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1. PURPOSE

MAGNETIC TAPE INTERCHANGEABILITY AND SKEW FUNCTION TEST (MTIS) IS DESIGNED TO TEST THE ABILITY OF TAPE DRIVES TO WRITE VARYING LENGTH RECORDS AND READ THEM BACK CORRECTLY, EITHER ON THE SAME DRIVE OR ON ANOTHER DRIVE. THE MTIS PROGRAM IS WRITTEN TO ACCOMODATE SYSTEMS WITH,

1.1 ONE OR TWO TAPE DRIVES.

1.2 DRIVES WITH 9 TRACK OR 7 TRACK READ-WRITE HEADS.

IN SYSTEMS WITH TWO TAPE DRIVES, THE DRIVES WILL BE EXERCISED IN A SERIAL FASHION. BECAUSE MTIS RUNS UNDER CONTROL OF THE DIAGNOSTIC MONITOR, INTERACTION BETWEEN MAGNETIC TAPE DRIVES AND OTHER DEVICES CAN ALSO BE TESTED.

THIS PROGRAM AND THE 2400 F. T. MUST NOT, HOWEVER, BE RUN WITH EACH OTHER IN OVERLAP MODE.

2. PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR USES 2,047 STORAGE WORDS AND THIS PROGRAM ALSO USES 2,047 STORAGE WORDS.

THE PROGRAM 2400 F. T. IS NOT A PREREQUISITE FOR THIS PROGRAM, BUT IT MUST BE REALIZED THERE ARE PORTIONS OF THE MAGNETIC TAPE SYSTEM WHICH ARE MORE THOROUGHLY CHECKED BY THE 2400 F. T. TO CHECK THE ENTIRE MAGNETIC TAPE SYSTEM THE ENTIRE FAMILY OF MAGNETIC TAPE TESTS MUST BE RUN.

CAUTION -- THIS PROGRAM DOES NOT CHECK FOR END OF TAPE, THEREFORE, THE REEL USED MUST CONTAIN SUFFICIENT TAPE FOR THE TEST. APPROXIMATELY 600 FEET OF TAPE ARE REQUIRED.

3. OPERATING PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

ON 2400 TAPE DRIVE(S),
1. LOAD REEL OF TAPE.
2. DEPRESS LOAD-REWIND KEY.
3. DEPRESS START KEY.

TAPE SHOULD REWIND TO LOAD POINT, AND READY LAMP SHOULD GO ON.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS OF PARTS 1-4 BELOW

1. CLEAR STORAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS
5. SELECT PROGRAM OPTIONS FROM,

   TABLE 0-PROGRAM CONTROL FUNCTION
   TABLE 1 SELECT AND LOOP ROUTINE
   TABLE 2-DEVICE SELECT FUNCTION
   TABLE 3-DATA ENTRY FUNCTION

NOTE

IF NO OPTIONS ARE SELECTED, THE PROGRAM WILL AUTOMATICALLY RUN BOTH DRIVES IN SEQUENCE, UNLESS DRIVE 1 IS EDITED AS NOT AVAILABLE. NO INTERCHANGEABILITY TEST WILL BE RUN WITH NO OPTIONS SELECTED.

6. INSTRUCT MONITOR TO EXECUTE.

TABLE 0 PROGRAM CONTROL FUNCTION

```
******************  1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1.
*                *     (AS SHOWN)
*   SENSE/PROGRAM *  2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
*                *     (AS SHOWN)
* 0 1 2 3 4 5 6 7 *  3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
*                *  4. PRESS CONSOLE INTERRUPT.
* 0 0 0 0 1 0 1 1 *  5. BIT 8 MUST BE ENTERED PRIOR TO EXECUTION. ALL OTHER
*                *     SWITCHES MAY BE CHANGED AT ANY TIME.
*****************************************************************************
*          DATA ENTRY SWITCHES          * DESCRIPTION                       *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *                                   *
*                  .  .  .              *                                   *
*                  .  .        1........*BYPASS ALL PRINTOUTS WITH A PREFIX OF *
*                  .  .                 *     A, C OR D.                    *
*                  .  .                 *                                   *
*                  .  1.................*PRINT ONLY THE FIRST BAD DATA WORD. *
*                  .                    *                                   *
*                  1.....................*RUN INTERCHANGEABILITY MODE.       *
*****************************************************************************
```

TABLE 1 LOOP ROUTINE

```
*******************  1. SET FUNCTION 0C IN SENSE/PROGRAM SWITCHES 0 AND 1.
*                 *     (AS SHOWN)
*   SENSE/PROGRAM *  2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
*                 *     (AS SHOWN)
* 0 1 2 3 4 5 6 7 *  3. SET ROUTINE IN DATA ENTRY SWITCHES 14 OR 15.
*                 *  4. PRESS CONSOLE INTERRUPT.
* 0 1 0 0 1 0 1 1 *  5. ROUTINE MUST BE ENTERED PRIOR TO EXECUTION, BUT MAY BE
*                 *     CLEARED TO ALLOW PROGRAM TO GO TO TERMINATION, AT ANY
*                 *     TIME.
*************************************************************************
*          DATA ENTRY SWITCHES          * DESCRIPTION                   *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *                               *
*                                       .  1..LOOP ONLY THE WRITE SECTION OF THE *
*                                       .      PROGRAM                  *
*                                       1.....LOOP ONLY THE READ SECTION OF THE *
*                                              PROGRAM (WITH THIS SWITCH ON THE *
*                                              WRITE SECTION IS BYPASSED) *
*************************************************************************
```

TABLE 2-DEVICE SELECT FUNCTION

```
*******************  1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.
*                 *     (AS SHOWN)
*   SENSE/PROGRAM *  2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
*                 *     (AS SHOWN)
* 0 1 2 3 4 5 6 7 *  3. SET DESIRED DEVICE SELECTION IN DATA ENTRY SWITCHES.
*                 *  4. PRESS CONSOLE INTERRUPT.
* 1 0 0 0 1 0 1 1 *  5. DEVICE SELECTION MUST BE MADE PRIOR TO EXECUTION.
*************************************************************************
*          DATA ENTRY SWITCHES          * DESCRIPTION                   *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *                               *
* . 1.....................................DO NOT RUN DRIVE 1.            *
* .                                                                     *
* 1.....................................DO NOT RUN DRIVE 0.            *
*                                                                       *
* NOTE 1-DRIVE SELECTION IS REQUIRED ONLY IF IT IS NOT DESIRED TO RUN BOTH DRS.*
*                                                                       *
* NOTE 2-IF THE SYSTEM HAS ONLY ONE DRIVE AN ENTRY OF 0001 IS MADE      *
*        ON THE EDIT CARD AND THIS OPTION IS NOT USED.                  *
*************************************************************************
```

TABLE 3-DATA ENTRY FUNCTION

```
*******************  1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1.
*                 *     (AS SHOWN)
*   SENSE/PROGRAM *  2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
*                 *     (AS SHOWN)
* 0 1 2 3 4 5 6 7 *  3. SET DESIRED DATA IN DATA ENTRY SWITCHES 0-15.
*                 *  4. PRESS CONSOLE INTERRUPT.
* 1 1 0 0 1 0 1 1 *  5. DATA ENTRY MUST BE MADE PRIOR TO EXECUTION.
*************************************************************************
*          DATA ENTRY SWITCHES          * DESCRIPTION                   *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *                               *
*                                       *                               *
* X X X X X X X X X X X X X X X X..ENTER DATA PATTERN DESIRED           *
*                                                                       *
* NOTE 1-IF THE PROGRAM SEES A HEXADECIMAL 0000 IN THIS SWITCH FUNCTION THE *
*        HEXADECIMAL PATTERN OF 3F3F IS USED.                           *
*                                                                       *
* NOTE 2-IF THE SYSTEM HAS ONE 7 TRACK DRIVE AND ONE 9 TRACK DRIVE AND IF *
*        THIS RUN WILL INCLUDE THE 7 TRACK DRIVE, THE DATA PATTERN MUST BE *
*        COMPATABLE TO BOTH 7 AND 9 TRACK DRIVES.  BITS 0, 1, 8 AND 9   *
*        MUST BE A ZERO.                                                *
*************************************************************************
```


3.3 PROGRAM HALTS

THIS PROGRAM WILL NEVER WAIT, UNLESS THE DIAGNOSTIC MONITOR OPTION OF HALT ON ERROR IS SELECTED. SEE DM USE PROCEDURE FOR THIS OPTION.

3.4 PROGRAM TERMINATION

THE PROGRAM WILL NORMALLY TERMINATE AFTER ONE COMPLETE PASS ON ALL SELECTED DRIVES. THE PROGRAM CAN BE MANUALLY TERMINATED BY USE OF THE DEFEXECUTION OPTION OF THE MONITOR. WHEN RUNNING IN THE BOOTSTRAP MODE, THE PROGRAM MUST BE ALLOWED TO TERMINATE NORMALLY.

4. PRINTOUTS

4.1 COMMAND MESSAGES

```
PID  MID  RID  RAD  UNIT
0800 C000 0000 XXXX 000X
          DRIVE 0 IS SELECTED TO BE RUN BUT IS NOT READY.
          THE PROGRAM WILL CONTINUE WITH DRIVE 1 IF IT IS SELECTED AND READY.

0800 C001 0000 XXXX 000X
          DRIVE 1 IS SELECTED TO BE RUN BUT IS NOT READY.
          THE PROGRAM WILL CONTINUE WITH DRIVE 0 IF IT IS SELECTED AND READY.

0800 C002 XXXX XXXX 000X
          THE WRITE SECTION IS COMPLETE.  MAKE SELECTED DRIVES READY.
          THIS PRINTOUT OCCURS ONLY IF RUNNING INTERCHANGEABILITY MODE.
```

4.2 DATA MESSAGES

```
                                  A    B    C    D    E    F    G
0800 D001 XXXX XXXX 000X XXXX XXXX XXXX XXXX XXXX XXXX XXXX
          PROGRAM IS COMPLETE. THIS MESSAGE WILL OCCUR WHEN
          ALL SELECTED DRIVES HAVE COMPLETED A PROGRAM
          PASS.

             A-NUMBER OF RECOVERED READ ERRORS.
             B-NUMBER OF UNRECOVERABLE READ ERRORS.
             C-NUMBER OF RECOVERED WRITE ERRORS.
             D-NUMBER OF UNRECOVERABLE WRITE ERRORS.
             E-NUMBER OF PROGRAM PASSES.
             F-TOTAL WRITE COMMANDS ISSUED.
             G-TOTAL READ COMMANDS ISSUED.

                        NUMBER
                        OF
                        RETRYS
0800 A001 XXXX XXXX 000X XXYY
          RECOVERED READ ERROR.  NUMBER OF RETRYS IS EQUAL TO XX TIMES 10
          PLUS YY.

0800 A002 XXXX XXXX 000X
          UNABLE TO BACKSPACE RECORD IN ERROR PAST THE TAPE CLEANER,
          BECAUSE LOAD POINT WAS REACHED FIRST.

                        NUMBER
                        OF
                        RETRYS
0800 A003 XXXX XXXX 000X 00YY
          RECOVERED WRITE ERROR.  NUMBER OF RETRYS IS EQUAL TO YY.
```

4.3 ERROR PRINTOUTS

```
                          DSW
                          RECEIVED
0800 E001 XXXX XXXX 000X XXXX
          NO LEGAL BITS WERE ON IN THE DSW AT INTERRUPT.  THE DRIVE IN ERROR
          WILL BE TERMINATED FROM THIS RUN.

                          LAST
                          FUNCTION
                          AND
                          MODIFIER
0800 E002 XXXX XXXX 000X XXXX
          LOST INTERRUPT.  THE DRIVE IN ERROR WILL BE TERMINATED FROM THIS RUN.

                          DSW
                          RECEIVED
0800 E003 XXXX XXXX 000X XXXX
          UNRECOVERABLE READ ERROR.  THIS PRINTOUT MAY OCCUR BECAUSE BITS
          2, 4, 5, 14 OR 15 WERE ON AFTER A READ OR BECAUSE 100 RETRIES HAVE
          ALL FAILED.

                           A    B    C    D    E
0800 E004 XXXX XXXX 000X XXXX XXXX XXXX XXXX XXXX
          DATA RECEIVED WAS IN ERROR.
          A-WORD COUNT OF THIS RECORD.
          B-DATA RECEIVED.
          C-DATA EXPECTED.
          D-WORD NUMBER IN ERROR.
          E-WORD COUNT OF THE PREVIOUS RECORD.

                          DSW
                          RECEIVED
0800 E005 XXXX XXXX 000X XXXX
          DSW SHOWS RECOVERABLE WRITE ERROR.

                          DSW
                          RECEIVED
0800 E006 XXXX XXXX 000X XXXX
          UNRECOVERABLE WRITE ERROR.  THIS PRINTOUT MAY OCCUR BECAUSE BITS
          2, 4, 5, 11, 14 OR 15 ARE ON IN THE DSW AFTER A WRITE OR BECAUSE
          THREE RETRYS HAVE ALL FAILED.  THE DRIVE IN ERROR WILL BE TERMINATED
          FROM THIS RUN.

                          DSW
                          RECEIVED
0800 EC07 XXXX XXXX 000X XXXX
          THE DSW SHOWS A RECOVERABLE READ ERROR.
```


5. COMMENTS

5.1 PROGRAM DESCRIPTION

THIS PROGRAM CONSISTS OF A SERIES OF COMMON MAGNETIC TAPE SUBROUTINES AND ONE TESTING ROUTINE, WITH TWO MODES OF OPERATION.

5.2 TEST ROUTINE

MODE 1

IN THE NORMAL MODE OF OPERATION THE PROGRAM WILL,

1. WRITE A SERIES OF RECORDS ON ONE TAPE DRIVE USING VARYING WORD COUNTS.
2. REWIND THE DRIVE AND READ ALL RECORDS WRITTEN, CHECKING BOTH THE DSW WORD AND THE DATA RECEIVED.
3. REPEAT STEPS 1 AND 2 ON THE SECOND DRIVE IF IT IS AVAILABLE AND SELECTED TO BE RUN.

   IN CASE OF ERROR ON EITHER THE READ OR WRITE OPERATION, THE STANDARD ERROR RECOVERY PROCEDURE IS USED.

MODE 2

IN THE INTERCHANGEABILITY MODE OF OPERATION THE PROGRAM WILL,

1. WRITE A SERIES OF RECORDS ON ONE TAPE DRIVE USING VARYING WORD COUNTS.
2. ISSUE A REWIND-UNLOAD COMMAND TO THE DRIVE JUST WRITTEN.
3. REPEAT STEPS 1 AND 2 ON THE SECOND DRIVE IF IT IS AVAILABLE AND SELECTED TO BE RUN.
4. LOOP, THROUGH THE DIAGNOSTIC MONITOR, UNTIL ALL SELECTED DRIVES AGAIN BECOME READY.

   OPERATOR, SWAPS TAPE REELS AND MAKES DRIVES READY AT THIS TIME.

   NOTE

   SINCE 7 AND 9 TRACK DRIVES ARE NOT COMPATABLE, IF THIS SYSTEM HAS ONE 9 TRACK AND ONE 7 TRACK DRIVE THE REELS CANNOT BE SWAPPED. IN THIS CASE A PREVIOUSLY SAVED REEL USING THE SAME PATTERN AND WORD COUNTS MIGHT BE USED.

5. READ ALL RECORDS WRITTEN AND CHECK BOTH THE DSW WORD AND DATA RECEIVED FOR ACCURACY.

   IN CASE OF ERROR ON EITHER THE READ OR WRITE OPERATION, THE STANDARD ERROR RECOVERY PROCEDURE IS USED.

5.3 COMMON MAGNETIC TAPE SUBROUTINES

EACH SUBROUTINE ASSUMES THAT INDEX REGISTER ONE CONTAINS THE DRIVE NUMBER PRESENTLY BEING USED.

NAME	CALL
BSP	BSI L BSP USE-BACKSPACE ONE RECORD, THE DRIVE INDICATED BY INDEX REGISTER ONE.

2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
CKBSY  BSI L CKBSY
       USE-ENTER ROUTINE SNDSW TO SENSE THE DRIVE INDICATED BY INDEX REGISTER
           ONE.  CHECK BIT 14 OF THE SENSE WORD TO CHECK FOR DRIVE BUSY.  IF
           THE DRIVE IS NOT BUSY, EXIT FROM THE ROUTINE.  IF THE DRIVE IS BUSY,
           A COUNT IS UPDATED AND A LOOP IS ESTABLISHED THROUGH THE DIAGNOSTIC
           MONITOR.  IF THIS BUSY COUNT OVERFLOWS, LOST INTERRUPT IS PRINTED
           AND THAT TAPE DRIVE IS TERMINATED FROM THIS RUN.

MER    BSI L MER
       DBC    MESSAGE ID
       DC     FORM NUMBER
       USE-SET UP THE DESIRED MESSAGE FROM THE MESSAGE ID AND FORM NUMBER AND
           CALL ON THE DIAGNOSTIC MONITOR ROUTINE, ERROR.

MLG    BSI L MLG
       DC     MESSAGE ID
       DC     FORM NUMBER
       USE-SET UP THE DESIRED MESSAGE FROM THE MESSAGE ID AND FORM NUMBER AND
           CALL ON THE DIAGNOSTIC MONITOR ROUTINE, LOG.

MTI    INTERRUPT ROUTINE
       USE-SENSE THE DSW TWICE.  THE FIRST SENSE IS NON-RESETABLE AND THE SECOND
           IS RESETABLE.  THE WORD RECEIVED FROM THE SECOND SENSE IS SAVED.  THE
           SENSE WORD IS CHECKED FOR LEGAL BITS (BITS 2, 3 OR 9) AND IF NO LEGAL
           BITS ARE ON, A RETURN IS SET TO ALLOW PRINTING OF THE ILLEGAL
           INTERRUPT.

RD     BSI L RD
       USE-READ A RECORD FROM THE TAPE DRIVE INDICATED BY INDEX REGISTER ONE.
           THE DSW AND THE DATA RECEIVED ARE CHECKED FOR EXPECTED AND ANY ERRORS
           ARE PRINTED.  IN THE EVENT OF ERRORS, A RETRY ROUTINE IS ENTERED
           WHICH WILL RETRY THE RECORD A MAXIMUM OF 100 TIMES.

RLDEV  BSI L RLDEV
       USE-CALL ON THE DIAGNOSTIC MONITOR RELDV ROUTINE TO RELEASE THE CHANNEL
           FOR POSSIBLE USE BY OTHER PROGRAMS BEING RUN IN OVERLAP MODE.

RQDEV  BSI L RQDEV
       USE-CALL ON THE DIAGNOSTIC MONITOR REQDV ROUTINE TO SECURE USE OF THE
           CHANNEL FOR THIS PROGRAM. IF THE CHANNEL IS ALREADY IN USE BY ANOTHER
           PROGRAM LOOP, THROUGH THE DIAGNOSTIC MONITOR, UNTIL THE CHANNEL
           IS FREE.

RWD    BSI L RWD
       USE-REWIND THE DRIVE INDICATED BY INDEX REGISTER ONE.

RWDU   BSI L RWDU
       USE-ISSUE A REWIND-UNLOAD COMMAND TO THE DRIVE INDICATED BY INDEX
           REGISTER ONE.

SNDSW  BSI L SNDSW
       USE-SENSE THE DRIVE INDICATED BY INDEX REGISTER ONE.  THE DRIVE IS
           SENSED TWICE AND THE TWO SENSE WORDS RECEIVED ARE COMPARED.  IF THE
           TWO WORDS ARE NOT THE SAME, THE DRIVE IS AGAIN SENSED TWICE.  WHEN
           THE WORDS COMPARE, THE ROUTINE EXITS WITH THE SENSE WORD IN THE
           A REGISTER.

STPST  BSI L STPST
       DC     ADDRESS TO SET
       USE-SET AN ENTRY IN THE MLSCF TABLE FOR LATER USE BY THE DIAGNOSTIC
           MONITOR.

WRT    BSI L WRT
       USE-WRITE ONE RECORD ON THE TAPE DRIVE INDICATED BY INDEX REGISTER ONE.
           IN THE CASE OF CORRECTABLE WRITE ERRORS THE ROUTINE WILL BACKSPACE,
           ERASE AND REWRITE.  A MAXIMUM OF THREE RETRIES WILL BE PERFORMED.
```

6 APPENDIX

6.1 EDIT PROCEDURE

THE FOLLOWING PROCEDURE IS FOR CARD INPUT, FOR PAPER TAPE INPUT, REFER TO THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION.

THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARDS COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

	PROGRAM ID						CARD SEQUENCE NUMBER					NUMBER OF EDIT ENTRIES					ENTRY 1 2400 DDEF INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (ORF)		ENTRY 2 DRIVE 1 AVAILABILITY 0000=DR 1 ON SYSTEM 0001=DR 1 NOT ON SYSTEM													
COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					26	31	36	41	46	51	56	61	66	71
CARD 0	E	0	B	0	0	▨	E	D	0	0	▨	0	0	0	2	▨					▨					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
						▨					▨					▨					▨					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
						▨					▨					▨					▨					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
						▨					▨					▨					▨					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
						▨					▨					▨					▨					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
						▨					▨					▨					▨					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨

EDIT PROCEDURE CONT'D

CARD 1 IS AN OPTIONAL EDIT CARD. THIS CARD IS REQUIRED ONLY IF IT IS DESIRED TO RUN WORD COUNTS OTHER THAN THE WORD COUNTS NORMALLY USED BY THE PROGRAM. ANY WORD COUNTS ENTERED ON CARD 1 MUST FALL BETWEEN THE LIMITS OF 0008 THROUGH 03E8. (8 THROUGH 1000 DECIMAL). ALL OR ANY OF THE RECORD WORD LENGHTS MAY BE CHANGED. IF CARD 1 IS ENTERED, THE WORD COUNTS USED BY THE PROGRAM ARE REPLACED BY THE WORD COUNT ON THE EDIT CARD UNLESS AN EDIT CARD ENTRY IS 0000. ANY ENTRIES OF 0000 ARE IGNORED AND THE WORD COUNT FOR THAT ONE RECORD REMAINS UNCHANGED.

ALL FIELDS OF CARD 1 MUST CONTAIN EITHER 0000 OR A WORD COUNT, IF CARD 1 IS USED. NORMAL WORD COUNTS USED BY THE PROGRAM ARE:

RECORD	DECIMAL	HEXADECIMAL
1	10	000A
2	40	0028
3	64	0040

COLUMN	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-26	26-31	31-36	36-41	41-46	46-51	51-56	56-61	61-66	66-71
	PROGRAM ID			CARD SEQUENCE NUMBER		NUMBER OF EDIT ENTRIES		ENTRY 1 WORD COUNT FOR RECORD 1 (HEX)			ENTRY 2 WORD COUNT FOR RECORD 2 (HEX)	ENTRY 3 WORD COUNT FOR RECORD 3 (HEX)	ENTRY 4 WORD COUNT FOR RECORD 4 (HEX)	ENTRY 5 WORD COUNT FOR RECORD 5 (HEX)	ENTRY 6 WORD COUNT FOR RECORD 6 (HEX)	ENTRY 7 WORD COUNT FOR RECORD 7 (HEX)	ENTRY 8 WORD COUNT FOR RECORD 8 (HEX)				
CARD 1	E	0	B	0	0	E	D	0	1	0	0	0	8																	
END	E	0	B	0	0	F	F	F	F																						

RECORD (CON'T)	DECIMAL (CON'T)	HEXADECIMAL (CON'T)
4	128	0080
5	256	0100
6	512	0200
7	700	02BC
8	1000	03E8

THE LAST CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES: 1. AN "E" IN COL. 1. 2. THE PID FOR THIS PROGRAM (COL. 2-3).
3. A TERMINATOR WORD OF "FFFF" (COL. 7 - 10)

```
                        ************************************************** 80C00020
                        ************************************************** 80C00030
                        *          MONITOR ENGLISH MESSAGE DECK          * 80C00040
                        ************************************************** 80C00050
                        ************************************************** 80C00060
                        *                                                  80C00070
                        * THE 1800 ENGLISH LANGUAGE MESSAGE DECK IS USED   80C00080
                        * IN CONJUNCTION WITH THE 1800 DIAGNOSTIC MONITOR  80C00090
                        * PROGRAM TO PROVIDE ENGLISH LANGUARE PRINTOUTS    80C00100
                        * FOR ALL DIAGNOSTIC MONITOR CONTROLLED PROGRAMS.  80C00110
                        *                                                  80C00120
                        * THE FIRST THREE CARDS OF THE ENGLISH MESSAGE     80C00130
                        * DECK CONTAIN THE PROGRAM THE LISTING OF WHICH    80C00140
                        * APPEARS BELOW.  THE FUNCTION OF THIS PROGRAM IS  80C00150
                        * TO XFER CONTROL TO THE ENGLISH MESSAGE DECK      80C00160
                        * LOADER SECTION OF THE MONITOR.  IF THE ENGLISH   80C00170
                        * LOADER SECTION OF THE MONITOR IS NOT IN CORE     80C00180
                        * THEN THE XFER IS TO AN ERROR WAIT IN THE MONITOR. 80C00190
                        *                                                  80C00200
                        * THE REMAINING CARDS IN THE ENGLISH MESSAGE DECK  80C00210
                        * CONTAIN THE CONTENT OF THE ENGLISH MESSAGES.     80C00220
                        * THESE CARDS ARE READ BY THE ENGLISH DECK LOADER  80C00230
                        * SECTION OF THE MONITOR.                          80C00240
                        *                                                  80C00250
07FF                         ORG     *+/07FF                             80C00260
                        *                                                  80C00270
006F 0                  RLBA  EQU     /006F                               80C00280
0135 0                  ENGLD EQU     /0135                               80C00290
                        *                                                  80C00300
07FF 0 C400 0135        DECK  LD    L ENGLD       GO TO ENG DECK LOADER IF 80C00310
0801 0 44A0 0135              BSI   I ENGLD,Z     * LOADER IS STILL IN CORE 80C00320
                        *                                                  80C00330
0803 0 6C00 0070              STX   L RLBA+1      SET LAST CARD INDICATOR  80C00340
0805 0 4C00 0136              BSC   L ENGLD+1     GO TO ERR WAIT IN MONITOR 80C00350
                        *                                                  80C00360
0808   07FF                   END     DECK                                80C00370
  NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY
```



```
        DECK   07FF  0808
        ENGLD  0135  07FF 0801 0805
        RLBA   006F  0803
        END OF ASSEMBLY
```

---------- LAST PAGE ----------

2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
0000                   ORG     *+2047
                 *
                 *
                 *                  EQUATE TABLES
                 *
                 *
012C             BEGIN EQU     300
012D             START EQU     BEGIN+1
012E             END   EQU     START+1
012F             LOG   EQU     END+1
0130             ERROR EQU     LOG+1
0131             REQDV EQU     ERROR+1
0132             RELDV EQU     REQDV+1
0133             CKCR  EQU     RELDV+1
07FF 0  0800     PID   DC      /0800      PROG ID
0800 0  0000     RID   DC      0          RTN ID
0801 0  0000     RAD   DC      0          RTN ADRS
0802 0  0000     SW0   DC      0          SW FNC 00
0803 0  0000     SW1   DC      0                 01
0804 0  0000     SW2   DC      0                 10
0805 0  0000     SW3   DC      0                 11
0806 1  0848     IPA   DC      MTRST      INIT ADRS
0807 1  086C     LPA   DC      MONO3      LOOP ADRS
0808 1  0864     EPA   DC      MTEND      END ADRS
0809 0  0000     MLSCF DC      0          INTRPT VECTOR
080A 0  0000           DC      0          MAIN LINE VECTOR
080B 0  FFFF     TERM  DC      /FFFF      TERMINATOR
080C 1  0FFB           DC      PEND       PROG HIGH LIMIT
080D 0  0000           DC      0
080E 0  0000           DC      0
080F 0  0000           DC      0
0810 0  0000           DC      0
0811 0  0000           DC      0
0812 0  0000     EDIT  DC      0          INTR LVL, ILSW, CH.
0813 0  0000           DC      0          DR 1 AVAIL SW
0814 0  0000           DC      0          WD CT FOR REC 1
0815 0  0000           DC      0                        2
0816 0  0000           DC      0                        3
0817 0  0000           DC      0                        4
0818 0  0000           DC      0                        5
0819 0  0000           DC      0                        6
081A 0  0000           DC      0                        7
081B 0  0000           DC      0                        8
                 *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                 *
                 *                  THIS IS THE INTRPT RTN
                 *
                 *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
081C 0  0000     MTIO  DC      0          AREA CODE STORAGE
081D 0  0000     MTI   DC      0                                  IE
081E 0  1010           SLA     16         CLEAR INT SW
081F 01 D4000A0B       STO  L  INT
0821 0  C00E           LD      MTDSW      GET SNS FNC
0822 0  F00F           EOR     ACMT       SET AREA CODE
0823 0  D00D           STO     MTDSW+1    SAVE
0824 0  080B           XIO     MTDSW      SENSE-NO RESET
0825 0  C00B           LD      MTDSW+1    GET IOCC
0826 0  F00C           EOR     ONE        SET BIT 15
0827 0  D009           STO     MTDSW+1    SAVE
0828 0  0807           XIO     MTDSW      SENSE - RESET
0829 0  D00A           STO     LSDSW      SAVE SENSE WD
082A 0  E00A           AND     MTIXO      CK FOR LEGAL
082B 01 4C180836       BSC  L  MTI03,+-   BRANCH = ILLEGAL
082D 01 4C80081D MTI04 BSC  I  MTI        EXIT                IX
                 *
                 *                  CONSTANTS
                 *
0830    0000           BSS  E  0
```


2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
0830 0  0700     MTDSW DC      /0700      SENSE IOCC
0831 0  0000           DC      0
                 *
0832 0  0000     ACMT  DC      0          AREA CODE
0833 0  0001     ONE   DC      1          CONSTANT 1
0834 0  0000     LSDSW DC      0          SENSE WD STORAGE
0835 0  3040     MTIXO DC      /3040      LEGAL INT CK
                 *
                 *                  NO LEGAL BIT ON
                 *
0836 0  C002     MTI03 LD      MTIX1      GET RETURN
0837 0  D001           STO     MLSCF      SET
0838 0  70F4           MDX     MTI04      GO EXIT
0839 1  083A     MTIX1 DC      MTI05      ENTRY TO SET
                 *
                 *                  RETURN ON ILLEGAL
                 *
083A 0  C0F7     MTI05 LD      ACMT       GET AREA CODE = MOD
083B 0  100A           SLA     10         SAVE BIT 10
083C 0  180F           SRA     15
083D 0  D001           STO     MTI06+1    SET
083E 00 65000000 MTI06 LDX  L1 0          IX 1 = TAPE DR
0840 01 4400087F       BSI  L  MER        PRINT               SRC
0842 0  E001           DC      /E001      ERR E1
0843 0  0001           DC      /0001      FORM 1
0844 0  1010           SLA     16         TERMINATE THIS DR
0845 01 D5000858       STO  L1 TAPE0
0847 0  7048           MDX     MONO7
                 *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                 *
                 *                  INITIALIZATION ROUTINE
                 *
                 *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
0848 0  0000     MTRST DC      0                              SE
0849 0  630C           LDX   3 12         CLEAR ALL CTS + SWS
084A 0  1010           SLA     16
084B 01 D7000857 RST1  STO  L3 TAPE0-1
084D 0  73FF           MDX   3 -1
084E 0  70FC           MDX     RST1
084F 01 D4000A0B       STO  L  INT
0851 01 6500086C       LDX  L1 MONO3      SET RETURN
0853 01 6D000809       STX  L1 MLSCF
0855 01 4C800848       BSC  I  MTRST      EXIT                SX
                 *
                 *                  CONSTANTS
                 *
0857 0  3F3F     PATC  DC      /3F3F      PATTERN CONSTANT
0858 0  0000     TAPE0 DC      0          DR 0 AREA CODE
0859 0  0000     TAPE1 DC      0          DR 1 AREA CODE
085A 0  0000     SRSCT DC      0          SERIES COUNT
085B 0  0000     RECRD DC      0          REC RD CT
085C 0  0000     URRD  DC      0          UNREC RD CT
085D 0  0000     RWR   DC      0          REC WT CT
085E 0  0000     URWR  DC      0          UNREC WT CT
085F 0  0000     PRPSS DC      0          PROG PASS CT
0860 0  0000     WRCT  DC      0          WRITE CT
0861 0  0000     RDCT  DC      0          READ CT
0862 0  0000     RDSW  DC      0          READ SW
0863 0  0000           DC      0
                 *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                 *
                 *                  PROGRAM END RTN
                 *
                 *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
0864 0  0000     MTEND DC      0                              SE
0865 01 44000870       BSI  L  RLDEV      RELEASE DEVICE      SRC
0867 01 4C800864       BSC  I  MTEND      EXIT                SX
                 *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

```
                         *                                                      80B01360
                         *                  CALL FOR EDIT                       80B01370
                         *                                                      80B01380
                         *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX 80B01390
                         ********************************************************80B01400
0869 00 4480012C         MTBEG BSI  I  BEGIN      GO TO MONITOR          *      80B01410
086B 1  07FF                   DC      PID                              *      80B01420
                         ********************************************************80B01430
                         *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX 80B01440
                         *                                                      80B01450
                         *                  SUPERVISOR RTN                      80B01460
                         *                                                      80B01470
                         *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX 80B01480
086C 01 4400085F         MON03 BSI  L  RQDEV      REQUEST DEVICE         SRC    80B01490
086E 01 CC00098E               LDD  L  RTNO       SET RTN = 0                   80B01500
0870 0  D88F                   STD     RID                                      80B01510
0871 0  C0E5                   LD      PATC       RESTORE PATTERN               80B01520
0872 01 D4000978               STO  L  PATT                                     80B01530
0874 0  C08F                   LD      SW2        GET SW FNC 2                  80B01540
0875 0  4828                   BSC     +Z         IS DRIVE 0 TO BE RUN          80B01550
0876 0  7007                   MDX     MON05      NO                            80B01560
0877 0  6100                   LDX   1 0          SET DR 0 IXING                80B01570
0878 0  C0A3                   LD      MTIO       GET AREA CODE                 80B01580
0879 0  D0DE                   STO     TAPE0      SAVE                          80B01590
087A 01 440009D2               BSI  L  SNDSW      SENSE DEVICE           SRC    80B01600
087C 0  4804                   BSC     E          IS DR READY                   80B01610
087D 0  7020                   MDX     MON08      NO                            80B01620
087E 0  C094             MON05 LD      EDIT+1     GET DR 1 AVAIL SW             80B01630
087F 0  4820                   BSC     Z          IS DR 1 AVAIL                 80B01640
0880 0  700D                   MDX     MON06      NO                            80B01650
0881 01 C4000804               LD   L  SW2        GET SW FNC 2                  80B01660
0883 0  1001                   SLA     1                                        80B01670
0884 0  4828                   BSC     +Z         IS DR 1 TO BE RUN             80B01680
0885 0  7008                   MDX     MON06      NO                            80B01690
0886 0  C095                   LD      MTIO       GET AREA CODE                 80B01700
0887 0  F024                   EOR     MOD        SET BIT 10                    80B01710
0888 0  D0D0                   STO     TAPE1      SAVE                          80B01720
0889 0  6101                   LDX   1 1          SET DR 1 IXING                80B01730
088A 01 440009D2               BSI  L  SNDSW      SENSE DRIVE            SRC    80B01740
088C 0  4804                   BSC     E          IS DR 1 READY                 80B01750
088D 0  7017                   MDX     MON09      NO                            80B01760
088E 01 44000870         MON06 BSI  L  RLDEV      RELEASE DEVICE         SRC    80B01770
                         *                                                      80B01780
0890 0  C0C7             MON07 LD      TAPE0      GET DR 0 A. C.                80B01790
0891 01 4C1808AD               BSC  L  MON10,+-   IS LOC CLEAR                  80B01800
0893 0  6100                   LDX   1 0          NO SET DR 0 IXING             80B01810
0894 0  D09D             MON11 STO     ACMT       SET CURRENT A. C.             80B01820
0895 01 C4000803               LD   L  SW1        GET SW FNC 1                  80B01830
0897 0  100E                   SLA     14                                       80B01840
0898 0  4810                   BSC     -          IS LOOP RD SW ON              80B01850
0899 0  7021                   MDX     MON13      NO                            80B01860
089A 0  C098                   LD      ONE        GET 0001                      80B01870
089B 01 D5000862               STO  L1 RDSW       SET RD SW                     80B01880
089D 0  701D                   MDX     MON13      START PROGRAM                 80B01890
                         *                                                      80B01900
                         *                  DRIVE 0 IS SELECTED BUT             80B01910
                         *                  IS NOT READY                        80B01920
                         *                                                      80B01930
089E 01 44000878         MON08 BSI  L  MLG        PRINT                  SRC    80B01940
08A0 0  C000                   DC      /C000      ID - C0                       80B01950
08A1 0  0000                   DC      /0000      FORM 0                        80B01960
08A2 0  1010                   SLA     16         CLEAR DR 0 A. C.              80B01970
08A3 0  D064                   STO     TAPE0                                    80B01980
08A4 0  70D9                   MDX     MON05                                    80B01990
                         *                                                      80B02000
                         *                  DRIVE 1 IS SELECTED BUT             80B02010
                         *                  IS NOT READY                        80B02020
                         *                                                      80B02030
```



```
08A5 01 44000878         MON09 BSI  L  MLG        PRINT                  SRC    80B02040
08A7 0  C001                   DC      /C001      ID C1                         80B02050
08A8 0  0000                   DC      /0000      FORM 0                        80B02060
08A9 0  1010                   SLA     16         CLEAR DR 1 A. C.              80B02070
08AA 0  D0AE                   STO     TAPE1                                    80B02080
08AB 0  70E2                   MDX     MON06                                    80B02090
                         *                                                      80B02100
                         *                  CONSTANTS                           80B02110
                         *                                                      80B02120
                         *                                                      80B02130
                         *                                                      80B02140
08AC 0  0020             MOD   DC        /0020      DR 1 MODIFIER               80B02150
                         *                                                      80B02160
                         *                  SET TO DRIVE 1                      80B02170
                         *                                                      80B02180
08AD 0  C0AB             MON10 LD        TAPE1      GET DR 1 AREA CODE          80B02190
08AE 01 4C1808B2               BSC  L    MON12,+-   BRANCH IF CLEAR             80B02200
08B0 0  6101                   LDX   1 1          SET IXING-DR 1                80B02210
08B1 0  70E2                   MDX     MON11                                    80B02220
08B2 01 7401085F         MON12 MDX  L    PRPSS,1    INCR PROG PASS CT           80B02230
08B4 0  1000                   NOP                                              80B02240
08B5 01 44000878               BSI  L  MLG        PRINT                  SRC    80B02250
08B7 0  D001                   DC      /D001      ID D 1                        80B02260
08B8 0  0005                   DC      /0005      FORM 5                        80B02270
                         ********************************************************80B02280
08B9 00 4C80012E               BSC  I  END        TERMINATE PROGRAM      *      80B02290
                         ********************************************************80B02300
08BB 0  63F8             MON13 LDX     3 -8                                     80B02310
08BC 01 C700081C         MONAB LD      L3 EDIT+10 GET AN EDIT WD CT            80B02320
08BE 01 4C1808C2               BSC  L    MONAA,+-   BRANCH IF CLEAR            80B02330
08C0 01 D7000986               STO  L3   VRWC+8     SET NEW WD CT               80B02340
08C2 0  7301             MONAA MDX     3 1          DECR IX 3                   80B02350
08C3 0  70F8                   MDX     MONAB      LOOP                          80B02360
08C4 01 C5000862         MON30 LD      L1 RDSW    GET READ SW                   80B02370
08C6 01 4C200948               BSC  L    MON25,Z    BRANCH IF SET               80B02380
08C8 01 CC00098A               LDD  L    RTN1       SET RTN = 1                 80B02390
08CA 01 DC000800               STD  L    RID                                    80B02400
08CC 01 44000986               BSI  L    RWD        REWIND DR              SRC    80B02410
08CE 01 C4000805               LD   L    SW3        GET SW FNC 3                80B02420
08D0 01 4C1808D4               BSC  L    MON15,+-   BRANCH IF ZERO              80B02430
08D2 01 D400097B               STO  L    PATT       SET AS PATTERN              80B02440
08D4 00 670003E9         MON15 LDX  L3   1001       IX 2 = LNGTH I/O AR         80B02450
08D6 01 C400097B               LD   L    PATT       GET PATTERN                 80B02460
08D8 01 D7000C11         MON16 STO  L3   IOA-1      SET I/O AREA                80B02470
08DA 0  73FF                   MDX     3 -1       DECR IX 3                   80B02480
08DB 0  70FC                   MDX     MON16      LOOP                          80B02490
08DC 0  62F8             MON17 LDX     2 -8                                     80B02500
08DD 01 C6000986         MON18 LD      L2 VRWC+8  GET WD CT                    80B02510
08DF 01 F400097C               EOR  L    NOEND      SET BIT 1                   80B02520
08E1 01 D4000C12               STO  L    IOA        SET IN I/O AREA             80B02530
08E3 01 44000AEE               BSI  L    WRT        GO WRITE               SRC    80B02540
08E5 0  7201                   MDX     2 1          ARE ALL WD CTS USED         80B02550
08E6 0  70F6                   MDX     MON18      NO                            80B02560
08E7 01 7401085A               MDX  L    SRSCT,1    INCR SERIES CT              80B02570
08E9 01 C400085A               LD   L    SRSCT      GET CT                      80B02580
08EB 01 9400097D               S    L    K500       SUB 500                     80B02590
08ED 01 4C2008DC               BSC  L    MON17,Z    BRANCH = NOT DONE           80B02600
08EF 01 D400085A               STO  L    SRSCT      CLEAR SERIES COUNT          80B02610
08F1 01 C4000803               LD   L    SW1        GET SW FNC 1                80B02620
08F3 0  100F                   SLA     15                                       80B02630
08F4 0  4828                   BSC     +Z         IS LOOP WRT SW ON             80B02640
08F5 0  70C5                   MDX     MON13      YES                           80B02650
                         *                                                      80B02660
                         *            CHECK INTERCHANGEABILITY SW               80B02670
                         *                                                      80B02680
08F6 01 C4000802               LD   L    SW0        GET SW FNC 0                80B02690
08F8 0  1008                   SLA     8                                        80B02700
08F9 0  4810                   BSC     -          IS SW ON                      80B02710
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2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
08FA 0  7050              MDX      MON25        NO                            80B02720
                    *                                                          80B02730
                    *                 INTERCHANGEABILITY SW IS ON              80B02740
                    *                                                          60B02750
08FB 01 C4000833          LD    L  ONE          GET 1                          80B02760
08FD 01 D5000862          STO   L1 RDSW         SET READ ONLY SW               80B02770
08FF 01 440009C1          BSI   L  RWDU         REWIND-UNLOAD           SRC    80B02780
0901 0  7100              MDX    1 0            WAS THIS DR 0                  80B02790
0902 0  700C              MDX      MON19        NO                             80B02800
0903 0  1010              SLA      16           CLEAR DR 0 A. C.               80B02810
0904 01 D4000858          STO   L  TAPE0                                       80B02820
0906 01 C4000659          LD    L  TAPE1        GET DR 1 A. C.                 80B02830
0908 01 4C200890          BSC   L  MON07,Z      BRANCH = RUN DR 1              80B02840
090A 01 4400087B    MON20 BSI   L  MLG          LOG-MAKE DRS READY      SRC    80B02850
090C 0  C002              DC       /C002        ID - C2                        80B02860
090D 0  0000              DC       /0000        FORM 0                         80B02870
090E 0  7008              MDX      MON21                                       80B02880
                    *                                                          80B02890
                    *                 RUN WAS ON DR 1                          80B02900
                    *                                                          80B02910
090F 0  1010        MON19 SLA      16           CLEAR DR 1 A. C.               80B02920
0910 01 D4000859          STO   L  TAPE1                                       80B02930
0912 01 C4000858          LD    L  TAPE0        GET DR 0 A. C.                 80B02940
0914 01 4C20089C          BSC   L  MON07,Z      BRANCH IF NOT CLEAR            80B02950
0916 0  70F3              MDX      MON20                                       80B02960
                    *                                                          80BC2970
                    *                 WAIT TILL DRS ARE READY                  80B02980
                    *                                                          80B02990
0917 01 4400085F    MON21 BSI   L  RQDEV        REQUEST DEVICE          SRC    80B03000
0919 01 C4000804          LD    L  SW2          GET SW FNC 2                   80B03010
091B 0  4828              BSC      +Z           IS DR 0 SEL                    80B03020
091C 0  7009              MDX      MON22        NO                             80B03030
091D 0  6100              LDX    1 0            SET IXING DR 0                 80B03040
091E 01 C400081C          LD    L  MTIO         GET AREA CODE                  80B03050
0920 01 D4000858          STO   L  TAPE0        SAVE                           80B03060
0922 01 440009D2          BSI   L  SNDSW        SENSE DRIVE             SRC    80B03070
0924 0  4804              BSC      E            IS DR READY                    80B03080
0925 0  7015              MDX      MON23        NO                             80B03090
0926 01 C4000813    MON22 LD    L  EDIT+1       GET DR 1 AVAIL SW              80B03100
0928 0  4820              BSC      Z            IS DR 1 AVAIL                  80B03110
0929 0  7C1D              MDX      MON24        NO                             80B03120
092A 01 C4000804          LD    L  SW2          GET SW FNC 2                   80B03130
092C 0  1001              SLA      1                                           80B03140
092D 0  4828              BSC      +Z           IS DR 1 SEL                    80B03150
092E 0  7018              MDX      MON24        NO                             80B03160
092F 0  6101              LDX    1 1            SET IXING DR 1                 80B03170
0930 01 C400081C          LD    L  MTIO         GET AREA CODE                  80B03180
0932 01 F40008AC          EOR   L  MOD          SET BIT 10                     80B03190
0934 01 D4000859          STO   L  TAPE1        SAVE                           80B03200
0936 01 440009D2          BSI   L  SNDSW        SENSE DRIVE             SRC    80B03210
0938 0  4804              BSC      E            IS DR READY                    80B03220
0939 0  7001              MDX      MON23        NO                             80B03230
093A 0  700C              MDX      MON24                                       80B03240
                    *                                                          80B03250
                    *                 DRIVE IS NOT READY                       80B03260
                    *                                                          80B03270
093B 01 44000870    MON23 BSI   L  RLDEV        RELEASE DEVICE                 80B03280
093D 0  1010              SLA      16           CLEAR AREA CODES               80B03290
093E 01 D4000858          STO   L  TAPE0                                       80B03300
0940 01 D4000859          STO   L  TAPE1                                       80B03310
0942 01 4400084B          BSI   L  STPST        SET MLSCF               SRC    80B03320
0944 1  0917              DC       MON21                                       80B03330
                    *********************************************************  80B03340
0945 00 4C80012D          BSC   I  START        GO TO MONITOR           *      80B03350
                    *********************************************************  80B03360
                    *                                                          80B03370
0947 01 44000870    MON24 BSI   L  RLDEV        RELEASE DEVICE          SRC    80B03380
0949 01 4C000890          BSC   L  MON07        GO READ                        80B03390
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2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
                    *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX            80B03400
                    *                                                          80B03410
                    *                 READ PORTION OF PROG                     80B03420
                    *                                                          80B03430
                    *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX            80B03440
094B 0  403A        MON25 BSI      RWD          REWIND DR               SRC    80B03450
094C 0  C86F              LDD      RTN2         SET RTN = 2                    80B03460
094D 01 DC000800          STD   L  RID                                         80B03470
094F 01 C4000805          LD    L  SW3          GET SW FNC 3                   80B03480
0951 01 4C180955          BSC   L  MON27,+-     BRANCH IF ZERO                 80B03490
0953 01 D400097B          STO   L  PATT         SET AS PATTERN                 80B03500
0955 0  62F8        MON27 LDX    2 -8           IX 2 = NO WD CTS               80B03510
0956 00 670003E9    MON28 LDX   L3 1001                                        80B03520
0958 0  1010              SLA      16                                          80B03530
0959 01 D7000C11    MON26 STO   L3 IOA-1        CLEAR I/O AREA                 80B03540
095B 0  73FF              MDX    3 -1           DECR IX 3                      80B03550
095C 0  70FC              MDX      MON26        LOOP                           80B03560
095D 01 C6000986    MON29 LD    L2 VRWC+8       GET A WD CT                    80B03570
095F 0  F01C              EOR      NOEND        SET BIT 1                      80B03580
0960 01 D4000C12          STO   L  IOA          SET IN I/O AREA                80B03590
0962 01 44000A0C          BSI   L  RD           GO READ                 SRC    80B03600
0964 0  7201              MDX    2 1            ARE ALL WD CTS USED            80B03610
0965 0  70F0              MDX      MON28        LOOP                           80B03620
0966 01 7401085A          MDX   L  SRSCT,1      INCR SERIES CT                 80B03630
0968 01 C400085A          LD    L  SRSCT        GET CTR                        80B03640
096A 0  9012              S        K500         SUB 500                        80B03650
096B 01 4C200955          BSC   L  MON27,Z      BRANCH = NOT DONE              80B03660
096D 01 D400085A          STO   L  SRSCT        CLEAR SERIES CTR               80B03670
096F 01 C4000803          LD    L  SW1          GET SW FNC 1                   80B03680
0971 0  100E              SLA      14                                          80B03690
0972 0  4828              BSC      +Z           IS LOOP RD SW ON               80B03700
0973 0  7005              MDX      MON31        YES                            80B03710
0974 0  1010              SLA      16           CLEAR ACCUM                    80B03720
0975 01 D5000858          STO   L1 TAPE0        CLEAR A. C.                    80B03730
0977 01 D5000862          STO   L1 RDSW         CLEAR READ SW                  80B03740
0979 01 4C000890    MC'31 BSC   L  MON07        CK FOR DONE                    80B03750
                    *                                                          80B03760
                    *                 CONSTANTS                                80B03770
                    *                                                          80B03780
                    *                                                          80B03790
                    *                                                          80B03800
                    *                                                          80B03810
097B 0  3F3F        PATT  DC       /3F3F        PATTERN                        80B03820
097C 0  4000        NOEND DC       /4000        NO END TBL INT BIT             80B03830
097D 0  01F4        K500  DC       500          CONSTANT 500                   80B03840
097E 0  000A        VRWC  DC       10           WD CT FOR REC 1                80B03850
097F 0  0028              DC       40                         2                80B03860
0980 0  0040              DC       64                         3                80B03870
0981 0  0080              DC       128                        4                80B03880
0982 0  0100              DC       256                        5                80B03890
0983 0  0200              DC       512                        6                80B03900
0984 0  02BC              DC       700                        7                80B03910
0985 0  03E8              DC       1000                       8                80B03920
                    *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX            80B03930
                    *                                                          80B03940
                    *                 COMMON REWIND RTN                        80B03950
                    *                                                          80B03960
                    *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX            80B03970
0986 0  0000        RWD   DC       0                                    SE     80B03980
0987 0  4050              BSI      CKBSY        CK FOR BUSY             SRC    80B03990
0988 0  1803              SRA      3                                           80B04000
0989 0  4804              BSC      E            IS DR AT LD PT                 80B04010
098A 0  7016              MDX      RWD02        YES                            80B04020
098B 01 C5000858          LD    L1 TAPE0        GET AREA CODE + MOD            80B04030
098D 0  F026              EOR      RWDFN        SET FUNCTION                   80B04040
098E 0  D026              STO      RWDFN+1      SAVE                           80B04050
098F 0  D030              STO      LSTFN                                       80B04060
0990 01 D4000A0B          STO   L  INT                                         80B04070
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0992 01 4400085F         BSI  L  RQDEV      REQUEST DEVICE       SRC  80B04080
0994 0  081F             XIO     RWDFN      ISSUE REWIND              80B04090
0995 0  4052             BSI     CKBSY      CK FOR BUSY          SRC  80B04100
0996 01 44000870         BSI  L  RLDEV      RELEASE DEVICE       SRC  80B04110
0998 01 440009D2   RWD01 BSI  L  SNDSW      SENSE DR             SRC  80B04120
099A 0  1801             SRA     1                                    80B04130
099B 0  4804             BSC     E          IS DR BUSY                80B04140
099C 0  70FB             MDX     RWD01      YES                       80B04150
099D 0  1802             SRA     2                                    80B04160
099E 0  4804             BSC     E          IS DR AT LD PT            80B04170
099F 0  7001             MDX     RWD02      YES                       80B04180
09A0 0  70F7             MDX     RWD01      NO                        80B04190
                   *                                                  80B04200
09A1 01 4C800986   RWD02 BSC  I  RWD        EXIT                 SX   80B04210
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B04220
                   *                                                  80B04230
                   *              COMMON BACKSPACE RTN                80B04240
                   *                                                  80B04250
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B04260
09A3 0  0000       BSP   DC      0                               SE   80B04270
09A4 0  4043             BSI     CKBSY      CK FOR BSY           SRC  80B04280
09A5 01 C5000858         LD   L1 TAPE0      GET AREA CODE             80B04290
09A7 0  F00E             EOR     BSPFN      SET FUNCTION              80B04300
09A8 0  D00E             STO     BSPFN+1    SAVE                      80B04310
09A9 0  D016             STO     LSTFN                                80B04320
09AA 01 D4000A0B         STO  L  INT                                  80B04330
09AC 01 4400085F         BSI  L  RQDEV      REQUEST DEVICE       SRC  80B04340
09AE 0  0807             XIO     BSPFN      ISSUE BSP                 80B04350
09AF 0  4038             BSI     CKBSY      CK BUSY              SRC  80B04360
                   *                                                  80B04370
09B0 01 44000870         BSI  L  RLDEV      RELEASE DEVICE       SRC  80B04380
09B2 01 4C8009A3         BSC  I  BSP        EXIT                 SX   80B04390
                   *                                                  80B04400
                   *              CONSTANTS                           80B04410
                   *                                                  80B04420
09B4    0000             BSS  E  0                                    80B04430
09B4 0  0404       RWDFN DC      /0404      REWIND IOCC               80B04440
09B5 0  0000             DC      0                                    80B04450
                   *                                                  80B04460
09B6 0  0408       BSPFN DC      /0408      BACKSPACE IOCC            80B04470
09B7 0  0000             DC      0                                    80B04480
                   *                                                  80B04490
09B8 0  0400       RWUFN DC      /0400      REWIND UNLOAD IOCC        80B04500
09B9 0  0000             DC      0                                    80B04510
                   *                                                  80B04520
09BA 0  0001       RTN1  DC      /0001      RTN FOR WRT PORTION       80B04530
09BB 1  08D4             DC      MON15                                80B04540
                   *                                                  80B04550
09BC 0  0002       RTN2  DC      /0002      RTN FOR READ PORTION      80B04560
09BD 1  094B             DC      MON25                                80B04570
                   *                                                  80B04580
09BE 0  0000       RTN0  DC      /0000      RTN FOR SUPV RTN          80B04590
09BF 1  086C             DC      MON03                                80B04600
                   *                                                  80B04610
09C0 0  0000       LSTFN DC      0          LAST FNC ISSUED           80B04620
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B04630
                   *                                                  80B04640
                   *              REWIND UNLOAD RTN                   80B04650
                   *                                                  80B04660
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B04670
09C1 0  0000       RWDU  DC      0                               SE   80B04680
09C2 0  4025             BSI     CKBSY      CHECK BUSY           SRC  80B04690
09C3 01 C5000858         LD   L1 TAPE0      GET AREA CODE             80B04700
09C5 0  F0F2             EOR     RWUFN      SET FNC                   80B04710
09C6 0  D0F2             STO     RWUFN+1    SAVE                      80B04720
09C7 0  D0F8             STO     LSTFN                                80B04730
09C8 01 D4000A0B         STO  L  INT                                  80B04740
                   *                                                  80B04750
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09CA 01 4400085F         BSI  L  RQDEV      REQUEST DEVICE       SRC  80B04760
09CC 0  08EB             XIO     RWUFN      ISSUE REWIND UNLOAD       80B04770
09CD 0  401A             BSI     CKBSY      CHECK FOR BUSY       SRC  80B04780
                   *                                                  80B04790
09CE 01 44000870         BSI  L  RLDEV      RELEASE DEVICE       SRC  80B04800
09D0 01 4C8009C1         BSC  I  RWDU       EXIT                 SX   80B04810
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B04820
                   *                                                  80B04830
                   *              SENSE DRIVE ROUTINE                 80B04840
                   *                                                  80B04850
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B04860
09D2 0  0000       SNDSW DC      0                               SE   80B04870
09D3 01 C5000858         LD   L1 TAPE0      GET AREA CODE             80B04880
09D5 0  F00E             EOR     DSWFN      SET FNC                   80B04890
09D6 0  D00E             STO     DSWFN+1    SAVE                      80B04900
09D7 0  6302       SNDS1 LDX   3 2          SET FOR DOUBLE SENSE      80B04910
09D8 0  080B       SNDS2 XIO     DSWFN      ISSUE SENSE               80B04920
09D9 01 D70009E5         STO  L3 DSWX0-1    SAVE WD                   80B04930
09DB 0  73FF             MDX   3 -1         DECR IX 3                 60B04940
09DC 0  70FB             MDX     SNDS2      LOOP                      80B04950
09DD 0  C009             LD      DSWX0+1    GET FIRST WD              80B04960
09DE 0  F007             EOR     DSWX0      COMPARE WITH SECOND       80B04970
09DF 0  4820             BSC     Z          IS DR FULLY SELECTED      80B04980
09E0 0  70F6             MDX     SNDS1      NO-SENSE AGAIN            80B04990
09E1 0  C004             LD      DSWX0      GET SENSE WD              80B05000
09E2 01 4C8009D2         BSC  I  SNDSW      EXIT                 SX   80B05010
                   *                                                  80B05020
                   *              CONSTANTS                           80B05030
                   *                                                  80B05040
09E4    0000             BSS  E  0                                    80B05050
09E4 0  0700       DSWFN DC      /0700      SENSE DSW IOCC            80B05060
09E5 0  0000             DC      0                                    80B05070
09E6 0  0000       DSWX0 DC      0          STORAGE                   80B05080
09E7 0  0000             DC      0                                    80B05090
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B05100
                   *                                                  80B05110
                   *              CHECK BUSY ROUTINE                  80B05120
                   *                                                  80B05130
                   *XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  80B05140
09E8 0  0000       CKBSY DC      0                               SE   80B05150
09E9 0  40E8       CKBS0 BSI     SNDSW      SENSE DRIVE          SRC  80B05160
09EA 0  1801             SRA     1                                    80B05170
09EB 0  4804             BSC     E          IS DR BUSY                80B05180
09EC 0  7009             MDX     CKBS1      YES                       80B05190
09ED 01 74000A0B         MDX  L  INT,0      HAS INT OCCURRED          80B05200
09EF 0  7006             MDX     CKBS1      NO                        80B05210
09F0 0  1010             SLA     16         CLEAR BUSY COUNT          80B05220
09F1 0  D018             STO     BSYCT                                80B05230
09F2 0  D018             STO     INT        CLEAR INTRPT SW           80B05240
09F3 0  C0F2             LD      DSWX0      GET DSW                   80B05250
09F4 01 4C8009E8         BSC  I  CKBSY      EXIT                 SX   80B05260
                   *                                                  80B05270
09F6 0  C014       CKBS1 LD      INT                                  80B05280
09F7 0  4818             BSC     +-         HAS AN INT OCCURRED       80B05290
09F8 0  700C             MDX     CKBS2      YES                       80B05300
09F9 01 740A0A0A         MDX  L  BSYCT,10   BUSY TOO LONG             80B05310
09FB 0  7009             MDX     CKBS2      NO                        80B05320
09FC 01 4400087F         BSI  L  MER        PRINT LOST INTRPT    SRC  80B05330
09FE 0  E002             DC      /E002      ID E 2                    80B05340
09FF 0  0002             DC      /0002      FORM 2                    80B05350
0A00 0  1010             SLA     16         TERMINATE THIS DR         80B05360
0A01 01 D5000858         STO  L1 TAPE0                                80B05370
0A03 01 4C000890         BSC  L  MON07                                80B05380
0A05 01 44000B4F   CKBS2 BSI  L  STPST      SET MLSCF                 80B05390
0A07 1  09E9             DC      CKBS0                                80B05400
                   ************************************************  80B05410
0A08 00 4C80012D         BSC  I  START      GO TO MONITOR      *      80B05420
                   ************************************************  80B05430
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0A0A 0  0000       BSYCT DC       0             BUSY COUNT                80B05440
0A0B 0  0000       INT   DC       0             INTRPT SW                 80B05450
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX      80B05460
                   *                                                      80B05470
                   *              COMMON READ ROUTINE                     80B05480
                   *                                                      80B05490
                   *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX      80B05500
0A0C 0  0000       RD    DC       0                                   SE  80B05510
0A0D 0  40DA             BSI      CKBSY         CK BSY               SRC  80B05520
0A0E 0  1010             SLA      16                                      80B05530
0A0F 01 D4000AD1         STO   L  ERCT          CLEAR ERROR CONTROL       80B05540
0A11 01 D4000AD2         STO   L  RETRY         CLEAR RETRY SW            80B05550
0A13 0  1010       RD00  SLA      16                                      80B05560
0A14 01 D4000AD5         STO   L  ERSW          CLEAR ERROR SW            80B05570
0A16 01 C5000858         LD    L1 TAPE0         GET AREA CODE             80B05580
0A18 0  F00D             EOR      RDFNC         SET FNC                   80B05590
0A19 0  D00F             STO      RDIO+1        SAVE                      80B05600
0A1A 0  D0A5             STO      LSTFN                                   80B05610
0A1B 01 D4000A0B         STO   L  INT                                     80B05620
0A1D 01 4400085F         BSI   L  RQDEV         REQUEST DEVICE       SRC  80B05630
0A1F 0  0808             XIO      RDIO          ISSUE READ                80B05640
0A20 0  40C7             BSI      CKBSY         CK BUSY              SRC  80B05650
0A21 0  7008             MDX      RD01                                    80B05660
                   *                                                      80B05670
                   *              CONSTANTS                               80B05680
                   *                                                      80B05690
0A22 0  2FB3       RDTXA DC       /2FB3         DSW OK CK                 80B05700
0A23 0  3FCF       RDTXB DC       /3FCF         WLR OR DIAG CK            80B05710
0A24 0  2C03       RDTXC DC       /2C03         NOT CORR CK               80B05720
0A25 0  00FF       RDTXD DC       /00FF         SAVE REREAD               80B05730
0A26 0  0602       RDFNC DC       /0602         READ FNC                  80B05740
0A28    0000             BSS   E  0                                       80B05750
0A28 1  0C12       RDIO  DC       IOA           READ IOCC                 80B05760
0A29 0  0000             DC       0                                       80B05770
                   *                                                      80B05780
                   *              READ IS COMPLETE                        80B05790
                   *                                                      80B05800
0A2A 01 44000870   RD01  BSI   L  RLDEV         RELEASE DEVICE       SRC  80B05810
0A2C 01 C4000AD2         LD    L  RETRY         GET RETRY SW              80B05820
0A2E 01 4C200AC2         BSC   L  RDT7A,Z       BRANCH = RETRY            80B05830
0A30 01 C4000861         LD    L  RDCT          GET TOTAL RD CT           80B05840
0A32 01 84000833         A     L  ONE           ADD 1                     80B05850
0A34 01 D4000861         STO   L  RDCT          SAVE                      80B05860
                   *                                                      80B05870
                   *              CHECK SENSE WORD                        80B05880
                   *                                                      80B05890
0A36 01 C4000834         LD    L  LSDSW         GET DSW                   80B05900
0A38 0  E0E9             AND      RDTXA                                   80B05910
0A39 0  4820             BSC      Z             WAS SENSE WD OK           80B05920
0A3A 0  703C             MDX      RD11          NO                        80B05930
                   *                                                      80B05940
                   *              CHECK DATA                              80B05950
                   *                                                      80B05960
0A3B 01 C4000AED   RD02  LD    L  RDTXH         GET LINE 0                80B05970
0A3D 01 D4000ADF         STO   L  RD26          SET                       80B05980
0A3F 0  1010             SLA      16            CLEAR ACCUM               80B05990
0A40 01 96000986         S     L2 VRWC+8        GET WD CT COMPL           80B06000
0A42 01 84000833         A     L  ONE           ADD 1                     80B06010
0A44 0  D001             STO      RD03+1        SET                       80B06020
0A45 00 67000000   RD03  LDX   L3 0             IX 3 = WD CT              80B06030
0A47 01 C4000AEB         LD    L  RDTXE         GET ADRS OF I/O +1        80B06040
0A49 01 86000986         A     L2 VRWC+8        ADD WD CT                 80B06050
0A4B 0  D010             STO      RD06+1        SET                       80B06060
0A4C 0  1010             SLA      16            CLEAR WD IN ERROR CT      80B06070
0A4D 01 D4000AD3         STO   L  WDNO                                    80B06080
0A4F 01 C4000978         LD    L  PATT          GET DATA PATT             80B06090
0A51 01 D4000AD4   RD04  STO   L  PTSV          SAVE                      80B06100
0A53 01 7401OAD3   RD05  MDX   L  WDNO,1        INCR WD IN ERROR CT       80B06110
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0A55 01 C40007FF         LD    L  PID           SET PARITY IGNORE         80B06120
0A57 00 D4000133         STO   L  CKCR                                    80B06130
0A59 01 C4000AD4         LD    L  PTSV          GET PATTERN WD            80B06140
0A5B 00 F7000000   RD06  EOR   L3 0             COMPARE WITH DATA         80B06150
0A5D 01 44200AD9         BSI   L  RD24,Z        BRANCH = NO COMPARE       80B06160
0A5F 0  7301       RD07  MDX   3  1             DECR IX 3                 80B06170
0A60 0  70F2             MDX      RD05          LOOP                      80B06180
0A61 0  1010       RD08  SLA      16            CLEAR PARITY IGNORE       80B06190
0A62 00 D4000133         STO   L  CKCR                                    80B06200
0A64 01 74000AD5         MDX   L  ERSW,0        IS ERROR SW = 0           80B06210
0A66 0  702C             MDX      RD16          NO                        80B06220
0A67 0  C069             LD       ERCT          GET ERROR CTRL            80B06230
0A68 0  4820             BSC      Z             SKIP IF NO PREV ERR       80B06240
0A69 0  7002             MDX      RD09          HAD A PREVIOUS ERROR      80B06250
0A6A 01 4C800A0C   RD10  BSC   I  RD            EXIT                  SX  80B06260
                   *                                                      80B06270
                   *              HAD A PREVIOUS ERROR                    80B06280
                   *                                                      80B06290
0A6C 01 C400085B   RD09  LD    L  RECRD         GET RECOVERED RD CT       80B06300
0A6E 01 84000833         A     L  ONE           ADD 1                     80B06310
0A70 01 D400085B         STO   L  RECRD         SAVE                      80B06320
0A72 01 4400087B         BSI   L  MLG           PRINT                SRC  80B06330
0A74 0  A001             DC       /A001         ID A 1                    80B06340
0A75 0  0004             DC       /0004         FORM 4                    80B06350
0A76 0  70F3             MDX      RD10                                    80B06360
                   *                                                      80B06370
                   *              DSW WAS NOT CORRECT                     80B06380
                   *                                                      80B06390
0A77 01 C4000834   RD11  LD    L  LSDSW         GET DSW                   80B06400
0A79 0  E0AA             AND      RDTXC                                   80B06410
0A7A 0  4820             BSC      Z             SKIP IF CORRECTABLE       80B06420
0A7B 0  700C             MDX      RD13          NOT CORRECTABLE           80B06430
0A7C 01 4400087F         BSI   L  MER           PRINT                SRC  80B06440
0A7E 0  E007             DC       /E007         ID E 7                    80B06450
0A7F 0  0001             DC       /0001         FORM 1                    80B06460
0A80 01 C4000834         LD    L  LSDSW         GET DSW                   80B06470
0A82 0  E0A0             AND      RDTXB                                   80B06480
0A83 01 4C190A87         BSC   L  RD12,+-       BRANCH = WLR OR DIAG      80B06490
0A85 01 74010AD5         MDX   L  ERSW,1        SET ERROR SW              80B06500
0A87 0  70B3       RD12  MDX      RD02          GO CK DATA                80B06510
                   *                                                      80B06520
                   *              UNCORRECTABLE ERROR                     80B06530
                   *                                                      80B06540
0A88 01 C400085C   RD13  LD    L  URRD          GET UNREC CT              80B06550
0A8A 01 84000833         A     L  ONE           ADD 1                     80B06560
0A8C 01 D400085C         STO   L  URRD          SAVE                      80B06570
0A8E 01 4400087F         BSI   L  MER           PRINT                SRC  80B06580
0A90 0  E003             DC       /E003         ID E 3                    80B06590
0A91 0  0001             DC       /0001         FORM 1                    80B06600
0A92 0  7007             MDX      RD10          CONTINUE                  80B06610
                   *                                                      80B06620
                   *              RETRY REC IN ERROR                      80B06630
                   *                                                      80B06640
0A93 0  1010       RD16  SLA      16                                      80B06650
0A94 0  D040             STO      ERSW          CLEAR ERROR SW            80B06660
0A95 0  C038             LD       ERCT          GET ERROR CONTROL         80B06670
0A96 0  E08E             AND      RDTXD         SAVE REREAD CT            80B06680
0A97 0  903E             S        K009          SUB 9                     80B06690
0A98 0  4818             BSC      +-            IS REREAD CT = 9          80B06700
0A99 0  7008             MDX      RD17          YES                       80B06710
0A9A 0  C036             LD       ERCT          GET ERROR CTRL            80B06720
0A9B 01 84000833         A     L  ONE           ADD 1                     80B06730
0A9D 0  D033             STO      ERCT          SAVE                      80B06740
0A9E 01 440009F3         BSI   L  BSP           BACKSPACE            SRC  80B06750
0AA0 01 4C000A13         BSC   L  RD00          GO RETRY                  80B06760
                   *                                                      80B06770
                   *              REREAD CT IS 9                          80B06780
                   *                                                      80B06790
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2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

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0AA2 0  C02E         RD17  LD      ERCT       GET ERROR CTRL                80B06800
0AA3 0  1808               SRA     8          SAVE CLEAN CT                 80B06810
0AA4 0  9031               S       K009       SUB 9                         80B06820
0AA5 01 4C180A88           BSC  L  RD13,+-    BRANCH = CLN CT = 9           80B06830
0AA7 0  802F               A       K010       ADD 10                        80B06840
0AA8 0  1008               SLA     8                                        80B06850
0AA9 0  D027               STO     ERCT       SAVE                          80B06860
                     *                                                      80B06870
                     *                   BACKSPACE PAST CLEANER             80B06880
                     *                                                      80B06890
0AAA 0  6305         RD18  LDX   3 5                                        80B06900
0AAB 0  6B08         RD19  STX   3 RD20+1     SAVE IX 3                     80B06910
0AAC 01 440009A3           BSI  L  BSP        BACKSPACE               SRC   80B06920
0AAE 01 440009D2           BSI  L  SNDSW      SENSE DR                SRC   80B06930
0AB0 0  1803               SRA     3                                        80B06940
0AB1 0  4804               BSC     E          IS DR AT LD PT                80B06950
0AB2 0  7014               MDX     RD23       YES                           80B06960
0AB3 00 67000000     RD20  LDX  L3 0          RESTORE IX 3                  80B06970
0AB5 0  73FF               MDX   3 -1         DECR IX 3                     80B06980
0AB6 0  70F4               MDX     RD19       LOOP                          80B06990
                     *                                                      80B07000
                     *                   REPOSITION TO REC DESIRED          80B07010
                     *                                                      80B07020
0AB7 0  6305               LDX   3 5                                        80B07030
0AB8 0  6B0A         RD21  STX   3 RDT7A+1    SAVE IX 3                     80B07040
0AB9 01 C4000833           LD   L  ONE        GET 1                         80B07050
0ABB 0  D016               STO     RETRY      SET RETRY SW                  80B07060
0ABC 0  73FF               MDX   3 -1         DECR IX 3                     80B07070
0ABD 0  7002               MDX     RD22       SKIP ONE RECORD               80B07080
0ABE 0  1010               SLA     16                                       80B07090
0ABF 0  D012               STO     RETRY      CLEAR RETRY SW                80B07100
0AC0 01 4C000A13     RD22  BSC  L  RD00       GO SKIP                       80B07110
0AC2 00 67000000     RDT7A LDX  L3 0          RESTORE IX 3                  80B07120
0AC4 0  73FF               MDX   3 -1         DECR IX 3                     80B07130
0AC5 0  70F2               MDX     RD21                                     80B07140
0AC6 0  70F1               MDX     RD21                                     80B07150
                     *                                                      80B07160
                     *                   DR REACHED LD PT - NOT             80B07170
                     *                   CLEANER                            80B07180
                     *                                                      80B07190
0AC7 01 44000B7B     RD23  BSI  L  MLG        PRINT                   SRC   80B07200
0AC9 0  A002               DC      /A002      ID A 2                        80B07210
0ACA 0  0000               DC      /0000      FORM 0                        80B07220
0ACB 0  C00C               LD      K005       GET 5                         80B07230
0ACC 0  90E7               S       RD20+1     SUB PRESENT LOC               80B07240
0ACD 0  D0E6               STO     RD20+1     SAVE                          80B07250
0ACE 01 67800A84           LDX  I3 RD20+1     IX 3 = RECS TO PASS           80B07260
0AD0 0  70E7               MDX     RD21       GO POSITION                   80B07270
                     *                                                      80B07280
                     *                   CONSTANTS                          80B07290
                     *                                                      80B07300
0AD1 0  0000         ERCT  DC      0          ERROR CONTROL                 80B07310
0AD2 0  0000         RETRY DC      0          RETRY SW                      80B07320
                     *                                                      80B07330
0AD3 0  0000         WDNO  DC      0          WORD IN ERROR CT              80B07340
0AD4 0  0000         PTSV  DC      0          PATTERN WD                    80B07350
0AD5 0  0000         ERSW  DC      0          ERROR SW                      80B07360
                     *                                                      80B07370
                     *                                                      80B07380
0AD6 0  0009         K009  DC      9          CONSTANT 9                    80B07390
0AD7 0  000A         K010  DC      10         CONSTANT 10                   80B07400
0AD8 0  0005         K005  DC      5          CONSTANT 5                    80B07410
                     *                                                      80B07420
                     *                   HAD BAD DATA                       80B07430
                     *                                                      80B07440
0AD9 0  0000         RD24  DC      0                                  SE    80B07450
0ADA 01 74010AD5           MDX  L  ERSW,1     INCR ERROR SW                 80B07460
0ADC 01 4400087F           BSI  L  MER        PRINT                   SRC   80B07470
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2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
0ADE 0  E004               DC      /E004      ID E 4                        80B07480
0ADF 0  0003         RD26  DC      /0003      FORM 3                        80B07490
0AE0 01 C4000802           LD   L  SW0        GET SW FNC 0                  80B07500
0AE2 0  100A               SLA     10                                       80B07510
0AE3 0  4810               BSC     -          IS PRINT ONLY 1ST ON          80B07520
0AE4 0  7002               MDX     RD25       NO                            80B07530
0AE5 01 4C000A61           BSC  L  RD08       YES                           80B07540
0AE7 0  C004         RD25  LD      RDTXF      GET NOT LINE 0                80B07550
0AE8 0  D0F6               STO     RD26       SET                           80B07560
0AE9 01 4C000A5F           BSC  L  RD07                                     80B07570
0AEB 1  0C13         RDTXE DC      IOA+1      CONSTANT ADRS                 80B07580
0AEC 0  8003         RDTXF DC      /8003      FORM 3 - NOT LINE 0           80B07590
0AED 0  0003         RDTXH DC      /0003      FORM 3 - LINE 0               80B07600
                     *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX     80B07610
                     *                                                      80B07620
                     *                   COMMON WRITE RTN                   80B07630
                     *                                                      80B07640
                     *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX     80B07650
0AEE 0  0000         WRT   DC      0                                  SE    80B07650
0AEF 01 440009E8           BSI  L  CKBSY      CK FOR BUSY             SRC   80B07670
0AF1 01 C5000858           LD   L1 TAPE0      GET AREA CODE                 80B07680
0AF3 0  F052               EOR     WRFNC      SET WRITE FNC                 80B07690
0AF4 0  D050               STO     WRIO+1     SAVE                          80B07700
0AF5 01 D40009C0           STO  L  LSTFN                                    80B07710
0AF7 01 D4000A08           STO  L  INT                                      80B07720
0AF9 0  1010               SLA     16                                       80B07730
0AFA 0  D0D6               STO     ERCT       CLEAR ERROR CNTRL             80B07740
0AFB 0  4063         WRT01 BSI     RQDEV      REQUEST DEVICE          SRC   80B07750
0AFC 0  0847               XIO     WRIO       ISSUE WRT                     80B07760
0AFD 01 440009E8           BSI  L  CKBSY      CK FOR BUSY             SRC   80B07770
                     *                                                      80B07780
0AFF 01 C4000860           LD   L  WRCT       GET WRITE CT                  80B07790
0B01 01 84000833           A    L  ONE        ADD 1                         80B07800
0B03 01 D4000860           STO  L  WRCT       SAVE                          80B07810
0B05 0  406A               BSI     RLDEV      RELEASE DEVICE          SRC   80B07820
0B06 01 C4000834           LD   L  LSDSW      GET DSW                       80B07830
0B08 0  E03F               AND     WRIX4      CK FOR CORRECT                80B07840
0B09 0  4820               BSC     Z          SKIP = OK                     80B07850
0B0A 0  7005               MDX     WRT03      DSW NOT CORRECT               80B07860
0B0B 0  C0C5               LD      ERCT       GET ERROR CTL                 80B07870
0B0C 0  4820               BSC     Z          SKIP = NO ERRORS              80B07880
0B0D 0  702A               MDX     WRT05      PREVIOUS ERROR                80B07890
0B0E 01 4C800AEE     WRT02 BSC  I  WRT        EXIT                    SX    80B07900
                     *                                                      80B07910
                     *                   DSW NOT CORRECT                    80B07920
                     *                                                      80B07930
0B10 01 C4000834     WRT03 LD   L  LSDSW      GET DSW                       80B07940
0B12 0  E034               AND     WRIX6      CK FOR CORR                   80B07950
0B13 0  4820               BSC     Z          SKIP = CORRECTABLE            80B07960
0B14 0  7015               MDX     WRT04      NOT CORRECTABLE               80B07970
0B15 0  4069               BSI     MER        PRINT                   SRC   80B07980
0B16 0  E005               DC      /E005      ID E 5                        80B07990
0B17 0  0001               DC      /0001      FORM 1                        80B08000
0B18 0  C0B8               LD      ERCT       GET ERROR CTRL                80B08010
0B19 0  902F               S       K003       SUB 3                         80B08020
0B1A 01 4C180B2A           BSC  L  WRT04,+-   BRANCH = 3 TRYS               80B08030
0B1C 0  802D               A       K004       ADD 4                         80B08040
0B1D 0  D0B3               STO     ERCT       SAVE                          80B08050
0B1E 01 440009A3           BSI  L  BSP        BACKSPACE               SRC   80B08060
0B20 01 C5000858           LD   L1 TAPE0      GET AREA CODE                 80B08070
0B22 0  F01F               EOR     ERAFN      SET ERASE FNC                 80B08080
0B23 0  D01F               STO     ERAFN+1    SET ERASE IOCC                80B08090
0B24 0  403A               BSI     RQDEV      REQUEST DEVICE          SRC   80B08100
0B25 0  081C               XIO     ERAFN      ISSUE ERASE                   80B08110
0B26 01 440009E8           BSI  L  CKBSY      CK FOR BUSY             SRC   80B08120
0B28 0  4047               BSI     RLDEV      RELEASE DEVICE          SRC   80B08130
0B29 0  7001               MDX     WRT01      RETRY                         80B08140
                     *                                                      80B08150
```

2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
                       *                   UNRECOVERABLE ERROR
                       *
082A 01 C400085E       WRT04 LD    L  URWR        GET UNREC CT
082C 01 84000833             A     L  ONE         ADD 1
082E 01 D400085E             STO   L  URWR        SAVE
0830 0  404E                 BSI      MER         PRINT                 SRC
0831 0  E006                 DC       /E006       ID E 6
0832 0  0001                 DC       /0001       FORM 1
0833 0  1010                 SLA      16          TERMINATE THIS DRIVE
0834 01 D5000858             STO   L1 TAPEC
0836 01 4C000890             BSC   L  MON07
                       *
                       *                   HAD A PREVIOUS ERROR
                       *
0838 01 C400085D       WRT05 LD    L  RWR         GET RECOV WRT CT
083A 01 84000833             A     L  ONE         ADD 1
083C 01 D400085D             STO   L  RWR         SAVE
083E 0  403C                 BSI      MLG         PRINT                 SRC
083F 0  A003                 DC       /A003       ID A 3
0840 0  0004                 DC       /0004       FORM 4
0841 0  70CC                 MDX      WRT02
                       *
                       *                   CONSTANTS
                       *
0842    0000                 BSS   E  0
0842 0  0402           ERAFN DC       /0402       ERASE IOCC
0843 0  0000                 DC       0
                       *
0844 1  0C12           WRIO  DC       IOA         WRITE IOCC
0845 0  0000                 DC       0
                       *
0846 0  0500           WRFNC DC       /0500       WRT FUNCTION
                       *
0847 0  2C13           WRIX6 DC       /2C13       CK DSW FOR CORCTABLE
0848 0  2F83           WRIX4 DC       /2F83       CK DSW FOR EXPECTED
0849 0  0003           K003  DC       3           CONSTANT 3
084A 0  0004           K004  DC       4           CONSTANT 4
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                       *
                       *                   RTN TO SET MLSCF ENTRY
                       *
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
084B 0  0000           STPST DC       0                                 SE
084C 01 C480084B             LD    I  STPST       GET FINAL RETURN
084E 0  D00E                 STO      CMEX+1      SAVE
084F 0  6A08                 STX    2 CMRT+1      SAVE IX 2
0850 0  6908                 STX    1 MONRT+1     SAVE IX 1
0851 0  C00C                 LD       FNLRT       GET ENTRY
0852 01 D400080A             STO   L  MLSCF+1     SET
0854 01 7401084B             MDX   L  STPST,1     INCR RETURN
0856 01 4C80084B             BSC   I  STPST       EXIT                  SX
                       *
                       *                   MONITOR RETURNS
                       *
0858 00 65000000       MONRT LDX   L1 0           RESTORE IX 1
085A 00 66000000       CMRT  LDX   L2 0           RESTORE IX 2
085C 00 4C000000       CMEX  BSC   L  0           BRANCH TO SAVED ADRS
085E 1  0858           FNLRT DC       MONRT       MLSCF ENTRY
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                       *
                       *                   ROUTINE TO REQUEST DEVICE
                       *
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
085F 0  0000           RQDEV DC       0                                 SE
0860 01 C4000812       RQ01  LD    L  EDIT        IS DEV ALREADY REQ
0862 0  4828                 BSC      +Z          SKIP = NO
0863 0  7006                 MDX      RQ02        YES
                       *********************************************
```


2400 INTERCHANGEABILITY AND SKEW FUNCTION TEST

```
0864 00 44800131             BSI   I  REQDV       REQUEST DEVICE      *
0866 1  086C                 DC       MTBSY       BUSY RETURN         *
0867 1  0812                 DC       EDIT        ADRS DDEF           *
0868 1  081C                 DC       MTIO        ADRS DVA            *
0869 1  0808                 DC       TERM        ADRS TERMINATOR     *
                       *********************************************
086A 01 4C80085F       RQ02  BSC   I  RQDEV       EXIT                  SX
                       *
                       *                   DEVICE IS BUSY
                       *
086C 0  40DE           MTBSY BSI      STPST       SET MLSCF ENTRY       SRC
086D 1  0860                 DC       RQ01
                       *********************************************
086E 00 4C80012D             BSC   I  START       GO TO MONITOR       *
                       *********************************************
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                       *
                       *                   ROUTINE TO RELEASE DEVICE
                       *
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
0870 0  0000           RLDEV DC       0                                 SE
0871 01 C4000812             LD    L  EDIT        GET DDEF
0873 0  4810                 BSC      -           IS DEVICE REQ
0874 0  7004                 MDX      RL01        NO
                       *********************************************
0875 00 44800132             BSI   I  RELDV       RELEASE DEVICE      *
0877 1  0812                 DC       EDIT        ADRS DDEF           *
0878 1  0808                 DC       TERM        ADRS TERMINATOR     *
                       *********************************************
0879 01 4C800870       RL01  BSC   I  RLDEV       EXIT                  SX
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                       *
                       *                   ROUTINE TO SET UP MSG
                       *
                       *XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
087B 0  0000           MLG   DC       0           LOG ENTRY             SE
087C 0  1010                 SLA      16          CLEAR ACCUM
087D 0  D022           MLG01 STO      ERRSW       SET IN ERROR SW
087E 0  7006                 MDX      LG01
                       *
087F 0  0000           MER   DC       0           ERROR ENTRY           SE
0880 0  C0FE                 LD       MER         GET RETURN
0881 0  D0F9                 STO      MLG         SAVE
0882 01 C4000833             LD    L  ONE         GET ONE
0884 0  70F8                 MDX      MLG01
                       *
0885 0  697D           LG01  STX    1 UNIT        SET UNIT IN MSG
0886 0  6B47                 STX    3 LG07+1      SAVE IX 3
0887 01 C480087B             LD    I  MLG         GET MSG ID
0889 0  6B28                 STX    3 LG04+1      SAVE IX 3
088A 0  D077                 STO      MSGID       SET IN MSG
088B 01 7401087B             MDX   L  MLG,1       INCR RETURN
088D 01 C480087B             LD    I  MLG         GET FORM NUMBER
088F 0  D009                 STO      LOGX0       SAVE
0890 0  1001                 SLA      1           REMOVE 0 BIT
0891 0  1801                 SRA      1
0892 0  D003                 STO      LG02+1      SET
0893 01 7401087B             MDX   L  MLG,1       INCR RETURN
0895 00 67000000       LG02  LDX   L3 0           IX 3 = FORM
0897 01 4F80089A             BSC   I3 FORMT       GO TO FORM
0899 0  0000           LOGX0 DC       0           FORM STORAGE
                       *
                       *                   FORM TABLE
                       *
089A 1  08A1           FORMT DC       FORM0       FORM NUMBER 0
089B 1  08BF                 DC       FORM1                   1
089C 1  08C6                 DC       FORM2                   2
089D 1  08CA                 DC       FORM3                   3
```

```
089E 1  0BF2            DC       FORM4                    4
089F 1  0BF6            DC       FORM5                    5
0BA0 0  0000      ERRSW DC       0          ERROR SW
                  *
                  *                FORM IS 0
                  *
0BA1 01 C4000833  FORM0 LD    L  ONE        GET 1
0BA3 0  D05C            STO      MSGO       SET AS WD CT
0BA4 0  COFB      LG03  LD       ERRSW      GET ERROR SW
0BA5 0  4820            BSC      Z          SKIP IF LOG
0BA6 0  700E            MDX      LG05       GO TO ERROR
0BA7 01 C4000802        LD    L  SW0        GET SW FNC 0
0BA9 0  100D            SLA      13
0BAA 0  4828            BSC      +Z         BRANCH = NO BYPASS
0BAB 0  7005            MDX      LG04       BYPASS LOG
                  ***********************************************
0BAC 00 4480012F        BSI   I  LOG        PRINT VIA LOG       *
0BAE 1  0C00            DC       MSGO       ADRS OF MSG         *
0BAF 1  0BBB            DC       PRBSY      BUSY RETURN         *
0BB0 0  0000            DC       0                              *
                  ***********************************************
0BB1 00 67000000  LG04  LDX   L3 0          RESTORE IX 3
0BB3 01 4C800B7B        BSC   I  MLG        EXIT                  SX
                  ***********************************************
0BB5 00 44800130  LG05  BSI   I  ERROR      PRINT VIA ERROR     *
0BB7 1  0C00            DC       MSGO       ADRS OF MSG         *
0BB8 1  0BBB            DC       PRBSY      BUSY RETURN         *
0BB9 1  0C0D            DC       LOOP       LOOP ON ERROR ADRS  *
                  ***********************************************
0BBA 0  70F6            MDX      LG04
                  *
                  *                BUSY RETURN
                  *
0BBB 0  408F      PRBSY BSI      STPST      SET MLSCF ENTRY       SRC
0BBC 1  0BA4            DC       LG03
                  ***********************************************
0BBD 00 4C80012D        BSC   I  START      GO TO MONITOR       *
                  ***********************************************
                  *
                  *                FORM IS ONE
                  *
0BBF 01 C4000834  FORM1 LD    L  LSDSW      GET DSW
0BC1 0  D042            STO      MOD0       SET IN MSG
0BC2 0  C002      LG06  LD       K002       GET 2
0BC3 0  D03C            STO      MSGO       SET AS WD CT
0BC4 0  70DF            MDX      LG03
0BC5 0  0002      K002  DC       2          CONSTANT 2
                  *
                  *                FORM IS TWO
                  *
0BC6 01 C40009C0  FORM2 LD    L  LSTFN      GET LAST FNC + MOD
0BC8 0  D03B            STO      MOD0       SET IN MSG
0BC9 0  70F8            MDX      LG06
                  *
                  *                FORM IS THREE
                  *
0BCA 01 C6000986  FORM3 LD    L2 VRWC+8     GET WD CT THIS REC
0BCC 0  D037            STO      MOD0       SET IN MSG
0BCD 00 67000000  LG07  LDX   L3 0          IX 3 = ADRS BAD WD
0BCF 01 C4000A5C        LD    L  RD06+1     GET IOA +1 +WD CT
0BD1 0  D005            STO      LG08+1     SET
0BD2 01 C40007FF        LD    L  PID        SET PARITY IGNORE
0BD4 00 D4000133        STO   L  CKCR
0BD6 00 C7000000  LG08  LD    L3 0          GET WD IN ERROR
0BD8 0  D02C            STO      MOD1       SET IN MSG
0BD9 0  1010            SLA      16         CLEAR PARITY IGNORE
0BDA 00 D4000133        STO   L  CKCR
0BDC 01 C4000AD4        LD    L  PTSV       GET EXPECTED DATA
```



```
0BDE 0  D027            STO      MOD2       SET IN MSG
0BDF 01 C4000AD3        LD    L  WDNO       GET WD NUMBER
0BE1 0  D025            STO      MOD3       SET IN MSG
0BE2 01 C6000985        LD    L2 VRWC+7     GET WD CT LAST REC
0BE4 0  D023      LG10  STO      MOD4       SET IN MSG
0BE5 01 F400097D        EOR   L  K500
0BE7 01 4C200BEC        BSC   L  LG09,Z     BRANCH IF OK
0BE9 01 C4000985        LD    L  VRWC+7     GET CORRECT WD CT
0BEB 0  70F8            MDX      LG10       GO SET
0BEC 0  C0AC      LG09  LD       LOGX0      GET FORM
0BED 0  1803            SRA      3          SAVE 0 BIT
0BEE 0  1003            SLA      3
0BEF 0  F01B            EOR      K006       SET WD CT = 6
0BF0 0  D00F            STO      MSGO       SET
0BF1 0  70B2            MDX      LG03
                  *
                  *                FORM IS FOUR
                  *
0BF2 01 C4000AD1  FORM4 LD    L  ERCT       GET ERROR CTRL
0BF4 0  D00F            STO      MOD0       SET IN MSG
0BF5 0  70CC            MDX      LG06
                  *
                  *                FORM IS FIVE
                  *
0BF6 0  6307      FORM5 LDX    3 7
0BF7 01 C700085A  LGAA  LD    L3 SRSCT      GET A COUNT
0BF9 01 D7000C03        STO   L3 UNIT       SET IN MSG
0BFB 0  73FF            MDX    3 -1         DECR IX 3
0BFC 0  70FA            MDX      LGAA       LOOP
0BFD 0  C00E            LD       K008       GET 8
0BFE 0  D001            STO      MSGO       SET AS WD CT
0BFF 0  70A4            MDX      LG03
                  *
                  *                MESSAGE STORAGE
                  *
0C00 0  0000      MSGO  DC       0          LINE NO-WD CT
0C01 0  0000            DC       0          HEX-DEC SW
0C02 0  0000      MSGID DC       0          MESSAGE ID
0C03 0  0000      UNIT  DC       0          UNIT NUMBER
0C04 0  0000      MOD0  DC       0          MSG MODIFIER 0
0C05 0  0000      MOD1  DC       0                       1
0C06 0  0000      MOD2  DC       0                       2
0C07 0  0000      MOD3  DC       0                       3
0C08 0  0000      MOD4  DC       0                       4
0C09 0  0000      MOD5  DC       0                       5
0C0A 0  0000      MOD6  DC       0                       6
                  *
                  *                CONSTANTS
                  *
0C0B 0  0006      K006  DC       6          CONSTANT 6
0C0C 0  0008      K008  DC       8          CONSTANT 8
                  *
                  *                LOOP ON ERROR ENTRY
                  *
0C0D 01 C4000801  LOOP  LD    L  RAD        GET RTN ADRS
0C0F 0  D001            STO      LOOP1+1    SAVE
0C10 00 4C000000  LOOP1 BSC   L  0          LOOP
0C12    03E9      IOA   BSS      1001       IOAREA
0FFB 0  0000      PEND  DC       0
0FFC    0869            END      MTBEG                        80B1078
```

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
ACMT	0832	0822,083A,0894
BEGIN	012C	07FF,0869
BSP	09A3	09B2,0A9E,0AAC,0B1E
BSPFN	09B6	09A7,09A8,09AE
BSYCT	0A0A	09F1,09F9
CKBSY	09E8	0987,0995,09A4,09AF,09C2,09CD,09F4,0A0D,0A20,0AEF, 0AFD,0B26
CKBS0	09E9	0A07
CKBS1	09F6	09EC,09EF
CKBS2	0A05	09F8,09FB
CKCR	0133	0A57,0A62,0BD4,0BDA
CMEX	085C	084E
CMRT	085A	084F
DSWFN	09E4	09D5,09D6,09D8
DSWXO	09E6	09D9,09DD,09DE,09E1,09F3
EDIT	0812	087E,088C,0926,0B60,0B67,0B71,0B77
END	012E	07FF,0889
EPA	0808	
ERAFN	0B42	0B22,0B23,0B25
ERCT	0AD1	0A0F,0A67,0A95,0A9A,0A9D,0AA2,0AA9,0AFA,0B0B,0B18, 0B1D,0BF2
ERROR	0130	07FF,0BB5
ERRSW	0BA0	0B7D,0BA4
ERSW	0AD5	0A14,0A64,0A85,0A94,0ADA
FNLRT	0B5E	0851
FORMT	089A	0897
FORM0	0BA1	089A
FORM1	0BBF	0B9B
FORM2	0BC6	0B9C
FORM3	0BCA	0B9D
FORM4	0BF2	0B9E
FORM5	0BF6	0B9F
INT	0A08	081F,084F,0990,09AA,09C8,09ED,09F2,09F6,0A18,0AF7
IOA	0C12	08D8,08E1,0959,0960,0A28,0AEB,0B44
IPA	0806	
K002	0BC5	0BC2
K003	0B49	0B19
K004	0B4A	0B1C
K005	0AD8	0ACB
K006	0C0B	0BEF
K008	0C0C	0BFD
K009	0AD6	0A97,0AA4
K010	0AD7	0AA7
K500	097D	08EB,096A,0BE5
LGAA	0BF7	0BFC
LG01	0B85	0B7E
LG02	0B95	0B92
LG03	0BA4	0B8C,0BC4,0BF1,0BFF
LG04	0B81	0B89,0BAB,0BBA
LG05	0B85	0BA6
LG06	0BC2	0BC9,0BF5
LG07	0BCD	0B86
LG08	0BD6	0BD1
LG09	0BEC	0BE7
LG10	0BE4	0BEB
LOG	012F	07FF,0BAC
LOGXO	0B99	0B8F,0BEC
LOOP	0C0D	0BB9
LOOP1	0C10	0C0F
LPA	0807	
LSDSW	0834	0829,0A36,0A77,0A80,0B06,0B10,0B8F
LSTFN	09C0	098F,09A9,09C7,0A1A,0AF5,0BC6
MER	0B7F	0840,09FC,0A7C,0A8E,0ADC,0B15,0B30,0B80
MLG	0B7B	089E,08A5,08B5,090A,0A72,0AC7,0B3E,0B81,0B87,0B8B, 0B8D,0B93,0BB3

MLG01	0B7D	0884
MLSCF	0809	0837,0853,0B52
MOD	08AC	0887,0932
MOD0	0C04	08C1,08C8,08CC,08F4
MOD1	0C05	08D8
MOD2	0C06	08DE
MOD3	0C07	08E1
MOD4	0C08	08E4
MOD5	0C09	
MOD6	0C0A	
MONAA	08C2	088E
MONAB	08BC	08C3
MONRT	0858	0850,085E
MON03	086C	0807,0851,098F
MON05	087E	0876,08A4
MON06	088E	0880,0885,08AB
MON07	0890	0847,0908,0914,0949,0979,0A03,0836
MON08	089E	087D
MON09	08A5	088D
MON10	08AD	0891
MON11	0894	08B1
MON12	08B2	08AE
MON13	08BB	0899,089D,08F5
MON15	08D4	08D0,0988
MON16	08D8	08D8
MON17	08DC	08ED
MON18	08DD	08E6
MON19	090F	0902
MON20	090A	0916
MON21	0917	090E,0944
MON22	0926	091C
MON23	093B	0925,0939
MON24	0947	0929,092E,093A
MON25	0948	08C6,08FA,098D
MON26	0959	095C
MON27	0955	0951,0968
MON28	0956	0965
MON29	095D	
MON30	08C4	
MON31	0979	0973
MSGID	0C02	08BA
MSGO	0C00	08A3,08AE,08B7,08C3,08F0,08FE
MTBEG	0869	0FFC
MTBSY	086C	0866
MTDSW	0830	0821,0823,0824,0825,0827,0828
MTEND	0864	0808,0867
MTI	081D	082D
MTIX0	0835	082A
MTIX1	0839	0836
MTIO	081C	0878,0886,091E,0930,0B68
MTI03	0836	0828
MTI04	082D	0838
MTI05	083A	0839
MTI06	083E	083D
MTRST	0848	0806,0855
NOEND	097C	08DF,095F
ONE	0833	0826,089A,08F8,0A32,0A42,0A6E,0A8A,0A9B,0AB9,0B01, 0B2C,0B3A,0B82,0BA1
PATC	0857	0871
PATT	097B	0872,08D2,08D6,0953,0A4F
PEND	0FF8	080C
PID	07FF	0868,0A55,0BD2
PRBSY	0BBB	0BAF,0BB8
PRPSS	085F	0882
PTSV	0AD4	0A51,0A59,0BDC
RAD	0801	0C0D
RD	0A0C	0962,0A6A
RDCT	0861	0A30,0A34

RDFNC	0A26	0A18
RDIO	0A28	0A19,0A1F
RDSW	0862	0898,08C4,08=D,0977
RDTXA	0A22	0A38
RDTXB	0A23	0A82
RDTXC	0A24	0A79
RDTXD	0A25	0A96
RDTXE	0AEB	0A47
RDTXF	0AEC	0AF7
RDTXH	0AED	0A3B
RDT7A	0AC2	0A2E,0AB8
RD00	0A13	0AA0,0AC0
RD01	0A2A	0A21
RD02	0A3B	0A87
RD03	0A45	0A44
RD04	0A51	
RD05	0A53	0A60
RD06	0A5B	0A48,08CF
RD07	0A5F	0AE9
RD08	0A61	0AE5
RD09	0A6C	0A69
RD10	0A6A	0A76,0A92
RD11	0A77	0A3A
RD12	0A87	0A83
RD13	0A88	0A7B,0AA5
RD16	0A93	0A66
RD17	0AA2	0A99
RD18	0AAA	
RD19	0AA8	0AB6
RD20	0AB3	0AAB,0ACC,0ACD,0ACE
RD21	0AB8	0AC5,0AC6,0AD0
RD22	0AC0	0ABD
RD23	0AC7	0AB2
RD24	0AD9	0A5D
RD25	0AE7	0AE4
RD26	0ADF	0A3D,0AE8
RECRD	085B	0A6C,0A70
RELDV	0132	07FF,0875
REQDV	0131	07FF,0864
RETRY	0AD2	0A11,0A2C,0ABB,0ABF
RID	0800	0870,08CA,094D
RLDEV	0870	0865,088E,093B,0947,0996,0980,09CE,0A2A,0B05,0B28, 0B79
RL01	0B79	0B74
RQDEV	085F	086C,0917,0992,09AC,09CA,0A1D,0AFB,0B24,0B6A
RQ01	0B60	0B6D
RQ02	0B6A	0B63
RST1	084B	084E
RTN0	09BE	086E
RTN1	09BA	08C8
RTN2	09BC	094C
RWD	0986	08CC,094B,09A1
RWDFN	0984	098D,098E,0994
RWDU	09C1	08FF,09D0
RWD01	0998	099C,09A0
RWD02	09A1	098A,099F
RWR	085D	0B38,0B3C
RWUFN	09B8	09C5,09C6,09CC
SNDSW	09D2	087A,088A,0922,0936,0998,09E2,09E9,0AAE
SNDS1	09D7	09E0
SNDS2	09D8	09DC
SRSCT	085A	08E7,09E9,08EF,0966,0968,096D,0BF7
START	012D	07FF,0945,0A08,0B6E,0B8D
STPST	0B4B	0942,0A05,0B4C,0B54,0B56,0B6C,0B8B
SW0	0802	08F6,0AE0,0BA7
SW1	0803	0895,08F1,096F
SW2	0804	0874,0881,0919,092A
SW3	0805	08CE,094F

TAPE0	0858	0845,0848,0879,0890,08A3,0904,0912,0920,093E,0975, 0988,09A5,09D3,09D3,0A01,0A16,0AF1,0B20,0B34
TAPE1	0859	0888,08AA,08AD,0906,0910,0934,0940
TERM	0808	0869,0878
UNIT	0C03	0885,08F9
URRD	085C	0A88,0A8C
URWR	085E	0B2A,0B2E
VRWC	097E	08C0,08DD,095D,0A40,0A49,0BCA,0BE2,0BE9
WDNO	0AD3	0A4D,0A53,0BDF
WRCT	0860	0AFF,0B03
WRFNC	0B46	0AF3
WRIO	0B44	0AF4,0AFC
WRIX4	0B48	0B08
WRIX6	0B47	0B12
WRT	0AEE	08E3,0B0E
WRT01	0AFB	0B29
WRT02	0B0E	0B41
WRT03	0B10	0B0A
WRT04	0B2A	0B14,0B1A
WRT05	0B38	0B0D

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1. PURPOSE

TO PROVIDE A MEANS WHEREBY THE 1800 DIAGNOSTIC MONITOR CAN PROVIDE PRINTOUTS IN ENGLISH FOR ALL DIAGNOSTIC MONITOR CONTROLLED PROGRAMS

2. REQUIREMENTS

THIS PROGRAM IS USED AS AN EXTENSION OF THE 1800 DIAGNOSTIC MONITOR. THIS PROGRAM MUST BE PLACED AS THE LAST PROGRAM IN THE CARD DECK TO BE LOADED INTO CORE. THE DIAGNOSTIC MONITOR AND ONE OR MORE TEST PROGRAMS MUST BE IN CORE AT THE TIME THIS PROGRAM IS LOADED. THIS PROGRAM MAY BE USED ONLY IF CARD IPL IS BEING USED, AND CANNOT BE STORED ON THE DISK USING THE DIMAL SYSTEM.

3. OPERATING PROCEDURE

PLACE THIS DECK AS THE LAST PROGRAM TO BE LOADED.
OTHERWISE STANDARD MONITOR LOADING AND OPERATING PROCEDURES APPLY.
REFER TO THE DIAGNOSTIC MONITOR DOCUMENTATION.

4. PRINTOUTS

NO PRINTOUTS ARE INITIATED BY THIS PROGRAM

5. COMMENTS

THE FIRST THREE CARDS IN THE ENGLISH MESSAGE DECK CONTAIN A SHORT PROGRAM. THE FUNCTIONS PERFORMED BY THIS PROGRAM ARE..

A. CHECK IF THE ENGLISH MESSAGE DECK LOADER SECTION OF THE MONITOR IS IN CORE (THIS SECTION OF MONITOR MAY BE OVERLAID BY TEST PROGRAMS).
B. IF THE ENGLISH DECK LOADER IS IN CORE TRANSFER CONTROL TO THAT SECTION.
C. IF THE ENGLISH DECK LOADER IS NOT IN CORE TRANSFER TO THE ENGLISH DECK INTERFACE SECTION OF MONITOR. THE INTERFACE SECTION WILL THEN PRINT A MESSAGE IDENTIFYING THIS CONDITION AND HALT AT AN ERROR WAIT.

THE REMAINING CARDS CONTAIN THE ENGLISH LANGUAGE MESSAGES. THESE CARDS ARE READ INTO CORE BY THE ENGLISH DECK LOADER IN THE MONITOR. ONLY THOSE MESSAGES WHICH APPLY TO PROGRAMS CURRENTLY IN CORE ARE RETAINED IN CORE.

THE FORMAT OF THESE CARDS IS AS FOLLOWS..

COLUMNS 1 THRU 70 CONTAIN THE CODE FOR THE ENGLISH MESSAGES.
COLUMN 71 CONTAINS A 12 BIT CHECK SUM.
COLUMN 72 IS BLANK
COLUMNS 73 THRU 75 CONTAIN THE PROGRAM IDENTIFICATION NUMBER.
COLUMNS 76 THRU 80 CONTAIN A CARD SEQUENCE NUMBER.

THE ENGLISH MESSAGES ARE CODED IN CARD COLUMNS 1 THRU 70 AS FOLLOWS..

THE FIRST COLUMN OF EACH MESSAGE IS A TERMINATOR (ALL ROWS PUNCHED). ROWS 12-5 OF THE SECOND COLUMN CONTAIN THE LAST TWO HEX DIGITS OF THE PID OF THE PROGRAM THE MESSAGE IS ASSOCIATED WITH. ROWS 6-9 OF THE SECOND COLUMN CONTAIN THE FIRST HEX DIGIT OF THE MESSAGE ID NUMBER (MID). THE THIRD COLUMN CONTAINS THE REMAINING THREE DIGITS OF THE MID. THE FOURTH COLUMN CONTAINS THE COUNT OF THE NUMBER OF CHARACTERS IN THE FIRST LINE TO BE PRINTED. THIS COUNT MUST BE EVEN AND IN THE RANGE OF 0 TO 60. SUBSEQUENT COLUMNS (COUNT/2) CONTAIN THE CODE FOR THE ENGLISH CHARACTERS—TWO CHARACTERS PER COLUMN. THE CODE USED IS THE 6 BIT CODE DESCRIBED BELOW. SUBSEQUENT LINES OF THE SAME MESSAGE BEGIN WITH THE CHARACTER COUNT (NO PID OR MID) FOLLOWED BY THE CHARACTER CODE. A SINGLE TERMINATOR MARKS THE END OF ONE MESSAGE AND THE BEGINNING OF THE NEXT. THE LAST MESSAGE IN THE LAST CARD ENDS WITH A TERMINATOR. LINES AND MESSAGES ARE PUNCHED IN CONTIGUOUS COLUMNS AND CARRY OVER FROM COLUMN 70 OF ONE CARD TO COLUMN 1 OF THE NEXT SO THAT ALL COLUMNS ARE USED.

6 BIT CHARACTER CODE

CHAR	BINARY	HEX	CHAR	BINARY	HEX
SPACE	000000	00	0	011001	19
0	000001	01	P	011010	1A
1	000010	02	Q	011011	1B
2	000011	03	R	011100	1C
3	000100	04	S	011101	1D
4	000101	05	T	011110	1E
5	000110	06	U	011111	1F
6	000111	07	V	100000	20
7	001000	08	W	100001	21
8	001001	09	X	100010	22
9	001010	0A	Y	100011	23
A	001011	0B	Z	100100	24
B	001100	0C	+	100101	25
C	001101	0D	-	100110	26
D	001110	0E	/	100111	27
E	001111	0F	*	101000	28
F	010000	10	(	101001	29
G	010001	11	)	101010	2A
H	010010	12	&	101011	2B
I	010011	13	.	101100	2C
J	010100	14	,	101101	2D
K	010101	15	≠	101110	2E
L	010110	16	=	101111	2F
M	010111	17	'	110000	30
N	011000	18	#	110001	31

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1. PURPOSE

THIS PROGRAM CHECKS THE 1442 CARD READ/PUNCH FOR CORRECT OPERATION.

2. PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 1,024 STORAGE WORDS.

3. USE PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY.

THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. CLEAR STORAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS
5. SELECT PROGRAM OPTIONS FROM,

   TABLE 0 PROGRAM CONTROL FUNCTION
   TABLE 1 ROUTINE SELECT FUNCTION
   TABLE 2 DEVICE SELECTION

6. INSTRUCT MONITOR TO EXECUTE

TABLE 0 CONTROL FUNCTION

SENSE/PROGRAM SWITCHES 0 1 2 3 4 5 6 7	
	1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1.
	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
	3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
0 0 0 0 1 1 1 1	4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	DESCRIPTION
. . . . . 1	BYPASS LOG PRINTOUT
. . . . . 1	TYPE ALL ERRORS FOR EACH CARD READ
. . . . . 1	START PROGRAM (SEE NOTES BELOW)
1	USE DELAY BETWEEN I/O COMMANDS

NOTES

DATA ENTRY SWITCH 8 MUST BE SET ON WITH OTHER DESIRED OPTIONS IN FUNCTION 00. BIT 8 BEING SET ON IS AN INDICATION THAT THE PUNCH HAS BEEN CLEARED OF OTHER DIAGNOSTICS THAT MIGHT FOLLOW THE 1442 DIAGNOSTIC. SWITCH 8 NEED BE SET ONLY DURING INITIAL EXECUTION. PLACE SOME BLANKS IN HOPPER AND MAKE RDY.

IF A ROUTINE IS NOT SELECTED, ROUTINES 1 THRU 7 WILL EXECUTE SEQUENTIALLY AND THE PROGRAM WILL BE TERMINATED AFTER ROUTINE 7 IS COMPLETED.

IF A PARTICULAR ROUTINE HAS BEEN SELECTED FOR OPERATION, THE PROGRAM WILL CHECK STORAGE PROTECT FEATURE IN ROUTINE 1. AFTER THAT IT WILL IMMEDIATELY BRANCH TO THE SELECTED ROUTINE AFTER STARTING. AFTER THE SELECTED ROUTINE IS FINISHED, THE PROGRAM WILL LOOP UNTIL ANOTHER ROUTINE HAS BEEN SELECTED AND WILL EXECUTE THE SELECTED ROUTINE.

WHEN LAST CARD SEQUENCE IS INDICATED THE PROGRAM WILL FINISH THAT ROUTINE. IT WILL THEN GO TO THE NEXT ROUTINE. IT IS NOT NECESSARY TO PRESS NPRO.

VARIOUS PRINTOUTS WILL OCCUR WHILE THE PROGRAM IS OPERATING. REFER TO PARAGRAPH 4, PRINTOUTS, FOR DETAILED INFORMATION.

TABLE 1 ROUTINE SELECT FUNCTION

```
*************************   1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1.
*   SENSE/PROGRAM       *   2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7       *   3. SET IN DESIRED ROUTINE IN DATA ENTRY SWITCHES 12-15.
*                       *   4. PRESS CONSOLE INTERRUPT.
* 0 1 0 0 1 1 1 1       *
*                       *
*************************************************************************************
*           DATA ENTRY SWITCHES             * DESCRIPTION                           *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *                                           *
*                                 0  0  0.. RUN ALL ROUTINES SEQUENTIALLY           *
*                                 0  0  1.. ROUTINE 1- CHECK STATUS                 *
*                                 0  1  0.. ROUTINE 2-FEED AND PUNCH CARDS          *
*                                 0  1  1.. ROUTINE 3-READ 8-8 AND CHECK (PACKED)   *
*                                 1  0  0.. ROUTINE 4-READ 12 BITS PER COLUMN       *
*                                 1  0  1.. ROUTINE 5-PUNCH 40 COLUMNS              *
*                                 1  1  0.. ROUTINE 6-READ 40 COLUMNS AND PUNCH     *
*                                 1  1  1.. ROUTINE 7-PUNCH SUPPLIED DATA           *
*                                                                                   *
*************************************************************************************
```

TABLE 2 DEVICE SELECTION

```
*************************   1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.
*   SENSE/PROGRAM       *   2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7       *   3. SET MODE OF OPERATION IN DATA ENTRY SWITCHES 6-15.
*                       *   4. PRESS CONSOLE INTERRUPT.
* 1 0 0 0 1 1 1 1       *
*                       *
*************************************************************************************
*           DATA ENTRY SWITCHES             * DESCRIPTION                           *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *                                           *
*                                                                                   *
*   1.................................. SELECT SECOND DEVICE                       *
*                                                                                   *
*************************************************************************************
```

3.3 PROGRAM TERMINATION

THE PROGRAM WILL TERMINATE AUTOMATICALLY AFTER ROUTINE 7 IS COMPLETED OR IT MAY BE TERMINATED BY DESELECTING IT.

4. PRINTOUTS

THIS PROGRAM FOLLOWS THE PRINTOUT FORMAT ESTABLISHED BY THE 1800 DIAGNOSTIC MONITOR. REFER TO SECTION 4. PRINTOUTS, OF THE DIAGNOSTIC MONITOR DOCUMENTATION.

4.1 STATUS MESSAGES

PID MID RID RAD MOD1

0F00 A001 000R XXXX DEAD

THIS PRINTOUT INDICATES THAT THE LAST CARD INDICATOR WAS ON WHEN THE 1442'S DSW WAS SENSED. THE PROGRAM WILL FINISH THAT ROUTINE AND GO TO THE NEXT ROUTINE OR LOOP IF THAT ONE HAS BEEN SELECTED.

4.2 COMMAND MESSAGES

PID MID RID RAD MOD1

0F00 C001 0001 XXXX A0A0

THIS PRINTOUT INSTRUCTS THE OPERATOR TO SET DATA ENTRY SWITCH 8 ON AND ANY OTHER DESIRED OPTIONS TO BE SELECTED AT THIS TIME UNDER FUNCTION 00 AFTER HE HAS VERIFIED THAT THE PUNCH IS CLEAR. THIS IS A SAFETY CHECK TO PREVENT THE ACCIDENTAL PUNCHING OF PROGRAMS THAT MAY FOLLOW THE 1442 FUNCTION TEST. AFTER THE 1442 IS CLEAR OF DIAGNOSTICS PLACE SOME BLANKS IN THE HOPPER AND MAKE READY.

0F00 C002 000R XXXX FEED

WHEN THIS PRINTOUT OCCURS PROCEED AS FOLLOWS. PLACE BLANK CARDS IN THE HOPPER AND MAKE READY.

0F00 C003 000R XXXX A1DE

THIS PRINTOUT INDICATES THE 1442 IS NOT READY.

0F00 C004 0007 XXXX ABCD

THIS PRINTOUT REQUESTS OPERATOR TO PLACE IN 1442 HOPPER A CARD PUNCHED WITH WHATEVER PATTERN THE OPERATOR DESIRES, FOLLOWED BY A DECK OF BLANK CARDS, AND TO MAKE THE 1442 READY.

0F00 C005 000R XXXX FED2

THIS PRINTOUT INDICATES THAT THE PUNCHED CARDS ARE TO BE TAKEN OUT OF STACKER AND PLACED IN THE HOPPER. THEN MAKE THE 1442 READY. IGNORE ANY BLANK CARDS IN THE STACKER.

4.3 ERROR MESSAGES

PID MID RID RAD MOD1 MOD2 MOD3 MOD4 MOD5 MOD6 MOD7

0F00 E001 000R XXXX 1CED

THIS ERROR PRINTOUT INDICATES THAT NO INTERRUPT WAS RECEIVED AFTER A READ, FEED, OR PUNCH COMMAND WAS INITIATED. THE PROGRAM WILL CONTINUE TO OPERATE AFTER THE PRINTOUT OCCURS.

0F00 E002 000R XXXX AD00

THIS ERROR PRINTOUT INDICATES THE 1442 WAS BUSY WHEN ITS DSW WAS SENSED.

0F00 E003 000R XXXX B1EE ZZZZ 0000

THIS ERROR PRINTOUT INDICATES A DSW ERROR OCCURRED. B1EE STANDS FOR 'BITS IN ERROR', ZZZZ IS THE ERROR DSW, AND LAST WORD IS THE EXPECTED DSW.

0F00 E004 000R XXXX CDEE ZZZZ YYYY CCXX

THIS ERROR PRINTOUT INDICATES AN ERROR WHEN COMPARING DATA READ WITH DATA PREVIOUSLY PUNCHED. CDEE STANDS FOR CARD IN ERROR. ZZZZ REPRESENTS THE DATA READ. YYYY REPRESENTS THE CORRECT DATA. CCXX REPRESENTS THE CARD COLUMN WHERE THE ERROR OCCURRED. IN THE CASE OF ROUTINE 3, THE ERROR MAY BE IN THE COLUMN BEFORE, BECAUSE OF READING IN PACKED MODE.

0F00 E005 000R XXXX A1EE

THIS PRINTOUT INDICATES A PARITY ERROR IN THE BIT CONFIGURATION ON THE BUS.

0F00 E006 0001 XXXX CODE

THIS PRINTOUT INDICATES THAT THE STORAGE PROTECT BIT IN THE DSW FAILED AFTER A READ OPERATION.

0F00 E007 000R XXXX BADO

THIS PRINTOUT WILL INDICATE THAT THE DEVICE WAS RELEASED WHEN IT HAD BEEN PREVIOUSLY RELEASED. THE PROGRAM WILL CONTINUE TO RUN.

0F00 E008 000R XXXX FDCC

THIS PRINTOUT INDICATES A FEED CHECK AT THE READ STATION. NPRO AND RELOAD CARDS TO SEE I F IT IS FALSE OR VALID.

5. COMMENTS

NORMAL PROGRAM OPERATION-

IF A ROUTINE IS NOT SELECTED IN TABLE 1, ROUTINES 1-7 WILL EXECUTE SEQUENTIALLY. AT THE END OF EACH ROUTINE, THE CUSTOMER ENGINEER HAS AN OPTION TO EITHER CONTINUE TO RUN IN THAT ROUTINE OR PROCEED TO THE NEXT ROUTINE. AT THE END OF EACH ROUTINE, THE PROGRAM WILL PRINT OUT A MESSAGE (1442 NOT READY). IF THE HOPPER IS LEFT EMPTY AND THE 1442 START KEY IS PRESSED, THE PROGRAM WILL PROCEED TO THE NEXT ROUTINE. IF CARDS ARE PLACED IN THE HOPPER AND THE 1442 START KEY IS PRESSED, THE PROGRAM WILL CONTINUE TO RUN IN THAT SAME ROUTINE.

IF A DELAY BETWEEN I/O COMMANDS IS DESIRED SET BIT 0 ON O F CONTROL FUNCTION AND THIS WILL ALLOW THE CLUTCH TO LATCH UP. WITH THE CARD STARTING AND STOPING IT WILL SHOW UP PROBLEMS OF WEAK OR WORN BELTS, LOOSE SET SCREWS, AND OTHER LINKAGE ASSOCIATED WITH THE CARD TRANSPORT.

5.1 ROUTINE 1

ROUTINE 1 CHECKS DIFFERENT FEATURES THAT ARE NOT CHECKED ELSEWHERE IN THE PROGRAM. AT THE BEGINNING, BIT 8 OF FUNCTION 00 MUST BE SET TO INDICATE THE PUNCH IS CLEAR OF OTHER DIAGNOSTICS AND READY TO BEGIN THE TEST. A STORAGE PROTECT BIT IS SET AND A CARD IS READ TO CHECK THE STORAGE PROTECT FEATURE FOR CORRECT OPERATION. AFTER THIS IS COMPLETED THE PROGRAM WILL PROCEED.

5.2 ROUTINE 2

ROUTINE 2 CHECKS FEEDING, PUNCHING, AND STACKING. THE CARDS ARE PUNCHED FROM A PATTERN STORED IN CORE STORAGE. ONLY THE CARDS PUNCHED ARE PLACED IN STACKER NO. 2.

5.3 ROUTINE 3

ROUTINE 3 READS, IN PACKED MODE (8-8), THE CARDS THAT WERE PUNCHED BY ROUTINE 2. TWO CARD COLUMNS ARE STORED IN ONE STORAGE LOCATION. THE ODD NUMBERED COLUMN (DIGITS 12 THROUGH 5) IS PLACED IN BIT POSITIONS 8 THROUGH 15 OF A STORAGE LOCATION, AND THE EVEN NUMBERED COLUMN (DIGITS 12 THROUGH 5) IS PLACED IN BIT POSITIONS 0 THROUGH 7. ALL DATA ARE CHECKED AGAINST THE DATA FROM WHICH THEY WERE PUNCHED. IF AN ERROR IS FOUND, A PRINTOUT OCCURS AND THE CARD IS SELECTED INTO STACKER NO.2. THE ERROR PRINTOUT CONTAINS THE PID, MESSAGE ID NUMBER, ROUTINE ID NUMBER, ROUTINE ADDRESS, BITS IN ERROR, THE CORRECT BITS, AND THE CARD COLUMN IN WHICH THE ERROR OCCURRED. IN THE CASE OF 8-8 FORMAT THE COLUMN PRINTOUT IS EVEN, WHICH WOULD INDICATE THAT THE ODD COLUMN BEFORE IT OR THAT EVEN COLUMN WAS IN ERROR.

5.4 ROUTINE 4

ROUTINE 4 READS IN STANDARD MODE (I E., ONE COLUMN PER WORD). DIGITS 12 THROUGH 9 OF THE CARD ARE PLACED IN BITS 0 THROUGH 11. BITS 12 THROUGH 15 ARE LEFT BLANK. THE DATA READ ARE CHECKED AGAINST THE DATA FROM WHICH THEY WERE PUNCHED. (AS IN ROUTINE 3).

5.5 ROUTINE 5

ROUTINE 5 PUNCHES THE FIRST 40 COLUMNS OF A CARD. THE CARDS PUNCHED BY ROUTINE 5 ARE USED BY ROUTINE 6 FOR A READ AND PUNCH TEST.

5.6 ROUTINE 6

ROUTINE 6 READS THE CARDS THAT WERE PUNCHED BY ROUTINE 5 AND CHECKS THE DATA READ AGAINST WHAT SHOULD HAVE BEEN PUNCHED. I F AN ERROR IS DETECTED, THE ERROR CARD WILL BE SELECTED IN STACKER 2 AND AN E004 PRINTOUT WILL OCCUR. AFTER THE DATA IS CHECKED, THE FIELD IS REVERSED (I.E.,COLUMN 1 IS PLACED IN COLUMN 80, COLUMN 2 IS PLACED IN COLUMN 79, ETC). AFTER THE FIELD-REVERSING OPERATION AND AFTER THE READ AREA HAS BEEN CLEARED, A PUNCH COMMAND IS INITIATED THAT CAUSES THE LAST 40 COLUMNS TO BE PUNCHED. THIS ROUTINE DOES NOT AUTOMATICALLY CHECK THE PUNCHING OPERATION. HOWEVER, BY FOLDING EACH CARD PUNCHED BY THIS ROUTINE IN HALF (FOLDED BETWEEN COLUMNS 40 AND 41, THE PUNCHES MAY BE ALIGNED. EXCEPT FOR THE LAST CARD, EACH CARD SHOULD BE PUNCHED THE SAME.

5.7 ROUTINE 7

ROUTINE 7 READS A CARD THAT HAS BEEN PUNCHED WITH SOME PATTERN THAT HAS FAILED OR CAUSED PUNCH CHECKS. THIS DATA IS THEN PUNCHED INTO BLANK CARDS THAT FOLLOW. IF THIS ROUTINE IS LOOPED, A NEW PATTERN MAY BE USED AFTER THE LAST CARD INDICATOR HAS COME ON. THE PUNCHING IS NOT CHECKED BY THE PROGRAM, BUT MAY BE CHECKED VISUALLY BY THE OPERATOR.

6 APPENDIX

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:
1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (UES HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN..

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES:
1. AN "E" IN COLUMN 1.
2. THE PID FOR THIS PROGRAM (COL. 2-3).
3. A TERMINATOR WORD OF "FFFF" (COL. 7-10).

																	1442-1 DDEF ENTRY 1					1442-2 DDEF ENTRY 2																																																					
		PROGRAM I.D.					CARD SEQUENCE NUMBER					NUMBER OF EDIT ENTRIES ENTER EITHER A "1" OR A "2"					INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL NO.		INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL NO.																																																			
COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					26					31					36					41					46					51					56					61					66					71				
CARD 0	E	0	F	0	0	▨	E	D	0	0	▨	0	0	0		▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨				
END	E	0	F	0	0	▨	F	F	F	F	▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨				
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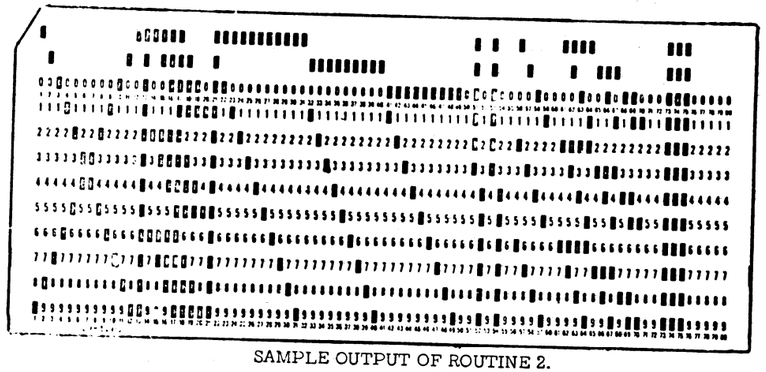
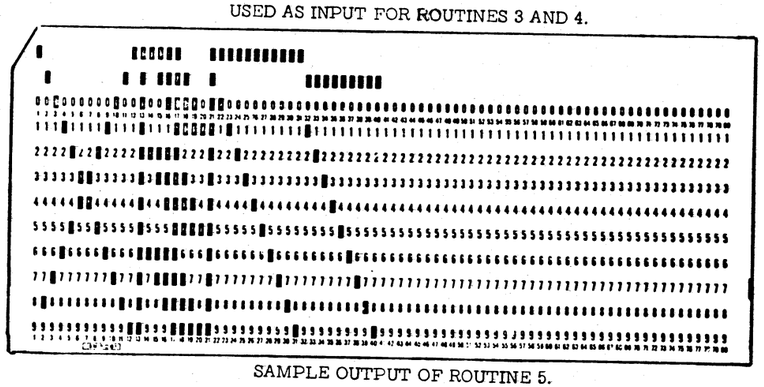
						▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨					▨				

CARD 0 CONTAINS THE DDEF'S FOR THE 1442'S. IF THIS SYSTEM HAS ONLY ONE 1442, THEN ONLY ONE DDEF ENTRY IS REQUIRED IN THIS CARD.

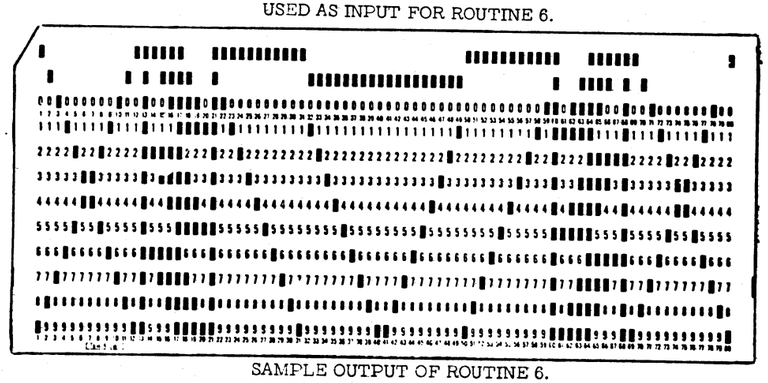
CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.



SAMPLE OUTPUT OF ROUTINE 2.
USED AS INPUT FOR ROUTINES 3 AND 4.



SAMPLE OUTPUT OF ROUTINE 5.
USED AS INPUT FOR ROUTINE 6.



SAMPLE OUTPUT OF ROUTINE 6.
FIGURE 1
1442 SAMPLE OUTPUTS

```
0000                    ORG     *&2047                                          80F00000
012C                BEGIN EQU   300                                             80F00010
012D                START EQU   BEGIN&1                                         80F00020
012E                END   EQU   START&1                                         80F00030
012F                LOG   EQU   END&1                                           80F00040
0130                ERROR EQU   LOG&1                                           80F00050
0131                REQDV EQU   ERROR&1                                         80F00060
0132                RELDV EQU   REQDV&1                                         80F00070
0133                CRCK  EQU   RELDV&1                                         80F00080
                    *                                                           80F00090
                    *                                                           80F00100
                    ********************************************              80F00110
                    *                                                           80F00120
                    *                                                           80F00130
                    ***** PST     PROGRAM STATUS TABLE **********               80F00140
                    *                                                           80F00150
07FF 0 0F00         PID   DC      /0F00       PID                               80F00160
0800 0 0000         RID   DC      /0000       ROUTINE NUMBER                    80F00170
0801 0 0000         RAD   DC      /0000       ROUTINE ADDR                      80F00180
0802 0 0000         SW0   DC      /0000       BIT SW FUNC 0                     80F00190
0803 0 0000         SW1   DC      /0000                   1                     80F00200
0804 0 0000         SW2   DC      /0000                   2                     80F00210
0805 0 0000         SW3   DC      /0000                   3                     80F00220
0806 1 0829         ILP   DC      RT0         INITIALIZATION ADDR               80F00230
0807 1 0829         LPA   DC      RT0         LOOP PROGRAM ADDR                 80F00240
0808 1 09D1         EPA   DC      RTEND       END PROG ADDR                     80F00250
0809 0 0000         MLSCF DC      /0000       1ST MLSCF NORMAL                  80F00260
080A 0 0000               DC      /0000       2ND MLSCF BUSY                    80F00270
080B 0 0000               DC      /0000       3RD MLSCF TEST INTR               80F00280
080C 0 FFFF         TERM  DC      /FFFF       TERMINATOR                        80F00290
080D 1 0C6A               DC      PEND                                          80F00300
080E 0 0000               DC      /000                                          80F00310
080F 0 0000               DC      /000                                          80F00320
0810 0 0000               DC      /000                                          80F00330
0811 0 0000               DC      /0000       ON-LINE SWITCH                    80F00340
0812 0 0000               DC      /0000       COMPATIBILITY SWITCH              80F00350
                    *                                                           80F00360
0813 0 0000         EDIT1 DC      /0000       RDR-PCH 1 DDEF                    80F00370
0814 0 0000         EDIT2 DC      /0000       RDR-PCH 2 DDEF                    80F00380
                    *                                                           80F00390
0815 0 0000         EDIT  DC      /0000       INTR AND CHAN USED                80F00400
                    *                                                           80F00410
                    *                                                           80F00420
                    *****         IDENTIFY INTERRUPT ROUTINE*****               80F00430
                    *                                                           80F00440
0816 0 0000               DC      /0000       INTERRUPT SWITCH                  80F00450
0817 0 0000         RPDVA DC      /0000       AREA CODE AND MOD                 80F00460
                    *                                                           80F00470
0818 0 0000         DSW4A DC      /0000       ADDR OF RETURN          SE        80F00480
0819 1 0C00 0B38          XIO   L SENSE       SENSE DSW                         80F00490
081B 0 1000         KEEP3 NOP               USE FOR TRAP                      80F00500
081C 1 F400 09D8          EOR   L CNTL        CK FOR OP COMPLETE                80F00510
081E 1 D400 0B60          STO   L WAS         SAVE DSW BITS                     80F00520
0820 1 6700 0A9F          LDX   L3 IRECD                                        80F00530
0822 1 6F00 0809          STX   L3 MLSCF      SET MLSCF ENTRY                   80F00540
0824 1 4C80 0818          BSC   I  DSW4A                              SX        80F00550
                    *                                                           80F00560
                    *****         STARTER ROUTINE ***************               80F00570
                    *                                                           80F00580
                    *                                                           80F00590
0826 0 4480 0I2C    GO    BSI   I  BEGIN      CALL MONITOR                      80F00600
0828 1 07FF               DC      PID         ADDR OF PST                       80F00610
                    *                                                           80F00620
                    ********************************************              80F00630
                    *                                                           80F00640
                    *****         RTO INITIALIZATION ************              80F00650
                    *                                                           80F00660
                    *                                                           80F00670
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0829 0 0000         RTO   DC      /0000                               E       80F00680
                    *                                                           80F00690
082A 0 C0D9               LD      SW2         DEVICE SELECTION                  80F00700
082B 0 180E               SRA     14                                            80F00710
082C 1 4C04 0830          BSC   L NBTWO,E     BCH ON BIT 1                      80F00720
082E 0 C0E4               LD      EDIT1       RDR-PCH 1 DDEF                    80F00730
082F 0 7001               MDX     XX                                            80F00740
                    *                                                           80F00750
0830 0 C0E3         NBTWO LD      EDIT2       RDR-PCH 2 DDEF                    80F00760
0831 0 D0E3         XX    STO     EDIT        DDEF CONTORL                      80F00770
                    *                                                           80F00780
0832 0 4480 0131    CALL  BSI   I REQDV       REQUEST DEVICE                    80F00790
                    *                                                           80F00791
0834 1 0848               DC      BSY         BUSY ADDRESS                      80F00792
0835 1 0815               DC      EDIT        ADDR INTR AND CHAN                80F00793
0836 1 0817               DC      RPDVA       ADDR AREA CODE                    80F00794
0837 1 080C               DC      TERM        TERMINATOR                        80F00795
                    *                                                           80F00800
0838 0 620D               LDX     2 13        LOAD XR 2                         80F00810
0839 1 C600 0B2E    BUILD LD    L2 FDACD      LOAD FUNCTION                     80F00820
083B 0 E8DB               OR      RPDVA       AREA CODE                         80F00830
083C 1 D600 0B2E          STD   L2 FDACD      SET IN I/O COMMAND                80F00840
083E 0 72FE               MDX     2 -2        ADJ XR 2                          80F00850
083F 0 70F9               MDX     BUILD                                         80F00860
                    *                                                           80F00870
0840 1 4400 0A3E          BSI   L RPREL       RELEASE DEVICE          SC        80F00880
                    *                                                           80F00890
0842 1 CC00 0B1E          LDD   L RID1        RT NUMBER AND ADDR                80F00900
0844 1 4400 0A86          BSI   L RTU         USE UPDATE ROUTINE      SC        80F00910
0846 1 4C80 0829          BSC   I RTO         RETURN                   X        80F00920
                    *                                                           80F00930
0848 1 6500 0832    BSY   LDX   L1 CALL       GET MLSCK ENTRY                   80F00931
084A 1 6D00 0809          STX   L1 MLSCF      SET MLSCF ENTRY                   80F00933
084C 0 4C80 012D          BSC   I  START       RETURN TO MONITOR                80F00935
                    *                                                           80F00940
084E 1 CC00 0B1E    SET1  LDD   L RID1        RT NUMBER AND ADDR                80F00950
0850 1 4400 0A86          BSI   L RTU         USE UPDATE ROUTINE      SC        80F00960
0852 0 4C80 012D          BSC   I START       RETURN TO MONITOR                 80F00970
                    *                                                           80F00980
                    ********************************************              80F00990
                    *                                                           80F01000
                    *****         ROUTINE 1-  CHECK STATUS ******               80F01010
                    *                                                           80F01020
                    *                                                           80F01030
0854 0 C0AD         RT1   LD      SW0         BIT SWITCH STORAGE      E         80F01040
0855 0 1008               SLA     8                                             80F01050
0856 1 4C28 0867          BSC   L RT1B,&Z     BCH ON MINUS                      80F01060
0858 1 CC00 0B3E          LDD   L MSTAR       MSG- SET BIT 8 FN 00              80F01070
085A 1 4400 0A28          BSI   L TYPE        USE TYPE ROUTINE                  80F01080
                    *                                                           80F01090
085C 1 C400 0802    RT1A  LD    L SW0         BIT SWITCH STORAGE                80F01100
085E 0 1008               SLA     8                                             80F01110
085F 1 4C28 0867          BSC   L RT1B,&Z     BCH ON MINUS                      80F01120
                    *                                                           80F01130
0861 1 6500 085C          LDX   L1 RT1A       GET MLSCF                         80F01140
0863 1 6D00 0809          STX   L1 MLSCF      SET MLSCF                         80F01150
0865 0 4C80 012D          BSC   I  START       RETURN TO MONITOR        SC      80F01160
                    *                                                           80F01170
0867 1 4400 0A13    RT1B  BSI   L KNOW        CHECK BIT SWITCHES      SC        80F01180
0869 1 7400 0811          MDX   L TERM&5,0    ON-LINE SW SET                    80F01186
086B 0 700E               MDX     RT1C        * YES                             80F01188
086C 1 2C41 0BB6          STS   L RAREA,/41   SET STG PROTECT                   80F01190
086E 1 4400 0A4E          BSI   L RPREQ       ROUTINE REQUEST         SC        80F01200
0870 1 0C00 0B36          XIO   L READX       READ TO CK STG PROT               80F01210
0872 1 4400 0A8E          BSI   L RTL         USE TIMING LOOP         SC        80F01220
                    *                                                           80F01230
0874 1 2C40 0BB6          STS   L RAREA,/40   REMOVE STG PROTECT                 80F01240
0876 1 CC00 0B52          LDD   L MSPV        MSG- STG PROT VIOL                80F01250
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0878 1 4400 0A28          BSI  L  TYPE       USE TYPE ROUTINE      SC   80F01260
087A 1 4400 0A4E  RT1C    BSI  L  RPREQ      REQUEST DEVICE        SC   80F01270
087C 1 0C00 0B38          XIO  L  SENSE      SENSE DSW                  80F01280
087E 1 4C04 0B0B          BSC  L  NRDY,E     BCH ON NOT READY      SC   80F01290
0880 1 4400 0A3E          BSI  L  RPREL      RELEASE DEVICE        SC   80F01300
0882 1 CC00 0B22          LDD  L  RIDX       RT NUMBER AND ADDRE        80F01310
0884 1 4400 0A86          BSI  L  RTU        USE UPDATE ROUTINE    SC   80F01320
0886 0 4C80 012D          BSC  I  START      RETURN TO MONITOR     X    80F01330
                     *                                                  80F01340
0888 1 CC00 0B20  SET2    LDD  L  RID2       RT NUMBER AND ADDR    SC   80F01350
088A 1 4400 0A86          BSI  L  RTU        USE UPDATE ROUTINE    SC   80F01360
088C 0 4C80 012D          BSC  I  START      RETURN TO MONITOR     X    80F01370
                     *                                                  80F01380
                     ********************************************       80F01390
                     *                                                  80F01400
                     *****          ROUTINE 2- FD A CARD OR PUNCH *     80F01410
                     *                                                  80F01420
                     *                                                  80F01430
088E 1 CC00 0B40  RT2     LDD  L  MFEED      MSG- LOAD BLANKS      E    80F01440
0890 1 4400 0A28          BSI  L  TYPE       USE TYPE ROUTINE      SC   80F01450
                     *                                                  80F01460
0892 1 C400 0B63  RT2A    LD   L  WA40                                    80F01470
0894 1 D400 0B8D          STO  L  WAREA&39   REMOVE TERMINATOR            80F01480
                     *                                                  80F01490
0896 1 4400 0A4E          BSI  L  RPREQ      REQUEST DEVICE        SC   80F01500
0898 1 0C00 0B2E          XIO  L  FDACD      FEED A CARD                 80F01510
089A 1 4400 0A8E          BSI  L  RTL        USE TIMING LOOP       SC   80F01520
089C 0 7001               MDX       RT2B                              80F01530
089D 0 7011               MDX       SKIP                              80F01540
                     *                                                  80F01550
089E 1 0C00 0B3A  RT2B    XIO  L  STACK      SELECT STACKER              80F01560
08A0 1 4400 0A4E          BSI  L  RPREQ      ROUTINE REQUEST             80F01570
08A2 1 0C00 0B30          XIO  L  PUNCH      PUNCH COMMAND               80F01580
08A4 1 4400 0A8E          BSI  L  RTL        USE TIMING LOOP       SC   80F01590
08A6 0 7001               MDX       RT2C                              80F01600
08A7 0 7007               MDX       SKIP                              80F01610
                     *                                                  80F01620
08A8 1 4400 0A4E  RT2C    BSI  L  RPREQ      REQUEST DEVICE        SC   80F01630
08AA 1 0C00 0B2E          XIO  L  FDACD      FEED A CARD                 80F01640
08AC 1 4400 0A8E          BSI  L  RTL        USE TIMING LOOP       SC   80F01650
08AE 0 70E3               MDX       RT2A     REPEAT CYCLE                80F01660
                     *                                                  80F01670
08AF 1 4400 0A0A  SKIP    BSI  L  FDLCD      FEED LAST CARD        SC   80F01680
08B1 1 4400 0A13          BSI  L  KNOW       CHECK BIT SWITCHES    SC   80F01690
                     *                                                  80F01700
08B3 1 CC00 0B24  SET3    LDD  L  RID3       RT NUMBER AND ADDR          80F01710
08B5 1 4400 0A86          BSI  L  RTU        USE TIMING LOOP       SC   80F01720
08B7 0 4C80 012D          BSC  I  START      RETURN TO MONITOR     X    80F01730
                     *                                                  80F01740
                     ********************************************       80F01750
                     *                                                  80F01760
                     *****          ROUTINE 3- READ 8-8 & CHECK ***     80F01770
                     *                                                  80F01780
                     *                                                  80F01790
08B9 1 CC00 0B46  RT3     LDD  L  MFED2      MSG- LOAD FROM STK 2        80F01800
08BB 1 4400 0A28          BSI  L  TYPE       USE TYPE ROUTINE      SC   80F01810
                     *                                                  80F01820
08BD 1 4400 0A4E  RT3A    BSI  L  RPREQ      ROUTINE REQUEST             80F01830
08BF 1 0C00 0B36          XIO  L  READX      READ 8-8  PACKED            80F01840
08C1 1 4400 0A8E          BSI  L  RTL        USE TIMING LOOP       SC   80F01850
08C3 0 700A               MDX       CHEC                              80F01860
08C4 1 4400 0A0A          BSI  L  FDLCD      FEED LAST CARD        SC   80F01870
08C6 1 4400 0A13          BSI  L  KNOW       CHECK BIT SWITCHES    SC   80F01880
                     *                                                  80F01890
08C8 1 CC00 0B26  SET4    LDD  L  RID4       RT NUMBER AND ADDR          80F01900
08CA 1 4400 0A86          BSI  L  RTU        USE UPDATE ROUTINE    SC   80F01910
08CC 0 4C80 012D          BSC  I  START      RETURN TO MONITOR     X    80F01920
                     *                                                  80F01930
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08CE 0 62AF       CHEC  LDX    2 -81      WAREA COL CTR               80F01940
08CF 0 63D8             LDX    3 -40      RAREA COL CTR               80F01950
                  *                                                   80F01960
08D0 1 C600 0BB7  SPEC  LD     L2 WAREA&81 DATA PUNCHED                80F01970
08D2 0 1803             SRA      3                                    80F01980
08D3 1 4C04 08E8        BSC    L  DOOR1,E  CK TERM ODD WORD            80F01990
08D5 0 188D             SRT      13       SHIFT ACC INTO Q REG        80F02000
08D6 0 7201             MDX    2 1                                    80F02010
08D7 1 C600 0BB7        LD     L2 WAREA&81 DATA PUNCHED                80F02020
08D9 0 1803             SRA      3                                    80F02030
08DA 1 4C04 08F2        BSC    L  DOOR2,E  CK TERM EVEN WORD           80F02040
08DC 0 1805             SRA      5        CLEAR BITS 8 THRU 12        80F02050
08DD 0 1088             SLT      8        POS HALVES IN ACC           80F02060
08DE 1 D400 0B61        STO    L  O2BE     STO IN OUGHT TO BE          80F02070
08E0 1 F700 08DE        EOR    L3 RAREA&40 DATA READ                   80F02080
08E2 0 7201             MDX    2 1         ADJ COL COUNT PCH           80F02090
08E3 1 4420 09E0        BSI    L  ERRFD,Z  BCH ON BITS             SC  80F02100
08E5 0 7301             MDX    3 1         ADJ COL COUNT RD            80F02110
08E6 0 70E9             MDX      SPEC      CK NEXT COLUMN              80F02120
08E7 0 70D5             MDX      RT3A                                  80F02130
                  *                                                   80F02140
                  *                        TERM FD ODD WORD ***       80F02150
                  *                                                   80F02160
08E8 0 1805       DOOR1 SRA      5         CLEAR BITS 8 THRU 12        80F02170
08E9 1 D400 0B61        STO    L  O2BE     STO IN OUGHT TO BE          80F02180
08EB 1 F700 08DE        EOR    L3 RAREA&40 DATA READ                   80F02190
08ED 1 4420 09E0        BSI    L  ERRFD,Z  BCH ON BITS             SC  80F02200
08EF 0 7301             MDX    3 1                                    80F02210
08F0 0 700C             MDX      XXXXX                                80F02220
08F1 0 70CB             MDX      RT3A                                 80F02230
                  *                                                   80F02240
                  *                        TERM FD EVEN WORD **       80F02250
                  *                                                   80F02260
08F2 0 1805       DOOR2 SRA      5         CLEAR BITS 8 THRU 12        80F02270
08F3 0 1088             SLT      8        POS HALVES IN ACC           80F02280
08F4 1 D400 0B61        STO    L  O2BE     STO IN OUGHT TO BE          80F02290
08F6 1 F700 08DE        EOR    L3 RAREA&40 DATA READ                   80F02300
08F8 1 4420 09E0        BSI    L  ERRFD,Z                          SC  80F02310
08FA 0 7301             MDX    3 1                                    80F02320
08FB 0 7001             MDX      XXXXX                                80F02330
08FC 0 70C0             MDX      RT3A                                 80F02340
                  *                                                   80F02350
08FD 0 1011       XXXXX SLA      17        CLEAR ACC TO ZERO           80F02360
08FE 1 D400 0B61        STO    L  O2BE     STO IN OUGHT TO BE          80F02370
0900 1 F700 08DE        EOR    L3 RAREA&40 DATA READ                   80F02380
0902 1 4420 09E0        BSI    L  ERRFD,Z  BCH ON BITS             SC  80F02390
                  *                                                   80F02400
0904 0 7301             MDX    3 1                                    80F02410
0905 0 70F7             MDX      XXXXX                                80F02420
0906 0 70B6             MDX      RT3A                                 80F02430
                  *                                                   80F02440
                  ********************************************        80F02450
                  *                                                   80F02460
                  *****          ROUTINE 4- READ 12 BITS/COL &        80F02470
                  *                                                   80F02480
                  *                                                   80F02490
0907 1 CC00 0B46  RT4   LDD    L  MFED2    MSG- LOAD FROM STK 2        80F02500
0909 1 4400 0A28        BSI    L  TYPE     USE TYPE ROUTINE        SC  80F02510
090B 1 4400 0A4E  RT4A  BSI    L  RPREQ    ROUTINE REQUEST             80F02520
090D 1 0C00 0B34        XIO    L  READ     READ COMMAND                80F02530
090F 1 4400 0A8E        BSI    L  RTL      DELAY LOOP              SC  80F02540
0911 0 700A             MDX       CHECK-1                             80F02550
0912 1 4400 0A0A        BSI    L  FDLCD    FEED LAST CARD          SC  80F02560
0914 1 4400 0A13        BSI    L  KNOW     CHECK BIT SWITCHES      SC  80F02570
                  *                                                   80F02580
0916 1 CC00 0B28  SET5  LDD    L  RID5     RT NUMBER AND ADDR          80F02590
0918 1 4400 0A86        BSI    L  RTU      USE UPDATE ROUTINE      SC  80F02600
091A 0 4C80 012D        BSC    I  START    RETURN TO MONITOR       X   80F02610
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                         *                                                  80F02620
091C 0 62B0                    LDX    2 -80       COL COUNT                 80F02630
091D 1 C600 0BB6         CHECK LD    L2 WAREA&80  DATA PUNCHED              80F02640
091F 0 1803                    SRA      3         REMOVE 3 BITS             80F02650
0920 1 4C04 092C               BSC   L  TERMR,E   CK FOR TERMINATOR         80F02660
0922 0 1003                    SLA      3         ADJ BACK                  80F02670
0923 1 D400 0B61               STO   L  02BE      STO IN OUGHT TO BE        80F02680
0925 1 F600 0C06               EOR   L2 RAREA&80  DATA READ                 80F02690
0927 1 4420 09E0               BSI   L  ERRFD,Z   BCH ON BITS           SC  80F02700
0929 0 7201                    MDX    2 1         ADJ COL COUNT             80F02710
092A 0 70F2                    MDX      CHECK     CK NEXT COLUMN            80F02720
092B 0 70DF                    MDX      RT4A                                80F02730
                         *                                                  80F02740
                         *                                                  80F02750
                         *****          TERMINATOR FOUND ROUTINE ******     80F02760
                         *                                                  80F02770
                         *                                                  80F02780
092C 0 1801              TERMR SRA      1         REMOVE TERMINATOR         80F02790
092D 0 1004                    SLA      4         ADJ BACK                  80F02800
092E 0 7001                    MDX      XXX&1                               80F02810
                         *                                                  80F02820
092F 0 1011              XXX   SLA      17        CLEAR ACC TO ZERO         80F02830
0930 1 D400 0B61               STO   L  02BE      STO IN OUGHT TO BE        80F02840
0932 1 F600 0C06               EOR   L2 RAREA&80  DATA READ                 80F02850
0934 1 4420 09E0               BSI   L  ERRFD,Z   BCH ON BITS           SC  80F02860
0936 0 7201                    MDX    2 1         ADJ COL COUNT             80F02870
0937 0 70F7                    MDX      XXX                                 80F02880
0938 0 70D2                    MDX      RT4A                                80F02890
                         *                                                  80F02900
                         ******************************************         80F02910
                         *                                                  80F02920
                         *****          ROUTINE 5- PUNCH 40 COLUMNS ***     80F02930
                         *                                                  80F02940
                         *                                                  80F02950
0939 1 C400 0B64         RT5   LD    L  WA40A                           E   80F02960
093B 1 D400 0B8D               STO   L  WAREA&39  CHANGE PCH DATA           80F02970
093D 1 CC00 0B40               LDD   L  MFEED     MSG- LOAD BLANKS          80F02980
093F 1 4400 0A28               BSI   L  TYPE      USE TYPE ROUTINE      SC  80F02990
                         *                                                  80F03000
0941 1 0C00 0B3A         DUP   XIO   L  STACK     SELECT STACKER 2          80F03010
0943 1 4400 0A4E               BSI   L  RPREQ     ROUTINE REQUEST           80F03020
0945 1 0C00 0B30               XIO   L  PUNCH     PUNCH COMMAND             80F03030
0947 1 4400 0A8E               BSI   L  RTL       USE TIMING LOOP       SC  80F03040
0949 0 70F7                    MDX      DUP                                 80F03050
094A 1 0C00 0B3A               XIO   L  STACK     SELECT STACKER 2          80F03060
094C 1 4400 0A0A               BSI   L  FDLCD     FEED LAST CARD       SC   80F03070
094E 1 4400 0A13               BSI   L  KNOW      CHECK BIT SWITCHES    SC  80F03080
                         *                                                  80F03090
0950 1 CC00 0B2A         SET6  LDD   L  RID6      RT NUMBER AND ADDR        80F03100
0952 1 4400 0A86               BSI   L  RTU       UPDATE ROUTINE        SC  80F03110
0954 0 4C80 012D               BSC   I  START     RETURN TO MONITOR     X   80F03120
                         *                                                  80F03130
                         *                                                  80F03140
                         ******************************************         80F03150
                         *                                                  80F03160
                         *****          ROUTINE 6- RD AND PCH *********     80F03170
                         *                                                  80F03180
                         *                                                  80F03190
0956 1 CC00 0B46         RT6   LDD   L  MFED2     MSG- LOAD FROM STK 2 E    80F03200
0958 1 4400 0A28               BSI   L  TYPE      USE TYPE ROUTINE     SC   80F03210
095A 1 C400 09DE               LD    L  SHA       ADJ 40 COLUMNS            80F03220
095C 1 D400 09E5               STO   L  COLA                           PR03 80F03230
095E 1 C400 09DF               LD    L  SHB       ADJ 40 COLUMNS            80F03240
0960 1 D400 09E9               STO   L  COLB                           PR04 80F03250
                         *                                                  80F03260
0962 1 4400 0A4E         RT6A  BSI   L  RPREQ     ROUTINE REQUEST           80F03270
0964 1 0C00 0B34               XIO   L  READ      READ COMMAND              80F03280
0966 1 4400 0A8E               BSI   L  RTL       USE TIMING LOOP      SC   80F03290
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0968 0 7003                    MDX      NEXT                                80F03300
0969 1 4400 0A0A               BSI   L  FDLCD     FEED LAST CARD        SC  80F03310
096B 0 7031                    MDX      GONOW                               80F03320
                         *                                                  80F03330
096C 0 62D8              NEXT  LDX    2 -40                                 80F03340
096D 1 C600 0B8E         COMP  LD    L2 WAREA&40  DATA PUNCHED              80F03350
096F 0 1803                    SRA      3         REMOVE 3 BITS             80F03360
0970 1 4C04 097C               BSC   L  CHIP,E    CK FOR TERMINATOR         80F03370
0972 0 1003                    SLA      3         ADJ BACK                  80F03380
0973 1 D400 0B61               STO   L  02BE      STO IN OUGHT TO BE        80F03390
0975 1 F600 0BDE               EOR   L2 RAREA&40  DATA READ                 80F03400
0977 1 4420 09E0               BSI   L  ERRFD,Z   BCH ON BITS           SC  80F03410
0979 0 7201                    MDX    2 1         ADJ COL COUNT             80F03420
097A 0 70F2                    MDX      COMP                                80F03430
097B 0 700C                    MDX      FLIP-2                              80F03440
                         *                                                  80F03450
097C 0 1801              CHIP  SRA      1         REMOVE TERMINATOR         80F03460
097D 0 1004                    SLA      4         ADJ BACK                  80F03470
097E 0 7001                    MDX      XXXX&1                              80F03480
097F 0 1011              XXXX  SLA      17        CLEAR ACC TO ZERO         80F03490
0980 1 D400 0B61               STO   L  02BE      STO IN OUGHT TO BE        80F03500
0982 1 F600 0BDE               EOR   L2 RAREA&40  DATA READ                 80F03510
0984 1 4420 09E0               BSI   L  ERRFD,Z   BCH ON BITS           SC  80F03520
0986 0 7201                    MDX    2 1         ADJ COL COUNT             80F03530
0987 0 70F7                    MDX      XXXX                                80F03540
0988 0 63FE                    LDX    3 -2                                  80F03550
0989 0 62D8                    LDX    2 -40                                 80F03560
                         *                                                  80F03570
098A 1 C600 0BDE         FLIP  LD    L2 RAREA&40  DATA TO BE FLIPPED        80F03580
098C 1 D700 0C07               STO   L3 RAREA&81  NEW LOCATION              80F03590
098E 0 1010                    SLA      16                                  80F03594
098F 1 D600 0BDE               STO   L2 RAREA&40  ELIMINATE OVERPUNCH       80F03595
0991 0 73FF                    MDX    3 -1                                  80F03600
0992 0 7201                    MDX    2 1                                   80F03610
0993 0 70F6                    MDX      FLIP                                80F03620
0994 1 7408 0C05               MDX   L  RAREA&79,8 SET TERMINATOR           80F03630
                         *                                                  80F03640
0996 1 4400 0A4E               BSI   L  RPREQ     ROUTINE REQUEST           80F03650
0998 1 0C00 0B32               XIO   L  PUNCX     PUNCH COMMAND             80F03660
099A 1 4400 0A8E               BSI   L  RTL       USE TIMING LOOP       SC  80F03670
099C 0 70C5                    MDX      RT6A                                80F03680
                         *                                                  80F03690
099D 1 C400 09DA         GONOW LD    L  LGA       ADJ 80 COLUMNS            80F03700
099F 0 D045                    STO      COLA                           PR03 80F03710
09A0 1 C400 09DB               LD    L  LGB       ADJ 80 COLUMNS            80F03720
09A2 0 D046                    STO      COLB                           PR04 80F03730
09A3 1 4400 0A13               BSI   L  KNOW      CHECK BIT SWITCHES    SC  80F03740
                         *                                                  80F03750
09A5 1 CC00 0B2C         SET7  LDD   L  RID7      RT NUMBER AND ADDR        80F03760
09A7 1 4400 0A86               BSI   L  RTU       USE UPDATE ROUTINE    SC  80F03770
09A9 0 4C80 012D               BSC   I  START     RETURN TO MONITOR     X   80F03780
                         *                                                  80F03790
                         *                                                  80F03800
                         *****          ROUTINE 7- NEW PCH DATA & PUNCH     80F03810
                         *                                                  80F03820
                         *                                                  80F03830
09AB 1 CC00 0B44         RT7   LDD   L  MABCD     MSG- ANY PATTERN &    E   80F03840
09AD 1 4400 0A28               BSI   L  TYPE      USE TYPE ROUTINE      SC  80F03850
09AF 1 4400 0A4E               BSI   L  RPREQ     ROUTINE REQUEST           80F03860
09B1 1 0C00 0B34               XIO   L  READ      READ NEW DATA             80F03870
09B3 1 4400 0A8E               BSI   L  RTL       USE TIMING LOOP       SC  80F03880
09B5 1 C400 0C05               LD    L  RAREA&79  LAST COL OF DATA          80F03890
09B7 0 E81E                    OR       BIT12     SET TERMINATOR            80F03900
09B8 1 D400 0C05               STO   L  RAREA&79  REPLACE DATA & TERM       80F03910
                         *                                                  80F03920
09BA 1 4400 0A4E               BSI   L  RPREQ     REQUEST DEVICE        SC  80F03930
09BC 1 0C00 0B2E               XIO   L  FDACD     FEED A CARD               80F03940
09BE 1 4400 0A8E               BSI   L  RTL       USE TIMING LOOP       SC  80F03950
```

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                        *
09C0 1 0C00 0B3A RECK   XIO  L  STACK      SELECT STACKER 2                80F03960
09C2 1 4400 0A4E        BSI  L  RPREQ      ROUTINE REQUEST                 80F03970
09C4 1 0C00 0B32        XIO  L  PUNCX      PUNCH COMMAND                   80F03980
09C6 1 4400 0A8E        BSI  L  RTL        USE TIMING LOOP          SC     80F03990
09C8 0 70F7             MDX     RECK       REPAET NO LAST CARD             80F04000
09C9 1 0C00 0B3A        XIO  L  STACK      SELECT STACKER 2                80F04010
09CB 0 403E             BSI     FDLCD      FEED LAST CARD           SC     80F04020
09CC 0 4046             BSI     KNOW       CHECK BIT SWITCHES       SC     80F04030
                        *                                                  80F04040
09CD 1 2C40 0BB6        STS  L  RAREA,/40  REMOVE STG PROTECT              80F04050
09CF 0 4C80 012E        BSC  I  END        GO TO MONITOR            X      80F04060
                        *                                                  80F04070
09D1 0 0000 RTEND       DC      /0000                               SE     80F04080
09D2 1 4400 0A3E        BSI  L  RPREL      ROUTINE RELEASE          SC     80F04090
09D4 1 4C80 09D1        BSC  I  RTEND      RETURN TO PROGRAM        SX     80F04100
                        *                                                  80F04110
                        *                                                  80F04120
                        ********************************************       80F04130
                        *                                                  80F04140
                        *****          STORAGE AREA ******************     80F04150
                        *                                                  80F04160
                        *                                                  80F04170
09D6 0 0008 BIT12  DC       /0008      TERMINATOR BIT                      80F04180
09D7 0 CC00 CC00   DC       /CC00      CARD COLUMN                         80F04190
09D8 0 0800 CNTL   DC       /0800                                          80F04200
09D9 0 0000 CONST  DC       /0000                                          80F04210
09DA 0 7251 LGA    MDX   2 81         80 COLUMN COUNTER        PR03       80F04220
09DB 0 72AF LGB    MDX   2 -81        80 COLUMN COUNTER        PR04       80F04230
09DC 0 0000 SAVE   DC       /0000                                          80F04240
09DD 0 8000        DC       /8000                                          80F04250
09DE 0 7229 SHA    MDX   2 41         40 COLUMN COUNTER        PR03       80F04260
09DF 0 72D7 SHB    MDX   2 -41        40 COLUMN COUNTER        PR04       80F04270
                        *                                                  80F04280
                        *                                                  80F04290
                        ********************************************       80F04300
                        *                                                  80F04310
                        *****          COMMON USE ROUTINES ***********     80F04320
                        *                                                  80F04330
                        *                                                  80F04340
                        *****          ERROR FOUND ROUTINE ***********     80F04350
                        *                                                  80F04360
                        *                                                  80F04370
09E0 0 0000 ERRFD  DC       /0000      ADDR STG                    SE     80F04380
09E1 1 F400 0B61        EOR  L  02BE                                       80F04390
09E3 1 D400 0B60        STO  L  WAS                                        80F04400
                        *                                                  80F04410
09E5 0 7251 COLA   MDX    2 &81        MDX 2 81 OR MDX 2 41     PM03       80F04420
09E6 0 1000 KEEP1  NOP      0          MDX WILL SKIP THIS                  80F04430
09E7 1 6E00 0B62        STX  L2 COL     COLUMN NUMBER                      80F04440
09E9 0 72AF COLB   MDX    2 -81        CORRECT XR2              PM04       80F04450
09EA 0 1000 KEEP2  NOP      0          MDX WILL SKIP THIS                  80F04460
09EB 1 C400 0B62        LD   L  COL     COLUMN NUMBER                      80F04470
09ED 0 E8E9             OR      CC00                                       80F04480
09EE 1 D400 0B62        STO  L  COL     CD COL PLUS COL NUMB               80F04490
                        *                                                  80F04500
09F0 1 6E00 0B38        STX  L2 SENSE   SAVE XR2                           80F04510
09F2 1 6F00 0B3A        STX  L3 STACK   SAVE XR3                           80F04520
09F4 1 CC00 0B4E        LDD  L  MCDEE   MSG- CARD ERROR                    80F04530
09F6 0 6104             LDX     1 4     NUMBER OF MODIFIERS                80F04540
09F7 1 4400 0AE8        BSI  L  ERRA    USE ERROR ROUTINE        SC        80F04550
09F9 1 6680 0B38        LDX  I2 SENSE   RESTORE XR2                        80F04560
09FB 1 6780 0B3A        LDX  I3 STACK   RESTORE XR3                        80F04570
09FD 1 7402 09E0        MDX  L  ERRFD,2 ADD 2 TO RETURN ADDR               80F04580
09FF 1 0C00 0B3A        XIO  L  STACK   SELECT ERROR CARD                  80F04590
0A01 1 C400 0802        LD   L  SW0     BIT SWITCH STG                     80F04600
0A03 0 100A             SLA     10                                         80F04610
0A04 1 4C90 09E0        BSC  I  ERRFD,- BCH PLUS OR ZERO         SX        80F04620
                                                                           80F04630
```



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0A06 1 74FE 09E0        MDX  L  ERRFD,-2  SUB 2 RETURN ADDR                80F04640
0A08 1 4C80 09E0        BSC  I  ERRFD      RETURN TO ROUTINE        SX     80F04650
                        *                                                  80F04660
                        *                                                  80F04670
                        *****          FEED LAST CARD ****************     80F04680
                        *                                                  80F04690
0A0A 0 0000 FDLCD  DC       /0000      RETURN ADDR              SE        80F04700
0A0B 1 4400 0A4E        BSI  L  RPREQ      ROUTINE REQUEST                 80F04710
0A0D 1 0C00 0B2E        XIO  L  FDACD      FEED A CARD                     80F04720
0A0F 1 4400 0A3E        BSI  L  RPREL      RELEASE DEVICE           SC     80F04730
0A11 1 4C80 0A0A        BSC  I  FDLCD      RETURN TO PROG           SX     80F04740
                        *                                                  80F04750
                        *                                                  80F04760
                        *****          KNOW BIT SWITCH SETTINGS ******     80F04770
                        *                                                  80F04780
                        *                                                  80F04790
0A13 0 0000 KNOW   DC       /0000      RETURN ADDR              SE        80F04800
0A14 1 C400 0803        LD   L  SW1        ROUTINE NUMBER                  80F04810
0A16 1 4C98 0A13        BSC  I  KNOW,&-    BCH ON ZERO              SX     80F04820
0A18 1 E400 0BA1        AND  L  K0007      SAVE BITS 13 THRU 15            80F04830
0A1A 1 D400 0800        STO  L  RID        STORE RT NUMBER                 80F04840
0A1C 1 6780 0800        LDX  I3 RID                                        80F04850
0A1E 1 4F80 0A20        BSC  I3 SETUP      SET UP NEW ROUTINE       SX     80F04860
                        *                                                  80F04870
0A20 0 0000 SETUP  DC       0          NOT USED                            80F04880
0A21 1 084E             DC      SET1                                       80F04890
0A22 1 0888             DC      SET2                                       80F04900
0A23 1 08B3             DC      SET3                                       80F04910
0A24 1 08C8             DC      SET4                                       80F04920
0A25 1 0916             DC      SET5                                       80F04930
0A26 1 0950             DC      SET6                                       80F04940
0A27 1 09A5             DC      SET7                                       80F04950
                        *                                                  80F04960
                        *                                                  80F04970
                        *****          PRINT ROUTINE *****************     80F04980
                        *                                                  80F04990
                        *                                                  80F05000
0A28 0 0000 TYPE   DC       /0000      RETURN ADDR              SE        80F05010
0A29 1 DC00 0B5A        STD  L  MSGL       CHANGE MESSAGE & NUM            80F05020
0A2B 1 C400 0802        LD   L  SW0        BIT SWITCH STORAGE              80F05030
0A2D 0 100D             SLA     13                                         80F05040
0A2E 1 4CA8 0A28        BSC  I  TYPE,&Z    RETURN TO PROG ON -      SX     80F05050
                        *                                                  80F05060
0A30 0 4480 012F TYPEA  BSI  I  LOG        CALL ON LOG              SC     80F05070
0A32 1 0B58             DC      INSTL      ADDR OF MSG                     80F05080
0A33 1 0A38             DC      TYPEB      BUSY ADDR                       80F05090
0A34 0 0000             DC      /0000                                      80F05100
                        *                                                  80F05110
0A35 1 6580 0A28        LDX  I1 TYPE                                       80F05120
0A37 0 7002             MDX     OUT1                                       80F05130
                        *                                                  80F05140
0A38 1 6500 0A30 TYPEB  LDX  L1 TYPEA      BUSY ROUTINE                    80F05150
0A3A 1 6D00 080A OUT1   STX  L1 MLSCF&1                                    80F05160
0A3C 0 4C80 012D        BSC  I  START      RETURN TO MONITOR        SX     80F05170
                        *                                                  80F05180
                        *                                                  80F05190
                        *****          ROUTINE RELEASE DEVICE ********     80F05200
                        *                                                  80F05210
                        *                                                  80F05220
0A3E 0 0000 RPREL  DC       /0000      RETURN ADDR              SE        80F05230
0A3F 0 1000             NOP                                                80F05240
                        *                                                  80F05250
0A40 1 C400 0815        LD   L  EDIT                                       80F05260
0A42 1 4CB0 0A3E        BSC  I  RPREL,-Z   BCH ON PLUS                     80F05270
                        *                                                  80F05280
0A44 0 4480 0132        BSI  I  RELDV      RELEASE DEVICE           SC     80F05290
0A46 1 0815             DC      EDIT       ADDR UNTR AND CHAN              80F05300
0A47 1 080C             DC      TERM       TERMINATOR                      80F05310
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0A48 1 6580 0A3E          LDX  I1 RPREL      GET RETURN ADRS                80F05320
0A4A 1 6D00 080A          STX  L1 MLSCF&1    SET MLSCF                      80F05330
0A4C 0 4C80 012D          BSC  I  START      RETURN TO MONITOR              80F05340
                          *                                                 80F05350
                          *****         ROUTINE REQUEST DEVICE ********     80F05360
                          *                                                 80F05370
                          *                                                 80F05380
0A4E 0 0000               RPREQ DC      /0000      RETURN ADDR          SE  80F05390
0A4F 0 1000                     NOP                                         80F05400
0A50 1 C400 0815                LD   L EDIT                                 80F05410
0A52 1 4CA8 0A4E                BSC  I RPREQ,&Z   BCH ON HAVE DEVICE   SX  80F05420
                          *                                                 80F05430
0A54 0 4480 0131          LABEL BSI  I REQDV      REQUEST DEVICE       SC  80F05440
                          *                                                 80F05450
0A56 1 0A80                     DC    STDBY      BUSY ADDRESS                80F05460
0A57 1 0815                     DC    EDIT       ADDR INTR AND CHAN          80F05470
0A58 1 0817                     DC    RPDVA      ADDR AREA CODE & MOD        80F05480
0A59 1 080C                     DC    TERM       TERMINATOR                  80F05490
                          *                                                 80F05500
0A5A 1 C400 0B39                LD   L SENSE&1                              80F05510
0A5C 1 EC00 0817                OR   L RPDVA                                80F05520
0A5E 1 D400 0B39                STO  L SENSE&1                              80F05530
                          *                                                 80F05540
0A60 1 0C00 0B38                XIO  L SENSE      SENSE DSW                   80F05550
0A62 1 4404 0B0B                BSI  L NRDY,E     USE NRDY IF B15 IS 1 SC     80F05560
                          *                                                 80F05570
0A64 1 0C00 0B38          SEE   XIO  L SENSE      SENSE DSW                   80F05580
0A66 0 100F                     SLA    15                                   80F05590
0A67 1 4C10 0A6F                BSC  L RDY,-      BCH ON READY                80F05600
                          *                                                 80F05610
0A69 1 6500 0A64                LDX  L1 SEE       GET MLSCF ENTRY             80F05620
0A6B 1 6D00 0809                STX  L1 MLSCF     SET MLSCF                   80F05630
0A6D 0 4C80 012D                BSC  I  START     RETURN TO MONITOR           80F05640
                          *                                                 80F05650
0A6F 1 C400 0802          RDY   LD   L  SW0       BIT SWITCH STORAGE          80F05651
0A71 1 4C10 0A7D                BSC  L  RETN3,-   CHECK BIT 0 FOR DELAY       80F05652
0A73 0 6500 0100                LDX  L1 /0100     DELAY COUNT                 80F05653
0A75 1 6D00 0A7F                STX  L1 DLYCT     SET UP COUNTER              80F05654
                          *                                                 80F05655
0A77 1 6500 0A7A          RETN1 LDX  L1 RETN2     GET MLSCF ENTRY             80F05656
0A79 0 7008                     MDX    RETN4                                80F05657
                          *                                                 80F05658
0A7A 1 74FF 0A7F          RETN2 MDX  L  DLYCT,-1  REDUCE COUNT                80F05659
0A7C 0 70FA                     MDX    RETN1                                80F05660
0A7D 1 4C80 0A4E          RETN3 BSC  I  RPREQ     RETURN TO PROG       SX  80F05661
                          *                                                 80F05670
0A7F 0 0000               DLYCT DC      /0000      DELAY COUNTER               80F05672
                          *                                                 80F05673
0A80 1 6500 0A54          STDBY LDX  L1 LABEL     GET BUSY ADDR               80F05680
0A82 1 6D00 0809          RETN4 STX  L1 MLSCF     SET MLSCF                   80F05690
0A84 0 4C80 012D                BSC  I  START     RETURN TO MONITOR           80F05700
                          *                                                 80F05710
                          *                                                 80F05720
                          *****         ROUTINE UPDATE *****************    80F05730
                          *                                                 80F05740
                          *                                                 80F05750
0A86 0 0000               RTU   DC      /0000      RETURN ADDR          SE  80F05760
0A87 1 DC00 0800                STD  L RID        NEW RT NUMBER AND ADDR      80F05770
0A89 0 1090                     SLT    16         MOVE Q TO ACC               80F05780
0A8A 1 D400 0809                STO  L MLSCF      NEW MLSCF ENTRY             80F05790
0A8C 1 4C80 0A86                BSC  I RTU        RETURN TO ROUTINE    SX  80F05800
                          *                                                 80F05810
                          *                                                 80F05820
                          *****         ROUTINE LOOP ******************     80F05830
                          *                                                 80F05840
                          *                                                 80F05850
0A8E 0 0000               RTL   DC      /0000      RETURN ADDR          SE  80F05860
0A8F 0 6700 F000                LDX  L3 /F000     TIMING CONSTANT             80F05870
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0A91 1 6F00 09D9          STX  L3 CONST                                     80F05880
                          *                                                 80F05890
0A93 1 6500 0A99          RTLA  LDX  L1 RTM                                 80F05900
0A95 1 6D00 080B                STX  L1 MLSCF&2   SET MLSCF ENTRY           80F05910
0A97 0 4C80 012D                BSC  I  START     RETURN TO MONITOR    SC  80F05920
                          *                                                 80F05930
0A99 1 7401 09D9          RTM   MDX  L  CONST,1                         SE  80F05940
0A9B 0 70F7                     MDX    RTLA                                 80F05950
0A9C 1 CC00 0B48                LDD  L M1CED      MSG- NO INTERRUPT           80F05960
0A9E 0 4089                     BSI  .  TYPE      USE TYPE ROUTINE     SC  80F05970
                          *                                                 80F05980
0A9F 1 C400 0B60          IRECD LD   L  WAS       GET DSW BITS & CHECK        80F05990
0AA1 1 4C18 0ABA                BSC  L  REGO,&-   BCH ON NO BITS              80F06000
0AA3 0 6100                     LDX   1 0         ALL ZEROS                   80F06010
0AA4 1 6D00 0B61                STX  L1 02BE      CLEAR OUGHT TO BE           80F06020
0AA6 0 630F                     LDX   3 15                                    80F06030
                          *                                                 80F06040
0AA7 0 1340               INERR SLCA   3 0         LOOK FOR BITS               80F06050
0AA8 1 F400 09DD                EOR  L  SAVE&1    REMOVE BIT FOUND            80F06060
0AAA 1 D400 09DC                STO  L  SAVE      SAVE REST OF BITS           80F06070
0AAC 1 6E00 0B38                STX  L2 SENSE     SAVE XR2                    80F06080
0AAE 1 6F00 0B3A                STX  L3 STACK     SAVE XR3                    80F06090
                          *                                                 80F06100
0AB0 1 4780 0AC7                BSI  I3 DSWBT     SELECT ERROR         SC  80F06110
0AB2 1 6680 0B38                LDX  I2 SENSE     RESTORE XR2                 80F06120
0AB4 1 6780 0B3A                LDX  I3 STACK     RESTORE XR3                 80F06130
0AB6 1 C400 09DC                LD   L  SAVE                                  80F06140
0AB8 1 4C20 0AA7                BSC  L  INERR,Z   BCH ON BITS                 80F06150
                          *                                                 80F06160
0ABA 0 4083               REGO  BSI      RPREL     ROUTINE RELEASE      SC  80F06170
0ABB 1 0C00 0B38          REGOT XIO  L   SENSE     SENSE DSW                   80F06180
0ABD 1 4C18 0AC5                BSC  L   ZIP,&-    BCH NO BITS                 80F06190
0ABF 1 6500 0ABB                LDX  L1  REGOT    GET MLSCF                   80F06200
0AC1 1 6D00 080A                STX  L1  MLSCF&1  SET MLSCF                   80F06210
0AC3 0 4C80 012D                BSC  I   START    RETURN TO MONITOR    SX  80F06220
                          *                                                 80F06230
0AC5 1 4C80 0A8E          ZIP   BSC  I   RTL       RETURN TO PROG       SX  80F06240
                          *                                                 80F06250
                          *                                                 80F06260
                          *****         DSW TABLES FOR LEVEL 4 ********     80F06270
                          *                                                 80F06280
                          *                                                 80F06290
0AC7 1 0B0B               DSWBT DC      NRDY       15 NOT READY               80F06300
0AC8 1 0AD7                     DC      BUSY       14 BUSY                    80F06310
0AC9 1 0ADD                     DC      ERR1       13                         80F06320
0ACA 1 0ADD                     DC      ERR1       12                         80F06330
0ACB 1 0ADD                     DC      ERR1       11                         80F06340
0ACC 1 0ADD                     DC      ERR1       10                         80F06350
0ACD 1 0ADD                     DC      ERR1       9                          80F06360
0ACE 1 0ADD                     DC      ERR1       8                          80F06370
0ACF 1 0AFA                     DC      FDCK       7 FD CK-RD STATION         80F06380
0AD0 1 0B11                     DC      STGPT      6 STG PROTECT VOIL         80F06390
0AD1 1 0B18                     DC      PAROR      5 PARITY ERROR             80F06400
0AD2 1 0ADD                     DC      ERR1       4 OP COMPLETE              80F06410
0AD3 1 0B00                     DC      LCD        3 LAST CARD                80F06420
0AD4 1 0ADD                     DC      ERR1       2 ANY ERROR                80F06430
0AD5 1 0ADD                     DC      ERR1       1                          80F06440
0AD6 1 0ADD                     DC      ERR1       0                          80F06450
                          *                                                 80F06460
                          *                                                 80F06470
                          *****         BUSY ROUTINE ******************     80F06480
                          *                                                 80F06490
                          *                                                 80F06500
0AD7 0 0000               BUSY  DC      0          RETURN ADDR          SE  80F06510
0AD8 0 C871                     LDD     MAD00      MSG- BUSY                  80F06520
0AD9 1 4400 0A28                BSI  L  TYPE       USE TYPE ROUTINE     SC  80F06530
0ADB 1 4C80 0AD7                BSC  I  BUSY       RETURN TO PROG       SX  80F06540
                          *                                                 80F06550
```

```
                         *
                         *****          ROUTINE ERR1 ******************
                         *
                         *
0ADD 0 0000              ERR1  DC       /0000       RETURN ADDR            SE
0ADE 1 C400 0B60               LD   L   WAS         DSW STORAGE
0AE0 0 1006                    SLA      6
0AE1 1 4CA8 0ADD               BSC  I   ERR1,&Z     BCH ON BIT 6           SX
0AE3 0 C868                    LDD      MB1EE       MSG- DSW ERROR BITS
0AE4 0 6103                    LDX   1  3           MODIFIER NUMBER
0AE5 0 4002                    BSI      ERRA        USE ERROR ROUTINE      SC
0AE6 1 4C80 0ADD               BSC  I   ERR1        RETURN TO PROG         SX
                         *
                         *
                         *****          ERROR TYPE OUT *****************
                         *
                         *
0AE8 0 0000              ERRA  DC       /0000       RETURN ADDR            SE
0AE9 0 D874                    STD      MSGE        CHANGE MESSAGE & NUM
0AEA 1 6D00 0B5C               STX   L1 INSTE       STORE MODIFIER NUM
                         *
0AEC 0 4480 0130         REPT  BSI  I   ERROR       MONITOR ERROR CALL     SC
0AEE 1 0B5C                    DC       INSTE       ERROR MESSAGE
0AEF 1 0AF4                    DC       REPT1       ADDR OF BUSY
0AF0 1 0AF1                    DC       REPT2       ADDR OF LOOP
                         *
0AF1 1 6580 0AE8         REPT2 LDX  I1  ERRA
0AF3 0 7002                    MDX      OUT3
                         *
0AF4 1 6500 0AEC         REPT1 LDX  L1  REPT        GET BUSY MLSCF
0AF6 1 6D00 080A         OUT3  STX  L1  MLSCF&1     SET MLSCF
0AF8 0 4C80 012D               BSC  I   START       RETURN TO MONITOR      SX
                         *
                         *
                         *****          FEED CHECK READ STATION *******
                         *
                         *
0AFA 0 0000              FDCK  DC       /0000       RETURN ADDR            SE
0AFB 0 C85A                    LDD      MFDCK       MSG- FEED CHECK
0AFC 1 4400 0A28               BSI  L   TYPE        USE TYPE ROUTINE       SC
0AFE 1 4C80 0AFA               BSC  I   FDCK        RETURN TO PROG         SX
                         *
                         *
                         *****          LAST CARD DEVISE **************
                         *
                         *
0B00 0 0000              LCD   DC       /0000       RETURN ADDR            SE
0B01 0 C83A                    LDD      MDEAD       MSG- LAST CARD
0B02 1 4400 0A28               BSI  L   TYPE        USE TYPE ROUTINE       SC
0B04 0 1010                    SLA      16
0B05 0 D05A                    STO      WAS
0B06 1 7401 0A8E               MDX  L   RTL,1
0B08 1 4400 0A3E               BSI  L   RPREL       RELEASE ROUTINE        SC
0B0A 0 708A                    MDX      ZIP         RETURN TO PROG         SX
                         *
                         *****          NOT READY **********************
                         *
                         *
0B0B 0 0000              NRDY  DC       /0000       RETURN ADDR            SE
0B0C 0 C835                    LDD      MA1DE       MSG- NOT READY
0B0D 1 4400 0A28               BSI  L   TYPE        USE TYPE ROUTINE       SC
0B0F 1 4C80 0B0B               BSC  I   NRDY        RETURN TO PROG         SX
                         *
                         *
                         *****          STORAGE PROTECT VIOLATE *******
                         *
                         *
0B11 0 0000              STGPT DC       /0000       RETURN ADDR            SE
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80F06560 80F06570 80F06580 80F06590 80F06600 80F06610 80F06620 80F06630 80F06640 80F06650 80F06660 80F06670 80F06680 80F06690 80F06700 80F06710 80F06720 80F06730 80F06740 80F06750 80F06760 80F06770 80F06780 80F06790 80F06800 80F06810 80F06820 80F06830 80F06840 80F06850 80F06860 80F06870 80F06880 80F06890 80F06900 80F06910 80F06920 80F06930 80F06940 80F06950 80F06960 80F06970 80F06980 80F06990 80F07000 80F07010 80F07020 80F07030 80F07040 80F07050 80F07060 80F07070 80F07080 80F07090 80F07100 80F07110 80F07120 80F07130 80F07140 80F07150 80F07160 80F07170 80F07180 80F07190 80F07200 80F07210 80F07220 80F07230


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0B12 1 2C40 0BB6               STS  L   RAREA,/40     REMOVE STG PROTECT
0B14 1 7406 0A8E               MDX  L   RTL,6         CHANGE RETURN ADDR
0B16 1 4C80 0B11               BSC  I   STGPT         RETURN TO PROG         SX
                         *
                         *
                         *****          PARITY ERROR ******************
                         *
                         *
0B18 0 0000              PAROR DC       /0000       RETURN ADDR            SE
0B19 0 C836                    LDD      MPAR        MSG PARITY ERROR
0B1A 1 4400 0A28               BSI  L   TYPE        USE TYPE ROUTINE       SC
0B1C 1 4C80 0B18               BSC  I   PAROR       RETURN TO PROG         SX
                         *
                         ********************************************
                         *
                         *****          MESSAGE AREA ******************
                         *
                         *
0B1E    0000                   BSS  E   0
0B1E 0 0001              RID1  DC       1           ROUTINE NUMBER
0B1F 1 0854                    DC       RT1         ROUTINE ADDRESS
0B20 0 0002              RID2  DC       2           ROUTINE NUMBER
0B21 1 088E                    DC       RT2         ROUTINE ADDRESS
0B22 0 0002              RIDX  DC       2           ROUTINE NUMBER
0B23 1 0892                    DC       RT2A        ROUTINE ADDRESS
0B24 0 0003              RID3  DC       3           ROUTINE NUMBER
0B25 1 08B9                    DC       RT3         ROUTINE ADDRESS
0B26 0 0004              RID4  DC       4           ROUTINE NUMBER
0B27 1 0907                    DC       RT4         ROUTINE ADDRESS
0B28 0 0005              RID5  DC       5           ROUTINE NUMBER
0B29 1 0939                    DC       RT5         ROUTINE ADDRESS
0B2A 0 0006              RID6  DC       6           ROUTINE NUMBER
0B2B 1 0956                    DC       RT6         ROUTINE ADDRESS
0B2C 0 0007              RID7  DC       7           ROUTINE NUMBER
0B2D 1 09AB                    DC       RT7         ROUTINE ADDRESS
                         *
0B2E 0 0000              FDACD DC       /0000       FEED A CARD
0B2F 0 0402                    DC       /0402
0B30 1 0B66              PUNCH DC       WAREA       PUNCH
0B31 0 0500                    DC       /0500
0B32 1 0BB6              PUNCX DC       RAREA       PUNCH
0B33 0 0500                    DC       /0500
0B34 1 0BB6              READ  DC       RAREA       READ
0B35 0 0600                    DC       /0600
0B36 1 0BB6              READX DC       RAREA       READ
0B37 0 0601                    DC       /0601
0B38 0 0000              SENSE DC       /0000       SENSE DSW
0B39 0 0701                    DC       /0701
0B3A 0 0000              STACK DC       /0000       SELECT STACKER
0B3B 0 0480                    DC       /0480
                         *
0B3C 0 A001              MDEAD DC       /A001       MSG CODE AND NUMBER
0B3D 0 DEAD                    DC       /DEAD       LAST CARD
                         *
0B3E 0 C001              MSTAR DC       /C001       MESSAGE NUMBER
0B3F 0 A0A0                    DC       /A0A0       SET BIT 8 FUNC 00
0B40 0 C002              MFEED DC       /C002
0B41 0 FEED                    DC       /FEED       LOAD BLANKS MAKE RDY
0B42 0 C003              MA1DE DC       /C003
0B43 0 A1DE                    DC       /A1DE       NOT READY
0B44 0 C004              MABCD DC       /C004
0B45 0 ABCD                    DC       /ABCD       LD ANY PAT PLUS BLKS
0B46 0 C005              MFED2 DC       /C005
0B47 0 FED2                    DC       /FED2       LOAD FROM STACKER 2
                         *
0B48 0 E001              M1CED DC       /E001
0B49 0 1CED                    DC       /1CED       NO INTERRUPT
0B4A 0 E002              MAD00 DC       /E002
```

80F07240 80F07250 80F07260 80F07270 80F07280 80F07290 80F07300 80F07310 80F07320 80F07330 80F07340 80F07350 80F07360 80F07370 80F07380 80F07390 80F07400 80F07410 80F07420 80F07430 80F07440 80F07450 80F07460 80F07470 80F07480 80F07490 80F07500 80F07510 80F07520 80F07530 80F07540 80F07550 80F07560 80F07570 80F07580 80F07590 80F07600 80F07610 80F07620 80F07630 80F07640 80F07650 80F07660 80F07670 80F07680 80F07690 80F07700 80F07710 80F07720 80F07730 80F07740 80F07750 80F07760 80F07770 80F07780 80F07790 80F07800 80F07810 80F07820 80F07830 80F07840 80F07850 80F07860 80F07870 80F07880 80F07890 80F07900 80F07910

```
0B4B 0 AD00          DC    /AD00     BUSY                          80F07920
0B4C 0 E003    MB1EE DC    /E003                                   80F07930
0B4D 0 B1EE          DC    /B1EE     DSW BITS IN ERROR             80F07940
0B4E 0 E004    MCDEE DC    /E004                                   80F07950
0B4F 0 CDEE          DC    /CDEE     CARD ERROR                    80F07960
0B50 0 E005    MPAR  DC    /E005                                   80F07970
0B51 0 A1EE          DC    /A1EE     PARITY ERROR                  80F07980
0B52 0 E006    MSPV  DC    /E006                                   80F07990
0B53 0 C0DE          DC    /C0DE     STG PROTECT ERROR             80F08000
0B54 0 E007    MRONG DC    /E007                                   80F08010
0B55 0 BAD0          DC    /BAD0     RELEASE DEVICE TWICE          80F08020
0B56 0 E008    MFDCK DC    /E008                                   80F08030
0B57 0 FDCC          DC    /FDCC     FEED CK AT READ STAT          80F08040
                     *                                             80F08050
                     *                                             80F08060
                     *****           PID MID RID RAD 0000          80F08070
                     *                                             80F08080
                     *                                             80F08090
0B58 0 0001    INSTL DC    /0001     WORD COUNT                    80F08100
0B59 0 0000          DC    /0000     HEX CONTROL                   80F08110
0B5A 0 0000    MSGL  DC    /0000     MESSAGE ID                    80F08120
0B5B 0 0000          DC    /0000     CODED MESSAGE                 80F08130
                     *                                             80F08140
                     *                                             80F08150
                     *****           PID MID RID RAD 0000 0000 0000 80F08160
                     *                                             80F08170
                     *                                             80F08180
0B5C 0 0000    INSTE DC    /0000     WORD COUNT                    80F08190
0B5D 0 0000          DC    /0000     HEX CONTROL                   80F08200
0B5E 0 0000    MSGE  DC    /0000     MESSAGE ID                    80F08210
0B5F 0 0000          DC    /0000     CODED MESSAGE                 80F08220
0B60 0 0000    WAS   DC    /0000     ERROR BITS                    80F08230
0B61 0 0000    02BE  DC    /0000     CORRECT BITS                  80F08240
0B62 0 0000    COL   DC    /0000     COL NUMBER IN HEX             80F08250
                     *                                             80F08260
                     *                                             80F08270
                     *****           WRITE AREA FOR PUNCH          80F08280
                     *                                             80F08290
                     *                                             80F08300
0B63 0 4010    WA40  DC    /4010                                   80F08310
0B64 0 4018    WA40A DC    /4018                                   80F08320
0B65 0 8018    WA79  DC    /8018                                   80F08330
                     *                                             80F08340
0B66 0 8010    WAREA DC    /8010     COLUMN 1                      80F08350
0B67 0 4020          DC    /4020                                   80F08360
0B68 0 2040          DC    /2040                                   80F08370
0B69 0 1080          DC    /1080                                   80F08380
0B6A 0 0900          DC    /0900                                   80F08390
0B6B 0 0600          DC    /0600                                   80F08400
0B6C 0 0600          DC    /0600                                   80F08410
0B6D 0 0900          DC    /0900                                   80F08420
0B6E 0 1080          DC    /1080                                   80F08430
0B6F 0 2040          DC    /2040                                   80F08440
0B70 0 4020          DC    /4020                                   80F08450
0B71 0 8010          DC    /8010                                   80F08460
0B72 0 FFF7          DC    /FFF7                                   80F08470
0B73 0 8880          DC    /8880                                   80F08480
0B74 0 CCC0          DC    /CCC0                                   80F08490
0B75 0 EEE0          DC    /EEE0                                   80F08500
0B76 0 FFF0          DC    /FFF0                                   80F08510
0B77 0 7777          DC    /7777                                   80F08520
0B78 0 3333          DC    /3333                                   80F08530
0B79 0 1111          DC    /1111                                   80F08540
0B7A 0 FFF7          DC    /FFF7     COL 21                        80F08550
0B7B 0 A000          DC    /A000                                   80F08560
0B7C 0 9000          DC    /9000     ALPHA RIPPLE                  80F08570
0B7D 0 8800          DC    /8800                                   80F08580
0B7E 0 8400          DC    /8400                                   80F08590
```



```
0B7F 0 8200          DC    /8200     COL 26                        80F08600
0B80 0 8100          DC    /8100                                   80F08610
0B81 0 8080          DC    /8080                                   80F08620
0B82 0 8040          DC    /8040                                   80F08630
0B83 0 8020          DC    /8020                                   80F08640
0B84 0 8010          DC    /8010                                   80F08650
0B85 0 5000          DC    /5000                                   80F08660
0B86 0 4800          DC    /4800                                   80F08670
0B87 0 4400          DC    /4400                                   80F08680
0B88 0 4200          DC    /4200                                   80F08690
0B89 0 4100          DC    /4100                                   80F08700
0B8A 0 4080          DC    /4080                                   80F08710
0B8B 0 4040          DC    /4040                                   80F08720
0B8C 0 4020          DC    /4020                                   80F08730
0B8D 0 4010          DC    /4010     COL 40 WAREA&39               80F08740
0B8E 0 3000          DC    /3000                                   80F08750
0B8F 0 2800          DC    /2800                                   80F08760
0B90 0 2400          DC    /2400                                   80F08770
0B91 0 2200          DC    /2200                                   80F08780
0B92 0 2100          DC    /2100                                   80F08790
0B93 0 2080          DC    /2080                                   80F08800
0B94 0 2040          DC    /2040                                   80F08810
0B95 0 2020          DC    /2020                                   80F08820
0B96 0 2010          DC    /2010                                   80F08830
0B97 0 0000          DC    /0000                                   80F08840
0B98 0 FC00          DC    /FC00                                   80F08850
0B99 0 03F0          DC    /03F0                                   80F08860
0B9A 0 FC00          DC    /FC00                                   80F08870
0B9B 0 03F0          DC    /03F0                                   80F08880
0B9C 0 0000          DC    /0000                                   80F08890
0B9D 0 8887          DC    /8887                                   80F08900
0B9E 0 4444          DC    /4444                                   80F08910
0B9F 0 2222          DC    /2222                                   80F08920
0BA0 0 1111          DC    /1111                                   80F08930
0BA1 0 0007    K0007 DC    /0007     CONSTANT                      80F08940
0BA2 0 8880          DC    /8880                                   80F08950
0BA3 0 CCC4          DC    /CCC4                                   80F08960
0BA4 0 AAA2          DC    /AAA2                                   80F08970
0BA5 0 9991          DC    /9991                                   80F08980
0BA6 0 4444          DC    /4444                                   80F08990
0BA7 0 6666          DC    /6666                                   80F09000
0BA8 0 5555          DC    /5555                                   80F09010
0BA9 0 2222          DC    /2222                                   80F09020
0BAA 0 3333          DC    /3333                                   80F09030
0BAB 0 1111          DC    /1111                                   80F09040
0BAC 0 0005          DC    /0005     CHECK PCH TERM                80F09050
0BAD 0 0006          DC    /0006                                   80F09060
0BAE 0 FFF7          DC    /FFF7                                   80F09070
0BAF 0 FFF7          DC    /FFF7                                   80F09080
0BB0 0 FFF7          DC    /FFF7                                   80F09090
0BB1 0 0008          DC    /0008     COLUMN 76                     80F09100
0BB2 0 FFF0          DC    /FFF0                                   80F09110
0BB3 0 FFF0          DC    /FFF0                                   80F09120
0BB4 0 FFF0          DC    /FFF0                                   80F09130
0BB5 0 FFF0          DC    /FFF0                                   80F09140
                     *                                             80F09150
                     *                                             80F09160
0BB6   0050    RAREA BSS   80        READ AREA                     80F09170
                     *                                             80F09180
0C06   0064          BSS   100                                     80F09190
                     *                                             80F09200
                     *                                             80F09210
                     *           THIS AREA CAN BE USED FOR PATCH   80F09220
                     *                                             80F09230
0C6A 0 0000    PEND  DC    /0000                                   80F09240
                     *                                             80F09250
0C6C   0826          END   GO                                      80F09260
 NO ERRORS IN ABOVE ASSEMBLY
```

C R O S S R E F E R E N C E

NAME	VALUE	REFERENCES
BEGIN	012C	0826
BIT12	09D6	09B7
BSY	0848	0834
BUILD	0839	083F
BUSY	0AD7	0AC8,0ADB
CALL	0832	0848
CC00	09D7	09ED
CHEC	08CE	08C3
CHECK	091D	0911,092A
CHIP	097C	0970
CNTL	09D8	081C
COL	0B62	09E7,09EB,09EE
COLA	09E5	095C,099F
COLB	09E9	0960,09A2
COMP	096D	097A
CONST	09D9	0A91,0A99
CRCK	0133	
DLYCT	0A7F	0A75,0A7A
DOOR1	08E8	08D3
DOOR2	08F2	08DA
DSWBT	0AC7	0AB0
DSW4A	0818	0824
DUP	0941	0949
EDIT	0815	0831,0835,0A40,0A46,0A50,0A57
EDIT1	0813	082E
EDIT2	0814	0830
END	012E	09CF
EPA	0808	
ERRA	0AE8	09F7,0AE5,0AF1
ERRFD	09E0	08E3,08ED,08F8,0902,0927,0934,0977,0984,09FD,0A04,0A06,0A08
ERROR	0130	0AEC
ERR1	0ADD	0AC9,0ACA,0ACB,0ACC,0ACD,0ACE,0AD2,0AD4,0AD5,0AD6,0AE1,0AE6
FDACD	0B2E	0839,083C,0898,08AA,09BC,0A0D
FDCK	0AFA	0ACF,0AFE
FDLCD	0A0A	08AF,08C4,0912,094C,0969,09CB,0A11
FLIP	098A	097B,0993
GO	0826	0C6C
GONOW	099D	096B
ILP	0806	
INERR	0AA7	0AB8
INSTE	0B5C	0AEA,0AEE
INSTL	0B58	0A32
IRECD	0A9F	0820
KEEP1	09E6	
KEEP2	09EA	
KEEP3	0818	
KNOW	0A13	0867,08B1,08C6,0914,094E,09A3,09CC,0A16
K0007	0BA1	0A18
LABEL	0A54	0A80
LCD	0B00	0AD3
LGA	09DA	099D
LGB	09DB	09A0
LOG	012F	0A30
LPA	0807	
MABCD	0B44	09AB
MAD00	0B4A	0AD8
MA1DE	0B42	0B0C
MB1EE	0B4C	0AE3
MCDEE	0B4E	09F4
MDEAD	0B3C	0B01
MFDCK	0B56	0AFB
MFED2	0B46	08B9,0907,0956
MFEED	0B40	088E,093D
MLSCF	0809	0822,084A,0863,0A3A,0A4A,0A6B,0A82,0A8A,0A95,0AC1,0AF6
MPAR	0B50	0B19
MRONG	0B54	

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MSGE    0B5E  0AE9
MSGL    0B5A  0A29
MSPV    0B52  0876
MSTAR   0B3E  0858
M1CED   0B48  0A9C
NBTWO   0830  082C
NEXT    096C  0968
NRDY    0B0B  087E,0A62,0AC7,0B0F
OUT1    0A3A  0A37
OUT3    0AF6  0AF3
O2BE    0B61  08DE,08E9,08F4,08FE,0923,0930,0973,0980,09E1,0AA4
PAROR   0B18  0AD1,0B1C
PEND    0C6A  080D
PID     07FF  0828
PUNCH   0B30  08A2,0945
PUNCX   0B32  0998,09C4
RAD     0801
RAREA   0BB6  086C,0874,08E0,08EB,08F6,0900,0925,0932,0975,0982,098A,098C,098F
              0994,09B5,09B8,09CD,0B12,0B32,0B34,0836
RDY     0A6F  0A67
READ    0B34  090D,0964,09B1
READX   0B36  0870,08BF
RECK    09C0  09C8
REGO    0ABA  0AA1
REGOT   0ABB  0ABF
RELDV   0132  0A44
REPT    0AEC  0AF4
REPT1   0AF4  0AEF
REPT2   0AF1  0AF0
REQDV   0131  0832,0A54
RETN1   0A77  0A7C
RETN2   0A7A  0A77
RETN3   0A7D  0A71
RETN4   0A82  0A79
RID     0800  0A1A,0A1C,0A87
RIDX    0B22  0882
RID1    0B1E  0842,084E
RID2    0B20  0888
RID3    0B24  08B3
RID4    0B26  08C8
RID5    0B28  0916
RID6    0B2A  0950
RID7    0B2C  09A5
RPDVA   0817  0836,083B,0A58,0A5C
RPREL   0A3E  0840,0880,09D2,0A0F,0A42,0A48,0ABA,0B08
RPREQ   0A4E  086E,087A,0896,08A0,08A8,08BD,090B,0943,0962,0996,09AF,09BA,09C2
              0A0B,0A52,0A7D
RTEND   09D1  0808,09D4
RTL     0A8E  0872,089A,08A4,08AC,08C1,090F,0947,0966,099A,09B3,09BE,09C6,0AC5
              0B06,0B14
RTLA    0A93  0A9B
RTM     0A99  0A93
RTU     0A86  0844,0850,0884,088A,08B5,08CA,0918,0952,09A7,0A8C
RT0     0829  0806,0807,0846
RT1     0854  0B1F
RT1A    085C  0861
RT1B    0867  0856,085F
RT1C    087A  086B
RT2     088E  0B21
RT2A    0892  08AE,0B23
RT2B    089E  089C
RT2C    08A8  08A6
RT3     08B9  0B25
RT3A    08BD  08E7,08F1,08FC,0906
RT4     0907  0B27
RT4A    090B  092B,0938
RT5     0939  0B29
RT6     0956  0B2B
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RT6A    0962  099C
RT7     09AB  0B2D
SAVE    09DC  0AA8,0AAA,0AB6
SEE     0A64  0A69
SENSE   0B38  0819,087C,09F0,09F9,0A5A,0A5E,0A60,0A64,0AAC,0AB2,0ABB
SETUP   0A20  0A1E
SET1    084E  0A21
SET2    0888  0A22
SET3    08B3  0A23
SET4    08C8  0A24
SET5    0916  0A25
SET6    0950  0A26
SET7    09A5  0A27
SHA     09DE  095A
SHB     09DF  095E
SKIP    08AF  089D,08A7
SPEC    08D0  08E6
STACK   0B3A  089E,0941,094A,09C0,09C9,09F2,09FB,09FF,0AAE,0AB4
START   012D  084C,0852,0865,0886,088C,08B7,08CC,091A,0954,09A9,0A3C,0A4C,0A6D
              0A84,0A97,0AC3,0AF8
STDBY   0A80  0A56
STGPT   0B11  0AD0,0B16
SW0     0802  0854,085C,0A01,0A2B,0A6F
SW1     0803  0A14
SW2     0804  082A
SW3     0805
TERM    080C  0837,0869,0A47,0A59
TERMR   092C  0920
TYPE    0A28  085A,0878,0890,08BB,0909,093F,0958,09AD,0A2E,0A35,0A9E,0AD9,0AFC
              0B02,0B0D,0B1A
TYPEA   0A30  0A38
TYPEB   0A38  0A33
WAREA   0B66  0894,08D0,08D7,091D,093B,096D,0B30
WAS     0B60  081E,09E3,0A9F,0ADE,0B05
WA40    0B63  0892
WA40A   0B64  0939
WA79    0B65
XX      0831  082F
XXX     092F  092E,0937
XXXX    097F  097E,0987
XXXXX   08FD  08F0,08FB,0905
ZIP     0AC5  0ABD,0B0A

END OF ASSEMBLY
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IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

SELECTOR CHANNEL DIAGNOSTIC

DATE 14NOV69 15SEP71
EC NO. 431319 431328

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

SELECTOR CHANNEL DIAGNOSTIC

1. PURPOSE

1.1 INTENT - THIS PROGRAM IS DESIGNED TO (1) DETECT MALFUNCTIONS IN THE IBM SELECTOR CHANNEL, AND (2) AID IN THE ISOLATION OF FAILURES BY PROVIDING DIAGNOSTIC INFORMATION AND SCOPE LOOP FACILITIES.

1.2 BRIEF DESCRIPTION OF TEST ROUTINES

SECTION	ROUTINE		
1	1	STATUS CHECK	TEST THE CHANNEL STATUS FOR READY AND AVAILABLE.
	2	PROGRAM CHECK	TEST THE PROGRAM CHECK CIRCUITS BY ISSUING INVALID IOCC FUNCTIONS.
	3	CCW ADDRESS REGISTER	TEST THE ADDRESS REGISTER FOR ANY BITS ON/OFF.
	4	TEST I/O	SEE THAT A TEST I/O WILL FUNCTION PROPERLY AND THAT CORRECT STATUS IS RETURNED.
	5	NO-OP	TEST THE NO-OP FOR CORRECT CHANNEL STATUS RETURNED.
	6	BYTE COUNTER REGISTER	TESTS THE ABILITY OF THE REGISTER TO DECREMENT AND PROPAGATE CARRY BITS.
	7	TIC	TESTS THE TRANSFER (BRANCHING) CAPABILITITY OF THE CHANNEL.
	8	SENSE	TEST SENSE I/O COMMAND ABILITY TO TRANSFER DATA
	9	DATA CHECK	TEST THE DATA CHECK CIRCUITS BY SENSING INTO A STORAGE PROTECTED AREA.
SECTION	ROUTINE		
2	1	DATA CHAIN	TESTS THE ABILITY OF THE CHNL TO CHAIN DATA FUNCTIONS OF CCWS.
	2	COMMAND CHAIN	TEST THE ABILITY OF THE CHNL TO CHAIN CCW'S.
	3	INCORRECT LENGTH (SILI BIT OFF)	TESTS INCORRECT LNGTH IND. (BIT 6) IN CHANNEL STATUS WORD.
	4	INCORRECT LENGTH (SILI BIT ON)	TESTS SILI FLAG FOR SUPPRESSION OF INCORRECT LENGTH INDICATOR.
	5	SKIP	TESTS THE ABILITY OF THE CHANNEL TO SKIP DATA TRANSFER.
	6	PCI	TESTS THE ABILITY OF THE

PROG ID 0810-*
PAGE 1

DATE 14NOV69 15SEP71
EC NO. 431319 431328

SECTION	ROUTINE		
			CHANNEL TO GENERATE A PROGRAM CONTROLLED INTERRUPT.
3	1	NOT OPERATION-AL	TEST FOR CORRECT STATUS FROM KNOWN NOT OPERATIONAL DEVICE.
	2	COMMAND REJECT	TEST COMMAND REJECT CIRCUITS BY ISSUING INVALID OP CODE (FF).
	3	HALT I/O	TEST HALT I/O FOR TERMINATION OF CHANNEL OPERATION AND DEVICE DISCONNECT.

2. PREREQUISITES

2.1 PROGRAM REQUIREMENTS.

- -1800 DIAGNOSTIC MONITOR PROGRAM -AT LEAST 8K OF CORE
- -SECTIONS SHOULD BE RUN IN SEQUENTIAL ORDER FOR CORRECT INDICATION

2.2 EQUIPMENT REQUIREMENTS.

- -CPU WITH THE STANDARD INSTRUCTION SET, COMPLETELY OPERATIVE.
- -HARD COPY OUTPUT DEVICE
- -METHOD OF LOADING PROGRAM
- -SELECTOR CHANNEL FEATURE
- -SELECTOR CHANNEL CONTROL UNIT

3. USE PROCEDURE.

3.1 PROGRAM LOADING.

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

** NOTE DO NOT INCLUDE DEVICE ADDRESS ON MONITOR EDIT.ENTER COMPLETE DEVICE ADDRESS IN BITS 8-15 OF SW FNC 2 WHEN PROGRAM COMES TO 'SELECT DEVICE' HALT (SEE 3.3)

3.2 PROGRAM OPERATION.

1. INSTRUCTIONS - THIS TEST SHOULD NOT BE RUN WITH BOTH 2841 CHANNELS CONNECTED TO THE SAME SELECTOR CHANNEL. (AS IN THE 2 CHANNEL SWITCH TEST) WHEN RUNNING THE TEST ON ONE CHANNEL IT IS ADVISABLE TO SWITCH 'OFF' THE ALTERNATE CHANNEL.

    1. LOAD MONITOR AND DESIRED DFT'S
    2. EXECUTE PID 0810 (WILL WAIT FOR OPTION SELECTION)
    3. SELECT OPTIONS (SEE TABLES 0 & 1 BELOW)
    4. SELECT DEVICE (SEE TABLE 2 BELOW)

PROGRAM OPTION SWITCHES-SW FNC 0. (NORMAL RUN, WITH ALL SWITCHES OFF, GIVES ERROR PRINTOUTS, CONTINUE ON ERROR)

** NOTE 'TURN ON' OPTION SWS IMPLIES SETTING THE SPECIFIED BITS ON IN THE INDICATED SWITCH FUNCTION BY SETTING UP THE S/P AND DE SWS AND DOING A 'CONSOLE IN-TERRUPT'.

2. OPTION SELECTION

THE PROGRAM OPTION SWITCHES SHOWN BELOW ARE IN THE MONITOR INTERFACE

** NOTE- TO TEST CHANNEL USING THE 360 CA OR 2501 CONTROL UNITS 'TURN ON' BIT 9 (SW FUNCTION 0).CHANNEL MAY 'HANG UP' IF COMMAND REJECT TEST IS ATTEMPTED ON THESE DEVICES.
**NOTE- TO TEST CHANNEL USING A CONTROL UNIT OTHER THAN THE 2841 'TURN ON' BIT 11.(SW FNC 0), OR THE DATA CHAIN TEST WILL FAIL.

TABLE IN THE PROGRAM. BITS ARE ZERO WHEN OFF AND ONE WHEN ON.

TABLE 0 SC DFT FUNCTION 0

CONTROL FUNCTION

```
*********************  1.  SET FUNCTION 00 IN S/P SWITCHES 0 AND 1.
*  SENSE/PROGRAM    *  2.  SET PID IN S/P SWITCHES 2 THROUGH 7.
*  0 1 2 3 4 5 6 7  *  3.  SET DESIRED CONTROL OPTIONS IN D/E SWITCHES 8-15
*                   *      AS SHOWN.
*  0 0 0 1 0 0 0 0  *  4.  PRESS CONSOLE INTERRUPT
***************************************************************************
*    DATA ENTRY SWITCHES                   *  DESCRIPTION                  *
*  0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15   *                               *
*                                   0.....  EXIT ERROR HALT LOOP           *
*                                1........  HALT ON ERROR                  *
*                             1...........  BYPASS ALL PRINTOUTS           *
*                          1..............  LOOP ON ERROR                  *
*                       1.................  BYPASS DATA CHAIN TEST         *
*                    1....................  PRNT RESULTS AND RTN TITLES    *
*                 1.......................  BYPASS CMD REJ TEST            *
*              1..........................  LOOP START I/O                 *
*                                           (TIGHT SCOP LOOP)              *
*                                                                          *
***************************************************************************
```

3. ROUTINE SELECTION SWITCHES - SW FNC 1. USED TO SELECT ROUTINES FOR EXECUTION. THE FORMAT OF THE SWITCHES IS 00SR WHERE S IS THE SEL-ECTED SECTION AND R IS THE SELECTED ROUTINE WITHIN THAT SECTION. IF R=0 ALL ROUTINES IN THE SELECTED SECTION WILL BE RUN. IF S=0 ALL SECTIONS (1-3) WILL BE RUN.

TABLE 1 SC DFT FUNCTION 1

ROUTINE SELECTION

```
********************  1.  SET FUNCTION 01 IN S/P SWITCHES 0 AND 1.
*  SENSE/PROGRAM   *  2.  SET PID IN S/P SWITCHES 2 THROUGH 7.
*  0 1 2 3 4 5 6 7 *  3.  SET DESIRED SECTION/ROUTINE CONFIGURATION IN
*                  *      D/E SWITCHES 8-11/12-15 RESPECTIVELY.
*  0 1 0 1 0 0 0 0 *  4.  PRESS CONSOLE INTERRUPT.
***************************************************************************
*     DATA ENTRY SWITCHES                  * DESCRIPTION                   *
*  0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15   *                               *
*                          R  R  R  R.... ROUTINE NUMBER IN HEX (0=RUN     *
*                                         ALL ROUTINES)                    *
*                 S S  S  S  .  .  .  ..... SECTION NUMBER IN HEX (0=RUN   *
*                                         ALL SECTIONS,                    *
*                                                                          *
***************************************************************************
```

4. DEVICE SELECTION. SWITCH FUNCTION 2 IS USED TO SELECT THE DEVICE UNDER TEST. THE UNIT ADDRESS IS PLACED IN THE 8 LOW ORDER BITS OF THE DE SWS (BITS 8-15).

TABLE 2 SC DFT FUNCTION 2

DEVICE SELECTION

```
*******************
*  SENSE/PROGRAM  * 1. SET FUNCTION 10 IN S/P SWITCHES 0 AND 1.
* 0 1 2 3 4 5 6 7 * 2. SET PID IN S/P SWITCHES 2 THROUGH 7.
* 1 0 0 1 0 0 0 0 * 3. SET 2841/2311 ADDRESS INTO D/E SWITCHES
*                 *    8-15 AS SHOWN
*                 * 4. PRESS CONSOLE INTERRUPT
*************************************************************************
*           DATA ENTRY SWITCHES        * DESCRIPTION                    *
*0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  *                                *
*                                U  U  U  U. . UNIT (2311) TO BE USED   *
*                 C  C  C  C . . . . . . . .UNIT (2841) TO BE USED.     *
*************************************************************************
```

3.3 PROGRAM HALTS.

1000 *****SELECT OPTIONS*****

THIS HALT OCCURS PRIOR TO PROGRAM EXECUTION TO ALLOW SETTING OF THE OPTION SWITCHES. IF OPTIONS ARE DESIRED THEY SHOULD BE ENTERED BEFORE SETTING OPTION SWITCH 2 (DEVICE) AS PROGRAM EXECUTION COMMENCES AT THIS TIME.

1000 ***HALT-- SC DIAGNOSTIC AT ADDRS XXXX

HALT AFTER ERROR, UNLESS BYPASSED, IS A LOOP THAT ALLOWS OPTION SELECTION AND LOOP EXIT USING THE SAME SWITCH FUNCTION (FNC 0). BESIDES THE NORMAL HALT AFTER ERROR DESCRIBED ABOVE, THERE ARE SEVERAL ERROR CONDITIONS IN WHICH THE PROGRAM CANNOT CONTINUE.(EXAMPLE, ACCESS NOT READY,HANG UP BUSY,ETC.) THE ERROR MESSAGE WILL IDENTIFY SUCH CONDITIONS. THE ADDRESS SPECIFIED IN LINE 1 IS THAT OF THE CALL ON THE WAIT ROUTINE.

NECESSARY INSTRUCTIONS TO EXIT THE ERROR HALT LOOP ACCOMPANY ENTRY TO THE LOOP VIA A PRINTOUT. WHILE IN THE LOOP VARIOUS SWITCH FUNCTION 0 OPTIONS CAN BE ENTERED ALONG WITH BIT 15=0 WHICH PROVIDES THE EXIT. BIT 15=0 ALONE WILL RESULT IN A NORMAL EXIT, IN MOST CASES THE ROUTINE WILL TERMINATE.

1. SETTING BIT 12 WILL EXIT TO THE START I/O THAT CAUSED THE ERROR.
2. SETTING BIT 8 WITH 12 WILL EXIT TO THE FAILING START I/O AND LOOP ON THE XIO. (TIGHT SCOPE LOOP)
3. SETTING BIT 13 AND SPECIFYING THE FAILING ROUTINE (FNC 1) WILL LOOP THROUGH THE ROUTINE WITHOUT CHANGING ANY PARAMETERS, PRINTING ERRORS, OR HALTING ON THE ERROR. (LONG SCOPE LOOP)

THESE OPTIONS SHOULD BE THE MOST USEFUL. SEE TABLE OF OPTIONS FOR OTHER APPLICATIONS.

** NOTE- THIS PROGRAM IS DESIGNED TO BE MOST EFFECTIVE WHEN RUNNING UNDER -HALT AFTER ERROR-. IF USER WISHES TO RUN IN THIS MODE SWITCH FUNCTION 0, BIT 14 MUST BE TURNED ON.

** NOTE- IF THE SELECTOR CHANNEL AND THE LOG DEVICE SHARE A DATA CHANNEL, CAUSING A CONSOLE INTERRUPT MAY RESULT IN MONITOR WAIT 9 (3009).

3.4 PROGRAM TERMINATION.

1.END OF NORMAL TEST.
-END OF DFT- MESSAGE IS PRINTED AT COMPLETEION OF NORMAL TEST. PROGRAM WILL TERMINATE UNLESS MONITOR FNC 0, SW 11 IS ON (LOOP PROGRAMS).

4.0 PRINTOUTS

4.1 ERROR MESSAGES

ERROR 00 IS OUTPUT WHEN AN INTERRUPT OCCURS WHICH IS NOT FROM THE DEVICE SELECTED OR WHICH COMES WHILE THIS TEST DOES NOT HAVE THE DEVICE. THIS ERROR IS ALWAYS ACCOMPANIED BY A CSW IN THE SECOND LINE. (SEE 4.1.1 BELOW)

ERROR SR01 IS OUTPUT WHEN AN INTERRUPT FAILS TO OCCUR AFTER ISSUING A START I/O OR WHEN THE CHANNEL IS BUSY ON ENTRY TO SIO RTN
SEE 4.1.2 BELOW

ERROR SR02 IS THE PRIMARY MESSAGE FROM THIS TEST.

ERROR SR02 IS OUTPUT WHEN AN UNEXPECTED BIT IS PRESENT IN ANY WORD OF THE CHANNEL STATUS. (SEE 4.1.3 BELOW) THE FIRST WORD WHICH DOESN'T COMPARE IS IDENTIFIED IN LINE 1. THE IOCC THAT POINTS TO THE FAILING CCW CHAIN IS PRINTED ALONG WITH EACH CCW IN THE CHAIN. CAREFUL COMPARISON OF ORIGINAL CCW PARAMETERS IN RELATION TO 'SHOULD BE' AND 'ENDING' PARAMETERS WILL USUALLY AID IN PINPOINTING CHANNEL BUGS.

ERROR SR03 USES AN ENGLISH MESSAGE TO EXPLAIN SOME OTHER ERROR THAN A CSW ERROR. THE MESSAGE IS SELF EXPLANATORY AND IS USUALLY ACCOMPANIED BY A CAW, CSW AND/OR SENSE WORD. (SEE 4.1.4 BELOW)

ERROR NUMBER FORMAT -

1. UNEXPECTED INTERRUPT ERROR PRINTOUT

```
1000 ** ER 00 UNEXPECTED INTERRUPT
```

2. NO INTERRUPT ERROR PRINTOUT

```
1000 ** ER-SR01 INTERRUPT D ID NOT OCCUR
          CSW YYYY UUZZ ADRS CNTR
1000 ** ER-SR01 CHANNEL BUSY-SIO NOT ATTEMPTED
```

3. NORMAL ERROR NUMBER PRINTOUT.

```
1000 ** ER- SR02 FFF NOT CORRECT
          CSW YYYY UUZZ ADRS CNTR
          S/B YYYY UUZZ ADRS CNTR
     IOCC AT ADDR XXXX = CCCC DDDD
      CCW AT ADDR CCCC = ABCD ABCD ABCD
       CHAINED TO CCCC = ABCD ABCD ABCD
```

4. ERROR NUMBER WITH MESSAGE.

```
1000 ** ER- SR03.....MESSAGE.....
```

5. THE SECOND LINE OF AN ERROR MESSAGE PRINTOUT GIVES VARIABLE DATA ON MACHINE CONDITIONS.

CAW KKKK CSW ADRS YYYY UUZZ CNTR SENSE B-B B-B B-B B-B

6. EXPLANATION OF CHARACTERS-

S	SECTION NUMBER
R	ROUTINE NUMBER
XX	SEQUENTIAL ERROR NUMBER WITHIN EACH ROUTINE
UU	CHANNEL AND DEVICE ADDRESS IN HEX
FFF	FIRST CSW WORD WHICH DOESN'T COMPARE (CS, US, AD, BC)
AAAA	ADDRESS OF ERROR BRANCH & STORE I-REG INSTRUCTION IN LISTING
KKKK	CHANNEL ADDRESS WORD FOR THE CCW CHAIN
ADRS	CHANNEL CCW ADDRESS REGISTER
YYYY	CHANNEL STATUS IN HEX
UUZZ	UNIT ADDRESS/UNIT STATUS IN HEX
CNTR	CHANNEL BYTE COUNT REGISTER
XXXX	ADDRESS OF IOCC FOR SIO
CCCC	ADDRESS OF CCW
DDDD	IOCC ADDRS, FUNCTION, MODIFIERS
ABCD	REFLECTS CURRENT CCW FOR SIO
B-B	SENSE BYTES IN BINARY

5. COMMENTS

5.1 DETAILED DESCRIPTION OF PROGRAM ROUTINES

SECTION 1.

ROUTINE 1. STATUS CHECK
THIS ROUTINE INTERROGATES THE CHANNEL STATUS BEFORE AND AFTER DOING A SENSE WITH RESET. ERROR PRINTOUTS RESULT FROM CC 2&3 OR CC1 AFTER ATTEMPTING TO RESET THE STATUS.

ROUTINE 2. PROGRAM CHECK
THIS ROUTINE ATTEMPTS TO EXECUTE INVALID FUNCTIONS (IOCC FUNCTION= 0,1,2 OR 6) THEN TESTS FOR PROGRAM CHECK TO EXERCISE THE PROGRAM CHECK CIRCUITS OF THE SELECTOR CHANNEL

ROUTINE 3. CCW ADDRS REGISTER
THIS ROUTINE SHOULD BE THE FIRST SIO (UNLESS ROUTINE 2 FAILS) OF THE TEST. BUILDS NO-OP CCW'S AT ADDRESS FFFC AND FFFD AND THE CCW ADDRESS REGISTER IS CHECKED FOR FFFF AND 0000.

ROUTINE 4. TEST I/O
THIS ROUTINE DOES A TEST I/O & COMPARES CHANNEL STATUS, UNIT STATUS, CCW ADDRESS, AND BYTE COUNT WITH EXPECTED CHANNEL STATUS WORD.

ROUTINE 5. NO-OP
THIS ROUTINE COMPARES CHANNEL STATUS RECEIVED WITH THE STATUS EXPECTED (CHANNEL END DEVICE END) AFTER EXECUTING A NO-OP COMMAND.

ROUTINE 6. BYTE COUNTER REGISTER
THIS ROUTINE CHECKS THE DECREMENTING AND CARRY PROPAGATION OF THE REGISTER. 15 BYTE COUNT CONFIGURATIONS ARE ISSUED AND THE RESULTANT BYTE COUNTS COMPARED WITH A BYTE COUNT 'SHOULD BE' TABLE.

ROUTINE 7. TRANSFER IN CHANNEL
THIS ROUTINE ISSUES A TIC TO A NOP IN LO CORE AND COMPARES THE RESULTANT CCW ADDRESS WITH A CCW 'SHOULD BE'.

ROUTINE 8. SENSE
THIS ROUTINE EXERCISES THE SENSE I/O COMMAND AND COMPARES THE RESULTING CHANNEL STATUS WORD WITH THE CSW EXPECTED. IT ALSO VERIFIES THE TRANSFER OF FOUR BYTES OF SENSE DATA.

ROUTINE 9. DATA CHECK
THIS ROUTINE ATTEMPTS TO SENSE DATA INTO A STORAGE PROTECTED AREA AND COMPARES THE CHANNEL STATUS UNIT STATUS AND CCW ADDRESS RETURNED AGAINST THE CSW EXPECTED.

SECTION 2.

ROUTINE 1. DATA CHAIN
THIS ROUTINE TESTS DATA CHAINING BY STARTING A CHAIN OF CCWS THAT CAUSE DATA TRANSFER TO SEPERATE STORAGE AREAS.

ROUTINE 2. COMMAND CHAIN
THIS ROUTINE STARTS A CHAIN CONSISTING OF A NO-OP AND A SENSE I/O. THE CS, US, AND CCW ADDRESS REGISTER RETURNED ARE COMPARED WITH THE EXPECTED CSW. THE SECOND COMMAND IN THE CHAIN, THE SENSE, IS TESTED TO SEE THAT DATA TRANSFER TOOK PLACE.

ROUTINE 3. INCORRECT LENGTH (SILI BIT OFF)
THIS ROUTINE ISSUES A SENSE COMMAND WITH AN INVALID BYTE COUNT AND SUPPRESS INCORRECT LENGTH INDICATOR (SILI) BIT OFF. EXPECTED CS OF HEX 4200 IS COMPARED WITH ACTUAL CS RECEIVED.

ROUTINE 4. INCORRECT LENGTH (SILI BIT ON)
SAME PROCEDURE AS ROUTINE 3 EXCEPT SLI BIT IS ON IN CCW. EXPECTED CHANNEL STATUS DOES NOT HAVE INCORRECT LENGTH BIT SET.

ROUTINE 5. SKIP
THIS ROUTINE TESTS THE ABILITY OF THE CHANNEL TO SKIP DATA TRANSFER BY ISSUING A CCW THAT WILL SUPPRESS TRANSFER OF THE SENSE INFORMATION REQUESTED.

ROUTINE 6. PROGRAM CONTROLLED INTERRUPT
THIS ROUTINE ISSUES A CCW WITH THE PCI BIT SET AND TESTS THE CAUSE OF INTERRUPT TO DETERMINE THE EFFECTIVENESS OF THE PCI BIT.

SECTION 3.

ROUTINE 1. NOT OPERATIONAL
THIS ROUTINE USES A SUSPECTED NOT OPERATIONAL DEVICE (INVERSE OF CIRCUITS. EXPECTED CHANNEL STATUS OF 8000 IS COMPARED TO THE CHANNEL DEVICE ADDRESS ENTERED IN BIT SWITCHES) TO TEST THE NOT OPERATIONAL STATUS RECEIVED.

ROUTINE 2. COMMAND REJECT
THIS ROUTINE ISSUES A START I/O WITH A CCW COMMAND OF HEX FF. A UNIT CHECK IS EXPECTED AND THE SENSE BYTES FROM THE DEVICE ARE TESTED TO INSURE THAT COMMAND REJECT WAS ON.
**NOTE- TURN 'ON' BIT 9 SW0 IF CONTROL UNIT BEING USED IS A 360 CA OR 2501.

ROUTINE 3. HALT I/O
THIS ROUTINE STARTS A CHAIN OF CCW'S (TIC TO A SENSE) THAT SHOULD PUT THE CHANNEL IN A BUSY STATE. IF THE CHANNEL DOES GO BUSY A HALT I/O IS ISSUED AND THE CHANNEL STATUS IS CHECKED FOR CHANNEL END, DEVICE END AND NOT BUSY. NOTE - AN ERROR 00 (NO INTERRUPT OCCURRED) INDICATES THAT THE HALT I/O DID NOT TERMINATE THE CHANNEL LOOP. THE CHANNEL IS STILL BUSY AND RESET-RESTART IS NECESSARY TO CONTINUE.

ALL ROUTINES - NOTE 1

GATING CSW ADDRESS INTO THE UNIT STATUS WORD IN ERROR SR02 PRINTOUT IS CHARACTERISTIC OF TOTAL CONFUSION IN THE CHANNEL. THIS COULD BE DUE TO NO CHANNEL POLLING OR NO COMMAND OUT.

ALL ROUTINES - NOTE 2

IF ALL CHANNEL STATUS BITS ARE ZERO, THERE IS A POSSIBILITY OF FAILURE TO GATE OUT OR TO DECODE ANY COMMANDS.

COMMON SUBROUTINES

1. START I/O
   THIS ROUTINE IS USED BY ALL ROUTINES TO EXECUTE A SIO AND THEN TEST THE CHANNEL STATUS RECEIVED AGAINST THE MASK PROVIDED IN THE SIO ROUTINE CALL. A COMPREHENISVE PRINTOUT IS PROVIDED SHOULD ANY NON-COMPARE OCCUR. (SEE 4.1.3 - ERROR PRINTOUT)

2. EROUT.
   THIS SUBROUTINE IS USED BY ALL ROUTINES TO PRINT OUT AN ERROR NUMBER OR ERROR MESSAGE, THE CAW, CSW, AND/OR SENSE INFORMATION. THE ROUTINE ALSO PROVIDES FOR PRINTING A BLANK LINE AS A SEPARATOR, WILL GET THE SENSE BYTES, STOP AFTER PRINTING ERROR, RETURN TO PROGRAM VIA A OPTIONAL REG, AND/OR EXIT TO NEXT ROUTINE.

6. APPENDIX

6.1 CHANNEL STATUS WORDS DEVICE AND CHANNEL STATUS BIT BREAKDOWN IN HEX

CSW ADRS YYYY UUZZ CNTR

- 8000 ---UNIT NOT OPERATIONAL
- 4000 ---UNIT STATUS PENDING
- 2000 ---PROGRAM CONTROL INTERRUPT
- 1000 ---PROGRAM CHECK
- 0800 ---DATA CHECK
- 0400 ---CONTROL CHECK
- 0200 ---INCORRECT LENGTH
- 0100 ---ADAPTER BUSY
- 80 ---ATTENTION
- 40 ---STATUS MODIFIER
- 20 ---CONTROL UNIT END
- 10 ---BUSY
- 08 ---CHANNEL END
- 04 ---DEVICE END
- 02 ---UNIT CHECK
- 01 ---UNIT EXCEPTION

ADRS - CHANNEL CCW ADDRESS REGISTER
YYYY - CHANNEL STATUS IN HEX
UUZZ - UNIT ADDRESS/UNIT STATUS IN HEX
CNTR - CHANNEL BYTE COUNT REGISTER

---------- LAST PAGE ----------

	SENSE BYTE 0	SENSE BYTE 1	SENSE BYTE 2	SENSE BYTE 3
BIT 0	COMMAND REJECT	DATA CHECK IN COUNT AREA	UNSAFE	READY
BIT 1	INTERVENTION REQUIRED	TRACK OVERRUN		ON LINE
BIT 2	BUS - OUT PARITY	END OF CYLINDER	SERIALIZER CHECK	UNSAFE
BIT 3	EQUIPMENT CHECK	INVALID SEQUENCE		
BIT 4	DATA CHECK	NO RECORD FOUND	ALU CHECK	ON LINE
BIT 5	OVERRUN	FILE PROTECTED	UNSELECTED FILE STATUS	END OF CYLINDER
BIT 6	TRACK CONDITION CHECK	MISSING ADDRESS MARKER		
BIT 7	SEEK CHECK	OVERFLOW INCOMPLETE		SEEK INCOMPLETE

* BLANK POSITIONS ARE "NOT USED"

6.3

THE FOLLOWING EDIT CARDS ARE REQUIRED BY THIS PROGRAM:

1. CARD 0 - MUST CONTAIN 2 EDITS. THE FIRST MUST DEFINE THE LOG DEVICE AND THE SECOND MUST DEFINE THE SELECTOR CHANNEL.
2. END CARD - MUST HAVE FFFF IN COLUMNS 7-10.
3. SEE NOTE 2.

THE DEVICE DEFINITION EDIT FIELD (DDEF) INCLUDES THE FOLLOWING:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THE DEVICE.
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE.
3. THE CHANNEL ASSIGNED TO THIS DEVICE.

NOTE 1 - THIS PROGRAM HAS ITS OWN LOG ROUTINE. THE FIRST ENTRY ON THE EDIT CARD IS ASSOCIATED WITH THE C.E. LOG DEVICE.

NOTE 2 - THE SELECTOR CHANNEL EDIT ENTRY FOR THE DIAGNOSTIC MONITOR (DM) SHOULD NOT CONTAIN A UNIT ADDRESS FOR A 2311 DISK DRIVE OR A 2841 CONTROL UNIT. (i.e. 9000)

																	DDEF LOG DEV. NOTE 1.					DDEF SEL. CHAN. NOTE 2.				
		PROGRAM ID							CARD SEQUENCE NR.						NUMBER OF ENTRIES		INTERRUPT LEVEL (HEX)	ILSW BIT (HEX)		CHANNEL OR F		INTERRUPT LEVEL (HEX)	ILSW BIT (HEX)		CHANNEL OR F	
COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					26
CARD 0	E	1	0	0	0	▨	E	D	0	0	▨	0	0	0	2	▨	X	X	X	X	▨	X	X	X	X	▨
END CD	E	1	0	0	0	▨	F	F	F	F	▨					▨					▨					▨
						▨					▨					▨					▨					▨
						▨					▨					▨					▨					▨
						▨					▨					▨					▨					▨

```
SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                    ID/SEQNO
                  0002     *                                                        81000020
                  0003     ********************************************************* 81000030
                  0004     *                                                       * 81000040
                  0005     ********************************************************* 81000050
                  0006     *                                                        81000060
                  0007     *              1800 MONITOR INTERFACE                    81000070
                  0008     *                                                        81000080
                  0009     ********************************************************* 81000090
                  0010     *                                                       * 81000100
                  0011     ********************************************************* 81000110
012C 0            0012     BEGIN EQU     300                                        81000120
012D 0            0013     START EQU     BEGIN+1                                    81000130
012E 0            0014     END   EQU     START+1                                    81000140
012F 0            0015     LOG   EQU     END+1                                      81000150
0130 0            0016     ERROR EQU     LOG+1                                      81000160
0131 0            0017     REQDV EQU     ERROR+1                                    81000170
0132 0            0018     RELDV EQU     REQDV+1                                    81000180
0133 0            0019     CRCK  EQU     RELDV+1                                    81000190
0134 0            0020     MATO  EQU     CRCK+1                                     81000200
                  0021     *                                                        81000210
0000              0022           ORG     *+/07FF    ORIGIN OF PGM                   81000220
                  0023     *                                                        81000230
                  0024     *            MONITOR INTERFACE TABLES                    81000240
                  0025     *                                                        81000250
07FF 0  1000      0026     TPID  DC      /1000                                      81000260
0800 0  0001      0027     TSID  DC      1          SECTION ID                      81000270
0801 0  0000      0028     TSAD  DC      0          SECTION PREFACE ADDRESS         81000280
                  0029     *     EQUATES FOR TSW0 SWITCH OPTIONS                    81000290
0008 0            0030     OLPST EQU     8          LOOP SIO,TIO                    81000300
0009 0            0031     OBYRT EQU     9          BYPASS CMND REJ RTN             81000310
000A 0            0032     OPRRS EQU     10         PRINT RESULTS                   81000320
000A 0            0033     OTTLE EQU     10         PRINT RTN TITLES                81000330
000B 0            0034     ORTRY EQU     11         RETRY SIO                       81000340
000C 0            0035     OLPER EQU     12         LOOP ERROR                      81000350
000D 0            0036     OBYPR EQU     13         BYPASS ALL PRINTOUTS            81000360
000E 0            0037     OHALT EQU     14         HALT ON ERROR                   81000370
000F 0            0038     OCHLT EQU     15         CLEAR ERROR HALT                81000380
                  0039     *                                                        81000390
0802 0  0000      0040     TSW0  DC      0          SELECT OPTIONS                  81000400
0803 0  0000      0041     TSW1  DC      0          SELECT SECT AND RTN             81000410
0804 0  FF00      0042     TSW2  DC      /FF00      UNIT ADDRESS                    81000420
0805 0  0000      0043     TSW3  DC      0                                          81000430
0806 1  093C      0044     IPA   DC      ZIPA       INIT PRGM ADDRESS               81000440
0807 1  094D      0045     LPA   DC      ZLPA       LOOP PRGM ADDRS                 81000450
0808 1  096C      0046     EPA   DC      ZEPA       END PRG ADDRS                   81000460
0809 1            0047     MLSCF EQU     *          MONITOR CONTROL FIELD           81000470
0809 0  0000      0048     MLSC0 DC      0          ENTRY ZERO                      81000480
080A 0  0000      0049     MLSC1 DC      0               ONE                        81000490
080B 0  0000      0050     MLSC2 DC      0               TWO                        81000500
```



```
SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                    ID/SEQNO
080C 0  FFFF      0051     TERM  DC      /FFFF                                      81000510
080D 1  156C      0052           DC      PEND       LAST ADDRS                      81000520
080E 0  0000      0053           DC      0          WORDS FOR MONITOR USE           81000530
080F 0  0000      0054           DC      0          *                               81000540
0810 0  0000      0055           DC      0          *                               81000550
0811 0  0000      0056           DC      0          *                               81000560
0812 0  0000      0057           DC      0          *                               81000570
0813 0  0000      0058     TLGED DC      0          LOG EDIT                        81000580
0814 0  0000      0059     TSCED DC      0          SEL CHANNEL EDIT                81000590
0815 0  0000      0060     TRID  DC      0          ROUTINE ID                      81000600
                  0061     ********************************************************* 81000610
                  0062     *                                                       * 81000620
                  0063     ********************************************************* 81000630
                  0064     *                                                        81000640
                  0065     *     TABLE OF CONSTANTS                                 81000650
                  0066     *                                                        81000660
                  0067     ********************************************************* 81000670
                  0068     *                                                       * 81000680
                  0069     ********************************************************* 81000690
                  0070     *                                                        81000700
087F 1            0071     TB    EQU     TPID+128   SO TBL CAN REACH PST TBL        81000710
0816 0  0001      0072     K1    DC      1          CONSTANT ONE                    81000720
0817 0  0002      0073     K2    DC      2          CONSTANT                        81000730
0818 0  0003      0074     K3    DC      3          CONSTANT                        81000740
0819 0  0004      0075     K4    DC      4                                          81000750
081A 0  0006      0076     K6    DC      6          CONSTANT                        81000760
081B 0  0007      0077     K7    DC      7          CONSTANT                        81000770
081C 0  0008      0078     K8    DC      8          CONSTANT                        81000780
081D 0  0009      0079     K9    DC      9                                          81000790
081E 0  000A      0080     K10   DC      10                                         81000800
081F 0  0014      0081     K20   DC      20                                         81000810
0820 0  0064      0082     K100  DC      100                                        81000820
0821 0  007F      0083     K127  DC      127        CONSTANT                        81000830
0822 0  0080      0084     K128  DC      128                                        81000840
0823 0  01F4      0085     K500  DC      500                                        81000850
0824 0  03E8      0086     K1000 DC      1000                                       81000860
0825 0  000A      0087     H000A DC      /000A      CONSTANT                        81000870
0826 0  0011      0088     H0011 DC      /0011                                      81000880
0827 0  0013      0089     H0013 DC      /0013      CONSTANT                        81000890
0828 0  0027      0090     H0027 DC      /0027      CONSTANT                        81000900
0829 0  0070      0091     H0070 DC      /0070      CONSTANT                        81000910
082A 0  0080      0092     H0080 DC      /0080                                      81000920
082B 0  00C6      0093     H00C6 DC      /00C6                                      81000930
082C 0  00C8      0094     H00C8 DC      /00C8                                      81000940
082D 0  00FF      0095     H00FF DC      /00FF      LINE TERMINATOR                 81000950
082E 0  0100      0096     H0100 DC      /0100      CONSTANT                        81000960
082F 0  0200      0097     H0200 DC      /0200      CONSTANT                        81000970
0830 0  0400      0098     H0400 DC      /0400      CONSTANT                        81000980
0831 0  0500      0099     H0500 DC      /0500      CONSTANT FOR WRITE IOCC         81000990
0832 0  0700      0100     H0700 DC      /0700      CONSTANT FOR SENSE DSW IOC      81001000
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```
SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL  OPCD FT OPERANDS                          ID/SEQNO
0833 0  0A00      0101    H0A00  DC      /0A00                              81001010
0834 0  0E00      0102    H0E00  DC      /0E00                              81001020
0835 0  2100      0103    H2100  DC      /2100                              81001030
0836 0  3000      0104    H3000  DC      /3000                              81001040
0837 0  4000      0105    H4000  DC      /4000     CONSTANT                 81001050
0838 0  5000      0106    H5000  DC      /5000     CONSTANT                 81001060
0839 0  7FFF      0107    H7FFF  DC      /7FFF                              81001070
083A 0  8000      0108    H8000  DC      /8000                              81001080
083B 0  C000      0109    HC000  DC      /C000                              81001090
083C 0  F000      0110    HF000  DC      /F000                              81001100
083D 0  FF00      0111    HFF00  DC      /FF00                              81001110
083E 0  0000      0112    CNTDN  DC      0                                  81001120
083F 0  0000      0113    ERTSW  DC      *-*                                81001130
0840 0  0000      0114    TSCTN  DC      *-*       SECTION NUMBER           81001140
0841 0  0000      0115    TRTNN  DC      *-*       ROUTINE NUMBER           81001150
0842 0  0000      0116    TCNSW  DC      0         ERROR SWITCH FOR RTNS    81001160
0843 0  0000      0117    TCVS1  DC      0                                  81001170
0844 0  0000      0118    TCVS2  DC      0                                  81001180
0845 0  0000      0119    CAWSV  DC      *-*       CCW ADDRESS SAVE AREA    81001190
0846    0002      0120    ERTSV  BSS  E  2         SENSE INFO SAVE          81001200
0848    0004      0121    TYP2   DMES  1 SIO,'E                             81001210
084A    0004      0122    TYP3   DMES  1 SNS,'E                             81001220
084C    0004      0123    TYPCS  DMES  1 CS  'E                             81001230
084E    0004      0124    TYPUS  DMES  1 US  'E                             81001240
0850    0004      0125    TYPAD  DMES  1 AD  'E                             81001250
0852    0004      0126    TYPBC  DMES  1 BC  'E                             81001260
0854    0004      0127    PCAW   DMES  1 CAW 'E                             81001270
0856    0004      0128    PCSW   DMES  1 CSW 'E                             81001280
0858    0004      0129    PSNS   DMES  1  SNS'E                             81001290
085A    0002      0130    SPACE  DMES  1    'E     SPACES IN 43 CODE        81001300
085B    0004      0131    NCARE  DMES  1 XXXX'E                             81001310
085D 0  0000      0132    DVADR  DC      *-*       DEVICE ADDRESS TO BE TESTED81001320
085E 0  0000      0133    SIOSW  DC      *-*       FOR SIO RTN              81001330
085F 0  0000      0134    PASSW  DC      *-*       USED TO TEST FOR ERROR   81001340
0860 0  0000      0135    LGBSY  DC      *-*       LOG BUSY SW              81001350
0861 0  0001      0136    PSCNT  DC      1         PASS COUNTER             81001360
0862 0  0000      0137    STKSW  DC      0         SWITCH FOR RE-ENTRANCE   81001370
0863 0  0000      0138    SCPLP  DC      0                                  81001380
0864 0  0000      0139    TIOSW  DC      0         TEST IO SW               81001390
0865 0  0000      0140    SPROT  DC      *-*       STORAGE PROTECTED WORD   81001400
0866 0  0000      0141    LPCNT  DC      *-*       LOOP CNTR                81001410
0867 0  0000      0142    T45SW  DC      0         0= NOT CALLED            81001420
                  0143    *                        1=1443                   81001430
                  0144    *                        2=1053/1816              81001440
                  0145    *                                                 81001450
0868 0  0000      0146    CNTRL  DC      *-*       CONTROL ROUTINE          81001460
0869 01 4C0009B1  0147           BSC  L  TCNTE     GO TO ROUTINE            81001470
                  0148    *                                                 81001480
086B 0  0000      0149    EROUT  DC      *-*       ERROR PRINTOUT ROUTINE   81001490
086C 01 4C0012C0  0150           BSC  L  ERTNE     GO TO RTN                81001500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL  OPCD FT OPERANDS                          ID/SEQNO
                  0151    *                                                 81001510
086E 0  0000      0152    FRETV  DC      *-*       RELEASE CHANNEL ROUTINE  81001520
086F 01 4C001016  0153           BSC  L  FRDVE     GO TO ROUTINE            81001530
                  0154    *                                                 81001540
0871 0  0000      0155    GETDV  DC      *-*       CHANNEL ROUTINE          81001550
0872 01 4C000FF2  0156           BSC  L  GTDVE     GO TO ROUTINE            81001560
                  0157    *                                                 81001570
0874 0  0000      0158    SIO    DC      *-*       START I/O ROUTINE        81001580
0875 01 4C001020  0159           BSC  L  SIONT     GO TO RTN                81001590
                  0160    *                                                 81001600
0877 0  0000      0161    STMLS  DC      *-*       SET MLSCF ROUTINE        81001610
0878 01 4C0011DF  0162           BSC  L  STMLE     GO TO RTN                81001620
                  0163    *                                                 81001630
087A 0  0000      0164    TCVBE  DC      *-*       CONVERT HEX TO 1443      81001640
087B 01 4C0014D4  0165           BSC  L  TCVBN     GO TO RTN                81001650
                  0166    *                                                 81001660
087D 0  0000      0167    TCVHD  DC      *-*       CONVERT HEX TO DEC       81001670
087E 01 4C0014F2  0168           BSC  L  THEXD     GO TO RTN                81001680
                  0169    *                                                 81001690
0880 0  0000      0170    THALT  DC      *-*       ENTRY POINT              81001700
0881 01 4C001220  0171           BSC  L  THLTE     GO TO RTN                81001710
                  0172    *                                                 81001720
0883 0  0000      0173    TLG IS DC      *-*       PRINT RTN                81001730
0884 01 4C00138B  0174           BSC  L  TLGME     GO TO RTN                81001740
                  0175    *                                                 81001750
0886 0  0000      0176    PIOCC  DC      *-*       PRINT IOCC'S AND CCW'S   81001760
0887 01 4C001160  0177           BSC  L  PIONT     GO TO RTN                81001770
                  0178    *                                                 81001780
8000 0            0179    BYPCS  EQU     /8000     BYPASS CKING-CHAN STATUS 81001790
4000 0            0180    BYPUS  EQU     /4000               -UNIT STATUS 81001800
2000 0            0181    BYPAD  EQU     /2000               -CSW ADDRESS 81001810
1000 0            0182    BYPBC  EQU     /1000               -BYTE CNTR   81001820
                  0183    *                                                 81001830
                  0184    ************************************************* 81001840
                  0185    *                                               * 81001850
                  0186    ************************************************* 81001860
                  0187    *                                                 81001870
                  0188    *     EQUATES AND CONSTANTS FOR CCW'S             81001880
                  0189    *                                                 81001890
                  0190    ************************************************* 81001900
                  0191    *                                               * 81001910
                  0192    ************************************************* 81001920
                  0193    *                                                 81001930
                  0194    *     FLAGS                                       81001940
                  0195    *                                                 81001950
0080 0            0196    FLDCH  EQU     /80       DATA CHAINING            81001960
0040 0            0197    FLCCH  EQU     /40       COMMAND CHAINING         81001970
0020 0            0198    FLSLI  EQU     /20       SUPPRESS INCORRECT LNG   81001980
0008 0            0199    FLSKP  EQU     /08       SKIP BIT                 81001990
0010 0            0200    FLPCI  EQU     /10       PGM CONTROLLED INTERRUPT 81002000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
                   0201    *                                               81002010
                   0202    *      OP CODES                                 81002020
                   0203    *                                               81002030
0000 0             0204    OPTIO EQU     /00       TEST I/O                 81002040
0001 0             0205    OPWR  EQU     /01       WRITE OP CODE            81002050
0002 0             0206    OPRD  EQU     /02       READ OP CODE             81002060
0003 0             0207    OPNOP EQU     /03       NO-OP                    81002070
0005 0             0208    WRDAT EQU     /05       WRITE DATA               81002080
0006 0             0209    RDDAT EQU     /06       READ DATA                81002090
0004 0             0210    OPSNS EQU     /04       SENSE I/O                81002100
0007 0             0211    SEEKC EQU     /07       SEEK CYLINDER            81002110
0011 0             0212    ERASE EQU     /11       ERASE RECORD             81002120
0008 0             0213    OPTIC EQU     /08       TRANSFER IN CHANNEL      81002130
000B 0             0214    SEEKB EQU     /0B       SEEK BIN                 81002140
0013 0             0215    RCAL  EQU     /13       RECALIBRATE              81002150
0012 0             0216    RDCNT EQU     /12       RD COUNT                 81002160
001A 0             0217    RDHA  EQU     /1A       READ HOME ADDRESS        81002170
001E 0             0218    RDCKD EQU     /1E       RD COUNT KEY DATA        81002180
0029 0             0219    SRCKE EQU     /29       SEARCH KEY EQUAL         81002190
000E 0             0220    RDKD  EQU     /0E       RD KEY DATA              81002200
000D 0             0221    WRKD  EQU     /0D       WR KEY DATA              81002210
0016 0             0222    RDRO  EQU     /16       READ RECORD ZERO         81002220
009A 0             0223    RDHMT EQU     /9A       READ HA MULTI TRACK      81002230
001B 0             0224    SKHD  EQU     /1B       SEEK HEAD                81002240
0039 0             0225    SRCHA EQU     /39       SEARCH HA                81002250
0049 0             0226    SRCKH EQU     /49       SEARCH KEY HI            81002260
0051 0             0227    SIDHI EQU     /51       SEARCH ID HI             81002270
0069 0             0228    SKHE  EQU     /59       SEARCH KEY HI/EQ         81002280
0071 0             0229    SIDHE EQU     /71       SEARCH ID HI/EQ          81002290
0031 0             0230    SRCID EQU     /31       SEARCH ID                81002300
001F 0             0231    SFILM EQU     /1F       SET FILE MASK            81002310
001D 0             0232    WRCKD EQU     /1D       WRT CNT,KEY,DATA         81002320
0019 0             0233    WPHA  EQU     /19       WRITE HA                 81002330
0015 0             0234    WRRO  EQU     /15       WRITE RECORD 0           81002340
                   0235    *                                               81002350
                   0236    ************************************************* 81002360
                   0237    *                                               * 81002370
                   0238    ************************************************* 81002380
                   0239    *                                               81002390
                   0240    *      EQUATES FOR CHANNEL STATUS DSW'S         81002400
                   0241    *                                               81002410
0000 0             0242    SCUNO EQU     0         UNIT NOT OPERATIONAL     81002420
0001 0             0243    SCUSP EQU     1         UNIT STATUS PENDING      81002430
0002 0             0244    SCPCI EQU     2         PGM CNTRL INT.           81002440
0003 0             0245    SCPCK EQU     3         PGM CHECK                81002450
0004 0             0246    SCDCK EQU     4         DATA CHECK               81002460
0005 0             0247    SCICC EQU     5         INTERFACE CNTRL CHECK    81002470
0006 0             0248    SCILG EQU     6         INCORRECT LENGTH INDICATOR 81002480
0007 0             0249    SCABZ EQU     7         ADAPTER BUSY             81002490
0008 0             0250    SCUOP EQU     8         UNIT OPERATIONAL         81002500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
                   0251    *                                               81002510
                   0252    ************************************************* 81002520
                   0253    *                                               * 81002530
                   0254    ************************************************* 81002540
                   0255    ************************************************* 81002550
                   0256    *                                               * 81002560
                   0257    ************************************************* 81002570
                   0258    *                                               81002580
                   0259    *      EQUATES FOR UNIT STATUS DSW              81002590
                   0260    *                                               81002600
0008 0             0261    UNATN EQU     8         UNIT STATUS-ATTENTION    81002610
0009 0             0262    UNSMD EQU     9         STATUS MODIFIER          81002620
000A 0             0263    UNCUE EQU     10        CONTROL UNIT END         81002630
000B 0             0264    UNBZY EQU     11        UNIT BUSY                81002640
000C 0             0265    UNCHE EQU     12        CHANNEL END              81002650
000D 0             0266    UNDVE EQU     13        DEVICE END               81002660
000E 0             0267    UNCHK EQU     14        UNIT CHECK               81002670
000F 0             0268    UNEXC EQU     15        UNIT EXCEPTION           81002680
                   0269    ************************************************* 81002690
                   0270    *                                               * 81002700
                   0271    ************************************************* 81002710
                   0272    *                                               81002720
                   0273    *      EQUATES FOR 2311 SENSE BYTES             81002730
                   0274    *                                               81002740
0004 0             0275    FBRST EQU     4         (BURST) DATA CK          81002750
0005 0             0276    FOVRN EQU     5         CHANNEL/2841 OVERRUN     81002760
0007 0             0277    FSKCK EQU     7         SEEK CK                  81002770
0009 0             0278    FTROV EQU     9                                  81002780
000A 0             0279    FEOCY EQU     10        END OF CYLINDER          81002790
000C 0             0280    FNORC EQU     12        NO RECORD FOUND          81002800
0010 0             0281    FUNSF EQU     16                                 81002810
0012 0             0282    FSERD EQU     18        SERDES CHECK             81002820
0015 0             0283    FUNSL EQU     21                                 81002830
0018 0             0284    FDRDY EQU     24        DRIVE READY              81002840
0019 0             0285    FONLN EQU     25                                 81002850
001A 0             0286    FUNSI EQU     26        UNSAFE                   81002860
001D 0             0287    FECYL EQU     29        END OF CYLINDER          81002870
001F 0             0288    FSKIN EQU     31        SEEK INCOMPLETE          81002880
                   0289    *                                               81002890
                   0290    *                                               81002900
0889 0  0001       0291    NOPCC DC      1         BYTE COUNT               81002910
088A 0  2003       0292          DC      /20*256+OPNOP FLAGS AND OP CODE    81002920
088B 1  088C       0293          DC      *         ADDRESS                  81002930
                   0294    *                                               81002940
                   0295    *                                               81002950
088C 0  0001       0296    RECAL DC      1         BYTE COUNT               81002960
088D 0  2013       0297          DC      /20*256+RCAL FLAGS AND OP CODE     81002970
088E 1  088F       0298          DC      *         ADDRESS                  81002980
                   0299    *                                               81002990
                   0300    *                                               81003000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                ID/SEQNO
088F 0  0001      0301     TSCCW DC      1          BYTE COUNT                   81003010
0890 0  2000      0302           DC      /20*256+OPTIO FLAGS AND OP CODE        81003020
0891 1  0892      0303           DC      TSWDS          ADDRESS                 81003030
                  0304     *                                                    81003040
0892 0  0000      0305     TSWDS DC      *-*                                    81003050
                  0306     *                                                    81003060
0893 0  0006      0307     SNCCW DC      6          BYTE COUNT                   81003070
0894 0  0004      0308           DC      0*256+OPSNS FLAGS AND OP CODE          81003080
0895 1  0896      0309           DC      SNWDS          ADDRESS                 81003090
                  0310     *                                                    81003100
089C    0004      0311     SNWDS BSS  E  4          SENSE BYTES                  81003110
0896 1            0312     SNWD0 EQU     SNWDS                                  81003120
0897 1            0313     SNWD1 EQU     SNWDS+1                                81003130
0898 1            0314     SNWD2 EQU     SNWDS+2                                81003140
0899 1            0315     SNWD3 EQU     SNWDS+3                                81003150
089A 1  088F      0316     TIOXX DC      TSCCW      TIO CCW                     81003160
089B 0  0000      0317           DC      *-*        TO BE FILLED IN             81003170
089C 0  0000      0318     HIOXX DC      *-*                                    81003180
089D 0  0000      0319           DC      *-*                                    81003190
089E 1  0893      0320     SENSE DC      SNCCW      SENSE IO W/SUPPRESS POLL.   81003200
089F 0  0000      0321           DC      *-*        TO BE FILLED IN             81003210
08A0 0  0000      0322     SIOXX DC      *-*        TO BE FILLED WITH CCW ADDR  81003220
08A1 0  0000      0323           DC      *-*        TO BE FILLED IN             81003230
08A2 0  0000      0324     SCSN0 DC      *-*                                    81003240
08A3 0  0000      0325           DC      *-*        = 0E                        81003250
08A4 0  0000      0326     SCSN1 DC      *-*                                    81003260
08A5 0  000       0327           DC      *-*        = 09                        81003270
08A6 0  0000      0328     SCSN2 DC      *-*                                    81003280
08A7 0  0000      0329           DC      *-*        = 0A                        81003290
08A8 0  0000      0330     SCSN3 DC      *-*                                    81003300
08A9 0  0000      0331           DC      *-*        = 0B                        81003310
08AA 0  0000      0332     SCSN4 DC      *-*                                    81003320
08AB 0  0000      0333           DC      *-*        = 0C                        81003330
08AC 0  0000      0334     SCSN5 DC      *-*                                    81003340
08AD 0  0000      0335           DC      *-*        = 06                        81003350
08AE    0004      0336     SCSX0 BSS  E  4          START I/O SAVE AREA         81003360
08B2    0004      0337     SCSX4 BSS  E  4          START I/O SAVE AREA 2       81003370
08B6    0004      0338     SCSX8 BSS  E  4          TIO SAVE AREA               81003380
08BA    0004      0339     SCSXC BSS  E  4          SENSE I/O SAVE AREA         81003390
08BE    0004      0340     SCSVS BSS  E  4          SAVE AREA FOR SENSE INFO    81003400
08C2    0003      0341     HA    BSS  E  3                                      81003410
08C6    0000      0342           BSS  E  0                                      81003420
08C6 1  149E      0343     TLGWR DC      TLGBA      IOAREA ADDRESS              81003430
08C7 0  0000      0344           DC      *-*        TO BE FILLED IN             81003440
08C8 0  0000      0345     TLGSP DC      /0000      SPACE IN 1443 CODE          81003450
08C8 1            0346     TLGSN EQU     TLGSP      SENSE DSW IOCC              81003460
08C9 0  0000      0347           DC      *-*        TO BE FILLED IN             81003470
08CA 0  0000      0348     TLGCT DC      0          LOOP COUNT FOR PRNTR INT    81003480
08CB 0  0000      0349     TLGSW DC      0          1ST/2ND CHAR SW (1053)      81003490
08CC 0  0000      0350     TLGSR DC      0          1ST/2ND CHAR SW (TLGCH)     81003500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                ID/SEQNO
08CD 0  0000      0351           DC      *-*        SENSE/RESET DSW             81003510
                  0352     *                                                    81003520
08CE    0010      0353     STSEP DMES  1 XX ERROR ON XXX 'E                      81003530
08D6    000D      0354           DMES  1 SECT X,RTN X 'E                       81003540
08DD 0  FFFF      0355           DC      /FFFF                                  81003550
08DE    0012      0356     UNADR DMES  1  UNIT XX,ADRS XXXX'E                    81003560
08E7 0  FFFF      0357           DC      /FFFF                                  81003570
                  0358     ********************************************************** 81003580
                  0359     *                                                    * 81003590
                  0360     ********************************************************** 81003600
                  0361     *                                                    81003610
                  0362     *     SELECTOR CHANNEL INTERRUPT ROUTINE             81003620
                  0363     *                                                    81003630
                  0364     ********************************************************** 81003640
                  0365     *                                                    * 81003650
                  0366     ********************************************************** 81003660
08E8 0  0000      0367     SCISW DC      *-*        INT EXPECTED SW             81003670
08E9 0  0000      0368     TSCAC DC      *-*        SEL CHAN AREA CODE          81003680
                  0369     *                                                    81003690
08EA 0  0000      0370     SCINT DC      *-*        INT ROUTINE ENTRY           81003700
08EB 0  6A17      0371           STX   2 SCIN4+1    SAVE XR2                    81003710
08EC 01 6600087F  0372           LDX   L2 TB        SET UP TABLE POINTER        81003720
                  0373     *                                                    81003730
08EE 0  C269      0374           LD    2 SCISW-TB   GET INT EXP SW              81003740
08EF 01 4C1808F4  0375           BZ      SCIN2      BR IF NOT SET               81003750
                  0376     *                                                    81003760
08F1 01 670008AE  0377           LDX   L3 SCSX0     POINT TO SAVE AREA          81003770
08F3 0  7006      0378           MDX     SCIN3                                  81003780
                  0379     *     GET HERE ON UNEXPECTED INTERRUPT               81003790
08F4 01 67000908  0380     SCIN2 LDX   L3 SCIN5     SET UP RETURN               81003800
08F6 01 6F000809  0381           STX   L3 MLSC0     *                           81003810
08F8 01 670008B2  0382           LDX   L3 SCSX4     POINT TO SAVE AREA          81003820
                  0383     *                                                    81003830
08FA 0  0A25      0384     SCIN3 XIO   2 SCSN1-TB   GET CHANNEL STATUS          81003840
08FB 0  D300      0385           STO   3 0          SAVE                        81003850
08FC 0  0A29      0386           XIO   2 SCSN3-TB   GET UNIT STATUS             81003860
08FD 0  D301      0387           STO   3 1          SAVE                        81003870
08FE 0  0A2B      0388           XIO   2 SCSN4-TB   GET CCW ADDRESS REG         81003880
08FF 0  D302      0389           STO   3 2          SAVE                        81003890
0900 0  0A2D      0390           XIO   2 SCSN5-TB   GET BYTE COUNTER REG         81003900
0901 0  D303      0391           STO   3 3          SAVE                        81003910
                  0392     *                                                    81003920
0902 00 66000000  0393     SCIN4 LDX   L2 *-*       RESET XR2                   81003930
0904 0  1010      0394           SLA     16         CLEAR INTERRRUPT SW         81003940
0905 0  D0F2      0395           STO     SCISW      **                          81003950
0906 01 4C8008EA  0396           BSC   I SCINT      RETURN                      81003960
                  0397     *     RETURN HERE ON UNEXPECTED INTERRUPT            81003970
0908 01 6600087F  0398     SCIN5 LDX   L2 TB                                    81003980
090A 0  610C      0399           LDX     1 12       SET UP MSG POINTER          81003990
090B 01 670008B5  0400           LDX   L3 SCSX4+3   SET UP CSW POINTER          81004000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
                  0401     *                                              81004010
090D 0  C300      0402     SCIN6 LD    3 0          GET CHNL STATUS       81004020
090E 0  42FB      0403           BSI   2 TCVBE-TB    CNVRT TO 1443 CODE    81004030
090F 01 D500092A  0404           STO   L1 SCIM2-1     PUT IN MSG            81004040
0911 0  18D0      0405           XCH                                        81004050
0912 01 D500092B  0406           STO   L1 SCIM2       *                     81004060
0914 0  75FF      0407           MDX   3 -1           BUMP CSW POINTER      81004070
0915 0  71FD      0408           MDX   1 -3           DECREMENT MSG POINTER 81004080
0916 0  70F6      0409           MDX     SCIN6        LOOP                  81004090
                  0410     *                                              81004100
0917 0  4204      0411           BSI   2 TLGMS-TB     PRINT ERR MESSAGE     81004110
0918 1  091B      0412           DC      SCIMS        *                     81004120
0919 00 4C80012D  0413           BSC   I START        GO BACK TO MONITOR    81004130
                  0414     *                                              81004140
                  0415     *                                              81004150
091B    001E      0416     SCIMS DMES  1 ** ER 00  UNEXPECTED INTERRUPT'E  81004160
092A 0  FF00      0417           DC      /FF00                            81004170
092B    001A      0418     SCIM2 DMES  1 CSW XXXX, XXXX, XXXX, XXXX'E      81004180
0938 0  FFFF      0419           DC      /FFFF                            81004190
                  0420     ************************************************ 81004200
                  0421     *                                              * 81004210
                  0422     ************************************************ 81004220
                  0423     *                                              81004230
0939 00 4480012C  0424     BGIN  BSI   I BEGIN      GO TO MONITOR BEGIN RTN 81004240
093B 1  07FF      0425           DC      TPID       ADDRESS OF PID          81004250
                  0426     ************************************************ 81004260
                  0427     *                                              * 81004270
                  0428     ************************************************ 81004280
093C 0  0000      0429     ZIPA  DC      *-*        ENTRY POINT             81004290
093D 0  C0FE      0430           LD      ZIPA       MOVE RETURN ADDRS       81004300
093E 0  D00E      0431           STO     ZLPA       *                       81004310
093F 01 6600087F  0432           LDX   L2 TB        SET UP POINTER          81004320
                  0433     *                                              81004330
0941 0  1010      0434           SLA     16         RESET-                  81004340
0942 0  D283      0435           STO   2 TSW0-TB    * SW 0                  81004350
0943 0  D284      0436           STO   2 TSW1-TB    * SW 1                  81004360
0944 01 D4001212  0437           STO     STMPT      RESET STMLS POINTER     81004370
0946 01 D4001480  0438           STO   L FRESW      RESET SC FREED SW       81004380
0948 0  C2BE      0439           LD    2 HFF00-TB   FETCH CONSTANT          81004390
0949 0  D285      0440           STO   2 TSW2-TB    PLACE IN SW 2           81004400
094A 0  C297      0441           LD    2 K1-TB      FETCH CONSTANT OF 1     81004410
094B 0  D2E2      0442           STO   2 PSCNT-TB   SET PASS COUNT=1         81004420
094C 0  7001      0443           MDX     ZLPA+1     CONTINUE                81004430
                  0444     ************************************************ 81004440
                  0445     *                                              * 81004450
                  0446     ************************************************ 81004460
                  0447     *                                              81004470
094D 0  0000      0448     ZLPA  DC      *-*          LOOP PGM RTN          81004480
094E 01 2C400865  0449           STS   L SPROT,/40    CLEAR STORAGE PROT. BIT 81004490
0950 01 67000981  0450           LDX   L3 TCNPR       GET MLSCF ADDRESS     81004500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
0952 01 6F000808  0451           STX   L3 MLSC2       SET IN TBL            81004510
0954 01 6600087F  0452           LDX   L2 TB          SET UP TBL POINTER    81004520
0956 0  C294      0453           LD    2 TLGED-TB     LOOK AT LOG EDIT      81004530
0957 01 4C100950  0454           BNN     ZLPA1        BR IF RELEASED        81004540
0959 00 44800132  0455           BSI   I RELDV        ELSE RELEASE DEVICE   81004550
095B 1  0813      0456           DC      TLGED        ADDR OF EDIT WORD     81004560
095C 1  080C      0457           DC      TERM         TERMINATOR            81004570
095D 0  C295      0458     ZLPA1 LD    2 TSCED-TB     SEL. CHAN. EDIT       81004580
095E 01 4C100964  0459           BNN     ZLPA2                              81004590
0960 00 44800132  0460           BSI   I RELDV        RELEASE DEVICE        81004600
0962 1  0814      0461           DC      TSCED                              81004610
0963 1  080C      0462           DC      TERM                               81004620
0964 1            0463     ZLPA2 EQU     *                                  81004630
0964 0  1010      0464           SLA     16           RESET-                81004640
0965 0  D2E3      0465           STO   2 STKSW-TB     * STACK SW            81004650
0966 0  D2DF      0466           STO   2 SIOSW-TB     * SIO SW              81004660
0967 0  D2E1      0467           STO   2 LGBSY-TB     * LOG SW              81004670
0968 0  C297      0468           LD    2 K1-TB        FETCH CONSTANT OF 1   81004680
0969 0  D281      0469           STO   2 TSID-TB      SET SECTION ID = 1    81004690
096A 01 4C80094D  0470           BSC   I ZLPA         EXIT                  81004700
                  0471     *                                              81004710
                  0472     ************************************************ 81004720
                  0473     *                                              * 81004730
                  0474     ************************************************ 81004740
096C 0  0000      0475     ZEPA  DC      *-*          END PGM RTN           81004750
096D 01 6600087F  0476           LDX   L2 TB          SET UP TABLE POINTER  81004760
096F 01 2C400865  0477           STS   L SPROT,/40    CLEAR STORAGE PROT. BIT 81004770
0971 0  C294      0478           LD    2 TLGED-TB     LOOK AT LOG EDIT      81004780
0972 01 4C100978  0479           BNN     ZEPA1        BR IF RELEASED        81004790
0974 00 44800132  0480           BSI   I RELDV        ELSE RELEASE DEVICE   81004800
0976 1  0813      0481           DC      TLGED        ADDR OF EDIT WORD     81004810
0977 1  080C      0482           DC      TERM         TERMINATOR            81004820
0978 0  C295      0483     ZEPA1 LD    2 TSCED-TB     SEL. CHANNEL EDIT     81004830
0979 01 4C10097F  0484           BNN     ZEPA2                              81004840
                  0485     *                                              81004850
097B 00 44800132  0486           BSI   I RELDV        RELEASE DEVICE        81004860
097D 1  0814      0487           DC      TSCED                              81004870
097E 1  080C      0488           DC      TERM                               81004880
097F 01 4C80096C  0489     ZEPA2 BSC   I ZEPA         EXIT BACK TO MONITOR  81004890
                  0490     ************************************************ 81004900
                  0491     *                                              * 81004910
                  0492     ************************************************ 81004920
                  0493     *                                              81004930
                  0494     *     PRE-CONTROL ROUTINE                      81004940
                  0495     *                                              81004950
                  0496     ************************************************ 81004960
                  0497     *                                              * 81004970
                  0498     ************************************************ 81004980
0981 01 6600087F  0499     TCNPR LDX   L2 TB          SET UP TABLE POINTER  81004990
0983 0  C2E8      0500           LD    2 T45SW-TB     GET 43/53 SWITCH      81005000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
0984 01 4C200998  0501          BNZ     TCN01                              81005010
0986 0  42F8      0502    TCNRQ BSI   2 STMLS-TB                           81005020
0987 00 44800131  0503          BSI   I REQDV       REQUEST DEVICE       81005030
0989 1  0986      0504          DC      TCNRQ      BUSY RETURN           81005040
098A 1  0813      0505          DC      TLGED      EDIT FOR PRINTER      81005050
098B 1  143C      0506          DC      TLGDA      AREA CODE GIVEN BACK  81005060
098C 1  080C      0507          DC      TERM       TERMINATOR            81005070
098D 00 44800132  0508          BSI   I RELDV       RELEASE DEVICE       81005080
098F 1  0813      0509          DC      TLGED      EDIT FOR PRINTER      81005090
0990 1  080C      0510          DC      TERM       TERMINATOR            81005100
0991 01 C400143C  0511          LD    L TLGDA      GET PRINTER AREA CODE 81005110
0993 0  F2B7      0512          EOR   2 H3000-TB                           81005120
0994 0  4820      0513          SKP     Z                                  81005130
0995 0  C297      0514          LD    2 K1-TB                              81005140
0996 0  8297      0515          A     2 K1-TB     ADD ONE                  81005150
0997 0  D2E8      0516          STO   2 T45SW-TB    SET SW FOR 43 OR 53    81005160
                  0517    *                                                81005170
0998 1            0518    TCN01 EQU     *                                  81005180
0998 0  42F2      0519          BSI   2 GETDV-TB   GET DEVICE FOR USE       81005190
0999 0  42EF      0520          BSI   2 FREDV-TB   RELEASE DEVICE           81005200
099A 0  C285      0521          LD    2 TSW2-TB    GET SW FNC 2 (DEV ADDR) 81005210
099B 0  1808      0522          SRA     8            SAVE BITS 0-7        81005220
099C 01 4C1809A5  0523          BZ      TCN02        BR IF ZERO           81005230
099E 0  4204      0524          BSI   2 TLGMS-TB     PRINT MESSAGE        81005240
099F 1  0A06      0525          DC      TCNE2        'ENTER DEV ADDRESS'  81005250
                  0526    *                                                81005260
09A0 0  42F8      0527          BSI   2 STMLS-TB     GO TO MONITOR        81005270
09A1 0  C285      0528          LD    2 TSW2-TB      GET SW FNC 2         81005280
09A2 0  1808      0529          SRA     8            SAVE BITS 0-7        81005290
09A3 0  4820      0530          SKP     Z            SKIP IF ZERO         81005300
09A4 0  70FB      0531          MDX     *-5          LOOP UNTIL OK        81005310
                  0532    *                                                81005320
09A5 0  C285      0533    TCN02 LD    2 TSW2-TB      GET SW FNC 2         81005330
09A6 0  D2DE      0534          STO   2 DVADR-TB   SET FOR SIO/TIO/SNS     81005340
09A7 0  42FB      0535          BSI   2 TCVBE-TB   CONVERT ADDR TO EBC    81005350
09A8 0  1090      0536          SLT     16         0 TO A                 81005360
09A9 0  D044      0537          STO     CUU11      STORE FOR PRINT        81005370
                  0538    *                                                81005380
09AA 0  C2E2      0539          LD    2 PSCNT-TB   GET PASS COUNT         81005390
09AB 0  42FE      0540          BSI   2 TCVHD-TB   CVT TO DECIMAL          81005400
09AC 0  42FB      0541          BSI   2 TCVBE-TB   CONVERT TO 1443 CODE    81005410
09AD 0  18D0      0542          XCH               Q TO A                   81005420
09AE 0  D044      0543          STO     TTL01+3    PUT IN MSG             81005430
09AF 0  4204      0544          BSI   2 TLGMS-TB PRINT PROGRAM TITLE        81005440
09B0 1  09E0      0545          DC      TTL00      MSG ADDRESS             81005450
                  0546    ********************************************** 81005460
                  0547    *                                            * 81005470
                  0548    ********************************************** 81005480
                  0549    *                                              81005490
                  0550    *     THIS ROUTINE CONTROLS ALL TESTS          81005500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
                  0551    *                                                81005510
09B1 1            0552    TCNTE EQU     *          ENTRY POINT           81005520
09B1 01 6600087F  0553          LDX   L2 TB       SET TABLE ADDRESS      81005530
09B3 0  C284      0554          LD      2 TSW1-TB  GET SW FNC 1           81005540
09B4 0  10CC      0555          SLA     12           SAVE BITS 12-15      81005550
09B5 0  180C      0556          SRA     12           **                   81005560
09B6 0  D2C2      0557          STO   2 TRTNN-TB     **                   81005570
09B7 0  C284      0558          LD    2 TSW1-TB    GET SW FNC 1           81005580
09B8 0  E2AE      0559          AND   2 H00FF-TB DROP BAD BITS            81005590
09B9 0  1884      0560          SRT     4            SAVE BITS 8-11       81005600
09BA 0  D2C1      0561          STO   2 TSCTN-TB   SAVE SECTION NUMBER     81005610
09BB 01 4C2009CE  0562          BNZ     TCN04        BR IF NOT ZERO       81005620
09BD 0  1090      0563          SLT     16           GET BACK BITS 12-15  81005630
09BE 0  180C      0564          SRA     12           SAVE THEM            81005640
09BF 01 4C2009D2  0565          BNZ     TCNER      ERR. NO SECTION SPECIFIED 81005650
                  0566    *                                                81005660
09C1 01 6580080O  0567    TCN03 LDX   I1 TSID        GET SECTION NUMBER   81005670
09C3 01 C50009DB  0568          LD    L1 TCNTA     GET SECT. PREFACE ADDRESS 81005680
09C5 0  D282      0569          STO   2 TSAD-TB  STORE IN SEC ADDRS        81005690
09C6 0  1010      0570          SLA     16           CLEAR ERROR COUNTER  81005700
09C7 0  D2C3      0571          STO   2 TCNSW-TB ***                       81005710
09C8 0  D296      0572          STO   2 TRID-TB    CLEAR RTN ID TO ZERO   81005720
09C9 0  C281      0573          LD    2 TSID-TB  INCREMENT SECTION         81005730
09CA 0  8297      0574          A     2 K1-TB    *                       81005740
09CB 0  D281      0575          STO   2 TSID-TB  *                       81005750
09CC 01 4C800801  0576          BSC   I TSAD       GO TO SECTION PREFACE  81005760
                  0577    *                                                81005770
09CE 0  D281      0578    TCN04 STO   2 TSID-TB    STORE SECT. NUMBER     81005780
09CF 0  900B      0579          S       TCNTA    SUB. NUMBER OF SECTIONS  81005790
09D0 01 4C2809C1  0580          BN      TCN03        BR IF OK             81005800
                  0581    *                                                81005810
09D2 0  C284      0582    TCNER LD    2 TSW1-TB  GET SW FNC 1             81005820
09D3 0  42FB      0583          BSI   2 TCVBE-TB  CONVERT HEX TO PRNT CODE 81005830
09D4 0  D02D      0584          STO     TTLER+11   PUT INVALID SWITCH     81005840
09D5 0  1090      0585          SLT     16         * SETTING INTO MESSAGE 81005850
09D6 0  D02C      0586          STO     TTLER+12   *                      81005860
09D7 0  4204      0587          BSI   2 TLGMS-TB                           81005870
09D8 1  09F7      0588          DC      TTLER                              81005880
09D9 0  4201      0589          BSI   2 THALT-TB                           81005890
09DA 0  42E9      0590          BSI   2 CNTRL-TB       GO TO RETRY RTN SELCT 81005900
                  0591    *                                                81005910
09DB 0  0005      0592    TCNTA DC      TCNTZ-TCNTA LENGTH OF TBL + 1      81005920
09DC 1  0A16      0593          DC      T10NT      SECTION ADDRESS         81005930
09DD 1  0C9B      0594          DC      T20NT      SECTION ADDRESS         81005940
09DE 1  0E92      0595          DC      T30NT      SECTION ADDRESS         81005950
09DF 1  0FD4      0596          DC      T40NT      SECTION ADDRESS         81005960
09E0 1            0597    TCNTZ EQU     *          END OF TABLE            81005970
                  0598    ********************************************** 81005980
                  0599    *                                            * 81005990
                  0600    ********************************************** 81006000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
09E0     001C      0601    TTL00 DMES  1  SC DIAGNOSTIC TEST ON UNIT 'E            81006010
09EE     0002      0602    CUU11 DMES  1   'E                                     81006020
09EF 0   FF00      0603          DC      /FF00                                     81006030
09F0     0009      0604    TTL01 DMES  1 PASS- XX 'E                               81006040
09F5 0   FF00      0605          DC      /FF00      TERMINATOR                     81006050
09FA 0   FFFF      0606          DC      /FFFF                                     81006060
09F7     001A      0607    TTLER DMES  1  **ER INVLD SWS FNC 1 XXXX'E              81006070
0A04 0   00FF      0608          DC      /00FF                                     81006080
0A05 0   FFFF      0609          DC      /FFFF                                     81006090
0A06     0017      0610    TCNE2 DMES  1  ****SELECT OPTIONS****'E                 81006100
0A12 0   FF00      0611          DC      /FF00                                     81006110
0A13 0   FFFF      0612          DC      /FFFF                                     81006120
                   0613    ************************************************      81006130
                   0614    *                                              *      81006140
                   0615    ************************************************      81006150
                   0616    *                                                     81006160
                   0617    *      SECTION PREFACE                                81006170
                   0618    *                                                     81006180
0A14 0   0001      0619    T10PR DC      /0001    SECTION NUMBER                  81006190
0A15 0   0009      0620          DC      9                                        81006200
                   0621    *                                                     81006210
0A16 0   C2C2      0622    T10NT LD    2 TRTNN-TB  SW FNC 1 BITS 12-15           81006220
0A17 01 4C180A1E   0623          BZ      T1101     BR IF RUN ALL RTNS            81006230
0A19 0   90FB      0624          S       T10PR+1   TEST FOR VALID                81006240
0A1A 01 4C3009D2   0625          BP      TCNER     BR IF INVALID RTN NUMBER      81006250
0A1C 0   80F8      0626          A       T10PR+1   RESTORE RTN NUMBER            81006260
0A1D 0   7000      0627          MDX     T1101     GO TO FIRST RTN               81006270
                   0628    ************************************************      81006280
                   0629    *                                              *      81006290
                   0630    ************************************************      81006300
                   0631    *                                                     81006310
                   0632    ************************************************      81006320
                   0633    *                                              *      81006330
                   0634    ************************************************      81006340
0A1E 1             0635    T1101 EQU     *          TEST ENTRY POINT              81006350
0A1L 01 74010815   0636          MDX  L  TRID,1     BUMP RTN ID                   81006360
0A20 01 4C180A25   0637          BZ      T1102     BR IF TEST NUMBER ZERO        81006370
0A22 0   9297      0638          S     2 K1-TB     DECREMENT BY ONE              81006380
0A23 01 4C200A65   0639          BNZ     T1201     BR IF NOT THIS TEST           81006390
                   0640    *                                                     81006400
0A25 0   C283      0641    T1102 LD    2 TSW0-TB   GET OPTION SWS               81006410
0A26 0   100A      0642          SLA     CTTLE     PRINT TITLES                  81006420
0A27 01 4C100A2B   0643          BNN     T1103       OR IF NOT SET               81006430
0A29 0   4204      0644          BSI   2 TLGMS-TB   GO TO PRINT ROUTINE          81006440
0A2A 1   0A49      0645          DC      TTL11     MESSAGE ADDRESS               81006450
0A2B 0   42F8      0646    T1103 BSI   2 STMLS-TB    GO TO MONITOR               81006460
                   0647    *                                                     81006470
0A2C 0   C2A1      0648          LD    2 K100-TB   SET UP LOOP COUNT            81006480
0A2D 0   D2E7      0649          STO   2 LPCNT-TB  **                            81006490
0A2E 0   42F2      0650          BSI   2 GETDV-TB  GET DEVICE FOR ROUTINE        81006500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
                   0651    *                                                     81006510
                   0652    ************************************************      81006520
                   0653    *                                              *      81006530
                   0654    ************************************************      81006540
                   0655    *                                                     81006550
                   0656    *      STATUS CHECK TEST                              81006560
                   0657    *                                                     81006570
                   0658    ************************************************      81006580
                   0659    *                                              *      81006590
                   0660    ************************************************      81006600
                   0661    *                                                     81006610
0A2F 0   1010      0662          SLA     16        CLEAR INT. EXPECTED SW        81006620
0A30 0   D269      0663          STO   2 SCISW-TB  *                             81006630
                   0664    *                                                     81006640
0A31 0   0A25      0665    T1104 XIO   2 SCSN1-TB      GET CHAN STATUS           81006650
0A32 0   D223      0666          STO   2 SCSN0-TB      SAVE FOR LATER CHECK      81006660
0A33 0   D22F      0667          STO   2 SCSX0-TB      SAVE FOR POSSIBLE MSG     81006670
0A34 0   0A29      0668          XIO   2 SCSN3-TB      GET UNIT STATUS           81006680
0A35 0   D230      0669          STO   2 SCSX0+1-TB    SAVE                      81006690
0A36 0   0A2B      0670          XIO   2 SCSN4-TB      GET CSW ADDR REG          81006700
0A37 0   D231      0671          STO   2 SCSX0+2-TB    SAVE FOR MSG              81006710
0A38 0   0A2D      0672          XIO   2 SCSN5-TB      GET BYTE COUNTER          81006720
0A39 0   D232      0673          STO   2 SCSX0+3-TB    SAVE FOR MSG              81006730
                   0674    *                                                     81006740
0A3A 0   C283      0675          LD    2 TSW0-TB       GET OPTION SWITCHES       81006750
0A3B 0   1008      0676          SLA     OLPST                                   81006760
0A3C 01 4C280A31   0677          BN      T1104         BR IF LOOP START I/O      81006770
                   0678    *                                                     81006780
0A3E 0   C223      0679          LD    2 SCSN0-TB      GET CHAN STATUS           81006790
0A3F 01 4C200A57   0680          BNZ     T1105         BR IF NONZERO             81006800
                   0681    *                                                     81006810
                   0682    *      GO TO NEXT ROUTINE IN SEQUENCE                 81006820
                   0683    *                                                     81006830
0A41 01 74FF0866   0684          MDX  L  LPCNT,-1      COUNT LOOPS               81006840
0A43 0   70ED      0685          MDX     T1104         LOOP                      81006850
                   0686    *                                                     81006860
0A44 0   42EF      0687    T11EN BSI   2 FREDV-TB      FREE DEVICE               81006870
0A45 0   C2C2      0688          LD    2 TRTNN-TB    GET RTN NUMBER              81006880
0A46 01 4C180A65   0689          BZ      T1201         GO TO NEXT RTN IN SEQ     81006890
0A48 0   42E9      0690          BSI   2 CNTRL-TB    GO TO CONTROL RTN           81006900
                   0691    *                                                     81006910
0A49     000E      0692    TTL11 DMES  1  SECT 1,RT 1- 'E                        81006920
0A50     000C      0693          DMES  1 STATUS CHECK'E                          81006930
0A56 0   FFFF      0694          DC      /FFFF                                   81006940
                   0695    *                                                     81006950
0A57 01 65000A63   0696    T1105 LDX  L1 CSW11         SET EXPECTED CSW          81006960
0A59 01 67000A5D   0697          LDX  L3 T1106         SET LIST ADDRESS          81006970
0A5B 01 4C0010AE   0698          BSC  L  SION2       GO PRINT ERROR MSG          81006980
                   0699    *                                                     81006990
0A5D 1   08A4      0700    T1106 DC      SCSN1                                   81007000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  0701    *     RETURN HERE FROM SIO ROUTINE                     81007010
0A5E 0  C283      0702          LD    2 TSW0-TB    GET OPTION SWITCHES           81007020
0A5F 0  100C      0703          SLA     OLPER      TEST FOR LOOP ON ERROR        81007030
0A60 01 4C280A31  0704          BN      T1104      LOOP IF SET                   81007040
0A62 0  70E1      0705          MDX     T11EN    ELSE END ROUTINE                81007050
                  0706    *                                                      81007060
0A63 0  0000      0707    CSW11 DC      /0000      EXPECTED CHANNEL STATUS       81007070
0A64 0  7000      0708          DC      BYPUS+BYPAD+BYPBC   CK ONLY CHAN STAT   81007080
                  0709    *                                                      81007090
                  0710    *                                                      81007100
                  0711    ***************************************************** 81007110
                  0712    *                                                   * 81007120
                  0713    ***************************************************** 81007130
0A65 1            0714    T1201 EQU     *          TEST ENTRY POINT              81007140
0A65 01 74010815  0715          MDX   L TRID,1     BUMP RTN ID                   81007150
0A67 01 4C180A6C  0716          BZ      T1202      BR IF TEST NUMBER ZERO        81007160
0A69 0  9297      0717          S     2 K1-TB    DECREMENT BY ONE                81007170
0A6A 01 4C200AC1  0718          BNZ     T1301      BR IF NOT THIS TEST           81007180
                  0719    *                                                      81007190
0A6C 0  C283      0720    T1202 LD    2 TSW0-TB    GET OPTION SWS              81007200
0A6D 0  100A      0721          SLA     OTTLE      PRINT TITLES                  81007210
0A6E 01 4C100A72  0722          BNN     T1203        BR IF NOT SET               81007220
0A70 0  4204      0723          BSI   2 TLGMS-TB    GO TO PRINT ROUTINE           81007230
0A71 1  0AA3      0724          DC      TTL12      MESSAGE ADDRESS               81007240
0A72 0  42F8      0725    T1203 BSI   2 STMLS-TB      GO TO MONITOR               81007250
                  0726    *                                                      81007260
0A73 0  C2A1      0727          LD    2 K100-TB    SET UP LOOP COUNT             81007270
0A74 0  D2E7      0728          STO   2 LPCNT-TB   **                            81007280
0A75 0  42F2      0729          BSI   2 GETDV-TB   GET DEVICE FOR ROUTINE        81007290
                  0730    *                                                      81007300
                  0731    ***************************************************** 81007310
                  0732    *                                                   * 81007320
                  0733    *     PROGRAM CHECK TEST                            * 81007330
                  0734    *                                                   * 81007340
                  0735    ***************************************************** 81007350
0A76 0  C26A      0736          LD    2 TSCAC-TB     GET AREA CODE AND          81007360
0A77 0  EADE      0737          OR    2 DVADR-TB     # UNIT ADDRS               81007370
0A78 0  D03C      0738          STO     T12I1+1    BUILD IOCC, F=0              81007380
0A79 0  82AF      0739          A     2 H0100-TB                                 81007390
0A7A 0  D03C      0740          STO     T12I2+1              F=1                 81007400
0A7B 0  82AF      0741          A     2 H0100-TB                                 81007410
0A7C 0  D03C      0742          STO     T12I3+1              F=2                 81007420
0A7D 0  82B1      0743          A     2 H0400-TB                                 81007430
0A7E 0  D03C      0744          STO     T12I4+1              F=6                 81007440
                  0745    *                                                      81007450
0A7F 0  42F5      0746    T1204 BSI   2 SIO-TB         DO SIO                   81007460
0A80 1  0AB4      0747          DC      T12I1                                    81007470
0A81 1  0A9F      0748          DC      CSW12                                    81007480
0A82 1  0AB4      0749          DC      *+1          ERROR RETURN                81007490
0A83 0  7002      0750          MDX     *+2        ELSE TRY NEXT IOCC            81007500
```



```
SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  0731    *                                                      81007510
0A84 01 6C000842  0752          STX   L TCNSW        SET ERROR SW               81007520
                  0753    *                                                      81007530
0A86 0  42F5      0754          BSI   2 SIO-TB                                   81007540
0A87 1  0AB6      0755          DC      T12I2                                    81007550
0A88 1  0ABF      0756          DC      CSW12                                    81007560
0A89 1  0A8B      0757          DC      *+1                                      81007570
0A8A 0  7002      0758          MDX     *+2                                      81007580
                  0759    *                                                      81007590
0A8B 01 6C000842  0760          STX   L TCNSW                                    81007600
                  0761    *                                                      81007610
0A8D 0  42F5      0762          BSI   2 SIO-TB                                   81007620
0A8E 1  0AB8      0763          DC      T12I3                                    81007630
0A8F 1  0ABF      0764          DC      CSW12                                    81007640
0A90 1  0A92      0765          DC      *+1                                      81007650
0A91 0  7002      0766          MDX     *+2                                      81007660
                  0767    *                                                      81007670
0A92 01 6C000842  0768          STX   L TCNSW                                    81007680
                  0769    *                                                      81007690
0A94 0  42F5      0770          BSI   2 SIO-TB                                   81007700
0A95 1  0A3A      0771          DC      T12I4                                    81007710
0A96 1  0ABF      0772          DC      CSW12                                    81007720
0A97 1  0A9E      0773          DC      T12EN                                    81007730
0A98 0  C2C3      0774          LD    2 TCNSW-TB                                 81007740
0A99 01 4C200A9E  0775          BNZ     T12EN                                    81007750
                  0776    *                                                      81007760
                  0777    *                                                      81007770
                  0778    *     GO TO NEXT ROUTINE IN SEQUENCE                   81007780
                  0779    *                                                      81007790
0A9B 01 74FF0866  0780          MDX   L LPCNT,-1     COUNT LOOPS                81007800
0A9D 0  70E1      0781          MDX     T1204        LOOP                       81007810
                  0782    *                                                      81007820
0A9E 0  42EF      0783    T12EN BSI   2 FREDV-TB     FREE DEVICE                81007830
0A9F 0  C2C2      0784          LD    2 TRTNN-TB   GET RTN NUMBER               81007840
0AA0 01 4C180AC1  0785          BZ      T1301      GO TO NEXT RTN IN SEQ         81007850
0AA2 0  42E9      0786          BSI   2 CNTRL-TB   GO TO CONTROL RTN             81007860
                  0787    *                                                      81007870
0AA3      000E    0788    TTL12 DMES  1  SECT 1,RT 2-'E                          81007880
0AAA      0012    0789          DMES  1 PROGRAM CHECK TEST'E                     81007890
0AB3 0    FFFF    0790          DC      /FFFF                                    81007900
                  0791    *                                                      81007910
0AB4      0000    0792          BSS   E 0                                        81007920
0AB4 1    0ABC    0793    T12I1 DC      CCW12                                    81007930
0AB5 0    000C    0794          DC      *-*                                      81007940
                  0795    *                                                      81007950
0AB6 1    0ABC    0796    T12I2 DC      CCW12                                    81007960
0AB7 0    0000    0797          DC      *-*                                      81007970
                  0798    *                                                      81007980
0AB8 1    0ABC    0799    T12I3 DC      CCW12                                    81007990
0AB9 0    0000    0800          DC      *-*                                      81008000
```

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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                              ID/SEQNO
                  0801    *                                                  81008010
0ABA 1  0ABC      0802    T1214 DC       CCW12                               81008020
0ABB 0  0000      0803          DC       *-*                                 81008030
                  0804    *                                                  81008040
                  0805    *                                                  81008050
0ABC 0  0001      0806    CCW12 DC       1          BYTE COUNT               81008060
0ABD 0  0003      0807          DC       0*256+OPNOP FLAGS AND OP CODE       81008070
0ABE 0  0000      0808          DC       0          ADDRESS                  81008080
                  0809    *                                                  81008090
                  0810    *                                                  81008100
0ABF 0  1000      0811    CSW12 DC       /1000      PROGRAM CHECK            81008110
0AC0 0  7000      0812          DC       *-*+BYPUS+BYPBC+BYPAD CK ONLY CS    81008120
                  0813    *                                                  81008130
                  0814    ************************************************** 81008140
                  0815    *                                                * 81008150
                  0816    ************************************************** 81008160
0AC1 1            0817    T1301 EQU      *          TEST ENTRY POINT         81008170
0AC1 01 74010815  0818          MDX  L   TRID,1     BUMP RTN ID              81008180
0AC3 01 4C180AC8  0819          BZ       T1302      BR IF TEST NUMBER ZERO   81008190
0AC5 0  9297      0820          S     2  K1-TB      DECREMENT BY ONE         81008200
0AC6 01 4C200B07  0821          BNZ      T1401      BR IF NOT THIS TEST      81008210
                  0822    *                                                  81008220
0AC8 0  C283      0823    T1302 LD     2 TSW0-TB    GET OPTION SWS           81008230
0AC9 0  100A      0824          SLA      OTTLE      PRINT TITLES             81008240
0ACA 01 4C100ACE  0825          BNN      T1303        BR IF NOT SET          81008250
0ACC 0  4204      0826          BSI   2  TLGMS-TB    GO TO PRINT ROUTINE      81008260
0ACD 1  0AEA      0827          DC       TTL13      MESSAGE ADDRESS          81008270
0ACE 0  42F8      0828    T1303 BSI    2 STMLS-TB     GO TO MONITOR          81008280
                  0829    *                                                  81008290
0ACF 0  C2A1      0830          LD     2 K100-TB    SET UP LOOP COUNT        81008300
0AD0 0  D2E7      0831          STO    2 LPCNT-TB   **                        81008310
0AD1 0  42F2      0832          BSI    2 GETDV-TB   GET DEVICE FOR ROUTINE    81008320
                  0833    *                                                  81008330
                  0834    ************************************************** 81008340
                  0835    *                                                * 81008350
                  0836    ************************************************** 81008360
                  0837    *                                                  81008370
                  0838    *     CCW ADDRS REGISTER                           81008380
                  0839    *                                                  81008390
                  0840    ************************************************** 81008400
                  0841    *                                                * 81008410
                  0842    ************************************************** 81008420
0AD2 0  C831      0843          LDD      CCW13       GET CCW ADDRS           81008430
0AD3 00 DC00FFFC  0844          STD  L   /FFFC       PUT IN HI CORE          81008440
                  0845    *                                                  81008450
0AD5 0  61FC      0846    T1304 LDX    1 -4          POINT TO CCW            81008460
0AD6 01 6D0008A0  0847          STX  L1  SIOXX       *                       81008470
                  0848    *                                                  81008480
                  0849    *     TEST FOR BITS OFF                            81008490
                  0850    *                                                  81008500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                              ID/SEQNO
0AD8 0  42F5      0851          BSI    2 SIO-TB     GO DO SIO                81008510
0AD9 1  08A0      0852          DC       SIOXX      IOCC ADDRS               81008520
0ADA 1  0AFC      0853          DC       CSW13       EXPECTED CSW            81008530
0ADB 1  0AE5      0854          DC       T13EN      ERROR RETURN             81008540
                  0855    *                                                  81008550
0ADC 01 740108A0  0856          MDX  L   SIOXX,1     BUMP IOCC ADDRS          81008560
                  0857    *                                                  81008570
                  0858    *     TEST FOR BITS ON                             81008580
                  0859    *                                                  81008590
0ADE 0  42F5      0860          BSI    2 SIO-TB     GO DO SIO                81008600
0ADF 1  08A0      0861          DC       SIOXX      IOCC ADDRS               81008610
0AE0 1  0B00      0862          DC       CSW13+4     EXPECTED CSW            81008620
0AE1 1  0AE5      0863          DC       T13EN      ERROR RETURN             81008630
                  0864    *                                                  81008640
                  0865    *                                                  81008650
                  0866    *     GO TO NEXT ROUTINE IN SEQUENCE               81008660
                  0867    *                                                  81008670
0AE2 01 74FF0866  0868          MDX  L   LPCNT,-1      COUNT LOOPS           81008680
0AE4 0  70F0      0869          MDX      T1304          LOOP                  81008690
                  0870    *                                                  81008700
0AE5 0  42EF      0871    T13EN BSI    2 FREDV-TB      FREE DEVICE           81008710
0AE6 0  C2C2      0872          LD     2 TRTNN-TB   GET RTN NUMBER           81008720
0AE7 01 4C180B07  0873          BZ       T1401        GO TO NEXT RTN IN SEQ   81008730
0AE9 0  42E9      0874          BSI    2 CNTRL-TB   GO TO CONTROL RTN        81008740
                  0875    *                                                  81008750
0AEA      000E    0876    TTL13 DMES   1  SECT 1,RT 3- 'E                    81008760
0AF1      0014    0877          DMES   1 CCW ADDRESS REGISTER'E               81008770
0AF8 0  FFFF      0878          DC       /FFFF                                81008780
                  0879    *                                                  81008790
                  0880    *     DATA AND CONSTANTS                           81008800
                  0881    *     CSW EXP FROM 'TEST BITS OFF'                 81008810
0AFC 0  0000      0882    CSW13 DC       *-*          CH STS NOT CHECKED      81008820
0AFD 0  D000      0883          DC       /D000        UN STS NOT CHECKED      81008830
0AFE 0  FFFF      0884          DC       /FFFF        EXP CSW ADDRS REG       81008840
0AFF 0  0000      0885          DC       *-*          BYTE CNT NOT CHEKED     81008850
                  0886    *     CSW EXP FROM 'TEST BITS ON'                  81008860
0B00 0  0000      0887          DC       *-*                                  81008870
0B01 0  D000      0888          DC       /D000                                81008880
0B02 0  0000      0889          DC       /0000        EXP CSW ADDRS REG       81008890
0B03 0  0000      0890          DC       *-*                                  81008900
                  0891    *                                                  81008910
                  0892    *                                                  81008920
0B04 0  0003      0893    CCW13 DC       OPNOP          BYTE COUNT            81008930
0B05 0  0003      0894          DC       0*256+OPNOP FLAGS AND OP CODE        81008940
0B06 0  0000      0895          DC       0          ADDRESS                   81008950
                  0896    *                                                  81008960
                  0897    ************************************************** 81008970
                  0898    *                                                * 81008980
                  0899    ************************************************** 81008990
0B07 1            0900    T1401 EQU      *          TEST ENTRY POINT         81009000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
0B07 01 74010815  0901           MDX  L  TRID,1      BUMP RTN ID          81009010
0B09 01 4C180B0E  0902           BZ      T1402       BR IF TEST NUMBER ZERO 81009020
0B0B 0  9297      0903           S     2 K1-TB       DECREMENT BY ONE     81009030
0B0C 01 4C200B3B  0904           BNZ     T1501       BR IF NOT THIS TEST  81009040
                  0905    *                                               81009050
0B0E 0  C283      0906    T1402  LD    2 TSW0-TB     GET OPTION SWS       81009060
0B0F 0  100A      0907           SLA     OTTLE       PRINT TITLES         81009070
0B10 01 4C100B14  0908           BNN     T1403         BR IF NOT SET      81009080
0B12 0  4204      0909           BSI   2 TLGMS-TB    GO TO PRINT ROUTINE  81009090
0B13 1  0B28      0910           DC      TTL14       MESSAGE ADDRESS      81009100
0B14 0  42F8      0911    T1403  BSI   2 STMLS-TB      GO TO MONITOR      81009110
                  0912    *                                               81009120
0B15 0  C2A1      0913           LD    2 K100-TB     SET UP LOOP COUNT    81009130
0B16 0  D2E7      0914           STO   2 LPCNT-TB    **                   81009140
0B17 0  42F2      0915           BSI   2 GETDV-TB    GET DEVICE FOR ROUTINE 81009150
                  0916    *                                               81009160
                  0917    ************************************************ 81009170
                  0918    *                                              * 81009180
                  0919    ************************************************ 81009190
                  0920    *                                               81009200
                  0921    *     TEST I/O ROUTINE                          81009210
                  0922    *                                               81009220
                  0923    ************************************************ 81009230
                  0924    *                                              * 81009240
                  0925    ************************************************ 81009250
                  0926    *                                               81009260
0B18 01 65000B38  0927    T1404 LDX  L1 CCW14       GET CCW ADDRS         81009270
0B1A 01 6D0008A0  0928          STX  L1 SIOXX       * AND PUT IN IOCC     81009280
                  0929    *                                               81009290
0B1C 0  42F5      0930           BSI   2 SIO-TB       GO DO SIO           81009300
0B1D 1  08A0      0931           DC      SIOXX        IOCC ADDRS          81009310
0B1E 1  0B34      0932           DC      CSW14         EXPECTED CSW       81009320
0B1F 1  0B23      0933           DC      T14EN       ERROR RETURN          81009330
                  0934    *                                               81009340
                  0935    *                                               81009350
                  0936    *     GO TO NEXT ROUTINE IN SEQUENCE            81009360
                  0937    *                                               81009370
0B20 01 74FF0866  0938           MDX  L  LOCNT,-1     COUNT LOOPS          81009380
0B22 0  70F5      0939           MDX     T1404          LOOP                81009390
                  0940    *                                               81009400
0B23 0  42EF      0941    T14EN BSI   2 FREDV-TB      FREE DEVICE          81009410
0B24 0  C2C2      0942          LD    2 TRTNN-TB    GET RTN NUMBER         81009420
0B25 01 4C180B3B  0943          BZ      T1501         GO TO NEXT RTN IN SEQ  81009430
0B27 0  42E9      0944          BSI   2 CNTRL-TB    GO TO CONTROL RTN      81009440
                  0945    *                                               81009450
0B28      000E    0946    TTL14 DMES  1  SECT 1,RT 4- '5                    81009460
0B2F      0008    0947          DMES  1 TEST I/O'E                        81009470
0B33 0  FFFF      0948          DC      /FFFF                             81009480
                  0949    *                                               81009490
                  0950    *     DATA AND CONSTANTS                        81009500
```



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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
                  0951    *                                               81009510
0B34 0  4000      0952    CSW14 DC      /4000       EXPECTED- CHNL STATUS  81009520
0B35 0  0000      0953          DC      /0000                 UNIT STATUS  81009530
0B36 1  0B3B      0954          DC      CCW14+3        CSW ADDRS           81009540
0B37 0  0000      0955          DC      /0000        BYTE COUNT            81009550
                  0956    *                                               81009560
                  0957    *                                               81009570
0B38 0  0001      0958    CCW14 DC      1           BYTE COUNT            81009580
0B39 0  0000      0959          DC      0*256+OPTIO FLAGS AND OP CODE       81009590
0B3A 0  0000      0960          DC      0           ADDRESS               81009600
                  0961    *                                               81009610
                  0962    ************************************************ 81009620
                  0963    *                                              * 81009630
                  0964    ************************************************ 81009640
0B3B 1            0965    T1501 EQU     *           TEST ENTRY POINT      81009650
0B3B 01 74010815  0966          MDX  L  TRID,1      BUMP RTN ID           81009660
0B3D 01 4C180B42  0967          BZ      T1502       BR IF TEST NUMBER ZERO 81009670
0B3F 0  9297      0968          S     2 K1-TB       DECREMENT BY ONE      81009680
0B40 01 4C200B6E  0969          BNZ     T1601       BR IF NOT THIS TEST   81009690
                  0970    *                                               81009700
0B42 0  C283      0971    T1502 LD    2 TSW0-TB     GET OPTION SWS        81009710
0B43 0  100A      0972          SLA     OTTLE       PRINT TITLES          81009720
0B44 01 4C100B48  0973          BNN     T1503         BR IF NOT SET       81009730
0B46 0  4204      0974          BSI   2 TLGMS-TB    GO TO PRINT ROUTINE   81009740
0B47 1  085C      0975          DC      TTL15       MESSAGE ADDRESS       81009750
0B48 0  42F8      0976    T1503 BSI   2 STMLS-TB      GO TO MONITOR       81009760
                  0977    *                                               81009770
0B49 0  C2A1      0978          LD    2 K100-TB     SET UP LOOP COUNT     81009780
0B4A 0  D2E7      0979          STO   2 LPCNT-TB    **                    81009790
0B4B 0  42F2      0980          BSI   2 GETDV-TB    GET DEVICE FOR ROUTINE 81009800
                  0981    *                                               81009810
                  0982    ************************************************ 81009820
                  0983    *                                              * 81009830
                  0984    ************************************************ 81009840
                  0985    *                                               81009850
                  0986    *     NO-OP ROUTINE                             81009860
                  0987    *                                               81009870
                  0988    ************************************************ 81009880
                  0989    *                                              * 81009890
                  0990    ************************************************ 81009900
0B4C 01 65000B67  0991    T1504 LDX  L1 CCW15       GET CCW ADDRS         81009910
0B4E 01 6D0008A0  0992          STX  L1 SIOXX       * AND PUT IN IOCC     81009920
                  0993    *                                               81009930
0B50 0  42F5      0994          BSI   2 SIO-TB       GO DO SIO            81009940
0B51 1  08A0      0995          DC      SIOXX        IOCC ADDRS           81009950
0B52 1  0B6A      0996          DC      CSW15         EXPECTED CSW        81009960
0B53 1  0B57      0997          DC      T15EN       ERROR RETURN          81009970
                  0998    *                                               81009980
                  0999    *                                               81009990
                  1000    *     GO TO NEXT ROUTINE IN SEQUENCE            81010000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  1001    *                                                      81010010
                  1002            MDX  L  LPCNT,-1     COUNT LOOPS               81010020
                  1003            MDX     T1504         LOOP                     81010030
                  1004    *                                                      81010040
                  1005    T15EN BSI    2 FREDV-TB      FREE DEVICE              81010050
                  1006            LD     2 TRTNN-TB    GET RTN NUMBER           81010060
                  1007            BZ       T1601       GO TO NEXT RTN IN SEQ    81010070
                  1008            BSI    2 CNTRL-TB    GO TO CONTROL RTN        81010080
                  1009    *                                                      81010090
                  1010    TTL15 DMES   1  SECT 1,RT 5- 'E                        81010100
                  1011            DMES   1 NO-OP'E                               81010110
                  1012            DC       /FFFF                                 81010120
                  1013    *                                                      81010130
                  1014    *                                                      81010140
                  1015    CCW15 DC         1           BYTE COUNT                81010150
                  1016            DC       0*256+OPNOP FLAGS AND OP CODE         81010160
                  1017            DC       *           ADDRESS                   81010170
                  1018    *                                                      81010180
                  1019    *                                                      81010190
                  1020    CSW15 DC         /4000                                 81010200
                  1021            DC       /000C                                 81010210
                  1022            DC       CCW15+3                               81010220
                  1023            DC       /0000                                 81010230
                  1024    ********************************************************81010240
                  1025    *                                                     * 81010250
                  1026    ********************************************************81010260
                  1027    T1601 EQU        *           TEST ENTRY POINT          81010270
0B6E 01 74010815  1028            MDX  L  TRID,1       PUMP RTN ID               81010280
0B70 01 4C180B75  1029            BZ       T1602       BR IF TEST NUMBER ZERO    81010290
0B72 0  9297      1030            S      2 K1-TB       DECREMENT BY ONE          81010300
0B73 01 4C2008B7  1031            BNZ      T1701       BR IF NOT THIS TEST       81010310
                  1032    *                                                      81010320
0B75 0  C283      1033    T1602 LD     2 TSW0-TB       GET OPTION SWS            81010330
0B76 0  100A      1034            SLA      OTTLE       PRINT TITLES              81010340
0B77 01 4C100B7B  1035            BNN      T1603         BR IF NOT SET           81010350
0B79 0  4204      1036            BSI    2 TLGMS-TB    GO TO PRINT ROUTINE       81010360
0B7A 1  0B99      1037            D        TTL16       MESSAGE ADDRESS           81010370
0B7B 0  42F8      1038    T1603 BSI    2 STMLS-TB        GO TO MONITOR           81010380
                  1039    *                                                      81010390
0B7C 0  C2A1      1040            LD     2 K100-TB     SET UP LOOP COUNT         81010400
0B7D 0  D2E7      1041            STO    2 LPCNT-TB    **                        81010410
0B7E 0  42F2      1042            BSI    2 GETDV-TB    GET DEVICE FOR ROUTINE    81010420
                  1043    *                                                      81010430
                  1044    ********************************************************810.0440
                  1045    *                                                     * 81010450
                  1046    ********************************************************81010460
                  1047    *                                                      81010470
                  1048    *     BYTE COUNTER TEST                                81010480
                  1049    *                                                      81010490
                  1050    ********************************************************81010500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  1051    *                                                     * 81010510
                  1052    ********************************************************81010520
0B7F 01 65000BB4  1053            LDX  L1 CCW16       SET CCW LOC INTO IOCC     81010530
0B81 01 6D0008A0  1054            STX  L1 SIOXX       *                         81010540
                  1055    *                                                      81010550
0B83 0  C297      1056            LD     2 K1-TB      SET EXPECTED BYTE COUNT   81010560
0B84 0  D02E      1057    T1604 STO        CSW16+3      STORE FOR LATER COMPARE   81010570
0B85 0  9298      1058            S      2 K2-TB      CREATE STARTING COUNT     81010580
0B86 0  F28D      1059            EOR    2 TERM-TB    **                        81010590
0B87 0  D02C      1060            STO      CCW16        PUT IN CCW              81010600
                  1061    *                                                      81010610
0B88 0  42F5      1062            BSI    2 SIO-TB     GO DO SIO                 81010620
0B89 1  08A0      1063            DC       SIOXX                                 81010630
0B8A 1  0BB0      1064            DC       CSW16                                 81010640
0B8B 1  0BAB      1065            DC       T1606                                 81010650
                  1066    *                                                      81010660
0B8C 0  C026      1067    T1605 LD         CSW16+3      GET EXPECTED BYTE COUNT   81010670
0B8D 01 4C180B94  1068            BZ       T16EN       END RTN IF ALL BITS TESTED 81010680
0B8F 0  1001      1069            SLA      1            CHANGE BIT POSITION       81010690
0B90 0  70F3      1070            MDX      T1604                                  81010700
                  1071    *                                                      81010710
                  1072    *                                                      81010720
                  1073    *     GO TO NEXT ROUTINE IN SEQUENCE                   81010730
                  1074    *                                                      81010740
0B91 01 74FF0866  1075            MDX  L  LPCNT,-1     COUNT LOOPS               81010750
0B93 0  70F0      1076            MDX      T1604         LOOP                    81010760
                  1077    *                                                      81010770
0B94 0  42EF      1078    T16EN BSI    2 FREDV-TB      FREE DEVICE              81010780
0B95 0  C2C2      1079            LD     2 TRTNN-TB    GET RTN NUMBER           81010790
0B96 01 4C180BB7  1080            BZ       T1701         GO TO NEXT RTN IN SEQ   81010800
0B98 0  42E9      1081            BSI    2 CNTRL-TB    GO TO CONTROL RTN        81010810
                  1082    *                                                      81010820
0B99      000E    1083    TTL16 DMES   1  SECT 1,RT 6- 'E                        81010830
0BA0      0013    1084            DMES   1 BYTE COUNT REGISTER'E                 81010840
0BAA 0    FFFF    1085            DC       /FFFF                                 81010850
                  1086    *                                                      81010860
0BAB 0  C232      1087    T1606 LD     2 SCSX0+3-TS  ERROR DUE TO BYTE COUNT     81010870
0BAC 0  F006      1088            EOR      CSW16+3       *                       81010880
0BAD 01 4C180B94  1089            BZ       T16EN       NO,END ROUTINE            81010890
                  1090    *                                                      81010900
0BAF 0  70DC      1091            MDX      T1605         YES,TEST OTHER BITS     81010910
                  1092    *                                                      81010920
                  1093    *                                                      81010930
0BB0 0  4000      1094    CSW16 DC         /4000       EXPECTED-CHAN STATUS      81010940
0BB1 0  000C      1095            DC       /000C              -UNIT STATUS      81010950
0BB2 1  0BB7      1096            DC       CCW16+3             -CCW ADDRESS      81010960
0BB3 0  0000      1097            DC       *-*                -BYTE CNT SET UP   81010970
                  1098    *                                                      81010980
                  1099    *                                                      81010990
0BB4 0  0000      1100    CCW16 DC         *-*           BYTE COUNT              81011000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
0BB5 0  0003      1101          DC     0*256+OPNOP FLAGS AND OP CODE       81011010
0BB6 0  0000      1102          DC     0           ADDRESS                 81011020
                  1103    *                                               81011030
                  1104    ************************************************* 81011040
                  1105    *                                               * 81011050
                  1106    ************************************************* 81011060
0BB7 1            1107    T1701 EQU    *          TEST ENTRY POINT        81011070
0BB7 01 74010815  1108          MDX  L  TRID,1     BUMP RTN ID             81011080
0BB9 01 4C180BBE  1109          BZ      T1702      BR IF TEST NUMBER ZERO  81011090
0BBB 0  9297      1110          S    2  K1-TB     DECREMENT BY ONE        81011100
0BBC 01 4C200BEB  1111          BNZ     T1801      BR IF NOT THIS TEST     81011110
                  1112    *                                               81011120
0BBE 0  C283      1113    T1702 LD     2 TSW0-TB    GET OPTION SWS        81011130
0BBF 0  100A      1114          SLA     OTTLE      PRINT TITLES            81011140
0BC0 01 4C100BC4  1115          BNN     T1703        BR IF NOT SET         81011150
0BC2 0  4204      1116          BSI  2  TLGMS-TB   GO TO PRINT ROUTINE      81011160
0BC3 1  0BD8      1117          DC      TTL17      MESSAGE ADDRESS         81011170
0BC4 0  42F8      1118    T1703 BSI    2 STMLS-TB     GO TO MONITOR         81011180
                  1119    *                                               81011190
0BC5 0  C2A1      1120          LD     2 K100-TB   SET UP LOOP COUNT       81011200
0BC6 0  D2E7      1121          STO    2 LPCNT-TB  **                      81011210
0BC7 0  42F2      1122          BSI    2 GETDV-TB  GET DEVICE FOR ROUTINE   81011220
                  1123    *                                               81011230
                  1124    ************************************************* 81011240
                  1125    *                                               * 81011250
                  1126    ************************************************* 81011260
                  1127    *                                               81011270
                  1128    *     TIC ROUTINE                               81011280
                  1129    *                                               81011290
                  1130    ************************************************* 81011300
                  1131    *                                               * 81011310
                  1132    ************************************************* 81011320
0BC8 01 65000BE4  1133    T1704 LDX  L1 CCW17      SET CCW ADDRS INTO IOCC  81011330
0BCA 01 6D0008A0  1134          STX  L1 SIOXX      *                       81011340
                  1135    *                                               81011350
0BCC 0  42F5      1136          BSI    2 SIO-TB    GO DO SIO               81011360
0BCD 1  08A0      1137          DC       SIOXX       IOCC ADDRS            81011370
0BCE 1  0BE7      1138          DC       CSW17       EXP CCW ADDRS         81011380
0BCF 1  0BD3      1139          DC       T17EN       ERROR RETURN          81011390
                  1140    *                                               81011400
                  1141    *                                               81011410
                  1142    *     GO TO NEXT ROUTINE IN SEQUENCE            81011420
                  1143    *                                               81011430
0BD0 01 74FF0866  1144          MDX  L  LPCNT,-1     COUNT LOOPS          81011440
0BD2 0  70F5      1145          MDX     T1704          LOOP                81011450
                  1146    *                                               81011460
0BD3 0  42EF      1147    T17EN BSI    2 FREDV-TB     FREE DEVICE          81011470
0BD4 0  C2C2      1148          LD     2 TRTNN-TB   GET RTN NUMBER         81011480
0BD5 01 4C180BEB  1149          BZ       T1801      GO TO NEXT RTN IN SEQ   81011490
0BD7 0  42E9      1150          BSI    2 CNTRL-TB   GO TO CONTROL RTN       81011500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
                  1151    *                                               81011510
0BD8      000E    1152    TTL17 DMES   1  SECT 1,RT 7- 'E                 81011520
0BDF      0008    1153          DMES   1 TIC TEST'E                       81011530
0BE3 C    FFFF    1154          DC       /FFFF                           81011540
                  1155    *                                               81011550
                  1156    *                                               81011560
0BE4 0    0000    1157    CCW17 DC       0          BYTE COUNT           81011570
0BE5 0    0008    1158          DC       0*256+OPTIC FLAGS AND OP CODE     81011580
0BE6 1    0889    1159          DC       NOPCC          ADDRESS           81011590
                  1160    *                                               81011600
                  1161    *                                               81011610
0BE7 0    4000    1162    CSW17 DC       /4000                           81011620
0BE8 0    000C    1163          DC       /000C                           81011630
0BE9 1    088C    1164          DC       NOPCC+3                         81011640
0BEA 0    0000    1165          DC       0                               81011650
                  1166    *                                               81011660
                  1167    ************************************************* 81011670
                  1168    *                                               * 81011680
                  1169    ************************************************* 81011690
0BEB 1            1170    T1801 EQU    *          TEST ENTRY POINT        81011700
0BEB 01 74010815  1171          MDX  L  TRID,1     BUMP RTN ID             81011710
0BED 01 4C180BF2  1172          BZ      T1802      BR IF TEST NUMBER ZERO  81011720
0BEF 0  9297      1173          S    2  K1-TB     DECREMENT BY ONE        81011730
0BF0 01 4C200C3E  1174          BNZ     T1901      BR IF NOT THIS TEST     81011740
                  1175    *                                               81011750
0BF2 0  C283      1176    T1802 LD     2 TSW0-TB    GET OPTION SWS        81011760
0BF3 0  100A      1177          SLA     OTTLE      PRINT TITLES            81011770
0BF4 01 4C100BF8  1178          BNN     T1803        BR IF NOT SET         81011780
0BF6 0  4204      1179          BSI  2  TLGMS-TB   GO TO PRINT ROUTINE      81011790
0BF7 1  0C17      1180          DC      TTL18      MESSAGE ADDRESS         81011800
0BF8 0  42F8      1181    T1803 BSI    2 STMLS-TB     GO TO MONITOR         81011810
                  1182    *                                               81011820
0BF9 0  C2A1      1183          LD     2 K100-TB   SET UP LOOP COUNT       81011830
0BFA 0  D2E7      1184          STO    2 LPCNT-TB  **                      81011840
0BFB 0  42F2      1185          BSI    2 GETDV-TB  GET DEVICE FOR ROUTINE   81011850
                  1186    *                                               81011860
                  1187    ************************************************* 81011870
                  1188    *                                               * 81011880
                  1189    ************************************************* 81011890
                  1190    *                                               81011900
                  1191    *     SENSE I/O TEST                            81011910
                  1192    *                                               81011920
                  1193    ************************************************* 81011930
                  1194    *                                               * 81011940
                  1195    ************************************************* 81011950
0BFC 01 65000C26  1196          LDX  L1 CCW18      SET CCW ADDRESS IN IOCC  81011960
0BFE 01 6D0008A0  1197          STX  L1 SIOXX      **                      81011970
                  1198    *                                               81011980
0C00 0  C28D      1199    T1804 LD     2 TERN-TB     SET UP DATA AREA=FFFF  81011990
0C01 0  D217      1200          STO    2 SNWD0-TB        **                81012000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
0C02 0  D218      1201          STO   2 SNWD1-TB        *                 81012010
                  1202    *                                               81012020
0C03 0  42F5      1203          BSI   2 SIO-TB      GO DO THE START I/O   81012030
0C04 1  08A0      1204          DC      SIOXX      IOCC ADDRESS          81012040
0C05 1  0C29      1205          DC      CSW18       CSW COMPARE LIST     81012050
0C07 1  0C12      1206          DC      T18EN      ERROR ADDRESS         81012060
                  1207    *                                               81012070
0C07 0  C217      1208          LD    2 SNWDS-TB     SEE IF DATA XFERRED 81012080
0C08 0  F28D      1209          EOR   2 TERM-TB      **                  81012090
0C09 01 4C200C0F  1210          BNZ     T1806         BR IF DATA XFERRED 81012100
                  1211    *                                               81012110
0C0B 0  42EC      1212    T1805 BSI   2 EROUT-TB     PRINT MESSAGE       81012120
0C0C 0  010A      1213          DC      /010A                             81012130
0C0D 1  0C2C      1214          DC      T18M1       MESSAGE ADDRESS       81012140
0C0E 0  7003      1215          MDX     T18EN       END RTN               81012150
                  1216    *                                               81012160
                  1217    *                                               81012170
                  1218    *     GO TO NEXT ROUTINE IN SEQUENCE            81012180
                  1219    *                                               81012190
0C0F 01 74FF0866  1220    T1806 MDX  L  LPCNT,-1     COUNT LOOPS          81012200
0C11 0  70EE      1221          MDX     T1804         LOOP                81012210
                  1222    *                                               81012220
0C12 0  42EF      1223    T18EN BSI   2 FREDV-TB     FREE DEVICE         81012230
0C13 0  C2C2      1224          LD    2 TRTNN-TB    GET RTN NUMBER        81012240
0C14 01 4C180C3E  1225          BZ      T1901        GO TO NEXT RTN IN SEQ 81012250
0C16 0  42E9      1226          BSI   2 CNTRL-TB    GO TO CONTROL RTN     81012260
                  1227    *                                               81012270
0C17      000E    1228    TTL18 DMES  1  SECT 1,RT 8- 'E                  81012280
0C1E      000E    1229          DMES  1 SENSE I/O TEST'E                  81012290
0C25 0  FFFF      1230          DC      /FFFF                             81012300
                  1231    *                                               81012310
0C26 0  0004      1232    CCW18 DC      4           BYTE COUNT            81012320
0C27 0  2004      1233          DC      FLSLI*256+OPSNS FLAGS AND OP CODF 81012330
0C23 1  0896      1234          DC      SNWDS           ADDRESS           81012340
                  1235    *                                               81012350
                  1236    *                                               81012360
0C29 0  4000      1237    CSW18 DC      /4000       EXPECTED-CHAN STATUS  81012370
0C2A 0  100C      1238          DC      /100C              -UNIT STATUS   81012380
0C2B 1  0C29      1239          DC      CCW18+3             -CSW ADDRESS  81012390
                  1240    *                                               81012400
0C2C      0022    1241    T18M1 DMES  1  1803 DATA NOT TRANSFERRED TO CORE'E 81012410
                  1242    *                                               81012420
0C3D 0  FFFF      1243          DC      /FFFF                             81012430
                  1244    *                                               81012440
                  1245    *                                               81012450
                  1246    ************************************************* 81012460
                  1247    *                                             * 81012470
                  1248    ************************************************* 81012480
0C3E 1            1249    T1901 EQU     *           TEST ENTRY POINT      81012490
0C3E 01 74010815  1250          MDX  L  TRID,1      BUMP RTN ID           81012500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
0C40 01 4C180C45  1251          BZ      T1902      BR IF TEST NUMBER ZERO 81012510
0C42 0  9297      1252          S     2 K1-TB     DECREMENT BY ONE        81012520
0C43 01 4C200A1E  1253          BNZ     T1101      BR IF NOT THIS TEST     81012530
                  1254    *                                               81012540
0C45 0  C283      1255    T1902 LD    2 TSW0-TB    GET OPTION SWS         81012550
0C46 0  100A      1256          SLA     OTTLE      PRINT TITLES            81012560
0C47 01 4C100C4B  1257          BNN     T1903        BR IF NOT SET         81012570
0C49 0  4204      1258          BSI   2 TLGMS-TB   GO TO PRINT ROUTINE      81012580
0C4A 1  0C67      1259          DC      TTL19      MESSAGE ADDRESS         81012590
0C4B 0  42F8      1260    T1903 BSI   2 STMLS-TB     GO TO MONITOR         81012600
                  1261    *                                               81012610
0C4C 0  C2A1      1262          LD    2 K100-TB    SET UP LOOP COUNT       81012620
0C4D 0  D2E7      1263          STO   2 LPCNT-TB   **                      81012630
0C4E 0  42F2      1264          BSI   2 GETDV-TB   GET DEVICE FOR ROUTINE  81012640
                  1265    *                                               81012650
                  1266    ************************************************* 81012660
                  1267    *                                             * 81012670
                  1268    ************************************************* 81012680
                  1269    *                                               81012690
                  1270    *     DATA CHECK TEST                           81012700
                  1271    *                                               81012710
                  1272    ************************************************* 81012720
                  1273    *                                             * 81012730
                  1274    ************************************************* 81012740
0C4F 01 65000C80  1275          LDX  L1 CCW19       SET CCW ADDRS INTO IOCC 81012750
0C51 01 6D0008A0  1276          STX  L1 SIOXX       *                     81012760
0C53 0  C28D      1277          LD    2 TERM-TB    SET SENSE ADDRS TO FFFF 81012770
0C54 0  D2E6      1278          STO   2 SPROT-TB   **                      81012780
0C55 01 2C410865  1279          STS  L  SPROT,/41  SET PROTECT BIT         81012790
                  1280    *                                               81012800
0C57 0  42F5      1281    T1904 BSI   2 SIO-TB       DO SIO               81012810
0C58 1  08A0      1282          DC      SIOXX       IOCC ADDRS            81012820
0C59 1  0C7C      1283          DC      CSW19        EXP CSW ADDRS        81012830
0C5A 1  0C62      1284          DC      T19EN      ERROR RETURN           81012840
                  1285    *                                               81012850
0C5B 0  C2E6      1286          LD    2 SPROT-TB   GET SENSE DATA         81012860
0C5C 0  F28D      1287          EOR   2 TERM-TB     WAS IT CHANGED        81012870
0C5D 01 4C200C77  1288          BNZ     T1905        YES, BRANCH          81012880
                  1289    *                                               81012890
                  1290    *                                               81012900
                  1291    *     GO TO NEXT ROUTINE IN SEQUENCE            81012910
                  1292    *                                               81012920
0C5F 01 74FF0866  1293          MDX  L  LPCNT,-1     COUNT LOOPS          81012930
0C61 0  70F5      1294          MDX     T1904         LOOP                81012940
                  1295    *                                               81012950
0C62 0  42EF      1296    T19EN BSI   2 FREDV-TB     FREE DEVICE         81012960
0C63 0  C2C2      1297          LD    2 TRTNN-TB   GET RTN NUMBER         81012970
0C64 01 4C180C98  1298          BZ      T1A01        GO TO NEXT RTN IN SEQ 81012980
0C66 0  42E9      1299          BSI   2 CNTRL-TB   GO TO CONTROL RTN       81012990
                  1300    *                                               81013000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
0C67     000E     1301    TTL19 DMES  1  SECT 1,RT 9- 'E                         81013010
0C6E     000F     1302          DMES  1 DATA CHECK TEST'E                       81013020
0C76 0   FFFF     1303          DC      /FFFF                                    81013030
                  1304    *     GET HERE IF PROTECTED AREA WAS CHANGED           81013040
0C77 0   42EC     1305    T1905 BSI   2 EROUT-TB                                81013050
0C78 0   010A     1306          DC      /010A                                    81013060
0C79 1   0C83     1307          DC      T1906                                    81013070
0C7A 0   19 1     1308          DC      /1901                                    81013080
0C7B 0   70E6     1309          MDX     T19EN                                    81013090
                  1310    *                                                      81013100
0C7C 0   4800     1311    CSW19 DC      /4800                                    81013110
0C7D 0   100C     1312          DC      /100C                                    81013120
0C7E 1   0C83     1313          DC      CCW19+3                                  81013130
0C7F 0   0000     1314          DC      *-*                                      81013140
                  1315    *                                                      81013150
                  1316    *                                                      81013160
0C80 0   0002     1317    CCW19 DC      2          BYTE COUNT                    81013170
0C81 0   2004     1318          DC      /20*256+OPSNS FLAGS AND OP CODE          81013180
0C82 1   0865     1319          DC      SPROT          ADDRESS                   81013190
                  1320    *                                                      81013200
                  1321    *                                                      81013210
0C83     0024     1322    T1906 DMES  1  1903 STORAGE PROTECTED AREA WAS CHA'     81013220
0C95     0004     1323          DMES  1 NGED'E                                   81013230
0C97 0   FFFF     1324          DC      /FFFF                                    81013240
                  1325    ************************************************       81013250
                  1326    *                                              *       81013260
                  1327    ************************************************       81013270
                  1328    *                                                      81013280
                  1329    *     SECTION END                                      81013290
                  1330    *                                                      81013300
0C98 0   42E9     1331    T1A01 BSI   2 CNTRL-TB   GO TO CONTROL RTN             81013310
                  1332    ************************************************       81013320
                  1333    *                                              *       81013330
                  1334    ************************************************       81013340
                  1335    *                                                      81013350
                  1336    *     SECTION PREFACE                                  81013360
                  1337    *                                                      81013370
0C99 0   0002     1338    T20PR DC      /0002    SECTION NUMBER                  81013380
0C9A 0   0006     1339          DC      6                                        81013390
                  1340    *                                                      81013400
0C9B 0   C2C2     1341    T20NT LD    2 TRTNN-TB  SW FNC 1 BITS 12-15            81013410
0C9C 01 4C180CA3  1342          BZ      T2101                                    81013420
0C9E 0   90FB     1343          S       T20PR+1   TEST FOR VALID                 81013430
0C9F 01 4C3009D2  1344          BP      TCNER     BR IF INVALID RTN NUMBER       81013440
0CA1 0   80F8     1345          A       T20PR+1   RESTORE RTN NUMBER             81013450
0CA2 0   7000     1346          MDX     T2101      GO TO 1ST ROUTINE             81013460
                  1347    ************************************************       81013470
                  1348    *                                              *       81013480
                  1349    ************************************************       81013490
0CA3 1            1350    T2101 EQU     *          TEST ENTRY POINT              81013500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
0CA3 01 74010815  1351          MDX   L  TRID,1      BUMP RTN ID                81013510
0CA5 01 4C180CAA  1352          BZ      T2102       BR IF TEST NUMBER ZERO       81013520
0CA7 0   9297     1353          S     2 K1-TB       DECREMENT BY 1               81013530
0CA8 01 4C200CFF  1354          BNZ     T2201       BR IF NOT THIS TEST          81013540
                  1355    *                                                      81013550
0CAA 0   D006     1356    T2102 STO     T21XX       SAVE RTN NUMBER              81013560
0CAB 0   C283     1357          LD    2 TSW0-TB     GET OPTION SWS               81013570
0CAC 0   100B     1358          SLA     11          TEST SKIP RTN                81013580
0CAD 01 4C100CB2  1359          BNN     T21XX+1     BR IF NO                     81013590
0CAF 0   C001     1360          LD      T21XX       RESTORE RTN NUMBER           81013600
0CB0 0   704E     1361          B       T2201       GO TO NEXT RTN               81013610
                  1362    *                                                      81013620
0CB1 0   0000     1363    T21XX DC      *-*         RTN NUMBER                   81013630
0CB2 0   C283     1364          LD    2 TSW0-TB     GET OPTION SWS               81013640
0CB3 0   100A     1365          SLA     OTTLE       PRINT TITLES                 81013650
0CB4 01 4C100CB8  1366          BNN     T2103       BR IF NOT SET                81013660
0CB6 0   4204     1367          BSI   2 TLGMS-TB     GO TO PRINT RTN              81013670
0CB7 1   0CD6     1368          DC      TTL21       MESSAGE ADDRS                81013680
                  1369    *                                                      81013690
0CB8 0   42F8     1370    T2103 BSI   2 STMLS-TB    GO TO MONITOR                81013700
0CB9 0   C2A1     1371          LD    2 K100-TB     SET UP LOOP CNT              81013710
0CBA 0   D2E7     1372          STO   2 LPCNT-TB    *                            81013720
0CBB 0   42F2     1373          BSI   2 GETDV-TB    GET DEVICE                   81013730
                  1374    ************************************************       81013740
                  1375    *                                              *       81013750
                  1376    ************************************************       81013760
                  1377    *                                                      81013770
                  1378    *     DATA CHAIN TEST                                  81013780
                  1379    *                                                      81013790
                  1380    ************************************************       81013800
                  1381    *                                              *       81013810
                  1382    ************************************************       81013820
0CBC 01 65000CE6  1383          LDX   L1 CCW21      SET CCW ADDRS IN IOCC        81013830
0CBE 01 6D0008A0  1384          STX   L1 SIOXX      *                            81013840
                  1385    *                                                      81013850
0CC0 0   C28D     1386    T2104 LD    2 TERM-TB     SET UP DATA AREA             81013860
0CC1 0   D217     1387          STO   2 SNWD0-TB    *                            81013870
                  1388    *                                                      81013880
0CC2 0   42F5     1389          BSI   2 SIO-TB      GO DO SIO                    81013890
0CC3 1   08A0     1390          DC      SIOXX       IOCC ADDRS                   81013900
0CC4 1   0CEC     1391          DC      CSW21       CSW COMPARE LIST             81013910
0CC5 1   0CD1     1392          DC      T21EN       ERROR ADDRS                  81013920
                  1393    *                                                      81013930
0CC6 0   C217     1394          LD    2 SNWD0-TB    SEE IF DATA XFERRED          81013940
0CC7 0   F28D     1395          EOR   2 TERM-TB     *                            81013950
0CC8 01 4C200CCE  1396          BNZ     T2106       BR IF YES                    81013960
                  1397    *                                                      81013970
0CCA 0   42EC     1398    T2105 BSI   2 EROUT-TB    ELSE PRINT ERROR MSG         81013980
0CCB 0   0108     1399          DC      /0108                                    81013990
0CCC 1   0CEF     1400          DC      T21M1       MSG ADDRS                    81014000
```

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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
0CCD 0  7003      1401          MDX     T21EN       END RTN               81014010
                  1402    *                                               81014020
0CCE 01 74FF0866  1403    T2106 MDX  L  LPCNT,-1     COUNT LOOPS           81014030
0CD0 0  70EF      1404          MDX     T2104       LOOP                  81014040
                  1405    *                                               81014050
0CD1 0  42EF      1406    T21EN BSI    2 FREDV-TB    FREE DEVICE           81014060
0CD2 0  C2C2      1407          LD     2 TRTNN-TB    GET RTN NUMBER        81014070
0CD3 01 4C180CFF  1408          BZ      T2201        GO TO NEXT RTN        81014080
0CD5 0  42E9      1409          BSI    2 CNTRL-TB    ELSE GO TO CONTROL RTN 81014090
                  1410    *                                               81014100
0CD6    001D      1411    TTL21 DMES   1  SECT 2,RT 1- DATA CHAIN TEST'E   81014110
0CE5 0  FFFF      1412          DC      /FFFF                             81014120
                  1413    *                                               81014130
0CE6 0  0001      1414    CCW21 DC      1           BYTE COUNT            81014140
0CE7 0  8004      1415          DC      FLDCH*256+OPSNS FLAGS AND OP CODE   81014150
0CE8 1  0897      1416          DC      SNWD1       ADDRS                 81014160
                  1417    *                                               81014170
0CE9 0  0001      1418          DC      1           BYTE COUNT            81014180
0CEA 0  20FF      1419          DC      FLSLI*256+/FF FLAGS AND OP CODE     81014190
0CEB 1  0896      1420          DC      SNWD0       ADDRESS               81014200
                  1421    *                                               81014210
0CEC 0  4000      1422    CSW21 DC      /4000       EXPECTED-CHAN STATUS  81014220
0CED 0  100C      1423          DC      /100C              -UNIT STATUS   81014230
0CEE 1  0CEC      1424          DC      CCW21+6            -CSW ADDRS     81014240
                  1425    *                                               81014250
0CEF    001E      1426    T21M1 DMES   1  2103 DATA NOT XFERRED TO CORE'E  81014260
0CFE 0  FFFF      1427          DC      /FFFF                             81014270
                  1428    ************************************************81014280
                  1429    *                                              *81014290
                  1430    ************************************************81014300
                  1431    *                                               81014310
                  1432    ************************************************81014320
                  1433    *                                              *81014330
                  1434    ************************************************81014340
0CFF 1            1435    T2201 EQU     *           TEST ENTRY POINT      81014350
0CFF 01 74010815  1436          MDX  L  TRID,1      BUMP RTN ID           81014360
0D01 01 4C160D06  1437          BZ      T2202       BR IF TEST NUMBER ZERO 81014370
0D03 0  9297      1438          S      2 K1-TB      DECREMENT BY ONE       81014380
0D04 01 4C200D54  1439          BNZ     T2301       BR IF NOT THIS TEST   81014390
                  1440    *                                               81014400
0D06 0  C283      1441    T2202 LD     2 TSW0-TB    GET OPTION SWS        81014410
0D07 0  100A      1442          SLA     OTTLE       PRINT TITLES          81014420
0D08 01 4C100D0C  1443          BNN     T2203         BR IF NOT SET       81014430
0D0A 0  4204      1444          BSI    2 TLGMS-TB   GO TO PRINT ROUTINE   81014440
0D0B 1  0D2A      1445          DC      TTL22       MESSAGE ADDRESS       81014450
0D0C 0  42E8      1446    T2203 BSI    2 STMLS-TB     GO TO MONITOR       81014460
                  1447    *                                               81014470
0D0D 0  C2A1      1448          LD     2 K100-TB    SET UP LOOP COUNT     81014480
0D0E 0  D2E7      1449          STO    2 LPCNT-TB   **                    81014490
0D0F 0  42F2      1450          BSI    2 GETDV-TB   GET DEVICE FOR ROUTINE 81014500
```



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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
                  1451    *                                               81014510
                  1452    ************************************************81014520
                  1453    *                                              *81014530
                  1454    ************************************************81014540
                  1455    *                                               81014550
                  1456    *     COMMAND CHAIN TEST                        81014560
                  1457    *                                               81014570
                  1458    ************************************************81014580
                  1459    *                                              *81014590
                  1460    ************************************************81014600
0D10 01 65000D38  1461          LDX  L1 CCW22       SET CCW ADDRESS IN IOCC 81014610
0D12 01 6D0008A0  1462          STX  L1 SIOXX       **                    81014620
                  1463    *                                               81014630
0D14 0  C28D      1464    T2204 LD     2 TERM-TB    SET UP DATA AREA=FFFF  81014640
0D15 0  D217      1465          STO    2 SNWD0-TB   *      **              81014650
                  1466    *                                               81014660
0D16 0  42F5      1467          BSI    2 SIO-TB     GO DO THE START I/O    81014670
0D17 1  08A0      1468          DC      SIOXX       IOCC ADDRESS          81014680
0D18 1  0D41      1469          DC      CSW22       CSW COMPARE LIST      81014690
0D19 1  0D25      1470          DC      T22EN      ERROR ADDRESS          81014700
                  1471    *                                               81014710
0D1A 0  C217      1472          LD     2 SNWD0-TB   GET DATA WORD         81014720
0D1B 0  F28D      1473          EOR    2 TERM-TB    *                     81014730
0D1C 01 4C200D22  1474          BNZ     T2205         BR IF DATA XFERRED  81014740
                  1475    *                                               81014750
0D1E 0  42EC      1476          BSI    2 EROUT-TB     PRINT MESSAGE       81014760
0D1F 0  010E      1477          DC      /010E                             81014770
0D20 1  0D44      1478          DC      T22M1       MESSAGE ADDRESS       81014780
0D21 0  7003      1479          MDX     T22EN       END RTN               81014790
                  1480    *                                               81014800
                  1481    *                                               81014810
                  1482    *     GO TO NEXT ROUTINE IN SEQUENCE            81014820
                  1483    *                                               81014830
0D22 01 74FF0866  1484    T2205 MDX  L  LPCNT,-1      COUNT LOOPS         81014840
0D24 0  70EF      1485          MDX     T2204         LOOP                81014850
                  1486    *                                               81014860
0D25 0  42EF      1487    T22EN BSI    2 FREDV-TB     FREE DEVICE         81014870
0D26 0  C2C2      1488          LD     2 TRTNN-TB    GET RTN NUMBER        81014880
0D27 01 4C180D54  1489          BZ      T2301        GO TO NEXT RTN IN SEQ 81014890
0D29 0  42E9      1490          BSI    2 CNTRL-TB    GO TO CONTROL RTN     81014900
                  1491    *                                               81014910
0D2A    000E      1492    TTL22 DMES   1  SECT 2,RT 2- 'E                 81014920
0D31    0012      1493          DMES   1 COMMAND CHAIN TEST'E             81014930
0D3A 0  FFFF      1494          DC      /FFFF                             81014940
                  1495    *                                               81014950
0D3B 0  0001      1496    CCW22 DC      1           BYTE COUNT            81014960
0D3C 0  4003      1497          DC      FLCCH*256+OPNOP FLAGS AND OP CODE   81014970
0D3D 1  0897      1498          DC      SNWD1          ADDRESS            81014980
                  1499    *                                               81014990
                  1500    *                                               81015000
```

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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                        ID/SEQNO
0D3E 0  0001        1501         DC       1             BYTE COUNT                       81015010
0D3F 0  2004        1502         DC       FLSLI*256+OPSNS FLAGS AND OP CODE              81015020
0D40 1  0896        1503         DC       SNWDO              ADDRESS                     81015030
                    1504   *                                                             81015040
                    1505   *                                                             81015050
0D41 0  4000        1506   CSW22 DC       /4000         EXPECTED-CHAN STATUS             81015060
0D42 0  100C        1507         DC       /100C                     -UNIT STATUS         81015070
0D43 1  0D41        1508         DC       CCW22+6                    -CSW ADDRESS        81015080
                    1509   *                                                             81015090
0D44    001E        1510   T22M1 DMES  1  2203 DATA NOT XFERRED TO CORE'E                81015100
                    1511   *                                                             81015110
0D53 0  FFFF        1512         DC       /FFFF                                          81015120
                    1513   *                                                             81015130
                    1514   *                                                             81015140
                    1515   *                                                             81015150
                    1516   *                                                             81015160
                    1517   ***************************************************** 81015170
                    1518   *                                                   * 81015180
                    1519   ***************************************************** 81015190
0D54 1              1520   T2301 EQU      *             TEST ENTRY POINT                 81015200
0D54 01 74010815    1521         MDX   L  TRID,1        BUMP RTN ID                      81015210
0D56 01 4C180D5B    1522         BZ       T2302         BR IF TEST NUMBER ZERO           81015220
0D58 0  9297        1523         S      2 K1-TB       DECREMENT BY ONE                   81015230
0D59 01 4C200DAA    1524         BNZ      T2401         BR IF NOT THIS TEST              81015240
                    1525   *                                                             81015250
0D5B 0  C283        1526   T2302 LD     2 TSWO-TB       GET OPTION SWS                   81015260
0D5C 0  100A        1527         SLA      OTTLE         PRINT TITLES                     81015270
0D5D 01 4C100D61    1528         BNN      T2303           BR IF NOT SET                  81015280
0D5F 0  4204        1529         BSI    2 TLGMS-TB      GO TO PRINT ROUTINE              81015290
0D60 1  0D7F        1530         DC       TTL23         MESSAGE ADDRESS                  81015300
0D61 0  42F8        1531   T2303 BSI    2 STMLS-TB        GO TO MONITOR                  81015310
                    1532   *                                                             81015320
0D62 0  C2A1        1533         LD     2 K100-TB       SET UP LOOP COUNT                81015330
0D63 0  D2E7        1534         STO    2 LPCNT-TB      **                               81015340
0D64 0  42F2        1535         BSI    2 GETDV-TB      GET DEVICE FOR ROUTINE           81015350
                    1536   *                                                             81015360
                    1537   ***************************************************** 81015370
                    1538   *                                                   * 81015380
                    1539   ***************************************************** 81015390
                    1540   *                                                             81015400
                    1541   *      INCORRECT LENGTH (SLI BIT OFF)                         81015410
                    1542   *                                                             81015420
                    1543   ***************************************************** 81015430
                    1544   *                                                   * 81015440
                    1545   ***************************************************** 81015450
0D65 01 65000D94    1546         LDX   L1 CCW23           SET CCW ADDRESS IN IOCC        81015460
0D67 01 6D0008A0    1547         STX   L1 SIOXX           **                             81015470
                    1548   *                                                             81015480
0D69 0  C28D        1549   T2304 LD     2 TERM-TB         SET UP DATA AREA=FFFF          81015490
0D6A 0  D217        1550         STO    2 SNWDO-TB    *        **                        81015500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                        ID/SEQNO
                    1551   *                                                             81015510
0D6B 0  42F5        1552         BSI    2 SIO-TB        GO DO THE START I/O              81015520
0D6C 1  08A0        1553         DC       SIOXX         IOCC ADDRESS                     81015530
0D6D 1  0D97        1554         DC       CSW23          CSW COMPARE LIST                81015540
0D6E 1  0D7A        1555         DC       T23EN       ERROR ADDRESS                      81015550
                    1556   *                                                             81015560
0D6F 0  C217        1557         LD     2 SNWDO-TB      GET DATA WORD                    81015570
0D70 0  F28D        1558         EOR    2 TERM-TB       *                                81015580
0D71 01 4C200D77    1559         BNZ      T2305             BR IF DATA XFERRED           81015590
                    1560   *                                                             81015600
0D73 0  42EC        1561         BSI    2 EROUT-TB        PRINT MESSAGE                  81015610
0D74 0  010E        1562         DC       /010E                                          81015620
0D75 1  0D9A        1563         DC       T23M1           MESSAGE ADDRESS                81015630
0D76 0  7003        1564         MDX      T23EN           END RTN                        81015640
                    1565   *                                                             81015650
                    1566   *                                                             81015660
                    1567   *      GO TO NEXT ROUTINE IN SEQUENCE                         81015670
                    1568   *                                                             81015680
0D77 01 74FF0866    1569   T2305 MDX   L  LPCNT,-1        COUNT LOOPS                    81015690
0D79 0  70EF        1570         MDX      T2304             LOOP                         81015700
                    1571   *                                                             81015710
0D7A 0  42EF        1572   T23EN BSI    2 FREDV-TB        FREE DEVICE                    81015720
0D7B 0  C2C2        1573         LD     2 TRTNN-TB      GET RTN NUMBER                   81015730
0D7C 01 4C180DAA    1574         BZ       T2401           GO TO NEXT RTN IN SEQ          81015740
0D7E 0  42E9        1575         BSI    2 CNTRL-TB      GO TO CONTROL RTN                81015750
                    1576   *                                                             81015760
0D7F    000E        1577   TTL23 DMES   1  SECT 2 RT 3- 'E                               81015770
0D86    0019        1578         DMES   1 INCORRECT LNGTH (SLI OFF)'E                    81015780
0D93 0  FFFF        1579         DC       /FFFF                                          81015790
                    1580   *                                                             81015800
0D94 0  0008        1581   CCW23 DC       8               BYTE COUNT                     81015810
0D95 0  0004        1582         DC       0*256+OPSNS FLAGS AND OP CODE                  81015820
0D96 1  0896        1583         DC       SNWDO              ADDRESS                     81015830
                    1584   *                                                             81015840
                    1585   *                                                             81015850
0D97 0  4200        1586   CSW23 DC       /4200         EXPECTED-CHAN STATUS             81015860
0D98 0  100C        1587         DC       /100C                     -UNIT STATUS         81015870
0D99 1  0D97        1588         DC       CCW23+3                    -CSW ADDRESS        81015880
                    1589   *                                                             81015890
0D9A    001E        1590   T23M1 DMES   1  2303 DATA NOT XFERRED TO CORE'E               81015900
                    1591   *                                                             81015910
0DA9 0  FFFF        1592         DC       /FFFF                                          81015920
                    1593   *                                                             81015930
                    1594   *                                                             81015940
                    1595   *                                                             81015950
                    1596   *                                                             81015960
                    1597   ***************************************************** 81015970
                    1598   *                                                   * 81015980
                    1599   ***************************************************** 81015990
0DAA 1              1600   T2401 EQU      *               TEST ENTRY POINT               81016000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
0DAA 01 74010815  1601            MDX  L  TRID,1      BUMP RTN ID                 81016010
0DAC 01 4C180DB1  1602            BZ      T2402       BR IF TEST NUMBER ZERO      81016020
0DAE 0  9297      1603            S    2  K1-TB       DECREMENT BY ONE            81016030
0DAF 01 4C200DFF  1604            BNZ     T2501       BR IF NOT THIS TEST         81016040
                  1605      *                                                       81016050
0DB1 0  C283      1606      T2402 LD   2  TSW0-TB     GET OPTION SWS              81016060
0DB2 0  10'A      1607            SLA     OTTLE       PRINT TITLES                81016070
0DB3 01 4C100DB7  1608            BNN     T2403         BR IF NOT SET             81016080
0DB5 0  4204      1609            BSI  2  TLGMS-TB    GO TO PRINT ROUTINE         81016090
0DB6 1  0DD5      1610            DC      TTL24       MESSAGE ADDRESS             81016100
0DB7 0  42F8      1611      T2403 BSI  2  STMLS-TB      GO TO MONITOR             81016110
                  1612      *                                                       81016120
0DB8 0  C2A1      1613            LD   2  K100-TB     SET UP LOOP COUNT           81016130
0DB9 0  D2E7      1614            STO  2  LPCNT-TB     **                          81016140
0DBA 0  42F2      1615            BSI  2  GETDV-TB     GET DEVICE FOR ROUTINE      81016150
                  1616      *                                                       81016160
                  1617      ************************************************      81016170
                  1618      *                                              *      81016180
                  1619      ************************************************      81016190
                  1620      *                                                       81016200
                  1621      *     INCORRECT LNGTH (SLI ON)                          81016210
                  1622      *                                                       81016220
                  1623      ************************************************      81016230
                  1624      *                                              *      81016240
                  1625      ************************************************      81016250
0DBB 01 65000DE9  1626            LDX  L1 CCW24        SET CCW ADDRESS IN IOCC    81016260
0DBD 01 6D0008A0  1627            STX  L1 SIOXX        **                         81016270
                  1628      *                                                       81016280
0DBF 0  C28D      1629      T2404 LD   2  TERM-TB      SET UP DATA AREA=FFFF      81016290
0DC0 0  D217      1630            STO  2  SNWD0-TB     *      **                  81016300
                  1631      *                                                       81016310
0DC1 0  42F5      1632            BSI  2  SIO-TB       GO DO THE START I/O        81016320
0DC2 1  08A0      1633            DC      SIOXX        IOCC ADDRESS               81016330
0DC3 1  0DEC      1634            DC      CSW24        CSW COMPARE LIST           81016340
0DC4 1  0DD0      1635            DC      T24EN      ERROR ADDRESS                81016350
                  1636      *                                                       81016360
0DC5 0  C217      1637            LD   2  SNWD0-TB    GET DATA WORD              81016370
0DC6 0  F28D      1638            EOR  2  TERM-TB     *                          81016380
0DC7 01 4C200DCD  1639            BNZ     T2405         BR IF DATA XFERRED       81016390
                  1640      *                                                       81016400
0DC9 0  42EC      1641            BSI  2  EROUT-TB       PRINT MESSAGE            81016410
0DCA 0  010E      1642            DC      /010E                                    81016420
0DCB 1  0DEF      1643            DC      T24M1        MESSAGE ADDRESS           81016430
0DCC 0  7003      1644            MDX     T24EN        END RTN                   81016440
                  1645      *                                                       81016450
                  1646      *                                                       81016460
                  1647      *     GO TO NEXT ROUTINE IN SEQUENCE                    81016470
                  1648      *                                                       81016480
0DCD 01 74FF0966  1649      T2405 MDX  L  LPCNT,-1     COUNT LOOPS                81016490
0DCF 0  70EF      1650            MDX     T2404        LOOP                      81016500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  1651      *                                                       81016510
0DD0 0  42EF      1652      T24EN BSI  2  FREDV-TB      FREE DEVICE               81016520
0DD1 0  C2C2      1653            LD   2  TRTNN-TB     GET RTN NUMBER            81016530
0DD2 01 4C180DFF  1654            BZ      T2501        GO TO NEXT RTN IN SEQ     81016540
0DD4 0  42E9      1655            BSI  2  CNTRL-TB     GO TO CONTROL RTN         81016550
                  1656      *                                                       81016560
0DD5      000E    1657      TTL24 DMES 1  SECT 2,RT 4- 'E                         81016570
0DDC      0018    1658            DMES 1  INCORRECT LNGTH (SLI ON)'E               81016580
0DE8 0  FFFF      1659            DC      /FFFF                                    81016590
                  1660      *                                                       81016600
0DE9 0  0008      1661      CCW24 DC      8            BYTE COUNT                  81016610
0DEA 0  2004      1662            DC      FLSLI*256+OPSNS FLAGS AND OP CODE        81016620
0DEB 1  0896      1663            DC      SNWD0          ADDRESS                   81016630
                  1664      *                                                       81016640
                  1665      *                                                       81016650
0DEC 0  4000      1666      CSW24 DC      /4000        EXPECTED-CHAN STATUS        81016660
0DED 0  100C      1667            DC      /100C              -UNIT STATUS          81016670
0DEE 1  0DEC      1668            DC      CCW24+3            -CSW ADDRESS          81016680
                  1669      *                                                       81016690
0DEF      001E    1670      T24M1 DMES 1  2403 DATA NOT XFERRED TO CORE'E          81016700
                  1671      *                                                       81016710
0DFE 0  FFFF      1672            DC      /FFFF                                    81016720
                  1673      *                                                       81016730
                  1674      *                                                       81016740
                  1675      *                                                       81016750
                  1676      *                                                       81016760
                  1677      ************************************************      81016770
                  1678      *                                              *      81016780
                  1679      ************************************************      81016790
0DFF 1            1680      T2501 EQU     *            TEST ENTRY POINT            81016800
0DFF 01 74010815  1681            MDX  L  TRID,1       BUMP RTN ID               81016810
0E01 01 4C180E06  1682            BZ      T2502        BR IF TEST NUMBER ZERO      81016820
0E03 0  9297      1683            S    2  K1-TB       DECREMENT BY ONE            81016830
0E04 01 4C200F4F  1684            BNZ     T2601        BR IF NOT THIS TEST         81016840
                  1685      *                                                       81016850
0E06 0  C283      1686      T2502 LD   2  TSW0-TB      GET OPTION SWS              81016860
0E07 0  100A      1687            SLA     OTTLE        PRINT TITLES                81016870
0E08 01 4C100E0C  1688            BNN     T2503          BR IF NOT SET             81016880
0E0A 0  4204      1689            BSI  2  TLGMS-TB     GO TO PRINT ROUTINE         81016890
0E0B 1  0E2A      1690            DC      TTL25        MESSAGE ADDRESS             81016900
0E0C 0  42F8      1691      T2503 BSI  2  STMLS-TB       GO TO MONITOR             81016910
                  1692      *                                                       81016920
0E0D 0  C2A1      1693            LD   2  K100-TB      SET UP LOOP COUNT           81016930
0E0E 0  D2E7      1694            STO  2  LPCNT-TB     **                          81016940
0E0F 0  42F2      1695            BSI  2  GETDV-TB     GET DEVICE FOR ROUTINE      81016950
                  1696      *                                                       81016960
                  1697      ************************************************      81016970
                  1698      *                                              *      81016980
                  1699      ************************************************      81016990
                  1700      *                                                       81017000
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SELECTOR CHANNEL DIAGNOSTIC/1800

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ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  1701    *     SKIP TEST                                         81017010
                  1702    *                                                       81017020
                  1703    ********************************************************81017030
                  1704    *                                                      *81017040
                  1705    ********************************************************81017050
0E10 01 65[ 0E3B  1706          LDX  L1 CCW25       SET CCW ADDRESS IN IOCC       81017060
0E12 01 6D0008A0  1707          STX  L1 SIOXX       **                            81017070
                  1708    *                                                       81017080
0E14 0  C28D      1709    T2504 LD    2 TERM-TB     SET UP DATA AREA=FFFF         81017090
0E'5 0  D217      1710          STO   2 SNWD0-TB    *      **                     81017100
                  1711    *                                                       81017110
0E16 0  42F5      1712          BSI   2 SIO-TB      GO DO THE START I/O           81017120
0E17 1  08A0      1713          DC      SIOXX       IOCC ADDRESS                  81017130
0E18 1  0E3E      1714          DC      CSW25       CSW COMPARE LIST              81017140
0E19 1  0E25      1715          DC      T25EN     ERROR ADDRESS                   81017150
                  1716    *                                                       81017160
0E1A 0  C217      1717          LD    2 SNWD0-TB    GET DATA WORD                 81017170
0E1B 0  F28D      1718          EOR   2 TERM-TB     *                             81017180
0E1C 01 4C18'E22  1719          BZ      T2505         BR IF NO DATA XFERRED       81017190
                  1720    *                                                       81017200
0E1E 0  42EC      1721          BSI   2 ERCUT-TB      PRINT MESSAGE               81017210
0E1F 0  010A      1722          DC      /010A                                     81017220
0E20 1  0E41      1723          DC      T25M1         MESSAGE ADDRESS             81017230
0E21 0  7003      1724          MDX     T25EN         END RTN                     81017240
                  1725    *                                                       81017250
                  1726    *                                                       81017260
                  1727    *     GO TO NEXT ROUTINE IN SEQUENCE                    81017270
                  1728    *                                                       81017280
0E22 01 74FF0866  1729    T2505 MDX  L  LPCNT,-1      COUNT LOOPS                 81017290
0E24 0  70EF      1730          MDX     T25'4         LOOP                        81017300
                  1731    *                                                       81017310
0E25 0  42EF      1732    T25EN BSI   2 FREDV-TB      FREE DEVICE                 81017320
0E26 0  C2C2      1733          LD    2 TRTNN-TB    GET RTN NUMBER                81017330
0E27 01 4C180E4F  1734          BZ      T2601         GO TO NEXT RTN IN SEQ       81017340
0E29 0  42E9      1735          BSI   2 CNTRL-TB    GO TO CONTROL RTN             81017350
                  1736    *                                                       81017360
0E2A    000E      1737    TTL25 DMES  .  SECT 2,RT 5- 'E                          81017370
0E31    0012      1738          DMES  1 SKIP DATA TRANSFER'E                      81017380
0E3A 0  FFFF      1739          DC      /FFFF                                     81017390
                  1740    *                                                       81017400
0E3B 0  0001      1741    CCW25 DC      1             BYTE COUNT                  81017410
0E3C 0  2804      1742          DC      /28*256+OPSNS FLAGS AND OP CODE           81017420
0E3D 1  0896      1743          DC      SNWD0           ADDRESS                   81017430
                  1744    *                                                       81017440
                  1745    *                                                       81017450
0E3E 0  4000      1746    CSW25 DC      /4000         EXPECTED-CHAN STATUS        81017460
0E3F 0  100C      1747          DC      /100C                -UNIT STATUS         81017470
0E40 1  0E3E      1748          DC      CCW25+3              -CSW ADDRESS         81017480
                  1749    *                                                       81017490
0E41    001A      1750    T25M1 DMES  1  2503 DATA XFERRED TO CORE'E               81017500
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SELECTOR CHANNEL DIAGNOSTIC/1800

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ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  1751    *                                                       81017510
0E4E 0  FFFF      1752          DC      /FFFF                                     81017520
                  1753    *                                                       81017530
                  1754    *                                                       81017540
                  1755    *                                                       81017550
                  1756    *                                                       81017560
                  1757    ********************************************************81017570
                  1758    *                                                      *81017580
                  1759    ********************************************************81017590
0E4F 1            1760    T2601 EQU     *             TEST ENTRY POINT            81017600
0E4F 01 74010815  1761          MDX  L  TRID,1        BUMP RTN ID                 81017610
0E51 01 4C180E56  1762          BZ      T2602         BR IF TEST NUMBER ZERO      81017620
0E53 0  9297      1763          S     2 K1-TB       DECREMENT BY ONE              81017630
0E54 01 4C200E8F  1764          BNZ     T2701         BR IF NOT THIS TEST         81017640
                  1765    *                                                       81017650
0E56 0  C283      1766    T2602 LD    2 TSW0-TB     GET OPTION SWS              81017660
0E57 0  100A      1767          SLA     OTTLE         PRINT TITLES                81017670
0E58 01 4C100E5C  1768          BNN     T2603           BR IF NOT SET             81017680
0E5A 0  4204      1769          BSI   2 TLGMS-TB     GO TO PRINT ROUTINE         81017690
0E5B 1  0E7C      1770          DC      TTL26         MESSAGE ADDRESS             81017700
0E5C 0  42F8      1771    T2603 BSI   2 STMLS-TB       GO TO MONITOR             81017710
                  1772    *                                                       81017720
0E5D 0  C2A1      1773          LD    2 K100-TB     SET UP LOOP COUNT           81017730
0E5E 0  D2E7      1774          STO   2 LPCNT-TB    **                          81017740
0E5F 0  42F2      1775          BSI   2 GETDV-TB    GET DEVICE FOR ROUTINE      81017750
                  1776    *                                                       81017760
                  1777    ********************************************************81017770
                  1778    *                                                      *81017780
                  1779    ********************************************************81017790
                  1780    *                                                       81017800
                  1781    *     PROGRAM CONTROL INTERRUPT                         81017810
                  1782    *                                                       81017820
                  1783    ********************************************************81017830
                  1784    *                                                      *81017840
                  1785    ********************************************************81017850
0E60 01 65000E85  1786          LDX  L1 CCW26       SET CCW ADDRESS IN IOCC       81017860
0E62 01 6D0008A0  1787          STX  L1 SIOXX       **                            81017870
                  1788    *                                                       81017880
0E64 0  42F5      1789    T2504 BSI   2 SIO-TB      GO DO THE START I/O           81017890
0E65 1  08A0      1790          DC      SIOXX       IOCC ADDRESS                  81017900
0E66 1  0E8B      1791          DC      CSW26       CSW COMPARE LIST              81017910
0E67 1  0E6B      1792          DC      T26EN     ERROR ADDRESS                   81017920
                  1793    *                                                       81017930
                  1794    *                                                       81017940
                  1795    *     GO TO NEXT ROUTINE IN SEQUENCE                    81017950
                  1796    *                                                       81017960
0E68 01 74FF0866  1797          MDX  L  LPCNT,-1      COUNT LOOPS                 81017970
0E6A 0  70F9      1798          MDX     T2604         LOOP                        81017980
                  1799    *                                                       81017990
0E6B 0  42EF      1800    T26EN BSI   2 FREDV-TB      FREE DEVICE                 81018000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
0E6C 0  C2C2       1801          LD    2 TRTNN-TB   GET RTN NUMBER                81018010
0E6D 01 4C180E8F   1802          BZ      T2701       GO TO NEXT RTN IN SEQ        81018020
0E6F 0  42E9       1803          BSI   2 CNTRL-TB   GO TO CONTROL RTN             81018030
                   1804    *                                                       81018040
0E70    000E       1805    TTL26 DMES  1  SECT 2,RT 6- 'E                          81018050
0E 7    0019       1806          DMES  1 PROGRAM CONTROL INTERRUPT'E                81018060
0E84 0  FFFF       1807          DC      /FFFF                                     81018070
                   1808    *                                                       81018080
0E85 0  0001       1809    CCW26 DC      1           BYTE COUNT                    81018090
0E86 0  5003       1810          DC      /50*256+OPNOP FLAGS AND OP CODE           81018100
0E87 1  0E88       1811          DC      *           ADDRESS                       81018110
                   1812    *                                                       81018120
                   1813    *                                                       81018130
0E88 0  0001       1814          DC      1           BYTE COUNT                    81018140
0E89 0  2003       1815          DC      FLSLI*256+OPNOP FLAGS AND OP CODE         81018150
0E8A 1  0E8B       1816          DC      *           ADDRESS                       81018160
                   1817    *                                                       81018170
                   1818    *                                                       81018180
0E8  0  6000       1819    CSW26 DC      /6000       EXPECTED-CHAN STATUS          81018190
0E8C 0  000C       1820          DC      /000C              -UNIT STATUS           81018200
0E8D 1  0E88       1821          DC      CCW25+6            -CSW ADDRESS           81018210
0E8E 0  0000       1822          DC      0                  -BYTE COUNT            81018220
                   1823    *                                                       81018230
                   1824    *                                                       81018240
                   1825    ********************************************************* 81018250
                   1826    *                                                       * 81018260
                   1827    ********************************************************* 81018270
                   1828    *                                                       81018280
                   1829    *     SECTION END                                       81018290
                   1830    *                                                       81018300
0E8F 0  42E9       1831    T2701 BSI   2 CNTRL-TB   GO TO CONTROL RTN              81018310
                   1832    ********************************************************* 81018320
                   1833    *                                                       * 81018330
                   1834    ********************************************************* 81018340
                   1835    *                                                       81018350
                   1836    *     SECTION PREFACE                                   81018360
                   1837    *                                                       81018370
0E90 0  0003       1838    T30PR DC      /0003     SECTION NUMBER                  81018380
0E91 0  0003       1839          DC      3                                         81018390
                   1840    *                                                       81018400
0E92 0  C2C2       1841    T30NT LD    2 TRTNN-TB  SW FNC 1 BITS 12-15             81018410
0E93 01 4C180E9A   1842          BZ      T3101       BR IF RUN ALL RTNS            81018420
0E95 0  90FB       1843          S       T30PR+1     TEST FOR VALID                81018430
0E96 01 4C3009D2   1844          BP      TCNER       BR IF INVALID RTN NUMBER      81018440
0E98 0  80FB       1845          A       T30PR+1     RESTORE RTN NUMBER            81018450
0E99 0  7000       1846          MDX     T3101       GO TO FIRST RTN               81018460
                   1847    ********************************* ********************* 81018470
                   1848    *                                                       * 81018480
                   1849    ********************************************************* 81018490
                   1850    *                                                       81018500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
                   1851    ********************************************************* 81018510
                   1852    *                                                       * 81018520
                   1853    ********************************************************* 81018530
0E9A 1             1854    T3101 EQU     *           TEST ENTRY POINT              81018540
0E9A 01 74C10815   1855          MDX   L  TRID,1      BUMP RTN ID                   81018550
0E9C 01 4C180EA1   1856          BZ      T3102       BR IF TEST NUMBER ZERO        81018560
0E9E 0  9297       1857          S     2 K1-TB       DECREMENT BY ONE              81018570
0E9F 01 4C200EE2   1858          BNZ     T3201       BR IF NOT THIS TEST           81018580
                   1859    *                                                       81018590
0EA1 0  C283       1860    T3102 LD    2 TSW0-TB     GET OPTION SWS                81018600
0EA2 0  100A       1861          SLA     OTTLE       PRINT TITLES                  81018610
0EA3 01 4C100EA7   1862          BNN     T3103         BR IF NOT SET               81018620
0EA5 0  4204       1863          BSI   2 TLGMS-TB     GO TO PRINT ROUTINE           81018630
0EA6 1  0EC8       1864          DC      TTL31       MESSAGE ADDRESS               81018640
0EA7 0  42F8       1865    T3103 BSI   2 STMLS-TB      GO TO MONITOR               81018650
                   1866    *                                                       81018660
0EA8 0  C2A1       1867          LD    2 K100-TB     SET UP LOOP COUNT             81018670
0EA9 0  D2E7       1868          STO   2 LPCNT-TB    **                            81018680
0EAA 0  42F2       1869          BSI   2 GETDV-TB    GET DEVICE FOR ROUTINE        81018690
                   1870    *                                                       81018700
                   1871    ********************************************************* 81018710
                   1872    *                                                       * 81018720
                   1873    ********************************************************* 81018730
                   1874    *                                                       81018740
                   1875    *     NOT OPERATIONAL TEST                              81018750
                   1876    *                                                       81018760
                   1877    ********************************************************* 81018770
                   1878    *                                                       * 81018780
                   1879    ********************************************************* 81018790
0EAB 01 65000ED5   1880          LDX   L1 CCW31        SET CCW ADDRS IN IOCC       81018800
0EAD 01 6D0008A0   1881          STX   L1 SIOXX        *                           81018810
0EAF 01 C40008A1   1882          LD    L  SIOXX+1      GET IOCC SECOND WORD        81018820
0EB1 0  18D8       1883          RTE      24           SAVE AREA CODE AND FUNC     81018830
0EB2 0  F2BE       1884          EOR   2 HFF00-TB      INVERT UNIT ADDRS           81018840
0EB3 0  18C8       1885          RTE      8            RESTORE WORD                81018850
0EB4 01 D40008A1   1886          STO   L  SIOXX+1      REPLACE                     81018860
                   1887    *                                                       81018870
0EB6 0  C2DE       1888    T3104 LD    2 DVADR-TB    GET DVC ADDRS                 81018880
0EB7 0  D2E6       1889          STO   2 SPROT-TB    SAVE                          81018890
0EB8 0  F28D       1890          EOR   2 TERM-TB     INVERT                        81018900
0EB9 0  D2DE       1891          STO   2 DVADR-TB    REPLACE                       81018910
                   1892    *                                                       81018920
0EBA 0  42F5       1893          BSI   2 SIO-TB      GO DO SIO                     81018930
0EBB 1  08A0       1894          DC      SIOXX       IOCC ADDRS                    81018940
0EBC 1  0EDE       1895          DC      CSW31         EXP CSW ADDRS               81018950
0EBD 1  0ED6       1896          DC      T3105         ERROR RETURN                81018960
                   1897    *                                                       81018970
0EBE 0  C2E6       1898          LD    2 SPROT-TB    RESTORE DVC ADDRS             81018980
0EBF 0  D2DE       1899          STO   2 DVADR-TB    *                             81018990
                   1900    *                                                       81019000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
                  1901    *                                              81019010
                  1902    *      GO TO NEXT ROUTINE IN SEQUENCE          81019020
                  1903    *                                              81019030
0EC0 01 74FF0866  1904           MDX  L  LPCNT,-1      COUNT LOOPS       81019040
0EC2 0  70F3      1905           MDX     T3104          LOOP             81019050
                  1906    *                                              81019060
0EC3 0  42EF      1907    T31EN BSI    2 FREDV-TB      FREE DEVICE       81019070
0EC4 0  C2C2      1908           LD     2 TRTNN-TB     GET RTN NUMBER    81019080
0EC5 01 4C180EE2  1909           BZ      T3201         GO TO NEXT RTN IN SEQ 81019090
0EC7 0  42E9      1910           BSI    2 CNTRL-TB     GO TO CONTROL RTN 81019100
                  1911    *                                              81019110
0EC8    000E      1912    TTL31 DMES   1  SECT 3,RT 1- 'E                81019120
0ECF    000F      1913           DMES   1 NOT OPERATIONAL'E              81019130
0ED7 0  FFFF      1914           DC      /FFFF                          81019140
                  1915    *                                              81019150
0ED8 0  C2E6      1916    T3105 LD     2 SPROT-TB                        81019160
0ED9 0  D2DE      1917           STO    2 DVADR-TB                      81019170
0EDA 0  70E8      1918           MDX     T31EN                          81019180
                  1919    *                                              81019190
0EDB 0  0001      1920    CCW31 DC       1          BYTE COUNT          81019200
0EDC 0  0003      1921           DC      0*256+OPNOP FLAGS AND CP CODE   81019210
0EDD 1  0EDE      1922           DC      *          ADDRESS              81 19220
                  1923    *                                              81019230
                  1924    *                                              81019240
0EDE 0  8000      1925    CSW31 DC       /8000       EXP CS              81019250
0EDF 0  0003      1926           DC      /0003         US                81019260
0EE0 1  0EDE      1927           DC      CCW31+3        ADDRS            81019270
0EE1 0  0000      1928           DC      0              BYTE COUNT       81019280
                  1929    ********************************************** 81019290
                  1930    *                                            * 81019300
                  1931    ********************************************** 81019310
0EE2 1            1932    T3201 EQU      *          TEST ENTRY POINT     81019320
0EE2 01 74010815  1933           MDX  L  TRID,1     BUMP RTN ID          81019330
0EE4 01 4C180EE9  1934           BZ      T3202      BR IF TEST NUMBER ZERO 81019340
0EE6 0  9297      1935           S     2 K1-TB      DECREMENT BY ONE     81019350
0EE7 01 4C200F3C  1936           BNZ     T3301      BR IF NOT THIS TEST  81019360
                  1937    *                                              81019370
0EE9 0  D006      1938    T3202 STO      T32XX      SAVE RTN NUMBER      81019330
0EEA 0  C283      1939           LD     2 TSW0-TB   GET OPTION SWS       81019390
0EEB 0  1009      1940           SLA     0BCRT      BYPASS ROUTINE       81019400
0EEC 01 4C100EF1  1941           BNN     T32XX+1    BR IF NO             81019410
0EEE 0  C001      1942           LD      T32XX      RESTORE RTN NUMBER   81019420
0EEF 0  704C      1943           B       T3301      GO TO NEXT RTN       81019430
                  1944    *                                              81019440
0EF0 0  0000      1945    T32XX DC       *-*        RTN NUMBER           81019450
0EF1 0  C283      1946           LD     2 TSW0-TB   GET OPTION SWS       81019460
0EF2 0  100A      1947           SLA     OTTLE      PRINT TITLES         81019470
0EF3 01 4C100EF7  1948           BNN     T3203       BR IF NOT SET       81019480
0EF5 0  4204      1949           BSI    2 TLGMS-TB  GO TO PRINT ROUTINE  81019490
0EF6 1  0F12      1950           DC      TTL32      MESSAGE ADDRESS      81019500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
0EF7 0  42F8      1951    T3203 BSI    2 STMLS-TB     GO TO MONITOR      81019510
                  1952    *                                              81019520
0EF8 0  C2A1      1953           LD     2 K100-TB     SET UP LOOP COUNT  81019530
0EF9 0  D2E7      1954           STO    2 LPCNT-TB    **                 81019540
0EFA 0  42F2      1955           BSI    2 GETDV-TB    GET DEVICE FOR ROUTINE 81019550
                  1956    *                                              81019560
                  1957    ********************************************** 81019570
                  1958    *                                            * 81019580
                  1959    ********************************************** 81019590
                  1960    *                                              81019600
                  1961    *      COMMAND REJECT                          81019610
                  1962    *                                              81019620
                  1963    ********************************************** 81019630
                  1964    *                                            * 81019640
                  1965    ********************************************** 81019650
0EFB 01 65000F25  1966           LDX  L1 CCW32         SET CCW ADDRS IN IOCC 81019660
0EFD 01 6D0008A0  1967           STX  L1 SIOXX         *                81019670
                  1968    *                                              81019680
0EFF 0  42F5      1969    T3204 BSI    2 SIO-TB       GO DO SIO          81019690
0F00 1  08A0      1970           DC       SIOXX        IOCC ADDRS         81019700
0F01 1  0F36      1971           DC       CSW32         EXP CSW ADDRS     81019710
0F02 1  0F0D      1972           DC       T32EN        ERROR RETURN       81019720
                  1973    *                                              81019730
0F03 0  42F5      1974           BSI    2 SIO-TB       DO SIO TO          81019740
0F04 1  069E      1975           DC       SENSE        * GET SENSE INFO   81019750
0F05 1  0F3A      1976           DC       CSW32+4                         81019760
0F06 1  0F0D      1977           DC       T32EN                           81019770
                  1978    *                                              81019780
0F07 0  C217      1979           LD     2 SNWDS-TB     GET SENSE WORD     81019790
0F08 01 4C100F21  1980           BNN     T3205          BR IF CMD REJ NOT SET 81019800
                  1981    *                                              81019810
                  1982    *                                              81019820
                  1983    *      GO TO NEXT ROUTINE IN SEQUENCE          81019830
                  1984    *                                              81019840
0F0A 01 74FF0866  1985           MDX  L  LPCNT,-1      COUNT LOOPS       81019850
0F0C 0  70F2      1986           MDX     T3204          LOOP             81019860
                  1987    *                                              81019870
0F0D 0  42EF      1988    T32EN BSI    2 FREDV-TB     FREE DEVICE        81019880
0F0E 0  C2C2      1989           LD     2 TRTNN-TB    GET RTN NUMBER     81019890
0F0F 01 4C180F3C  1990           BZ      T3301         GO TO NEXT RTN IN SEQ 81019900
0F11 0  42E9      1991           BSI    2 CNTRL-TB    GO TO CONTROL RTN  81019910
                  1992    *                                              81019920
0F12    000E      1993    TT_32 DMES   1  SECT 3,RT 2- 'E                81019930
0F19    000E      1994           DMES   1 COMMAND REJECT'E               81019940
0F20 0  FFFF      1995           DC      /FFFF                          81019950
                  1996    *                                              81019960
0F21 0  42EC      1997    T3205 BSI    2 EROUT-TB                        81019970
0F22 0  010B      1998           DC      /010B                          81019980
0F23 1  0F28      1999           DC      T3206                          81019990
                  2000    *                                              81020000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
0F24 0  70E8      2001            MDX     T32EN                            81020010
                  2002     *                                               81020020
                  2003     *                                               81020030
0F25 0  0001      2004     CCW32  DC       1          BYTE COUNT           81020040
0F26 0  00FF      2005            DC       0*256+/FF FLAGS AND OP CODE     81020050
0F27 1  0896      2006            DC       SNWDS          ADDRESS          81020060
                  2007     *                                               81020070
                  2008     *                                               81020080
0F28      0019    2009     T3206  DMES   1  3203 COMMAND REJ NOT SET'E      81020090
0F35 0    FFFF    2010            DC       /FFFF                           81020100
                  2011     *                                               81020110
0F36 0    4000    2012     CSW32  DC       /4000        EXP CS             81020120
0F37 0    0002    2013            DC       /0002          US               81020130
0F38 1    0F28    2014            DC       CCW32+3         ADDRS           81020140
0F39 0    0000    2015            DC       0                BYTE COUNT     81020150
                  2016     *       EXP CSW FOR SENSE SIO                   81020160
0F3A 0    0000    2017            DC       *-*                             81020170
0F3B 0    F000    2018            DC       /F000                           81020180
                  2019     ********************************************** 81020190
                  2020     *                                            * 81020200
                  2021     ********************************************** 81020210
0F3C 1            2022     T3301  EQU      *          TEST ENTRY POINT     81020220
0F3C 01 74010815  2023            MDX   L  TRID,1     BUMP RTN ID          81020230
0F3E 01 4C180F43  2024            BZ       T3302     BR IF TEST NUMBER ZERO 81020240
0F40 0  9297      2025            S     2  K1-TB     DECREMENT BY ONE       81020250
0F41 01 4C200FD1  2026            BNZ      T3401     BR IF NOT THIS TEST    81020260
                  2027     *                                               81020270
0F43 0  C263      2028     T3302  LD    2  TSW0-TB   GET OPTION SWS         81020280
0F44 0  100A      2029            SLA      OTTLE     PRINT TITLES           81020290
0F45 01 4C100F49  2030            BNN      T3303       BR IF NOT SET        81020300
0F47 0  4204      2031            BSI   2  TLGMS-TB   GO TO PRINT ROUTINE    81020310
0F48 1  0F81      2032            DC       TTL33     MESSAGE ADDRESS        81020320
0F49 0  42F8      2033     T3303  BSI   2  STMLS-TB     GO TO MONITOR        81020330
                  2034     *                                               81020340
0F4A 0  C2A1      2035            LD    2  K100-TB   SET UP LOOP COUNT      81020350
0F4B 0  D2E7      2036            STO   2  LPCNT-TB   **                     81020360
0F4C 0  42F2      2037            BSI   2  GETDV-TB   GET DEVICE FOR ROUTINE 81020370
                  2038     *                                               81020380
                  2039     ********************************************** 81020390
                  2040     *                                            * 81020400
                  2041     ********************************************** 81020410
                  2042     *                                               81020420
                  2043     *       HALT I/O TEST                           81020430
                  2044     *                                               81020440
                  2045     ********************************************** 81020450
                  2046     *                                            * 81020460
                  2047     ********************************************** 81020470
0F4D 01 65000C26  2048     T3300  LDX   L1 CCW18      ADDR OF SENSE CCW    81020480
0F4F 01 6D0008A0  2049            STX   L1 SIOXX      PLACE IN SIO         81020490
0F51 01 6C00083F  2050            STX   L  ERTSW      SET EARLY RETURN SWITCH 81020500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
0F53 0  42F5      2051            BSI   2 SIO-TB      GO DO SENSE          81020510
0F54 1  08A0      2052            DC      SIOXX                            81020520
0F55 0  1000      2053            NOP                                      81020530
0F56 01 65000FCA  2054            LDX   L1 CCW33       SET CCW ADDRS IN IOCC 81020540
0F58 01 6D0008A0  2055            STX   L1 SIOXX      *                    81020550
0F5A 01 6C00083F  2056     T3304  STX   L  ERTSW      SET EARLY RETURN SW  81020560
0F5C 0  C29D      2057            LD    2 K8-TB       INITIALIZE TIC CCW   81020570
0F5D 0  D070      2058            STO     CCW33+4     *                    81020580
0F5E 0  1010      2059            SLA     16          CLEAR CHANNEL BUSY SW 81020590
0F5F 0  D070      2060            STO     T33X        *                    81020600
                  2061     *                                               81020610
0F60 0  42F5      2062            BSI   2 SIO-TB      GO DO SIO            81020620
0F61 1  08A0      2063            DC      SIOXX       IOCC ADDRS           81020630
                  2064     *       EARLY RETURN COMES HERE                 81020640
0F62 0  6132      2065            LDX   1 50                               81020650
0F63 0  71FF      2066     T3305  MDX   1 -1                               81020660
0F64 0  70FE      2067            MDX     T3305                            81020670
0F65 0  0A25      2068            XIO   2 SCSN1-TB      GET CHANNEL STATUS  81020680
0F66 0  D22F      2069            STO   2 SCSX0-TB      SAVE                81020690
0F67 0  1007      2070            SLA     SCABZ       CHANNEL SB BUSY      81020700
0F68 01 4C100F8D  2071            BNN     T3308       BR IF NOT            81020710
0F6A 0  6865      2072            STX     T33X        SET CHANNEL BUSY SW  81020720
0F6B 01 6C00083F  2073            STX   L  ERTSW      SET EARLY RETURN SW  81020730
                  2074     *                                               81020740
0F6D 0  42F5      2075     T33GO BSI   2 SIO-TB                            81020750
0F6E 1  089C      2076     T33CK DC      HIOXX                            81020760
                  2077     * EARLY RETURN COMES HERE                       81020770
0F6F 0  6132      2078            LDX   1 50                               81020780
0F70 0  71FF      2079     T3306  MDX   1 -1                               81020790
0F71 0  70FE      2080            MDX     T3306                            81020800
                  2081     *                                               81020810
0F72 0  0A25      2082            XIO   2 SCSN1-TB      GET CHANNEL STATUS  81020820
0F73 0  D22F      2083            STO   2 SCSX0-TB      SAVE                81020830
0F74 0  1007      2084            SLA     SCABZ       CHANNEL SHOULD NOT BE BUSY 81020840
0F75 01 4C280F8D  2085            BN      T3308       BR IF IT IS BUSY     81020850
                  2086     *                                               81020860
                  2087     *       GO TO NEXT ROUTINE IN SEQUENCE          81020870
                  2088     *                                               81020880
0F77 01 74FF0866  2089            MDX   L  LPCNT,-1     COUNT LOOPS        81020890
0F79 0  70D3      2090            MDX     T3300       LOOP                 81020900
                  2091     *                                               81020910
0F7A 0  C299      2092     T3307  LD    2 K3-TB       SET TIC = NO-OP      81020920
0F7B 0  D052      2093            STO     CCW33+4     *                    81020930
0F7C 0  42EF      2094     T33EN  BSI   2 FREDV-TB      FREE DEVICE        81020940
0F7D 0  C2C2      2095            LD    2 TRTNN-TB    GET RTN NUMBER       81020950
0F7E 01 4C180FD1  2096            BZ      T3401       GO TO NEXT RTN IN SEQ 81020960
0F80 0  42E9      2097            BSI   2 CNTRL-TB    GO TO CONTROL RTN    81020970
                  2098     *                                               81020980
0F81      000E    2099     TTL33  DMES   1  SECT 3,RT 3- 'E                 81020990
0F88      0008    2100            DMES   1 HALT I/O'E                      81021000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT     ST.NO.  LABEL OPCD FT OPERANDS                                   ID/SEQNO
0F8C 0  FFFF        2101          DC      /FFFF                                      81021010
                    2102    *                                                        81021020
0F8D 0  0A29        2103    T3308 XIO   2 SCSN3-TB                                   81021030
0F8E 0  D230        2104          STO   2 SCSX0+1-TB                                 81021040
0F8F 0  0A2B        2105          XIO   2 SCSN4-TB                                   81021050
0F90 0  D231        2106          STO   2 SCSX0+2-TB                                 81021060
0F91 0  0A2D        2107          XIO   2 SCSN5-TB                                   81021070
0F92 0  D232        2108          STO   2 SCSX0+3-TB                                 81021080
                    2109    *                                                        81021090
0F93 01 74000FD0    2110          MDX  L  T33X        TEST IF CHANNEL BUSY           81021100
0F95 0  7004        2111          MDX     T3309       BR IF BUSY                     81021110
0F96 0  42EC        2112          BSI   2 EROUT-TB                                   81021120
0F97 0  010A        2113          DC      /010A                                      81021130
0F98 1  0F9E        2114          DC      T330A                                      81021140
0F99 0  70E2        2115          MDX     T33EN       END ROUTINE                    81021150
                    2116    *                                                        81021160
0F9A 0  42EC        2117    T3309 BSI   2 EROUT-TB                                   81021170
0F9B 0  010A        2118          DC      /010A                                      81021180
0F9C 1  0FB5        2119          DC      T330B                                      81021190
0F9D 0  70DC        2120          MDX     T3307                                      81021200
                    2121    *                                                        81021210
0F9E    0020        2122    T330A DMES  1  3303 CHANNEL DIDN''T GO BUSY ON '         81021220
0FAE    000C        2123          DMES  1 TIC TO SENSE'E                             81021230
0FB4 0  FFFF        2124          DC      /FFFF                                      81021240
                    2125    *                                                        81021250
0FB5    0024        2126    T330B DMES  1  3303 CHANNEL STILL BUSY AFTER HALT '      81021260
0FC7    0003        2127          DMES  1 I/O'E                                      81021270
0FC9 0  FFFF        2128          DC      /FFFF                                      81021280
                    2129    *                                                        81021290
0FCA 0  0001        2130    CCW33 DC      1           BYTE COUNT                     81021300
0FCB 0  6004        2131          DC      /60*256+OPSNS FLAGS AND OP CODE            81021310
0FCC 1  0896        2132          DC      SNWD0           ADDRESS                    81021320
                    2133    *                                                        81021330
                    2134    *                                                        81021340
0FCD 0  0001        2135          DC      1           BYTE COUNT                     81021350
0FCE 0  0008        2136          DC      0*256+OPTIC FLAGS AND OP CODE              81021360
0FCF 1  0FCA        2137          DC      CCW33           ADDRESS                    81021370
                    2138    *                                                        81021380
                    2139    *                                                        81021390
0FD0 0  0000        2140    T33X  DC      *-*         CHANNEL BUSY SW (RTN 33)       81021400
                    2141    ******************************************************** 81021410
                    2142    *                                                      * 81021420
                    2143    ******************************************************** 81021430
                    2144    *                                                        81021440
                    2145    *     SECTION END                                        81021450
                    2146    *                                                        81021460
0FD1 0  42E9        2147    T3401 BSI   2 CNTRL-TB    GO TO CONTROL RTN              81021470
                    2148    ******************************************************** 81021480
                    2149    *                                                      * 81021490
                    2150    ******************************************************** 81021500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT     ST.NO.  LABEL OPCD FT OPERANDS                                   ID/SEQNO
                    2151    *                                                        81021510
                    2152    *     SECTION PREFACE                                    81021520
                    2153    *                                                        81021530
0FD2 0  0004        2154    T40PR DC      /0004      SECTION NUMBER                  81021540
0FD3 0  0000        2155          DC      0                                          81021550
                    2156    *                                                        81021560
0FD4 0  C2C1        2157    T40NT LD    2 TSCTN-TB                                   81021570
0FD5 01 4C180FDF    2158          BZ      T40EN                                      81021580
                    2159    *                                                        81021590
0FD7 0  C2C2        2160          LD    2 TRTNN-TB  SW FNC 1 BITS 12-15              81021600
0FD8 01 4C180FF1    2161          BZ      T4101     BR IF RUN ALL RTNS               81021610
0FDA 0  90F9        2162          S       T40PR+1   TEST FOR VALID                   81021620
0FDB 01 4C3009D2    2163          BP      TCNER     BR IF INVALID RTN NUMBER         81021630
0FDD 0  80F5        2164          A       T40PR+1   RESTORE RTN NUMBER               81021640
0FDE 0  7012        2165          MDX     T4101     GO TO FIRST RTN                  81021650
0FDF 0  4204        2166    T40EN BSI   2 TLGMS-TB  PRINT END OF TEST MSG            81021660
0FE0 1  0FE6        2167          DC      T40ER                                      81021670
0FE1 01 74010861    2168          MDX  L  PSCNT,1   BUMP PASS CNTR                   81021680
0FE3 0  1000        2169          NOP               IN CASE OF SKIP                  81021690
0FE4 00 4C80012E    2170          BSC  I  END       GO TO MONITOR END                81021700
                    2171    *                                                        81021710
0FE6    0011        2172    T40ER DMES  1  ** END OF DFT **'E                        81021720
0FEF 0  FF00        2173          DC      /FF00                                      81021730
0FF0 0  FFFF        2174          DC      /FFFF                                      81021740
                    2175    ******************************************************** 81021750
                    2176    *                                                      * 81021760
                    2177    ******************************************************** 81021770
                    2178    *                                                        81021780
                    2179    ******************************************************** 81021790
                    2180    *                                                      * 81021800
                    2181    ******************************************************** 81021810
                    2182    *                                                        81021820
                    2183    *     SECTION END                                        81021830
                    2184    *                                                        81021840
0FF1 0  42E9        2185    T4101 BSI   2 CNTRL-TB  GO TO CONTROL RTN                81021850
                    2186    ******************************************************** 81021860
                    2187    *                                                      * 81021870
                    2188    ******************************************************** 81021880
0FF2 1              2189    GTDVE EQU     *         GET DEVICE ROUTINE               81021890
                    2190    *                                                        81021900
0FF2 0  42F8        2191    GTDV1 BSI   2 STMLS-TB                                   81021910
0FF3 00 44800131    2192          BSI  I  REQDV                                      81021920
0FF5 1  0FF2        2193          DC      GTDV1     BUSY RETURN                      81021930
0FF6 1  0814        2194          DC      TSCED     SEL CHN EDIT                     81021940
0FF7 1  08E9        2195          DC      TSCAC     SEL CHN AREA CODE                81021950
0FF8 1  080C        2196          DC      TERM      TERMINATOR                       81021960
                    2197    *                                                        81021970
0FF9 01 2C400865    2198          STS  L  SPROT,/40 RESET STOR PROT BIT              81021980
                    2199    *                                                        81021990
0FFB 0  C2B1        2200          LD    2 H0400-TB  BUILD HALT I/O IOCC              81022000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
0FFC 0  EA6A      2201            OR    2 TSCAC-TB   OR IN AREA CODE             81022010
0FFD 0  EADE      2202            OR    2 DVADR-TB   ***                         81022020
0FFE 0  D21E      2203            STO   2 HIOXX+1-TB ***                         81022030
                  2204    *                                                       81022040
0FFF 0  EAAF      2205            OR    2 H0100-TB   BUILD START I/O IOCC       81022050
10C  0  D222      2206            STO   2 SIOXX+1-TB ***                         81022060
                  2207    *                                                       81022070
1001 0  D21C      2208            STO   2 TIOXX+1-TB BUILD TEST I/O IOCC         81022080
                  2209    *                                                       81022090
1002 0  D220      2210            STO   2 SENSE+1-TB SET FOR SENSE IOCC          81022100
                  2211    *                                                       81022110
1003 0  C283      2212            LD    2 H0700-TB   BUILD SENSE CHANNEL         81022120
1004 0  EA6A      2213            OR    2 TSCAC-TB   *   STATUS IOCC'S           81022130
1005 0  1808      2214            SRA     8                                       81022140
1006 0  1008      2215            SLA     8                                       81022150
1007 0  829B      2216            A     2 K6-TB                                   81022160
1008 0  D22E      2217            STO   2 SCSN5+1-TB                = 06         81022170
1009 0  8298      2218            A     2 K2-TB                                   81022180
100A 0  D224      2219            STO   2 SCSN0+1-TB ***           = 08         81022190
100B 0  8297      2220            A     2 K1-TB                                   81022200
100C 0  D226      2221            STO   2 SCSN1+1-TB                = 09         81022210
100D 0  8297      2222            A     2 K1-TB                                   81022220
100E 0  D228      2223            STO   2 SCSN2+1-TB                = 0A         81022230
100F 0  8297      2224            A     2 K1-TB                                   81022240
1010 0  D22A      2225            STO   2 SCSN3+1-TB                = 0B         81022250
1011 0  8297      2226            A     2 K1-TB                                   81022260
1012 0  D22C      2227            STO   2 SCSN4+1-TB                = 0C         81022270
1013 0  D269      2228            STO   2 SCISW-TB   SET INT SW                   81022280
                  2229    *                                                       81022290
1014 01 4C800871  2230            BSC   I GETDV      RETURN                       81022300
                  2231    ********************************************************81022310
                  2232    *                                                      *81022320
                  2233    *********************************************** ******* 81022330
                  2234    ********************************************************81022340
                  2235    *                                                      *81022350
                  2236    ********************************************************81022360
                  2237    *                                                       81022370
1016 00 44800132  2238    FRDVE BSI   I RELDV      RELEASE DEVICE                 81022380
1018 1  0814      2239          DC      TSCED      SEL CHN EDIT                   81022390
1019 1  080C      2240          DC      TERM       TERMINATOR                     81022400
                  2241    *                                                       81022410
101A 0  1010      2242          SLA     16         RESET-                         81022420
101B 0  D269      2243          STO   2 SCISW-TB   INTERRUPT SW                   81022430
101C 0  D2C0      2244          STO   2 ERTSW-TB   EARLY RETURN SW                81022440
101D 01 4C80086E  2245          BSC   I FREDV      RETURN                         81022450
                  2246    ********************************************************81022460
                  2247    *                                                      *81022470
                  2248    *     START I/O ROUTINE                                *81022480
                  2249    *                                                      *81022490
                  2250    *     CALL - BSI  2 SIO-TB                             *81022500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  2251    *             DC      IOCC ADDRESS                    * 81022510
                  2252    *             DC    EXPECTED CSW'S ADDRESS            * 81022520
                  2253    *             DC    ERROR RETURN ADDRESS              * 81022530
                  2254    *                                                     * 81022540
                  2255    *                                                     * 81022550
                  2256    ********************************************************81022560
101F 1  0F6E      2257    SIOYY DC        T33CK      HALT I/O RTN ID             81022570
                  2258    *                                                       81022580
1020 01 67800874  2259    SIONT LDX   I3 SIO         SET XR3= CALLING ADDRS      81022590
1022 0  C300      2260          LD    3 0            GET IOCC ADDRS              81022600
1023 0  D013      2261          STO     SIO01+3      SET TO DO XIO               81022610
                  2262    *                                                       81022620
1024 0  1010      2263          SLA     16                                       81022630
1025 01 D4001143  2264          STO   L SIOBS        CLEAR CHNL BUSY SW          81022640
                  2265    *                                                       81022650
1027 0  C2F5      2266          LD    2 SIO-TB       GET ENTRY                   81022660
1028 0  90F6      2267          S       SIOYY        TEST FOR HIO RTN            81022670
1029 01 4C181034  2268          BZ      SIO01        BR IF YES                   81022680
                  2269    *                                                       81022690
102B 0  0A25      2270    SIOCK XIO   2 SCSN1-TB                                 81022700
102C 0  1007      2271          SLA     SCABZ                                    81022710
102D 01 4C101034  2272          BNN     SIO01                                    81022720
                  2273    *                                                       81022730
102F 0  0A25      2274          XIO   2 SCSN1-TB                                 81022740
1030 0  D23B      2275          STO   2 SCSXC-TB                                 81022750
1031 0  1007      2276          SLA     SCABZ                                    81022760
1032 01 4C281144  2277          BN      SIOBZ        BR IF STILL BUSY            81022770
                  2278    *                                                       81022780
1034 01 6C0008E8  2279    SIO01 STX   L SCISW        SET INT SW                  81022790
1036 00 0C000000  2280          XIO   L *-*          DO THE XIO                  81022800
                  2281    *                                                       81022810
1038 0  C2C0      2282          LD    2 ERTSW-TB     GET EARLY RET SW            81022820
1039 01 4C201100  2283          BNZ     SIOER      BR IF SET                     81022830
103B 00 650000FA  2284          LDX   L1 250         SET TIMER=250               81022840
103D 0  C283      2285    SIO02 LD    2 TSW0-TB      GET OPTION SWS              81022850
103E 0  1008      2286          SLA     OLPST        TEST LOOP START I/O         81022860
103F 0  4810      2287          SKP     -            SKIP IF YES                 81022870
1040 0  42F8      2288          BSI   2 STMLS-TB      GO TO MONITOR               81022880
1041 0  C269      2289          LD    2 SCISW-TB     DID INT OCCUR               81022890
1042 01 4C18106B  2290          BZ      SIO04        BR IF YES                   81022900
1044 0  71FF      2291          MDX   1 -1           ELSE DECREMENT COUNTER      81022910
1045 0  70F7      2292          MDX     SIO02        LOOP                        81022920
                  2293    *     COME HERE IF TIMED OUT W/O INT.                 81022930
1046 0  1010      2294          SLA     16           CLEAR INT SWITCH            81022940
1047 0  D269      2295          STO   2 SCISW-TB     ***                         81022950
1048 0  C283      2296          LD    2 TSW0-TB                                  81022960
1049 0  1008      2297          SLA     OLPST        LOOP START I/O              81022970
104A 01 4C101050  2298          BNN     SIO03        BR IF NO                    81022980
104C 0  0A25      2299          XIO   2 SCSN1-TB     RESET CHANNEL               81022990
104D 0  0A29      2300          XIO   2 SCSN3-TB     RESET CHANNEL               81023000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
104E 0   0A2D     2301           XIO   2 SCSN5-TB   ALLOW POLLING          81023010
104F 0   70E4     2302           MDX     SIO01       GO DO XIO AGAIN       81023020
                  2303   *       COME HERE IF NO INTERRUPT AND NOT SCOPING 81023030
1050 0   0A25     2304   SIO03 XIO   2 SCSN1-TB   GET CHNL STATUS          81023040
1051 0   D23B     2305         STO   2 SCSXC-TB   SAVE                     81023050
1052 0   0A29     2306         XIO   2 SCSN3-TB   GET UNIT STATUS          81023060
1053 0   D23C     2307         STO   2 SCSXC+1-TB     SAVE                 81023070
1054 0   0A2B     2308         XIO   2 SCSN4-TB     GET CSW ADDRS          81023080
1055 0   D23D     2309         STO   2 SCSXC+2-TB     SAVE                 81023090
1056 0   0A2D     2310         XIO   2 SCSN5-TB     GET BYTE COUNT         81023100
1057 0   D23E     2311         STO   2 SCSXC+3-TB     SAVE                 81023110
                  2312   *                                                 81023120
1058 01  44001506 2313         BSI  L  TCVSR                               81023130
105A 0   18D0     2314         XCH                                         81023140
105B 0   1008     2315         SLA     8                                   81023150
105C 0   18D0     2316         XCH                                         81023160
105D 0   1088     2317         SLT     8                                   81023170
105E 01  D4001104 2318         STO  L  SIOM1                               81023180
1060 0   42EC     2319         BSI   2 EROUT-TB                           81023190
1061 0   114A     2320         DC      /114A              TAGS AND OPTIONS 81023200
1062 1   1104     2321         DC      SIOM1       MESSAGE ADDRESS         81023210
                  2322   *                                                 81023220
1063 0   C301     2323         LD    3 1                 GET EXP CSW ADDRS 81023230
1064 0   D001     2324         STO     *+1         SET XR1=EXP CSW ADDRS   81023240
1065 00  65000000 2325         LDX  L1 *-*         *                       81023250
1067 0   CAD7     2326         LDD   2 PCSW-TB     PUT 'CSW' IN MESSAGE    81023260
1068 01  DC001116 2327         STD  L  SIOM2+3     *                       81023270
106A 0   704D     2328         MDX     SIOM3      GO TO COMMON RTN         81023280
                  2329   *                                                 81023290
106B 0   C283     2330   SIO04 LD    2 TSW0-TB    GET OPTION SWS           81023300
106C 0   1008     2331         SLA     OLPST       TEST FOR LOOP START I/O 81023310
106D 01  4C101076 2332         BNN     SIO05        BR IF NO               81023320
                  2333   *                                                 81023330
106F 01  74FF0863 2334         MDX  L  SCPLP,-1    DEC SCOP LOOP CNT       81023340
1071 0   70C2     2335         MDX     SIO01        LOOP TO SIO            81023350
1072 0   42F8     2336         BSI   2 STMLS-TB    GO VISIT MONITOR        81023360
1073 0   C2A5     2337         LD    2 K1000-TB    SET LOOP CNT= 1000      81023370
1074 0   D2E4     2338         STD   2 SCPLP-TB    *                       81023380
1075 0   706E     2339         MDX     SIO01        LOOP TO SIO            81023390
                  2340   *                                                 81023400
1076 0   C301     2341   SIO05 LD    3 1           E SE GET EXP CSW ADDRS  81023410
1077 0   D001     2342         STO     *+1          SET XR1=EXP CSW ADDRS   81023420
1078 00  65000000 2343         LDX  L1 *-*          *                       81023430
                  2344   *                                                 81023440
107A 0   CACD     2345         LDD   2 TYPCS-TB    PUT 'CS' IN MESSAGE     81023450
107B 01  DC001116 2346         STD  L  SIOM2+3     *                       81023460
                  2347   *                                                 81023470
107D 0   C101     2348         LD    1 1           GET FLAGS IN US WORD    81023480
107E 0   18D0     2349         XCH                 SAVE                    81023490
107F 0   C100     2350         LD    1 0           GET CS WORD             81023500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
                  2351   *                                                 81023510
1080 0   F22F     2352         EOR   2 SCSX0-TB    EQUAL CS SB             81023520
1081 01  442010A7 2353         BSI  L  SIO07,Z      NO,BRANCH              81023530
1033 0   1081     2354         SLT     1           BUMP OUT CS FLAG        81023540
                  2355   *                                                 81023550
1084 0   C2CF     2356         LD    2 TYPUS-TB    PUT 'US'IN MESSAGE      81023560
1085 01  D4001116 2357         STO  L  SIOM2+3     *                       81023570
1087 0   1010     2358         SLA     16                                  81023580
1088 01  D4001117 2359         STO  L  SIOM2+4                             81023590
108A 0   C101     2360         LD    1 1           GET UNIT STATUS         81023600
108B 0   1888     2361         SRT     8           SAVE STATUS PORTION     81023610
                  2362   *                                                 81023620
108C 0   C2DE     2363   SIO06 LD    2 DVADR-TB     GET UNIT ADDRESS       81023630
108D 0   1088     2364         SLT     8            GET REST OF US WORD    81023640
108E 0   F230     2365         EOR   2 SCSX0+1-TB    EQUAL US 'WAS'        81023650
108F 01  442010A7 2366         BSI  L  SIO07,Z       BR IF NO              81023660
1091 0   1081     2367         SLT     1            BUMP OUT US FLAG       81023670
1092 0   C2D1     2368         LD    2 TYPAD-TB     PUT 'AD' IN MESSAGE    81023680
1093 01  D4001116 2369         STO  L  SIOM2+3      *                      81023690
1095 0   1010     2370         SLA     16                                  81023700
1096 01  D4001117 2371         STO  L  SIOM2+4                             81023710
1098 0   C102     2372         LD    1 2            GET CSW  ADDRS         81023720
1099 0   F231     2373         EOR   2 SCSX0+2-TB    EQUAL ADDRS SB        81023730
109A 01  442010A7 2374         BSI  L  SIO07,Z       BR IF NO              81023740
109C 0   1081     2375         SLT     1            BUMP OUT AD FLAG       81023750
                  2376   *                                                 81023760
109D 0   C2D3     2377         LD    2 TYPBC-TB     PUT 'BC' IN MESSAGE    81023770
109E 0   D077     2378         STO     SIOM2+3      *                      81023780
109F 0   1010     2379         SLA     16                                  81023790
10A0 0   D076     2380         STO     SIOM2+4                             81023800
10A1 0   C103     2381         LD    1 3            GET BYTE COUNT         81023810
10A2 0   F232     2382         EOR   2 SCSX0+3-TB    EQUAL BYTE CNT SB     81023820
10A3 01  442010A7 2383         BSI  L  SIO07,Z       BR IF NO              81023830
10A5 00  4F000003 2384         BSC  L3 3            ELSE RETURN TO CALL    81023840
                  2385   *       GET HERE IF ANY ERROR FOUND IN CSW        81023850
10A7 0   0000     2386   SIO07 DC      *-*                                 81023860
10A8 0   18D0     2387         XCH                 Q TO A                  81023870
10A9 01  4C1010AE 2388         BNN     *+3         BR IF BIT 0 NOT SET     81023880
10AB 0   18D0     2389         XCH                 A TO Q                  81023890
10AC 01  4C8010A7 2390         BSC  I  SIO07        IGNORE ERROR           81023900
                  2391   *                                                 81023910
10AE 01  44001506 2392   SION2 BSI  L  TCVSR       GET SECT AND RTN NUMBER 81023920
10B0 0   18D0     2393         XCH                                         81023930
10B1 0   1008     2394         SLA     8           PUT IN MESSAGE          81023940
10B2 0   18D0     2395         XCH                 **                      81023950
10B3 0   1088     2396         SLT     8           **                      81023960
10B4 0   D05E     2397         STO     SIOM2      **                       81023970
                  2398   *                                                 81023980
10B5 0   42EC     2399         BSI   2 EROUT-TB    ERROR ROUTINE           81023990
10B6 0   814A     2400         DC      /814A       TAGS AND OPTIONS        81024000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
10B7 1  1113      2401          DC      SIOM2      MESSAGE ADDRESS         81024010
                  2402    *                                               81024020
10B8 0  C100      2403    SIOM3 LD    1 0          GET CHANNEL STATUS      81024030
10B9 0  42FB      2404          BSI   2 TCVBE-TB   CONVERT TO 1443 CODE    81024040
10BA 0  D869      2405          STD     SIOM3+4    SET IN MESSAGE          81024050
10BB 0  C101      2406          LD    1 1          GET UNIT STATUS         81024060
10BC 0  1888      2407          SRT     8          SET IN UNIT ADDRESS     81024070
10BD 0  C2DE      2408          LD    2 DVADR-TB   **                      81024080
10BE 0  1088      2409          SLT     8          **                      81024090
10BF 0  42FB      2410          BSI   2 TCVBE-TB   CONVERT TO 1443 CODE    81024100
10C0 0  D066      2411          STD     SIOM3+7    SET IN MESSAGE          81024110
10C1 0  18D0      2412          XCH                **                      81024120
10C2 0  D065      2413          STO     SIOM3+8    **                      81024130
10C3 0  C102      2414          LD    1 2          GET CSW ADDRESS REGISTER 81024140
10C4 0  42FB      2415          BSI   2 TCVBE-TB                           81024150
10C5 0  D864      2416          STD     SIOM3+10                           81024160
10C6 0  C103      2417          LD    1 3            GET BYTE COUNTER      81024170
10C7 0  42FB      2418          BSI   2 TCVBE-TB                           81024180
10C8 0  D064      2419          STO     SIOM3+13                           81024190
10C9 0  18D0      2420          XCH                                        81024200
10CA 0  D063      2421          STO     SIOM3+14                           81024210
10CB 0  C101      2422          LD    1 1          GET STATUS FLAGS        81024220
10CC 01 4C1010D0  2423          BNN     SIOO8      BR IF CS CHECKED        81024230
10CE 0  CADC      2424          LDD   2 NCARE-TB   ELSE SET CS=XXXX         81024240
10CF 0  D854      2425          STD     SIOM3+6    *                       81024250
                  2426    *                                               81024260
10D0 0  C101      2427    SIOO8 LD    1 1          GET STATUS FLAGS        81024270
10D1 0  1001      2428          SLA     1          GET STATUS FLAGS        81024280
10D2 01 4C1010D8  2429          BNN     SIOO9      BR IF US CHECKED        81024290
10D4 0  CADC      2430          LDD   2 NCARE-TB   ELSE SET US=XXXX         81024300
10D5 0  D051      2431          STO     SIOM3+7    *                       81024310
10D6 0  18D0      2432          XCH                *                       81024320
10D7 0  D050      2433          STO     SIOM3+8    *                       81024330
                  2434    *                                               81024340
10D8 0  C101      2435    SIOO9 LD    1 1          GET STATUS FLAGS        81024350
10D9 0  1002      2436          SLA     2          GET STATUS FLAGS        81024360
10DA 01 4C1010DE  2437          BNN     SIO10      BR IF ADDRS CHECKED     81024370
10DC 0  CADC      2438          LDD   2 NCARE-TB   ELSE SET ADDRS=XXXX      81024380
10DD 0  D84C      2439          STD     SIOM3+10   *                       81024390
                  2440    *                                               81024400
10DE 0  C101      2441    SIO10 LD    1 1          GET STATUS FLAGS        81024410
10DF 0  1003      2442          SLA     3          GET STATUS FLAGS        81024420
10E0 01 4C1010E6  2443          BNN     SIO11      BR IF BYTE COUNT CHECKED 81024430
10E2 0  CADC      2444          LDD   2 NCARE-TB   ELSE SET BC=XXXX         81024440
10E3 0  D049      2445          STO     SIOM3+13   *                       81024450
10E4 0  1800      2446          XCH                *                       81024460
10E5 0  D048      2447          STO     SIOM3+14   *                       81024470
                  2448    *                                               81024480
10E6 0  4204      2449    SIO11 BSI   2 TLGMS-TB   GO PRINT CS SB          81024490
10E7 1  1120      2450          DC      SIOM3                              81024500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
                  2451    *                                               81024510
10E8 0  C300      2452          LD    3 0          GET IOCC ADDRS          81024520
10E9 0  D001      2453          STO     *+1        SET XR1=IOCC ADDRS      81024530
10EA 00 65000000  2454          LDX   L1 *-*       *                       81024540
10EC 0  4207      2455          BSI     2 PIOCC-TB GO PRINT IOCC AND CCW   81024550
10ED 0  C281      2456          LD      2 TSID-TB  GET SEC NUMB            81024560
10EE 0  9298      2457          S       2 K2-TB    EQUAL SEC 1             81024570
10EF 01 4C2010F5  2458          BNZ     SIO12      NO,BRANCH               81024580
10F1 0  C296      2459          LD      2 TRID-TB  YES,GET RTN NUMB        81024590
10F2 0  9297      2460          S       2 K1-TB    EQUAL RTN 1             81024600
10F3 00 4F180001  2461          BZ    L3 1         YES,RETURN TO RTN       81024610
                  2462    *                                               81024620
10F5 0  C283      2463    SIO12 LD      2 TSW0-TB                         81024630
10F6 0  100C      2464          SLA     OLPER      TEST FOR LOOP ON ERROR  81024640
10F7 01 4C281034  2465          BN      SIOO1        BRANCH IF YES         81024650
10F9 0  C283      2466          LD      2 TSW0-TB                         81024660
10FA 0  100E      2467          SLA     14                                81024670
10FB 01 4C1010FE  2468          BNN     SIO13                             81024680
10FD 0  4201      2469          BSI     2 THALT-TB                        81024690
10FE 00 4F800002  2470    SIO13 BSC   I3 2         GO TO ERROR RETURN ADDR 81024700
                  2471    *                                               81024710
1100 0  1010      2472    SIOER SLA     16         RESET EARLY RET SW      81024720
1101 0  D2C0      2473          STO     2 ERTSW-TB *                       81024730
1102 00 4F000001  2474          BSC   L3 1         RETURN TO CALL          81024740
                  2475    *                                               81024750
1104      0000    2476          BSS   E 0                                 81024760
1104      001C    2477    SIOM1 DMES  1 XX01 INTERRUPT DID NOT OCCUR'E    81024770
1112 0    FFFF    2478          DC      /FFFF                             81024780
1113      0015    2479    SIOM2 DMES  1 XX02  XX  NOT CORRECT'E            81024790
111E 0    FFFF    2480          DC      /FFFF                             81024800
1120      0000    2481          BSS   E 0                                 81024810
1120      001E    2482    SIOM3 DMES  1     S/B XXXX  XXXX  XXXX  XXXX'E  81024820
112F 0    FFFF    2483          DC      /FFFF                             81024830
1130      0023    2484    SIOM4 DMES  1 XX01 CHANNEL BUSY-SIO NOT ATTEMPTED'E 81024840
1142 0    FFFF    2485          DC      /FFFF                             81024850
1143 0    0000    2486    SIOBS DC      *-*        CHANNEL BUSY SW         81024860
                  2487    *                                               81024870
1144 0    C0FE    2488    SIOBZ LD      SIOBS                             81024880
1145 01 4C20114B  2489          BNZ     SIOB2                             81024890
1147 0    68FB    2490          STX     SIOBS                             81024900
1148 0    0A1D    2491          XIO   2 HIOXX-TB  DO HALT I/O              81024910
1149 01 4C001028  2492          BSC   L SIOCK      GO TEST BUSY AGAIN      81024920
                  2493    *                                               81024930
114B 0    0A29    2494    SIOB2 XIO   2 SCSN3-TB                          81024940
114C 0    D23C    2495          STO     2 SCSXC+1-TB                      81024950
114D 0    0A2B    2496          XIO   2 SCSN4-TB                          81024960
114E 0    D23D    2497          STO     2 SCSXC+2-TB                      81024970
114F 0    0A2D    2498          XIO   2 SCSN5-TB                          81024980
1150 0    D23E    2499          STO     2 SCSXC+3-TB                      81024990
                  2500    *                                               81025000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                              ID/SEQNO
1151 0  1010       2501          SLA      16                                   81025010
1152 01 D4001143   2502          STO  L   SIOBS                                81025020
                   2503    *                                                   81025030
1154 01 44001506   2504          BSI  L   TCVSR                                81025040
1156 0  18D0       2505          XCH                                           81025050
1157 0  1008       2506          SLA      8                                    81025060
1158 0  18D0       2507          XCH                                           81025070
1159 0  1088       2508          SLT      8                                    81025080
115A 0  D0D5       2509          STO      SIOM4                                81025090
                   2510    *                                                   81025100
115B 0  42EC       2511          BSI   2 EROUT-TB                              81025110
115C 0  114A       2512          DC       /114A                                81025120
115D 1  1130       2513          DC       SIOM4                                81025130
                   2514    *                                                   81025140
115E 01 4C001020   2515          BSC  L   SIONT                                81025150
                   2516    *                                                   81025160
                   2517    ************************************************** 81025170
                   2518    *     PRINTS MESSAGE                             * 81025180
                   2519    *             IOCC AT ADDR XXXX = XXXX XXXX      * 81025190
                   2520    *         IF START I/O.                          * 81025200
                   2521    *              CCW AT ADDR XXXX = XXXX XXXX XXXX * 81025210
                   2522    *         IF DATA/COMMAND CHAINING.              * 81025220
                   2523    *               CHAINED TO XXXX = XXXX XXXX XXXX * 81025230
                   2524    *                 ''      ''  ''     ''   ''   '' * 81025240
                   2525    *      CALL -  LDX  L1 IOCC ADDRESS              * 81025250
                   2526    *              BSI  2 PIOCC-TB                   * 81025260
                   2527    ************************************************** 81025270
1160 0  6951       2528    PIONT STX   1 LINE1+7                               81025280
1161 0  C050       2529          LD       LINE1+7                              81025290
1162 0  42FB       2530          BSI   2 TCVBE-TB                              81025300
1163 0  D04E       2531          STO      LINE1+7                              81025310
1164 0  1090       2532          SLT      16                                   81025320
1165 0  D04D       2533          STO      LINE1+8                              81025330
1166 0  C100       2534          LD    1 0                                     81025340
1167 0  42FB       2535          BSI   2 TCVBE-TB                              81025350
1168 0  D04C       2536          STO      LINE1+10                             81025360
1169 0  18D0       2537          XCH                                           81025370
116A 0  D04B       2538          STO      LINE1+11                             81025380
116B 0  C101       2539          LD    1 1                                     81025390
116C 0  42FB       2540          BSI   2 TCVBE-TB                              81025400
116D 0  18D8       2541          RTE      24                                   81025410
116E 0  D049       2542          STO      LINE1+13                             81025420
116F 0  18C8       2543          RTE      8                                    81025430
1170 0  1808       2544          SRA      8                                    81025440
1171 0  D045       2545          STO      LINE1+12                             81025450
1172 0  18C8       2546          RTE      8                                    81025460
1173 0  D045       2547          STO      LINE1+14                             81025470
                   2548    *                                                   81025480
1174 0  4204       2549          BSI   2 TLGMS-TB                              81025490
1175 1  11AB       2550          DC       LINE1                                81025500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                              ID/SEQNO
                   2551    *                                                   81025510
1176 0  C101       2552          LD    1 1                                     81025520
1177 0  E2B3       2553          AND   2 H0700-TB                              81025530
1178 0  F2B2       2554          EOR   2 H0500-TB                              81025540
1179 01 4C2011A9   2555          BNZ      PIOXT     EXIT IF NOT START I/O      81025550
117B 0  C100       2556          LD    1 0          GET CCW ADDRESS            81025560
117C 0  D001       2557          STO      *+1                                  81025570
117D 00 65000000   2558          LDX  L1 *-*                                   81025580
117F 0  6B28       2559          STX   3 PIOX3+1    SAVE REG                   81025590
1180 01 670011BB   2560          LDX  L3 LINE2                                 81025600
1182 0  7002       2561          MDX      PIO02                                81025610
                   2562    *                                                   81025620
1183 01 670011CD   2563    PIO01 LDX  L3 LINE3                                 81025630
1185 0  693C       2564    PIO02 STX   1 LINE2+7                               81025640
1186 0  C03B       2565          LD       LINE2+7                              81025650
1187 0  42FB       2566          BSI   2 TCVBE-TB                              81025660
1188 0  D307       2567          STO   3 7                                     81025670
1189 0  18D0       2568          XCH                                           81025680
118A 0  D308       2569          STO   3 8                                     81025690
118B 0  C100       2570          LD    1 0                                     81025700
118C 0  42FB       2571          BSI   2 TCVBE-TB                              81025710
118D 0  D30A       2572          STO   3 10                                    81025720
118E 0  18D0       2573          XCH                                           81025730
118F 0  D30B       2574          STO   3 11                                    81025740
1190 0  C101       2575          LD    1 1                                     81025750
1191 0  42FB       2576          BSI   2 TCVBE-TB                              81025760
1192 0  18D8       2577          RTE      24                                   81025770
1193 0  D30D       2578          STO   3 13                                    81025780
1194 0  18C8       2579          RTE      8                                    81025790
1195 0  1808       2580          SRA      8                                    81025800
1196 0  D30C       2581          STO   3 12                                    81025810
1197 0  18C8       2582          RTE      8                                    81025820
1198 0  D30E       2583          STO   3 14                                    81025830
1199 0  C102       2584          LD    1 2                                     81025840
119A 0  42FB       2585          BSI   2 TCVBE-TB                              81025850
119B 0  D30F       2586          STO   3 15                                    81025860
119C 0  18D0       2587          XCH                                           81025870
119D 0  D310       2588          STO   3 16                                    81025880
119E 0  6B01       2589          STX   3 PIO03                                 81025890
119F 0  4204       2590          BSI   2 TLGMS-TB                              81025900
11A0 0  0000       2591    PIO03 DC       *-*                                  81025910
                   2592    *                                                   81025920
11A1 0  C101       2593          LD    1 1            CCW+1                    81025930
11A2 0  E2BC       2594          AND   2 HC000-TB     SAVE CHAINING BITS       81025940
11A3 01 4C1811A7   2595          BZ       PIOX3       EXIT IF NOT SET          81025950
11A5 0  7103       2596          MDX   1 3            ELSE SET NEXT CCW ADDR   81025960
11A6 0  70DC       2597          MDX      PIO01       LOOP LINE3 AGAIN         81025970
                   2598    *                                                   81025980
11A7 00 67000000   2599    PIOX3 LDX  L3 *-*        RESTORE REGISTER           81025990
11A9 01 4C800886   2600    PIOXT BSC  I  PIOCC      EXIT ROUTINE               81026000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.   LABEL OPCD FT OPERANDS                                          ID/SEQNO
                   2601     *                                                              81026010
                   2602     *                                                              81026020
                   2603     *                                                              81026030
11AB    001D       2604     LINE1 DMES  1  IOCC AT ADDR XXXX= XXXX XXXX'E                  81026040
11BA 0  FFFF       2605           DC      /FFFF                                           81026050
11BB    0022       2606     LINE2 DMES  1   CCW AT ADDR XXXX= XXXX XXXX XXXX'E           81026060
11CC 0  FFFF       2607           DC      /FFFF                                           81026070
11CD    0022       2608     LINE3 DMES  1    CHAINED TO XXXX= XXXX XXXX XXXX'E          81026080
11DE 0  FFFF       2609           DC      /FFFF                                           81026090
                   2610     *                                                              81026100
                   2611     *                                                              81026110
                   2612     *                                                              81026120
                   2613     *                                                              81026130
                   2614     ************************************************************ 81026140
                   2615     *                                                          * 81026150
                   2616     ************************************************************ 81026160
                   2617     *                                                              81026170
                   2618     *     SAVE INDEX REGISTERS AND GO TO MONITOR                   81026180
                   2619     *                                                              81026190
                   2620     ************************************************************ 81026200
                   2621     *                                                          * 81026210
                   2622     ************************************************************ 81026220
11DF 1             2623     STMLE EQU     *                                                81026230
11DF 0  C2F8       2624           LD    2 STMLS-TB   GET CALLING ADDRS                     81026240
11E0 0  D02E       2625           STO     STMSA      PUT IN TEMP SAVE AREA                81026250
11E1 0  692E       2626           STX   1 STMSA+1    PUT REGS IN SAVE AREA                81026260
11E2 0  6B2E       2627           STX   3 STMSA+2    **                                   81026270
11E3 01 65801212   2628           LDX   I1 STMPT     GET Q LOCATION                       81026280
                   2629     *                                                              81026290
11E5 0  C029       2630           LD      STMSA      GET I REG                            81026300
11E6 01 D5001214   2631           STO   L1 STMST     PUT IN Q                             81026310
11E8 0  C027       2632           LD      STMSA+1    GET XR1                              81026320
11E9 01 D5001215   2633           STO   L1 STMST+1   PUT IN Q                             81026330
11EB 0  C025       2634           LD      STMSA+2    GET XR3                              81026340
11EC 01 D5001216   2635           STO   L1 STMST+2   PUT IN Q                             81026350
                   2636     *                                                              81026360
11EE 0  7103       2637           MDX   1 +3         BUMP Q POINTER                       81026370
11EF 0  6922       2638           STX   1 STMPT      SAVE                                 81026380
                   2639     *                                                              81026390
11F0 0  C022       2640           LD      STMRT      SET UP MONITOR RETURN                81026400
11F1 0  D28C       2641           STO   2 MLSC2-TB   *                                    81026410
11F2 00 4CC00121   2642           BSC   I START      GO  VISIT MONITOR                    81026420
                   2643     *                                                              81026430
                   2644     *      RETURN FROM MONITOR HERE                                81026440
                   2645     *                                                              81026450
11F4 01 6600087F   2646     STMLX LDX   L2 TB         SET UP TABLE PNTR                    81026460
11F6 0  C01D       2647           LD      STMST      GET ENTRY LOC                        81026470
11F7 0  D2F8       2648           STO   2 STMLS-TB   PUT IN RETURN                        81026480
                   2649     *                                                              81026490
11F8 0  C01C       2650           LD      STMST+1    GET XR1                              81026500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.   LABEL OPCD FT OPERANDS                                          ID/SEQNO
11F9 0  D016       2651           STO     STMSA+1    PUT IN TEMP SAVE                     81026510
11FA 0  C01B       2652           LD      STMST+2    GET XR2                              81026520
11FB 0  D015       2653           STO     STMSA+2    PUT IN TEMP SAVE                     81026530
                   2654     *                                                              81026540
11FC 0  61F7       2655           LDX   1 -9                                              81026550
                   2656     *                                                              81026560
11FD 01 C5001220   2657     STMLL LD    L1 STMST+12   MOVE ALL SAVED                      81026570
11FF 01 D500121D   2658           STO   L1 STMST+9    * PARAMETERS UP 3                    81026580
1201 0  7101       2659           MDX   1 +1          * PLACES IN Q                        81026590
1202 0  70FA       2660           MDX     STMLL      *                                    81026600
                   2661     *                                                              81026610
1203 01 74FD1212   2662           MDX   L STMPT,-3    DECREMENT Q POINTER                  81026620
1205 0  7006       2663           MDX     STMPS      IF NOT 0,CONTINUE                    81026630
                   2664     *                                                              81026640
1206 01 65801210   2665     STMSE LDX   I1 STMSA+1    ELSE RESTORE PARAMETERS              81026650
1208 01 67801211   2666           LDX   I3 STMSA+2    *                                    81026660
120A 01 4C800877   2667           BSC   I  STMLS      RETURN                               81026670
                   2668     *     GET HERE IF ENTRYS NEED SERVICING                        81026680
120C 0  C006       2669     STMPS LD      STMRT      SET UP RETURN TO                     81026690
120D 0  D28C       2670           STO   2 MLSC2-TB   * STMLS ROUTINE                      81026700
120E 0  70F7       2671           MDX     STMSE      EXIT                                 81026710
                   2672     *                                                              81026720
                   2673     *     TEMPORARY SAVE AREA                                      81026730
                   2674     *                                                              81026740
120F 0  0000       2675     STMSA DC      *-*                                            81026750
1210 0  0000       2676           DC      *-*                                            81026760
1211 0  0000       2677           DC      *-*                                            81026770
                   2678     *                                                              81026780
1212 0  0000       2679     STMPT DC      0            Q POINTER                         81026790
1213 1  11F4       2680     STMRT DC      STMLX        RE-ENTRY LOCATION                 81026800
                   2681     *                                                              81026810
                   2682     *     QUEUED SAVE AREA                                         81026820
                   2683     *                                                              81026830
1214 0  0000       2684     STMST DC      *-*          I    1                            81026840
1215 0  0000       2685           DC      *-*          XR1  1                            81026850
1216 0  0000       2686           DC      *-*          XR3  1                            81026860
                   2687     *                                                              81026870
1217 0  0000       2688           DC      *-*          I    2                            81026880
1218 0  0000       2689           DC      *-*          XR1  2                            81026890
1219 0  0000       2690           DC      *-*          XR3  2                            81026900
                   2691     *                                                              81026910
121A 0  0000       2692           DC      *-*                                            81026920
121B 0  0000       2693           DC      *-*                                            81026930
121C 0  0000       2694           DC      *-*                                            81026940
                   2695     *                                                              81026950
121D 0  0000       2696           DC      *-*                                            81026960
121E 0  0000       2697           DC      *-*                                            81026970
121F 0  0000       2698           DC      *-*                                            81026980
                   2699     ************************************************************ 81026990
                   2700     *                                                          * 81027000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  2701    ************************************************** 81027010
                  2702    *     HALT ROUTINE                                 81027020
                  2703    *          SETS BIT 15 IN TSW0 ON AND LOOPS        81027030
                  2704    *          THRU MONITOR UNTIL BIT IS CLEARED.      81027040
                  2705    *                                                  81027050
                  2706    ************************************************** 81027060
                  2707    *                                                * 81027070
                  2708    ************************************************** 81027080
1220 1            2709    THLTE EQU   *                                      81027090
1220 0  C283      2710          LD    2 TSW0-TB    GET OPTION SWS            81027100
1221 0  100E      2711          SLA     OHALT      TEST FOR HALT ON ERROR    81027110
1222 01 4C101233  2712          BNN     THLTR      BR IF NO                  81027120
                  2713    *                                                  81027130
1224 0  C201      2714    THLTG LD    2 THALT-TB   GET CALLING ADDRESS       81027140
1225 0  42FB      2715          BSI   2 TCVBE-TB   CONVERT TO PRNT CODE       81027150
1226 0  D01F      2716          STO     THLT2      SET IN MSG                81027160
1227 0  1090      2717          SLT     16         Q TO A                    81027170
1228 0  D01E      2718          STO     THLT2+1    SET IN MSG                81027180
1229 0  4204      2719          BSI   2 TLGMS-TB   GO PRINT MSG              81027190
122A 1  1235      2720          DC      THLTM      MESSAGE ADDRESS           81027200
                  2721    *                                                  81027210
122B 0  C297      2722          LD    2 K1-TB      SET BIT 15                81027220
122C 0  EA83      2723          OR    2 TSW0-TB    *                         81027230
122D 0  D283      2724          STO   2 TSW0-TB    *                         81027240
                  2725    *                                                  81027250
                  2726    *     LOOP THRU MONITOR UNTIL READY                81027260
                  2727    *                                                  81027270
122E 0  42F8      2728    THLTL BSI   2 STMLS-TB   GO TO MONITRR             81027280
                  2729    *     RETURN HERE                                  81027290
122F 0  C283      2730          LD    2 TSW0-TB    GET SWITCH WORD           81027300
1230 01 4C04122E  2731          BOD     THLTL      BR IF STILL ON            81027310
                  2732    *                                                  81027320
1232 0  42F8      2733          BSI   2 STMLS-TB   GO TO MONITOR             81027330
1233 01 4C800880  2734    THLTR BSC   I THALT       RETURN TO CALLER          81027340
                  2735    *                                                  81027350
1235    0022      2736    THLTM DMES  1  **HALT-- SC  DIAGNOSTIC AT ADRS 'E  81027360
1246    0004      2737    THLT2 DMES  1     'E                               81027370
1248 0  00FF      2738          DC      /00FF                                81027380
1249    001C      2739          DMES  1  TO CLEAR HALT SET SWITCHES-'E         81027390
1257 0  00FF      2740          DC      /00FF                                81027400
1258    0015      2741          DMES  1  S/P 00PP PPPP, P=PID'E                81027410
1263 0  00FF      2742          DC      /00FF                                81027420
1264    0018      2743          DMES  1  DES XXXX XXXX XXXX XXX0'E             81027430
1270 0  00FF      2744          DC      /00FF                                81027440
1271    0017      2745          DMES  1  PRESS CONSOLE INTERUPT'E              81027450
127D 0  FFFF      2746          DC      /FFFF                                81027460
                  2747    *                                                  81027470
                  2748    ************************************************** 81027480
                  2749    *                                                * 81027490
                  2750    ************************************************** 81027500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  2751    *                                                  81027510
                  2752    *     CALL **************************          81027520
                  2753    *        * BSI 2 EROUT-TB           *          81027530
                  2754    *        * DC    /0127  CNTRL TAGS  *          81027540
                  2755    *        * DC    /ABCD  ERR NUMBER  *          81027550
                  2756    *        *              (SECT,RT,ER) *          81027560
                  2757    *        **************************            81027570
                  2758    *                                                  81027580
                  2759    ************************************************** 81027590
                  2760    *                                                * 81027600
                  2761    ************************************************** 81027610
                  2762    *                                                  81027620
                  2763    *     EQUATES FOR EROUT TAGS                       81027630
                  2764    *                                                  81027640
0000 0            2765    OECX0 EQU     0          CSW=SCSX0                 81027650
0001 0            2766    OECX4 EQU     1          CSW=SCSX4                 81027660
0002 0            2767    OECX8 EQU     2          CSW=SCSX8                 81027670
0003 0            2768    OECXC EQU     3          CSW=SCSXC                 81027680
0006 0            2769    OEXIT EQU     6          EXIT TO ERADR             81027690
0007 0            2770    OEPBL EQU     7          PRINT A BLANK LINE        81027700
0009 0            2771    OEBYP EQU     9          BYPASS HALT LOOP          81027710
000A 0            2772    OEGSN EQU     10         GET SENSE BYTES           81027720
000B 0            2773    OEL1B EQU     11         BYPASS LINE 1             81027730
000C 0            2774    OEERR EQU     12         PRINT ERROR MSG           81027740
000D 0            2775    OECAW EQU     13         PRINT CAW                 81027750
000E 0            2776    OECSW EQU     14         *     CSW                 81027760
000F 0            2777    OESNS EQU     15         *     SNS                 81027770
                  2778    ************************************************** 81027780
                  2779    *                                                * 81027790
                  2780    ************************************************** 81027800
                  2781    ERMSG BSS   E  0                                   81027810
127E    0000      2782          DMES  1  **ER-XXXX  'E                       81027820
127E    000C      2783    PRINT BSS   E  60          PRINT BUFFER            81027830
1284    003C      2784    ERTNE EQU     *            ENTRY POINT             81027840
12C0 1            2785          STX   L1 ERT17+1     SAVE REGS               81027850
12C0 01 6D0013B1  2786          STX   L3 ERT17+3     *                       81027860
                  2787    *                                                  81027870
12C4 01 67B00B6B  2788    ERTN2 LDX   I3 EROUT       SET REG                 81027880
12C6 0  C300      2789          LD    3 0            GET OPTIONS/FLAGS       81027890
12C7 0  1007      2790          SLA     OEPBL        PRINT BLANK LINE FIRST  81027900
12C8 01 4C1012CC  2791          BNN     ERTN3        BR IF NOT               81027910
12CA 0  4204      2792          BSI   2 TLGMS-TB     PRINT BLANK LINE        81027920
12CB 1  080C      2793          DC      TERM         /FFFF                   81027930
                  2794    *                                                  81027940
12CC 0  C300      2795    ERTN3 LD    3 0            GET TAGS                81027950
12CD 0  100B      2796          SLA     OEL1B        BYPASS LINE 1 PRINT     81027960
12CE 01 4C281304  2797          BN      ERT10          BR IF YES             81027970
12D0 0  1001      2798          SLA     OEERR-OEL1B  ERROR MSG               81027980
12D1 01 4C1012E4  2799          BNN     ERTN6        BR IF NOT               81027990
                  2800    *                                                  81028000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                     ID/SEQNO
12D3 0  6100        2801         LDX   1 0             SET COUNT TO ZERO              81028010
12D4 0  C301        2802         LD    3 1             GET MSG ADDRESS                81028020
12D5 0  D001        2803         STO     ERTN4+1       SET FOR LOAD INSTRUCTION       81028030
12D6 00 C5000000    2804   ERTN4 LD   L1 *-*           GET WORD TO MOVE               81028040
12D8 0  F28D        2805         EOR   2 TERM-TB       IS IT END OF MSG               81028050
12D9 01 4C1812E0    2806         BZ      ERTN5           BR YES                       81028060
12DB 0  F28D        2807         EOR   2 TERM-TB         RESTORE DATA WORD            81028070
12DC 01 D5001281    2808         STO  L1 ERMSG+3         STORE IN TABLE               81028080
12DE 0  7101        2809         MDX   1 1             COUNT                          81028090
12DF 0  70F6        2810         MDX     ERTN4         LOOP                           81028100
                    2811   *                                                          81028110
12E0 01 75001281    2812   ERTN5 MDX  L1 ERMSG+3       POINT TO NEXT WORD             81028120
12E2 0  1000        2813         NOP                                                  81028130
12E3 0  7009        2814         MDX     ERTN7                                        81028140
                    2815   *                                                          81028150
12E4 0  C301        2816   ERTN6 LD    3 1             GET MSG NUMBER                 81028160
12E5 0  42FB        2817         BSI   2 TCVBE-TB      CONVERT TO 43 CODE             81028170
12E6 0  D09A        2818         STO     ERMSG+3       STORE                          81028180
12E7 0  18D0        2819         XCH                   SWAP A-Q                       81028190
12E8 0  D099        2820         STO     ERMSG+4                                      81028200
12E9 0  1010        2821         SLA     16                SET IN TWO BLANKS          81028210
12EA 0  D098        2822         STO     ERMSG+5            **                        81028220
12EB 01 65001284    2823         LDX  L1 PRINT         SET POINTER                    81028230
                    2824   *                                                          81028240
12ED 0  C2DE        2825   ERTN7 LD    2 DVADR-TB      GET DEVICE ADDRESS             81028250
12EE 0  42FB        2826         BSI   2 TCVBE-TB      CONVERT TO 43 CODE             81028260
12EF 0  1090        2827         SLT     16            LOW ORDER TWO BYTES ONLY       81028270
12F0 0  D262        2828         STO   2 UNADR+3-TB    STORE FOR PRINT                81028280
12F1 0  C2EC        2829         LD    2 ERQUT-TB      GET CALLING ADDRESS            81028290
12F2 0  9297        2830         S     2 K1-TB         POINT TO CALLING INSTRUCTN     81028300
12F3 0  42FB        2831         BSI   2 TCVBE-TB      CONVERT TO HEX                 81028310
12F4 0  D266        2832         STO   2 UNADR+7-TB                                   81028320
12F5 0  1090        2833         SLT     16                                           81028330
12F6 0  D267        2834         STO   2 UNADR+8-TB                                   81028340
12F7 0  6904        2835         STX   1 ERTN8+3       SAVE REG IN INSTRUCTION        81028350
12F8 0  6100        2836         LDX   1 0             SET COUNT                      81028360
                    2837   *                                                          81028370
12F9 01 C50008DE    2838   ERTN8 LD   L1 UNADR         GET WORD TO MOVE               81028380
12FB 00 D5000000    2839         STO  L1 *-*           STORE IN NEW LOC'N             81028390
12FD 0  F28D        2840         EOR   2 TERM-TB       TEST FOR END OF MSG            81028400
12FE 01 4C181302    2841         BZ      ERTN9           BR IF YES                    81028410
1300 0  7101        2842         MDX   1 1             BUMP COUNT                     81028420
1301 0  70F7        2843         MDX     ERTN8         LOOP                           81028430
                    2844   *                                                          81028440
1302 0  4204        2845   ERTN9 BSI   2 TLGMS-TB      GO PRINT MSG                   81028450
1303 1  127E        2846         DC      ERMSG         ADDRESS OF MESSAGE             81028460
                    2847   *     --CAW--   ADDRESS OF CCW CHAIN                       81028470
1304 0  C300        2848   ERT10 LD    3 0             GET TAGS                       81028480
1305 0  100D        2849         SLA     0ECAW         TEST FOR CAW,CSW,SNS           81028490
1306 01 4C181379    2850         BZ      ERT15           BR IF NONE                   81028500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                     ID/SEQNO
1308 01 65001284    2851         LDX  L1 PRINT         SET POINTER TO AREA            81028510
130A 01 4C101316    2852         BNN     ERT11         BR IF NO CAW                   81028520
130C 0  10A0        2853         SLT     32                                           81028530
130D 0  D900        2854         STD   1 0                                            81028540
130E 0  7102        2855         MDX   1 2                                            81028550
130F 0  CAD5        2856         LDD   2 PCAW-TB       GET HEADER                     81028560
1310 0  D900        2857         STD   1 0             STORE IN AREA                  81028570
1311 0  C2C6        2858         LD    2 CAWSV-TB      GET CCW ADDRESS FOR SIO        81028580
1312 0  42FB        2859         BSI   2 TCVBE-TB      CONVERT TO EBC                 81028590
1313 0  D902        2860         STD   1 2             STORE IN AREA                  81028600
1314 0  7104        2861         MDX   1 4             BUMP POINTER                   81028610
1315 0  1000        2862         NOP                                                  81028620
                    2863   *     --CSW--   CHANNEL DSW WORDS                          81028630
1316 0  C300        2864   ERT11 LD    3 0             GET TAGS                       81028640
1317 0  100E        2865         SLA     0ECSW         TEST FOR CSW TO BE PRINTED     81028650
1318 01 4C101348    2866         BNN     ERT12           BR IF NOT                    81028660
131A 0  C300        2867         LD    3 0             GET OPTION WORD                81028670
131B 01 670008AE    2868         LDX  L3 SCSX0         POINT TO CSW SAVE AREA 0       81028680
131D 0  180C        2869         SRA     12            SAVE BITS 0-3                  81028690
131E 0  100C        2870         SLA     12            ***                            81028700
131F 0  4830        2871         SKP     Z-                                           81028710
1320 0  7304        2872         MDX   3 4             BUMP TO NEXT SAVE AREA         81028720
1321 0  1001        2873         SLA     1             TEST NEXT BIT                  81028730
1322 0  4830        2874         SKP     Z-                                           81028740
1323 0  7304        2875         MDX   3 4             BUMP TO NEXT SAVE AREA         81028750
1324 0  1001        2876         SLA     1             TEST NEXT BIT                  81028760
1325 0  4830        2877         SKP     Z-                                           81028770
1326 0  7304        2878         MDX   3 4             BUMP TO NEXT SAVE AREA         81028780
1327 0  1001        2879         SLA     1             TEST NEXT BIT                  81028790
1328 0  4830        2880         SKP     Z-                                           81028800
1329 0  7304        2881         MDX   3 4             BUMP TO NEXT SAVE AREA         81028810
132A 0  CAD7        2882         LDD   2 PCSW-TB       GET 'CSW '                     81028820
132B 0  D902        2883         STD   1 2             SET IN MSG                     81028830
132C 0  C300        2884         LD    3 0             GET CHANNEL STATUS WORD        81028840
132D 0  42FB        2885         BSI   2 TCVBE-TB      CONVERT                        81028850
132E 0  D904        2886         STD   1 4             STORE                          81028860
132F 0  C301        2887         LD    3 1             GET UNIT STATUS WORD           81028870
1330 0  42FB        2888         BSI   2 TCVBE-TB      CONVERT                        81028880
1331 0  D107        2889         STO   1 7             STORE                          81028890
1332 0  1090        2890         SLT     16                                           81028900
1333 0  D108        2891         STO   1 8             STORE                          81028910
1334 0  C302        2892         LD    3 2             GET CSW ADDRESS WORD           81028920
1335 0  42FB        2893         BSI   2 TCVBE-TB      CONVERT                        81028930
1336 0  D90A        2894         STD   1 10            STORE                          81028940
1337 0  C303        2895         LD    3 3             GET BYTE COUNT                 81028950
1338 0  42FB        2896         BSI   2 TCVBE-TB      CONVERT                        81028960
1339 0  D10D        2897         STO   1 13            STORE                          81028970
133A 0  1090        2898         SLT     16            Q TO A                         81028980
133B 0  D10E        2899         STO   1 14            STORE                          81028990
133C 0  C2DB        2900         LD    2 SPACE-TB      GET SPACES                     81029000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                   ID/SEQNO
133D 0  D100        2901         STO   1 0            **                            81029010
133E 0  D101        2902         STO   1 1            **                            81029020
133F 0  D106        2903         STO   1 6            SET IN BETWEEN                81029030
1340 0  D109        2904         STO   1 9            SET IN BETWEEN                81029040
1341 0  D10C        2905         STO   1 12           SET IN BETWEEN                81029050
1342 0  D10F        2906         STO   1 15                                         81029060
1343 0  D111        2907         STO   1 17           CLEAR NEXT SLOT TOO           81029070
1344 0  71.F        2908         MDX   1 15           BUMP POINTER                  81029080
1345 0  1000        2909         NOP                                                81029090
1346 01 6780086B    2910         LDX  I3 EROUT        RESTORE REG                   81029100
                    2911   *     --SNS--   GET 2311 SENSE INFORMATION               81029110
1348 0  C300        2912   ERT12 LD    3 0            GET TAGS                      81029120
1349 0  100F        2913         SLA     0ESNS        TEST FOR SNS INFO             81029130
134A 01 4C101372    2914         BNN     ERT14        BR IF NO                      81029140
134C 0  CAD9        2915         LDD   2 PSNS-TB      GET HEADER WORDS              81029150
134D 0  D100        2916         STO   1 0            STORE                         81029160
134E 0  1090        2917         SLT     16                                         81029170
134F 0  D101        2918         STO   1 1            STORE                         81029180
1350 0  7103        2919         MDX   1 3            BUMP POINTER                  81029190
1351 0  1000        2920         NOP                                                81029200
1352 0  C29.        2921         LD    2 K8-TB                                      81029210
1353 0  D0A8        2922         STO     ERTN8+3      SAVE TEMPORARILY              81029220
1354 0  CA17        2923         LDD   2 SNWDS-TB     GET SENSE INFO                81029230
                    2924   *                                                        81029240
1355 0  18DC        2925   ERT13 RTE     28           MOVE AROUND                   81029250
1356 0  DAC7        2926         STD   2 ERTSV-TB     SAVE FOR LOOP                 81029260
1357 0  108C        2927         SLT     12                                         81029270
1358 0  1010        2928         SLA     16                                         81029280
1359 0  1081        2929         SLT     1                                          81029290
135A 0  1003        2930         SLA     3                                          81029300
135B 0  1081        2931         SLT     1                                          81029310
135C 0  1003        2932         SLA     3                                          81029320
135D 0  1081        2933         SLT     1                                          81029330
135E 0  1003        2934         SLA     3                                          81029340
135F 0  1081        2935         SLT     1                                          81029350
1360 0  42FB        2936         BSI   2 TCVBE-TB     CONVERT TO HEX                81029360
1361 0  D100        2937         STO   1 0            STORE IN TBLE                 81029370
1362 0  1090        2938         SLT     16           0 TO A                        81029380
1363 0  D101        2939         STO   1 1            STORE                         81029390
1364 0  7102        2940         MDX   1 2            BUMP POINTER                  81029400
1365 0  1000        2941         NOP                                                81029410
1366 0  C095        2942         LD      ERTN8+3      FETCH COUNTER                 81029420
1367 0  8297        2943         A     2 K1-TB        ADD ONE                       81029430
1368 01 4C04136E    2944         BOD     *+4          BRANCH IF ODD                 81029440
136A 0  C2DB        2945         LD    2 SPACE-TB     FETCH SPACE CHARACTERS        81029450
136B 0  D100        2946         STO   1 0            PLACE IN PRINT LINE           81029460
136C 0  7101        2947         MDX   1 1            ADVANCE PRINT LINE POINTER    81029470
136D 0  1000        2948         NOP                                                81029480
136E 0  CAC7        2949         LDD   2 ERTSV-TB     GET SENSE INFO BACK           81029490
136F 01 74FF12FC    2950         MDX   L ERTN8+3,-1   COUNT                         81029500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                   ID/SEQNO
1371 0  70E3        2951         MDX     ERT13        LOOP UNTIL FINISHED           81029510
                    2952   *                                                        81029520
1372 0  C28D        2953   ERT14 LD    2 TERM-TB       SET /FFFF AT END             81029530
1373 0  D100        2954         STO   1 0            **                            81029540
1374 0  4204        2955         BSI   2 TLGMS-TB     PRINT MESSAGE                 81029550
1375 1  1284        2956         DC      PRINT                                      81029560
1376 0  C2E3        2957         LD    2 STKSW-TB     GET SWITCH                    81029570
1377 01 4C201386    2958         BNZ     ERT18        EXIT IF SET                   81029580
                    2959   *                                                        81029590
1379 0  C300        2960   ERT15 LD    3 0            GET TAGS                      81029600
137A 0  1009        2961         SLA     0EBYP                                      81029610
137B 01 4C28137E    2962         BN      ERT16        BR IF NOT HALT                81029620
137D 0  4201        2963         BSI   2 THALT-TB     WAIT FOR OPERATOR             81029630
                    2964   *                                                        81029640
137E 0  C300        2965   ERT16 LD    3 0            GET TAGS                      81029650
137F 0  1006        2966         SLA     0EXIT        TEST FOR OTHER EXIT           81029660
1380 00 65000000    2967   ERT17 LDX  L1 *-*          RELOAD REGS                   81029670
1382 00 67000000    2968         LDX  L3 *-*          ***                           81029680
1384 01 4CA8136A    2969         BN    I ERADR        BR IF YES                     81029690
                    2970   *                                                        81029700
1386 01 74020866    2971   ERT18 MDX   L EROUT,2      BUMP RETURN BY TWO            81029710
1388 01 4C80086B    2972         BSC   I EROUT        EXIT                          81029720
138A 0  0000        2973   ERADR DC      *-*          RETURN ADDRESS PUT HERE       81029730
                    2974   **************************************************** 81029740
                    2975   *                                                  * 81029750
                    2976   **************************************************** 81029760
                    2977   **************************************************** 81029770
                    2978   *                                                  * 81029780
                    2979   **************************************************** 81029790
                    2980   *                                                    81029800
                    2981   *                                                    81029810
                    2982   **************************************************** 81029820
                    2983   *                                                  * 81029830
                    2984   **************************************************** 81029840
138B 1              2985   TLGME EQU     *            ENTRY POINT                   81029850
138B 0  C2E1        2986         LD    2 LGBSY-TB     GET LOG BUSY SW               81029860
138C 01 4C181390    2987         BZ      TLGNB       BR IF NOT BUSY                 81029870
138E 0  42F8        2988         BSI   2 STMLS-TB    GO VISIT MONITOR               81029880
138F 0  70FB        2989         B       TLGME       ELSE LOOP                      81029890
                    2990   *                                                        81029900
1390 0  C204        2991   TLGNB LD    2 TLGMS-TB     GET CALLING ADDRS             81029910
1391 0  D2E1        2992         STO   2 LGBSY-TB     SET LOG BUSY SW               81029920
1392 01 D400147F    2993         STO   L LEXIT+1      SET RETURN ADDRS              81029930
1394 01 6F001479    2994         STX  L3 TLGX3+1      SAVE REG                      81029940
1396 01 6D00147B    2995         STX  L1 TLGX3+3      SAVE REG                      81029950
1398 0  C283        2996         LD    2 TSW0-TB      GET OPTION SWS                81029960
1399 0  100D        2997         SLA     0BYPR                                      81029970
139A 01 4C281476    2998         BN      TLGEN        BR IF BYPASS PRNTOUT          81029980
                    2999   *                                                        81029990
139C 0  C294        3000         LD    2 TLGED-TB     GET EDIT FOR PRINTER          81030000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
139D 01 4C1013A0  3001           BNN     TLG01       BR IF NOT SELECTED     81030010
                  3002     ********************************************** 81030020
139F 0  70FF      3003           MDX     *-1         TRAP STOP              81030030
                  3004     ********************************************** 81030040
                  3005     *     RELEASE SC IN CASE SHARED CHANNEL          81030050
13A0 0  C295      3006     TLG01 LD    2 TSCED-TB    GET DDEF               81030060
13A1 01 4C1013AF  3007           BNN     TLG02       BR IF NOT SEL          81030070
                  3008     *                                                81030080
13A3 0  1010      3009           SLA     16          CLEAR CHANNEL FREED SW 81030090
13A4 01 D4001480  3010           STO  L  FRESW       *                      81030100
13A6 0  C2A0      3011           LD    2 K20-TB        SET COUNTER FOR DELAY 81030110
13A7 0  D225      3012           STO   2 SCSN1-TB      **                    81030120
13A8 0  42F8      3013           BSI   2 STMLS-TB      GO TO MONITOR         81030130
13A9 01 74FF08A4  3014           MDX  L  SCSN1,-1        DECR. COUNTER       81030140
13AB 0  70FC      3015           MDX     *-4             LOOP UNTIL FINISHED 81030150
                  3016     *                                                81030160
13AC 0  42E[      3017           BSI   2 FREDV-TB FREE SEL CHNL             81030170
13AD 01 6C001480  3018           STX  L  FRESW       SET SC FREED SW        81030180
13AF 00 44000131  3019     TLG02 BSI  I  READV       REQUEST DEVICE         81030190
13B1 1  13C8      3020           DC      TLG03         BUSY RETURN          81030200
13B2 1  0813      3021           DC      TLGED       EDIT FOR PRINTED       81030210
13B3 1  143C      3022           DC      TLGDA       AREA CODE GIVEN BACK   81030220
13B4 1  080C      3023           DC      TERM        TERMINATOR             81030230
                  3024     *                                                81030240
13B5 0  C2E8      3025           LD    2 T455W-TB    GET 43/53 SW           81030250
13B6 01 4C0413BD  3026           BOD     TLG40       BR IF 1443             81030260
                  3027     *                                                81030270
13B8 0  C2AF      3028           LD    2 H0100-TB    ELSE BUILD WRITE IOCC  81030280
13B9 01 EC00143C  3029           OR   L  TLGDA       *                      81030290
13BB 0  D248      3030           STO   2 TLGWR+1-TB  *                      81030300
13BC 0  7004      3031           MDX     TLGCM       * GO TO COMMON RTN     81030310
                  3032     *                                                81030320
13BD 0  C2B2      3033     TLG40 LD    2 H0500-TB      CREATE WR IOCC         81030330
13BE 01 EC00143C  3034           OR   L  TLGDA       OR IN AREA CODE        81030340
13C0 0  D248      3035           STO   2 TLGJR+1-TB                         81030350
13C1 0  C2B3      3036     TLGCM LD    2 H0700-TB    CREATE SENSE IOCC      81030360
13C2 01 EC00143C  3037           OR   L  TLGDA       OR IN AREA CODE        81030370
13C4 0  D24A      3038           STO   2 TLGSN+1-TB                         81030380
13C5 0  EA97      3039           OR    2 K1-TB     SET RESET BIT            81030390
13C6 0  D24E      3040           STO   2 TLGSR+1-TB    ***                  81030400
13C7 0  7002      3041           MDX     TLG04       GO TO PRINT            81030410
                  3042     *                                                81030420
13C8 0  42F8      3043     TLG03 BSI   2 STMLS-TB      GO TO MONITOR        81030430
13C9 0  70E5      3044           MDX     TLG02       LOOP TO TRY AGAIN      81030440
                  3045     *                                                81030450
13CA 01 6580147F  3046     TLG04 LDX   I1 LEXIT+1    GET CALLING RTN ADDR   81030460
13CC 0  C100      3047           LD    1 0           GET MSG ADDRESS        81030470
13CD 0  D001      3048           STO     *+1         SET FOR LOAD INDEX     81030480
13CE 00 65000000  3049           LDX  L1 *-*         LOAD REG               81030490
13D0 01 6D001483  3050           STX  L1 TLGCH+2     SAVE IN 'GET CHAR' RTN 81030500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.   LABEL OPCD FT OPERANDS                          ID/SEQNO
13D2 01 678008C6  3051           LDX   I3 TLGWR       GET WRD COUNT ADDRESS  81030510
13D4 0  6816      3052           STX   3 TLGBP+1     SET FOR BUMPING        81030520
                  3053     *                                                81030530
13D5 0  C100      3054           LD    1 0         GET FIRST DATA WORD      81030540
13D6 0  F28D      3055           EOR   2 TERM-TB   COMPARE WITH /FFFF        81030550
13D7 01 4C1813DD  3056           BZ      TLG05     BR IF YES                81030560
                  3057     *                                                81030570
13D9 0  C280      3058           LD    2 TPID-TB   GET PID                  81030580
13DA 0  E28A      3059           AND   2 H7FFF-TB  DROP SELECT BIT          81030590
13DB 0  42FB      3060           BSI   2 TCVBE-TB  CONVERT TO 1443 CODE      81030600
13DC 0  D802      3061           STD   3 2         SET IN MSG               81030610
                  3062     *                                                81030620
13DD 0  1010      3063     TLG05 SLA     16        CLEAR -                  81330630
13DE 0  D24C      3064           STO   2 TLGSW-TB  * 1ST/2ND CHAR SW        81030640
13DF 0  D24D      3065           STO   2 TLGSW+1-TB *                       81030650
13E0 0  D05A      3066           STO     TLGIS     * INTERRUPT SW           81030660
13E1 0  C299      3067           LD    2 K3-TB     *                        81030670
13E2 0  D300      3068           STO   3 0                                  81030680
13E3 0  7301      3069           MDX   3 1         BUMP TO PT TO BUFFER     81030690
                  3070     *                                                81030700
13E4 01 44001481  3071     TLG06 BSI  L  TLGCH      GET A CHARACTER         81030710
13E6 0  700F      3072           MDX     TLG07       COME HERE FOR HEX FF   81030720
13E7 0  1008      3073           SLA     8         PUT IN HIGH ORDER BYTE   81030730
13E8 0  EA49      3074           OR    2 TLGSP-TB    SET LOW ORDER TO SP    81030740
13E9 0  D303      3075           STO   3 3         STORE IN BUFFER          81330750
13EA 00 74010000  3076     TLGBP MDX  L  *-*,1     BUMP WORD COUNT          81030760
13EC 01 44001481  3077           BSI  L  TLGCH     GET ANOTHER CHARACTER    81030770
13EE 0  7007      3078           MDX     TLG07       IF CHARACTER IS HEX FF 81030780
13EF 0  1886      3079           SRT     8         CHARACTER TO Q           81030790
13F0 0  C303      3080           LD    3 3         GET LAST CHARACTER       81030800
13F1 0  1808      3081           SRA     8         BYTE TO LOW POSITION     81030810
13F2 0  1088      3082           SLT     8         COMBINED BYTES IN A      81030820
13F3 0  D303      3083           STO   3 3         STORE IN BUFFER          81030830
13F4 0  7301      3084           MDX   3 1         BUMP SINK                81030840
13F5 0  70EE      3085           MDX     TLG06       LOOP UNTIL HEX FF      81030850
                  3086     *                                                81030860
                  3087     *     TEST FOR 1443, IF YES GO TO XIO            81030870
                  3088     *     IF ,053 DO A CARRIAGE RETURN               81030880
                  3089     *                                                81030890
13F6 0  C2E8      3090     TLG07 LD    2 T455W-TB    GET 43/53 SW           81030900
13F7 01 4C041423  3091           BOD     TLG42     BR IF 1443               81030910
                  3092     *     PUT TERMINATOR IN MESSAGE                  81030920
13F9 0  C24D      3093           LD    2 TLGSW+1-TB GET 1ST/2ND CHAR SW     81030930
13FA 01 4C1813FE  3094           BZ      TLG08       BR IF 2ND CHAR         81030940
13FC 0  C2BE      3095           LD    2 HFF00-TB  ELSE GET TERMINATOR      81030950
13FD 0  D303      3096           STO   3 3         PUT IN MESSAGE           81030960
                  3097     *                                                81030970
13FE 0  C2AE      3098     TLG08 LD    2 H00FF-TB      GET TERMINATOR         81030980
13FF 0  EB03      3099           OR    3 3           PUT IN MESSAGE         81030990
1400 0  D303      3100           STO   3 3           *                      81031000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  3101    *                                                      81031010
1401 01 6500149F  3102            LDX  L1 TLGBA+1   SET UP BUFFER POINTER        81031020
1403 0  6936      3103            STX   1 TLGSV     SAVE                         81031030
1404 0  1010      3104            SLA     16         CLEAR-                      81031040
1405 0  D24C      3105            STO   2 TLGSW-TB  * SECOND CHAR SW             81031050
                  3106    *                                                      81031060
                  3107    *       START LINE WITH A **CARRIAGE RETURN**          81031070
                  3108    *                                                      81031080
1406 0  C032      3109            LD      TLGCR     GET CR CHARACTER             81031090
1407 01 D400149E  3110            STO  L  TLGBA     PUT IN OUTPUT AREA           81031100
1409 0  7023      3111            MDX     TLG43     GO PRINT                     81031110
                  3112    *                                                      81031120
                  3113    *       COME HERE FROM INTERRUPT ROUTINE IF 1053       81031130
                  3114    *                                                      81031140
140A 01 6580143A  3115    TLGPR LDX  I1 TLGSV     RESTORE POINTER              81031150
140C 0  C24C      3116            LD    2 TLGSW-TB  GET 2ND CHAR SW              81031160
140D 01 4C181416  3117            BZ      TLG09       BR IF 0 (CHAR 1)           81031170
                  3118    *                                                      81031180
140F 0  1010      3119            SLA     16         ELSE RESET SW               81031190
1410 0  D24C      3120            STO   2 TLGSW-TB  *                            81031200
1411 0  C100      3121            LD    1 0          GET CHARACTERS              81031210
1412 0  1008      3122            SLA     8          SAVE 2ND CHAR               81031220
1413 0  7101      3123            MDX   1 1          BUMP POINTER                81031230
1414 0  6925      3124            STX   1 TLGSV     SAVE POINTER                 81031240
1415 0  7005      3125            MDX     TLG10       GO TO COMMON RTN           81031250
                  3126    *       GET HERE IF PRINTING CHARACTER 1               81031260
1416 0  C100      3127    TLG09 LD    1 0          GET CHARACTERS              81031270
1417 0  1808      3128            SRA     8                                      81031280
1418 0  1008      3129            SLA     8                                      81031290
1419 01 6C00080B  3130            STX  L  TLGSW     SET 2ND CHAR SW              81031300
                  3131    *       GET HERE IF PRINTING CHARACTER 2               81031310
141B 0  928E      3132    TLG10 S     2 HFF00-TB    TEST FOR END OF LINE         81031320
141C 01 4C18145F  3133            BZ      TLGX2     BR IF YES                    81031330
                  3134    *                                                      81031340
141E 0  82BE      3135            A     2 HFF00-TB   ELSE RESTORE CHAR           81031350
141F 0  1808      3136            SRA     8          RIGHT JUSTIFY CHAR          81031360
1420 01 44001525  3137            BSI  L  TCV45      CONVERT TO 1816 CODE        81031370
1422 0  D07B      3138            STO     TLGBA     PUT IN OUTPUT AREA           81031380
                  3139    *                                                      81031390
                  3140    ********************************************************81031400
                  3141    *                                                     * 81031410
                  3142    ********************************************************81031420
                  3143    *                                                      81031430
                  3144    *     DO XIO WRITE-                                    81031440
                  3145    *           PRINT A LINE (1443)                        81031450
                  3146    *           PRINT A CHARACTER (1053)                   81031460
                  3147    *                                                      81031470
                  3148    ********************************************************81031480
                  3149    *                                                     * 81031490
                  3150    ********************************************************81031500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                                  ID/SEQNO
                  3151    *                                                      81031510
1423 0  0A49      3152    TLG42 XIO   2 TLGSN-TB   SENSE DSW                     81031520
1424 0  18D0      3153          RTE     16         SAVE                          81031530
1425 0  C2E8      3154          LD    2 T45SW-TB   GET 43/53 SW                  81031540
1426 0  4804      3155          SKP     E          SKIP IF 53                    81031550
1427 0  108A      3156          SLT     10         SHIFT 31 FOR 43               81031560
1428 0  1095      3157          SLT     21         SHIFT 21 FOR 53               81031570
1429 01 4C10142D  3158          BNN     TLG43     BR IF READY                    81031580
142B 0  42F8      3159          BSI   2 STMLS-TB   ELSE GO TO MONITOR            81031590
142C 0  70F6      3160          MDX     TLG42     LOOP UNTIL READY               81031600
                  3161    *                                                      81031610
142D 0  0A47      3162    TLG43 XIO   2 TLGWR-TB                                 81031620
                  3163    *                                                      81031630
142E 0  680C      3164          STX     TLGIS     SET INT SW                     81031640
142F 0  C28D      3165          LD    2 TERM-TB    GET /FFFF                     81031650
1430 0  D24B      3166          STO   2 TLGCT-TB   SET LOOP COUNT                81031660
                  3167    *                                                      81031670
1431 0  42F8      3168    TLG11 BSI   2 STMLS-TB    GO TO MONITOR               81031680
1432 0  C008      3169          LD      TLGIS      TEST FOR INT                  81031690
1433 01 4C181458  3170          BZ      TLGXR     BR IF IT HAPPENED              81031700
1435 01 74FF08CA  3171          MDX  L  TLGCT,-1  DECR COUNT                     81031710
1437 0  70F9      3172          MDX     TLG11       LOOP                       81031720
                  3173    ********************************************************81031730
1438 0  70FF      3174          MDX     *-1         TRAP STOP                  81031740
                  3175    ********************************************************81031750
                  3176    *                                                      81031760
                  3177    ********************************************************81031770
                  3178    *                                                     * 81031780
                  3179    ********************************************************81031790
                  3180    *                                                      81031800
                  3181    *     PRINT INTERRUPT ROUTINE                          81031810
                  3182    *                                                      81031820
1439 0  8100      3183    TLGCR DC        /8100     CARRIAGE*RETURN              81031830
143A 0  0000      3184    TLGSV DC        *-*       SAVE BUFFER POINTER          81031840
143B 0  0000      3185    TLGIS DC        0         INT SW                       81031850
143C 0  0000      3186    TLGBA DC        *-*       AREA CODE PUT HERE BY MON    81031860
143D 0  0000      3187    TLGIN DC        *-*       INTERRUPT ENTRY POINT        81031870
143E 01 6E001458  3188          STX  L2 TLG14+1     SAVE XR2                     81031880
1440 01 66000C7F  3189          LDX  L2 TB          SET XR2                      81031890
1442 0  C0F8      3190          LD      TLGIS       GET INT SWITCH               81031900
1443 0  4818      3191          SKP     +-          SKIP IF NONZERO              81031910
                  3192    ********************************************************81031920
1444 0  70FF      3193          MDX     *-1         TRAP STOP                    81031930
                  3194    ********************************************************81031940
1445 01 0C0008CC  3195          XIO  L  TLGSR      SENSE RESET DSW               81031950
1447 01 4C28144D  3196          BN      TLG12       BR IF XFER COMPLETE (1443    81031960
                  3197    *                         *  OR SVC RESPONSE (1053)   81031970
1449 0  1002      3198          SLA     2          TEST FOR PRINT COMPLETE       81031980
144A 01 4C281455  3199          BN      TLG13       BR IF YES                    81031990
                  3200    ********************************************************81032000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
144C 0  70FF      3201          MDX     *-1         TRAP STOP              81032010
                  3202    ********************************************** 81032020
144D 0  18D0      3203    TLG12 RTE       16        SAVE DSW               81032030
144E 0  C2E8      3204          LD     2  T45SW-TB   GET 43/53 SW           81032040
144F 0  F297      3205          EOR    2  K1-TB      TEST FOR 1443          81032050
1450 01 4C201455  3206          BNZ       TLG13      BR IF 1053             81032060
1452 0  1092      3207          SLT       18         GET DSW (PRINT COMPLETE) 81032070
1453 01 4C101457  3208          BNN       TLG13+2                           81032080
                  3209    *                                                 81032090
1455 0  1010      3210    TLG13 SLA       16                                81032100
1456 0  D0E4      3211          STO       TLGIS      CLEAR INT SWITCH       81032110
1457 00 66000000  3212    TLG14 LDX  L2 *-*          RESTORE XR2            81032120
1459 01 4C801430  3213          BSC  I    TLGIN      EXIT INT RTN           81032130
                  3214    *                                                 81032140
                  3215    ********************************************** 81032150
                  3216    *                                              * 81032160
                  3217    ********************************************** 81032170
                  3218    *                                                 81032180
                  3219    *     MONITOR COMES HERE FROM INT RTN             81032190
                  3220    *                                                 81032200
145B 0  C042      3221    TLGXR LD        TLGBA      GET WORD CNT           81032210
145C 0  1808      3222          SRA       8          TEST FOR 1053 CHAR     81032220
145D 01 4C20140A  3223          BNZ       TLGPR      BR IF 1053             81032230
                  3224    *                                                 81032240
145F 01 678008C6  3225    TLGX2 LDX  I3 TLGWR      GET BUFFER ADDRESS     81032250
1461 01 6F0013EB  3226          STX  L3 TLGBP+1    SET  PTR TO WORD COUNT 81032260
1463 0  C299      3227          LD     2  K3-TB     SET WRD CNT=3          81032270
1464 0  D300      3228          STO    3  0         ***                    81032280
1465 0  7301      3229          MDX    3  1         BUMP POINTER           81032290
1466 0  10A0      3230          SLT       32         SET PID=BLANKS IN MESSAGE 81032300
1467 0  D801      3231          STO    3  1         *                      81032310
1468 0  D24C      3232          STO    2  TLGSW-TB  RESET 1ST/2ND CHAR SW  81032320
1469 0  4017      3233          BSI       TLGCH      GET A CHARACTER        81032330
146A 0  7002      3234          MDX       TLG15      HERE IF HEX /00FF      81032340
146B 01 4C0013E7  3235          BSC  L    TLG06+3    ELSE LOOP              81032350
                  3236    *                                                 81032360
146D 00 44800132  3237    TLG15 BSI  I    RELDV      GO RELEASE DVC         81032370
146F 1  0813      3238          DC        TLGED      ADDRS OF EDIT WRD      81032380
1470 1  080C      3239          DC        TERM                              81032390
1471 0  C00E      3240          LD        FRESW      GET CHNL RELS SW       81032400
1472 0  4820      3241          BSC       Z          SKIP IF NOT SET        81032410
1473 0  42F2      3242          BSI    2  GETDV-TB  ELSE GET CHNL           81032420
                  3243    *                                                 81032430
1474 0  1010      3244          SLA       16         RESET-                 81032440
1475 0  D00A      3245          STO       FRESW      * CHNL RELS SW         81032450
                  3246    *                                                 81032460
1476 01 7401147F  3247    TLGEN MDX  L  LEXIT+1,1  BUMP RETURN BY 1         81032470
1478 00 67000000  3248    TLGX3 LDX  L3 *-*        RESTORE REG              81032480
147A 00 65000000  3249          LDX  L1 *-*        RESTORE REG              81032490
147C 0  1010      3250          SLA       16         RESET LOG BUSY SW      81032500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT   ST.NO.  LABEL OPCD FT OPERANDS                          ID/SEQNO
147D 0  D2E1      3251          STO    2  LGBSY-TB   *                      81032510
147E 00 4C000000  3252    LEXIT BSC  L  *-*          EXIT PRINT RTN         81032520
                  3253    *                                                 81032530
1480 0  0000      3254    FRESW DC       0          CHNL RELEASED SW       81032540
                  3255    ********************************************** 81032550
                  3256    *                                              * 81032560
                  3257    ********************************************** 81032570
                  3258    *                                                 81032580
                  3259    *     FETCH ONE CHARACTER FROM SOURCE MESSAGE     81032590
                  3260    *                                                 81032600
1481 0  0000      3261    TLGCH DC       *-*        ENTRY POINT            81032610
1482 00 65000000  3262          LDX  L1 *-*        SET UP POINTER         81032620
1484 0  C24D      3263          LD     2  TLGSW+1-TB GET 1/2 CHAR SW       81032630
1485 01 4C20148C  3264          BNZ       TLG16      BR IF SET              81032640
1487 01 6C0008CC  3265          STX  L    TLGSW+1    SET 1/2 CHAR SW        81032650
1489 0  C100      3266          LD     1  0          GET TWO CHARACTERS     81032660
148A 0  1808      3267          SRA       8          KEEP HIGH ORDER ONE    81032670
148B 0  7007      3268          MDX       TLG17      GO TO CMN RTN          81032680
                  3269    *                                                 81032690
148C 0  1010      3270    TLG16 SLA       16         CLEAR 1ST/2ND CHAR SWITCH 81032700
148D 0  D24D      3271          STO    2  TLGSW+1-TB    ***                 81032710
148E 0  C100      3272          LD     1  0          GET TWO CHARACTERS     81032720
148F 0  1008      3273          SLA       8          KEEP LOW ORDER ONE     81032730
1490 0  1808      3274          SRA       8          ****                   81032740
1491 0  7101      3275          MDX    1  1          BUMP SOURCE POINTER     81032750
1492 0  69F0      3276          STX    1  TLGCH+2    SAVE                   81032760
                  3277    *                                                 81032770
1495 01 4C201496  3278    TLG17 BNZ       TLG18         SET TO SPACE IF ZERO 81032780
1495 0  C249      3279          LD     2  TLGSP-TB     ***                 81032790
1496 0  F2AE      3280    TLG18 EOR    2  H00FF-TB TEST FOR HEX FF           81032800
1497 01 4C981481  3281          BZ   I    TLGCH      EXIT IF HEX FF         81032810
1499 0  F2AE      3282          EOR    2  H00FF-TB RE-INVERT IT              81032820
149A 01 74011481  3283          MDX  L    TLGCH,1    BUMP RETURN ADDRESS    81032830
149C 01 4C801481  3284          BSC  I    TLGCH      EXIT THIS RTN          81032840
                  3285    *                                                 81032850
                  3286          BSS  E    0                                 81032860
149E      0000    3287    TLGBA DC       *-*        WORD COUNT FOR PRNT LINE 81032870
149E 0    0000    3288          DMES 1    XXXX'E     PID GOES HERE          81032880
149F      0006    3289          BSS       50         LENGTH OF BUFFER       81032890
14A2      0032    3290    ********************************************** 81032900
                  3291    *                                              * 81032910
                  3292    ********************************************** 81032920
                  3293    ********************************************** 81032930
                  3294    *                                              * 81032940
                  3295    ********************************************** 81032950
                  3296    *                                                 81032960
                  3297    *       CONVERT HEX WORD TO 1443 CODE             81032970
                  3298    *                                                 81032980
                  3299    ********************************************** 81032990
                  3300    *                                              * 81033000
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                    ID/SEQNO
                   3301    ********************************************************* 81033010
14D4 1             3302    TCVBN EQU     *          ENTRY POINT                      81033020
                   3303    *                                                         81033030
14D4 0  1800       3304          RTE     16                                          81033040
14D5 0  400E       3305          BSI     TCV01      GET NEXT CHARACTER               81033050
14D6 0  1008       3306          SLA     8                                           81033060
14D7 0  D2C4       3307          STO   2 TCVS1-TB                                    81033070
14D8 0  400B       3308          BSI     TCV01      GET NEXT CHARACTER               81033080
14D9 0  EAC4       3309          OR    2 TCVS1-TB                                    81033090
14DA 0  D2C4       3310          STO   2 TCVS1-TB                                    81033100
                   3311    *                                                         81033110
                   3312    *                                                         81033120
14DB 0  4008       3313          BSI     TCV01      GET NEXT CHARACTER               81033130
14DC 0  1008       3314          SLA     8                                           81033140
14DD 0  D2C5       3315          STO   2 TCVS2-TB                                    81033150
14DE 0  4005       3316          BSI     TCV01      GET NEXT CHARACTER               81033160
14DF 0  EAC5       3317          OR    2 TCVS2-TB                                    81033170
14E0 0  1890       3318          SRT     16                                          81033180
14E1 0  C2C4       3319          LD    2 TCVS1-TB                                    81033190
14E2 01 4C80087A   3320          BSC   I TCVBE                                       81033200
                   3321    *                                                         81033210
14E4 0  0000       3322    TCV01 DC      *-*        ENTRY                            81033220
14E5 0  1010       3323          SLA     16                                          81033230
14E6 0  1084       3324          SLT     4                                           81033240
14E7 01 4C2014EC   3325          BNZ     TCV02      BR IF NOT ZERO                   81033250
14E9 0  C2A6       3326          LD    2 H000A-TB     0=/0A                          81033260
14EA 01 4C8014E4   3327          BSC   I TCV01      EXIT                             81033270
                   3328    *                                                         81033280
14EC 0  929E       3329    TCV02 S     2 K9-TB      SUBTRACT 9                       81033290
14ED 0  4830       3330          SKP     4-                                        81033300
14EE 0  82A9       3331          A     2 H0027-TB   ADD BACK A CONSTANT              81033310
14EF 0  829E       3332          A     2 K9-TB                                       81033320
                   3333    *                                                         81033330
14F0 01 4C6014E4   3334          BSC   I TCV01      EXIT                             81033340
                   3335    *                                                         81033350
                   3336    ********* ************************************************ 81033360
                   3337    *                                                       * 81033370
                   3338    ********************************************************* 81033380
                   3339    *                                                         81033390
                   3340    *   CONVERT HEX TO DECIMAL, A REG TO A REG                81033400
                   3341    *                                                         81033410
                   3342    *     *** CALL - BSI    2 TCVHD-TB ***                    81033420
                   3343    ********************************************************* 81033430
                   3344    *                                                       * 81033440
                   3345    ********************************************************* 81033450
                   3346    *                                                         81033460
14F2 01 4CA8087D   3347    THEXD BN    I   TCVHD      EXIT IF NEG                    81033470
14F4 0  1890       3348          SRT     16                                          81033480
14F5 0  AAA5       3349          D     2 K1000-TB   MOST SIGNIFICANT DIGIT           81033490
14F6 0  100C       3350          SLA     12         POSITION DIGIT                   81033500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.  LABEL OPCD FT OPERANDS                                    ID/SEQNO
14F7 0  D00D       3351          STO     THEXS                                       81033510
14F8 0  1004       3352          SLA     4          CLEAR A REG                      81033520
                   3353    *                                                         81033530
14F9 0  AAA1       3354          D     2 K100-TB    NEXT SIGNIFICANT DIGIT           81033540
14FA 0  1008       3355          SLA     8          POSITION DIGIT                   81033550
14FB 0  E809       3356          OR      THEXS                                       81033560
14FC 0  D008       3357          STO     THEXS                                       81033570
14FD 0  1008       3358          SLA     8          CLEAR A REG                      81033580
                   3359    *                                                         81033590
14FE 0  AA9F       3360          D     2 K10-TB     NEXT SIGNIFICANT DIGIT           81033600
14FF 0  108C       3361          SLT     12         COMBINE LAST TWO DIGITS          81033610
1500 0  180C       3362          SRA     12         ***                              81033620
1501 0  1084       3363          SLT     4          ***                              81033630
1502 0  E802       3364          OR      THEXS                                       81033640
1503 01 4C80087D   3365          BSC   I TCVHD                                       81033650
                   3366    *                                                         81033660
1505 0  0000       3367    THEXS DC      0          TEMP STORAGE                     81033670
                   3368    *                                                         81033680
                   3369    ********************************************************* 81033690
                   3370    *                                                       * 81033700
                   3371    ********************************************************* 81033710
                   3372    ********************************************************* 81033720
                   3373    *                                                       * 81033730
                   3374    ********************************************************* 81033740
                   3375    *                                                         81033750
                   3376    *     CALL     BSI L TCVSR                                81033760
                   3377    *     GET AQ = SPACE/SECT/SPACE/RTN                       81033770
                   3378    *                                                         81033780
                   3379    ********************************************************* 81033790
                   3380    *                                                       * 81033800
                   3381    ********************************************************* 81033810
1506 0  0000       3382    TCVSR DC      *-*                                         81033820
1507 0  6B0A       3383          STX   3 TCVSZ+1    SAVE REG                         81033830
1508 01 67800815   3384          LDX   I3 TRID      GET ROUTINE NUMBER               81033840
150A 01 C7001515   3385          LD    L3 DIGIT     GT PRINTABLE CODE                81033850
150C 0  1890       3386          SRT     16         A TO Q                           81033860
150D 01 67800800   3387          LDX   I3 TSID      GET SECT NUMBER                  81033870
150F 01 C7001514   3388          LD    L3 DIGIT-1   GET PRINTABLE CODE               81033880
1511 00 67000000   3389    TCVSZ LDX   L3 *-*        RESTORE REG                      81033890
1513 01 4C801506   3390          BSC   I TCVSR      EXIT                             81033900
                   3391    *                                                         81033910
1515    0020       3392    DIGIT DATA  1  0 1 2 3 4 5 6 7 8 9 A B C D E F'E         81033920
                   3393    ********************************************************* 81033930
                   3394    *                                                       * 81033940
                   3395    ********************************************************* 81033950
                   3396    *                                                         81033960
                   3397    *     CONVERT 1443 CODE TO 1816/1053 CODE                 81033970
                   3398    *                                                         81033980
                   3399    ********************************************************* 81033990
                   3400    *                                                       * 81034000
```

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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
                   3401     ************************************************  81034010
1525 0  0000       3402     TCV45 DC      *-*                                     81034020
1526 0  6845       3403           STX   3 TCVSV+1                                 81034030
1527 0  D043       3404           STO     TCVSV      SAVE 1443 CHAR               81034040
1528 01 6700153E   3405           LDX  L3 TCVTB      SET UP POINTER               81034050
152A 0  10A0       3406           SLT     32          CLEAR AQ                    81034060
152B 0  C300       3407     TCV03 LD    3 0           PICK UP NEXT ENTRY IN TBL   81034070
152C 0  18C8       3408           RTE     8           DELETE TR CHAR              81034080
152D 0  F03D       3409           EOR     TCVSV      TEST CHAR                    81034090
152E 01 4C181537   3410           BZ      TCV04        CHAR COMPARES              81034100
                   3411     *                                                     81034110
1530 0  1088       3412           SLT     8           RESTORE Q REG=0             81034120
1531 0  E2AE       3413           AND   2 H00FF-TB SET UP TO TEST                 81034130
1532 0  F2AE       3414           EOR   2 H00FF-TB * FOR TERMINATOR               81034140
1533 01 4C181539   3415           BZ      TCVEN      GO TO END ROUTINE            81034150
                   3416     *                                                     81034160
1535 0  7301       3417           MDX   3 1           INC POINTER                 81034170
1536 0  70F4       3418           MDX     TCV03        RETURN TO LOOP             81034180
                   3419     *                                                     81034190
1537 0  18D0       3420     TCV04 XCH                 RESTORE TR CHAR             81034200
1538 0  4818       3421           SKP     +-          EXIT                        81034210
                   3422     *                                                     81034 20
1539 0  C030       3423     TCVEN LD      TCVSP      SET UP SPACE                 81034230
153A 01 6700156C   3424           LDX  L3 TCVSV+1     RESTORE XR3                 81034240
153C 01 4C801525   3425           BSC  I  TCV45      EXIT                         81034250
                   3426     ************************************************  81034260
                   3427     *                                              *  81034270
                   3428     ************************************************  81034280
153E 0  313E       3429     TCVTB DC      /313E       A(1443,TILT-ROTATE)         81034290
153F 0  321A       3430           DC      /321A       B                           81034300
1540 0  331E       3431           DC      /331E       C                           81034310
1541 0  3432       3432           DC      /3432       D                           81034320
1542 0  3536       3433           DC      /3536       E                           81034330
1543 0  3612       3434           DC      /3612       F                           81034340
1544 0  3716       3435           DC      /3716       G                           81034350
1545 0  3826       3436           DC      /3826       H                           81034360
1546 0  3922       3437           DC      /3922       I                           81034370
1547 0  217E       3438           DC      /217E       J                           81034380
1548 0  225A       3439           DC      /225A       K                           81034390
1549 0  235E       3440           DC      /235E       L                           81034400
154A 0  2472       3441           DC      /2472       M                           81034410
154B 0  2576       3442           DC      /2576       N                           81034420
154C 0  2652       3443           DC      /2652       O                           81034430
154D 0  2756       3444           DC      /2756       P                           81034440
154E 0  2866       3445           DC      /2866       Q                           81034450
154F 0  2962       3446           DC      /2962       R                           81034460
1550 0  129A       3447           DC      /129A       S                           81034470
1551 0  139E       3448           DC      /139E       T                           81034480
1552 0  1482       3449           DC      /1482       U                           81034490
1553 0  1586       3450           DC      /1586       V                           81034500
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SELECTOR CHANNEL DIAGNOSTIC/1800
ADDR REL OBJECT    ST.NO.   LABEL OPCD FT OPERANDS                                  ID/SEQNO
1554 0  1692       3451           DC      /1692       W                           81034510
1555 0  1796       3452           DC      /1796       X                           81034520
1556 0  18A6       3453           DC      /18A6       Y                           81034530
1557 0  19A2       3454           DC      /19A2       Z                           81034540
                   3455     *                                                     81034550
1558 0  01FC       3456           DC      /01FC       1(1443,TILT-ROTATE)         81034560
1559 0  02D8       3457           DC      /02D8       2                           81034570
155A 0  03DC       3458           DC      /03DC       3                           81034580
155B 0  04F0       3459           DC      /04F0       4                           81034590
155C 0  05F4       3460           DC      /05F4       5                           81034600
155D 0  06D0       3461           DC      /06D0       6                           81034610
155E 0  07D4       3462           DC      /07D4       7                           81034620
155F 0  08E4       3463           DC      /08E4       8                           81034630
1560 0  09E0       3464           DC      /09E0       9                           81034640
1561 0  0AC4       3465           DC      /0AC4       0                           81034650
                   3466     *                                                     81034660
1562 0  0021       3467           DC      /0021       SP(1443,TILT-ROTATE)        81034670
1563 0  2CD6       3468           DC      /2CD6       *                           81034680
1564 0  1CFE       3469           DC      /1CFE       (                           81034690
1565 0  3CF6       3470           DC      /3CF6       )                           81034700
1566 0  11BC       3471           DC      /11BC       /                           81034710
1567 0  2084       3472           DC      /2084       -                           81034720
1568 0  0BC2       3473           DC      /0BC2       =                           81034720
1569 0  00FF       3474     TCVTC DC      /00FF       TERM                        81034740
156A 0  2100       3475     TCVSP DC      /2100       SPACE                       81034750
156B 0  0000       3476     TCVSV DC      0           TEMP STORAGE                81034760
156C 0  0000       3477           DC      0                                       81034770
156C 1             3478     PEND  EQU     *-1         END OF PGM                  81034780
156E    0939       3479           END     BGIN        XFER ADDRESS                81034790
```

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES								
BEGIN	012C	0	0012	0013	0424							
BGIN	0939	1	0424	3479								
BYPAD	2000	0	0181	0708	0812							
BYPBC	1000	0	0182	0708	0812							
BYPCS	8000	0	0179									
BYPUS	4000	0	0180	0708	0812							
CAWSV	0845	1	0119	2856								
CCW12	0ABC	1	0805	0793	0796	0799	0802					
CCW13	0B04	1	0893	0843								
CCW14	0B38	1	0958	0927	0954							
CCW15	0B67	1	1015	0991	1022							
CCW16	0BB4	1	1100	1053	1060	1096						
CCW17	0BE4	1	1157	1133								
CCW18	0C26	1	1232	1196	1239	2048						
CCW19	0C80	1	1317	1275	1313							
CCW21	0CE6	1	1414	1383	1424							
CCW22	0D38	1	1496	1461	1508							
CCW23	0D94	1	1581	1546	1588							
CCW24	0DE9	1	1661	1526	1668							
CCW25	0E3B	1	1741	1706	1748							
CCW26	0E85	1	1809	1786	1821							
CCW31	0ED8	1	1920	1880	1927							
CCW32	0F25	1	2004	1966	2014							
CCW33	0FCA	1	2130	2054	2058	2093	2137					
CNTDN	083E	1	0112									
CNTRL	0868	1	0146	0590	0690	0786	0874	0944	1008	1081	1150	1226
				1299	1331	1409	1490	1575	1655	1735	1803	1831
				1910	1991	2097	2147	2185				
CRCK	0133	0	0019	0020								
CSW11	0A63	1	0707	0696								
CSW12	0ABF	1	0811	0748	0756	0764	0772					
CSW13	0AFC	1	0892	0853	0862							
CSW14	0B34	1	0952	0932								
CSW15	0B6A	1	1020	0996								
CSW16	0BB0	1	1094	1057	1064	1067	1083					
CSW17	0BE7	1	1162	1138								
CSW18	0C29	1	1237	1205								
CSW19	0C7C	1	1311	1293								
CSW21	0CEC	1	1422	1391								
CSW22	0D41	1	506	1469								
CSW23	0D97	1	1586	1554								
CSW24	0DEC	1	1666	1634								
CSW25	0E3E	1	1746	1714								
CSW26	0E88	1	1819	1791								
CSW31	0EDE	1	1925	1895								
CSW32	0F36	1	2012	1971	1976							
CUU11	09EE	1	0602	0537								
DIGIT	1515	1	3392	3385	3388							
DVADR	085D	1	0132	0534	0737	1888	1891	1899	1917	2202	2363	2403

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES								
				2825								
END	012E	0	0014	0015	2170							
EPA	0808	1	0046									
ERADR	138A	1	2973	2969								
ERASE	0011	0	0212									
ERMSG	127E	1	2781	2308	2812	2818	2820	2822	2846			
EROUT	086B	1	0149	1212	1305	1398	1476	1561	1641	1721	1997	2112
				2117	2319	2399	2511	2788	2829	2910	2971	2972
ERROR	0130	0	0016	0017								
ERTNE	12C0	1	2784	0150								
ERTN2	12C4	1	2788									
ERTN3	12CC	1	2795	2791								
ERTN4	12D6	1	2804	2803	2810							
ERTN5	12E0	1	2812	2806								
ERTN6	12E4	1	2816	2799								
ERTN7	12ED	1	2825	2814								
ERTN8	12F9	1	2838	2835	2843	2922	2942	2950				
ERTN9	1302	1	2845	2841								
ERTSV	0846	1	0120	2926	2949							
ERTSW	093F	1	0113	2050	2056	2073	2244	2282	2473			
ERT10	1304	1	2846	2797								
ERT11	1316	1	2864	2852								
ERT12	1348	1	2912	2866								
ERT13	1355	1	2925	2951								
ERT14	1372	1	2953	2914								
ERT15	1379	1	2960	2850								
ERT16	137E	1	2965	2962								
ERT17	1380	1	2967	2785	2786							
ERT18	1386	1	2971	2958								
FBRST	0004	0	0275									
FDRDY	0018	0	0284									
FECYL	001D	0	0287									
FEOCY	000A	0	0279									
FLCCH	0040	0	0197	1497								
FLDCH	0080	0	0196	1415								
FLPCI	0010	0	0200									
FLSKP	0008	0	0199									
FLSLI	0020	0	0198	1233	1419	1502	1662	1815				
FNORC	000C	0	0280									
FONLN	0019	0	0285									
FOVRN	0005	0	0276									
FRDVE	1016	1	2238	0153								
FREDY	086E	1	0152	0520	0687	0783	0871	0941	1005	1078	1147	1223
				1296	1406	1487	1572	1652	1732	1800	1907	1988
				2094	2245	3017						
FRESW	1480	1	3254	0438	3010	3018	3240	3245				
FSERD	0012	0	0282									
FSKCK	0007	0	0277									
FSKIN	001F	0	0288									
FTROV	0009	0	0278									

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES
FUNSF	0010	0	0281	
FUNSI	001A	0	0286	
FUNSL	0015	0	0283	
GETDV	0871	1	0155	0519 0650 0729 0832 0915 0980 1042 1122 1185 1264 1373 1450 1535 1615 1695 1775 1869 1955 2037 2230 3242
GTDVE	0FF2	1	2189	0156
GTDV1	0FF2	1	2191	2193
HA	08C2	1	0341	
HC000	0838	1	0109	2594
HFF00	083D	1	0111	0439 1884 3095 3132 3135
HF000	083C	1	0110	
HIOXX	089C	1	0318	2076 2203 2491
H0A00	0833	1	0101	
H0E00	0834	1	0102	
H00C6	082B	1	0093	
H00C8	082C	1	0094	
H00FF	082D	1	0095	0559 3098 3280 3282 3413 3414
H000A	0825	1	0087	3326
H0011	0826	1	0088	
H0013	0827	1	0089	
H0027	0828	1	0090	3331
H0070	0829	1	0091	
H0080	082A	1	0092	
H0100	082E	1	0096	0739 0741 2205 3028
H0200	082F	1	0097	
H0400	0830	1	0098	0743 2200
H0500	0831	1	0099	2554 3033
H0700	0832	1	0100	2212 2553 3036
H2100	0835	1	0103	
H3000	0836	1	0104	0512
H4000	0837	1	0105	
H5000	0838	1	0106	
H7FFF	0839	1	0107	3059
H8000	083A	1	0108	
IPA	0806	1	0044	
K1	0816	1	0072	0441 0468 0514 0515 0574 0638 0717 0820 0903 0968 1030 1056 1110 1173 1252 1353 1438 1523 1603 1683 1763 1857 1935 2025 2220 2222 2224 2226 2460 2722 2830 2943 3039 3205
K10	081E	1	0080	3360
K100	0820	1	0082	0648 0727 0830 0913 0978 1040 1120 1183 1262 1371 1448 1533 1613 1693 1773 1867 1953 2035 3354
K1000	0824	1	0086	2337 3349
K127	0821	1	0083	
K128	0822	1	0084	
K2	0817	1	0073	1058 2218 2457
K20	081F	1	0081	3011
K3	0818	1	0074	2092 3067 3227

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES
K4	0819	1	0075	
K500	0823	1	0085	
K6	081A	1	0076	2216
K7	081B	1	0077	
K8	081C	1	0078	2057 2921
K9	081D	1	0079	3329 3332
LEXIT	147E	1	3252	2993 3046 3247
LGBSY	0860	1	0135	0467 2986 2992 3251
LINE1	11AB	1	2604	2528 2529 2531 2533 2536 2538 2542 2545 2547 2550
LINE2	11B5	1	2606	2560 2564 2565
LINE3	11CD	1	2608	2563
LOG	012F	0	0015	0016
LPA	0807	1	0045	
LPCNT	0866	1	0141	0649 0684 0728 0780 0831 0868 0914 0938 0979 1002 1041 1075 1121 1144 1184 1220 1263 1293 1372 1403 1449 1484 1534 1569 1614 1649 1694 1729 1774 1797 1868 1904 1954 1985 2036 2089
MAT0	0134	0	0020	
MLSCF	0809	1	0047	
MLSC0	0809	1	0048	0381
MLSC1	080A	1	0049	
MLSC2	080B	1	0050	0451 2641 2670
NCARE	085B	1	0131	2424 2430 2438 2444
NOPCC	0889	1	0291	1159 1164
OBCRT	0009	0	0031	1940
OBYPR	000D	0	0036	2997
OCHLT	000F	0	0038	
OEBYP	0009	0	2771	2961
OECAW	000D	0	2775	2849
OECSW	000E	0	2776	2865
OECXC	0003	0	2768	
OECX0	0000	0	2765	
OECX4	0001	0	2766	
OECX8	0002	0	2767	
OEERR	000C	0	2774	2798
OEGSN	000A	0	2772	
OELIB	0008	0	2773	2796 2798
OEPBL	0007	0	2770	2790
OESNS	000F	0	2777	2913
OEXIT	0006	0	2769	2966
OHALT	000E	0	0037	2711
OLPER	000C	0	0035	0703 2464
OLPST	0008	0	0030	0676 2286 2297 2331
OPNOP	0003	0	0207	0292 0807 0893 0894 1016 1101 1497 1810 1815 1921
OPRD	0002	0	0206	
OPRRS	000A	0	0032	
OPSNS	0004	0	0210	0308 1233 1318 1415 1502 1582 1662 1742 2131
OPTIC	0008	0	0213	1158 2136

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES								
OPTIO	0000	0	0204	0302	0959							
OPWR	0001	0	0205									
ORTRY	000B	0	0034									
OTTLE	000A	0	0033	0642	0721	0824	0907	0972	1034	1114	1177	1256
				1365	1442	1527	1607	1687	1767	1861	1947	2029
PASSW	085F	1	0134									
PCAW	0854	1	0127	2856								
PCSW	0856	1	0128	2326	2882							
PEND	156C	1	3478	0052								
PIOCC	0886	1	0176	2455	2600							
PIONT	1160	1	2528	0177								
PIOXT	11A9	1	2600	2555								
PIOX3	11A7	1	2599	2559	2595							
PIO01	1183	1	2563	2597								
PIO02	1185	1	2564	2561								
PIO03	11A0	1	2591	2589								
PRINT	1284	1	2783	2823	2841	2956						
PSCNT	0861	1	0136	0442	0539	2168						
PSNS	0858	1	0129	2915								
RCAL	0013	0	0215	0297								
RDCKD	001E	0	0218									
RDCNT	0012	0	0216									
RDDAT	0006	0	0209									
RDHA	001A	0	0217									
RDHMT	009A	0	0223									
RDKD	000E	0	0220									
RDR0	0016	0	0222									
RECAL	088C	1	0296									
RELDV	0132	0	0018	0019	0455	0460	0480	0486	0508	2238	3237	
REQDV	0131	0	0017	0018	0503	2192	3019					
SCABZ	0007	0	0249	2070	2084	2271	2276					
SCDCK	0004	0	0246									
SCICC	0005	0	0247									
SCILG	0006	0	0248									
SCIMS	091B	1	0416	0412								
SCIM2	092B	1	0418	0404	0406							
SCINT	08EA	1	0370	0396								
SCIN2	08F4	1	0380	0375								
SCIN3	08FA	1	0364	0378								
SCIN4	0902	1	393	0371								
SCIN5	0908	1	0398	0380								
SCIN6	090D	1	0402	0409								
SCISW	08E8	1	0367	0374	0395	0663	2228	2243	2279	2289	2295	
SCPCI	0002	0	0244									
SCPCK	0003	0	0245									
SCPLP	0863	1	0138	2334	2338							
SCSN0	08A2	1	0324	0666	0679	2219						
SCSN1	08A4	1	0326	0384	0665	0700	2068	2082	2221	2270	2274	2299
				2304	3012	3014						
SCSN2	08A6	1	0328	2223								

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES								
SCSN3	08A8	1	0330	0386	0668	2103	2225	2300	2306	2494		
SCSN4	08AA	1	0332	0388	0670	2105	2227	2302	2496			
SCSN5	08AC	1	0334	0390	0672	2107	2217	2301	2310	2498		
SCSVS	08BE	1	0340									
SCSXC	08BA	1	0339	2275	2305	2307	2309	2311	2495	2497	2499	
SCSX0	08AE	1	0336	0377	0667	0669	0671	0673	1087	2069	2083	2104
				2106	2108	2352	2365	2373	2382	2868		
SCSX4	08B2	1	0337	0382	0400							
SCSX8	08B6	1	0338									
SCUNO	0000	0	0242									
SCUOP	0008	0	0250									
SCUSP	0001	0	0243									
SEEKB	000B	0	0210									
SEEKC	0007	0	0211									
SENSE	089E	1	0320	1975	2210							
SFILM	001F	0	0231									
SIDHE	0071	0	0229									
SIDHI	0051	0	0227									
SIO	0874	1	0158	0746	0754	0762	0770	0851	0860	0930	0994	1062
				1136	1203	1281	1389	1467	1552	1632	1712	1789
				1893	1969	1974	2051	2062	2075	2259	2266	
SIOBS	1143	1	2486	2254	2488	2490	2502					
SIOBZ	1144	1	2488	2277								
SIOB2	114B	1	2494	2489								
SIOCK	102B	1	2270	2492								
SIOER	1100	1	2472	2283								
SIOM1	1104	1	2477	2318	2321							
SIOM2	1113	1	2479	2327	2346	2357	2359	2369	2371	2378	2380	2397
				2401								
SIOM3	1120	1	2482	2405	2411	2413	2416	2419	2421	2425	2431	2433
				2439	2445	2447	2450					
SIOM4	1130	1	2484	2509	2513							
SIONT	1020	1	2259	0159	2515							
SION2	10AE	1	2392	0698								
SION3	10B8	1	2403	2328								
SIOSW	085E	1	0133	0466								
SIOXX	08A0	1	0322	0847	0852	0856	0861	0928	0931	0992	0995	1054
				1063	1134	1137	1197	1204	1276	1282	1384	1390
				1462	1468	1547	1553	1627	1633	1707	1713	1787
				1790	1881	1882	1886	1894	1967	1970	2049	2052
				2055	2063	2206						
SIOYY	101F	1	2257	2267								
SIO01	1034	1	2279	2261	2268	2272	2302	2335	2339	2465		
SIO02	103D	1	2265	2292								
SIO03	1050	1	2304	2298								
SIO04	106B	1	2330	2290								
SIO05	1076	1	2341	2332								
SIO06	108C	1	2363									
SIO07	10A7	1	2386	2353	2366	2374	2383	2390				
SIO08	10D0	1	2427	2423								

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES
SIO09	10D8	1	2435	2429
SIO10	10DE	1	2441	2437
SIO11	10E6	1	2449	2443
SIO12	10F5	1	2463	2458
SIO13	10FE	1	2470	2468
SKHD	001B	0	0224	
SKHE	0069	0	0228	
SNCCW	0893	1	0307	0320
SNWDS	0896	1	0311	0309 0312 0313 0314 0315 1208 1234 1979 2006 2923
SNWD0	0896	1	0312	1200 1387 1394 1420 1465 1472 1503 1550 1557 1583 1630 1637 1663 1710 1717 1743 2132
SNWD1	0897	1	0313	1201 1416 1498
SNWD2	0898	1	0314	
SNWD3	0899	1	0315	
SPACE	085A	1	0130	2900 2945
SPROT	0865	1	0140	0449 0477 1278 1279 1286 1319 1889 1898 1916 2198
SRCHA	0039	0	0225	
SRCID	0031	0	0230	
SRCKE	0029	0	0219	
SRCKH	0049	0	0226	
START	012D	0	0013	0014 0413 2642
STKSW	0862	1	0137	0465 2957
STMLE	11DF	1	2623	0162
STMLL	11FD	1	2657	2660
STALS	0877	1	0161	0502 0527 0646 0725 0828 0911 0976 1038 1118 1181 1260 1370 1446 1531 1611 1691 1771 1865 1951 2033 2191 2288 2336 2624 2648 2667 2728 2733 2969 3013 3043 3159 3168
STMLX	11F8	1	2646	2680
STMPS	120C	1	2669	2663
STMPT	1212	1	2679	0437 2628 2638 2662
STMRT	1213	1	2680	2640 2669
STMSA	120F	1	2675	2625 2626 2627 2630 2632 2634 2651 2653 2665 2666
STMSE	1206	1	2665	2671
STMST	1214	1	2684	2631 2633 2635 2647 2650 2652 2657 2658
STSEP	08CE	1	0353	
TB	087F	1	0071	0372 0374 0384 0386 0388 0390 0398 0403 0411 0432 0435 0436 0439 0440 0441 0442 0452 0453 0458 0465 0466 0467 0468 0469 0476 0484 0493 0499 0500 0502 0512 0514 0515 0516 0519 0520 0521 0524 0527 0528 0533 0534 0535 0539 0540 0541 0544 0553 0554 0557 0558 0559 0561 0569 0571 0572 0573 0574 0575 0578 0582 0583 0587 0589 0590 0622 0638 0641 0644 0646 0648 0649 0650 0663 0665 0666 0667 0668 0669 0670 0671 0672 0673 0675 0679 0687 0688 0690 0702 0717 0720 0723 0725 0727 0728 0729 0736 0737 0739

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES
				0741 0743 0746 0754 0752 0770 0774 0783 0784 0786 0820 0823 0826 0828 0830 0831 0832 0851 0860 0871 0872 0874 0903 0906 0909 0911 0913 0914 0915 0930 0941 0942 0944 0968 0971 0974 0976 0978 0979 0980 0994 1005 1006 1008 1030 1033 1036 1038 1040 1041 1042 1056 1058 1059 1062 1078 1079 1081 1087 1110 1113 1116 1118 1120 1121 1122 1136 1147 1143 1150 1173 1176 1179 1181 1183 1184 1185 1199 1200 1201 1203 1208 1209 1212 1223 1224 1226 1252 1255 1258 1260 1262 1263 1264 1277 1278 1281 1286 1287 1296 1297 1299 1305 1331 1341 1353 1357 1364 1367 1370 1371 1372 1373 1386 1387 1389 1394 1395 1398 1406 1407 1409 1438 1441 1444 1445 1448 1449 1450 1464 1465 1467 1472 1473 1476 1487 1488 1490 1523 1526 1529 1531 1533 1534 1535 1549 1550 1552 1557 1558 1561 1572 1573 1575 1603 1606 1609 1611 1613 1614 1615 1629 1630 1632 1637 1638 1641 1652 1653 1655 1683 1686 1689 1691 1693 1694 1695 1709 1710 1712 1717 1718 1721 1732 1733 1735 1763 1766 1769 1771 1773 1774 1775 1789 1800 1801 1803 1831 1841 1857 1860 1863 1865 1867 1868 1869 1884 1888 1889 1890 1891 1893 1898 1899 1907 1908 1910 1916 1917 1935 1939 1946 1949 1951 1953 1954 1955 1969 1974 1979 1988 1989 1991 1997 2025 2028 2031 2033 2035 2036 2037 2051 2057 2062 2066 2069 2075 2082 2083 2092 2094 2095 2097 2103 2104 2105 2106 2107 2108 2112 2117 2147 2157 2160 2166 2185 2191 2200 2201 2202 2203 2205 2206 2208 2210 2212 2213 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2245 2244 2266 2270 2274 2275 2282 2285 2288 2289 2295 2296 2299 2300 2301 2304 2305 2306 2307 2308 2309 2310 2311 2319 2326 2330 2336 2337 2338 2345 2352 2356 2363 2365 2368 2373 2377 2382 2399 2404 2408 2410 2415 2418 2424 2430 2438 2444 2449 2455 2456 2457 2459 2460 2463 2466 2469 2473 2491 2494 2495 2496 2497 2498 2499 2511 2530 2535 2540 2549 2553 2554 2566 2571 2576 2585 2590 2594 2624 2641 2646 2648 2670 2710 2714 2715 2719 2722 2723 2724 2728 2730 2733 2792 2805 2807 2817 2825 2826 2828 2829 2830 2831 2832 2834 2840 2845 2856 2858 2859 2882 2885 2888 2893 2896 2900 2915 2921 2923 2926 2936 2943 2945 2949 2953 2955 2957 2963 2986 2988 2991 2992 2996 3000 3006 3011 3012 3013 3017 3025 3028 3030 3033 3035 3036 3038 3039 3040 3043 3055 3058 3059 3060 3064 3065 3067 3074 3090 3093 3095

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES								
				3098	3105	3116	3120	3132	3135	3152	3154	3159
				3162	3165	3166	3168	3189	3204	3205	3227	3232
				3242	3251	3263	3271	3279	3280	3282	3307	3309
				3310	3315	3317	3319	3326	3329	3331	3332	3349
				3354	3360	3413	3414					
TCNER	09D2	1	0582	0565	0625	1344	1844	2163				
TCNE2	0A06	1	0610	0525								
TCNPR	0981	1	0499	0450								
TCNRQ	0986	1	0502	0504								
TCNSW	0842	1	0116	0571	0752	0760	0768	0774				
TCNTA	09DB	1	0592	0568	0579	0592						
TCNTE	0981	1	0552	0147								
TCNTZ	09E0	1	0597	0592								
TCN01	0998	1	0518	0501								
TCN02	09A5	1	0533	0523								
TCN03	09C1	1	0567	0580								
TCN04	09C9	1	0578	0562								
TCVBE	087A	1	0164	0403	0535	0541	0583	2404	2410	2415	2418	2530
				2535	2540	2566	2571	2576	2585	2715	2817	2826
				2831	2859	2885	2888	2893	2896	2936	3060	3320
TCVBN	14D4	1	3302	0165								
TCVEN	1539	1	3423	3415								
TCVHD	087D	1	0167	0540	3347	3365						
TCVSP	156A	1	3475	3423								
TCVSR	1506	1	3382	2313	2392	2504	3390					
TCVSV	156B	1	3476	3403	3404	3409	3424					
TCVSZ	1511	1	3389	3383								
TCVS1	0843	1	0117	3307	3309	3310	3319					
TCVS2	0844	1	0118	3315	3317							
TCVTB	153E	1	3429	3405								
TCVTC	1569	1	3474									
TCV01	14E4	1	3322	3305	3308	3313	3316	3327	3334			
TCV02	14EC	1	3329	3325								
TCV03	152B	1	3407	3418								
TCV04	1537	1	3420	3410								
TCV45	1525	1	3402	3137	3425							
TERM	080C	1	0051	0457	0462	0482	0488	0507	0510	1059	1199	1209
				1277	1287	1386	1395	1464	1473	1549	1558	1629
				1638	1709	1718	1890	2195	2240	2793	2805	2807
				2840	2953	3023	3055	3165	3239			
THALT	0880	1	0170	0589	2459	2714	2734	2961				
THEXD	14F2	1	3347	0168								
THEXS	1505	1	3367	3351	3356	3357	3364					
THLTE	1220	1	2709	0171								
THLTG	1224	1	2714									
THLTL	122E	1	2728	2731								
THLTM	1235	1	2736	2720								
THLTR	1233	1	2734	2712								
THLT2	1246	1	2737	2716	2718							
TIOSW	0864	1	0139									

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES								
TIOXX	089A	1	0316	2208								
TLGBA	149E	1	3287	0343	3102	3110	3138	3221				
TLGBP	13EA	1	3076	3052	3226							
TLGCH	1481	1	3261	3050	3071	3077	3233	3276	3281	3283	3284	
TLGCM	13C1	1	3036	3031								
TLGCR	1439	1	3183	3109								
TLGCT	08CA	1	0348	3166	3171							
TLGDA	143C	1	3186	0506	0511	3022	3029	3034	3037			
TLGED	0813	1	0058	0453	0456	0478	0481	0505	0509	3000	3021	3238
TLGEN	1476	1	3267	2998								
TLGIN	143D	1	3187	3213								
TLGIS	143B	1	3185	3066	3164	3169	3190	3211				
TLGME	138B	1	2985	0174	2939							
TLGMS	0883	1	0173	0411	0524	0544	0587	0644	0723	0826	0909	0974
				1036	1116	1179	1258	1367	1444	1529	1609	1689
				1769	1863	1949	2031	2166	2449	2549	2590	2719
				2792	2845	2955	2991					
TLGNB	1390	1	2991	2987								
TLGPR	140A	1	3115	3223								
TLGSN	08C8	1	0346	3038	3152							
TLGSP	08C8	1	0345	0346	3074	3279						
TLGSR	08CC	1	0350	3040	3195							
TLGSV	143A	1	3184	3103	3115	3124						
TLGSW	08CB	1	0349	3064	3065	3093	3105	3116	3120	3130	3232	3263
				3265	3271							
TLGWR	08C6	1	0343	3030	3035	3051	3162	3225				
TLGXR	145B	1	3221	3170								
TLGX2	145F	1	3225	3133								
TLGX3	1478	1	3248	2994	2995							
TLG01	13A0	1	3006	3001								
TLG02	13AF	1	3019	3007	3044							
TLG03	13C8	1	3043	3020								
TLG04	13CA	1	3046	3041								
TLG05	13DD	1	3063	3056								
TLG06	13E4	1	3071	3085	3235							
TLG07	13F6	1	3090	3072	3078							
TLG08	13FE	1	3098	3094								
TLG09	1416	1	3127	3117								
TLG10	1418	1	3132	3125								
TLG11	1431	1	3168	3172								
TLG12	144D	1	3203	3196								
TLG13	1455	1	3210	3199	3206	3208						
TLG14	1457	1	3212	3188								
TLG15	146D	1	3237	3234								
TLG16	148C	1	3270	3264								
TLG17	1493	1	3278	3268								
TLG18	1496	1	3280	3278								
TLG40	138D	1	3033	3026								
TLG42	1423	1	3152	3091	3160							
TLG43	142D	1	3162	3111	3156							

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES								
TPID	07FF	1	0026	0071	0425	3058						
TRID	0815	1	0060	0572	0636	0715	0818	0901	0966	1028	1108	1171
				1250	1351	1436	1521	1601	1681	1761	1855	1933
				2023	2459	3394						
TRTNN	0841	1	0115	0557	0622	0688	0784	0872	0942	1006	1079	1148
				1224	1297	1341	1407	1488	1573	1653	1733	1801
				1841	1908	1989	2095	2160				
TSAD	0801	1	0028	0569	0576							
TSCAC	08E9	1	0368	0736	2195	2201	2213					
TSCCW	088F	1	0301	0316								
TSCED	0814	1	0059	0458	0461	0483	0487	2194	2239	3006		
TSCTN	0840	1	0114	0561	2157							
TSID	0800	1	0027	0469	0567	0573	0575	0578	2456	3387		
TSWDS	0892	1	0305	0303								
TSW0	0802	1	0040	0435	0641	0675	0702	0720	0823	0906	0971	1033
				1113	1176	1255	1357	1364	1441	1526	1606	1686
				1766	1860	1939	1946	2028	2285	2296	2330	2463
				2466	2710	2723	2724	2730	2996			
TSW1	0803	1	0041	0436	0554	0558	0582					
TSW2	0804	1	0042	0440	0521	0528	0533					
TSW3	0805	1	0043									
TTLER	09F7	1	0607	0584	0586	0588						
TTL00	09E0	1	0601	0545								
TTL01	09F0	1	0604	0543								
TTL11	0A49	1	0692	0645								
TTL12	0AA3	1	0788	0724								
TTL13	0AEA	1	0876	0827								
TTL14	0B28	1	0946	0910								
TTL15	0B5C	1	1010	0975								
TTL16	0B99	1	1083	1037								
TTL17	0BD8	1	1152	1117								
TTL18	0C17	1	1228	1180								
TTL19	0C67	1	1301	1259								
TTL21	0CD6	1	1411	1368								
TTL22	0D2A	1	1482	1445								
TTL23	0D7F	1	1577	1530								
TTL24	0DD5	1	1657	1610								
TTL25	0E2A	1	1737	1690								
TTL26	0E70	1	1805	1770								
TTL31	0EC8	1	1912	1864								
TTL32	0F12	1	1993	1950								
TTL33	0F81	1	2099	2032								
TYPAD	0850	1	0125	2368								
TYPBC	0852	1	0126	2377								
TYPCS	084C	1	0123	2345								
TYPUS	084E	1	0124	2356								
TYP2	0848	1	0121									
TYP3	084A	1	0122									
T1A01	0C98	1	1331	1298								
T10NT	0A16	1	0622	0593								

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES			
T10PR	0A14	1	0619	0624	0626		
T11EN	0A44	1	0687	0705			
T1101	0A1E	1	0635	0623	0627	1253	
T1102	0A25	1	0641	0637			
T1103	0A2B	1	0646	0643			
T1104	0A31	1	0665	0677	0685	0704	
T1105	0A57	1	0696	0680			
T1106	0A5D	1	0700	0697			
T12EN	0A9E	1	0783	0773	0775		
T1211	0AB4	1	0793	0738	0747		
T1212	0AB6	1	0796	0740	0755		
T1213	0AB8	1	0799	0742	0763		
T1214	0ABA	1	0802	0744	0771		
T1201	0A65	1	0714	0639	0689		
T1202	0A6C	1	0720	0716			
T1203	0A72	1	0725	0722			
T1204	0A7F	1	0746	0781			
T13EN	0AE5	1	0871	0854	0863		
T1301	0AC1	1	0817	0718	0785		
T1302	0AC3	1	0823	0819			
T1303	0ACE	1	0826	0825			
T1304	0AD5	1	0846	0869			
T14EN	0B23	1	0941	0933			
T1401	0B07	1	0900	0821	0873		
T1402	0B0E	1	0906	0902			
T1403	0B14	1	0911	0908			
T1404	0B18	1	0927	0939			
T15EN	0B57	1	1005	0997			
T1501	0B38	1	0965	0904	0943		
T1502	0B42	1	0971	0967			
T1503	0B48	1	0976	0973			
T1504	0B4C	1	0981	1003			
T16EN	0B94	1	1078	1068	1089		
T1601	0B6E	1	1027	0969	1007		
T1602	0B75	1	1033	1029			
T1603	0B78	1	1038	1035			
T1604	0B84	1	1057	1070	1076		
T1605	0B8C	1	1067	1091			
T1606	0BAB	1	1087	1065			
T17EN	0BD3	1	1147	1139			
T1701	0BB7	1	1107	1031	1080		
T1702	0BBE	1	1113	1109			
T1703	0BC4	1	1118	1115			
T1704	0BC8	1	1133	1145			
T18EN	0C12	1	1223	1206	1215		
T18M1	0C2C	1	1241	1214			
T1801	0BEB	1	1170	1111	1149		
T1802	0BF2	1	1176	1172			
T1803	0BF8	1	1181	1178			
T1804	0C00	1	1199	1221			

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES		
T1805	0C0B	1	1212			
T1806	0C0F	1	1220	1210		
T19EN	0C62	1	1296	1284	1309	
T1901	0C3E	1	1249	1174	1225	
T1902	0C45	1	1255	1251		
T1903	0C4B	1	1260	1257		
T1904	0C57	1	1281	1294		
T1905	0C77	1	1305	1288		
T1906	0C83	1	1322	1307		
T20NT	0C9B	1	1341	0594		
T20PR	0C99	1	1338	1343	1345	
T21EN	0CB1	1	1406	1392	1401	
T21M1	0CEF	1	1426	1400		
T21XX	0CB1	1	1363	1356	1359	1360
T2101	0CA3	1	1350	1342	1345	
T2102	0CAA	1	1356	1352		
T2103	0CB8	1	1370	1366		
T2104	0CC0	1	1386	1404		
T2105	0CCA	1	1398			
T2106	0CCE	1	1403	1396		
T22EN	0D25	1	1487	1470	1479	
T22M1	0D44	1	1510	1478		
T2201	0CFF	1	1435	1354	1361	1408
T2202	0D06	1	1441	1437		
T2203	0D0C	1	1446	1443		
T2204	0D14	1	1464	1485		
T2205	0D22	1	1484	1474		
T23EN	0D7A	1	1572	1555	1564	
T23M1	0D9A	1	1590	1565		
T2301	0D54	1	1520	1439	1489	
T2302	0D5B	1	1526	1522		
T2303	0D61	1	1531	1528		
T2304	0D69	1	1549	1570		
T2305	0D77	1	1569	1559		
T24EN	0DD0	1	1652	1635	1644	
T24M1	0DEF	1	1670	1643		
T2401	0DAA	1	1600	1524	1574	
T2402	0DB1	1	1606	1602		
T2403	0DB7	1	1611	1608		
T2404	0DBF	1	1629	1650		
T2405	0DCD	1	1649	1639		
T25EN	0E25	1	1732	1715	1724	
T25M1	0E41	1	1750	1723		
T2501	0DFF	1	1680	1604	1654	
T2502	0E06	1	1686	1682		
T2503	0E0C	1	1691	1688		
T2504	0E14	1	1709	1730		
T2505	0E22	1	1729	1719		
T26EN	0E6B	1	1800	1792		
T2601	0E4F	1	1760	1684	1734	

CROSS-REFERENCE

SYMBOL	VALUE	REL	DEFN	REFERENCES					
T2602	0E56	1	1766	1762					
T2603	0E5C	1	1771	1768					
T2604	0E64	1	1789	1798					
T2701	0E8F	1	1831	1764	1802				
T30NT	0E92	1	1841	0593					
T30PR	0E90	1	1838	1843	1845				
T31EN	0EC3	1	1907	1918					
T3101	0E9A	1	1854	1842	1846				
T3102	0EA1	1	1860	1856					
T3103	0EA7	1	1865	1862					
T3104	0EB6	1	1888	1905					
T3105	0ED3	1	1916	1896					
T32EN	0F0D	1	1968	1972	1977	2001			
T32XX	0EF0	1	1945	1938	1941	1942			
T3201	0EE2	1	1932	1858	1909				
T3202	0EE9	1	1938	1934					
T3203	0EF7	1	1951	1948					
T3204	0EFF	1	1969	1986					
T3205	0F21	1	1997	1980					
T3206	0F28	1	2009	1999					
T33CK	0F6E	1	2075	2257					
T33EN	0F7C	1	2094	2115					
T33GO	0F6D	1	2075						
T33X	0FD0	1	2140	2060	2072	2110			
T3304	0F9E	1	2122	2114					
T3306	0F85	1	2126	2119					
T3307	0F4D	1	2048	2090					
T3301	0F3C	1	2022	1936	1943	1990			
T3302	0F43	1	2028	2024					
T3303	0F49	1	2033	2030					
T3304	0F5A	1	2056						
T3305	0F63	1	2066	2067					
T3306	0F70	1	2079	2080					
T3307	0F7A	1	2092	2120					
T3308	0F8D	1	2103	2071	2085				
T3309	0F9A	1	2117	2111					
T3401	0FD1	1	2147	2026	2096				
T40EN	0FDF	1	2166	2158					
T40ER	0FE6	1	2172	2167					
T40NT	0FD4	1	2157	0596					
T40PR	0FD2	1	2154	2162	2164				
T4101	0FF1	1	2185	2161	2165				
T45SW	0867	1	0142	0500	0516	3025	3090	3154	3204
UNADR	08DE	1	0356	2828	2832	2834	2838		
UNATN	0008	0	0261						
UNBZY	000B	0	0264						
UNCHE	000C	0	0265						
UNCHK	000E	0	0267						
UNCUE	000A	0	0263						
UNDVE	000D	0	0266						

SYMBOL	VALUE	REL	DEFN	CROSS-REFERENCE REFERENCES
UNEXC	000F	0	0268	
UNSMD	0009	0	0262	
WRCKD	001D	0	0232	
WRDAT	0005	0	0208	
WRHA	0019	0	0233	
WRKD	000D	0	0221	
WRRO	0015	0	0234	
ZEPA	096C	1	0475	0046 0489
ZEPA1	0978	1	0483	0479
ZEPA2	097E	1	0489	0484
ZIPA	09[illegible]	1	0429	0044 0430
ZLPA	094D	1	0448	0045 0431 0443 0470
ZLPA1	095D	1	0458	0454
ZLPA2	0964	1	0463	0459

NO STATEMENTS FLAGGED IN THIS ASSEMBLY

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SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

NOTE: THIS DOCUMENT IS INTENDED FOR USE PRIMARILY WITH THE SELECTOR CHANNEL OFF-LINE DFT PID 0810 AND SHOULD BE FILED IN VOLUMN 4 WITH THE DFT DESCRIPTION.

SELECTOR CHANNEL MAINTENANCE PROCEDURES

THE PURPOSE OF THESE CHARTS IS TO ASSIST THE CE IN DIAGNOSING AND LOCATING SELECTOR CHANNEL HARDWARE PROBLEMS.

THE SYMPTOM REFERENCE CHARTS PROVIDE AN INTERPRETATION OF OFF- AND ON-LINE ERROR INDICATIONS, A LIST OF THE CIRCUITS WHICH COULD POSSIBLY CAUSE THOSE INDICATIONS, AND THE MEANS OF CHECKING THE STATUS OF THOSE CIRCUITS.

THE SEQUENCE CHART PROVIDES A STEP-BY-STEP CHECK-OUT PROCEDURE UTILIZING THE [illegible] MONITOR BOX. THIS CHART WILL NORMALLY BE USED WHEN THE CAPABILITIES OF THE SYMPTOM REFERENCE CHARTS HAVE BEEN EXHAUSTED.

TO USE THE SYMPTOM REFERENCE CHARTS:

OFF-LINE:

1) RUN DIAGNOSTIC TEST PID 0810
2) OBTAIN ERROR INDICATIONS (PRINTOUT OR CONSOLE)
3) DETERMINE THE SHEET NUMBER FROM THE SYMPTOM REFERENCE CHART INDEX.
   USE THE FIRST ERROR MESSAGE.
   **a. IF "CHANNEL BUSY" MESSAGE PRINTS AT ANY TIME, GO DIRECTLY TO SHEET 4.
   **b. IF "CS NOT CORRECT" LIGHTS AND BOTH POSSIBLE ERROR CONDITIONS EXIST (BITS ON OR BITS OFF) USE SHEETS FOR "BITS ON".
4) FOLLOW THE INSTRUCTIONS ON THE SHEET YOU HAVE SELECTED.

ON-LINE:

1) DUMP THE PE ERROR LOG AND ERROR STATISTICS TABLE.
2) THE GENERAL FAILING AREA CAN BE DETERMINED AS FOLLOWS:
   IMPROPER CSW=SELECTOR CHANNEL FAILURE
   IMPROPER US=CONTROL UNIT FAILURE
   IMPROPER SENSE BYTES=DEVICE FAILURE
3) USE THE SYMPTOM REFERENCE CHART SHEETS TITLED "CS NOT CORRECT" TO CHECK OUT APPARENT SELECTOR CHANNEL FAILURES.
4) IF THE CONTROL UNIT APPEARS TO BE FUNCTIONING PROPERLY BUT THE US IS INCORRECT, USE THE SYMPTOM REFERENCE CHART SHEETS TITLES "US NOT CORRECT" TO APPROACH THE PROBLEM.

OR

5) IF A 2841 IS ON THE SYSTEM, RUN THE SELECTOR CHANNEL /2841/2311 ON-LINE DFT. THE FIRST SECTION OF THIS TEST IS SIMILAR TO THE OFF-LINE DFT PID 0810.
6) UTILIZE THE SYMPTOM REFERENCE CHART USING THE ERROR MESSAGES FROM THIS TEST. THE SYMPTOM REFERENCE CHART INDEX INDICATES THE SHEET NUMBER FOR THOSE ERROR MESSAGES WHICH ARE CONSIDERED UNIQUE TO THE SELECTOR CHANNEL. ANY OTHER ERROR MESSAGES SHOULD BE APPROACHED AS 2841/2311 FAILURES.

TO USE THE SEQUENCE CHART:

1) RUN THE DFT OR PROGRAM TO DETERMINE THE FAILING ROUTINE OR FUNCTION.
2) UTILIZE THE SYMPTOM REFERENCE CHART AS MUCH AS POSSIBLE BEFORE USING THE SEQUENCE CHART.
3) ALWAYS BEGIN WITH STEP 1 OF THE SEQUENCE CHART.
4) RESTART THE DFT OR PROGRAM AND BYPASS ERROR PRINTOUTS.
5) FOLLOW THE ADDITIONAL INSTRUCTIONS ON THE SEQUENCE CHART.

SELECTOR CHANNEL MAINTENANCE
PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART INDEX

SEE DFT DESCRIPTION FOR THE BREAKDOWN OF THE ERROR PRINTOUTS.

ERROR NUMBER	OFF-LINE ERROR MESSAGE	SHEET
	NO ERROR MESSAGES	1
00	UNEXPECTED INTERRUPT	2
01	INTERRUPT DID NOT OCCUR	3
01	CHANNEL BUSY-SIO NOT ATTEMPTED	4
02	R0 NOT CORRECT	5
02	R1 NOT CORRECT	6
02	CS NOT CORRECT(BITS OFF THAT SHOULD BE ON)	7
02	CS NOT CORRECT(BITS ON THAT SHOULD BE OFF)	8,9,10
02	IS NOT CORRECT(BITS OF THAT SHOULD BE ON)	11
02	IS NOT CORRECT BITS ON THAT SHOULD BE OFF)	12,13
03	CHANNEL DIDN'T GO BUSY ON TIC TO SENSE	14
03	DATA NOT XFERRED TO CORE	14
03	STORAGE PROTECTED AREA WAS CHANGED	15
03	COMMAND REJ NOT SET	15
03	DATA XFERRED TO CORE	15

ERROR NUMBER	ON-LINE ERROR MESSAGE	SHEET
	NO ERROR MESSAGES	1
E15(MPX)	NO RESPONSE	3,4
E16	BYTE COUNT DID NOT STOP DATA TRANSFER	5
E10	INCORRECT CSW RECEIVED	5 THRU 13
E14	NO DATA WAS TRASNFERED TO CORE	14
E15	STORAGE PROTECTED AREA WAS CHANGED	15
E17	DATA WAS TRANSFERED TO CORE	15

SYMPTOM REFERENCE CHART-SHEET 1 NO DFT MESSAGES

INSTRUCTIONS:

1) DETERMINE ERROR SYMPTOM FROM CONSOLE INDICATIONS.
2) DETERMINE FAILING ROUTINE BY SETTING DFT OPTION TO PRINT ROUTINE TITLES.
3) LOOP ON FAILING ROUTINE OR FUNCTION ; BYPASS PRINTOUTS.
4) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE ROUTINE.
5) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
6) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
7) FOLLOW ANY INSTRUCTIONS UNIQUE TO THE FAILURE.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
APPEARS LOCKED IN SOLID CYCLE STEALS	ANY ROUTINE OR SIO	IMPROPER TERMINATION OF A CYCLE STEAL OPER	SEE SEQUENCE CHART. NOTE: PRESS ADAPTER RESET ON THE I/O MONITOR TO RESTART THE ROUTINE PRIOR TO EACH I/O MONITOR SETUP.				
SEL CHAN INTERRUPT ON; PROGRAM AT ERROR WAIT OR IN A LOOP	ANY ROUTINE OR SIO	UNEXPECTED INTERRUPT	SEE ERGO "UNEXPECTED INTERRUPT" SHEET 2				
PROGRAM IS IN A LARGE LOOP, WILL NOT TERMINATE PROPERLY	ANY ROUTINE OR SIO	COMMAND CHAIN UP	CMD CHAIN FLAG	OFF	381	SCOPE	+STATE 3 (351)
			-SET SUPPRESS OUT FL	OFF	281	SCOPE	+STATUS IN (281)
	1 - 1 1 - 2 SNS	INCOMPLETE SENSE DSW	SENSE OP	ON	335	SCOPE	+GATED AREA DECODE (335)
	ANY ROUTINE OR SIO	INCOMPLETE START I/O	STATE LATCHES	ON IN SEQUENCE	341-361	I/O MON	B4(FOR DATA XFER CMD) B1 & B5(FOR NON-D. CMD)
			SEE SEQUENCE CHART. NOTE: PRESS ADAPTER RESET ON THE I/O MONITOR TO RESTART THE ROUTINE PRIOR TO EACH I/O MONITOR SETUP.				
OP CODE CHECK	ANY ROUTINE OR SIO	DATA XFER GATES UP	+GATE BYTE CNTR TO BUS IN	OFF	061	SCOPE	-INTERNAL
			+CCW ADDR REG TO BUS IN	OFF	131	SCOPE	-INTERNAL
			+GATE B BFR TO BUS IN	OFF	109	SCOPE	-INTERNAL
			+GATE A BFR TO BUS IN	OFF	105	SCOPE	-INTERNAL
			+GATE STATUS REG TO BUS IN	OFF	335	SCOPE	-INTERNAL
		"HOT" IN BUS BIT (S)	1800 BUS IN ASSEMBLY	OFF	061-065	SCOPE	-INTERNAL

SELECTOR CHANNEL MAINTENANCE
PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 2 ERROR 00-UNEXPECTED INTERRUPT

INSTRUCTIONS:

1) DETERMINE THE FAILING ROUTINE FROM THE FIRST ERROR PRINTOUT
2) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE ROUTINE.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE MON'S TO VERIFY SEQUENCES AND SCOPE PICTURES.

(1) ERROR SYMPTONS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
THIS ERROR MESSAGE OR A LOOP WITH THE SEL CHAN INTERRUPT ACTIVE	ANY ROUTINE OR SIO	IMPROPER INTERRUPT	INTERRUPT REQ. "HOT" IN BUS BIT	OFF OFF	311 061-065	SCOPE SCOPE	+INTERNAL -INTERNAL
		CANNOT RESET INTERR. CONDITION	GATES TO 1800 BUS IN ASSEMBLY STATUS REG.	OFF OFF	061-065 371 373	SCOPE I/O MON	+INTERNAL A1
			+SENSE RST +SENSE	ON ON	335 335	SCOPE SCOPE	+XIO DATA CYCLE (335) +GATED ADDR DECODE (335)
2 - 2 CMD CHAIN	DID NOT CMD CHAIN		CMD CHAIN FLAG +SET FLAG REG +BYTE COUNTER ZERO	ON ON ON	301 301 159	SCOPE SCOPE I/O MON	+STATE 3 (301) +STATE 3 (301) D2

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SELECTOR CHANNEL MAINTENANCE
PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 3 ERROR 01-INTERRUPT DID NOT OCCUR

INSTRUCTIONS:

1) DETERMINE ALL FAILING ROUTINES FROM THE ERROR PRINTOUTS.
2) LOOP ON THE FAILING ROUTINE OR FUNCTION BEING CHECKED, BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS FOR EACH ROUTINE WHICH FAILS.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE IOM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
6) FOLLOW ANY INSTRUCTIONS UNIQUE TO THE FAILURE.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR SFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
THE FOLLOWING ROUTINE(S) FAIL	1-2 PROGRAM CHECK	FAILS TO DETECT AN INVALID XIO FUNCTION	STATUS REG BIT 3 INT REG FL	ON ON	371 311	SCOPE SCOPE	+GATED AREA DECODE (371) +GATED AREA DECODE (371)
	1-4 TEST I/O	TEST I/O NOT DECODED	TEST I/O	ON	311	SCOPE	+GATE TEST I/O (311)
	2-6 PCI	FAILS TO SET PROGRAM CONTROL INTERRUPT	STATUS REG BIT 2	ON	371	SCOPE	+STATE 3 (351)
	3-1 NOT OPER.	FAILS TO DETECT A NOT OPERATIONAL DEVICE	STATUS REG BIT 0 SELECT-IN TAG 1800 BUS IN ASSEMBLY	ON ON ON	371 035 061 065	SCOPE I/O MON SCOPE	+CHNL SEL SEQ FF (371) 02 +XIO DATA CYCLE (027)
	2-2 CHD CHAIN	FAILED TO CHD CHAIN	CHD CHAIN FLAG BYTE COUNTER ZERO CS DELAY FL	ON ON ON	381 159 315	SCOPE I/O MON SCOPE	+STATE 3 (351) 02 +BYTE COUNTER ZERO (159)
	3-3 HALT I/O	HALT I/O NOT DECODED	HALT I/O FL	ON	331	SCOPE	+GATED AREA DECODED (331)
	1-7 3-3 TIC	TIC NOT DECODED	TIC	ON	321 391	I/O MON SCOPE	01 +STATE 3 (321)
	ANY OTHER ROUTINE OR SIO	INCOMPLETE START I/O FUNCTION					CHECK ALL LIGHTS: B1 (FOR INBED CMDS) B4 (FOR DATA XFER CMDS) SEE SEQUENCE CHART.

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 4 ERROR 01-CHANNEL BUSY-SIO NOT ATTEMPTED

INSTRUCTIONS:

1) OBTAIN FAILING ROUTINE FROM ERROR MESSAGE PRIOR TO THIS MESSAGE.
2) LOOP ON FAILING ROUTINE OR FUNCTION, BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS LISTED.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
6) FOLLOW ANY SPECIAL INSTRUCTIONS.
7) SEE MDM'S TO DETERMINE TIMING OF A/B COMPLETE AND PHASE COUNTERS.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MDM SETUP OR SCOPE SYNC POINT
CONTINUOUS PRINTING OF THIS ERROR MESSAGE	ANY ROUTINE OR SIO	BUSY WAS NOT TURNED OFF AT THE END OF THE LAST START I/O	PHASE COUNTERS A/B COMPLETE	SEE NOTE 7 SEE NOTE 7	201 221	SCOPE SCOPE	USE THE INPUTS TO THESE CIRCUITS AS SCOPE SYNC POINTS. B1 (FOR HDWD CHKS) E4 (FOR DATA XFER CHKS)
			CHECK ALL LIGHTS ON THE I/O MONITOR.				
			THEN, SEE SEQUENCE CHART.				

NOTE: USE THE ADAPTER RESET ON THE I/O MONITOR TO RESTART THE ROUTINE PRIOR TO EACH I/O MONITOR SETUP.

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 5 ERROR 02-EC NOT CORRECT

INSTRUCTIONS:

1) COMPARE ALL ERROR MESSAGES TO DETERMINE ERROR SYMPTOM.
2) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
3) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
4) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
5) INSURE THAT THE BUS IN ASSEMBLER CONTAINS THE SAME VALUE AS THE BYTE COUNTER.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
VALUE DOES NOT CHANGE	ANY ROUTINE OR SIO	BYTE COUNTER IS NOT BEING LOADED	-SET BYTE COUNTER STATE 2	ON ON	345 345	SCOPE I/O MON	+STATE 2 (345) B2
DIFFERENCE BETWEEN ACTUAL AND DESIRED VALUES IS 1,2, OR 3	ANY ROUTINE OR SIO	NO DECREMENT TO BYTE COUNTER	SERVICE-IN TAG BUSY FF, PHASE FF'S CS RLQ/ACK XFER COMPLETE -DECREMENT BYTE COUNTER SEE ERROR SYMPTOM "VALUE IS INCORRECT"	ON ON BOTH ON BOTH ON OFF ON	035 310 201 029 379 271	I/O MON I/O MON I/O MON I/O MON SCOPE SCOPE	D2 (FOR CMDS WITHOUT D2 DATA XFER, SKIP D2 THE FIRST FOUR D2 CIRCUITS) +STATE 4 (384) -CS ACK (271)
VALUE IS ALWAYS ZERO	ANY ROUTINE OR SIO	NO GATE TO IN BUS	+GATE BYTE COUNTER TO IN BUS	ON	335	SCOPE	+GATED AREA DECODE (335)
VALUE IS INCORRECT (NONE OF THE ABOVE SYMPTOMS)	ANY ROUTINE OR SIO	SINGLE BIT POSITION BAD	BYTE COUNTER 1800 BUS IN ASSEMBLY	 SEE NOTE 5	151 THRU 155 601 035	SWAP CARDS 2M5 & 2L6 SCOPE	 +XIO DATA CYCLE (035)
		NO RESET	STATE 2	ON	345	I/O MON	B2

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SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 6 ERROR 02-AD NOT CORRECT

INSTRUCTIONS:

1) COMPARE ALL ERROR MESSAGES TO DETERMINE ERROR SYMPTON.
2) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
3) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
4) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
5) INSURE THAT THE BUS IN ASSEMBLER CONTAINS THE SAME VALUE AS THE CCW ADDR REG.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
DIFFERENCE BETWEEN ACTUAL AND DESIRED VALUE IS 1,2, OR 3	ANY ROUTINE OR S10	NO INCREMENT TO CCW ADDRESS REG	-INCREMENT CCW ADDR REG	ON	131	SCOPE	-STATE 2 (131)
VALUE IS ALWAYS /0003 OR /0006	ANY ROUTINE OR S10	NO SET TO CCW ADDR REG	STATE 1 X10 DATA CYCLE -SET CCW AD REG	ON ON ON	341 027 131	I/O MON SCOPE SCOPE	B2 +GATED AREA DECODE (311) +STATE 1 (131)
LEFT 9 BITS OR RIGHT 7 BITS OF CCW ADDR REG ALWAYS = 0	ANY ROUTINE OR S10	NO GATE TO IN BUS FOR HALF THE CCW ADDR REG	+CCW ADDR REG TO BUS IN P1 OR +CCW ADDR REG TO BUS IN P2	ON ON	131 131	SCOPE SCOPE	+X10 DATA CYCLE (027) +X10 DATA CYCLE (027)
VALUE IS ALWAYS 0000	ANY ROUTINE OR S10	NO GATE TO IN BUS FOR ENTIRE CCW ADDR REG	+CCW ADDR REG TO BUS IN	ON	335	SCOPE	+X10 DATA CYCLE (027)
VALUE IS ALWAYS /FFFF	ANY ROUTINE OR S10	RESET UP SOLID	TIC STATE 1 -RESET CCW ADDR REG	OFF OFF OFF	321 341 131	I/O MON I/O MON SCOPE	B2 C2 -STATE 2 (131)
DIFFERENCE BETWEEN ACTUAL AND DESIRED IS A MULTIPLE OF 3	2-2 2-6 CMD CHAIN	FAILED TO COMMAND CHAIN	CMD CHAIN FLAG	ON	351	SCOPE	+STATE 3 (351)
VALUE IS INCORRECT (NONE OF THE ABOVE SYMPTOMS)	ANY ROUTINE OR S10	SINGLE BIT ON/OFF	CCW ADDR REG		133-139	SWAP CARDS	2K4 & 2E6
			1800 OUT BUS BIT	SEE NOTE 5	021-023	SCOPE	+STATE 1 (341)
			1800 BUS IN ASSEMBLY	SEE NOTE 5	061-065	SCOPE	+X10 DATA CYCLE (027)
		NO RESET	TIC STATE 1 -RESET CCW ADDR REG	OFF ON ON	321 341 131	I/O MON I/O MON SCOPE	C1 B2 +STATE 1 (131)

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 7 ERROR 02-CS NOT CORRECT (BITS OFF THAT SHOULD BE ON)

INSTRUCTIONS:

1) COMPARE ACTUAL AND EXPECTED CSW'S TO DETERMINE ERRONEOUS BITS.
2) DETERMINE APPLICABLE FAILING ROUTINE FROM FIRST ERROR MESSAGE.
3) LOOP ON FAILING ROUTINE OR FUNCTION, BYPASS PRINTOUTS.
4) CHECK ALL CIRCUITS LISTED FOR THAT ROUTINE.
5) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
6) USE MD'S TO VERIFY SEQUENCES AND SCOPE PICTURES.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
BIT 0 OFF	3-1 NOT OPER	"NOT OPERATIONAL" NOT DETECTED	STATUS REG BIT 0	ON	371	I/O MON	C2
			SELECT-IN TAG	ON	035	I/O MON	C2
			INCOMPLETE SEL SEQUENCE				SEE SEQUENCE CHART
BIT 1 OFF	ANY ROUTINE OR SIO	PENDING UNIT STATUS NOT DETECTED	STATUS REG BIT 1	ON	371	I/O MON	B5 (FOR INMED CMDS) B3 (FOR DATA XFER CMDS)
			STATUS IN TAG	ON	035	I/O MON	B5 (FOR INMED CMDS) B3 (FOR DATA XFER CMDS)
			+CONDITION GATE	ON	201	SCOPE	+STATUS XFER (281)
			-SET STAT PENDING INCOMPLETE SEL SEQUENCE	ON	261	SCOPE	+CHNL SEL SEQ (251) SEE SEQUENCE CHART
	1-4 TEST I/O	PENDING UNIT STATUS NOT DETECTED	TEST I/O	ON	311	SCOPE	+STATE 4 (351)
BIT 2 OFF	2-6 PCI	PROGRAM CONTROL INTERRUPT NOT SET	STATUS REG BIT 2	ON	371	I/O MON	B2
			STATE 3	ON	351	I/O MON	B2
			+SET FLAG REG	ON	321	SCOPE	+STATE 3 (321)
BIT 3 OFF	1-2 PROG CHECK	PROGRAM CHECK NOT DETECTED.	STATUS REG BIT 3	ON	371	I/O MON	B1
			AREA DECODE	ON	311	SCOPE	+XIO CTRL CYCLE (311)
BIT 4 OFF	1-9 DATA CHECK	DATA CHECK NOT DETECTED.	STATUS REG BIT 4	ON	373	I/O MON	C3
			STATE 6	ON	361	I/O MON	C3
			CS ACK	ON	029	I/O MON	C3
			+XFER IN	ON	321	I/O MON	C3
			WRITE STOR. PROT. BITS SWITCH	ON		CONSOLE	
BIT 6 OFF	2-3 INCORR LENGTH	INCORRECT LENGTH NOT DETECTED	STATUS REG BIT 6	ON	373	I/O MON	C3
			SLI FLAG	OFF	381	SCOPE	+STATE 3 (351)
			+SET INCORCT LNTH	ON	281	SCOPE	+STATUS-IN (281)
			+XFER COMPL FL	OFF	379	SCOPE	+STATUS-IN (281)
			-DATA XFER+SERV-IN	OFF	271	SCOPE	+XFER COMPL FL (271)
BITS 5,7, OR 8 OFF	NONE	THESE BITS SHOULD NOT BE ON.					

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SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 8 — ERROR 02-CS NOT CORRECT (BITS ON THAT SHOULD BE OFF)

INSTRUCTIONS:

1) COMPARE ACTUAL AND EXPECTED CSW'S TO DETERMINE ERRONEOUS B TS
2) DETERMINE APPLICABLE FAILING ROUTINE FROM FIRST ERROR MESSAGE
3) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
4) CHECK ALL CIRCUITS LISTED FOR THAT ROUTINE.
5) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
6) USE MON'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
7) INSURE THAT THE DEVICE ADDRESS AT THE SEL CHAN IS THE SAME ADDRESS SENT OUT BY THE PROGRAM.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
BIT 0 ON	ANY ROUTINE OR SIO	CONTROL UNIT WAS NOT PROPERLY SELECTED	STATUS REG BIT 0	OFF	371	I/O MON	C2
			SELECT-IN TAG	OFF	035	I/O MON	C2
			CONTROL UNIT DISABLED				CHECK CONTROL UNIT
			A BUFFER	SEE NOTE 7	103 105	I/O MON	C4
			360 BUS IN	SEE NOTE 7	031 033	SCOPE	+ADDRESS IN (035)
			DEV ADDR REG	SEE NOTE 7	111	SCOPE	+X10 CONTROL CYCLE (027)
			1800 BUS OUT	SEE NOTE 7	023	SCOPE	+X10 CONTROL CYCLE (027)
			ADDRESS WRONG				CHECK PROGRAM
			INCOMPLETE SEL SEQUENCE				SEE SEQUENCE CHART
	1-1 1-2 3-1 X10 SNS	UNIT STATUS PENDING WITHOUT A PREVIOUS START I/O	STATUS REG BIT 1	OFF	371	I/O MON	A1
			-CONDITION SET-RST	OFF	209	SCOPE	-INTERNAL
			-SET STAT PENDING	OFF	261	SCOPE	-INTERNAL
BIT 2 ON	ANY ROUTINE OR SIO	INCORRECT PROGRAM CONTROL INTERRUPT	STATUS REG BIT 2	OFF	371	I/O MON	B2
			TIMING OF STATE 3	OFF	351	I/O MON	C2
			TIMING OF +CLT FLAG REG	OFF	321	SCOPE	+STATE 3 (321)
			1800 OUT BUS BIT 3	OFF	021	SCOPE	+STATE 3 (321)
			-RST STAT BITS	ON	335	SCOPE	+SENSE RST (335)
BIT 3 ON	ANY ROUTINE OR SIO	PARITY ERROR DURING STATES 1 THRU 5	STATUS REG BIT 3	OFF	371	I/O MON	B2
			+PARITY ERROR	OFF.	027	SCOPE	+START I/O (341)
			-RST STATES 12345	ON	325	SCOPE	X7 (231)
			-RST STAT BITS	ON	335	SCOPE	+SENSE RST (335)
		INVALID IOCC FUNCTION	STATUS REG BIT 3	OFF	371	I/O MON	B1 OR B4
			FUNCTION WRONG				CHECK PROGRAM
			1800 OUT BUS AREA DECODE	VALID FUNCT. /9	021	SCOPE	+X10 CTRL CYCLE (027)
					311	SCOPE	+X10 CTRL CYCLE (027)
			-RST STAT BITS	ON	335	SCOPE	+SENSE RST (335)

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 1 ERROR 02-CS NOT CORRECT (BITS ON THAT SHOULD BE OFF)

INSTRUCTIONS:

1) COMPARE ACTUAL AND EXPECTED CSW'S TO DETERMINE ERRONEOUS BITS.
2) IF BIT 4 IS ON, TURN ON CHECK STOP TO DETERMINE PROBABLE FAILURE.
3) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
4) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE PROBABLE FAILURE.
5) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
6) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DIAG ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
BIT 4 ON	ANY ROUTINE OR SIO	STORAGE PROTECT VIOLATION	STATUS REG BIT 4	OFF	373	I/O MON CONSOLE	02
			STORAGE PROTECT BITS IN READ TABLE.				CLEAR STORAGE PROTECT BITS
			DATA PUT IN WRONG CORE LOCATION.				CHECK CAR AND PROGRAM
			+STO PROT VIOLATION	OFF	027	SCOPE	+STATE 6 (304)
		INPUT DATA PARITY ERROR	STATUS REG BIT 4	OFF	373	I/O MON	02
			A/B BUFFERS	VALID PARITY	103-103	I/O MON	02
			360 BUS IN	VALID PARITY	031	SCOPE	+SERVICE-IN (031)
			+GATE BUS IN TO A/B BUFFERS.	ON	101	SCOPE	+BYTE A (202)
			+GATE A BUF TO BUS IN	ON	105	SCOPE	-CS ACK (029)
			+GATE B BUF TO BUS IN	ON	109	SCOPE	-CS ACK (029)
			-RST STAT BITS	ON	330	SCOPE	+SENSE RST (330)
			+PARITY ERROR	OFF	027	SCOPE	-CS ACK (029)
BIT 5 ON	ANY ROUTINE OR SIO	TWO "IN" TAGS UP TOGETHER	STATUS REG BIT 5	OFF	373	I/O MON	04
			-SET COMD OUT+ INTF CHK	OFF	275	SCOPE	+CHNL SEL SEQ (285)
			-SET DISC SS + INT CTRL CHK	OFF	285	SCOPE	+CHNL SEL SEQ (285)
			-SET INTERFACE CTRL CHK	OFF	285	SCOPE	+CHNL SEL SEQ (285)
			CONTROL UNIT IMPROPER SEL SEQUENCE				CHECK CU INTERFACE SEE SEQUENCE CHART.

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 10 ERROR 02-CS NOT CORRECT (BITS ON THAT SHOULD BE OFF)

INSTRUCTIONS:

1) COMPARE ACTUAL AND EXPECTED CS'S TO DETERMINE ERRONEOUS BITS.
2) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE ERROR SYMPTOM.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
BIT 6 ON	ANY ROUTINE OR SIO	SLI FLAG NOT SET	+SUPPRESS LENGTH INDICATION	ON	381	SCOPE	+STATE 3 (351)
			+SET FLAG REG	ON	321	SCOPE	+STATE 3 (351)
		CU ATTEMPTED TO XFER DATA AFTER BYTE=0 OR CU END OCCURED BEFORE BYTE=0	STATUS REG BIT 6	OFF	373	I/O MON	D2 SEE "BC NOT CORRECT"
			BYTE COUNTER				
			+XFER COMPLETE	ON	379	SCOPE	+BYTE COUNTER ZERO (379)
			SERVICE-IN TAG	ON	035	I/O MON	D2
			-DATA XFER + SERV-IN	OFF	271	SCOPE	+XFER COMPLETE FL (271)
			+DATA CHAIN	OFF	381	SCOPE	+XFER COMPLETE FL (271)
			+SET INCORCT LNTH	OFF	281	SCOPE	+STATUS-IN (281)
			-RST STAT BITS	ON	335	SCOPE	+SENSE RST (335)
			STATUS-IN TAG	ON	035	I/O MON	D3
BIT 7 ON	ANY ROUTINE OR SIO	START I/O DID NOT TERMINATE PROPERLY	-TERMINATE I/O SS.	ON	325	SCOPE	+CHANNEL AVAILABLE (325)
			+HALT I/O OR MSTR RESET INCOMPLETE OPERATION	ON	331	SCOPE	+INTERNAL SEE SEQUENCE CHART
BIT 8 ON	ANY ROUTINE OR SIO	IMPROPER ENDING SEQUENCE	PHASE FF'S	1 OFF, 2 ON	291	I/O MON	B3
			-INITIALIZE SEL CHAIN	ON	251	SCOPE	+CHANNEL POLLING (251)

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 11 ERROR 02-US NOT CORRECT (BITS OFF THAT SHOULD BE ON)

INSTRUCTIONS:

1) COMPARE ACTUAL AND EXPECTED UA/US TO DETERMINE FAILING BITS.
2) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE ERROR SYMPTOM.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE MDTS TO VERIFY SEQUENCES AND SCOPE PICTURES.
6) DATA OR CMD MAY BE LEFT IN THE B BUFFER AND INTERPRETED AS US DURING INCOMPLETE OPERATIONS.
7) INSURE THAT THE DEVICE ADDRESS AT THE SEL CHAN IS THE SAME ADDRESS SENT OUT BY THE PROGRAM.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
ANY BITS 0-7 OFF	ANY ROUTINE OR SIO	INCORRECT ADDRESS	A BUFFER	SEE NOTE 7	103-107	I/O MON	C4
			DEV ADDR REG	SEE NOTE 7	121	SCOPE	+XIO CONTROL CYCLE (027)
BITS 8,9,10,11 OFF	NONE	NONE OF THESE BITS SHOULD BE ON					
BITS 12 OR 13 OFF	ANY ROUTINE OR SIO	NO CHANNEL END	B BUFFER BIT 4 OR 5	ON	109	I/O MON	B3
			STATUS-IN TAG	ON	261	I/O MON	B3
			+SET B BFR REG	ON	101	SCOPE	+STATUS-IN (281)
			360 BUS IN BIT 4 OR 5	ON	033	SCOPE	+STATUS-IN (281)
			+GATE BUS IN	ON	101	SCOPE	+STATUS-IN (281)
			-A/B BUF TO BUS IN SENSE. INCOMPLETE OPERATION	ON	335	SCOPE	+XIO DATA CYCLE (335) SEE SEQUENCE CHART
BIT 14 OFF	3-2 UNIT CHECK	INVALID COMMAND NOT DETECTED	B BUFFER	ALL ON	107 109	I/O MON	C4
			B BUFFER BIT 6	ON	109	I/O MON	C5 OR B5
			STATUS-IN TAG	ON	261	I/O MON	C5 OR B5
			+SET B BFR REG	ON	101	SCOPE	+STATE 3 (351)
			+SET B BFR REG	ON	101	SCOPE	+STATUS-IN (281)
			STATE 3	ON	351	I/O MON	B2
			360 BUS IN BIT 6	ON	033	SCOPE	+STATUS-IN (281)
			360 BUS OUT	ALL ON	051	SCOPE	-CHNL SEL SEQ (271)
			-A/B BUF TO BUS IN SENSE INCOMPLETE OPERATION	ON	335	SCOPE	+XIO DATA CYCLE (335) SEE SEQUENCE CHART
		CONTROL UNIT IS NOT A 2841 OR 2848.					SET DFT TABLE 0 OPTION TO BYPASS THIS ROUTINE.
BIT 15 OFF	NONE	THIS BIT SHOULD NOT BE ON.					

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 12 ERROR 02-US NOT CORRECT (BITS ON THAT SHOULD BE OFF)

INSTRUCTIONS:

1) COMPARE ACTUAL AND EXPECTED UA/US TO DETERMINE ERRONEOUS BITS.
2) DETERMINE FAILING ROUTINE FROM FIRST ERROR MESSAGE.
3) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
4) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE FAILURE.
5) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
6) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
7) FOLLOW ANY INSTRUCTIONS UNIQUE TO THE FAILURE.
8) DATA OR CMD MAY BE LEFT IN THE B BUFFER AND INTERPRETED AS US DURING INCOMPLETE OPERATIONS.
9) INSURE THAT THE DEVICE-ADDRESS AT THE SEL CHAN IS THE SAME ADDRESS SENT OUT BY THE PROGRAM.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
ANY BITS 0-7 ON	ANY ROUTINE OR SIO	INCORRECT ADDRESS	A BUFFER	SEE NOTE 9	103-107	I/O MON	C4
			DEV ADDR REG	SEE NOTE 9	121	SCOPE	+XIO CONTROL CYCLE (027)
BITS 8,9,10,11 ON	ANY ROUTINE OR SIO	INCORRECT STATUS FROM CONTROL UNIT	B BUFFER BITS 0, 1,2,3	OFF	107	I/O MON	C5
			360 BUS IN BITS 0,1,2,3	OFF	033	SCOPE	+STATUS-IN (281)
		INCOMPLETE OPERATION	CU/DEVICE				CHECK SENSE BYTES FOR CU OR DEVICE FAILURE SEE SEQUENCE CHART
BITS 12 AND 13 ON	3-1 NOT OPER	WITH CSW BIT 0 ON: CHANNEL/DEVICE END FROM A NOT OPER CONTROL UNIT	B BUFFER BITS 4 AND 5	OFF	109	I/O MON	B3
			360 BUS IN BITS 4 AND 5	OFF	033	SCOPE	STATUS-IN (281) CHECK CONTROL UNIT
		WITH CSW BIT 0 OFF: CU DECODED AN INVALID ADDRESS.					SEE "US NOT CORRECT" (BITS OFF THAT SHOULD BE ON) BIT 0; ROUTINE 3-1
	3-2 CMD REJECT	WITH US BIT 14 ON: CHANNEL/DEVICE END FOLLOWING AN INVALID COMMAND	B BUFFER BIT 6	OFF	109	I/O MON	C5
			360 BUS IN BIT 6	OFF	033	SCOPE	+STATUS-IN (281)
		WITH US BIT 14 OFF: AN INVALID COMMAND WAS NOT DETECTED.					CHECK CONTROL UNIT SEE "US NOT CORRECT" (BITS OFF THAT SHOULD BE ON) BIT 14; ROUTINE 3-2

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 13 ERROR 02-US NOT CORRECT (BITS ON THAT SHOULD BE OFF)

INSTRUCTIONS:

1) COMPARE ACTUAL AND EXPECTED CSW'S TO DETERMINE FAILING BITS.
2) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE FAILURE.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
6) DATA OR CMD MAY BE LEFT IN THE B BUFFER AND INTERPRETED AS US DURING INCOMPLETE OPERATIONS.
7) IF BOTH 14 AND 15 ARE ON, BEGIN WITH BIT 15.
8) INSURE THAT THE COMMAND IN THE B BUFFER IS THE SAME COMMAND SENT OUT BY THE PROGRAM AND IS IN PROPER PARITY.

(1) ERROR SYMPTONS	(2) FAILING FUNCTION OR OFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MDM SETUP OR SCOPE SYNC POINT
BIT 14 ON	ANY ROUTINE OR SIO	COMMAND O.K.; ERRONEOUS US BIT	B BUFFER BIT 6	OFF	107 109 033	I/O MDM SCOPE	B3 AND C5 +STATUS-IN (281) CHECK CONTROL UNIT
		CU RECEIVED A COMMAND IT CAN NOT EXECUTE OR CMD IS IN BAD PARITY	360 BUS IN BIT 6	OFF			
			360 BUS OUT	SEE NOTE 8	033 069	SCOPE	CHECK DEVICE -CHNL SEL SEQ (271)
			B BUFFER	SEE NOTE 8	107 109	I/O MDM	C4
			+GATE BUS OUT TO B BFR COMMAND DECODE	ON	101	SCOPE	+STATE 3 (351) CHECK CONTROL UNIT
BIT 15 ON	ANY ROUTINE OR SIO	ERRONEOUS INDICATION OF AN END-OF-FILE CONDITION	B BUFFER BIT 7	OFF	107 109 033	I/O MDM SCOPE	B3 +STATUS-IN (281)
			360 BUS IN BIT 7	OFF			

SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHART-SHEET 14

ERROR 03-MISCELLANEOUS ERROR MESSAGES

INSTRUCTIONS:

1) DETERMINE FAILING ROUTINE FROM THE FIRST ERROR MESSAGE.
2) LOOP ON FAILING ROUTINE OR FUNCTION; BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE FAILING ROUTINE.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE MDM'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
6) FOLLOW ANY INSTRUCTIONS UNIQUE TO THE FAILURE.
7) SEE MDM'S TO DETERMINE TIMING OF A/B COMPLETE AND BYTE A/B.

(1) ERROR SYMPTONS	(2) FAILING FUNCTION OR DFT ROUTINE	(3) PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
CHANNEL DIDN'T GO BUSY ON TIC TO SENSE	3-3 TIC	FAILED TO TIC	TIC FL	ON	321	I/O MON	C1
			STATE 3	ON	351	I/O MON	B2
			STATE DELTA 2	ON	345	SCOPE	+TIC FL (345)
		CCW ADDRESS WRONG					SEE "AD NOT CORRECT"
		COMMAND AT "TIC TO" ADDRESS IS INVALID THIS SHOULD CAUSE US BIT 14 TO COME ON					CHECK PROGRAM SEE "US NOT CORRECT" (BITS ON THAT SHOULD BE OFF) BIT 14
		FAILURE TO COMMAND CHAIN TO TIC	COMMAND CHAIN FLAG	ON	381	SCOPE	+STATE 3 (351)
			XFER CCW FL	ON	315	I/O MON	C1
			STATE DELTA 3	ON	345	SCOPE	+STATE 2 (345)
			STATE DELTA 1	ON	361	SCOPE	+CHANNEL AVAILABLE (361)
DATA NOT XFERRED TO CORE	ANY "XFER IN" SIO	IMPROPER DATA GATING					SEE SEQUENCE CHART
			-A/B BUF TO BUS IN XFER IN	ON	325	SCOPE	+CS ACKNOWLEDGE (325)
			A/B COMPLETE	SEE NOTE 7	221	SCOPE	+SERVICE-IN (035)
			CS DELAY FL	ON	315	SCOPE	+SERVICE-IN (035)
			+SKIP FL	OFF	381	SCOPE	+SERVICE-IN (035)
			BYTE A/B FL	SEE NOTE 7	285	SCOPE	+A COMPLETE (221)
			-SET CS CTRL 2	ON	331	SCOPE	+STATE 6 (361)
		INCOMPLETE SELECTION SEQUENCE					SEE SEQUENCE CHART
	2-1 DATA CHAIN	CONTROL UNIT IS NOT A 2841 OR 2848					SET DFT TABLE 0 OPTION TO BYPASS THIS ROUTINE

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SELECTOR CHANNEL MAINTENANCE

PROCEDURES FOR THE IBM 1800 SYSTEM

SYMPTOM REFERENCE CHAR-SHEET 15 ERROR 03-MISCELLANEOUS ERROR MESSAGES

INSTRUCTIONS:

1) DETERMINE FAILING ROUTINE FROM FIRST ERROR MESSAGE.
2) LOOP ON FAILING ROUTINE OR FUNCTION. BYPASS PRINTOUTS.
3) CHECK ALL CIRCUITS LISTED FOR THE APPLICABLE FAILING ROUTINE.
4) REFER TO LISTED ALD PAGES OR TEST POINT LABEL ON GATE FOR SCOPE AND SYNC PINS.
5) USE MON'S TO VERIFY SEQUENCES AND SCOPE PICTURES.
6) FOLLOW ANY INSTRUCTIONS UNIQUE TO THE FAILURE.

(1) ERROR SYMPTOMS	(2) FAILING FUNCTION OR DFT ROUTINE	PROBABLE FAILURE	(4) POSSIBLE FAILING CIRCUITS	(5) PROPER CIRCUIT STATUS	(6) ALD	(7) MEANS OF CHECKING CIRCUIT	(8) I/O MON SETUP OR SCOPE SYNC POINT
STORAGE PROTECTED AREA WAS CHANGED	1=9 DATA CHECK	INPUT AREA WAS MODIFIED DURING A SENSE COMMAND	WRITE STORAGE PROTECT BITS SWITCH. STORAGE PROTECT BIT/CIRCUITS FAILING.	YES			CONSOLE CORE/CPU FAILURE
COMMAND REJ NOT SET	3=8 CMD REJ.	US BIT 14 WAS NOT TURNED ON AFTER ISSUING A COMMAND OF/FF					SEE "US NOT CORRECT" (BITS OFF THAT SHOULD BE ON) BIT 14 OFF
DATA XFERRED TO CORE	2=5 SKIP	CONTROL UNIT CAN ACCEPT A COMMAND OF/FF		SET DFT TABLE B OPTION TO BYPASS THIS ROUTINE.			
		SKIP FLAG FAILED	STATE 3	ON	351	I/O MON	D2
			+SET SKIP REQ	ON	329	SCOPE	+STATE 3 (351)
			+SKIP FL	ON	301	SCOPE	+STATE 3 (351)
			-SET CC REQ DLY AND B REQ	OFF	271	SCOPE	+BYTE B (271)
			-CS REQUEST FL	OFF	315	I/O MON	D2

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SELECTOR CHANNEL MAINTENANCE
PROCEDURES FOR THE IBM 1090 SYSTEM

SEQUENCE CHART

NOTE: THIS CHART IS VALID ONLY FOR START I/O'S (X10 INITIALIZE WRITE)

INSTRUCTIONS:

1) LOOP ON A FAILING ROUTINE OR FUNCTION AND BYPASS PRINTOUTS.
2) CHECK EACH CONDITION USING THE I/O MONITOR SETUP GIVEN.
3) BEGIN SCOPING ON THE FIRST ERRONEOUS CONDITION FOUND.
4) CHECK ONLY THE CONDITIONS LISTED FOR EACH STEP. WHEN AN ERRONEOUS CONDITION IS FOUND, COMPARE THE REMAINING LIGHTS WITH THE I/O MONITOR SETUP CALLED OUT ON THAT STEP.
5) FAILURE OF THE I/O MONITOR TO LOCK INDICATES A FAILURE OF A "CU" DISPLAY CONDITION. BEGIN SCOPING ON THAT CONDITION.
6) READ ALL SPECIAL NOTES AND COMMENTS WITHIN THE CHART.

STEP	CONDITION	ALD	I/O MON SETUP	I/O MON LIGHT	PROPER STATUS	PAGE	COMMENTS
1	PHASE COUNTERS	201	A1 (RESET)	A16-A17	BOTH OFF		CHANNEL POLLING
2	AREA DECODE	311	NOT DISPLAYED				
3	FUNCTION DECODE	371	B1 OR B4	A3	OFF		
4	BUSY SET	373	B2 (STATE 1)	A8	ON	30140	CSW BIT 3 (DISPLAY SELECT SWITCH 3 ON)
5	STATES 2 AND 3 SET	375	B?	C2 & C3	ON	30140	CSW BIT 7 (DISPLAY SELECT SWITCH 3 ON)
6	STATE 4 SET	371	C2	C4	ON	30140	
7	READY LATCH SET	315	C2	A10	ON	30170	
8	PHASE COUNTERS	201	C2	A16-A17	1 ON, 2 OFF	30190	SELECTION SEQUENCE
9	SELECT OUT	377	C2	B1	ON	30190	
10	ADDRESS OUT	377	C2	D2	ON	30190	
11	CARD ADDRESS FROM A BIT	103	C4	A1-A9	VALID ADDR	30190	DISPLAY SELECT SWITCH 1 ON
12	OPERATIONAL IN	205	C4	D7	ON	30190	
13	ADDRESS IN	035	C4	D3	ON	30190	
14	ADDRESS EQUAL	171	NOT DISPLAYED				
15	COMMAND OUT	377	C4	D?	ON	30190	

* COMPARE ALL LIGHTS ON THE I/O MONITOR WITH SETUP SHEET C5 OR D5 BEFORE CONTINUING. BEGIN SCOPING ON ANY IMPROPER LINE OR LATCH.

* SKIP STEPS 16 THRU 37 IF THE LOCKED START I/O DOES NOT INVOLVE DATA XFER.

16	PHASE COUNTERS	201	C5 OR D5	A16-A17	1 OFF, 2 ON	30190	STATUS XFER
17	STATUS IN	035	C5 OR D5	B9	ON	30200	
18	SERVICE OUT	379	C5 OR D5	B4	ON	30200	
19	STATUS TO B REG	107	C5 OR D5	A1-A9	/00	30200	DISPLAY SELECT SWITCH 2 ON

* COMPARE ALL LIGHTS ON THE I/O MONITOR WITH SETUP SHEET C5 OR D5 BEFORE CONTINUING. BEGIN SCOPING ON ANY IMPROPER LINE OR LATCH

20	PHASE COUNTERS	201	B1	A16-A17	BOTH ON	30210	DATA XFER

SELECTOR CHANNEL MAINTENANCE
PROCEDURES FOR THE IBM 1800 SYSTEM

SEQUENCE CHART (CONT)

21	[illegible]	379	D1	A9	ON	30210	DISPLAY SELECT SWITCH 3 ON
22	TRANSFER BYTE A	285	D1	B15	ON	30210	SWITCH B15 ON
23	SERVICE IN	035	D1	B10	ON	30210	
24	SET DATA IN A BFR	103	D1	A1-A9	ODD PARITY	30210	
25	SERVICE OUT	379	D1	B4	ON	30210	DISPLAY SELECT SWITCH 1 ON

* SKIP TO STEP 30 IF THE BYTE COUNT IS EQUAL TO 1 *

26	TRANSFER BYTE B	285	D1	B15	[illegible]	30220	SWITCH B15 OFF
27	SERVICE IN	035	D1	B10	ON	30220	
28	SET DATA IN B BFR	107	D1	A1-A9	ODD PARITY	30220	
29	SERVICE OUT	379	D1	B4	ON	30220	

* COMPARE ALL LIGHTS ON THE I/O MONITOR WITH SETUP SHEET D1 BEFORE CONTINUING. BEGIN SCOPING ON ANY IMPROPER LINE OR LATCH *

30	SET CS DELAY FL	315	NOT DISPLAYED				
31	SET CS REQUEST FL	315	D2	A10	ON	30230	
32	CS [illegible]K FROM CHANNEL	029	D2	A11	ON	30230	
33	STATE 6 SET	361	D2	C6	ON	30230	
34	XFER DATA [illegible]	373	D2	A5	OFF	30230	
35	BYTE COUNT [illegible]	159	D2	A12	ON	30230	DISPLAY SELECT SWITCH 2 ON NOT ON IF CU IS [illegible]
36	SET XFER COMPLETE FL	379	NOT DISPLAYED				
37	COMMAND OUT	377	D2	[illegible]	ON	30200	[illegible]

* COMPARE ALL LIGHTS ON THE I/O MONITOR WITH SETUP SHEET D2 BEFORE CONTINUING. BEGIN SCOPING ON ANY IMPROPER LINE OR LATCH *

38	[illegible] COUNTERS	201	B3 CR B5	A16-A17	1 OCT, [illegible]	30260	[illegible]
39	STATUS IN	035	B3 CR B5	B5	ON	30260	
40	[illegible]	107	B3 CR B5	A1-A9	[illegible]	30260	DISPLAY SELECT SWITCH 2 ON
41	[illegible]	145	B3 CR B5	A14-A5	[illegible]	30260	DISPLAY SELECT SWITCH 1 ON
42	SERVICE OUT	379	B3 CR B5	B4	ON	30260	
43	SET UNIT [illegible]	371	B3 CR B5	A2	ON	30260	DISPLAY SELECT SWITCH 3 ON
44	[illegible]	311	NOT DISPLAYED				
45	[illegible]	311	NOT DISPLAYED				

* COMPARE ALL LIGHTS ON THE I/O MONITOR WITH SETUP SHEET D3 OR B5 BEFORE CONTINUING. BEGIN SCOPING ON ANY IMPROPER LINE OR LATCH *

END OF DOCUMENT