A20360
37  *                                                                   M6A20370
38  * LOADING PROCEDURE:                                               M6A20380
39  *        THE 06-157F02M17 PAPER TAPE IS LOADED USING THE STANDARD  M6A20390
40  *   '50' SEQUENCE:                                                 M6A20400
41  *                                                                   M6A20410
42  *              LOC             DATA                                 M6A20420
43  *          X'0050'         X'D500'                                  M6A20430
44  *          X'0052'         X'00CF'                                  M6A20440
45  *          X'0054'         X'4300'                                  M6A20450
46  *          X'0056'         X'0080'                                  M6A20460
47  *                                                                   M6A20470
48  * TTY     X'0078'         X'0294'                                  M6A20480
49  * HSPTR   X'0078'         X'0399'                                  M6A20490
50  * HSPTR/P X'0078'         X'1399'                                  M6A20500
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52  *                                                                     M6A20520
53  * NORMAL TESTING:                                                     M6A20530
54  *        A TELETYPE MUST BE ATTACHED AT THE DEVICE ADDRESS X'02'. IF   M6A20540
55  * THE TELETYPE IS ATTACHED AT A DIFFERENT ADDRESS, CHANGE THE LOCATION M6A20550
56  * LABELED "TTYADR" TO THE ACTUAL TELETYPE ADDRESS. IF A CRT ON PASLA   M6A20560
57  * (FDX ONLY) IS TO BE USED FOR I/O, CHANGE LOCATION LABELED "IO" TO    M6A20570
58  * X'0101'. PASLA DEVICE ADDRESSES ARE ASSUMED TO BE X'10' (READ SIDE)  M6A20580
59  * AND X'11' (WRITE SIDE). IF PASLA ADDRESSES ARE DIFFERENT, CHANGE     M6A20590
60  * LOCATION LABELED "CRTADR" TO THE ACTUAL PASLA ADDRESS. AFTER         M6A20600
61  * STARTING THE PROGRAM EXECUTION AT LOC X'A00'. SUBTESTS 1 THROUGH 8   M6A20610
62  * MAY BE SELECTED INDIVIDUALLY OR ALL 8 SUBTESTS MAY BE RUN IN         M6A20620
63  * SUCESSION BY SELECTING SUBTEST 0. ALL ENTRIES ARE TERMINATED WITH    M6A20630
64  * A CARRIAGE RETURN (CR).                                             M6A20640
65  *        ERROR MESSAGES ARE PRINTED ON THE TELETYPE (OR CRT).          M6A20650
66  *                                                                     M6A20660
67  * OPTIONAL TESTING:                                                    M6A20670
68  *        HIGH AND LOW TESTING ADDRESS LIMITS MAY BE SELECTED BY        M6A20680
69  * DEPRESSING LINE FEED (LF) AND ENTERING THE PROPER VALUES.            M6A20690
70  *        A SUBTEST MAY BE RUN CONTINUOUSLY BY DEPRESSING THE LETTER    M6A20700
71  * "L" AFTER SELECTING THE DESIRED SUBTEST. DEPRESS "BREAK" TO HALT     M6A20710
72  * THE SUBTEST AND RETURN TO THE SUBTEST SELECTION ROUTINE.             M6A20720
73  *                                                                     M6A20730
74  * ERROR PROCEDURES                                                     M6A20740
75  *        FOR A MEMORY ERROR, THE FOLLOWING ERROR MESSAGE WILL BE       M6A20750
76  * PRINTED ON THE CONSOLE DEVICE:                                       M6A20760
77  *                                                                     M6A20770
78  *    TT   XXXXX   YYYYYYYY   ZZZZZZZZ                                  M6A20780
79  *                                                                     M6A20790
80  *      WHERE:                                                          M6A20800
81  *      TT = THE SUBTEST NUMBER THE ERROR OCCURRED IN                  M6A20810
82  *      XXXXX = THE ADDRESS OF THE LOCATION UNDER TEST                 M6A20820
83  *      YYYYYYYY = THE CORRECT DATA EXPECTED                           M6A20830
84  *      ZZZZZZZZ = THE INCORRECT DATA READ                            M6A20840
85  *                                                                     M6A20850
86  *      FOR ALL OTHER ERROR MESSAGES, REFER TO THE TEST DESCRIPTION.   M6A20860
87  *                                                                     M6A20870
```

MEMORY LOADER

```
     0000 0000          89  R0      EQU   0                                              M6A20890
     0000 0001          90  R1      EQU   1                                              M6A20900
     0000 0002          91  R2      EQU   2                                              M6A20910
     0000 0003          92  R3      EQU   3                                              M6A20920
     0000 0004          93  R4      EQU   4         LOC BEING TESTED                     M6A20930
     0000 0005          94  R5      EQU   5         *  DATA PATTERN                      M6A20940
     0000 0006          95  R6      EQU   6         *                                    M6A20950
     0000 0007          96  R7      EQU   7         *                                    M6A20960
     0000 0008          97  R8      EQU   8         *                                    M6A20970
     0000 0009          98  R9      EQU   9         DATA STORED IN LOC                   M6A20980
     0000 000A          99  R10     EQU   10        DATA READ FROM LOC                   M6A20990
     0000 000B         100  R11     EQU   11        CONSOLE DEVICE ADDRESS               M6A21000
     0000 000C         101  R12     EQU   12                                            M6A21010
     0000 000D         102  R13     EQU   13                                            M6A21020
     0000 000E         103  RETRN   EQU   14        BAL REGISTER                         M6A21030
     0000 000F         104  LINK    EQU   15        BAL REGISTER                         M6A21040
     0000 000A         105  WORK    EQU   10                                            M6A21050
                       106  *                                                           M6A21060
                       107  *                                                           M6A21070
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BOOTSTRAP LOADER

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                        109  *                                                               M6A21090
                        110  *   BOOTLOADER WITH CHKSUM                                      M6A21100
                        111  *                                                               M6A21110
000000I                 112          ORG    X'80'                                            M6A21120
                        113  *                                                               M6A21130
000080    2421          114          LIS    R2,1                                             M6A21140
000082    2303          115          BS     BOOT                                             M6A21150
000084    19EC          116          DC     Z(PSWSAVE)     CURRENT PSW SAVE POINTER(32-BIT M/C)  M6A21160
000086    1A08          117          DC     Z(RSAVE)       REGISTER SAVE POINTER(32-BIT M/C)     M6A21170
000088    C810 0A00     118  BOOT    LHI    R1,ORIGIN1     R1 = ADR( FIRST BYTE OF TEST PROG )   M6A21180
00008C    C830 17AB     119          LHI    R3,LNZB+1                                         M6A21190
000090    4030 0022     120          STH    R3,X'22'                                         M6A21200
000094    2731          121          SIS    R3,1           R3 = ADR( LAST NON-ZERO BYTE )    M6A21210
000096    C860 0000     122  MN      LHI    R6,0           R6 = CHKSUM BYTE = X'MN'          M6A21220
00009A    D340 0078     123          LB     R4,X'78'       INPUT DEV ADR                     M6A21230
00009E    DE40 0079     124          OC     R4,X'79'                                         M6A21240
0000A2    9045          125  LEADER  SSR    R4,R5                                            M6A21250
0000A4    2091          126          BTBS   9,1            DU,BSY                            M6A21260
0000A6    9B45          127          RDR    R4,R5                                            M6A21270
0000A8    0855          128          LDAR   R5,R5                                            M6A21280
0000AA    2234          129          BZS    LEADER         IGNORE LEADER                     M6A21290
0000AC    D251 0000     130  LOAD    STB    R5,0(R1)       STORE 1ST NON-ZERO & SUBSEQUENT BYTE  M6A21300
0000B0    D351 0000     131          LB     R5,0(R1)       FETCH BYTE AS STORRED             M6A21310
0000B4    0765          132          XAR    R6,R5          GENERATE CHKSUM                   M6A21320
0000B6    9481          133          EXBR   R8,R1                                            M6A21330
0000B8    9828          134          WHR    R2,R8          DISPLAY ADDRESS BEING LOADED      M6A21340
0000BA    9045          135          SSR    R4,R5                                            M6A21350
0000BC    2091          136          BTBS   9,1            DU,BSY                            M6A21360
0000BE    9B45          137          RDR    R4,R5                                            M6A21370
0000C0    C110 00AC     138          BXLE   R1,LOAD        LOAD TILL LAST BYTE               M6A21380
0000C4    9466          139          EXBR   R6,R6                                            M6A21390
0000C6    9826          140          WHR    R2,R6          DISPLAY FINAL CHKSUM              M6A21400
0000C8    2478          141  LOWT    LIS    R7,8                                             M6A21410
0000CA    917C          142          SLHLS  R7,12                                           M6A21420
0000CC    9557          143          EPSR   R5,R7          PSW = X'8000' (HALT)              M6A21430
0000CE    2203          144          BS     LOWT           HALT !                            M6A21440
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                                    146  *                                                                        M6A21460
                                    147  *                                                                        M6A21470
000000                              148          ORG    X'A00'                                                    M6A21480
                                    149  *                                                                        M6A21490
                                    150  *                                                                        M6A21500
000A00   4300 0A16                  151  ORIGIN1  B      START           ENTRY AT THIS POINT WILL INITIALIZE      M6A21510
                                    152  *                              LOW CORE & ESTABLISH MEMORY TABLE         M6A21520
000A04   4300 0BD0                  153          B      RESTART2        ENTRY HERE WILL ALLOW TYPE NUMBER TO      M6A21530
                                    154  *                              BE SELECTED WITHOUT REESTABLISHING        M6A21540
                                    155  *                              THE MEMORY TABLE*******                   M6A21550
000A08   4300 0B0E                  156          B      RESTART1        ENTRY HERE CAUSES NEW MEMORY TABLE        M6A21560
                                    157  *                              WITHOUT LOW CORE SETUP****                M6A21570
000A0C   4300 0A16                  158          B      START                                                    M6A21580
                                    159  ****************************************************************          M6A21590
000A10   0202                       160  IO       DC     X'0202'         CONSOLE DEVICE NUMBER                    M6A21600
000A12   1011                       161  CRTADR   DC     X'1011'         PASLA DEVICE ADDRESS                     M6A21610
000A14   0202                       162  TTYADR   DC     X'0202'         TTY DEVICE ADDRESS                       M6A21620
                                    163  *                                                                        M6A21630
                                    164  ************************************************************************  M6A21640
                                    165  *                                                                        M6A21650
                                    166  *                                                                        M6A21660
000A16   F810 0000 00F0             167  START    LI     R1,Y'00F0'      GO TO RS F                               M6A21670
000A1C   9501                       168          EPSR   R0,R1                                                    M6A21680
                                    169  *                                                                        M6A21690
                                    170  *                                                                        M6A21700
000A1E   D300 0A10                  171  DEVCHK   LB     R0,IO           GET CONSOLE DEVICE NUMBER                M6A21710
000A22   C500 0001                  172          CLHI   R0,1                                                     M6A21720
000A26   4330 0A44                  173          BE     CRT             BRANCH IF CRT ON PASLA                   M6A21730
000A2A   7300 176A                  174  TTY      LHL    R0,READ2                                                M6A21740
000A2E   4000 153C                  175          STH    R0,READ1        SET UP TTY COMMANDS                      M6A21750
000A32   D300 0A14                  176          LB     R0,TTYADR                                               M6A21760
000A36   D200 153A                  177          STB    R0,ADDRESS      SET UP TTY ADDRESS                       M6A21770
000A3A   0700                       178          XR     R0,R0                                                    M6A21780
000A3C   4000 176E                  179          STH    R0,CRTFLG       ZERO PASLA FLAG                          M6A21790
000A40   4300 0A5E                  180          B      EXECUTE         BRANCH TO PROGRAM                        M6A21800
000A44   7300 176C                  181  CRT      LHL    R0,READ3                                                M6A21810
000A48   4000 153C                  182          STH    R0,READ1        SET UP PASLA COMMANDS                    M6A21820
000A4C   240F                       183          LIS    R0,X'F'                                                  M6A21830
000A4E   4000 176E                  184          STH    R0,CRTFLG       SET PASLA FLAG                           M6A21840
000A52   D300 0A12                  185          LB     R0,CRTADR                                               M6A21850
000A56   D200 153A                  186          STB    R0,ADDRESS      SET UP PASLA ADDRESS                     M6A21860
000A5A   DE00 153B                  187          OC     R0,PADSET                                               M6A21870
                                    188  *                                                                        M6A21880
                                    189  *                                                                        M6A21890
000A5E   0700                       190  EXECUTE  XR     R0,R0           SET UP LOW CORE                          M6A21900
000A60   5000 0000                  191          ST     R0,0                                                     M6A21910
000A64   5000 0020                  192          ST     R0,X'20'        MACHINE MALFUNCTION INTRPT.              M6A21920
000A68   5000 0024                  193          ST     R0,X'24'        OLD PSW                                  M6A21930
000A6C   5000 0028                  194          ST     R0,X'28'        RESERVED,MUST BE ZERO                    M6A21940
000A70   5000 002C                  195          ST     R0,X'2C'                                                 M6A21950
000A74   5000 0030                  196          ST     R0,X'30'        ILLEG.INSTR.NEW PSW                      M6A21960
000A78   E610 14B4                  197          LA     R1,ILGINT       NEW PSW LOC.                             M6A21970
000A7C   5010 0034                  198          ST     R1,X'34'                                                 M6A21980
000A80   C810 00F0                  199          LHI    R1,X'F0'                                                 M6A21990
000A84   5010 0038                  200          ST     R1,X'38'        MACHINE MALFUNCTION INTRPT.              M6A22000
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000A88   E610 1436        201          LA    R1,MALFTN       NEW PSW LOC.                              M6A22010
000A8C   5010 003C        202          ST    R1,X'3C'                                                 M6A22020
000A90   5000 0040        203          ST    R0,X'40'        RESERVED,MUST BE ZERO                    M6A22030
000A94   5000 0044        204          ST    R0,X'44'                                                 M6A22040
000A98   5000 0048        205          ST    R0,X'48'        ARITH.FAULT NEW PSW                      M6A22050
000A9C   E610 1502        206          LA    R1,ARTFLT                                                M6A22060
000AA0   5010 004C        207          ST    R1,X'4C'                                                 M6A22070
000AA4   E610 19FC        208          LA    R1,TABLE        SYSTEM QUEUE POINTER                     M6A22080
000AA8   5010 0080        209          ST    R1,X'80'                                                 M6A22090
000AAC   E610 19EC        210          LA    R1,PSWSAVE      CURRENT PSW SAVE POINTER                 M6A22100
000AB0   4010 0084        211          STH   R1,X'84'                                                 M6A22110
000AB4   E610 1A08        212          LA    R1,RSAVE        REG.SAV POINTER (SET 1)                  M6A22120
000AB8   4010 0086        213          STH   R1,X'86'                                                 M6A22130
000ABC   5000 0088        214          ST    R0,X'88'        SYS.Q SERVICE INTRPT. NEW PSW            M6A22140
000AC0   E610 1510        215          LA    R1,SYSQ                                                  M6A22150
000AC4   5010 008C        216          ST    R1,X'8C'                                                 M6A22160
000AC8   5000 0090        217          ST    R0,X'90'        MEMORY ACCESS CONTROLLER INTRPT.         M6A22170
000ACC   E610 14E6        218          LA    R1,MACINT       NEW PSW                                  M6A22180
000AD0   5010 0094        219          ST    R1,X'94'                                                 M6A22190
000AD4   5000 0098        220          ST    R0,X'98'        SVC INTRPT,NEW PSW                       M6A22200
000AD8   E640 14F4        221          LA    R4,SVCERR                                                M6A22210
000ADC   C810 009C        222          LHI   R1,X'9C'                                                 M6A22220
000AE0   2422             223          LIS   R2,2                                                     M6A22230
000AE2   C830 00BC        224          LHI   R3,X'BC'                                                 M6A22240
000AE6   4041 0000        225   X9C    STH   R4,0(R1)                                                 M6A22250
000AEA   C110 0AE6        226          BXLE  R1,X9C                                                   M6A22260
000AEE   2424             227          LIS   R2,4                                                     M6A22270
000AF0   C830 00CC        228          LHI   R3,X'CC'                                                 M6A22280
000AF4   5001 0000        229   XBC    ST    R0,0(R1)        RESERVED,MUST BE ZERO                    M6A22290
000AF8   C110 0AF4        230          BXLE  R1,XBC                                                   M6A22300
000AFC   E640 151E        231          LA    R4,EXTINT       EXTERNAL INTERRUPT SERVICE ROUTINE       M6A22310
000B00   2422             232          LIS   R2,2                                                     M6A22320
000B02   C830 02CC        233          LHI   R3,X'2CC'                                                M6A22330
000B06   4041 0000        234   XCC    STH   R4,0(R1)        INTERRUPT SERVICE TABLE                  M6A22340
000B0A   C110 0B06        235          BXLE  R1,XCC                                                   M6A22350
                         236   *                                                                     M6A22360
                         237   *                                                                     M6A22370
         0000 0B0E        238   RESTART1 EQU  *              ENTRY AT THIS POINT ESTABLISHES          M6A22380
                         239   *                                MEMORY TABLE                         M6A22390
                         240   *                                                                     M6A22400
                         241   *                                                                     M6A22410
000B0E   41F0 1114        242   PRTTITLE BAL  LINK,PRINT     PRINT TITLE                              M6A22420
000B12   153E             243          DC    Z(TITLE)        START ADDRESS OF MESSAGE                 M6A22430
000B14   1565             244          DC    Z(ENDOF)        END ADDRESS OF MESSAGE                   M6A22440
                         245   *                                                                     M6A22450
                         246   *                                                                     M6A22460
000B16   41F0 1114        247   TOCS    BAL   LINK,PRINT     PRINT AVAILABLE MEMORY MESSAGE           M6A22470
000B1A   1566             248          DC    Z(MEMSG)        START ADDRESS OF MESSAGE                 M6A22480
000B1C   1577             249          DC    Z(END)                                                   M6A22490
000B1E   0700             250          XR    R0,R0                                                    M6A22500
000B20   5000 0000        251          ST    R0,0                                                     M6A22510
000B24   4000 1776        252          STH   R0,FLAG                                                  M6A22520
000B28   4000 1778        253          STH   R0,WRAPFLG                                               M6A22530
000B2C   D200 175F        254          STB   R0,KB0144                                                M6A22540
000B30   4000 1760        255          STH   R0,KB0272                                                M6A22550
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000B34   4000 1762           256            STH     R0,KB0528                                                        M6A22560
000B38   4000 1764           257            STH     R0,KB0784                                                        M6A22570
000B3C   F800 1234 5678      258            LI      R0,Y'12345678'     LOAD DATA PATTERN                             M6A22580
000B42   C810 4000           259            LHI     R1,X'4000'         LOAD START ADDRESS OF SEARCH                  M6A22590
000B46   0821                260            LR      R2,R1              LOAD SEARCH INCREMENT VALUE                   M6A22600
000B48   F830 000F C000      261            LI      R3,Y'FC000'        YES, CHECK FOR WRAP AROUND                    M6A22610
000B4E   2441                262            LIS     R4,1               LOAD STARTING TABLE INDEX                     M6A22620
000B50   0755                263            XR      R5,R5              ESTABLISH ADRS OF 1ST MEMORY LOC              M6A22630
000B52   5011 0000           264   REP      ST      R1,0(R1)           STORE DATA PATTERN                            M6A22640
000B56   5871 0000           265            L       R7,0(R1)           LOAD DATA PATTERN FROM SEARCH LOC             M6A22650
000B5A   249F                266            LIS     R9,X'F'                                                          M6A22660
000B5C   0517                267            CLR     R1,R7              IS DATA READ = DATA STORED ?                  M6A22670
000B5E   2137                268            BNES    MEMLIST                   .                                     M6A22680
000B60   5870 0000           269            L       R7,0               WAS DATA STORED IN LOCATION ZERO?             M6A22690
000B64   4330 0BA2           270            BZ      SETBIT                                                           M6A22700
000B68   4090 1778           271   STFLG    STH     R9,WRAPFLG         SET FLAG IF WRAP AROUND OCCURED               M6A22710
000B6C   4090 1776           272   MEMLIST  STH     R9,FLAG                                                          M6A22720
000B70   0894                273            LR      R9,R4              NO, WAS LAST BIT SET ?                         M6A22730
000B72   2791                274            SIS     R9,1                                                             M6A22740
000B74   7490 175E           275            TBT     R9,KB0016                                                        M6A22750
000B78   4330 0BB4           276            BZ      NEXT               NO, ZERO NEXT BIT IN MEMORY TABLE             M6A22760
000B7C   0895                277            LR      R9,R5              YES, LOAD START ADRS OF MEMORY SEG            M6A22770
000B7E   41F0 11A6           278            BAL     LINK,CONVERT       CONVERT TO ASCII CHARACTERS                   M6A22780
000B82   0010                279            DC      X'10'              SHIFT INDEX                                   M6A22790
000B84   1578                280            DC      Z(MEMSG1)          STORE INDEX                                   M6A22800
000B86   0891                281            LR      R9,R1                                                            M6A22810
000B88   2791                282            SIS     R9,1               ESTABLISH LAST ADRS OF MEMORY SEGMFNT         M6A22820
000B8A   41F0 11A6           283            BAL     LINK,CONVERT       CONVERT TO ASCII CHARACTERS                   M6A22830
000B8E   0010                284            DC      X'10'              SHIFT INDEX                                   M6A22840
000B90   1580                285            DC      Z(ENDVAL)          STORE INDEX                                   M6A22850
000B92   41F0 1114           286            BAL     LINK,PRINT         PRINT MEMORY SEGMENT ADDRESSES                M6A22860
000B96   1578                287            DC      Z(MEMSG1)          START ADRS OF MESSAGE                          M6A22870
000B98   1587                288            DC      Z(END1)            END ADRS OF MESSAGE                           M6A22880
000B9A   2791                289            SIS     R9,1                                                             M6A22890
000B9C   5090 1790           290            ST      R9,LAST                                                          M6A22900
000BA0   230A                291            BS      NEXT               CHECK NEXT 8K OF MEMORY                       M6A22910
000BA2   7540 175E           292   SETBIT   SBT     R4,KB0016          SET BIT IN MEMORY TABLE                       M6A22920
000BA6   7390 1776           293            LHL     R9,FLAG                                                          M6A22930
000BAA   2335                294            BZS     NEXT                                                             M6A22940
000BAC   0851                295            LR      R5,R1              LOAD START ADRS OF MEMORY SEGMENT             M6A22950
000BAE   0799                296            XR      R9,R9                                                            M6A22960
000BB0   4090 1776           297            STH     R9,FLAG                                                          M6A22970
000BB4   7390 1778           298   NEXT     LHL     R9,WRAPFLG                                                       M6A22980
000BB8   213C                299            BNZS    ENABLE1                                                          M6A22990
000BBA   2641                300            AIS     R4,1               INCREMENT TABLE INDEX                         M6A23000
000BBC   7640 175E           301            RBT     R4,KB0016          ZERO NEXT BIT IN MEMORY TABLE                M6A23010
000BC0   FA00 0000 0001      302            AI      R0,1               ADD ONE TO DATA PATTERN                       M6A23020
000BC6   C110 0B52           303            BXLE    R1,REP             REPEAT UNTIL ALL OF MEMORY IS CHECKED        M6A23030
000BCA   249F                304            LIS     R9,X'F'                                                          M6A23040
000BCC   4300 0B68           305            B       STFLG                                                           M6A23050
                             306   *                                                                                M6A23060
                             307   *                                                                                M6A23070
         0000 0BD0           308   RESTART2 EQU     *                  ENTRY AT THIS POINT WILL NOT                 M6A23080
                             309   *                                          ESTABLISH MEMORY TABLE               M6A23090
                             310   *                                                                                M6A23100
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000BD0   F810 0000 20F0   311   ENABLE1   LI     R1,X'20F0'                                               M6A23110
000BD6   9501             312             EPSR   R0,R1              NOW ENABLE INTERRUPTS                  M6A23120
000BD8   C810 4000        313   SETVAL    LHI    R1,X'4000'                                               M6A23130
000BDC   5010 1784        314             ST     R1,LOVAL           SET LOVAL                             M6A23140
000BE0   5810 1790        315             L      R1,LAST                                                  M6A23150
000BE4   5010 1788        316             ST     R1,HIVAL           SET HIVAL                             M6A23160
000BE8   C870 0020        317             LHI    R7,C' '            GET READY TO CLEAR TYPNO              M6A23170
000BEC   D270 1667        318             STB    R7,TYPNO           CLEAR TYPNO                           M6A23180
000BF0   41F0 1114        319             BAL    LINK,PRINT         PRINT "TYPE= "                        M6A23190
000BF4   1660             320             DC     Z(TYPEMSG)         STARTING ADDRESS OF MESSAGE           M6A23200
000BF6   1667             321             DC     Z(TYPEND)          ENDING ADDRESS OF MESSAGE             M6A23210
000BF8   41F0 0CA8        322   TYPESENS  BAL    LINK,TYPSENS       GO FIND OUT WHAT TYPE OF CORE MAT     M6A23220
000BFC   0711             323   PRTMSG    XR     R1,R1                                                    M6A23230
000BFE   D210 177D        324             STB    R1,ERRFLG                                                M6A23240
000C02   4010 177E        325             STH    R1,TTYFLG          ZERO TTY & CONTINUE FLAG              M6A23250
000C06   4010 1778        326             STH    R1,WRAPFLG         ZERO WRAPAROUND FLAG                  M6A23260
000C0A   41F0 1114        327             BAL    LINK,PRINT         PRINT 'SUBTEST'                       M6A23270
000C0E   16C2             328             DC     Z(TSTMSG)          START ADDRESS OF MESSAGE              M6A23280
000C10   16CF             329             DC     Z(TSTEND)          END ADDRESS OF MESSAGE                M6A23290
000C12   D370 177E        330             LB     R7,TTYFLG                                                M6A23300
000C16   0877             331             LR     R7,R7              IS TTY FLAG SET ?                     M6A23310
000C18   2335             332             BZS    PRTMSG1            NO, CONTINUE                          M6A23320
000C1A   F810 0000 A0F0   333             LI     R1,Y'A0F0'         YES, HALT                             M6A23330
000C20   9501             334             EPSR   R0,R1              PROCESSOR HALTED                      M6A23340
000C22   5010 179C        335   PRTMSG1   ST     R1,TOTAL           ZERO TOTAL COUNT                      M6A23350
000C26   5010 17A0        336             ST     R1,TOTALERR        ZERO TOTAL ERROR COUNT                M6A23360
000C2A   41F0 1164        337   SUBGET    BAL    LINK,READ          GET A CHARACTER                       M6A23370
000C2E   C570 000A        338             CLHI   R7,X'0A'           IS IT A "LF"?                         M6A23380
000C32   4330 135A        339             BE     HILO               YES SO GOT "HILO" LIM SUBROUTINE      M6A23390
000C36   CB70 0030        340             SHI    R7,X'30'           IS IT AN ASCII NUMBER?                M6A23400
000C3A   4280 0C62        341             BL     READERR            NO SO ASK AGAIN                       M6A23410
000C3E   C570 0009        342             CLHI   R7,X'9'            IS IT LESS THAN 9?                    M6A23420
000C42   4380 0C62        343             BNL    READERR            NO SO ASK AGAIN                       M6A23430
000C46   D270 177C        344             STB    R7,SUBTST          VALID NUMBER SO SAVE IT               M6A23440
000C4A   41F0 1164        345   LCHK      BAL    LINK,READ          GET ANOTHER CHARACTER                 M6A23450
000C4E   C570 004C        346             CLHI   R7,C'L'            IS IT AN "L"?                         M6A23460
000C52   2135             347             BNES   CRCHK              NO IS IT A "CR"?                      M6A23470
000C54   2471             348             LIS    R7,1               YES- SO SET THE                      M6A23480
000C56   D270 177F        349             STB    R7,CONTFLG         CONTINUE FLAG                         M6A23490
000C5A   230A             350             BS     OKIN               OK SO  RUN THE TEST                  M6A23500
000C5C   C570 000D        351   CRCHK     CLHI   R7,X'0D'           IS IT A "CR"?                         M6A23510
000C60   2337             352             BES    OKIN               YES SO RUN                            M6A23520
000C62   41F0 1114        353   READERR   BAL    LINK,PRINT         PRINT THE ERRONEOUS                  M6A23530
000C66   1668             354             DC     Z(QUEST)           INPUT                                 M6A23540
000C68   166F             355             DC     Z(QUEND)           MESSAGE                               M6A23550
000C6A   4300 0C2A        356             B      SUBGET             TRY AGAIN                             M6A23560
000C6E   41F0 1114        357   OKIN      BAL    LINK,PRINT         PRINT A "LF"                          M6A23570
000C72   1577             358             DC     Z(END)                                                   M6A23580
000C74   1577             359             DC     Z(END)                                                   M6A23590
000C76   D210 177B        360   SELTST    STB    R1,TSTFLG          ZERO TEST FLAG                        M6A23600
000C7A   D310 177C        361   SUBSEL    LB     R1,SUBTST          LOAD R1 WITH SUBTEST SELECTED         M6A23610
000C7E   1111             362             SLLS   R1,1               GENERATE CORRECT INDEX VALUE          M6A23620
000C80   73E1 0C96        363             LHL    RETRN,SUB(R1)      LOAD ADDRS OF SUBTEST                 M6A23630
000C84   50E0 1824        364             ST     RETRN,REGSAV1E     SAVE BRANCH ADDRESS                   M6A23640
000C88   5040 17FC        365             ST     R4,REGSAV14        SAVE TESTING LOC.                     M6A23650
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000C8C   D000 17AC       366           STM    R0,REGSAV00        SAVE WORKING REGISTERS              M6A23660
000C90   D100 17EC       367           LM     R0,REGSAV10        PICKUP TESTING REGISTERS           M6A23670
000C94   030E            368           BR     RETRN              BRANCH TO SUBTEST SELECTED         M6A23680
000C96   0DF8            369   SUB      DC     Z(SUB0)                                               M6A23690
000C98   0E02            370            DC     Z(SUB1)                                               M6A23700
000C9A   0E2A            371            DC     Z(SUB2)                                               M6A23710
000C9C   0E56            372            DC     Z(SUB3)                                               M6A23720
000C9E   0E82            373            DC     Z(SUB4)                                               M6A23730
000CA0   0EAE            374            DC     Z(SUB5)                                               M6A23740
000CA2   0EDA            375            DC     Z(SUB6)                                               M6A23750
000CA4   0F06            376            DC     Z(SUB7)                                               M6A23760
000CA6   0F32            377            DC     Z(SUB8)                                               M6A23770
                         378   ***********************************************                      M6A23780
                         379   *    "TYPSENS" IS CALLED TO DETERMINE WHICH *                        M6A23790
                         380   *TYPE OF CORE MAT IS BEING TESTED:          *                        M6A23800
                         381   *         -TYPE=0 FOR 35-491 (16 KB)        *                        M6A23810
                         382   *         -TYPE=1 FOR 32-198 (32 KB 750NS)  *                        M6A23820
                         383   *                           (32 KB 1000NS) *                        M6A23830
                         384   *         -TYPE=2 FOR 32-206 (32 KB 750NS)  *                        M6A23840
                         385   *                           (32 KB 1000NS) *                        M6A23850
                         386   *         -TYPE=3 FOR 32-200 (64 KB 1000NS) *                        M6A23860
                         387   *         -TYPE=4 FOR 32-209 (64 KB 750NS)  *                        M6A23870
                         388   *ONCE THE CORRECT TYPE NUMBER HAS BEEN      *                        M6A23880
                         389   *ENTERER THIS MODULE THEN SETS UP THE COR-  *                        M6A23890
                         390   *RESPONDING WORST CASE PATTERN-IF REQUIRED. *                        M6A23900
                         391   * IT THEN RETURNS AND IS READY TO RUN THE   *                        M6A23910
                         392   *SUBTESTS.                                  *                        M6A23920
                         393   ***********************************************                      M6A23930
000CA8   08EF            394   TYPSENS  LR     RETRN,LINK         SAVE RETURN ADDRESS                M6A23940
000CAA   41F0 1164       395   TYPEGET  BAL    LINK,READ          GOO GET CHARACTER FROM CONSOLE     M6A23950
000CAE   C570 0030       396            CLHI   R7,C'0'            TYPE=0? (35-491)                   M6A23960
000CB2   4330 0CE2       397            BE     TYPSET0            YES,SET TYPEFLAG=0                 M6A23970
000CB6   C570 0031       398            CLHI   R7,C'1'            TYPE=1? (32-198)                   M6A23980
000CBA   4330 0CF0       399            BE     TYPSET1            YES,SET TYPEFLAG=1                 M6A23990
000CBE   C570 0032       400            CLHI   R7,C'2'            TYPE=2? (32-206)                   M6A24000
000CC2   4330 0CFE       401            BE     TYPSET2            YES,SET TYPEFLAG=2                 M6A24010
000CC6   C570 0033       402            CLHI   R7,C'3'            TYPE=3? (32-200)                   M6A24020
000CCA   4330 0D0C       403            BE     TYPSET3            YES,SET TYPEFLAG=3                 M6A24030
000CCE   C570 0034       404            CLHI   R7,C'4'            TYPE=4? (32-209)                   M6A24040
000CD2   4330 0D2C       405            BE     TYPSET4            YES,SET TYPEFLAG=4                 M6A24050
000CD6   41F0 1114       406            BAL    LINK,PRINT         INVALID TYPE NUMBER                M6A24060
000CDA   1588            407            DC     Z(PARNOMSG)        PRINT VALID TYPE NUMBERS AND       M6A24070
000CDC   163B            408            DC     Z(PARNOEND)        CORRESPONDING PART NUMBERS.        M6A24080
000CDE   4300 0CAA       409            B      TYPEGET            LOOK FOR CORRECT TYPE NUMBER AGAIN M6A24090
000CE2   D270 1667       410   TYPSET0  STB    R7,TYPNO           PUT TYPE NUMBER IN MESSAGE         M6A24100
000CE6   C870 1030       411            LHI    R7,START0          GET START0 ADDRESS                 M6A24110
000CEA   4070 17A4       412            STH    R7,TYPSTRT         SAVE START0 ADDRESS FOR TESTING    M6A24120
000CEE   030E            413            BR     RETRN              TYPE IS SET,RETURN TO SUBTEST INIT. M6A24130
000CF0   D270 1667       414   TYPSET1  STB    R7,TYPNO           PUT TYPE NUMBER IN MESSAGE         M6A24140
000CF4   C870 0F5E       415            LHI    R7,START1          GET START1 ADDRESS FOR TESTING     M6A24150
000CF8   4070 17A4       416            STH    R7,TYPSTRT         SAVE IT.                           M6A24160
000CFC   030E            417            BR     RETRN              TYPE IS SET,RETURN TO SUBTEST INIT. M6A24170
000CFE   D270 1667       418   TYPSET2  STB    R7,TYPNO           PUT TYPE NUMBER IN MESSAGE         M6A24180
000D02   C870 0F5E       419            LHI    R7,START2          GET START2 ADDRESS                 M6A24190
000D06   4070 17A4       420            STH    R7,TYPSTRT         SAVE START2 ADDRESS FOR TESTING    M6A24200
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000D0A   030E                    421          BR    RETRN         TYPE IS SET,RETURN TO SUBTEST INIT.   M6A24210
000D0C   D270 1667               422  TYPSET3 STB   R7,TYPNO      PUT TYPE NUMBER IN MESSAGE           M6A24220
000D10   C870 0F5E               423          LHI   R7,START3     GET START3 ADDRESS                   M6A24230
000D14   4070 17A4               424          STH   R7,TYPSTRT    SAVE START3 ADDRESS FOR TESTING      M6A24240
000D18   C8A0 0210               425          LHI   WORK,X'0210'                                       M6A24250
000D1C   40A0 1536               426          STH   WORK,PAT3     PAT1,PAT2,PAT3&PAT4 ARE USED FOR     M6A24260
000D20   73A0 4000 8400          427          LHL   WORK,X'8400'  THE WORST CASE PATTERN GENERATION    M6A24270
000D26   40A0 1538               428          STH   WORK,PAT4     FOR ALL DIFFERENT CORE MATS          M6A24280
000D2A   030E                    429          BR    RETRN         TYPE&PAT ARE SET,SO RETURN           M6A24290
000D2C   D270 1667               430  TYPSET4 STB   R7,TYPNO                                           M6A24300
000D30   C870 0F5E               431          LHI   R7,START4                                          M6A24310
000D34   4070 17A4               432          STH   R7,TYPSTRT                                         M6A24320
000D38   C8A0 0012               433          LHI   WORK,X'0012'                                       M6A24330
000D3C   40A0 1536               434          STH   WORK,PAT3     PAT3 & PAT4 ARE NOW LOADED           M6A24340
000D40   C8A0 4400               435          LHI   WORK,X'4400'  WITH THE WORST CASE BITS TO GENERATE M6A24350
000D44   40A0 1538               436          STH   WORK,PAT4     THE WORST CASE PATTERN FOR 32-209    M6A24360
000D48   030E                    437          BR    RETRN         TYPE&PAT ARE SET,SO RETURN           M6A24370
                                 438  *THIS IS AN ENTRY POINTER TO ALLOW THE TEST(FWR1) TO             M6A24380
                                 439  *ENTER THE CORRECT WORST CASE GENERATOR                          M6A24390
000D4A   73F0 17A4               440  TRESTRT LHL   LINK,TYPSTRT  GET ENTRY POINTER                    M6A24400
000D4E   430F 0008               441          B     8(LINK)       RE-ENTER WORST CASE GENERATOR        M6A24410
                                 442  *                                                                M6A24420
                                 443  ****************************************************************  M6A24430
                                 444  *                                                                M6A24440
000D52   41E0 1174               445  SUBCHK  BAL   RETRN,TESTBRK IS BREAK KEY DEPRESSED?              M6A24450
000D56   D310 177D               446          LB    R1,ERRFLG                                          M6A24460
000D5A   0811                    447          LR    R1,R1         IS ERROR FLAG SET ?                  M6A24470
000D5C   2139                    448          BNZS  TSTSEL        YES, CHECK FOR NEXT SUBTEST          M6A24480
000D5E   D310 177F               449          LB    R1,CONTFLG    IS CONTINUE FLAG SET ?               M6A24490
000D62   0811                    450          LR    R1,R1                                              M6A24500
000D64   2135                    451          BNZS  TSTSEL        YES, CHECK FOR NEXT SUBTEST          M6A24510
000D66   41F0 1114               452          BAL   LINK,PRINT    NO, PRINT 'NO ERROR'                 M6A24520
000D6A   16D0                    453          DC    Z(NOERR)      START ADDRESS OF MESSAGE             M6A24530
000D6C   16D9                    454          DC    Z(ERREND)     END ADDRESS OF MESSAGE               M6A24540
000D6E   0711                    455  TSTSEL  XR    R1,R1         ZERO REGISTER R1                     M6A24550
000D70   D210 177D               456          STB   R1,ERRFLG     ZERO ERROR FLAG                      M6A24560
000D74   D330 177C               457          LB    R3,SUBTST     LOAD R3 WITH CURRENT SUBTEST         M6A24570
000D78   D310 177B               458          LB    R1,TSTFLG     LOAD R1 WITH TEST FLAG               M6A24580
000D7C   0811                    459          LR    R1,R1         IS TEST FLAG SET ?                   M6A24590
000D7E   233A                    460          BZS   SWTST         NO, READ DISPLAY SWITCH              M6A24600
000D80   2631                    461          AIS   R3,1          YES, INCREMENT SUBTEST NUMBER        M6A24610
000D82   C530 0009               462          CLHI  R3,X'9'       HAVE ALL SUBTESTS BEEN RUN ?         M6A24620
000D86   2385                    463          BNLS  STOP          YES, CHECK SWITCH 15                 M6A24630
000D88   D230 177C               464  STRBYT  STB   R3,SUBTST     NO, STORE SUBTEST TO BE EXECUTED NEXT M6A24640
000D8C   4300 0C7A               465          B     SUBSEL        SELECT ADDRESS OF SUBTEST            M6A24650
000D90   2431                    466  STOP    LIS   R3,1          START WITH SUBTEST ONE               M6A24660
000D92   2411                    467  SWTST   LIS   R1,1          LOAD R1 WITH DISPLAY PANEL ADRS      M6A24670
000D94   5110 179C               468          AM    R1,TOTAL      INCREMENT TOTAL COUNT                M6A24680
000D98   5840 179C               469          L     R4,TOTAL                                           M6A24690
000D9C   41E0 10F0               470          BAL   RETRN,WRITE2  WRITE TOTAL ON DISPLAY               M6A24700
000DA0   41E0 1174               471          BAL   RETRN,TESTBRK GO SEE IF BREAK KEY IS PRESSED       M6A24710
000DA4   D320 177F               472          LB    R2,CONTFLG    IS CONTINUE FLAG SET?                M6A24720
000DA8   0822                    473          LR    R2,R2                                              M6A24730
000DAA   2333                    474          BZS   SENSE4        NO - IS CONSOLE DU?                  M6A24740
000DAC   4300 0D88               475          B     STRBYT        YES SO REPEAT TEST                   M6A24750
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000DB0  9DBA            476  SENSE4  SSR   R11,R10          SENSE TTY STATUS                      M6A24760
000DB2  4210 0D88       477          BM    STRBYT           BRANCH IF DU                          M6A24770
000DB6  C4A0 000C       478          NHI   R10,X'000C'      MASK FOR PASLA EXAMIN & BSY           M6A24780
000DBA  C5A0 000C       479          CLHI  R10,X'0C'        IS THE PASLA DU?                      M6A24790
000DBE  4330 0D88       480          BE    STRBYT           YES-SO REPEAT TEST                    M6A24800
000DC2  D3A0 177E       481  TTYCHK  LB    R10,TTYFLG                                             M6A24810
000DC6  08AA            482          LR    R10,R10          HAS TTY BEEN TURNED OFF               M6A24820
000DC8  4330 0BFC       483          BZ    PRTMSG           NO, PRINT 'SUBTEST'                   M6A24830
000DCC  5890 179C       484  PRTTOT  L     R9,TOTAL                                               M6A24840
000DD0  41F0 11A6       485          BAL   LINK,CONVERT     YES, PRINT TOTAL & TOTAL ERROR        M6A24850
000DD4  001C            486          DC    X'1C'            SHIFT INDEX                           M6A24860
000DD6  1670            487          DC    Z(TOTALMSG)      STORE INDEX                           M6A24870
000DD8  41F0 1114       488          BAL   LINK,PRINT       PRINT TOTAL COUNT                     M6A24880
000DDC  1670            489          DC    Z(TOTALMSG)      START ADDRESS OF MESSAGE              M6A24890
000DDE  167F            490          DC    Z(TOTALEND)      END OF MESSAGE                        M6A24900
000DE0  5890 17A0       491          L     R9,TOTALERR                                            M6A24910
000DE4  41F0 11A6       492          BAL   LINK,CONVERT     CONVERT TO ASCII CHARACTERS           M6A24920
000DE8  001C            493          DC    X'1C'            SHIFT INDEX                           M6A24930
000DEA  1670            494          DC    Z(TOTALMSG)      STORE INDEX                           M6A24940
000DEC  41F0 1114       495          BAL   LINK,PRINT       PRINT TOTAL ERROR COUNT               M6A24950
000DF0  1670            496          DC    Z(TOTALMSG)      START ADDRESS OF MESSAGE              M6A24960
000DF2  1687            497          DC    Z(ERROREND)      END ADDRESS OF MESSAGE                M6A24970
000DF4  4300 0BFC       498          B     PRTMSG           PRINT 'SUBTEST'                       M6A24980
                        499  *                                                                    M6A24990
                        500  ******************************************************************   M6A25000
                        501  *                                                                    M6A25010
000DF8  2411            502  SUB0    LIS   R1,1             LOAD R1 WITH ONE                      M6A25020
000DFA  D210 177B       503          STB   R1,TSTFLG        SET TEST FLAG TO RUN ALL TEST         M6A25030
000DFE  D210 177C       504          STB   R1,SUBTST        STORE SUBTEST NUMBER                  M6A25040
                        505  *                              START WITH SUBTEST 1                  M6A25050
                        506  *                                                                    M6A25060
000E02  41E0 1282       507  SUB1    BAL   RETRN,TSTNUM     PRINT TEST NUMBER                     M6A25070
000E06  2450            508          LIS   R5,0             R5=R6=R7=R8=0                          M6A25080
000E08  0865            509          LR    R6,R5                                                  M6A25090
000E0A  0875            510          LR    R7,R5                                                  M6A25100
000E0C  0885            511          LR    R8,R5                                                  M6A25110
000E0E  73D0 17A4       512          LHL   R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN         M6A25120
000E12  01FD            513          BALR  LINK,R13         NOW RUN THE CORRECT WORST CASE.       M6A25130
000E14  2450            514          LIS   R5,0             R5 = 0                                M6A25140
000E16  0865            515          LR    R6,R5            R6 = 0                                M6A25150
000E18  0875            516          LR    R7,R5            R7 = 0                                M6A25160
000E1A  F880 0000 FFFF  517          LI    R8,Y'FFFF'       R8 = FFFF                             M6A25170
000E20  73D0 17A4       518          LHL   R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN         M6A25180
000E24  01FD            519          BALR  LINK,R13         NOW RUN THE CORRECT WORST CASE.       M6A25190
000E26  4300 0D52       520          B     SUBCHK                                                 M6A25200


000E2A  41E0 1282       522  SUB2    BAL   RETRN,TSTNUM     PRINT TEST NUMBER                     M6A25220
000E2E  F870 0000 FFFF  523          LI    R7,Y'FFFF'       R5=R6=0, R7 = FFFF                     M6A25230
000E34  2480            524          LIS   R8,0             R8=0                                   M6A25240
000E36  0868            525          LR    R6,R8                                                  M6A25250
000E38  0858            526          LR    R5,R8                                                  M6A25260
000E3A  73D0 17A4       527          LHL   R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN         M6A25270
000E3E  01FD            528          BALR  LINK,R13         NOW RUN THE CORRECT WORST CASE.       M6A25280
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000E40  F880 0000 FFFF    529        LI    R8,Y'FFFF'    R8=FFFF, R5=R6=0,R7=FFFF      M6A25290
000E46  0878              530        LR    R7,R8                                        M6A25300
000E48  2450              531        LIS   R5,0                                         M6A25310
000E4A  0865              532        LR    R6,R5                                        M6A25320
000E4C  73D0 17A4         533        LHL   R13,TYPSTRT   GET ADRS OF WC TEST TO BE RUN  M6A25330
000E50  01FD              534        BALR  LINK,R13      NOW RUN THE CORRECT WORST CASE. M6A25340
000E52  4300 0D52         535        B     SUBCHK                                       M6A25350


000E56  41E0 1282         537  SUB3  BAL   RETRN,TSTNUM  PRINT TEST NUMBER              M6A25370
000E5A  F860 0000 FFFF    538        LI    R6,Y'FFFF'    R6=FFFF ,R5=0                  M6A25380
000E60  2470              539        LIS   R7,0          R7=0                           M6A25390
000E62  0887              540        LR    R8,R7         R8=0                           M6A25400
000E64  0857              541        LR    R5,R7                                        M6A25410
000E66  73D0 17A4         542        LHL   R13,TYPSTRT   GET ADRS OF WC TEST TO BE RUN  M6A25420
000E6A  01FD              543        BALR  LINK,R13      NOW RUN THE CORRECT WORST CASE. M6A25430
000E6C  F880 0000 FFFF    544        LI    R8,Y'FFFF'    R8=FFFF,R5=0,R6=FFFF,R7=0      M6A25440
000E72  0868              545        LR    R6,R8                                        M6A25450
000E74  2450              546        LIS   R5,0                                         M6A25460
000E76  0875              547        LR    R7,R5                                        M6A25470
000E78  73D0 17A4         548        LHL   R13,TYPSTRT   GET ADRS OF WC TEST TO BE RUN  M6A25480
000E7C  01FD              549        BALR  LINK,R13      NOW RUN THE CORRECT WORST CASE. M6A25490
000E7E  4300 0D52         550        B     SUBCHK                                       M6A25500


000E82  41E0 1282         552  SUB4  BAL   RETRN,TSTNUM  PRINT TEST NUMBER              M6A25520
000E86  F870 0000 FFFF    553        LI    R7,Y'FFFF'    R7=FFFF, R5=0 ,R6=FFFF         M6A25530
000E8C  0867              554        LR    R6,R7                                        M6A25540
000E8E  2450              555        LIS   R5,0                                         M6A25550
000E90  0885              556        LR    R8,R5         R8=0                           M6A25560
000E92  73D0 17A4         557        LHL   R13,TYPSTRT   GET ADRS OF WC TEST TO BE RUN  M6A25570
000E96  01FD              558        BALR  LINK,R13      NOW RUN THE CORRECT WORST CASE. M6A25580
000E98  F880 0000 FFFF    559        LI    R8,Y'FFFF'    R8=FFFF,R5=0,R6=FFFF,R7=FFFF   M6A25590
000E9E  0868              560        LR    R6,R8                                        M6A25600
000EA0  0878              561        LR    R7,R8                                        M6A25610
000EA2  2450              562        LIS   R5,0                                         M6A25620
000EA4  73D0 17A4         563        LHL   R13,TYPSTRT   GET ADRS OF WC TEST TO BE RUN  M6A25630
000EA8  01FD              564        BALR  LINK,R13      NOW RUN THE CORRECT WORST CASE. M6A25640
000EAA  4300 0D52         565        B     SUBCHK                                       M6A25650


000EAE  41E0 1282         567  SUB5  BAL   RETRN,TSTNUM  PRINT TEST NUMBER              M6A25670
000EB2  F850 0000 FFFF    568        LI    R5,Y'FFFF'    5=FFFF                         M6A25680
000EB8  2460              569        LIS   R6,0          R6=0                           M6A25690
000EBA  0876              570        LR    R7,R6         R7=0                           M6A25700
000EBC  0886              571        LR    R8,R6         R8=0                           M6A25710
000EBE  73D0 17A4         572        LHL   R13,TYPSTRT   GET ADRS OF WC TEST TO BE RUN  M6A25720
000EC2  01FD              573        BALR  LINK,R13      NOW RUN THE CORRECT WORST CASE. M6A25730
000EC4  F880 0000 FFFF    574        LI    R8,Y'FFFF'    R8=FFFF,R5=FFFF,R6=0,R7=0      M6A25740
000ECA  0858              575        LR    R5,R8                                        M6A25750
000ECC  2460              576        LIS   R6,0                                         M6A25760
000ECE  0876              577        LR    R7,R6                                        M6A25770
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000ED0   73D0 17A4               578          LHL    R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN      M6A25780
000ED4   01FD                    579          BALR   LINK,R13         NOW RUN THE CORRECT WORST CASE.    M6A25790
000ED6   4300 0D52               580          B      SUBCHK                                              M6A25800


000EDA   41E0 1282               582  SUB6    BAL    RETRN,TSTNUM     PRINT TEST NUMBER                  M6A25820
000EDE   F870 0000 FFFF          583          LI     R7,Y'FFFF'       R7=FFFF,R5=FFFF,R6=0               M6A25830
000EE4   0857                    584          LR     R5,R7                                               M6A25840
000EE6   2460                    585          LIS    R6,0                                                M6A25850
000EE8   0886                    586          LR     R8,R6            R8=0                               M6A25860
000EEA   73D0 17A4               587          LHL    R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN      M6A25870
000EEE   01FD                    588          BALR   LINK,R13         NOW RUN THE CORRECT WORST CASE.    M6A25880
000EF0   F880 0000 FFFF          589          LI     R8,Y'FFFF'       R8=FFFF,R5=FFFF,R6=0,R7=FFFF       M6A25890
000EF6   0878                    590          LR     R7,R8                                               M6A25900
000EF8   0858                    591          LR     R5,R8                                               M6A25910
000EFA   2460                    592          LIS    R6,0                                                M6A25920
000EFC   73D0 17A4               593          LHL    R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN      M6A25930
000F00   01FD                    594          BALR   LINK,R13         NOW RUN THE CORRECT WORST CASE.    M6A25940
000F02   4300 0D52               595          B      SUBCHK                                              M6A25950


000F06   41E0 1282               597  SUB7    BAL    RETRN,TSTNUM     PRINT TEST NUMBER                  M6A25970
000F0A   F860 0000 FFFF          598          LI     R6,Y'FFFF'       R6=FFFF,R5=FFFF                    M6A25980
000F10   0856                    599          LR     R5,R6                                              M6A25990
000F12   2470                    600          LIS    R7,0             R7=0                               M6A26000
000F14   0887                    601          LR     R8,R7            R8=0                               M6A26010
000F16   73D0 17A4               602          LHL    R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN      M6A26020
000F1A   01FD                    603          BALR   LINK,R13         NOW RUN THE CORRECT WORST CASE.    M6A26030
000F1C   F880 0000 FFFF          604          LI     R8,Y'FFFF'       R8=FFFF,R5=R6=FFFF,R7=0            M6A26040
000F22   0858                    605          LR     R5,R8                                               M6A26050
000F24   0868                    606          LR     R6,R8                                               M6A26060
000F26   2470                    607          LIS    R7,0                                                M6A26070
000F28   73D0 17A4               608          LHL    R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN      M6A26080
000F2C   01FD                    609          BALR   LINK,R13         NOW RUN THE CORRECT WORST CASE.    M6A26090
000F2E   4300 0D52               610          B      SUBCHK                                              M6A26100


000F32   41E0 1282               612  SUB8    BAL    RETRN,TSTNUM     PRINT TEST NUMBER                  M6A26120
000F36   F850 0000 FFFF          613          LI     R5,Y'FFFF'                                          M6A26130
000F3C   0875                    614          LR     R7,R5                                               M6A26140
000F3E   0865                    615          LR     R6,R5                                               M6A26150
000F40   2480                    616          LIS    R8,0             R8=0                               M6A26160
000F42   73D0 17A4               617          LHL    R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN      M6A26170
000F46   01FD                    618          BALR   LINK,R13         NOW RUN THE CORRECT WORST CASE.    M6A26180
000F48   F850 0000 FFFF          619          LI     R5,Y'FFFF'                                          M6A26190
000F4E   0865                    620          LR     R6,R5                                               M6A26200
000F50   0875                    621          LR     R7,R5                                               M6A26210
000F52   0885                    622          LR     R8,R5            R5 = R6 = R7 = R8 = FFFF           M6A26220
000F54   73D0 17A4               623          LHL    R13,TYPSTRT      GET ADRS OF WC TEST TO BE RUN      M6A26230
000F58   01FD                    624          BALR   LINK,R13         NOW RUN THE CORRECT WORST CASE.    M6A26240
000F5A   4300 0D52               625          B      SUBCHK                                              M6A26250
                                 626  *                                                                  M6A26260
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                                627  *                    LOAD THE DATA PATTERN IN ADDRESS SPECIFIED BY R4    M6A26270
                                628  *                    IF PAT3 = 0 & PAT4 = 0 , LOAD R5                    M6A26280
                                629  *                    IF PAT3 = 0 & PAT4 = 1 , LOAD R6                    M6A26290
                                630  *                    IF PAT3 = 1 & PAT4 = 0 , LOAD R7                    M6A26300
                                631  *                    IF PAT3 = 1 & PAT4 = 1 , LOAD R8                    M6A26310
                                632  *                                                                       M6A26320
              0000 0F5E         633  START1  EQU  *                    WORST CASE ALGORITHM FOR 32-198        M6A26330
              0000 0F5E         634  START2  EQU  *                    WORST CASE ALGORITHM FOR 32-206        M6A26340
              0000 0F5E         635  START3  EQU  *                    WORST CASE ALGORITHM FOR 32-200        M6A26350
              0000 0F5E         636  START4  EQU  *                    WORST CASE ALGORITHM FOR 32-209        M6A26360
000F5E        40F0 17A6         637  ALGRM1  STH  LINK,NXTST           SAVE NEXT TEST LOC.                    M6A26370
000F62        41F0 11D8         638          BAL  LINK,FWR1            FIND STARTING LOC.                     M6A26380
000F66        73B0 1536         639  LODTAQ  LHL  R11,PAT3             PAT3 IN R11                            M6A26390
000F6A        73C0 1538         640          LHL  R12,PAT4             PAT4 IN R12                            M6A26400
000F6E        5840 1794         641          L    R4,LOADR             START LOADING AT LOC IN LOADR          M6A26410
000F72        0804             642  LODTA0   LR   R0,R4                                                       M6A26420
000F74        040B             643          NR   R0,R11                BITS IN PAT3 BOTH 0 ?                  M6A26430
000F76        2333             644          BZS  BT1ZRO                                                       M6A26440
000F78        050B             645          CLR  R0,R11                BITS IN PAT3 BOTH 1 ?                  M6A26450
000F7A        213C             646          BNES BT1ONE                                                       M6A26460
000F7C        0804             647  BT1ZRO   LR   R0,R4                EXCLUSIVE OR OF BITS IN PAT3 IS 0      M6A26470
000F7E        040C             648          NR   R0,R12                BITS IN PAT4 BOTH 0 ?                  M6A26480
000F80        2134             649          BNZS BTOCH2                                                       M6A26490
000F82        4054 0000        650  BT00     STH  R5,0(R4)             EXCLUSIVE OR OF BITS IN PAT4 IS 0      M6A26500
000F86        2305             651          BS   LDTA2                                                        M6A26510
000F88        050C             652  BTOCH2   CLR  R0,R12               BITS IN PAT4 BOTH 1 ?                  M6A26520
000F8A        2234             653          BES  BT00                                                         M6A26530
000F8C        4064 0000        654  BT01     STH  R6,0(R4)                                                    M6A26540
000F90        2306             655  LDTA2    BS   LDTA3                                                        M6A26550
000F92        0804             656  BT1ONE   LR   R0,R4                EXCLUSIVE OR OF BITS IN PAT3 IS 1      M6A26560
000F94        040C             657          NR   R0,R12               BITS IN PAT4 BOTH 0 ?                  M6A26570
000F96        2134             658          BNZS BT1CH2                                                       M6A26580
000F98        4074 0000        659  BT10     STH  R7,0(R4)             EXCLUSIVE OR OF BITS IN PAT4 IS 0      M6A26590
000F9C        2305             660  LDTA3    BS   LOADED                                                       M6A26600
000F9E        050C             661  BT1CH2   CLR  R0,R12               BITS IN PAT4 BOTH 1 ?                  M6A26610
000FA0        2234             662          BES  BT10                                                         M6A26620
000FA2        4084 0000        663  BT11     STH  R8,0(R4)             EXCLUSIVE OR OF BITS IN PAT4 IS 1      M6A26630
000FA6        2642             664  LOADED   AIS  R4,2                                                         M6A26640
000FA8        58E0 1798        665          L    RETRN,HIADR                                                 M6A26650
000FAC        05E4             666          CLR  RETRN,R4                                                     M6A26660
000FAE        4380 0F72        667          BNL  LODTA0                                                       M6A26670
                                668  *                                                                        M6A26680
                                669  *                                                                        M6A26690
000FB2        5840 1794        670  CHKDTA   L    R4,LOADR             START CHECKING AT LOC IN LOADR         M6A26700
                                671  *        LOADS EXPECTED DATA PATTERN IN R9 TO MATCH ADDRESS IN R4       M6A26710
000FB6        0895             672  CHKDT1   LR   R9,R5                 ASSUME PAT3 = 0 , PAT4 = 0            M6A26720
000FB8        0804             673          LR   R0,R4                                                        M6A26730
000FBA        040B             674          NR   R0,R11                                                       M6A26740
000FBC        2333             675          BZS  DT1ZRO                                                       M6A26750
000FBE        050B             676          CLR  R0,R11                                                       M6A26760
000FC0        2138             677          BNES DT1ONE                                                       M6A26770
000FC2        0804             678  DT1ZRO   LR   R0,R4                BIT 12 = 0                            M6A26780
000FC4        040C             679          NR   R0,R12                                                       M6A26790
000FC6        2334             680          BZS  CHKA2                 BRANCH IF PAT4 = 0                     M6A26800
000FC8        050C             681          CLR  R0,R12                                                       M6A26810
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000FCA  2332            682         BES   CHKA2           BRANCH IF BIT 34 = 0        M6A26820
000FCC  0896            683         LR    R9,R6           PAT4 = 1 SO R9 = R6         M6A26830
000FCE  2308            684  CHKA2  BS    CHKDTE                                      M6A26840
000FD0  0897            685  DT1ONE LR    R9,R7           PAT3 = 1 ASSUME PAT4 = 0    M6A26850
000FD2  0804            686         LR    R0,R4           BRING ADDRESS FROM R4 TO R0 M6A26860
000FD4  040C            687         NR    R0,R12                                      M6A26870
000FD6  2334            688         BZS   CHKDTE          ASSUMPTION O.K.  R9 = R7    M6A26880
000FD8  050C            689         CLR   R0,R12                                      M6A26890
000FDA  2332            690         BES   CHKDTE                                      M6A26900
000FDC  0898            691         LR    R9,R8           PAT4 = 1 SO R9 = R8         M6A26910
                        692  ****                         R9=DATA EXPECTED            M6A26920
000FDE  73A4 0000       693  CHKDTE LHL   R10,0(R4)       R10=DATA READ               M6A26930
000FE2  059A            694         CLR   R9,R10          IF R9 = R10 , NO ERROR      M6A26940
000FE4  2335            695         BES   COMP1           CHECK COMPLE. PATTERN       M6A26950
000FE6  41F0 12A8       696         BAL   LINK,ERROR                                  M6A26960
000FEA  4300 101C       697         B     CHKDTG                                      M6A26970
000FEE  0809            698  COMP1  LR    R0,R9           STORE R9 TEMPORARILY        M6A26980
000FF0  F790 0000 FFFF  699         XI    R9,Y'FFFF'      R9 = COMPLE. PATTERN        M6A26990
000FF6  4094 0000       700         STH   R9,0(R4)                                    M6A27000
000FFA  73A4 0000       701         LHL   R10,0(R4)                                   M6A27010
000FFE  059A            702         CLR   R9,R10                                      M6A27020
001000  2335            703         BES   COMP2                                       M6A27030
001002  41F0 12A8       704         BAL   LINK,ERROR                                  M6A27040
001006  4300 101C       705         B     CHKDTG                                      M6A27050
00100A  0890            706  COMP2  LR    R9,R0                                       M6A27060
00100C  4094 0000       707         STH   R9,0(R4)                                    M6A27070
001010  73A4 0000       708         LHL   R10,0(R4)                                   M6A27080
001014  059A            709         CLR   R9,R10                                      M6A27090
001016  2333            710         BES   CHKDTG                                      M6A27100
001018  41F0 12A8       711         BAL   LINK,ERROR                                  M6A27110
00101C  41E0 10F0       712  CHKDTG BAL   RETRN,WRITE2    DISPLAY LOC                 M6A27120
001020  2642            713         AIS   R4,2            INCREMENT LOC               M6A27130
001022  58E0 1798       714         L     RETRN,HIADR                                 M6A27140
001026  05E4            715         CLR   RETRN,R4                                    M6A27150
001028  4380 0FB6       716         BNL   CHKDT1          WHEN R4 > HIADR , DONE      M6A27160
00102C  4300 10E2       717         B     CHKEND          ELSE GOTO CHECK END OF WC   M6A27170
                        718  *                                                        M6A27180
                        719  *       LOAD THE DATA PATTERNS INTO ALL OF MEMORY         M6A27190
                        720  *       IF PAT1 = 0 , PAT2 = 0 LOAD R5                    M6A27200
                        721  *       IF PAT1 = 0 , PAT2 = 1 , LOAD R6                  M6A27210
                        722  *       IF PAT1 = 1 , PAT2 = 0 , LOAD R7                  M6A27220
                        723  *       IF PAT1 = 1 , PAT2 = 1 , LOAD R8                  M6A27230
                        724  *                                                        M6A27240
        0000 1030       725  START0 EQU   *               WORST CASE ALGORITHM FOR 35-491  M6A27250
001030  40F0 17A6       726  ALGRM2 STH   LINK,NXTST      SAVE NEXT TEST LOC.         M6A27260
001034  41F0 11D8       727         BAL   LINK,FWR1       FIND STARTING LOC.          M6A27270
001038  73B0 1532       728  LODTA1 LHL   R11,PAT1        R11=PAT1                    M6A27280
00103C  73C0 1534       729         LHL   R12,PAT2        R12=PAT2                    M6A27290
001040  5840 1794       730         L     R4,LOADR        START LOADING AT LOC IN LOADR M6A27300
001044  0804            731  LODTA3 LR    R0,R4                                       M6A27310
001046  040B            732         NR    R0,R11          CHECK FOR PAT1 SET          M6A27320
001048  213A            733         BNZS  CHKBT3                                      M6A27330
00104A  0804            734  BT1ZR1 LR    R0,R4                                       M6A27340
00104C  040C            735         NR    R0,R12                                      M6A27350
00104E  2134            736         BNZS  BT011                                       M6A27360
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001050   4054 0000       737  BT001    STH    R5,0(R4)      PAT1=0 ,PAT2=0 ,STORE R5        M6A27370
001054   2303            738           BS     LODTA4                                        M6A27380
001056   4064 0000       739  BT011    STH    R6,0(R4)      PAT1=0 ,PAT2=1 ,STORE R6        M6A27390
00105A   2309            740  LODTA4   BS     LOADE1                                        M6A27400
00105C   0804            741  CHKBT3   LR     R0,R4         PAT1=1 ,CHECK FOR PAT2          M6A27410
00105E   040C            742           NR     R0,R12                                        M6A27420
001060   2134            743           BNZS   BT111                                         M6A27430
001062   4074 0000       744  BT101    STH    R7,0(R4)      PAT1=1 ,PAT2=0 ,STORE R7        M6A27440
001066   2303            745           BS     LOADE1                                        M6A27450
001068   4084 0000       746  BT111    STH    R8,0(R4)      PAT1=1 ,PAT2=1 ,STORE R8        M6A27460
00106C   2642            747  LOADE1   AIS    R4,2                                          M6A27470
00106E   58E0 1798       748           L      RETRN,HIADR                                   M6A27480
001072   05E4            749           CLR    RETRN,R4                                      M6A27490
001074   4380 1044       750           BNL    LODTA3                                        M6A27500
                         751  *                                                             M6A27510
                         752  *                                                             M6A27520
001078   5840 1794       753  CHKDT2   L      R4,LOADR      START CHECKING AT LOC IN LOADR  M6A27530
00107C   0895            754  CHKDT3   LR     R9,R5         R9 = R5  SET UP FOR PAT1=PAT2=0 M6A27540
00107E   0804            755           LR     R0,R4                                         M6A27550
001080   040B            756           NR     R0,R11        CHECK FOR PAT1                  M6A27560
001082   2136            757           BNZS   CHKDT4                                        M6A27570
001084   0804            758           LR     R0,R4                                         M6A27580
001086   040C            759           NR     R0,R12        CHECK FOR PAT2                  M6A27590
001088   2332            760           BZS    CHKDB1                                        M6A27600
00108A   0896            761           LR     R9,R6         PAT1=0,PAT2=1,R9=R6             M6A27610
00108C   2307            762  CHKDB1   BS     CHKDT6        PAT1 = 0 , PAT2 = 0 , R9 = R5   M6A27620
00108E   0804            763  CHKDT4   LR     R0,R4         CHECK FOR PAT2 ,PAT1=1          M6A27630
001090   040C            764           NR     R0,R12                                        M6A27640
001092   2133            765           BNZS   CHKDT5                                        M6A27650
001094   0897            766           LR     R9,R7         PAT1=1 ,PAT2=0, R9=R7           M6A27660
001096   2302            767           BS     CHKDT6                                        M6A27670
001098   0898            768  CHKDT5   LR     R9,R8         R9=DATA EXPECTED                M6A27680
00109A   73A4 0000       769  CHKDT6   LHL    R10,0(R4)     R10=DATA READ                   M6A27690
00109E   059A            770           CLR    R9,R10        IF R9 = R10 , NO ERROR          M6A27700
0010A0   2333            771           BES    COMP11        CHECK COMPLE. PATTERN           M6A27710
0010A2   41F0 12A8       772           BAL    LINK,ERROR                                    M6A27720
0010A6   0809            773  COMP11   LR     R0,R9         STORE R9 TEMPORARILY            M6A27730
0010A8   F790 0000 FFFF  774           XI     R9,Y'FFFF'    R9 = COMPLE. PATTERN            M6A27740
0010AE   4094 0000       775           STH    R9,0(R4)                                      M6A27750
0010B2   73A4 0000       776           LHL    R10,0(R4)                                     M6A27760
0010B6   059A            777           CLR    R9,R10                                        M6A27770
0010B8   2334            778           BES    COMP21                                        M6A27780
0010BA   41F0 12A8       779           BAL    LINK,ERROR                                    M6A27790
0010BE   230A            780           BS     CHKDT7                                        M6A27800
0010C0   0890            781  COMP21   LR     R9,R0                                         M6A27810
0010C2   4094 0000       782           STH    R9,0(R4)                                      M6A27820
0010C6   73A4 0000       783           LHL    R10,0(R4)                                     M6A27830
0010CA   059A            784           CLR    R9,R10                                        M6A27840
0010CC   2333            785           BES    CHKDT7                                        M6A27850
0010CE   41F0 12A8       786           BAL    LINK,ERROR                                    M6A27860
0010D2   41E0 10F0       787  CHKDT7   BAL    RETRN,WRITE2  DISPLAY LOC                     M6A27870
0010D6   2642            788           AIS    R4,2          INCREMENT ADDRESS               M6A27880
0010D8   58E0 1798       789           L      RETRN,HIADR                                   M6A27890
0010DC   05E4            790           CLR    RETRN,R4                                       M6A27900
0010DE   4380 107C       791           BNL    CHKDT3        WHEN R4 > HIADR , DONE          M6A27910
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                            792  *                                                              M6A27920
                            793  *                                                              M6A27930
0010E2   41F0 11E4          794  CHKEND   BAL    LINK,FWR                                        M6A27940
0010E6   4300 0D4A          795           B      TRESTRT           GOTO RE-ENTRY POINTER         M6A27950
0010EA   73E0 17A6          796           LHL    RETRN,NXTST                                     M6A27960
0010EE   030E               797           BR     RETRN                                           M6A27970
                            798  *                                                              M6A27980
                            799  *                                                              M6A27990
                            800  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A28000
                            801  *                                               *              M6A28010
                            802  *               W R I T E 2                     *              M6A28020
                            803  *                                               *              M6A28030
                            804  *  THIS ROUTINE WRITES TO THE DISPLAY PANEL (D1-D4)  *         M6A28040
                            805  *         R4 = THE DATA TO BE WRITTEN            *              M6A28050
                            806  *         RETRN = THE RETURN ADDRESS REGISTER    *              M6A28060
                            807  *                                               *              M6A28070
                            808  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A28080
                            809  *                                                              M6A28090
0010F0   40E0 17A8          810  WRITE2   STH    RETRN,RXTURN      SAVE RETURN ADDRESS           M6A28100
0010F4   24E1               811           LIS    RETRN,1           LOAD RETRN WITH DISPLAY ADRS  M6A28110
0010F6   DEE0 1768          812           OC     RETRN,INCRMT      PUT DISPLAY IN INCREMENTAL MODE  M6A28120
0010FA   08F4               813           LR     LINK,R4           GET FULL ADDRESS IS DISPLAY REG.  M6A28130
0010FC   94FF               814           EXBR   LINK,LINK         WRITE VALUE ON DISPLAY PANEL  M6A28140
0010FE   98EF               815           WHR    RETRN,LINK                                      M6A28150
001100   34FF               816           EXHR   LINK,LINK                                       M6A28160
001102   94FF               817           EXBR   LINK,LINK                                       M6A28170
001104   98EF               818           WHR    RETRN,LINK                                      M6A28180
001106   DAE0 177C          819           WD     RETRN,SUBTST      WRITE SUBTEST NUMBER TO DISPLAY  M6A28190
00110A   DEE0 1767          820           OC     RETRN,NORM        PUT DISPLAY IN NORMAL MODE    M6A28200
00110E   73F0 17A8          821           LHL    LINK,RXTURN                                     M6A28210
001112   030F               822           BR     LINK              RETURN TO SUBTEST             M6A28220
                            823  *                                                              M6A28230
                            824  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A28240
                            825  *                                               *              M6A28250
                            826  *                   P R I N T                   *              M6A28260
                            827  *                                               *              M6A28270
                            828  * THIS ROUTINE PRINTS MESSAGES ON THE TELETYPE.  *              M6A28280
                            829  * R12 = THE STARTING ADDRESS OF THE MESSAGE.     *              M6A28290
                            830  * R13 = THE ENDING ADDRESS OF THE MESSAGE.       *              M6A28300
                            831  * LINK = THE RETURN ADDRESS.                     *              M6A28310
                            832  *                                               *              M6A28320
                            833  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *        M6A28330
                            834  *                                                              M6A28340
001114   D3B0 153A          835  PRINT    LB     R11,ADDRESS       GET CONSOLE ADDRESS           M6A28350
001118   9DBA               836           SSR    R11,R10           SENSE CONSOLE                 M6A28360
00111A   C4A0 000C          837           NHI    R10,X'000C'       MASK PASLA STATUS BITS        M6A28370
00111E   C5A0 000C          838           CLHI   R10,X'000C'       IS IT DU?                     M6A28380
001122   233B               839           BES    PRDU             YES SO SET FLAG AND RETURN    M6A28390
001124   73A0 176E          840           LHL    R10,CRTFLG        IS CONSOLE DEVICE ON PASLA ?  M6A28400
001128   2332               841           BZS    CMD               NO, CONTINUE                  M6A28410
00112A   26B1               842           AIS    R11,1             YES, MODIFY ADDRESS           M6A28420
00112C   DEB0 153D          843  CMD      OC     R11,WRITE1        PUT IN WRITE MODE             M6A28430
001130   9DBA               844  SENSE    SSR    R11,R10                                         M6A28440
001132   2081               845           BTBS   8,SENSE           WAIT FOR BUSY TO DROP         M6A28450
001134   2112               846           BMS    PRDU              DU SO SET FLAG & RETURN       M6A28460
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001136  2305            847         BS    CONTO2           NO PRINT                          M6A28470
001138  D2B0 177E       848  PRDU   STB   R11,TTYFLG       SET DU FLAG                       M6A28480
00113C  430F 0004       849         B     4(LINK)          AND RETURN                        M6A28490
001140  73CF 0000       850  CONTO2 LHL   R12,0(LINK)      LOAD START ADDRESS OF MESSAGE     M6A28500
001144  73DF 0002       851         LHL   R13,2(LINK)      LOAD END ADDRESS OF MESSAGE       M6A28510
001148  96BC            852         WBR   R11,R12          WRITE MESSAGE TO CONSOLE DEVICE   M6A28520
00114A  9DBA            853         SSR   R11,R10                                            M6A28530
00114C  2081            854         BTBS  8,1              WAIT FOR BUSY TO DROP             M6A28540
00114E  73A0 176E       855         LHL   R10,CRTFLG       IS CONSOLE DEVICE ON PASLA ?      M6A28550
001152  433F 0004       856         BZ    4(LINK)          NO, RETURN                        M6A28560
001156  07AA            857         XR    R10,R10                                            M6A28570
001158  9ABA            858         WDR   R11,R10          YES, WRITE A NULL CHAR.           M6A28580
00115A  9DBA            859         SSR   R11,R10                                            M6A28590
00115C  2081            860         BTBS  8,1              WAIT FOR BUSY TO DROP             M6A28600
00115E  27B1            861         SIS   R11,1            RESTORE CONSOLE DEVICE ADDRESS    M6A28610
001160  430F 0004       862         B     4(LINK)          RETURN                            M6A28620
                        863  *                                                               M6A28630
                        864  * * * * * * * * * * * * * * * * * * * * * * * * * * *           M6A28640
                        865  *                                        *                      M6A28650
                        866  *                   R E A D              *                      M6A28660
                        867  *                                        *                      M6A28670
                        868  * THIS ROUTINE READS ASCII CHARACTERS FROM THE TTY  *           M6A28680
                        869  * OR THE CONSOLE. IT ALSO STRIPS OFF THE PARITY BIT. *          M6A28690
                        870  * IT THEN RETURNS  ON LINK.                *                    M6A28700
                        871  * R11 = THE TTY ADDRESS.                   *                    M6A28710
                        872  * R7 = THE HEX VALUE OF THE CHARACTER READ. *                   M6A28720
                        873  *                                        *                      M6A28730
                        874  * * * * * * * * * * * * * * * * * * * * * * * * * * *           M6A28740
                        875  *                                                               M6A28750
001164  DEB0 153C       876  READ   OC    R11,READ1        READ=DISABLE UNBLOCK READ=X'A4'   M6A28760
001168  9DB7            877  SENSER SSR   R11,R7           SENSE CONSOLE STATUS              M6A28770
00116A  2081            878         BCS   SENSER           BUSY SO SENSE AGAIN               M6A28780
00116C  9BB7            879         RDR   R11,R7           READ A CHARACTER FROM CONSOLE     M6A28790
00116E  C470 007F       880         NHI   R7,X'7F'         MASK OFF PARITY BIT               M6A28800
001172  030F            881         BR    LINK             AND RETURN                        M6A28810
                        882  *********************************************                   M6A28820
                        883  *                                        *                      M6A28830
                        884  *     T E S T   B R E A K                *                      M6A28840
                        885  *                                        *                      M6A28850
                        886  *        CHECKS THE CONSOLE FOR A        *                      M6A28860
                        887  *        BREAK CONDITION..(PASLA OR      *                      M6A28870
                        888  *        CLI). IF NO BREAK KEY IS        *                      M6A28880
                        889  *        PRESSED IT RETURNS ON           *                      M6A28890
                        890  *        "RETRN"...IF BREAK EXISTS       *                      M6A28900
                        891  *        IT GOES TO COMMAND MODE.        *                      M6A28910
                        892  *                                        *                      M6A28920
                        893  *********************************************                   M6A28930
001174  D3B0 153A       894  TESTBRK LB   R11,ADDRESS      GET ADDRESS                       M6A28940
001178  9DBA            895         SSR   R11,R10          WHAT'S UP CONSOLE?                M6A28950
00117A  C3A0 0020       896         THI   R10,X'20'        IS IT BREAK?                      M6A28960
00117E  033E            897         BZR   RETRN            NO--RETURN                        M6A28970
001180  4820 176E       898         LH    R2,CRTFLG        IS IT A PASLA?                    M6A28980
001184  4330 119A       899         BZ    CHECKR           NO,TEST IT AGAIN ANYWAY           M6A28990
001188  C3A0 0008       900         THI   R10,8            ALREADY ACKNOWLEDGED?             M6A29000
00118C  023E            901         BNZR  RETRN            YES RETURN                        M6A29010
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00118E  9BB2        902         RDR   R11,R2          READ A CHARACTER FROM PASLA        M6A29020
001190  9DBA        903 PASSENS SSR   R11,R10         WHAT'S UP PAL(SA)?                 M6A29030
001192  2281        904         BFBS  8,PASSENS       OH--YOU'RE BUSY ASK AGAIN?         M6A29040
001194  0822        905         LR    R2,R2           NOT BUSY ANYMORE                   M6A29050
001196  023E        906         BNZR  RETRN           AND GOT A FRAMING ERROR SO RETURN  M6A29060
001198  2305        907         BS    TRUEBRK         GOT A NULL CHAR..VALID PASLA BREAK M6A29070
00119A  9DBA        908 CHECKR  SSR   R11,R10         WHAT'S UP CONSOLE?                 M6A29080
00119C  C3A0 0020   909         THI   R10,X'20'       IS IT BREAK?                       M6A29090
0011A0  2033        910         BNZS  CHECKR          YES - WAIT FOR RELEASE OF KEY      M6A29100
0011A2  4300 0BFC   911 TRUEBRK B     PRTMSG          VALID BREAK- GOTO COMMAND MODE     M6A29110
                    912 *                                                                M6A29120
                    913 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *      M6A29130
                    914 *                                               *                M6A29140
                    915 *                   C O N V E R T               *                M6A29150
                    916 *                                               *                M6A29160
                    917 * THE ROUTINE CONVERTS HEX CHARACTERS TO ASCII AND  *            M6A29170
                    918 * STORES THE IN MEMORY.                         *                M6A29180
                    919 * R7 = THE SHIFT INDEX (THE NUM OF  BITS IN THE HEX  *           M6A29190
                    920 *       CHARACTER MINUS 4).                     *                M6A29200
                    921 * R9 = THE HEX VALUE TO BE CONVERTED.           *                M6A29210
                    922 * R12 = THE STARTING ADDRESS WHERE THE CHARACTER IS  *           M6A29220
                    923 *       TO BE STORED.                           *                M6A29230
                    924 * LINK = THE RETURN ADDRESS.                    *                M6A29240
                    925 *                                               *                M6A29250
                    926 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *      M6A29260
                    927 *                                                                M6A29270
0011A6  737F 0000   928 CONVERT LHL   R7,0(LINK)          LOAD SHIFT INDEX               M6A29280
0011AA  73CF 0002   929         LHL   R12,2(LINK)         LOAD ADRS INDEX                M6A29290
0011AE  0869        930 CONVERT1 LR   R6,R9               LOAD VALUE TO BE CONVERTED     M6A29300
0011B0  EC67 0000   931         SRL   R6,0(R7)            SHIFT DIGIT INTO PLACE         M6A29310
0011B4  C460 000F   932         NHI   R6,X'F'             MASK OFF ALL BUT LEAST SIGNIF DIGIT M6A29320
0011B8  C660 0030   933         OHI   R6,X'30'            CONVERT TO ASCII               M6A29330
0011BC  C560 003A   934         CLHI  R6,X'3A'            IS CHARACTER A NUMBER          M6A29340
0011C0  2183        935         BLS   CONT9               YES, CONTINUE ROUTINE          M6A29350
0011C2  CA60 0007   936         AHI   R6,7                NO, CONVERT TO ASCII LETTER    M6A29360
0011C6  D26C 0000   937 CONT9   STB   R6,0(R12)           STORE VALUE IN MESSAGE         M6A29370
0011CA  0877        938         LR    R7,R7               IS CONVERSION COMPLETE         M6A29380
0011CC  433F 0004   939         BZ    4(LINK)             YES, RETURN TO SUBTEST         M6A29390
0011D0  2774        940         SIS   R7,4                NO, DECREMENT SHIFT INDEX      M6A29400
0011D2  26C1        941         AIS   R12,1               INCREMENT STORE INDEX          M6A29410
0011D4  4300 11AE   942         B     CONVERT1            CONVERT NEXT HEX DIGIT         M6A29420
                    943 *                                                                M6A29430
                    944 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *      M6A29440
                    945 *                                               *                M6A29450
                    946 *                   F W R 1                     *                M6A29460
                    947 *                                               *                M6A29470
                    948 * THIS ROUTINE SCANS THE AVAILABLE MEMORY TABLE FROM  *          M6A29480
                    949 * BOTTOM TO TOP (KB0008 TO KB0968) AND RETURNS ON  *             M6A29490
                    950 * LINK EACH TIME IT ENCOUNTERS AN AVAILABLE 8K BLOCK  *          M6A29500
                    951 * OF MEMORY. WHEN THE ENTIRE TABLE HAS BEEN CHECKED  *           M6A29510
                    952 * THE ROUTINE RETURNS ON 4(LINK).               *                M6A29520
                    953 * R1 = TABLE INDEX VALUE                        *                M6A29530
                    954 * R2 = THE STARTING ADDRESS OF THE AVAILABLE 8K BLOCK.*          M6A29540
                    955 * LINK = THE RETURN ADDRESS.                    *                M6A29550
                    956 *                                               *                M6A29560
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                                 957    * * * * * * * * * * * * * * * * * * * * * * * * * * * *         M6A29570
                                 958    *                                                               M6A29580
001108    0711                   959    FWR1     XR     R1,R1          ZERO REGISTER R1                  M6A29590
0011DA    0722                   960             XR     R2,R2          ZERO REGISTER R2                  M6A29600
0011DC    5020 178C              961             ST     R2,BLKADR                                        M6A29610
0011E0    D220 177A              962             STB    R2,LIMFLG      CLEAR FLAG                        M6A29620
0011E4    D320 177F              963    FWR      LB     R2,CONTFLG                                       M6A29630
0011E8    0822                   964             LR     R2,R2          IS CONTINUE FLAG SET ?            M6A29640
0011EA    4330 1214              965             BZ     FW1            NO, BRANCH                        M6A29650
0011EE    D3A0 153A              966             LB     WORK,ADDRESS   YES, LOOK FOR BREAK KEY           M6A29660
0011F2    9DA2                   967             SSR    WORK,R2                                          M6A29670
0011F4    C320 0020              968             THI    R2,X'20'       IS BREAK KEY SET ?                M6A29680
0011F8    4330 1214              969             BZ     FW1            NO, CONTINUE TESTING              M6A29690
0011FC    7320 176E              970             LHL    R2,CRTFLG      YES, IS CONSOLE DEV ON PASLA ?    M6A29700
001200    2336                   971             BZS    TTYSNS         NO, BRANCH                        M6A29710
001202    DEA0 153C              972             OC     WORK,READ1                                       M6A29720
001206    9BA2                   973             RDR    WORK,R2        YES, CLEAR CHARACTER              M6A29730
001208    4300 0DC2              974             B      TTYCHK                                           M6A29740
00120C    9DA2                   975    TTYSNS   SSR    WORK,R2                                          M6A29750
00120E    2041                   976             BTBS   4,1            WAIT FOR BREAK TO GO AWAY         M6A29760
001210    4300 0DC2              977             B      TTYCHK                                           M6A29770
001214    D3A0 177A              978    FW1      LB     WORK,LIMFLG                                      M6A29780
001218    08AA                   979             LR     WORK,WORK      IS LIMIT FLAG SET ?               M6A29790
00121A    423F 0004              980             BNZ    4(LINK)        YES, RETURN ON LINK + 4 (EOT)     M6A29800
00121E    5820 178C              981             L      R2,BLKADR                                        M6A29810
001222    2611                   982    FW       AIS    R1,1           NO, INCREMENT INDEX REGISTER      M6A29820
001224    CA20 4000              983             AHI    R2,X'4000'     INCREMENT MEMORY BLOCK ADDRS      M6A29830
001228    7410 175E              984             TBT    R1,KB0016      IS MEMORY BLOCK IN SYSTEM ?       M6A29840
00122C    2235                   985             BZS    FW             NO, CHECK NEXT BLOCK              M6A29850
00122E    C510 0040              986             CLHI   R1,64          YES, HAS ALL AVAIL MEM BEEN CHECKED?  M6A29860
001232    438F 0004              987             BNL    4(LINK)        YES, RETURN ON LINK + 4 (EOT)     M6A29870
001236    5020 178C              988             ST     R2,BLKADR                                        M6A29880
00123A    58A0 1784              989    CHKLIM   L      WORK,LOVAL     LOAD LOW LIMIT                    M6A29890
00123E    05A2                   990             CLR    WORK,R2        IS LOW LIMIT LESS THAN BLOCK ADRS ?  M6A29900
001240    4280 1262              991             BL     LOW2           YES, USE CURRENT BLOCK ADRS       M6A29910
001244    F4A0 000F F000         992             NI     WORK,Y'FF000'  NO,MASK FOR 16 BIT ADDRESS        M6A29920
00124A    05A2                   993             CLR    WORK,R2        IS ADRS IN CURRENT BLOCK ?        M6A29930
00124C    2337                   994             BES    LOW1           YES, USE LOW LIMIT                M6A29940
00124E    F4A0 000F E000         995             NI     WORK,Y'FE000'  NO, MASK FOR 20 BIT ADRS          M6A29950
001254    05A2                   996             CLR    WORK,R2        IS ADRS IN CURRENT BLOCK ?        M6A29960
001256    4230 1222              997             BNE    FW             NO, CHECK NEXT BLOCK              M6A29970
00125A    08A2                   998    LOW1     LR     WORK,R2        NO, USE LOVAL                     M6A29980
00125C    5820 1784              999             L      R2,LOVAL       LOAD LOW LIMIT                    M6A29990
001260    2302                   1000            BS     ADDBLK                                           M6A30000
001262    08A2                   1001   LOW2     LR     WORK,R2        LOAD CURRENT BLOCK ADRS           M6A30010
001264    CAA0 3FFE              1002   ADDBLK   AHI    WORK,X'3FFE'   ADD BLOCK SIZE TO BLOCK ADRS      M6A30020
001268    55A0 1788              1003            CL     WORK,HIVAL     IS BLOCK END ADRS < HIGH LIMIT ?  M6A30030
00126C    2186                   1004            BLS    EMOS           YES, RETURN                       M6A30040
00126E    24AF                   1005            LIS    WORK,X'F'      NO, SET LIMIT FLAG                M6A30050
001270    D2A0 177A              1006            STB    WORK,LIMFLG                                      M6A30060
001274    58A0 1788              1007            L      WORK,HIVAL     LOAD HIGH LIMIT                   M6A30070
001278    5020 1794              1008   EMOS     ST     R2,LOADR       SET LOADR                         M6A30080
00127C    50A0 1798              1009            ST     WORK,HIADR     SET HIADR                         M6A30090
001280    030F                   1010            BR     LINK           RETURN                            M6A30100
                                 1011   *                                                               M6A30110
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                          1012  * * * * * * * * * * * * * * * * * * * * * * * * * * *    M6A30120
                          1013  *                                                   *    M6A30130
                          1014  *                      T S T N U M                   *    M6A30140
                          1015  *                                                   *    M6A30150
                          1016  * THIS ROUTINE STORES THE CURRENT SUBTEST NUMBER IN  *    M6A30160
                          1017  * THE ERROR MESSAGE AND ALSO PRINTS IT ON THE TTY.   *    M6A30170
                          1018  * RETRN = THE RETURN ADDRESS.                        *    M6A30180
                          1019  *                                                   *    M6A30190
                          1020  * * * * * * * * * * * * * * * * * * * * * * * * * * *    M6A30200
                          1021  *                                                        M6A30210
001282   D390 177C        1022  TSTNUM  LB    R9,SUBTST         LOAD CURRENT SUBTEST NUMBER     M6A30220
001286   41F0 11A6        1023          BAL   LINK,CONVERT      CONVERT TO ASCII CHARACTERS     M6A30230
00128A   0004             1024          DC    X'4'              SHIFT INDEX                     M6A30240
00128C   165C             1025          DC    Z(SUBNUM)         STORE INDEX                     M6A30250
00128E   7390 165C        1026          LHL   R9,SUBNUM         LOAD ASCII VALUE OF SUBTEST NUMBER  M6A30260
001292   4090 164C        1027          STH   R9,TT             STORE SUBTEST NUMBER IN ERROR MSG   M6A30270
001296   D390 177F        1028          LB    R9,CONTFLG        IS CONTINUE FLAG SET            M6A30280
00129A   0899             1029          LR    R9,R9                                             M6A30290
00129C   023E             1030          BNZR  RETRN             YES, RETURN TO SUBTEST          M6A30300
00129E   41F0 1114        1031          BAL   LINK,PRINT        NO, PRINT SUBTEST NUMBER        M6A30310
0012A2   165C             1032          DC    Z(SUBNUM)         START ADRS OF MESSAGE           M6A30320
0012A4   165F             1033          DC    Z(ENDMSG)         END ADRS OF MESSAGE             M6A30330
0012A6   030E             1034          BR    RETRN             RETURN TO SUBTEST              M6A30340
                          1035  *                                                        M6A30350
                          1036  * * * * * * * * * * * * * * * * * * * * * * * * * * *    M6A30360
                          1037  *                                                   *    M6A30370
                          1038  *                       E R R O R                    *    M6A30380
                          1039  *                                                   *    M6A30390
                          1040  * THIS ROUTINE PRINTS THE FOLLOWING MESSAGE:         *    M6A30400
                          1041  *                                                   *    M6A30410
                          1042  * W  TT  XXXXX  YYYYYYYY  ZZZZZZZZ                    *    M6A30420
                          1043  *                                                   *    M6A30430
                          1044  * W = THE CONDITION CODE WHEN AN INTERRUPT OCCURS    *    M6A30440
                          1045  * TT = THE SUBTEST NUMBER THE ERROR OCCURED IN       *    M6A30450
                          1046  * XXXXX = THE ADDRESS OF THE LOCATION UNDER TEST     *    M6A30460
                          1047  * YYYYYYYY = THE CORRECT DATA EXPECTED               *    M6A30470
                          1048  * ZZZZZZZZ = THE INCORRECT DATA READ                 *    M6A30480
                          1049  *                                                   *    M6A30490
                          1050  * R4 = MEMORY LOCATION UNDER TEST                    *    M6A30500
                          1051  * R7 = EXPECTED DATA                                 *    M6A30510
                          1052  * R8 = DATA READ                                     *    M6A30520
                          1053  * LINK = THE RETURN ADDRESS                          *    M6A30530
                          1054  *                                                   *    M6A30540
                          1055  * * * * * * * * * * * * * * * * * * * * * * * * * * *    M6A30550
                          1056  *                                                        M6A30560
0012A8   D000 17EC        1057  ERROR   STM   R0,REGSAV10       SAVE TEST REGISTERS            M6A30570
0012AC   D100 17AC        1058          LM    R0,REGSAV00       PICK UP WORK REGISTERS         M6A30580
0012B0   E6C0 1640        1059          LA    R12,TT            LOAD START ADRS OF ERROR MESSAGE  M6A30590
0012B4   40C0 1314        1060  ERROR1  STH   R12,RTN+4         STORE START ADRS IN DATA CONSTANT LOC  M6A30600
0012B8   D3B0 153A        1061  GWTTY1  LB    R11,ADDRESS       LOAD TTY ADDRESS               M6A30610
0012BC   24FF             1062  G01     LIS   LINK,X'F'                                        M6A30620
0012BE   D2F0 177D        1063          STB   LINK,ERRFLG       SET ERROR FLAG                 M6A30630
0012C2   24F1             1064          LIS   LINK,1                                           M6A30640
0012C4   51F0 17A0        1065          AM    LINK,TOTALERR     INCREMENT ERROR COUNT          M6A30650
0012C8   238D             1066          BNCS  CONT7             CONTINUE UNTIL COUNT = X'FFFFFFFF'  M6A30660
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0012CA  9DBA              1067          SSR   R11,R10         IS TTY DU ?                              M6A30670
0012CC  21C2              1068          BTFS  12,QRZ                                                  M6A30680
0012CE  231A              1069          BNMS  CONT7           NO, CONTINUE WITH ROUTINE               M6A30690
0012D0  2541              1070   QRZ    LCS   R4,1                                                    M6A30700
0012D2  5040 17A0         1071          ST    R4,TOTALERR                                             M6A30710
0012D6  41E0 10F0         1072          BAL   RETRN,WRITE2    YES WRITE Y'FFFFFFFF' ON DISPLAY        M6A30720
0012DA  F810 0000 A0F0    1073          LI    R1,Y'A0F0'      LOAD HALT PSW                           M6A30730
0012E0  9501              1074          EPSR  R0,R1           HALT PROCESSOR                          M6A30740
0012E2  9DBA              1075   CONT7  SSR   R11,R10                                                 M6A30750
0012E4  C3A0 0020         1076          THI   R10,X'20'                                               M6A30760
0012E8  4230 1322         1077          BNZ   BRKWAIT                                                 M6A30770
0012EC  5890 17FC         1078          L     R9,REGSAV14     LOAD ADRS WHERE ERROR OCCURED           M6A30780
0012F0  41F0 11A6         1079          BAL   LINK,CONVERT    CONVERT TO ASCII CHARACTERS             M6A30790
0012F4  0010              1080          DC    X'10'           SHIFT INDEX                             M6A30800
0012F6  1644              1081          DC    Z(XXXXX)        STORE INDEX                             M6A30810
0012F8  5890 1810         1082          L     R9,REGSAV19     LOAD EXPECTED DATA                      M6A30820
0012FC  41F0 11A6         1083          BAL   LINK,CONVERT    CONVERT TO ASCII CHARACTERS             M6A30830
001300  001C              1084          DC    X'1C'           SHIFT INDEX                             M6A30840
001302  164C              1085          DC    Z(YYYYYYYY)     STORE INDEX                             M6A30850
001304  5890 1814         1086          L     R9,REGSAV1A     LOAD DATA READ                          M6A30860
001308  41F0 11A6         1087          BAL   LINK,CONVERT    CONVERT TO ASCII CHARACTERS             M6A30870
00130C  001C              1088          DC    X'1C'           SHIFT INDEX                             M6A30880
00130E  1656              1089          DC    Z(ZZZZZZZZ)     STORE INDEX                             M6A30890
001310  41F0 1114         1090   RTN    BAL   LINK,PRINT      PRINT ERROR MESSAGE                     M6A30900
001314  163C              1091          DC    Z(STARMSG)      START ADRS OF MESSAGE                   M6A30910
001316  165F              1092          DC    Z(ENDMSG)       END ADRS OF MESSAGE                     M6A30920
001318  D000 17AC         1093          STM   R0,REGSAV00     SAVE WORK REGISTERS                     M6A30930
00131C  D100 17EC         1094          LM    R0,REGSAV10     PICK UP TEST REGISTERS                  M6A30940
001320  030F              1095          BR    LINK            RETURN TO SUBTEST                       M6A30950
001322  73E0 176E         1096   BRKWAIT LHL  RETRN,CRTFLG                                            M6A30960
001326  2335              1097          BZS   BRKWAIT1                                                M6A30970
001328  DEB0 153C         1098          OC    R11,READ1                                               M6A30980
00132C  9BBE              1099          RDR   R11,RETRN                                               M6A30990
00132E  2303              1100          BS    RTN5                                                    M6A31000
001330  9DBA              1101   BRKWAIT1 SSR R11,R10                                                 M6A31010
001332  2041              1102          BTBS  4,1                                                     M6A31020
001334  D000 17AC         1103   RTN5   STM   R0,REGSAV00     SAVE WORK REGISTERS                     M6A31030
001338  D100 17EC         1104          LM    R0,REGSAV10     PICK UP TESTING REGISTERS               M6A31040
00133C  4300 0D52         1105          B     SUBCHK                                                  M6A31050
                          1106   *                                                                    M6A31060
                          1107   *                                                                    M6A31070
001340  0711              1108   FWR1A  XR    R1,R1           ZERO REGISTER ONE                       M6A31080
001342  0722              1109          XR    R2,R2           ZERO REGISTER TWO                       M6A31090
001344  2611              1110   FWRA   AIS   R1,1            INCREMENT INDEX REGISTER                M6A31100
001346  CA20 4000         1111          AHI   R2,X'4000'      INCREMENT MEMORY BLOCK ADDRESS          M6A31110
00134A  7410 175E         1112          TBT   R1,KB0016       IS MEMORY BLOCK IN SYSTEM ?             M6A31120
00134E  2235              1113          BZS   FWRA            NO, CHECK NEXT BLOCK                     M6A31130
001350  C510 0080         1114          CLHI  R1,128          YES, HAS ALL AVAIL MEM BEEN CK'D ?      M6A31140
001354  028F              1115          BLR   LINK                                                    M6A31150
001356  430F 0002         1116          B     2(LINK)         YES, RETURN ON LINK + 2                 M6A31160
                          1117   *                                                                    M6A31170
                          1118   ****************************************************************************  M6A31180
                          1119   *                                                                    M6A31190
00135A  41F0 1114         1120   HILO   BAL   LINK,PRINT      PRINT "LO= "                            M6A31200
00135E  1688              1121          DC    Z(LOMSG)        START ADDRESS OF MESSAGE                M6A31210
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001360    168D              1122          DC     Z(LOEND)       END ADDRESS OF MESSAGE                   M6A31220
001362    4190 13D6         1123          BAL    R9,HILOGET     GET DATA FROM CONSOLE                    M6A31230
001366    41F0 1340         1124  CONT12  BAL    LINK,FWR1A     IND FIRST AVAILABLE 16K BLOCK            M6A31240
00136A    0582              1125  COMPR   CLR    R8,R2          IS BLOCK SELECTED = AVAIL BLOCK ?        M6A31250
00136C    233A              1126          BES    LOW            YES, STORE SELECTED BLOCK IN LOVAL?      M6A31260
00136E    41F0 1344         1127          BAL    LINK,FWRA      NO, FIND NEXT AVAILABLE 16K BLOCK        M6A31270
001372    2204              1128          BS     COMPR          COMPARE NEXT BLOCK                       M6A31280
001374    41F0 1114         1129          BAL    LINK,PRINT     PRINT "MEMORY NOT AVAILABLE"             M6A31290
001378    16AC              1130          DC     Z(MNAMSG)      START ADDRESS OF MESSAGE                 M6A31300
00137A    16C1              1131          DC     Z(MNAEND)      END ADDRESS OF MESSAGE                   M6A31310
00137C    4300 135A         1132          B      HILO                                                   M6A31320
001380    F4A0 000F FFFE    1133  LOW     NI     R10,Y'FFFFE'                                            M6A31330
001386    50A0 1784         1134          ST     R10,LOVAL                                              M6A31340
00138A    41F0 1114         1135  HILO1   BAL    LINK,PRINT     PRINT "HI= "                             M6A31350
00138E    168E              1136          DC     Z(HIMSG)       START ADDRESS OF MESSAGE                 M6A31360
001390    1693              1137          DC     Z(HIEND)       END ADDRESS OF MESSAGE                   M6A31370
001392    4190 13D6         1138          BAL    R9,HILOGET     GET DATA FROM CONSOLE                    M6A31380
001396    5890 1784         1139          L      R9,LOVAL       LOAD R9 WITH THE LOW VALUE               M6A31390
00139A    05A9              1140          CLR    R10,R9         IS HIVAL > LOVAL ?                       M6A31400
00139C    4280 13BC         1141          BC     NOTLOW         NO, PRINT MESSAGE                        M6A31410
0013A0    41F0 1340         1142  CONT10  BAL    LINK,FWR1A     YES, FIND FIRST AVAIL 16K BLOCK          M6A31420
0013A4    0582              1143  COMPR2  CLR    R8,R2          IS BLOCK SELECTED = BLOCK AVAIL ?        M6A31430
0013A6    4330 13C8         1144          BE     HIGH           YES, STORE SELECTED BLOCK IN HIVAL       M6A31440
0013AA    41F0 1344         1145          BAL    LINK,FWRA      NO, FIND NEXT AVAIL 16K BLOCK            M6A31450
0013AE    2205              1146          BS     COMPR2         COMPARE NEXT BLOCK                       M6A31460
0013B0    41F0 1114         1147          BAL    LINK,PRINT     PRINT "MEMORY NOT AVAILABLE"             M6A31470
0013B4    16AC              1148          DC     Z(MNAMSG)      START ADDRESS OF MESSAGE                 M6A31480
0013B6    16C1              1149          DC     Z(MNAEND)      END ADDRESS OF MESSAGE                   M6A31490
0013B8    4300 138A         1150          B      HILO1          SELECT NEW HI VALUE                      M6A31500
0013BC    41F0 1114         1151  NOTLOW  BAL    LINK,PRINT     PRINT "LOW VALUE>HIGH VALUE"             M6A31510
0013C0    1694              1152          DC     Z(NLMSG)       START ADDRESS OF MESSAGE                 M6A31520
0013C2    16A8              1153          DC     Z(NLEND)       END ADDRESS OF MESSAGE                   M6A31530
0013C4    4300 135A         1154          B      HILO           RENTER LIMITS                           M6A31540
0013C8    F4A0 000F FFFE    1155  HIGH    NI     R10,Y'FFFFE'                                            M6A31550
0013CE    50A0 1788         1156          ST     R10,HIVAL                                              M6A31560
0013D2    4300 0BFC         1157          B      PRTMSG                                                 M6A31570
                           1158  *                                                                      M6A31580
                           1159  *                                                                      M6A31590
0013D6    2480              1160  HILOGET LIS    R8,0           CLEAR HEX ADDRESS REGISTER               M6A31600
0013D8    24A0              1161          LIS    WORK,0         CLEAR CHARACTER COUNT REGISTER           M6A31610
0013DA    41F0 1164         1162  HILOREAD BAL   LINK,READ      GET A CHARACTER FROM CONSOLE             M6A31620
0013DE    26A1              1163          AIS    WORK,1         INCREMENT CHAR COUNT REG                 M6A31630
0013E0    C570 000D         1164          CLHI   R7,X'0D'       FINISHED?                                M6A31640
0013E4    4330 142C         1165          BE     EXIT1          YUP                                      M6A31650
0013E8    C5A0 0006         1166          CLHI   WORK,X'6'      HAS TESTEE EXCEDED ADDRESS SPACE?        M6A31660
0013EC    4380 142C         1167          BNL    EXIT1          YUP SO ASSUME HE'S FINISHED              M6A31670
0013F0    C570 0030         1168          CLHI   R7,X'30'       IS IT A VALID CHARACTER?                 M6A31680
0013F4    4280 1420         1169          BL     QIP            NO ASK AGAIN                             M6A31690
0013F8    C570 003A         1170          CLHI   R7,X'3A'       YEAH IS IT A DECIMAL NUMBER?             M6A31700
0013FC    218C              1171          BLS    DECNUM         YUP IT'S DECIMAL ALRIGHT                 M6A31710
0013FE    C570 0041         1172          CLHI   R7,X'41'       IS IT A LETTER?                          M6A31720
001402    4280 1420         1173          BL     QIP            NOPE IT'S SUMTHIN' ELSE                  M6A31730
001406    C570 0047         1174          CLHI   R7,X'47'       IS IT A HEX NUMBER?                      M6A31740
00140A    4380 1420         1175          BNL    QIP            NOPE ASK THE TESTEE AGAIN                M6A31750
00140E    C570 0037         1176          SHI    R7,X'37'       CONVERT TO HEX NUMBER                    M6A31760
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001412    2303                1177            BS      HILOFIN          GET ANOTHER CHARACTER             M6A31770
001414    CB70 0030           1178    DECNUM  SHI     R7,X'30'         CONVERT TO HEX NUMBER            M6A31780
001418    1184                1179    HILOFIN SLLS    R8,4             SHIFT HEX ADDRESS REGISTER       M6A31790
00141A    0A87                1180            AR      R8,R7            AND ADD NEX NUMBER               M6A31800
00141C    4300 13DA           1181            B       HILOREAD         GET ONE MORE                    M6A31810
001420    41F0 1114           1182    QIP     BAL     LINK,PRINT       OOOOPS MADE AN ERROR            M6A31820
001424    1668                1183            DC      Z(QUEST)         SOO TELL TESTEE                 M6A31830
001426    1668                1184            DC      Z(QIPEND)                                        M6A31840
001428    4300 13D6           1185            B       HILOGET          START ALL OVER                  M6A31850
00142C    08A8                1186    EXIT1   LR      R10,R8                                           M6A31860
00142E    F480 000F C000      1187            NI      R8,Y'FC000'      ISOLATE TWO MOST SIGNIF DIGITS   M6A31870
001434    0309                1188            BR      R9                                               M6A31880
                              1189    *                                                                M6A31890
                              1190    ***********************************************************************   M6A31900
                              1191    *                                                                M6A31910
001436    D000 1A48           1192    MALFTN  STM     R0,RSAVE+64      SAVE ALL REGISTERS              M6A31920
00143A    9599                1193            EPSR    R9,R9            CAPTURE CURRENT CONDITION CODE   M6A31930
00143C    48C0 1778           1194            LH      R12,WRAPFLG                                      M6A31940
001440    2333                1195            BZS     MALFTNA                                          M6A31950
001442    C200 0020           1196            LPSW    X'20'                                            M6A31960
001446    C390 000F           1197    MALFTNA THI     R9,X'F'                                          M6A31970
00144A    4330 1492           1198            BZ      MMALFTN                                          M6A31980
00144E    24C1                1199            LIS     R12,1                                            M6A31990
001450    04C9                1200            NR      R12,R9                                           M6A32000
001452    2337                1201            BZS     CONT17                                           M6A32010
001454    5810 0024           1202            L       R1,X'24'                                         M6A32020
001458    F810 0000 A0F0      1203            LI      R1,Y'A0F0'       LOAD HALT PSW                   M6A32030
00145E    9501                1204            EPSR    R0,R1            HALT PROCESSOR                  M6A32040
001460    41F0 11A6           1205    CONT17  BAL     LINK,CONVERT     CONVERT TO ASCII CHARACTERS     M6A32050
001464    0000                1206            DC      X'0'             SHIFT INDEX                     M6A32060
001466    163D                1207            DC      Z(W)             STORE INDEX                     M6A32070
001468    5840 0024           1208            L       R4,X'24'         LOAD ADRS WHERE MALFTN OCCURED  M6A32080
00146C    E6C0 163D           1209            LA      R12,W            LOAD START ADRS OF ERROR MESSAGE M6A32090
001470    E6F0 147C           1210            LA      LINK,CONT16      ESTABLISH RETURN ADRS           M6A32100
001474    50F0 1828           1211            ST      LINK,REGSAV1F    STORE RETURN REGISTER           M6A32110
001478    4300 12B4           1212            B       ERROR1           GO TO ERROR ROUTINE             M6A32120
00147C    9DBA                1213    CONT16  SSR     R11,R10          IS TTY DU ?                     M6A32130
00147E    2316                1214            BNMS    CONT15           NO, LOAD NEW PSW                M6A32140
001480    F840 AAAA AAAA      1215            LI      R4,Y'AAAAAAAA'                                   M6A32150
001486    41E0 10F0           1216            BAL     RETRN,WRITE2     YES, WRITE Y'AAAAAAAA' ON DISPLAY M6A32160
00148A    F810 0000 A0F0      1217    CONT15  LI      R1,Y'A0F0'       LOAD HALT PSW                   M6A32170
001490    9501                1218            EPSR    R0,R1            AND HALT PROCESSOR              M6A32180
001492    41F0 11A6           1219    MMALFTN BAL     LINK,CONVERT                                     M6A32190
001496    0000                1220            DC      X'0'                                             M6A32200
001498    171C                1221            DC      Z(CCADRS)                                        M6A32210
00149A    0891                1222            LR      R9,R1                                            M6A32220
00149C    41F0 11A6           1223            BAL     LINK,CONVERT                                     M6A32230
0014A0    0010                1224            DC      X'10'                                            M6A32240
0014A2    1720                1225            DC      Z(MMADRS)                                         M6A32250
0014A4    41F0 1114           1226            BAL     LINK,PRINT                                        M6A32260
0014A8    1704                1227            DC      Z(MACHMAL)                                        M6A32270
0014AA    1727                1228            DC      Z(MMEND)                                          M6A32280
0014AC    D100 1A48           1229            LM      R0,RSAVE+64                                       M6A32290
0014B0    4300 147C           1230            B       CONT16                                           M6A32300
                              1231    *                                                                M6A32310
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                                 1232  *                                                                      M6A32320
0014B4   089F                    1233  ILGINT   LR    R9,LINK            LOAD OLD PSW                         M6A32330
0014B6   41F0 11A6               1234           BAL   LINK,CONVERT       CONVERT TO ASCII CHARACTERS          M6A32340
0014BA   001C                    1235           DC    X'1C'              SHIFT INDEX                          M6A32350
0014BC   16FA                    1236           DC    Z(ADRS)            STORE INDEX                          M6A32360
0014BE   089E                    1237           LR    R9,RETRN           LOAD LOC WHERE ILG INST OCCURED      M6A32370
0014C0   41F0 11A6               1238           BAL   LINK,CONVERT       CONVERT TO ASCII CHARACTERS          M6A32380
0014C4   001C                    1239           DC    X'1C'              SHIFT INDEX                          M6A32390
0014C6   16F0                    1240           DC    Z(ADRS1)           STORE INDEX                          M6A32400
0014C8   41F0 1114               1241           BAL   LINK,PRINT         PRINT ILLEGAL INSTRUCTION MESSAGE    M6A32410
0014CC   16DA                    1242           DC    Z(ILGMSG)          START ADRS OF MESSAGE                M6A32420
0014CE   1703                    1243           DC    Z(ILGEND)          END ADRS OF MESSAGE                  M6A32430
0014D0   9DBA                    1244           SSR   R11,R10            IS TTY OFF ?                         M6A32440
0014D2   2316                    1245           BNMS  CONT14             NO, LOAD NEW PSW                     M6A32450
0014D4   F840 5555 5555          1246           LI    R4,Y'55555555'                                         M6A32460
0014DA   41E0 10F0               1247           BAL   RETRN,WRITE2       YES, WRITE Y'55555555' ON DISPLAY    M6A32470
0014DE   F810 0000 A0F0          1248  CONT14   LI    R1,Y'A0F0'         LOAD HALT PSW                        M6A32480
0014E4   9501                    1249           EPSR  R0,R1              AND HALT PROCESSOR                   M6A32490
                                 1250  *                                                                      M6A32500
                                 1251  *                                                                      M6A32510
0014E6   082E                    1252  MACINT   LR    R2,RETRN           SAVE OLD PSW                         M6A32520
0014E8   083F                    1253           LR    R3,LINK            SAVE OLD LOCATION COUNTER            M6A32530
0014EA   41F0 1114               1254           BAL   LINK,PRINT         PRINT 'MACINT'                       M6A32540
0014EE   172A                    1255           DC    Z(MAC)             START ADRS OF MESSAGE                M6A32550
0014F0   1731                    1256           DC    Z(MACEND)          END ADRS OF MESSAGE                  M6A32560
0014F2   1802                    1257           LPSWR R2                 LOAD OLD PSW & LOC COUNTER           M6A32570
                                 1258  *                                                                      M6A32580
                                 1259  *                                                                      M6A32590
0014F4   082E                    1260  SVCERR   LR    R2,RETRN           SAVE OLD PSW                         M6A32600
0014F6   083F                    1261           LR    R3,LINK            SAVE OLD LOCATION COUNTER            M6A32610
0014F8   41F0 1114               1262           BAL   LINK,PRINT         PRINT 'SVCINT'                       M6A32620
0014FC   1732                    1263           DC    Z(SVC)             START ADRS OF MESSAGE                M6A32630
0014FE   1739                    1264           DC    Z(SVCEND)          END ADRS OF MESSAGE                  M6A32640
001500   1802                    1265           LPSWR R2                 LOAD OLD PSW & LOC COUNTER           M6A32650
                                 1266  *                                                                      M6A32660
                                 1267  *                                                                      M6A32670
001502   082E                    1268  ARTFLT   LR    R2,RETRN           SAVE OLD PSW                         M6A32680
001504   083F                    1269           LR    R3,LINK            SAVE OLD LOCATION COUNTER            M6A32690
001506   41F0 1114               1270           BAL   LINK,PRINT         PRINT 'ARTFLT'                       M6A32700
00150A   173A                    1271           DC    Z(ART)             START ADRS OF MESSAGE                M6A32710
00150C   1741                    1272           DC    Z(ARTEND)          END ADRS OF MESSAGE                  M6A32720
00150E   1802                    1273           LPSWR R2                 LOAD OLD PSW & LOC COUNTER           M6A32730
                                 1274  *                                                                      M6A32740
                                 1275  *                                                                      M6A32750
001510   082E                    1276  SYSQ     LR    R2,RETRN           SAVE OLD PSW                         M6A32760
001512   083F                    1277           LR    R3,LINK            SAVE OLD LOCATION COUNTER            M6A32770
001514   41F0 1114               1278           BAL   LINK,PRINT         PRINT 'SYSQUE'                       M6A32780
001518   1742                    1279           DC    Z(SYS)             START ADRS OF MESSAGE                M6A32790
00151A   1749                    1280           DC    Z(SYSEND)          END ADRS OF MESSAGE                  M6A32800
00151C   1802                    1281           LPSWR R2                 LOAD OLD PSW & LOC COUNTER           M6A32810
                                 1282  *                                                                      M6A32820
                                 1283  *                                                                      M6A32830
00151E   0892                    1284  EXTINT   LR    R9,R2              LOAD INT DEVICE ADRS                 M6A32840
001520   41F0 11A6               1285           BAL   LINK,CONVERT       CONVERT TO ASCII CHARACTERS          M6A32850
001524   0008                    1286           DC    X'8'               SHIFT INDEX                          M6A32860
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001526   1752                          1287              DC     Z(DEVADRS)          STORE INDEX                       M6A32870
001528   41F0 1114                     1288              BAL    LINK,PRINT          PRINT 'EXTINT XXX'                M6A32880
00152C   174A                          1289              DC     Z(EXT)              START ADRS OF MESSAGE             M6A32890
00152E   1757                          1290              DC     Z(EXTEND)           END ADRS OF MESSAGE              M6A32900
001530   1800                          1291              LPSWR R0                   LOAD OLD PSW & LOC COUNTER       M6A32910
                                       1292     *                                                                   M6A32920
                                       1293     ****************************************************************    M6A32930
                                       1294     *                                                                   M6A32940
001532   0200                          1295     PAT1     DC     X'200'                                               M6A32950
001534   0010                          1296     PAT2     DC     X'10'                                                M6A32960
001536   0220                          1297     PAT3     DC     X'220'                                               M6A32970
001538   0014                          1298     PAT4     DC     X'14'                                                M6A32980
00153A   00                            1299     ADDRESS  DB     X'0'                CONSOLE DEVICE ADDRESS           M6A32990
00153B   F8                            1300     PADSET   DB     X'F8'               PASLA SETUP COMMAND              M6A33000
00153C   A498                          1301     READ1    DC     X'A498'             CONSOLE DEVICE COMMANDS          M6A33010
         0000 153D                     1302     WRITE1   EQU    *-1                                                  M6A33020
                                       1303     *                                                                   M6A33030
                                       1304     ****************************************************************    M6A33040
                                       1305     *                                                                   M6A33050
                                       1306     *                                                                   M6A33060
                                       1307     * * * * * * * * * * * * * * * * * * * * * * * * * * * *             M6A33070
                                       1308     *                                                       *           M6A33080
                                       1309     *                    M E S S A G E S                    *           M6A33090
                                       1310     *                                                       *           M6A33100
                                       1311     * * * * * * * * * * * * * * * * * * * * * * * * * * * *             M6A33110
                                       1312     *                                                                   M6A33120
00153E   0D0A                          1313     TITLE    DC     X'0D0A',C'32 BIT S6A MEMORY TEST 06-157F02R01',X'0D0A'  M6A33130
001540   3332 2042 4954 2053
001548   3641 204D 454D 4F52
001550   5920 5445 5354 2030
001558   362D 3135 3746 3032
001560   5230 3120
001564   0D0A
         0000 1565                     1314     ENDOF    EQU    *-1                                                  M6A33140
                                       1315     *                                                                   M6A33150
                                       1316     *                                                                   M6A33160
001566   4156 4149 4C41 424C          1317     MEMSG    DC     C'AVAILABLE MEMORY',X'0D0A'                           M6A33170
00156E   4520 4D45 4D4F 5259
001576   0D0A
         0000 1577                     1318     END      EQU    *-1                                                  M6A33180
001578   0000 0000                     1319     MEMSG1   DC     0                                                    M6A33190
00157C   0000                          1320              DC     X'0'                                                 M6A33200
00157E   2D20                          1321              DC     X'2D20'                                              M6A33210
001580   0000 0000                     1322     ENDVAL   DC     0                                                    M6A33220
001584   0000                          1323              DC     X'0'                                                 M6A33230
001586   0D0A                          1324              DC     X'0D0A'                                              M6A33240
         0000 1587                     1325     END1     EQU    *-1                                                  M6A33250
001588   0D0A                          1326     PARNOMSG DC     X'0D0A'                                              M6A33260
00158A   5641 4C49 4420 5459          1327              DC     C'VALID TYPE NUMBERS ARE: ',X'0D0A'                   M6A33270
001592   5045 204E 554D 4245
00159A   5253 2041 5245 3A20
0015A2   0D0A
0015A4   2D54 5950 453D 3020          1328              DC     C'-TYPE=0 FOR 35-491 16KB ',X'0D0A'                   M6A33280
0015AC   464F 5220 3335 2D34
0015B4   3931 2031 364B 4220
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0015BC    0D0A
0015BE    2D54 5950 453D 3120    1329              DC    C'-TYPE=1 FOR 32-198 32KB ',X'0D0A'          M6A33290
0015C6    464F 5220 3332 2D31
0015CE    3938 2033 324B 4220
0015D6    0D0A
0015D8    2D54 5950 453D 3220    1330              DC    C'-TYPE=2 FOR 32-206 32KB ',X'0D0A'          M6A33300
0015E0    464F 5220 3332 2D32
0015E8    3036 2033 324B 4220
0015F0    0D0A
0015F2    2D54 5950 453D 3320    1331              DC    C'-TYPE=3 FOR 32-200 64KB(1000 NS)',X'0D0A'  M6A33310
0015FA    464F 5220 3332 2D32
001602    3030 2036 344B 4228
00160A    3130 3030 204E 5329
001612    0D0A
001614    2D54 5950 453D 3420    1332              DC    C'-TYPE=4 FOR 32-209 64KB(750 NS) ',X'0D0A'  M6A33320
00161C    464F 5220 3332 2D32
001624    3039 2036 344B 4228
00162C    3735 3020 4E53 2920
001634    0D0A
001636    5459 5045 3D20        1333              DC    C'TYPE= '                                     M6A33330
          0000 163B             1334    PARNOEND  EQU   *-1                                            M6A33340
                                1335    *                                                             M6A33350
                                1336    *                                                             M6A33360
                                1337    * ERROR MESSAGE W  TT  XXXXX  YYYYYYYY  ZZZZZZZZ              M6A33370
00163C    00                    1338    STARMSG   DB    0                                             M6A33380
00163D    00                    1339    W         DB    0                                             M6A33390
00163E    2020                  1340              DC    X'2020'                                        M6A33400
001640    0000 2020             1341    TT        DC    Y'2020'                                        M6A33410
001644    0000 0000             1342    XXXXX     DC    Y'0'                                           M6A33420
001648    0000                  1343              DC    X'0'                                           M6A33430
00164A    2020                  1344              DC    X'2020'                                        M6A33440
00164C    0000 0000             1345    YYYYYYYY  DC    Y'0'                                           M6A33450
001650    0000 0000             1346              DC    Y'0'                                           M6A33460
001654    2020                  1347              DC    X'2020'                                        M6A33470
001656    0000 0000             1348    ZZZZZZZZ  DC    Y'0'                                           M6A33480
00165A    0000                  1349              DC    X'0'                                           M6A33490
00165C    0000                  1350    SUBNUM    DC    X'0'                                           M6A33500
00165E    0D0A                  1351              DC    X'0D0A'                                         M6A33510
          0000 165F             1352    ENDMSG    EQU   *-1                                            M6A33520
001660    0D0A                  1353    TYPEMSG   DC    X'0D0A',C'TYPE= '                              M6A33530
001662    5459 5045 3D20
          0000 1667             1354    TYPEND    EQU   *-1                                            M6A33540
          0000 1667             1355    TYPNO     EQU   TYPEND                                         M6A33550
                                1356    *                                                             M6A33560
                                1357    *                                                             M6A33570
001668    0D0A                  1358    GUEST     DC    X'0D0A',C'? '          CR,LF,?                 M6A33580
00166A    3F20
          0000 166B             1359    QIPEND    EQU   *-1                   ????                     M6A33590
00166C    0D0A                  1360              DC    X'0D0A',C'* '          CR,LF,*                 M6A33600
00166E    2A20
          0000 166F             1361    QUEND     EQU   *-1                                            M6A33610
                                1362    *                                                             M6A33620
                                1363    *                                                             M6A33630
001670    0000 0000             1364    TOTALMSG  DC    0                                             M6A33640
001674    0000 0000             1365              DC    0                                             M6A33650
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001678    2054 4F54 414C 2020   1366            DC      C' TOTAL '                              M6A33660
          0000 167F             1367   TOTALEND EQU      *-1                                     M6A33670
001680    4552 524F 5253        1368            DC      C'ERRORS',X'0D0A'                        M6A33680
001686    0D0A
          0000 1687             1369   ERROREND EQU      *-1                                     M6A33690
                                1370   *                                                        M6A33700
                                1371   *                                                        M6A33710
001688    0D0A                 1372   LOMSG    DC      X'0D0A'                                  M6A33720
00168A    4C4F 3D20            1373            DC      C'LO= '                                  M6A33730
          0000 168D            1374   LOEND    EQU      *-1                                     M6A33740
                                1375   *                                                        M6A33750
                                1376   *                                                        M6A33760
00168E    0D0A                 1377   HIMSG    DC      X'0D0A'                                  M6A33770
001690    4849 3D20            1378            DC      C'HI= '                                  M6A33780
          0000 1693            1379   HIEND    EQU      *-1                                     M6A33790
                                1380   *                                                        M6A33800
                                1381   *                                                        M6A33810
001694    0D0A                 1382   NLMSG    DC      X'0D0A'                                  M6A33820
001696    4C4F 5720 5641 4C55  1383            DC      C'LOW VALUE > HIGH VALUE'                M6A33830
00169E    4520 3E20 4849 4748
0016A6    2056 414C 5545
          0000 16AB            1384   NLEND    EQU      *-1                                     M6A33840
                                1385   *                                                        M6A33850
                                1386   *                                                        M6A33860
0016AC    0D0A                 1387   MNAMSG   DC      X'0D0A'                                  M6A33870
0016AE    4D45 4D4F 5259 204E  1388            DC      C'MEMORY NOT AVAILABLE'                  M6A33880
0016B6    4F54 2041 5641 494C
0016BE    4142 4C45
          0000 16C1            1389   MNAEND   EQU      *-1                                     M6A33890
                                1390   *                                                        M6A33900
                                1391   *                                                        M6A33910
0016C2    0D0A                 1392   TSTMSG   DC      X'0D0A',C'SUBTEST',X'0D0A',C'*'          M6A33920
0016C4    5355 4254 4553 5420
0016CC    0D0A
0016CE    2A20
          0000 16CF            1393   TSTEND   EQU      *-1                                     M6A33930
                                1394   *                                                        M6A33940
                                1395   *                                                        M6A33950
0016D0    4E4F 2045 5252 4F52  1396   NOERR    DC      C'NO ERROR',X'0D0A'                      M6A33960
0016D8    0D0A
          0000 16D9            1397   ERREND   EQU      *-1                                     M6A33970
                                1398   *                                                        M6A33980
                                1399   *                                                        M6A33990
0016DA    494C 4C45 4741 4C20  1400   ILGMSG   DC      C'ILLEGAL INSTRUCTION'                   M6A34000
0016E2    494E 5354 5255 4354
0016EA    494F 4E20
0016EE    0D0A                 1401            DC      X'0D0A'                                  M6A34010
0016F0    0000 0000            1402   ADRS1    DC      0                                        M6A34020
0016F4    0000 0000            1403            DC      0                                        M6A34030
0016F8    2000                 1404            DC      X'2000'                                  M6A34040
0016FA    0000 0000            1405   ADRS     DC      0                                        M6A34050
0016FE    0000 0000            1406            DC      0                                        M6A34060
001702    0D0A                 1407            DC      X'0D0A'                                  M6A34070
          0000 1703            1408   ILGEND   EQU      *-1                                     M6A34080
                                1409   *                                                        M6A34090
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                                  1410  *                                                                    M6A34100
001704   0D0A                     1411  MACHMAL   DC    X'0D0A',C'MACHINE MALFUNCTION'                       M6A34110
001706   4D41 4348 494E 4520
00170E   4D41 4C46 554E 4354
001716   494F 4E20
00171A   0D0A                     1412            DC    X'0D0A'                                              M6A34120
00171C   00                       1413  CCADRS    DB    0                                                    M6A34130
00171D   00                       1414            DB    0                                                    M6A34140
00171E   2020                     1415            DC    X'2020'                                              M6A34150
001720   0000 0000                1416  MMADRS    DC    0                                                    M6A34160
001724   00                       1417            DB    0                                                    M6A34170
001725   00                       1418            DB    0                                                    M6A34180
001726   0D0A                     1419            DC    X'0D0A'                                              M6A34190
         0000 1727                1420  MMEND     EQU   *-1                                                  M6A34200
                                  1421  *                                                                    M6A34210
                                  1422  *                                                                    M6A34220
001728   00                       1423            DB    0                                                    M6A34230
001729   00                       1424            DB    0                                                    M6A34240
00172A   4D41 4349 4E54           1425  MAC       DC    C'MACINT'                                            M6A34250
001730   0D0A                     1426            DC    X'0D0A'                                              M6A34260
         0000 1731                1427  MACEND    EQU   *-1                                                  M6A34270
                                  1428  *                                                                    M6A34280
                                  1429  *                                                                    M6A34290
001732   5356 4349 4E54           1430  SVC       DC    C'SVCINT'                                            M6A34300
001738   0D0A                     1431            DC    X'0D0A'                                              M6A34310
         0000 1739                1432  SVCEND    EQU   *-1                                                  M6A34320
                                  1433  *                                                                    M6A34330
                                  1434  *                                                                    M6A34340
00173A   4152 5446 4C54           1435  ART       DC    C'ARTFLT'                                            M6A34350
001740   0D0A                     1436            DC    X'0D0A'                                              M6A34360
         0000 1741                1437  ARTEND    EQU   *-1                                                  M6A34370
                                  1438  *                                                                    M6A34380
                                  1439  *                                                                    M6A34390
001742   5359 5351 5545           1440  SYS       DC    C'SYSQUE'                                            M6A34400
001748   0D0A                     1441            DC    X'0D0A'                                              M6A34410
         0000 1749                1442  SYSEND    EQU   *-1                                                  M6A34420
                                  1443  *                                                                    M6A34430
                                  1444  *                                                                    M6A34440
00174A   4558 5449 4E54 2020      1445  EXT       DC    C'EXTINT '                                           M6A34450
001752   0000 0000                1446  DEVADRS   DC    0                                                    M6A34460
001756   0D0A                     1447            DC    X'0D0A'                                              M6A34470
         0000 1757                1448  EXTEND    EQU   *-1                                                  M6A34480
001758   0000                     1449            DC    X'0'                                                 M6A34490
                                  1450  *                                                                    M6A34500
                                  1451  * * * * * * * * * * * * * * * * * * * * * * * * * *                  M6A34510
                                  1452  *                                                   *                M6A34520
                                  1453  *            M E M O R Y   T A B L E                *                M6A34530
                                  1454  *                                                   *                M6A34540
                                  1455  * * * * * * * * * * * * * * * * * * * * * * * * * *                  M6A34550
                                  1456  *                                                                    M6A34560
00175C                            1457            ALIGN 4                                                    M6A34570
00175C   0000                     1458            DC    X'0'                                                 M6A34580
00175E   80                       1459  KB0016    DB    X'80'           16- 32- 48- 64- 80- 96- 112- 128-   M6A34590
00175F   00                       1460  KB0144    DB    0             144-160-176-192-208-224-240-256       M6A34600
001760   00                       1461  KB0272    DB    0             272-288-304-320-336-352-368-384       M6A34610
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001761  00              1462  KB0400    DB    0                    400-416-432-448-464-480-496-512      M6A34620
001762  00              1463  KB0528    DB    0                    528-544-560-576-592-608-624-640      M6A34630
001763  00              1464  KB0656    DB    0                    656-672-688-704-720-736-752-768-     M6A34640
001764  00              1465  KB0784    DB    0                    784-800-816-832-848-864-880-896      M6A34650
001765  00              1466  KB0912    DB    0                    912-928-944-960-976-992-1008-1024    M6A34660
001766  FF              1467  KBEND     DB    X'FF'                                                     M6A34670
                        1468  *                                                                         M6A34680
                        1469  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *             M6A34690
                        1470  *                                               *                         M6A34700
                        1471  *                D A T A   C O N S T A N T S     *                         M6A34710
                        1472  *                                               *                         M6A34720
                        1473  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *             M6A34730
                        1474  *                                                                         M6A34740
                        1475  *        NOTE: CONSTANTS USED FOR I/O CONTROL                             M6A34750
                        1476  *                                                                         M6A34760
001767  80              1477  NORM      DB    X'80'                                                     M6A34770
001768  40              1478  INCRMT    DB    X'40'                                                     M6A34780
001769  00              1479            DB    *                                                         M6A34790
00176A  A498            1480  READ2     DC    X'A498'                                                   M6A34800
00176C  B9AB            1481  READ3     DC    X'B9AB'                                                   M6A34810
00176E  0000            1482  CRTFLG    DC    X'0'                                                      M6A34820
001770  0000 0000       1483            DC    Y'0'                                                      M6A34830
                        1484  *                                                                         M6A34840
                        1485  *                                                                         M6A34850
                        1486  *        NOTE: FLAGS USED IN THIS TEST AND I/O                            M6A34860
                        1487  *                                                                         M6A34870
001774  00F0            1488  FTNWRT    DC    X'F0'                                                     M6A34880
001776  0000            1489  FLAG      DC    X'0'                                                      M6A34890
001778  0000            1490  WRAPFLG   DC    X'0'                                                      M6A34900
00177A  00              1491  LIMFLG    DB    0                                                         M6A34910
00177B  00              1492  TSTFLG    DB    0                                                         M6A34920
00177C  00              1493  SUBTST    DB    0                                                         M6A34930
00177D  00              1494  ERRFLG    DB    0                                                         M6A34940
00177E  00              1495  TTYFLG    DB    0                                                         M6A34950
00177F  00              1496  CONTFLG   DB    0                                                         M6A34960
001780  00              1497  TYPEFLG   DB    0                                                         M6A34970
001781  00              1498            DB    0                                                         M6A34980
                        1499  *                                                                         M6A34990
                        1500  *        NOTE: ADDRESS SAVE LOCATIONS USED IN THIS TEST                   M6A35000
                        1501  *                                                                         M6A35010
001784                  1502            ALIGN 4                                                         M6A35020
001784  0000 0000       1503  LOVAL     DC    0                                                         M6A35030
001788  0000 0000       1504  HIVAL     DC    0                                                         M6A35040
00178C  0000 0000       1505  BLKADR    DC    0                                                         M6A35050
001790  0000 0000       1506  LAST      DC    0                                                         M6A35060
001794  0000 0000       1507  LOADR     DC    0                                                         M6A35070
001798  0000 0000       1508  HIADR     DC    0                                                         M6A35080
00179C  0000 0000       1509  TOTAL     DC    0                                                         M6A35090
0017A0  0000 0000       1510  TOTALERR  DC    0                                                         M6A35100
0017A4  0000            1511  TYPSTRT   DC    X'0'              STARTING ADDRESS OF WC TEST             M6A35110
0017A6  0000            1512  NXTST     DC    X'0'                                                      M6A35120
0017A8  0000            1513  RXTURN    DC    X'0'                                                      M6A35130
        0000 17AA       1514  LNZB      EQU   *                                                         M6A35140
                        1515  *                                                                         M6A35150
                        1516  *        NOTE: EIGHT SIMULATED REGISTER SETS                              M6A35160
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                                    1517  *                                                    M6A35170
0017AC                              1518          ALIGN 4                                      M6A35180
0017AC    0000 0000                 1519  REGSAV00 DC     0                                    M6A35190
0017B0    0000 0000                 1520  REGSAV01 DC     0                                    M6A35200
0017B4    0000 0000                 1521  REGSAV02 DC     0                                    M6A35210
0017B8    0000 0000                 1522  REGSAV03 DC     0                                    M6A35220
0017BC    0000 0000                 1523  REGSAV04 DC     0                                    M6A35230
0017C0    0000 0000                 1524  REGSAV05 DC     0                                    M6A35240
0017C4    0000 0000                 1525  REGSAV06 DC     0                                    M6A35250
0017C8    0000 0000                 1526  REGSAV07 DC     0                                    M6A35260
0017CC    0000 0000                 1527  REGSAV08 DC     0                                    M6A35270
0017D0    0000 0000                 1528  REGSAV09 DC     0                                    M6A35280
0017D4    0000 0000                 1529  REGSAV0A DC     0                                    M6A35290
0017D8    0000 0000                 1530  REGSAV0B DC     0                                    M6A35300
0017DC    0000 0000                 1531  REGSAV0C DC     0                                    M6A35310
0017E0    0000 0000                 1532  REGSAV0D DC     0                                    M6A35320
0017E4    0000 0000                 1533  REGSAV0E DC     0                                    M6A35330
0017E8    0000 0000                 1534  REGSAV0F DC     0                                    M6A35340
0017EC    0000 0000                 1535  REGSAV10 DC     0                                    M6A35350
0017F0    0000 0000                 1536  REGSAV11 DC     0                                    M6A35360
0017F4    0000 0000                 1537  REGSAV12 DC     0                                    M6A35370
0017F8    0000 0000                 1538  REGSAV13 DC     0                                    M6A35380
0017FC    0000 0000                 1539  REGSAV14 DC     0                                    M6A35390
001800    0000 0000                 1540  REGSAV15 DC     0                                    M6A35400
001804    0000 0000                 1541  REGSAV16 DC     0                                    M6A35410
001808    0000 0000                 1542  REGSAV17 DC     0                                    M6A35420
00180C    0000 0000                 1543  REGSAV18 DC     0                                    M6A35430
001810    0000 0000                 1544  REGSAV19 DC     0                                    M6A35440
001814    0000 0000                 1545  REGSAV1A DC     0                                    M6A35450
001818    0000 0000                 1546  REGSAV1B DC     0                                    M6A35460
00181C    0000 0000                 1547  REGSAV1C DC     0                                    M6A35470
001820    0000 0000                 1548  REGSAV1D DC     0                                    M6A35480
001824    0000 0000                 1549  REGSAV1E DC     0                                    M6A35490
001828    0000 0000                 1550  REGSAV1F DC     0                                    M6A35500
00182C    0000 0000                 1551  REGSAV20 DC     0                                    M6A35510
001830    0000 0000                 1552  REGSAV21 DC     0                                    M6A35520
001834    0000 0000                 1553  REGSAV22 DC     0                                    M6A35530
001838    0000 0000                 1554  REGSAV23 DC     0                                    M6A35540
00183C    0000 0000                 1555  REGSAV24 DC     0                                    M6A35550
001840    0000 0000                 1556  REGSAV25 DC     0                                    M6A35560
001844    0000 0000                 1557  REGSAV26 DC     0                                    M6A35570
001848    0000 0000                 1558  REGSAV27 DC     0                                    M6A35580
00184C    0000 0000                 1559  REGSAV28 DC     0                                    M6A35590
001850    0000 0000                 1560  REGSAV29 DC     0                                    M6A35600
001854    0000 0000                 1561  REGSAV2A DC     0                                    M6A35610
001858    0000 0000                 1562  REGSAV2B DC     0                                    M6A35620
00185C    0000 0000                 1563  REGSAV2C DC     0                                    M6A35630
001860    0000 0000                 1564  REGSAV2D DC     0                                    M6A35640
001864    0000 0000                 1565  REGSAV2E DC     0                                    M6A35650
001868    0000 0000                 1566  REGSAV2F DC     0                                    M6A35660
00186C    0000 0000                 1567  REGSAV30 DC     0                                    M6A35670
001870    0000 0000                 1568  REGSAV31 DC     0                                    M6A35680
001874    0000 0000                 1569  REGSAV32 DC     0                                    M6A35690
001878    0000 0000                 1570  REGSAV33 DC     0                                    M6A35700
00187C    0000 0000                 1571  REGSAV34 DC     0                                    M6A35710
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001880   0000 0000          1572   REGSAV35 DC     0                                                    M6A35720
001884   0000 0000          1573   REGSAV36 DC     0                                                    M6A35730
001888   0000 0000          1574   REGSAV37 DC     0                                                    M6A35740
00188C   0000 0000          1575   REGSAV38 DC     0                                                    M6A35750
001890   0000 0000          1576   REGSAV39 DC     0                                                    M6A35760
001894   0000 0000          1577   REGSAV3A DC     0                                                    M6A35770
001898   0000 0000          1578   REGSAV3B DC     0                                                    M6A35780
00189C   0000 0000          1579   REGSAV3C DC     0                                                    M6A35790
0018A0   0000 0000          1580   REGSAV3D DC     0                                                    M6A35800
0018A4   0000 0000          1581   REGSAV3E DC     0                                                    M6A35810
0018A8   0000 0000          1582   REGSAV3F DC     0                                                    M6A35820
0018AC   0000 0000          1583   REGSAV40 DC     0                                                    M6A35830
0018B0   0000 0000          1584   REGSAV41 DC     0                                                    M6A35840
0018B4   0000 0000          1585   REGSAV42 DC     0                                                    M6A35850
0018B8   0000 0000          1586   REGSAV43 DC     0                                                    M6A35860
0018BC   0000 0000          1587   REGSAV44 DC     0                                                    M6A35870
0018C0   0000 0000          1588   REGSAV45 DC     0                                                    M6A35880
0018C4   0000 0000          1589   REGSAV46 DC     0                                                    M6A35890
0018C8   0000 0000          1590   REGSAV47 DC     0                                                    M6A35900
0018CC   0000 0000          1591   REGSAV48 DC     0                                                    M6A35910
0018D0   0000 0000          1592   REGSAV49 DC     0                                                    M6A35920
0018D4   0000 0000          1593   REGSAV4A DC     0                                                    M6A35930
0018D8   0000 0000          1594   REGSAV4B DC     0                                                    M6A35940
0018DC   0000 0000          1595   REGSAV4C DC     0                                                    M6A35950
0018E0   0000 0000          1596   REGSAV4D DC     0                                                    M6A35960
0018E4   0000 0000          1597   REGSAV4E DC     0                                                    M6A35970
0018E8   0000 0000          1598   REGSAV4F DC     0                                                    M6A35980
0018EC   0000 0000          1599   REGSAV50 DC     0                                                    M6A35990
0018F0   0000 0000          1600   REGSAV51 DC     0                                                    M6A36000
0018F4   0000 0000          1601   REGSAV52 DC     0                                                    M6A36010
0018F8   0000 0000          1602   REGSAV53 DC     0                                                    M6A36020
0018FC   0000 0000          1603   REGSAV54 DC     0                                                    M6A36030
001900   0000 0000          1604   REGSAV55 DC     0                                                    M6A36040
001904   0000 0000          1605   REGSAV56 DC     0                                                    M6A36050
001908   0000 0000          1606   REGSAV57 DC     0                                                    M6A36060
00190C   0000 0000          1607   REGSAV58 DC     0                                                    M6A36070
001910   0000 0000          1608   REGSAV59 DC     0                                                    M6A36080
001914   0000 0000          1609   REGSAV5A DC     0                                                    M6A36090
001918   0000 0000          1610   REGSAV5B DC     0                                                    M6A36100
00191C   0000 0000          1611   REGSAV5C DC     0                                                    M6A36110
001920   0000 0000          1612   REGSAV5D DC     0                                                    M6A36120
001924   0000 0000          1613   REGSAV5E DC     0                                                    M6A36130
001928   0000 0000          1614   REGSAV5F DC     0                                                    M6A36140
00192C   0000 0000          1615   REGSAV60 DC     0                                                    M6A36150
001930   0000 0000          1616   REGSAV61 DC     0                                                    M6A36160
001934   0000 0000          1617   REGSAV62 DC     0                                                    M6A36170
001938   0000 0000          1618   REGSAV63 DC     0                                                    M6A36180
00193C   0000 0000          1619   REGSAV64 DC     0                                                    M6A36190
001940   0000 0000          1620   REGSAV65 DC     0                                                    M6A36200
001944   0000 0000          1621   REGSAV66 DC     0                                                    M6A36210
001948   0000 0000          1622   REGSAV67 DC     0                                                    M6A36220
00194C   0000 0000          1623   REGSAV68 DC     0                                                    M6A36230
001950   0000 0000          1624   REGSAV69 DC     0                                                    M6A36240
001954   0000 0000          1625   REGSAV6A DC     0                                                    M6A36250
001958   0000 0000          1626   REGSAV6B DC     0                                                    M6A36260
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00195C    0000 0000       1627    REGSAV6C DC      0                                                    M6A36270
001960    0000 0000       1628    REGSAV6D DC      0                                                    M6A36280
001964    0000 0000       1629    REGSAV6E DC      0                                                    M6A36290
001968    0000 0000       1630    REGSAV6F DC      0                                                    M6A36300
00196C    0000 0000       1631    REGSAV70 DC      0                                                    M6A36310
001970    0000 0000       1632    REGSAV71 DC      0                                                    M6A36320
001974    0000 0000       1633    REGSAV72 DC      0                                                    M6A36330
001978    0000 0000       1634    REGSAV73 DC      0                                                    M6A36340
00197C    0000 0000       1635    REGSAV74 DC      0                                                    M6A36350
001980    0000 0000       1636    REGSAV75 DC      0                                                    M6A36360
001984    0000 0000       1637    REGSAV76 DC      0                                                    M6A36370
001988    0000 0000       1638    REGSAV77 DC      0                                                    M6A36380
00198C    0000 0000       1639    REGSAV78 DC      0                                                    M6A36390
001990    0000 0000       1640    REGSAV79 DC      0                                                    M6A36400
001994    0000 0000       1641    REGSAV7A DC      0                                                    M6A36410
001998    0000 0000       1642    REGSAV7B DC      0                                                    M6A36420
00199C    0000 0000       1643    REGSAV7C DC      0                                                    M6A36430
0019A0    0000 0000       1644    REGSAV7D DC      0                                                    M6A36440
0019A4    0000 0000       1645    REGSAV7E DC      0                                                    M6A36450
0019A8    0000 0000       1646    REGSAV7F DC      0                                                    M6A36460
0019AC    0000 0000       1647    REGSAVF0 DC      0                                                    M6A36470
0019B0    0000 0000       1648    REGSAVF1 DC      0                                                    M6A36480
0019B4    0000 0000       1649    REGSAVF2 DC      0                                                    M6A36490
0019B8    0000 0000       1650    REGSAVF3 DC      0                                                    M6A36500
0019BC    0000 0000       1651    REGSAVF4 DC      0                                                    M6A36510
0019C0    0000 0000       1652    REGSAVF5 DC      0                                                    M6A36520
0019C4    0000 0000       1653    REGSAVF6 DC      0                                                    M6A36530
0019C8    0000 0000       1654    REGSAVF7 DC      0                                                    M6A36540
0019CC    0000 0000       1655    REGSAVF8 DC      0                                                    M6A36550
0019D0    0000 0000       1656    REGSAVF9 DC      0                                                    M6A36560
0019D4    0000 0000       1657    REGSAVFA DC      0                                                    M6A36570
0019D8    0000 0000       1658    REGSAVFB DC      0                                                    M6A36580
0019DC    0000 0000       1659    REGSAVFC DC      0                                                    M6A36590
0019E0    0000 0000       1660    REGSAVFD DC      0                                                    M6A36600
0019E4    0000 0000       1661    REGSAVFE DC      0                                                    M6A36610
0019E8    0000 0000       1662    REGSAVFF DC      0                                                    M6A36620
                          1663    *                                                                     M6A36630
                          1664    ***************************************************************************   M6A36640
                          1665    *                                                                     M6A36650
0019EC                    1666    PSWSAVE  DS      16                                                   M6A36660
0019FC                    1667    TABLE    DS      12                                                   M6A36670
001A08                    1668    RSAVE    DS      128                                                  M6A36680
                          1669    *                                                                     M6A36690
                          1670    *                                                                     M6A36700
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CHKSUM/M17 PUNCHER

```
001A88   2400           1672   $CHKSUM  LIS   R0,0            PUNCH M17 TAPE WITH CHECKSUM         M6A36720
001A8A   9510           1673            EPSR  R1,R0           SELECT REG. SET 0 & CLEAR PSW   ***  M6A36730
                        1674   *                                                                   M6A36740
001A8C   E610 0A00      1675            LDAI  R1,ORIGIN1      LOAD START ADDRESS                   M6A36750
001A90   2421           1676            LIS   R2,1            LOAD INCREMENT VALUE                 M6A36760
001A92   E630 17AA      1677            LDAI  R3,LNZB         LOAD FINAL ADDRESS                   M6A36770
001A96   2440           1678            LIS   R4,0            INITIALIZE CHKSUM BYTE               M6A36780
                        1679   *                                                                   M6A36790
001A98   D351 0000      1680   $GEN     LB    R5,0(R1)                                             M6A36800
001A9C   0745           1681            XAR   R4,R5           CALCULATE CHKSUM BYTE                M6A36810
001A9E   C110 1A98      1682            BXLE  R1,$GEN                                              M6A36820
001AA2   D240 0099      1683            STB   R4,MN+3         CHECKSUM BYTE TO BOOT LOADER         M6A36830
                        1684   *                                                                   M6A36840
001AA6   C810 0080      1685   $TAPE    LHI   R1,X'0080'                                           M6A36850
001AAA   9E21           1686            OCR   R2,R1           DISPLAY IN NORMAL MODE               M6A36860
001AAC   9444           1687            EXBR  R4,R4                                                M6A36870
001AAE   9824           1688            WHR   R2,R4           DISPLAY CHKSUM BYTE (TO D1)          M6A36880
001AB0   9411           1689            EXBR  R1,R1                                                M6A36890
001AB2   9501           1690            EPSR  R0,R1           HALT PROCESSOR.                      M6A36900
                        1691   *                                                                   M6A36910
                        1692   **************************************************************       M6A36920
                        1693   *                                                                   M6A36930
001AB4   D360 007A      1694   $PUNCH   LB    R6,X'7A'        GET BOUTDV (PUNCH) ADDRESS.          M6A36940
001AB8   DE60 007B      1695            OC    R6,X'7B'        START TAPE PUNCH                     M6A36950
001ABC   9D60           1696            SSR   R6,R0                                                M6A36960
001ABE   2081           1697            BTBS  8,1                                                  M6A36970
001AC0   41F0 1B02      1698            BAL   LINK,$TAPL      PUNCH LEADER (256 CHARACTERS)        M6A36980
001AC4   9411           1699            EXBR  R1,R1           (R1) = X'0080'                       M6A36990
001AC6   C830 00CF      1700            LHI   R3,X'CF'                                             M6A37000
                        1701   *                                                                   M6A37010
001ACA   DA61 0000      1702   $PNCH1   WD    R6,0(R1)        PUNCH BOOT LOADER                    M6A37020
001ACE   9D60           1703            SSR   R6,R0                                                M6A37030
001AD0   2081           1704            BTBS  8,1                                                  M6A37040
001AD2   C110 1ACA      1705            BXLE  R1,$PNCH1                                            M6A37050
001AD6   41F0 1B08      1706            BAL   LINK,$TAPL1     PUNCH ONE-FOLD GAP.                  M6A37060
                        1707   *                                                                   M6A37070
001ADA   D340 0099      1708            LB    R4,MN+3         GET CHECKSUM BYTE                    M6A37080
001ADE   E610 0A00      1709            LDAI  R1,ORIGIN1      (NORMALLY X'A00')                    M6A37090
001AE2   E630 17AA      1710            LDAI  R3,LNZB                                              M6A37100
                        1711   *                                                                   M6A37110
001AE6   D351 0000      1712   $PNCH2   LB    R5,0(R1)        PUNCH PROGRAM                        M6A37120
001AEA   0745           1713            XAR   R4,R5           (ORIGIN1 TO LNZB)                    M6A37130
001AEC   9A65           1714            WDR   R6,R5                                                M6A37140
001AEE   9401           1715            EXBR  R0,R1                                                M6A37150
001AF0   9620           1716            WHR   R2,R0           DISPLAY ADDRESS PUNCHED              M6A37160
001AF2   9D60           1717            SSR   R6,R0                                                M6A37170
001AF4   2081           1718            BTBS  8,1                                                  M6A37180
001AF6   C110 1AE6      1719            BXLE  R1,$PNCH2                                            M6A37190
001AFA   41F0 1B02      1720            BAL   LINK,$TAPL      PUNCH TRAILER.                       M6A37200
001AFE   4300 1AA6      1721            B     $TAPE           DISPLAY CHECKSUM. HALT PROCESSOR.    M6A37210
                        1722   *                                                                   M6A37220
001B02   C800 0100      1723   $TAPL    LHI   R0,256          TO PUNCH BLANK LEADER                M6A37230
001B06   2303           1724            BS    $TAPLP                                               M6A37240
```

CHKSUM/M17 PUNCHER

```
                                1725  *                                                            M6A37250
001B08   C800 0080              1726  $TAPL1   LHI     R0,128         TO PUNCH 1-FOLD GAP     ***   M6A37260
                                1727  *                                                            M6A37270
001B0C   2701                   1728  $TAPLP   SIS     R0,1                                         M6A37280
001B0E   032F                   1729           BNPR    LINK           RETURN                        M6A37290
001B10   2430                   1730           LIS     R3,0                                         M6A37300
001B12   9A63                   1731           WDR     R6,R3          PUNCH BLANK FRAME             M6A37310
001B14   9D68                   1732           SSR     R6,R8                                        M6A37320
001B16   2081                   1733           BTBS    8,1                                          M6A37330
001B18   2206                   1734           BS      $TAPLP         CONTINUE.                     M6A37340
                                1735  *                                                            M6A37350
001B1A                          1736           END                                                 M6A37360
```

CHKSUM/M17 PUNCHER

ASSEMBLED BY CAL 03-066R05-00   (32-BIT)

START OPTIONS: SCR,CRO,T=32

    NO CAL ERRORS
    NO CAL WARNINGS
    2 PASSES

```
$CHKSUM   0000 1A88      1672*
$GEN      0000 1A98      1680*  1682
$PNCH1    0000 1ACA      1702*  1705
$PNCH2    0000 1AE6      1712*  1719
$PUNCH    0000 1AB4      1694*
$TAPE     0000 1AA6      1685*  1721
$TAPL     0000 1B02      1698   1720   1723*
$TAPL1    0000 1B08      1706   1726*
$TAPLP    0000 1B0C      1724   1728*  1734
ABSTOP    0000 1B1A
ADC       0000 0004
ADDBLK    0000 1264      1000   1002*
ADDRESS   0000 153A       177    186    835    894    966   1061   1299*
ADRS      0000 16FA      1236   1405*
ADRS1     0000 16F0      1240   1402*
ALGRM1    0000 0F5E       637*
ALGRM2    0000 1030       726*
ART       0000 173A      1271   1435*
ARTEND    0000 1741      1272   1437*
ARTFLT    0000 1502       206   1268*
BLKADR    0000 178C       961    981    988   1505*
BOOT      0000 0088       115    118*
BRKWAIT   0000 1322      1077   1096*
BRKWAIT1  0000 1330      1097   1101*
BT00      0000 0F82       650*   653
BT001     0000 1050       737*
BT01      0000 0F8C       654*
BT011     0000 1056       736    739*
BT0CH2    0000 0F88       649    652*
BT10      0000 0F98       659*   662
BT101     0000 1062       744*
BT11      0000 0FA2       663*
BT111     0000 1068       743    746*
BT1CH2    0000 0F9E       658    661*
BT1ONE    0000 0F92       646    656*
BT1ZR1    0000 104A       734*
BT1ZR0    0000 0F7C       644    647*
CCADRS    0000 171C      1221   1413*
CHECKR    0000 119A       899    908*   910
CHKA2     0000 0FCE       680    682    684*
CHKBT3    0000 105C       733    741*
CHKDB1    0000 108C       760    762*
CHKDT1    0000 0FB6       672*   716
CHKDT2    0000 1078       753*
CHKDT3    0000 107C       754*   791
```

CHKSUM/M17 PUNCHER

```
CHKDT4    0000 108E      757     763*
CHKDT5    0000 1098      765     768*
CHKDT6    0000 109A      762     767     769*
CHKDT7    0000 10D2      780     785     787*
CHKDTA    0000 0FB2      670*
CHKDTE    0000 0FDE      684     688     690     693*
CHKDTG    0000 101C      697     705     710     712*
CHKEND    0000 10E2      717     794*
CHKLIM    0000 123A      989*
CMD       0000 112C      841     843*
COMP1     0000 0FEE      695     698*
COMP11    0000 10A6      771     773*
COMP2     0000 100A      703     706*
COMP21    0000 10C0      778     781*
COMPR     0000 136A      1125*   1128
COMPR2    0000 13A4      1143*   1146
CONT02    0000 1140      847     850*
CONT10    0000 13A0      1142*
CONT12    0000 1366      1124*
CONT14    0000 14DE      1245    1248*
CONT15    0000 148A      1214    1217*
CONT16    0000 147C      1210    1213*   1230
CONT17    0000 1460      1201    1205*
CONT7     0000 12E2      1066    1069    1075*
CONT9     0000 11C6      935     937*
CONTFLG   0000 177F      349     449     472     963     1028    1496*
CONVERT   0000 11A6      278     283     485     492     928*    1023    1079    1083    1087    1205    1219    1223    1234
                         1238    1285
CONVERT1  0000 11AE      930*    942
CRCHK     0000 0C5C      347     351*
CRT       0000 0A44      173     181*
CRTADR    0000 0A12      161*    185
CRTFLG    0000 176E      179     184     840     855     898     970     1096    1482*
DECNUM    0000 1414      1171    1178*
DEVADRS   0000 1752      1287    1446*
DEVCHK    0000 0A1E      171*
DT1ONE    0000 0FD0      677     685*
DT1ZRO    0000 0FC2      675     678*
EMOS      0000 1278      1004    1008*
ENABLE1   0000 08D0      299     311*
END       0000 1577      249     358     359     1318*
END1      0000 1587      288     1325*
ENDMSG    0000 165F      1033    1092    1352*
ENDOF     0000 1565      244     1314*
ENDVAL    0000 1580      285     1322*
ERREND    0000 16D9      454     1397*
ERRFLG    0000 177D      324     446     456     1063    1494*
ERROR     0000 12A8      696     704     711     772     779     786     1057*
ERROR1    0000 12B4      1060*   1212
ERROREND  0000 1687      497     1369*
EXECUTE   0000 0A5E      180     190*
EXIT1     0000 142C      1165    1167    1186*
EXT       0000 174A      1289    1445*
```

CHKSUM/M17 PUNCHER

```
EXTEND    0000 1757    1290   1448*
EXTINT    0000 151E     231   1284*
FLAG      0000 1776     252    272    293    297   1489*
FTNWRT    0000 1774    1488*
FW        0000 1222     982*   985    997
FW1       0000 1214     965    969    978*
FWR       0000 11E4     794    963*
FWR1      0000 11D8     638    727    959*
FWR1A     0000 1340    1108*  1124   1142
FWRA      0000 1344    1110*  1113   1127   1145
GO1       0000 12BC    1062*
GWTTY1    0000 12B8    1061*
HIADR     0000 1798     665    714    748    789   1009   1508*
HIEND     0000 1693    1137   1379*
HIGH      0000 13C8    1144   1155*
HILO      0000 135A     339   1120*  1132   1154
HILO1     0000 138A    1135*  1150
HILOFIN   0000 1418    1177   1179*
HILOGET   0000 13D6    1123   1138   1160*  1185
HILOREAD  0000 13DA    1162*  1181
HIMSG     0000 168E    1136   1377*
HIVAL     0000 1788     316   1003   1007   1156   1504*
ILGEND    0000 1703    1243   1408*
ILGINT    0000 14B4     197   1233*
ILGMSG    0000 16DA    1242   1400*
IMPTOP    0000 0000I
INCRMT    0000 1768     812   1478*
IO        0000 0A10     160*   171
KB0016    0000 175E     275    292    301    984   1112   1459*
KB0144    0000 175F     254   1460*
KB0272    0000 1760     255   1461*
KB0400    0000 1761    1462*
KB0528    0000 1762     256   1463*
KB0656    0000 1763    1464*
KB0784    0000 1764     257   1465*
KB0912    0000 1765    1466*
KBEND     0000 1766    1467*
LADC      0000 0002
LAST      0000 1790     290    315   1506*
LCHK      0000 0C4A     345*
LDTA2     0000 0F90     651    655*
LDTA3     0000 0F9C     655    660*
LDWT      0000 00C8     141*   144
LEADER    0000 00A2     125*   129
LIMFLG    0000 177A     962    978   1006   1491*
LINK      0000 000F     104*   242    247    278    283    286    319    322    327    337    345    353    357
                        394    395    406    440    441    452    485    488    492    495    513    519    528
                        534    543    549    558    564    573    579    588    594    603    609    618    624
                        637    638    696    704    711    726    727    772    779    786    794    813    814
                        814    815    816    816    817    817    818    821    822    849    850    851    856
                        862    881    928    929    939    980    987   1010   1023   1031   1062   1063   1064
                       1065   1079   1083   1087   1090   1095   1115   1116   1120   1124   1127   1129   1135
                       1142   1145   1147   1151   1162   1182   1205   1210   1211   1219   1223   1226   1233
```

CHKSUM/M17 PUNCHER

			1234	1238	1241	1253	1254	1261	1262	1269	1270	1277	1278	1285	1288
			1698	1706	1720	1729									
LNZB	0000	17AA	119	1514*	1677	1710									
LOAD	0000	00AC	130*	138											
LOADE1	0000	106C	740	745	747*										
LOADED	0000	0FA6	660	664*											
LOADR	0000	1794	641	670	730	753	1008	1507*							
LODTA0	0000	0F72	642*	667											
LODTA1	0000	1038	728*												
LODTA3	0000	1044	731*	750											
LODTA4	0000	105A	738	740*											
LODTAQ	0000	0F66	639*												
LOEND	0000	168D	1122	1374*											
LOMSG	0000	1688	1121	1372*											
LOVAL	0000	1784	314	989	999	1134	1139	1503*							
LOW	0000	1380	1126	1133*											
LOW1	0000	125A	994	998*											
LOW2	0000	1262	991	1001*											
MAC	0000	172A	1255	1425*											
MACEND	0000	1731	1256	1427*											
MACHMAL	0000	1704	1227	1411*											
MACINT	0000	14E6	218	1252*											
MALFTN	0000	1436	201	1192*											
MALFTNA	0000	1446	1195	1197*											
MEMLIST	0000	086C	268	272*											
MEMSG	0000	1566	248	1317*											
MEMSG1	0000	1578	280	287	1319*										
MMADRS	0000	1720	1225	1416*											
MMALFTN	0000	1492	1198	1219*											
MMEND	0000	1727	1228	1420*											
MN	0000	0096	122*	1683	1708										
MNAEND	0000	16C1	1131	1149	1389*										
MNAMSG	0000	16AC	1130	1148	1387*										
NEXT	0000	0BB4	276	291	294	298*									
NLEND	0000	16AB	1153	1384*											
NLMSG	0000	1694	1152	1382*											
NOERR	0000	16D0	453	1396*											
NORM	0000	1767	820	1477*											
NOTLOW	0000	13BC	1141	1151*											
NXTST	0000	17A6	637	726	796	1512*									
OKIN	0000	0C6E	350	352	357*										
ORIGIN1	0000	0A00	118	151*	1675	1709									
PADSET	0000	153B	187	1300*											
PARNOEND	0000	163B	408	1334*											
PARNOMSG	0000	1588	407	1326*											
PASSENS	0000	1190	903*	904											
PAT1	0000	1532	728	1295*											
PAT2	0000	1534	729	1296*											
PAT3	0000	1536	426	434	639	1297*									
PAT4	0000	1538	428	436	640	1298*									
PRDU	0000	1138	839	846	848*										
PRINT	0000	1114	242	247	286	319	327	353	357	406	452	488	495	835*	1031
			1090	1120	1129	1135	1147	1151	1182	1226	1241	1254	1262	1270	1278

CHKSUM/M17 PUNCHER

```
                      1288
PRTMSG    0000 0BFC    323*   483    498    911   1157
PRTMSG1   0000 0C22    332    335*
PRTTITLE  0000 0B0E    242*
PRTTOT    0000 0DCC    484*
PSWSAVE   0000 19EC    116    210   1666*
PURETOP   0000 0000P
QIP       0000 1420   1169   1173   1175   1182*
QIPEND    0000 166B   1184   1359*
QRZ       0000 12D0   1066   1070*
QUEND     0000 166F    355   1361F
QUEST     0000 1668    354   1183   1358*
R0        0000 0000     89*   168    171    172    174    175    176    177    178    178    179    181    182
                       183    184    185    186    187    190    190    191    192    193    194    195    196
                       203    204    205    214    217    220    229    250    250    251    252    253    254
                       255    256    257    258    302    312    334    366    367    642    643    645    647
                       648    652    656    657    661    673    674    676    678    679    681    686    687
                       689    698    706    731    732    734    735    741    742    755    756    758    759
                       763    764    773    781   1057   1058   1074   1093   1094   1103   1104   1192   1204
                      1218   1229   1249   1291   1672   1673   1690   1696   1703   1715   1716   1717   1723
                      1726   1728
R1        0000 0001     90*   118    130    131    133    138    167    168    197    198    199    200    201
                       202    206    207    208    209    210    211    212    213    215    216    218    219
                       222    225    226    229    230    234    235    259    260    264    264    265    267
                       281    295    303    311    312    313    314    315    316    323    323    324    325
                       326    333    334    335    336    360    361    362    363    446    447    447    449
                       450    450    455    455    456    458    459    459    467    468    502    503    504
                       959    959    982    984    986   1073   1074   1108   1108   1110   1112   1114   1202
                      1203   1204   1217   1218   1222   1248   1249   1673   1675   1680   1682   1685   1686
                      1689   1689   1690   1699   1699   1702   1705   1709   1712   1715   1719
R10       0000 000A     99*   476    478    479    481    482    482    693    694    701    702    708    709
                       769    770    776    777    783    784    836    837    838    840    844    853    855
                       857    857    858    859    895    896    900    903    908    909   1067   1075   1076
                      1101   1133   1134   1140   1155   1156   1186   1213   1244
R11       0000 000B    100*   476    639    643    645    674    676    728    732    756    835    836    842
                       843    844    848    852    853    858    859    861    876    877    879    894    895
                       902    903    908   1061   1067   1075   1098   1099   1101   1213   1244
R12       0000 000C    101*   640    648    652    657    661    679    681    687    689    729    735    742
                       759    764    850    852    929    937    941   1059   1060   1194   1199   1200   1209
R13       0000 000D    102*   512    513    518    519    527    528    533    534    542    543    548    549
                       557    558    563    564    572    573    578    579    587    588    593    594    602
                       603    608    609    617    618    623    624    851
R2        0000 0002     91*   114    134    140    223    227    232    260    472    473    473    898    902
                       905    905    960    960    961    962    963    964    964    967    968    970    973
                       975    981    983    988    990    993    996    998    999   1001   1008   1109   1109
                      1111   1125   1143   1252   1257   1260   1265   1268   1273   1276   1281   1284   1676
                      1686   1688   1716
R3        0000 0003     92*   119    120    121    224    228    233    261    457    461    462    464    466
                      1253   1261   1269   1277   1677   1700   1710   1730   1731
R4        0000 0004     93*   123    124    125    127    135    137    221    225    231    234    262    273
                       292    300    301    365    469    641    642    647    650    654    656    659    663
                       664    666    670    673    678    686    693    700    701    707    708    713    715
                       730    731    734    737    739    741    744    746    747    749    753    755    758
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CHKSUM/M17 PUNCHER

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                          763   769   775   776   782   783   788   790   813   1070  1071  1208  1215
                          1246  1678  1681  1683  1687  1687  1688  1708  1713
R5        0000 0005       94*   125   127   128   128   130   131   132   135   137   143   263   263
                          277   295   508   509   510   511   514   515   516   526   531   532   541
                          546   547   555   556   562   568   575   584   591   599   605   613   614
                          615   619   620   621   622   650   672   737   754   1680  1681  1712  1713
                          1714
R6        0000 0006       95*   122   132   139   139   140   509   515   525   532   538   545   554
                          560   569   570   571   576   577   585   586   592   598   599   606   615
                          620   654   683   739   761   930   931   932   933   934   936   937   1694
                          1695  1696  1702  1703  1714  1717  1731  1732
R7        0000 0007       96*   141   142   143   265   267   269   317   318   330   331   331   338
                          340   342   344   346   348   349   351   396   398   400   402   404   410
                          411   412   414   415   416   418   419   420   422   423   424   430   431
                          432   510   516   523   530   539   540   541   547   553   554   561   570
                          577   583   584   590   600   601   607   614   621   659   685   744   766
                          877   879   880   928   931   938   938   940   1164  1168  1170  1172  1174
                          1176  1178  1180
R8        0000 0008       97*   133   134   511   517   524   525   526   529   530   540   544   545
                          556   559   560   561   571   574   575   586   589   590   591   601   604
                          605   606   616   622   663   691   746   768   1125  1143  1160  1179  1180
                          1186  1187  1732
R9        0000 0009       98*   266   271   272   273   274   275   277   281   282   289   290   293
                          296   296   297   298   304   484   491   672   683   685   691   694   698
                          699   700   702   706   707   709   754   761   766   768   770   773   774
                          775   777   781   782   784   930   1022  1026  1027  1028  1029  1029  1078
                          1082  1086  1123  1138  1139  1140  1188  1193  1193  1197  1200  1222  1233
                          1237  1284
READ      0000 1164       337   345   395   876*  1162
READ1     0000 153C       175   182   876   972   1098  1301*
READ2     0000 176A       174   1480*
READ3     0000 176C       181   1481*
READERR   0000 0C62       341   343   353*
REGSAV00  0000 17AC       366   1058  1093  1103  1519*
REGSAV01  0000 17B0       1520*
REGSAV02  0000 17B4       1521*
REGSAV03  0000 17B8       1522*
REGSAV04  0000 17BC       1523*
REGSAV05  0000 17C0       1524*
REGSAV06  0000 17C4       1525*
REGSAV07  0000 17C8       1526*
REGSAV08  0000 17CC       1527*
REGSAV09  0000 17D0       1528*
REGSAV0A  0000 17D4       1529*
REGSAV0B  0000 17D8       1530*
REGSAV0C  0000 17DC       1531*
REGSAV0D  0000 17E0       1532*
REGSAV0E  0000 17E4       1533*
REGSAV0F  0000 17E8       1534*
REGSAV10  0000 17EC       367   1057  1094  1104  1535*
REGSAV11  0000 17F0       1536*
REGSAV12  0000 17F4       1537*
REGSAV13  0000 17F8       1538*
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CHKSUM/M17 PUNCHER

```
REGSAV14   0000 17FC       365    1078    1539*
REGSAV15   0000 1800      1540*
REGSAV16   0000 1804      1541*
REGSAV17   J000 1808      1542*
REGSAV18   0000 180C      1543*
REGSAV19   0000 1810      1082    1544*
REGSAV1A   0C00 1814      1086    1545*
REGSAV1B   J000 1818      1546*
REGSAV1C   0000 181C      1547*
REGSAV1D   0000 1820      1548*
REGSAV1E   0000 1824       364    1549*
REGSAV1F   0000 1828      1211    1550*
REGSAV20   0000 182C      1551*
REGSAV21   0000 1830      1552*
REGSAV22   J00C 1834      1553*
REGSAV23   0000 1838      1554*
REGSAV24   0000 183C      1555*
REGSAV25   0000 1840      1556*
REGSAV26   0000 1844      1557*
REGSAV27   0000 1848      1558*
REGSAV28   0000 184C      1559*
REGSAV29   0000 1850      1560*
REGSAV2A   0000 1854      1561*
REGSAV2B   0000 1858      1562*
REGSAV2C   0000 185C      1563*
REGSAV2D   0000 1860      1564*
REGSAV2E   0000 1864      1565*
REGSAV2F   0000 1868      1566*
REGSAV30   0000 186C      1567*
REGSAV31   0000 1870      1568*
REGSAV32   0000 1874      1569*
REGSAV33   0000 1878      1570*
REGSAV34   0000 187C      1571*
REGSAV35   0000 1880      1572*
REGSAV36   0000 1884      1573*
REGSAV37   0000 1888      1574*
REGSAV38   0000 188C      1575*
REGSAV39   0000 1890      1576*
REGSAV3A   0000 1894      1577*
REGSAV3B   0000 1898      1578*
REGSAV3C   0000 189C      1579*
REGSAV3D   0000 18A0      1580*
REGSAV3E   0000 18A4      1581*
REGSAV3F   0000 18A8      1582*
REGSAV40   0000 18AC      1583*
REGSAV41   0000 18B0      1584*
REGSAV42   0000 18B4      1585*
REGSAV43   0000 18B8      1586*
REGSAV44   0000 18BC      1587*
REGSAV45   0000 18C0      1588*
REGSAV46   0000 18C4      1589*
REGSAV47   0000 18C8      1590*
REGSAV48   0000 18CC      1591*
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REGSAV49   0000 18D0      1592*
REGSAV4A   0000 18D4      1593*
REGSAV4B   0000 18D8      1594*
REGSAV4C   0000 18DC      1595*
REGSAV4D   0000 18E0      1596*
REGSAV4E   0000 18E4      1597*
REGSAV4F   0000 18E8      1598*
REGSAV50   0000 18EC      1599*
REGSAV51   0000 18F0      1600*
REGSAV52   0000 18F4      1601*
REGSAV53   0000 18F8      1602*
REGSAV54   0000 18FC      1603*
REGSAV55   0000 1900      1604*
REGSAV56   0000 1904      1605*
REGSAV57   0000 1908      1606*
REGSAV58   0000 190C      1607*
REGSAV59   0000 1910      1608*
REGSAV5A   0000 1914      1609*
REGSAV5B   0000 1918      1610*
REGSAV5C   0000 191C      1611*
REGSAV5D   0000 1920      1612*
REGSAV5E   0000 1924      1613*
REGSAV5F   0000 1928      1614*
REGSAV60   0000 192C      1615*
REGSAV61   0000 1930      1616*
REGSAV62   0000 1934      1617*
REGSAV63   0000 1938      1618*
REGSAV64   0000 193C      1619*
REGSAV65   0000 1940      1620*
REGSAV66   0000 1944      1621*
REGSAV67   0000 1948      1622*
REGSAV68   0000 194C      1623*
REGSAV69   0000 1950      1624*
REGSAV6A   0000 1954      1625*
REGSAV6B   0000 1958      1626*
REGSAV6C   0000 195C      1627*
REGSAV6D   0000 1960      1628*
REGSAV6E   0000 1964      1629*
REGSAV6F   0000 1968      1630*
REGSAV70   0000 196C      1631*
REGSAV71   0000 1970      1632*
REGSAV72   0000 1974      1633*
REGSAV73   0000 1978      1634*
REGSAV74   0000 197C      1635*
REGSAV75   0000 1980      1636*
REGSAV76   0000 1984      1637*
REGSAV77   0000 1988      1638*
REGSAV78   0000 198C      1639*
REGSAV79   0000 1990      1640*
REGSAV7A   0000 1994      1641*
REGSAV7B   0000 1998      1642*
REGSAV7C   0000 199C      1643*
REGSAV7D   0000 19A0      1644*
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REGSAV7E	0000	19A4	1645*											
REGSAV7F	0000	19A8	1646*											
REGSAVF0	0000	19AC	1647*											
REGSAVF1	0000	19B0	1648*											
REGSAVF2	0000	19B4	1649*											
REGSAVF3	0000	19B8	1650*											
REGSAVF4	0000	19BC	1651*											
REGSAVF5	0000	19C0	1652*											
REGSAVF6	0000	19C4	1653*											
REGSAVF7	0000	19C8	1654*											
REGSAVF8	0000	19CC	1655*											
REGSAVF9	0000	19D0	1656*											
REGSAVFA	0000	19D4	1657*											
REGSAVFB	0000	19D8	1658*											
REGSAVFC	0000	19DC	1659*											
REGSAVFD	0000	19E0	1660*											
REGSAVFE	0000	19E4	1661*											
REGSAVFF	0000	19E8	1662*											
REP	0000	0B52	264*	303										
RESTART1	0000	0B0E	156	238*										
RESTART2	0000	0BD0	153	308*										
RETRN	0000	000E	103*	363	364	368	394	413	417	421	429	437	445	470	471
			507	522	537	552	567	582	597	612	665	666	712	714	715
			748	749	787	789	790	796	797	810	811	812	815	818	819
			820	897	901	906	1030	1034	1072	1096	1099	1216	1237	1247	1252
			1260	1268	1276										
RSAVE	0000	1A08	117	212	1192	1229	1668*							
RTN	0000	1310	1060	1090*										
RTN5	0000	1334	1100	1103*										
RXTURN	0000	17A8	810	821	1513*									
SELTST	0000	0C76	360*											
SENSE	0000	1130	844*	845										
SENSE4	0000	0DB0	474	476*										
SENSER	0000	1168	877*	878										
SETBIT	0000	0BA2	270	292*										
SETVAL	0000	0BD8	313*											
STARMSG	0000	163C	1091	1338*										
START	0000	0A16	151	158	167*									
START0	0000	1030	411	725*										
START1	0000	0F5E	415	633*										
START2	0000	0F5E	419	634*										
START3	0000	0F5E	423	635*										
START4	0000	0F5E	431	636*										
STFLG	0000	0B68	271*	305										
STOP	0000	0D90	463	466*										
STRBYT	0000	0D88	464*	475	477	480								
SUB	0000	0C96	363	363*										
SUB0	0000	0DF8	369	502*										
SUB1	0000	0E02	370	507*										
SUB2	0000	0E2A	371	522*										
SUB3	0000	0E56	372	537*										
SUB4	0000	0E82	373	552*										
SUB5	0000	0EAE	374	567*										

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Symbol	Value												
SUB6	0000 0EDA	375	582*										
SUB7	0000 0F06	376	597*										
SUB8	0000 0F32	377	612*										
SUBCHK	0000 0D52	445*	520	535	550	565	580	595	610	625	1105		
SUBGET	0000 0C2A	337*	356										
SUBNUM	0000 165C	1025	1026	1032	1350*								
SUBSEL	0000 0C7A	361*	465										
SUBTST	0000 177C	344	361	457	464	504	819	1022	1493*				
SVC	0000 1732	1263	1430*										
SVCEND	0000 1739	1264	1432*										
SVCERR	0000 14F4	221	1260*										
SWTST	0000 0D92	460	467*										
SYS	0000 1742	1279	1440*										
SYSEND	0000 1749	1280	1442*										
SYSQ	0000 1510	215	1276*										
TABLE	0000 19FC	208	1667*										
TESTBRK	0000 1174	445	471	894*									
TITLE	0000 153E	243	1313*										
TOCS	0000 0B16	247*											
TOTAL	0000 179C	335	468	469	484	1509*							
TOTALEND	0000 167F	490	1367*										
TOTALERR	0000 17A0	336	491	1065	1071	1510*							
TOTALMSG	0000 1670	487	489	494	496	1364*							
TRESTRT	0000 0D4A	440*	795										
TRUEBRK	0000 11A2	907	911*										
TSTEND	0000 16CF	329	1393*										
TSTFLG	0000 177B	360	458	503	1492*								
TSTMSG	0000 16C2	328	1392*										
TSTNUM	0000 1282	507	522	537	552	567	582	597	612	1022*			
TSTSEL	0000 0D6E	448	451	455*									
TT	0000 1640	1027	1059	1341*									
TTY	0000 0A2A	174*											
TTYADR	0000 0A14	162*	176										
TTYCHK	0000 0DC2	481*	974	977									
TTYFLG	0000 177E	325	330	481	848	1495*							
TTYSNS	0000 120C	971	975*										
TYPEFLG	0000 1780	1497*											
TYPEGET	0000 0CAA	395*	409										
TYPEMSG	0000 1660	320	1353*										
TYPEND	0000 1667	321	1354*	1355									
TYPESENS	0000 0BF8	322*											
TYPNO	0000 1667	318	410	414	418	422	430	1355*					
TYPSENS	0000 0CA8	322	394*										
TYPSET0	0000 0CE2	397	410*										
TYPSET1	0000 0CF0	399	414*										
TYPSET2	0000 0CFE	401	418*										
TYPSET3	0000 0D0C	403	422*										
TYPSET4	0000 0D2C	405	430*										
TYPSTRT	0000 17A4	412	416	420	424	432	440	512	518	527	533	542	548	557
		563	572	578	587	593	602	608	617	623	1511*		
W	0000 163D	1207	1209	1339*									
WORK	0000 000A	105*	425	426	427	428	433	434	435	436	966	967	972	973
		975	978	979	979	989	990	992	993	995	996	998	1001	1002

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			1003	1005	1006	1007	1009	1161	1163	1166
WRAPFLG	0000	1778	253	271	298	326	1194	1490*		
WRITE1	0000	153D	843	1302*						
WRITE2	0000	10F0	470	712	787	810*	1072	1216	1247	
X9C	0000	0AE6	225*	226						
XBC	0000	0AF4	229*	230						
XCC	0000	0B06	234*	235						
XXXXX	0000	1644	1081	1342*						
YYYYYYYY	0000	164C	1085	1345*						
ZZZZZZZZ	0000	1656	1089	1348*						