XDS 901682A

$5.50

DIAGNOSTIC PROGRAM MANUAL

SIGMA 5 AND 7 7-CHANNEL MAGNETIC TAPE TEST

PROGRAM NO. 705735A

August 1970

Prepared by
Field Engineering Publications

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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
1						TITLE	'SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70'	

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0   12:04  DEC 31, '99          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          2
     2
     3                                .        SYSTEM   SIG7FDP
     4   01 00300                             ORG      X'300'
         01 00300
     5                          *                                                                  *
     6                          *                                                                  *
     7                          *                                                                  *
     8                          * CATALOG NO. 705735                                               *
     9                          * ----------------                                                 *
    10                          * MANUAL:     901682                                               *
    11                          * ----------------                                                 *
    12                          *                                                                  *
    13                          * PROGRAM OBJECTIVE                                                *
    14                          * ----------------                                                 *
    15                          *                                                                  *
    16                          * THE PROGRAM PROVIDES A COMPREHENSIVE SET OF TESTS DESIGNED TO     *
    17                          * DETECT SOLID LOGIC FAILURES AND TO ISOLATE FAILURES TO A          *
    18                          * SPECIFIC FUNCTION. THE RANDOM EXERCISER PART OF THE TEST          *
    19                          * PROGRAM WILL AID IN THE DETECTION OF INTERMITTENT FAILURES.       *
    20                          *                                                                  *
    21                          * PROGRAM MODIFICACTION                                             *
    22                          * --------------------                                             *
    23                          *        NONE                                                      *
    24                          *                                                                  *
    25                          * OPERATING REQUIREMENTS AND SPECIFICATIONS                         *
    26                          * ----------------------------------------                         *
    27                          *                                                                  *
    28                          * REQUIRED EQUIPMENT                                               *
    29                          *                                                                  *
    30                          *        SIGMA 5/7 WITH 16K MINIMUM MEMORY                         *
    31                          *        MAGNETIC TAPE STATIONS (7362,7372) AND CONTROLLER (7361/  *
    32                          *        7365/7371/7374).                                          *
    33                          *        CARD READER, PAPER-TAPE READER OR MAGNETIC TAPE UNIT FOR  *
    34                          *        PROGRAM INPUT.                                            *
    35                          *        KEYBOARD PRINTER OR LINE PRINTER FOR MESSAGE OUTPUT       *
    36                          *                                                                  *
    37                          * OPTIONAL EQUIPMENT                                               *
    38                          *                                                                  *
    39                          *        NONE                                                      *
    40                          *                                                                  *
    41                          * PROGRAM PREREQUSITES                                             *
    42                          *                                                                  *
    43                          *        THE CPU AND I/O PROCESSOR AS WELL AS THE PROGRAM INPUT AND *
    44                          *        MESSAGE OUTPUT DEVICE MUST BE OPERATIONAL.                *
    45                          *                                                                  *
    46                          * CORE STORAGE                                                     *
    47                          *                                                                  *
    48                          *        LOCATIONS REQUIRED FROM X'0040'                           *
    49                          *                              TO X'----'                          *
    50                          *                                                                  *
    51                          * RUN TIME                                                         *
    52                          *                                                                  *
    53                          *        FUNCTIONAL TESTS: 9.0 MUNITES FOR ONE SUCCESSFUL PASS ON ONE *
    54                          *                          PASS ON ONE DEVICE. THIS EXCLUDES THE END *
    55                          *                          OF TAPE TEST AND ALL TESTS THAT REQUIRE   *
    56                          *                          OPERATOR INTERVENTION.                    *
    57                          *                                                                    *
    58                          *        RANDOM EXERCISER: RUN TIME IS A FUCTION OF THE NUMBER OF    *
    59                          *                          DEVICES AND THE NUMBER OF CYCLES REQUESTED. *
    60                          *                                                                    *
    61                          *        UTILITY TESTS:    RUN TIME IS A FUNCTION OF THE NUMBER OF   *
    62                          *                          DEVICES AND THE NUMBER OF CYCLES REQUESTED *
    63                          *                          IN THE TAPE TEST. THE SYNC ON A CHARACTER  *
    64                          *                          AND DESKEW TEST HAVE NO TIME LIMIT. THE    *
    65                          *                          COMPATABILITY AND NOISE TEST WILL RUN 9.0  *
    66                          *                          MINUTES PER DEVICE FOR THE WRITE/READ      *
    67                          *                          PASS AND 5.0 MINUTES ON WRITE ONLY OR READ *
    68                          *                          ONLY PASS.                                 *
    69                          *                                                                  *
    70                          * PROGRAM MEDIA                                                   *
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS

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0    12:04  DEC 31, '99          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          3
     71                       *
     72                       *        80-COLUMN CARDS, 8-LEVEL PAPER TAPE OR MAGNETIC TAPE.
     73                       *
     74                       * SOURCE LANGUAGE
     75                       *
     76                       *        SIGMA 5/7 METASYMBOL
     77                       *
     78                       * LOADING PROCEDURES
     79                       *
     80                       *        LOADING PROCEDURE IS DEFINED IN THE DIAGNOSTIC PROGRAM
     81                       *        MONITOR MANUAL NO. 901649.
     82                       *        A SUCCESSFUL LOAD OPERATION IS INDICATED BY THE TITLE PRINTOUT
     83                       *        OF THE THIS TEST PROGRAM.
     84                       *
     85                       * OPERATING PROCEDURE
     86                       *
     87                       *        CONTROL OPTIONS
     88                       *
     89                       *                 PROGRAM CONTROL OPTIONS ARE SELECTED WITH THE
     90                       *                 PROCESSOR CONTROL PANEL SENSE SWITCHES 1,3,4
     91                       *                 (SENSE SWITCH 2 IS UNUSED)
     92                       *
     93                       *         SSW1      SSW3
     94                       *        POSITION  POSITION
     95                       *
     96                       *        0 OR 1       0      THE PROGRAM COMES TO A WAIT AFTER ERROR
     97                       *                            PRINTOUT(S) DURING EXECUTION OF FUNCTION OF
     98                       *                            FUNCTIONAL TESTS (TST1) AND AFTER
     99                       *                            COMPLETION OF THE SELECTED TESTS.
    100                       *                            INCREMENTING THE PROGRAM ADDRESS (PCP
    101                       *                            INSTRUCTION ADDRESS INCREMENT) AFTER THE
    102                       *                            WAIT INSTRUCTION CAUSES THE PROGRAM TO
    103                       *                            CONTINUE WITHOUT LOOPING.
    104                       *
    105                       *           0         1      THE PROGRAM CONTINUES WITHOUT WAITING OR
    106                       *                            WITHOUT FUNCTIONAL TEST ERROR LOOPING.
    107                       *
    108                       *           1         1      THE PROGRAM PRINTS THE ERROR MESSAGE(S) AND
    109                       *                            LOOPS (WITHOUT WAITING) ON THE ERROR
    110                       *                            PRODUCING INSTRUCTION SEQUENCE. THE PROGRAM
    111                       *                            ALSO LOOPS (WITHOUT WAITING) ON THE
    112                       *                            SELECTED TEST.
    113                       *
    114                       *         SSW4
    115                       *        POSITION
    116                       *
    117                       *           0              THE PROGRAM PRINTS ALL MESSAGES.
    118                       *
    119                       *           1              THE PROGRAM INHIBITS ALL PRINTOUTS. DPM
    120                       *                          MESSAGE CANNOT BE SUPPRESSED.
    121                       *
    122                       * TABLE OF ALL DIRECTIVES
    123                       * THE DATA STATEMENT FOLLOWING EACH DIRECTIVE NAME PRODUCES A MEMORY
    124                       * ADDRESS IN THE MEMORY-CONTENTS-COLUMN WHICH CAN BE USED TO LOCATE
    125                       * THE PROGRAM CODING FOR THE DIRECTIVE. THE CODING FOR EACH DIRECTIVE
    126                       * IS PRECEDED BY A DESCRIPTION OF THE DIRECTIVE AND ITS PARAMETERS.
    127                       *
    128                       * MNEMONICS      DESCRIPTION
    129                       * ** SYST **     THE DIRECTIVE DESCRIBES THE SYSTEM ENVIRONMENT
    130                       *               INTERMIXING OF TAPE STATIONS OF 37.5 IPS AND 75 IPS
    131                       *               DURING THE EXECUTION OF THE FUNCTIONAL TESTS IS NOT
    132                       *               ALLOWED.
    133                       *
    134                       *               PARAMETERS D1 DEVICE STATION NUMBERS 7362,7365 (37.5
    135                       *               ----------      IPS) OR 7372,7374(75 IPS)
    136                       *                         D2 0
    137                       *                         D3 DEVICE ADDRESS (1ST)
    138                       *                         D4 DEVICE ADDRESS (2ND)
    139                       *                         D5 DEVICE ADDRESS (3RD)
    140                       *                         D6 DEVICE ADDRESS (4TH)
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| LINE NO. | MEM PROT KEY | MEMORY ADDRESS | MEMORY CONTENTS | ORIG | LABEL | OPERATION | OPERAND | COMMENTS |

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          4
   141                                                                                              *
   142                                                                  D7 DEVICE ADDRESS (5TH)     *
   143                                                                  D8 DEVICE ADDRESS (6TH)     *
   144                                                                  D9 DEVICE ADDRESS (7TH)     *
   145                                                                 D10 DEVICE ADDRESS (8TH)     *
   146                                                                                              *
   147                                                 EXAMPLE    SYST,7372,0,81,83,87              *
   148                                                 -------                                      *
   149                                                                                              *
   150                                                                     TAPE DEVICES 81, 83, 87 ON 7372(75 IPS)*
   151                                                                                              *
   152                                                 EXAMPLE   SYST,7362,0,80                     *
   153                                                 -------                                      *
   154                                                                                              *
   155                                                                     TAPE DEVICE 80 ON 7362 (37.5 IPS)
   156                                                                                              *
   157                                                 ** TST0 **     THE DIRECTIVE SELECTS THE COMPREHENSIVE TEST
   158                                                                CONSISTING OF THE FUNCTIONAL TEST (TESTS 1 -37)
   159                                                                AND THE RANDOM EXERCISER TEST.
   160  01 00300    0000047F 02  TST0ADDR DATA          TST0                                        *
   161                                                                                              *
   162                                                 PARAMETERS D1 NUMBER OF LOOPS ON THE RANDOM EXERCISER
   163                                                 ---------- D2 NUMBER OF RETRIES ON THE RANDOM
   164                                                                   EXERCISER.                 *
   165                                                                                              *
   166                                                 EXAMPLE    TST0,1000,5                       *
   167                                                 -------                                      *
   168                                                                     THE FUNCTIONAL TEST WILL BE RUN ON ALL
   169                                                                     DEVICES SPECIFIED IN THE SEQUENCE
   170                                                                     ENTERED IN THE SYST DIRECTIVE.
   171                                                                     THE RANDOM EXERCISER WILL TEST ALL
   172                                                                     DEVICES CONCURRENTLY UNTIL 1000 PASSES
   173                                                                     HAVE BEEN MADE. READ OR WRITE OPERATIONS
   174                                                                     WILL BE RETRIED 5 TIMES IF TE FAILURES
   175                                                                     ARE ENCOUNTERED.           *
   176                                                                                              *
   177                                                 ** TST1 **     THE DIRECTIVE SELECTS THE ENTIRE FUNCTIONAL TEST (NO
   178                                                                PARAMETERS ENTERED) OR SELECTS ONE OR MORE FUNCTIONAL
   179                                                                SUBTESTS.
   180  01 00301    00000498 02  TST1ADDR DATA          TST1                                        *
   181                                                                                              *
   182                                                 PARAMETERS D1 FIRST FUNCTIONAL SUBTEST
   183                                                 ---------- D2 LAST FUNCTIONAL SUBTEST
   184                                                                                              *
   185                                                            WHERE 0 <D1 <=D2 <=41             *
   186                                                                                              *
   187                                                 EXAMPLES   TST1,0,0                          *
   188                                                 --------                                     *
   189                                                                                              *
   190                                                                     RUN ALL FUNCTIONAL TESTS *
   191                                                                                              *
   192                                                            TST1,24,27                        *
   193                                                                                              *
   194                                                                     RUN FUNCTIONAL TESTS 24 THRU 27
   195                                                                                              *
   196                                                 ** TST2 **     THE DIRECTIVE SELECTS THE RANDOM EXERCISER TEST
   197                                                                                              *
   198  01 00302    000004DD 02  TST2ADDR DATA          TST2                                        *
   199                                                 PARAMETERS D1 NUMBER OF PASSES TO BE EXECUTED BY
   200                                                 ----------    RANDOM EXERCISER
   201                                                            D2 NUMBER OF RETRIES IF TE FAILURES ARE
   202                                                               ENCOUNTERED IN THE RANDOM EXERCISER.
   203                                                                                              *
   204                                                 ** TST3 **     THE DIRECTIVE SELECTS ONE OF THE UTILITY PROGRAMS.
   205                                                                                              *
   206  01 00303    000004F8 02  TST3ADDR DATA          TST3                                        *
   207                                                 PARAMETERS D1 UTILITY TEST SELECTION
   208                                                 ---------- D2 OPERATIONS REQUESTED ACCORDING TO TEST
   209                                                            D3 PARAMETER REQUESTED ACCORDING TO TEST
   210                                                            D4 PARAMETER REQUESTED ACCORDING TO TEST
   211                                                                                              *
   212                                                            D1 1 TAPE TEST                    *
   213  01 00304    0000125F 02  TST31ADR DATA          TST31                                       *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          5
                                                                                                    *
   211                                                                                              *
   212                                                                                              *
   213                                                                                              *
   214                                                                                              *
   215                                                                                              *
   216                                                                                              *
   217                                                                                              *
   218                                                                                              *
   219                                                                                              *
   220                                                                                              *
   221                                                                                              *
   222                                                                                              *
   223                                                                                              *
   224                                                                                              *
   225                                                                                              *
   226                                                                                              *
   227                                                                                              *
   228                                                                                              *
   229                                                                                              *
   230   01 00305     000013A9 02  TST32ADR DATA      TST32                                         *
   231                                                                                              *
   232                                                                                              *
   233                                                                                              *
   234                                                                                              *
   235                                                                                              *
   236                                                                                              *
   237                                                                                              *
   238                                                                                              *
   239   01 00306     00001403 02  TST33ADR DATA      TST33                                         *
   240                                                                                              *
   241                                                                                              *
   242                                                                                              *
   243                                                                                              *
   244                                                                                              *
   245                                                                                              *
   246                                                                                              *
   247                                                                                              *
   248   01 00307     00001456 02  TST34ADR DATA      TST34                                         *
   249                                                                                              *
   250                                                                                              *
   251                                                                                              *
   252                                                                                              *
   253                                                                                              *
   254                                                                                              *
   255                                                                                              *
   256                                                                                              *
   257                                                                                              *
   258                                                                                              *
   259                                                                                              *
   260                                                                                              *
   261   01 00308     000014D9 02  TST35ADR DATA      TST35                                         *
   262                                                                                              *
   263                                                                                              *
   264                                                                                              *
   265                                                                                              *
   266                                                                                              *
   267                                                                                              *
   268                                                                                              *
   269                                                                                              *
   270                                                                                              *
   271                                                                                              *
   272                                                                                              *
   273                                                                                              *
   274                                                                                              *
   275                                                                                              *
   276                                                                                              *
   277                                                                                              *
   278                                                                                              *
   279                                                                                              *
   280                                                                                              *
```

```
D2 0 WRITE,REWIND,READ FORWARD,SPACE                                                                *
       BACKWARD D3 RECORDS.                                                                         *
     1 WRITE D3 RECORDS.                                                                            *
     2 READ FORWARD D3 RECORDS.                                                                     *
     3 SPACE BACKWARD D3 RECORDS.                                                                   *
     4 READ FORWARD AND SPACE BACKWARD D3                                                           *
       RECORDS IN SEQUENCE.                                                                         *
     8 WRITE, REWIND, READ FWD, SPACE BKW                                                           *
       D3 RECORDS (BCD).                                                                            *
     9 WTITE D3 RECORDS (BCD).                                                                      *
    10 READ FWD D3 RECORDS (BCD).                                                                   *
    12 READ FWD, SPACE BKW D3 RECORDS(BCD)                                                          *
D3 NUMBER OF RECORDS TO BE WRITTEN OR                                                               *
     READ. IF D3 =0 CONTINUE UNTIL EOT                                                              *
     OR BOT IS REACHED.                                                                             *
D4 DELAY IN MILLISECONDS BETWEEN                                                                    *
     OPERATION SETS.                                                                                *
                                                                                                    *
D1 2 DESKEW TEST                                                                                    *
                                                                                                    *
   D2 0,1 WRITE UNTIL EOT IS REACHED AND                                                            *
        REWIND.                                                                                     *
     2 READ FORWARD UTIL EOT AND REWIND.                                                            *
     3 SPACE BACKWARD UNTIL BOT IS REACHED                                                          *
   D3 NOT USED                                                                                      *
   D4 NOT USED                                                                                      *
                                                                                                    *
D1 3 SYNC ON A CHARACTER TEST                                                                       *
                                                                                                    *
   D2 1 READ FORWARD AND SPACE RECORD                                                               *
        BACKWARD.                                                                                   *
     2 SPACE BACKWARD AND SPACE RECORD                                                              *
        FORWARD.                                                                                    *
   D3 BYTE TO SYNC ON.                                                                              *
   D4 DELAY IN MILLISECONDS BETWEEN SYNCS.                                                          *
                                                                                                    *
D1 4 COMPATABILITY AND NOISE PATTERN TEST                                                           *
                                                                                                    *
   D2 0,1 WRITE,SPACE BACKWARD,AND READ                                                             *
        FORWARD ALL RECORDS.                                                                        *
     2 SPACE FORWARD,SPACE BACKWARD,READ                                                            *
        FORWARD ALL RECORDS.                                                                        *
     3 READ FORWARD,SPACE BACKWARD,SPACE                                                            *
        FORWARD ALL RECORDS.                                                                        *
     4 READ FORWARD ALL RECORDS.                                                                    *
     5 WRITE ALL RECORDS.                                                                           *
   D3 NOT USED                                                                                      *
   D4 NOT USED                                                                                      *
                                                                                                    *
D1 5 READ/SPACE TEST                                                                                *
                                                                                                    *
D2 0 REWIND AND READ FWD N RECORDS.                                                                 *
   1 REWIND AND SPACE FWD N RECORDS.                                                                *
   2 DONT REWIND, READ FWD N RECORDS                                                                *
   3 DONT REWIND, SPACE FWD N RECORDS.                                                              *
   4 DONT REWIND, SPACE BKW N RECORDS.                                                              *
   8 REWIND, READ FWD N RECORDS WITH EVEN                                                           *
     PARITY, DECIMAL (BCD).                                                                         *
  10 DONT REWIND, READ FWD WITH EVEN PARITY                                                         *
     PARITY, DECIMAL (BCD).                                                                         *
D3 NUMBER OF RECORDS TO READ OR SPACE                                                               *
D4 0 DONT PRINTOUT RECORD                                                                           *
   1 PRINTOUT RECORD IN ERROR.                                                                      *
   2 PRINTOUT NTH RECORD.                                                                           *
                                                                                                    *
EXAMPLES   TST3,1,1,1000,5                                                                          *
--------                                                                                            *
WRITE 1000 RECORDS WITH A 5 MILLISECOND                                                             *
DELAY AFTER EACH WRITE OPERATION                                                                    *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          6
LINE NO. | MEM PROT KEY | MEMORY ADDRESS | MEMORY CONTENTS | ORIG | LABEL | OPERATION | OPERAND | COMMENTS
   281                                                                  TST3,2,2
   282
   283                                                                  READ FORWARD UNTIL EOT AND REWIND
   284
   285                                                                  TST3,3,1,375,10
   286
   287                                                                  READ FORWARD 375 BYTES, SIGNAL (TDV) AND
   288                                                                  DELAY 10 MILLISECONDS. SPACE BACKWARD.
   289
   290                                                                  TST3,4,5
   291
   292                                                                  WRITE ALL RECORDS.
   293
   294                                                                  TST3,5,0,100,1
   295
   296                                                                  REWIND,READ 100 RECORDS.PRINT OUT ERROR REC
   297
   298
   299                          * ** DATA **      THE DIRECTIVE SELECTS A PATTERN TYPE TO BE USED
   300                          *                 DURING THE TAPE TEST (TST3,1 ONLY).
   301   01 00309  00000535 02  DATAADDR DATA      DATTA
   302                          *
   303                          *                 PARAMETERS D1 PATTERN TYPE
   304                          *                 ----------    0 FIXED PATTERN
   305                          *                               2 RANDOM PATTERN
   306                          *                               5 BIT CROWDING PATTERN
   307                          *                 D2 IF D1 =0 FIXED PATTERN
   308                          *                    IF D1 =2 RANDOM PATTERN SEED
   309                          *                    IF D1 =5 TWO TRACK NUMBERS
   310                          *                 D3 IF D1 =5 BYTE STRING FOR 1ST TRACK
   311                          *                 D4 IF D1 =5 BYTE STRING FOR 2ND TRACK
   312                          *
   313                          *                 EXAMPLES  DATA,2,12876541
   314                          *                 --------
   315                          *
   316                          *                           GENEATE RANDOM PATTERN STARTING WITH SEED
   317                          *                           12876541.
   318                          *
   319                          *                           DATA,5,36,FF00FF00,00FF00FF
   320                          *
   321                          *                           GENERATE A BIT STRING FF00FF00 ON TRACK 3,
   322                          *                           GENERATE A BIT STRING 00FF00FF ON TRACK 6
   323                          *
   324                          * ** LIMT **        THE DIRECTIVE LIMITS SPECIFIC OPERATIONS DURING
   325                          *                   EXECUTION OF THE TEST.
   326   01 0030A  0000055D 02  LIMTADDR DATA       :LIMIT
   327                          *
   328                          *                 PARAMETERS D1 LIMIT TYPE
   329                          *                 ---------- D2 LIMIT COUNT
   330                          *
   331                          *                           D1 1 LIMIT COMPARE ERROR PRINTOUT
   332                          *                              D2 NUMBER OF COMPARE ERRORS TO BE
   333                          *                                 REPORTED IN EACH RECORD.
   334                          *
   335                          *                 EXAMPLE   LIMT,1,5
   336                          *                 -------
   337                          *                           REPORT UP TO 5 COMPARE ERRORS FOR EACH
   338                          *                           RECORD.
   339                          *
   340                          *
   341                          * ** LEN  **       THIS DIRECTIVE SELECTS THE BYTE LENGTH OF THE RECORD
   342                          *                 TO BE USED IN THE TAPE TEST (TST3,1 ONLY).
   343   01 0030B  0000052A 02  LENTHADR DATA       LEN
   344                          *
   345                          *                 PARAMETERS
   346                          *                 ---------- D1 BYTE LENGTH OF RECORD
   347                          *                            D2 NOT USED
   348                          *                            D3 NOT USED
   349                          *                            D4 NOT USED
   350                          *
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS


```
351                                  *                EXAMPLE    LEN,980                                *
352                                  *                -------                                           *
353                                  *                           GENERATE A RECORD OF 980 BYTES.       *
354                                  *                                                                 *
355                                  *                                                                 *
356                                  *                                                                 *
357                                  *                                                                 *
358                                  *                                                                 *
359                                  *                                                                 *
360                                  * OPERATION MODES                                                  *
361                                  * ---------------    PROGRAM-OPERATOR COMMUNICATION IS ACCOMPLISHED *
362                                  *                    USING THE INPUT/OUTPUT DEVICES SPECIFIED BY    *
363                                  *                    THE OPERATOR.                                  *
364                                  *                                                                   *
365                                  *                    DIRECTIVES ARE ENTERED AND TESTS ARE INITIATED *
366                                  *                    THRU THE MESSAGE INPUT DEVICE (MID).           *
367                                  *                                                                   *
368                                  *                    THE PROGRAM OUTPUTS MESSAGES THRU THE MESSAGE  *
369                                  *                    OUTPUT DEVICE (MOD)                            *
370                                  *                                                                   *
371                                  *                    (REFER TO DPM DIRECTIVES 'MID' AND 'MOD').     *
372                                  *                                                                   *
373                                  * START-RESTART PROCEDURE                                           *
374                                  *                                                                   *
375                                  * START              AFTER THE PROGRAM IS SUCCESSFULLY LOADED AND THE *
376                                  *                    PROGRAM IDENTIFICATION IS PRINTED, THE OPERATOR *
377                                  *                    MAY SPECIFY ANY TEST DIRECTIVE (TST0,TST1,TST2, *
378                                  *                    OR TST3), UTILTY DIRECTIVE (DATA,LIMT, OR RSET), *
379                                  *                    OR THE ENVIRONMENTAL DIRECTIVE (SYST).         *
380                                  *                                                                   *
381                                  *                    THE SYST DIRECTIVE MUST BE INITIALLY ENTERED   *
382                                  *                    TO DESCRIBE THE CONFIGURATION TO BE TESTED.    *
383                                  *                                                                   *
384                                  * RESTART            RESTART OR RECOVERY MAY BE ACHIEVED BY THE     *
385                                  *                    FOLLOWING PROCEDURE:                           *
386                                  *                                                                   *
387                                  *                    1. PRESSING THE CONTROL PANEL INTERRUPT SWITCH. *
388                                  *                                                                   *
389                                  *                    2. A. PLACING THE COMPUTE SWITCH ON THE PCP TO IDLE
390                                  *                       B. PRESSING THE SYSTEM RESET SWITCH ON THE PCP *
391                                  *                       C. PLACING THE COMPUTE SWITCH ON THE PCP TO RUN*
392                                  *                                                                   *
393                                  * TERMINATION INDICATION                                            *
394                                  *                                                                   *
395                                  *                    THE TERMINATION OF A DIRECTIVE IS INDICATED BY WHEN
396                                  *                    CONTROL IS RETURNED TO THE MESSAGE INPUT DEVICE. *
397                                  *                                                                   *
398                                  * SUCCESS-FAILURE INDICATIONS                                       *
399                                  * ---------------------------                                       *
400                                  *                                                                   *
401                                  *                                                                   *
402                                  * WAITS              THE PROGRAM COMES TO A WAIT CONDITION.         *
403                                  *                                                                   *
404                                  *                    1. AFTER ERROR MESSAGE PRINTOUT DURING THE     *
405                                  *                       EXECUTION OF FUNCTIONAL TESTS (SSW3 = 0).   *
406                                  *                                                                   *
407                                  *                    2. AFTER THE COMPLETION OF A TEST (SSW3 = 0).  *
408                                  *                                                                   *
409                                  *                    3. AFTER WATCHDOG TIMER TRAP, IF THE IO RESET  *
410                                  *                       JUMPER WAS NOT ENTERED OR PROGRAMMABLE IO   *
411                                  *                       RESET IS NOT IMPLEMENTED.                   *
412                                  *                                                                   *
413                                  * LOOPS              THE PROGRAM LOOPS ON AN INSTRUCTION SEQUENCE   *
414                                  *                    PRODUCING AN ERROR DURING FUNCTIONAL TEST      *
415                                  *                    EXECUTION (SS1=1,SS3=1) OR AT THE COMPETION    *
416                                  *                    OF A TEST (SS1=1,SS3=1).                       *
417                                  *                                                                   *
418                                  * MESSAGE PRINTOUT   1. FUNCTIONAL TEST                             *
419                                  *                                                                   *
420                                  *                       THE STANDARD ERROR MESSAGES                 *
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| LINE NO. | MEM PROT KEY | MEMORY ADDRESS | MEMORY CONTENTS | ORIG | LABEL | OPERATION | OPERAND | COMMENTS |

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          8
  421                          *                                                                  *
  422                          *                          ERR NO.DDDD LOC.XXXX                    *
  423                          *                                                                  *
  424                          *                        ARE DEFINED IN THE FAULT INDEX (DDDD = INDEX).*
  425                          *                                                                  *
  426                          *                        ALL OTHER MESSAGES PRECEDING THE STANDARD *
  427                          *                        ERROR MESSAGE ARE SELF EXPLANETORY.       *
  428                          *                                                                  *
  429                          *                      2. RANDOM EXERCISER AND UTILITY TESTS.      *
  430                          *                                                                  *
  431                          *                        ALL MESSAGES ARE SELF EXPLANETORY.        *
  432                          *                                                                  *
  433                          *                      3. DPM ERROR MESSAGE ARE DEFINED IN THE     *
  434                          *                         DPM MANUAL.                              *
  435                          *                                                                  *
  436                          * PROGRAM TEST DESCRIPTION                                         *
  437                          * ------------------------                                         *
  438                          *                                                                  *
  439                          *                      THE FOLLOWING IS A DESCRIPTION OF THE TESTS *
  440                          *                      CONTAINED IN THE 7 TRACK MAGNETIC TAPE TEST *
  441                          *                      PROGRAM.                                    *
  442                          *                                                                  *
  443                          * COMPREHENSIVE TEST (TST0)                                        *
  444                          *                      THE COMPREHENSIVE TEST CONSISTS OF THE FUNCTIONAL *
  445                          *                      TEST AND THE RANDOM EXERCISER TEST.         *
  446                          *                                                                  *
  447                          * FUNCTIONAL TEST (TST1)                                           *
  448                          *                      THE FUNCTIONAL TEST PERFORMS A SYSTEMATIC TEST OF *
  449                          *                      ALL LOGIC FUNCTIONS OF THE TAPE CONTROLLER AND ALL*
  450                          *                      TAPE DEVICES SPECIFIED BY THE SYST DIRECTIVES.  *
  451                          *                      THE FUNCTIONAL TEST CONSISTS OF A NUMBER OF     *
  452                          *                      SUBTESTS WHICH MAY BE SELECTED INDIVIDUALLY OR  *
  453                          *                      IN GROUPS. THE FUNCTIONAL TESTS CAN BE RUN AT ANY *
  454                          *                      DENSITY IF 75 IPS. THE TAPE CREEP TEST (TST1,35) *
  455                          *                      AND THE GAP LENGTH TIMING TEST (TST1,37) TOLERANCE*
  456                          *                      IS SET FOR 800 BPI.                         *
  457                          *                                                                  *
  458                          *                      WHEN A FAULT HAS BEEN DETECTED, AUTOMATIC ERROR *
  459                          *                      LOOPING THRU SENSE SWITCH CONTROL IS IMPLEMENTED *
  460                          *                      WHENEVER POSSIBLE. WRITE AND READ RETRIES WILL  *
  461                          *                      ONLY BE DONE IN THE DATA TEST (TST1,33).        *
  462                          *                                                                  *
  463                          *                      FOR A DESCRIPTION OF INDIVIDUAL SUBTESTS REFER  *
  464                          *                      TO THE FUNCTIONAL TEST SECTION IN THE PROGRAM   *
  465                          *                      LISTING. EACH SUBTEST IS PRECEDED BY A TEST     *
  466                          *                      DESCRIPTION.                                    *
  467                          *                                                                  *
  468                          * RANDOM EXERCISER TEST (TST2)                                     *
  469                          *                      THIS TEST PROVIDES A MEANS OF OPERATING A MAGNETIC*
  470                          *                      TAPE SYSTEM WITH PSEUDO-RANDOM OPERATION, ORDER *
  471                          *                      SEQUENCE, DATA PATTERN, I/O AREA, TIME DELAY, AND *
  472                          *                      RECORD SIZE FOR THE PURPOSE OF DETECTING INTERMIT-*
  473                          *                      TENT FAILURES AND EXERCISING ALL TAPE UNITS.    *
  474                          *                                                                  *
  475                          *                      THE RANDOM EXERCISER TEST WILL REPORT ERRORS AS *
  476                          *                      THEY OCCUR, BUT ONLY AS TO THE FUNCTION THAT    *
  477                          *                      FAILED. NO ERROR LOOPING IS PROVIDED EXCEPT FOR *
  478                          *                      LIMITED RETRIES.                                *
  479                          *                                                                  *
  480                          * UTILITY TEST ROUTINES (TST3)                                     *
  481                          *                                                                  *
  482                          *                      THE UTILITY TEST ROUTINE  ALLOWS THE USER TO SELECT
  483                          *                      A SPECIFIC FUNCTION AND TO CONTROL THE DATA PATTERN
  484                          *                      (SEE DATA DIRECTIVE) AND THE RECORD LENGTH (SEE *
  485                          *                      'LEN' DIRECTIVE. THE UTILITY TESTS CAN BE RUN AT *
  486                          *                      ANY DENSITY IF 75 IPS.                          *
  487                          *                                                                  *
  488                          * 1. TAPE TEST         THIS TEST ALLOWS THE USER TO WRITE, READ FORWARD, *
  489                          *                      READ BACKWARD, READ FORWARD AND THEN BACKWARD, OR *
  490                          *                      WRITE FOLLOWED BY REWIND AND READ FORWARD AND READ*
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          9
  491                           *                     BACKWARD N RECORDS OR UNTIL EOT IS REACHED.      *
  492                           *                                                                      *
  493                           * 2. DESKEW TEST      THIS TEST IS PROVIDED AS A SCOPING AID DURING     *
  494                           *                     CHECKING AND ADJUSTING THE READ/WRITE SKEW. A    *
  495                           *                     PATTERN OF ALL ONES WILL BE RECORDED AS A CONTIN- *
  496                           *                     UOUS RECORD. AT EOT THE TAPE WILL BE REWOUND.    *
  497                           *                                                                      *
  498                           * 3. SYNC ON CHARACTER TEST                                            *
  499                           *                     THIS TEST IS PROVIDED AS A SCOPING AID BY EXECUTING
  500                           *                     A UNIQUE I/O INSTRUCTION (TDV) AFTER THE BYTE COUNT
  501                           *                     SPECIFIED IN THE TEST HAS BEEN REACHED.          *
  502                           *                                                                      *
  503                           * 4. COMPATABILITY AND NOISE PATTERN TEST                              *
  504                           *                     THIS TEST ALLOWS THE USER TO WRITE, READ FORWARD, *
  505                           *                     READ BACKWARD, OR READ FORWARD AND BACKWARD A PRE-*
  506                           *                     DETERMINED INCREMENTED NOISE PATTERN.            *
  507                           *                                                                      *
  508                           * 5. READ/SPACE TEST                                                   *
  509                           *                     THIS TEST ALLOWS THE USER TO WRITE, READ, OR     *
  510                           *                     SPACE N RECORDS, WITH OR WITHOUT REWIND. ONLY NON-*
  511                           *                     RECOVERABLE TRANSMISSION ERRORS WILL CAUSE ERROR *
  512                           *                     PRINTOUT, BACKSPACE, AND A HALT.                 *
  513                           *                                                                      *
  514                           *                                                                      *
  515                           *                                                                      *
  516                           *                                                                      *
  517                           *                                                                      *
  518                           *                                                                      *
  519                           *                                                                      *
  520                           *                                                                      *
  521                           *                                                                      *
  522                           *                                                                      *
  523                           *                        ****************                              *
  524                           *                        *              *                              *
  525                           *                        *  FAULT INDEX *                              *
  526                           *                        *              *                              *
  527                           *                        ****************                              *
  528                           *                                                                      *
  529                           * FAULT INDEX DESCRIPTION -FUNCTIONAL SUBTESTS                        *
  530                           * ---------------------------------------------                       *
  531                           * THE FAULT INDEX CONTAINS A LIST OF ERROR NUMBERS AND A BRIEF         *
  532                           * DESCRIPTION OF EACH ERROR. THE NUMBERS ARE ARRANGED IN ASCENDING     *
  533                           * SEQUENCE. ALL NUMBERS REFER TO ERRORS IN THE FUNCTIONAL SUBTESTS.    *
  534                           * THE FIRST TWO DIGITS ARE USED TO IDENTIFY THE SUBTEST. THE LAST      *
  535                           * TWO DIGITS REFER TO INDIVIDUAL ERRORS WITHIN THE SUBTEST. THE        *
  536                           * DELAY SUBROUTINE AND TIMEOUT SUBROUTINES HAVE MESSAGE PRINTOUTS.     *
  537                           *                                                                      *
  538                           * FUNCTIONAL SUBTEST DESCRIPTION                                       *
  539                           * ------------------------------                                      *
  540                           * EACH MESSAGE CONSISTS OF TWO PARTS. THE ERROR NUMBER REFERS TO       *
  541                           * AN ENTRY IN THE FAULT INDEX, THE LOCATION NUMBER REFERS TO THE MEMORY*
  542                           * LOCATION IN THE LISTING (ONLY IF THE PROGRAM IS NOT RELOCATED) WHERE *
  543                           * THE ERROR OCCURRED. THE LOCATION NUMBER IS INTENDED TO BE USED TO    *
  544                           * LOCATE A FUNCTIONAL SUBTEST IN THE LISTING. PRECEDING EACH FUNCTIONAL*
  545                           * SUBTEST IS A BRIEF DESCRIPTION OF THE TEST. THE DESCRIPTION OF THE   *
  546                           * ERROR NUMBER AND THE DESCRIPTION OF THE SUBTEST SHOULD BE SUFFICIENT *
  547                           * TO DEFINE THE CURRENT OPERATION AND THE NATURE OF THE FAILURE.       *
  548                           * ADDITIONAL INFORMATION ABOUT THE ERROR CAN BE FOUND IN THE COMMENT   *
  549                           * FIELD OF THE LISTING.                                                *
  550                           *                                                                      *
  551                           * DESCRIPTIVE ERROR MESSAGES                                           *
  552                           * --------------------------                                          *
  553                           * ERROR NUMBERS CAN BE PRECEDED BY DESCRIPTIVE MESSAGES WHICH WILL     *
  554                           * AID IN THE ISOLATION OF FAILURES.                                    *
  555                           *                                                                      *
  556                           *                                                                      *
  557                           *                                                                      *
  558                           *                                                                      *
  559                           *0101  AIO CONDITION CODE ERROR. NO INTERRUPT RECOGNITION EXPECTED.    *
  560                           *      AIO, HIO, TIO, TDV TEST                                         *
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```
0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          10
   561                          *
   562                          *0102  HIO CONDITION CODE OR STATUS ERROR. SEE PRINTOUT.
   563                          *      AIO, HIO, TIO, TDV TEST
   564                          *
   565                          *0103  TIO CONDITION CODE OR STATUS ERROR. SEE PRINTOUT.
   566                          *      AIO, HIO, TIO, TDV TEST
   567                          *
   568                          *0104  TDV CONDITION CODE OR STATUS ERROR. SEE PRINTOUT.
   569                          *      AIO, HIO, TIO, TDV TEST
   570                          *
   571                          *0201  SIO FOR INVALID ORDER NOT ACCEPTED. CONDITION CODE ERROR
   572                          *      INVALID ORDER TEST
   573                          *
   574                          *0202  SIO FOR INVALID ORDER STATUS ERROR. UE AND NO
   575                          *      INTERRUPT PENDING EXPECTED. (READ BACKWARD)
   576                          *      INVALID ORDER TEST
   577                          *
   578                          *0203  HIO DID NOT RESET INTERRUPT PENDING BIT IN STSTUS
   579                          *      INVALID ORDER TEST
   580                          *
   581                          *0204  SIO FOR INVALID ORDER NOT ACCEPTED, CONDITION CODE ERROR
   582                          *      INVALID ORDER TEST
   583                          *
   584                          *0205  SIO FOR INVALID ORDER STATUS ERROR. UE AND NO
   585                          *      INTERRUPT PENDING EXPECTED (SET CORRECTION).
   586                          *      INVALID ORDER TEST
   587                          *
   588                          *0301  SIO CONDITION CODE ERROR ON SET ERASE.
   589                          *      ERASE ORDER TEST
   590                          *
   591                          *0302  TIO STATUS ERROR ON SET ERASE. NO UE OR BYTE COUNT REDUCTION ARE
   592                          *      EXPECTED. NO DATA PHASES EXECUTED.
   593                          *      ERASE ORDER TEST
   594                          *
   595                          *0701  SIO FOR INVALID ORDER CONDITION CODE ERROR. (READ BKW, UE SET)
   596                          *      INTERRUPT ON UE,CE,AND AIO TEST
   597                          *
   598                          *0702  NO UE INTERRUPT ON INVALID READ BACKWARD WITH UE SET.
   599                          *      INTERRUPT ON UE,CE,AND AIO TEST
   600                          *
   601                          *0703  NO UE SET ON AIO AFTER INVALID ORDER OR INT PENDING NOT RESET
   602                          *      AFTER AIO.
   603                          *      INTERRUPT ON UE,CE,AND AIO TEST
   604                          *
   605                          *0704  SIO FOR SET ERASE CONDITION CODE ERROR. (ERASE, CE SET)
   606                          *      INTERRUPT ON UE,CE,AND AIO TEST
   607                          *
   608                          *0705  NO CE INTERRUPT ON ERASE WITH CE SET.
   609                          *      INTERRUPT ON UE,CE,AND AIO TEST
   610                          *
   611                          *0706  NO INTERRUPT PENDING SET AFTER HIO FOLLOWING THE ERASE ORDER.
   612                          *      INTERRUPT ON UE,CE,AND AIO TEST
   613                          *
   614                          *0710  HIO STATUS RESPONSE ERROR FOLLOWING AIO-UE OR IP SHOULD
   615                          *      NOT BE SET.
   616                          *      INTERRUPT ON UE,CE,AND AIO TEST
   617                          *
   618                          *0711  TIO STATUS RESPONSE ERROR FOLLOWING HIO. IP SHOULD NOT BE SET.
   619                          *      INTERRUPT ON UE,CE,AND AIO TEST
   620                          *
   621                          *0801  TIO STATUS RESPONSE ERROR AFTER AN INVALID ORDER. IP AND UE
   622                          *      SHOULD BE SET. (READ BKW, UE SET WITH INT DISARMED)
   623                          *      I/O INTERRUPT TEST
   624                          *
   625                          *0802  TIO STATUS RESPONSE ERROR AFTER INTERRUPT ARMED AND DISABLED.
   626                          *      I/O INTERRUPT TEST
   627                          *
   628                          *0803  NO INTERRUPT RECEIVED ON INVALID ORDER WITH UE SET AFTER
   629                          *      INTERRUPT ARMED AND ENABLED.
   630                          *      I/O INTERRUPT TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          11
   631                          *
   632                          *0901  SIO CONDITION CODE ERROR ON COMMAND CHAINING ORDER (ERASE
   633                          *       READ BACKWARD)
   634                          *       COMMAND CHAINING TEST
   635                          *
   636                          *0902  NO INTERRUPT ON COMMAND CHAINING ERASE, READ BACKWARD.
   637                          *       COMMAND CHAINING TEST
   638                          *
   639                          *0903  THE LAST DOUBLE WORD ADDRESS IS INCORRECT ON COMMAND CHAINING.
   640                          *       THE ADDRESS SHOULD BE READ BACKWARD.
   641                          *       COMMAND CHAINING TEST
   642                          *
   643                          *0904  SIO CONDITION CODE ON COMMAND CHAINING ORDER. (READ BKW,SENSE)
   644                          *       COMMAND CHAINING TEST
   645                          *
   646                          *0905  NO INTERRUPT RECEIVED ON COMMAND CHAINING READ BKW, ERASE.
   647                          *       COMMAND CHAINING TEST
   648                          *
   649                          * 0906 THE LAST DOUBLE WORD ADDRESS IS INCORRECT ON COMMAND CHAINING.
   650                          *       THE ADDRESS SHOULD BE READ BACKWARD.
   651                          *       COMMAND CHAINING TEST
   652                          *
   653                          * 1101 TDV STATUS ERROR AFTER REWIND ON LINE. NO LOAD POINT BIT SET.
   654                          *       REWIND TEST
   655                          *
   656                          * 1102 TIO STATUS ERROR AFTER REWIND AND INTERRUPT. NO INTER PEND SET.
   657                          *       REWIND TEST
   658                          *
   659                          * 1103 TIO STATUS ERROR AFTER HIO ON REWIND WITH INTERRUPT.
   660                          *       REWIND TEST
   661                          *
   662                          * 1104 TIO STATUS ERROR AFTER REWIND WITH INTERRUPT. INTER PEND NOT SET
   663                          *       REWIND TEST
   664                          *
   665                          * 1105 AIO STATUS ERROR AFTER REWIND WITH INTERRUPT. DEVICE END NOT SET
   666                          *       REWIND TEST
   667                          *
   668                          * 1106 TIO STATUS ERROR AFTER AIO. INTERRUPT PENDING NOT RESET.
   669                          *       REWIND TEST
   670                          *
   671                          * 1107 TDV STATUS ERROR AFTER REWIND WITH INTERRUPT. NO LOAD POINT SET.
   672                          *       REWIND TEST
   673                          *
   674                          * 1203 NO INTERRUPT ON SPACE BACKWARD AT LOAD POINT. (BC =2)
   675                          *       READ, SPACE RECORD, AND SPACE FILE BACKWARD FROM BOT TEST
   676                          *
   677                          * 1204 TIO  OR TDV STATUS ERROR ON SPACE BKW AT LOAD POINT. UE, LOAD
   678                          *       POINT, AND BC =2 EXPECTED.
   679                          *       READ, SPACE RECORD, AND SPACE FILE BACKWARD FROM BOT TEST
   680                          *
   681                          * 1205 NO INTERRUPT RECEIVED ON SPACE FILE BACKWARD AT LOAD POINT.
   682                          *       READ, SPACE RECORD, AND SPACE FILE BACKWARD FROM BOT TEST
   683                          *
   684                          * 1206 TIO  OR TDV STATUS ERROR ON SPACE FILE BKW AT LOAD POINT. UE,
   685                          *       LOAD POINT, AND NO EOF EXPECTED.
   686                          *       READ, SPACE RECORD, AND SPACE FILE BACKWARD FROM BOT TEST
   687                          *
   688                          * 1301 NO INTERRUPT ON WRITE TAPE MARK AT LOAD POINT. (CE AND BC =2 SET
   689                          *       WRITE TAPE MARK (TAPE MOTION, WRITE,AND READ AFTER WRITE) TEST
   690                          *
   691                          * 1302 TIO  OR TDV STATUS ERROR ON WRITE TAPE MARK AT LOAD POINT. EOF
   692                          *       AND BC =2 EXPECTED.
   693                          *       WRITE TAPE MARK (TAPE MOTION, WRITE,AND READ AFTER WRITE) TEST
   694                          *
   695                          * 1401 NO INTERRUPT RECEIVED ON WRITE TAPE MARK AFTER REWIND.
   696                          *       SPACE RECORD FORWARD TEST (TAPE MOTION AND READ)
   697                          *
   698                          * 1402 NO INTERRUPT RECEIVED ON SPACE FORWARD OVER A TAPE MARK AT LOAD
   699                          *       POINT. (CE AND BC =2 SET)
   700                          *       SPACE RECORD FORWARD TEST (TAPE MOTION AND READ)
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			12
701								
702					* 1403 BYTE COUNT ON SPACE FWD AT LOAD POINT ERROR. SHOULD BE 2.			
703					* SPACE RECORD FORWARD TEST (TAPE MOTION AND READ)			
704					*			
705					* 1404 TIO STATUS ERROR ON SPACE FWD AT LOAD POINT. NO ERROR EXPECTED.			
706					* SPACE RECORD FORWARD TEST (TAPE MOTION AND READ)			
707					*			
708					* 1501 TIO OR TDV STATUS ERROR ON WRITE RECORDS 1-64 BYTE LENGTH. NO			
709					* INCORRECT LENGTH OR UE EXPECTED, BC =00.			
710					* WRITE TEST (TAPE MOTION, VARIABLE BC, WRITE, READ AFTER WRITE)			
711					*			
712					* 1502 NO INTERRUPT RECEIVED ON WRITING 64 BYTES WITH INTERRUPT ON ZBC.			
713					* WRITE TEST (TAPE MOTION, VARIABLE BC, WRITE,READ AFTER WRITE)			
714					*			
715					* 1503 AIO OR TIO STATUS ERROR ON WRITING 64 BYTES WITH INTERRUPT ON			
716					* ZBC SET.			
717					* WRITE TEST (TAPE MOTION, VARIABLE BC, WRITE, READ AFTER WRITE)			
718					*			
719					* 1601 TIO OR TDV STATUS ERROR ON WRITING 100 BYTES ALL BITS ON. NO			
720					* INCORRECT LENGTH OR UE EXPECTED, BC =00.			
721					* READ TEST (TAPE MOTION AND READ)			
722					*			
723					* 1602 TIO OR TDV STATUS ERROR ON READ FORWARD 100 BYTES ALL BITS ON			
724					* WITH BYTE COUNT 1-64. INCORRECT LENGTH AND NO IZC EXPECTED.			
725					* READ TEST (TAPE MOTION AND READ)			
726					*			
727					* 1801 TIO OR TDV STATUS ERROR ON WRITING 100 BYTES ALL BITS ON. NO			
728					* INCORRECT LENGTH OR UE EXPECTED, BC =00.			
729					* WRITE-READ DATA TEST (DATA =X'FF')			
730					*			
731					* 1901 WRITE, READ FORWARD, OR INFORMATION ERRORS WHEN SATURATING ONE			
732					* TRACK. 100 RECORDS OF 100 BYTES PATTERN 00,01,02,04,08,10,20			
733					* WRITE-READ DATA TEST (DATA =X'00'THRU X'20')			
734					*			
735					* 2001 ERASE TIME SET TOO LONG. SEE MESSAGE PRINTOUT.			
736					* SET ERASE-WRITE TEST			
737					*			
738					* 2002 ERASE TIME SET TOO SHORT. SEE MESSAGE PRINTOUT.			
739					* SET ERASE-WRITE TEST			
740					*			
741					* 2101 TIO OR TDV STATUS ERROR ON WRITING 100 BYTES ALL BITS ON.			
742					* WRITE-SPACE FORWARD AND BACKWARD TEST			
743					*			
744					* 2102 TIO OR TDV STATUS ERROR ON SPACING FORWARD OVER 100 BYTES AT			
745					* LOAD POINT			
746					* WRITE-SPACE FORWARD AND BACKWARD TEST			
747					*			
748					* 2103 TIO OR TDV STATUS ERROR ON SPACING BACKWARD OVER 100 BYTES ONE			
749					* RECORD BEYOND LOAD POINT. NO UE OR LOAD POINT EXPECTED.			
750					* WRITE-SPACE FORWARD AND BACKWARD TEST			
751					*			
752					* 2104 TIO OR TDV STATUS ERROR ON SPACING BACKWARD ONE RECORD AT LOAD			
753					* POINT. UE AND LOAD POINT EXPECTED.			
754					* WRITE-SPACE FORWARD AND BACKWARD TEST			
755					*			
756					* 2105 TIO OR TDV STATUS ERROR ON SPACING FORWARD OVER 100 BYTES ALL			
757					* BITS ON. NO UE OR ERROR EXPECTED, BC =00.			
758					* WRITE-SPACE FORWARD AND BACKWARD TEST			
759					*			
760					* 2106 TIO OR TDV STATUS ERROR ON SPACING BACKWARD OVER 100 BYTES ALL			
761					* BITS ON. NO UE OR ERROR EXPECTED, BC =00.			
762					* WRITE-SPACE FORWARD AND BACKWARD TEST			
763					*			
764					* 2201 TIO OR TDV STATUS ERROR ON WRITING A TAPE MARK. TAPE MARK AND			
765					* NO UE EXPECTED.			
766					* WRITE TAPE MARK TEST			
767					*			
768					* 2202 TIO OR TDV STATUS ERROR ON SPACING BACKWARD OVER 100 TAPE			
769					* MARKS. TAPE MARK AND UE EXPECTED.			
770					* WRITE TAPE MARK TEST			

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          13
   771                          *
   772                          * 2203 TIO OR TDV STATUS ERROR ON READING FORWARD OVER 100 TAPE
   773                          *      MARKS. TAPE MARK AND UE EXPECTED.
   774                          *      WRITE TAPE MARK TEST
   775                          *
   776                          * 2301 TIO  OR TDV STATUS ERROR ON WRITING A TAPE MARK. TAPE MARK AND
   777                          *      NO UE EXPECTED.
   778                          *      WRITE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   779                          *
   780                          * 2302 TIO  OR TDV STATUS ERROR ON SPACE FILE FORWARD. TAPE MARK AND
   781                          *      NO UE EXPECTED.
   782                          *      WRITE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   783                          *
   784                          * 2303 TIO  OR TDV STATUS ERROR ON SPACE FILE BACKWARD. TAPE MARK AND
   785                          *      NO UE EXPECTED
   786                          *      WR TE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   787                          *
   788                          * 2304 Ti   OR TDV STATUS ERROR ON SPACE FILE BACKWARD AT LOAD POINT.
   789                          *      LO D POINT, TAPE MARK, AND NO UE EXPECTED.
   790                          *      WR TE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   791                          *
   792                          *2305 TIO  OR TDV STATUS ERROR ON WRITING A RECORD 100 BYTES. NO ERROR
   793                          *      EX ECTED, BC =00.
   794                          *      WR TE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   795                          *
   796                          * 2306 TIO  OR TDV STATUS ERROR ON WRITING A TAPE MARK. NO ERROR
   797                          *      EXPECTED, TAPE MARK.
   798                          *      WRITE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   799                          *
   800                          * 2307 TIO  OR TDV STATUS ERROR ON SPACING BACKWARD OVER A TAPE MARK.
   801                          *      UE AND TAPE MARK EXPECTED.
   802                          *      WRITE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   803                          *
   804                          * 2308 TIO  OR TDV STATUS ERROR ON SPACING FORWARD OVER A TAPE MARK.
   805                          *      UE AND TAPE MARK EXPECTED.
   806                          *      WRITE TAPE MARK - SPACE FILE AND RECORD, READ TEST
   807                          *
   808                          * 2401 TIO OR TDV STATUS ERROR AFTER REWINDING AND WRITING A RECORD
   809                          *      OF 27,000 WORDS, LOOPING 10 TIMES. NO ERROR EXPECTED.
   810                          *      TAPE LOOP TEST
   811                          *
   812                          * 2601 TIO OR TDV STATUS ERROR ON WRITING 96 BYTES ALL BITS ON.
   813                          *      NO ERRORS EXPECTED, BC =00, NO INCORRECT LENGTH.
   814                          *      INCORRECT LENGTH TEST
   815                          *
   816                          * 2602 TIO OR TDV STATUS ERROR ON SPACING A RECORD BACKWARD. NO ERROR
   817                          *      EXPECTED.
   818                          *      INCORRECT LENGTH TEST
   819                          *
   820                          * 2603 TIO  OR TDV STATUS ERROR ON READING A RECORD FORWARD. NO ERRER
   821                          *      EXPECTED, BC =00, NO INCORRECT LENGTH.
   822                          *      INCORRECT LENGTH TEST
   823                          *
   824                          * 2604 TIO OR TDV STATUS ERROR ON SPACING A 96 BYTE RECORD BACKWARD.
   825                          *      NO ERROR EXPECTED.
   826                          *      INCORRECT LENGTH TEST
   827                          *
   828                          * 2605 TIO OR TDV STATUS ERROR ON READING A 96 BYTE RECORD FORWARD
   829                          *      WITH A BC =95 INCORRECT LENGTH, UE AND BC =00 EXPECTED.
   830                          *      INCORRECT LENGTH TEST
   831                          *
   832                          * 2606 TIO OR TDV STATUS ERROR ON SPACING A 96 BYTE RECORD BACKWARD.
   833                          *      NO ERROR EXPECTED.
   834                          *      INCORRECT LENGTH TEST
   835                          *
   836                          * 2607 TIO OR TDV STATUS ERROR ON READING A 96 BYTE RECORD FORWARD
   837                          *      WITH SUPPRESS INC LENGTH,BC=97. INC LENGTH BC=1, NO UE EXPECTED.
   838                          *      INCORRECT LENGTH TEST
   839                          *
   840                          * 2608 TIO OR TDV STATUS ERROR ON SPACING BKW OVER RECORD. NO UE
```

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS

```
0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          14
   841                          *      EXPECTED.                                                    *
   842                          *      INCORRECT LENGTH TEST                                        *
   843                          *                                                                   *
   844                          * 2609 TIO OR TDV STATUS ERROR ON READING FORWARD A 96 BYTE RECORD  *
   845                          *      WITH SUPPRESS INC LENGTH, BC=95. INC LENGTH, BC=0,NO UE EXPECTED*
   846                          *      INCORRECT LENGTH TEST                                        *
   847                          *                                                                   *
   848                          * 2701 TIO OR TDV STATUS ERROR ON WRITING 2 BYTES DATA CHAIN 94. NO  *
   849                          *      ERRORS EXPECTED, BC =00.                                     *
   850                          *      DATA CHAINING TEST                                           *
   851                          *                                                                   *
   852                          * 2702 TIO OR TDV STATUS ERROR ON SPACING BACKWARD OVER RECORD (2 BYTES*
   853                          *      DATA CHAIN 94). NO ERROR EXPECTED.                           *
   854                          *      DATA CHAINING TEST                                           *
   855                          *                                                                   *
   856                          * 2704 TIO  OR TDV STATUS ERRORS ON READING FORWARD 48 BYTES DATA CHAIN*
   857                          *      48 BYTES. NO ERROR EXPECTED, BC =00.                         *
   858                          *      DATA CHAINING TEST                                           *
   859                          *                                                                   *
   860                          * 2705 INFORMATION ERROR ON READING A RECORD FWD 48 BYTES DATA CHAIN 48*
   861                          *      DATA CHAINING TEST                                           *
   862                          *                                                                   *
   863                          * 2801 TIO  OR TDV STATUS ERROR WHEN WRITING FROM WA, WA+1 BYTE,     *
   864                          *      WA+2 BYTES, WA+3 BYTES.                                      *
   865                          *      BYTE BOUNDARY TEST                                           *
   866                          *                                                                   *
   867                          * 2802 TIO OR TDV STATUS ERROR ON SPACING BACKWARD. NO ERROR EXPECTED *
   868                          *      BYTE BOUNDARY TEST                                           *
   869                          *                                                                   *
   870                          * 2804 TIO  OR TDV STATUS ERROR WHEN READING FWD INTO WA,WA+1 BYTE,  *
   871                          *      WA+2 BYTES, WA+3 BYTES.                                      *
   872                          *      BYTE BOUNDARY TEST                                           *
   873                          *                                                                   *
   874                          * 2805 INFORMATION ERROR WHEN READING FWD INTO WA, WA+1 BYTE, WA+2    *
   875                          *      BYTES, WA+3 BYTES.                                           *
   876                          *      BYTE BOUNDARY TEST                                           *
   877                          *                                                                   *
   878                          * 2806 TIO  OR TDV STATUS ERROR ON WRITING A RECORD 4,16,32,64,...   *
   879                          *      BYTES IN LENGTH.                                             *
   880                          *      BYTE BOUNDARY TEST                                           *
   881                          *                                                                   *
   882                          * 2807 TIO OR TDV STATUS ERROR ON SPACING BKW OVER 4,16,32,64,128...  *
   883                          *      BYTES IN LENGTH.                                             *
   884                          *      BYTE BOUNDARY TEST                                           *
   885                          *                                                                   *
   886                          * 2809 TIO  OR TDV STATUS ERROR ON READING A RECORD FWD 4,16,32,64... *
   887                          *      BYTES IN LENGTH.                                             *
   888                          *      BYTE BOUNDARY TEST                                           *
   889                          *                                                                   *
   890                          * 2810 INFORMATION ERROR ON READING FORWARD 4,16,32,64... BYTES.     *
   891                          *      BYTE BOUNDARY TEST                                           *
   892                          *                                                                   *
   893                          * 2901 TIO OR TDV STATUS ERROR WHEN WRITING THE BCD CHARACTER SET. NO *
   894                          *      ERROR EXPECTED.                                              *
   895                          *      DECIMAL (BCD) MODE DATA TEST                                 *
   896                          *                                                                   *
   897                          * 2902 TIO OR TDV STATUS ERROR WHEN SPACING BACKWARD OVER BCD RECORD. *
   898                          *      NO ERROR EXPECTED.                                           *
   899                          *      DECIMAL (BCD) MODE DATA TEST                                 *
   900                          *                                                                   *
   901                          * 2903 TIO OR TDV STATUS ERROR WHEN READING THE BCD CHARACTER SET.    *
   902                          *      NO ERROR EXPECTED.                                           *
   903                          *      DECIMAL (BCD) MODE DATA TEST                                 *
   904                          *                                                                   *
   905                          * 2904 INFORMATION ERROR ON THE BCD CHARACTER SET RECORD.            *
   906                          *      DECIMAL (BCD) MODE DATA TEST                                 *
   907                          *                                                                   *
   908                          * 2905 TIO OR TDV STATUS ERROR WHEN SPACING OVER THE BCD CHARACTER SET.*
   909                          *      DECIMAL (BCD) MODE DATA TEST                                 *
   910                          *                                                                   *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          15
  911                          * 2906 TIO OR TDV STATUS ERROR WHEN READING THE BCD CHARACTER SET      *
  912                          *      WITHOUT TRANSLATION. TRANSMISSION ERRORS EXPECTED              *
  913                          *      DECIMAL (BCD) MODE DATA TEST                                   *
  914                          *                                                                     *
  915                          * 2907 INFORMATION ERROR ON BCD RECORD READ WITHOUT TRANSLATION.      *
  916                          *      DECIMAL (BCD) MODE DATA TEST                                   *
  917                          *                                                                     *
  918                          * 2908 TIO OR TDV ERROR WHEN WRITING A 4 BYTE RECORD CHECKING ZERO    *
  919                          *      TRANSLATION. NO ERROR EXPECTED.                                *
  920                          *      DECIMAL (BCD) MODE DATA TEST                                   *
  921                          *                                                                     *
  922                          * 2909 TIO OR TDV ERROR WHEN SPACING BKW OVER ZERO TRANSLATION RECORD.*
  923                          *      DECIMAL (BCD) MODE DATA TEST                                   *
  924                          *                                                                     *
  925                          * 2911 TIO OR TDV ERROR WHEN READING 4 BYTE ZERO TRANSLATION RECORD.  *
  926                          *      NO ERROR EXPECTED.                                             *
  927                          *      DECIMAL (BCD) MODE DATA TEST                                   *
  928                          *                                                                     *
  929                          * 2912 INFORMATION ERROR ON ZERO TRANSLATION RECORD. INFORMATION      *
  930                          *      EXPECTED X'F0F0F0F0'.                                          *
  931                          *      DECIMAL (BCD) MODE DATA TEST                                   *
  932                          *                                                                     *
  933                          * 3001 TIO OR TDV STATUS ERROR WHEN WRITING A BINARY RECORD X'00'-X'3F'*
  934                          *      BINARY MODE DATA TEST                                          *
  935                          *                                                                     *
  936                          * 3002 TIO OR TDV STATUS ERROR WHEN SPACING BKW OVER BINARY RECORD.   *
  937                          *      BINARY MODE DATA TEST                                          *
  938                          *                                                                     *
  939                          * 3003 TIO OR TDV STATUS ERROR WHEN READING A BINARY RECORD X'00'-X'3F'*
  940                          *      BINARY MODE DATA TEST                                          *
  941                          *                                                                     *
  942                          * 3004 INFORMATION ERROR ON READING BINARY RECORD X'00'-X'3F'.        *
  943                          *      BINARY MODE DATA TEST                                          *
  944                          *                                                                     *
  945                          * 3005 TIO OR TDV STATUS ERROR SPACING BKW OVER BINARY RECORD.        *
  946                          *      BINARY MODE DATA TEST                                          *
  947                          *                                                                     *
  948                          * 3006 TIO OR TDV STATUS ERROR WHEN READING BINARY RECORD WITH BCD.   *
  949                          *      TRANSMISSION ERROR EXPECTED.                                   *
  950                          *      BINARY MODE DATA TEST                                          *
  951                          *                                                                     *
  952                          * 3007 INFORMATION ERROR WHEN READING BINARY RECORD WITH BCD.         *
  953                          *      BINARY MODE DATA TEST                                          *
  954                          *                                                                     *
  955                          * 3101 TIO OR TDV  STATUS ERROR WHEN WRITING A PACKED BINARY RECORD   *
  956                          *      X'00'-X'FF'. NO ERROR EXPECTED.                                *
  957                          *      PACKED BINARY DATA TEST                                        *
  958                          *                                                                     *
  959                          * 3102 TIO OR TDV STATUS ERROR WHEN SPACING BKW OVER A PACKED BINARY  *
  960                          *      RECORD X'00'-X'FF'.                                            *
  961                          *      PACKED BINARY DATA TEST                                        *
  962                          *                                                                     *
  963                          * 3103 TIO OR TDV STATUS ERROR WHEN READING A PACKED BINARY RECORD    *
  964                          *      X'00'-X'FF'.                                                   *
  965                          *      PACKED BINARY DATUS TEST                                       *
  966                          *                                                                     *
  967                          * 3104 INFORMATION ERROR WHEN READING A PACKED BINARY RECORD.         *
  968                          *      PACKED BINARY DATA TEST                                        *
  969                          *                                                                     *
  970                          * 3105 TIO OR TDV STATUS ERROR WRITING PACKED BINARY RECORD OF  6,7,8 *
  971                          *      BYTES TO TEST THE PACKED BINARY END CONDITION.                 *
  972                          *      PACKED BINARY DATA TEST                                        *
  973                          *                                                                     *
  974                          * 3106 TIO OR TDV STATUS ERROR WHEN SPACING BKW OVER PACKED BINARY REC.*
  975                          *      PACKED BINARY DATA TEST                                        *
  976                          *                                                                     *
  977                          * 3107 TIO OR TDV STATUS ERROR READING A PACKED BINARY RECORD OF 6,8,9 *
  978                          *      BYTES TO TEST THE END CONDITION.                               *
  979                          *      PACKED BINARY DATA TEST                                        *
  980                          *                                                                     *
```

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          16
  981                          * 3108 INFORMATION ERROR ON PACKED BINARY RECORD CHECKING END CONDITION*
  982                          *      PACKED BINARY DATA TEST                                        *
  983                          *                                                                     *
  984                          * 3201 TIO OR TDV STATUS ERROR WRITING A PACKED BINARY RECORD TO SET  *
  985                          *      ONE BIT AT A TIME IN THE LRC CHARACTER                         *
  986                          *      LRC TEST                                                       *
  987                          *                                                                     *
  988                          * 3202 TIO OR TDV STATUS ERROR SPACING BKW OVER PACKED BINARY RECORD. *
  989                          *      LRC TEST                                                       *
  990                          *                                                                     *
  991                          * 3203 TIO OR TDV STATUS ERROR READING A PACKED BINARY RECORD TO SET  *
  992                          *      ONE BIT AT A TIME IN THE LRC CHARACTER.                        *
  993                          *      LRC TEST                                                       *
  994                          *                                                                     *
  995                          * 3204 INFORMATION ERROR ON PACKED BINARY RECORD THAT SETS A BIT AT A *
  996                          *      TIME IN THE LRC CHARACTER.                                     *
  997                          *      LRC TEST                                                       *
  998                          *                                                                     *
  999                          * 3205 TIO OR TDV STATUS ERROR WRITING A BINARY RECORD TO SET ONE BIT *
 1000                          *      AT A TIME IN THE LRC CHARACTER.                                *
 1001                          *      LRC TEST                                                       *
 1002                          *                                                                     *
 1003                          * 3206 TIO OR TDV STATUS ERROR SPACING BACKWARD OVER A BINARY RECORD. *
 1004                          *      LRC TEST                                                       *
 1005                          *                                                                     *
 1006                          * 3207 TIO OR TDV STATUS ERROR READING A BINARY RECORD TO SET ONE BIT *
 1007                          *      AT A TIME IN THE LRC CHARACTER.                                *
 1008                          *      LRC TEST                                                       *
 1009                          *                                                                     *
 1010                          * 3208 INFORMATION ERROR ON BINARY RECORD THAT SETS A BIT IN THE LRC. *
 1011                          *      LRC TEST                                                       *
 1012                          *                                                                     *
 1013                          * 3209 TIO OR TDV STATUS ERROR WRITING A BCD RECORD WITH A BLANK LRC, *
 1014                          *      THEN SETS A PARTICULAR BIT AND THE PARITY BIT IN THE LRC CHAR. *
 1015                          *      LRC TEST                                                       *
 1016                          *                                                                     *
 1017                          * 3210 TIO OR TDV STATUS ERROR SPACING BKW OVER BCD RECORD.           *
 1018                          *      LRC TEST                                                       *
 1019                          *                                                                     *
 1020                          * 3211 TIO OR TDV STATUS ERROR READING THE BCD RECORD WITH A BLANK LRC,*
 1021                          *      THEN SETS A PARTICULAR BIT AND THE PARITY BIT IN THE LRC CHAR. *
 1022                          *      LRC TEST                                                       *
 1023                          *                                                                     *
 1024                          * 3212 INFORMATION ERROR READING A BCD RECORD WITH A BLANK LRC, AND   *
 1025                          *      PARTICULAR BITS IN THE LRC CHARACTER.                          *
 1026                          *      LRC TEST                                                       *
 1027                          *                                                                     *
 1028                          * 3301 TIO OR TDV STATUS ERROR ON WRITING AN INCREMENTED RECORD WITH  *
 1029                          *      SATURATED TRACKS AND NOISE PATTERN.                            *
 1030                          *      DATA TEST                                                      *
 1031                          *                                                                     *
 1032                          * 3302 TIO OR TDV STATUS ERROR ON SPACE BACKWARD OVER AN INCREMENTED  *
 1033                          *      RECORD WITH SATURATED TRACKS AND NOISE PATTERNS.               *
 1034                          *      DATA TEST                                                      *
 1035                          *                                                                     *
 1036                          * 3303 TIO OR TDV STATUS ERROR ON READING FORWARD AN INCREMENTED      *
 1037                          *      RECORD WITH SATURATED TRACKS AND NOISE PATTERNS.               *
 1038                          *      DATA TEST                                                      *
 1039                          *                                                                     *
 1040                          * 3304 INFORMATION ERROR ON READING FORWARD AN INCREMENTED RECORD     *
 1041                          *      WITH SATURATED TRACKS AND NOISE PATTERNS.                      *
 1042                          *      DATA TEST                                                      *
 1043                          *                                                                     *
 1044                          * 3401 TIO ERROR.  DEVICE SHOULD BE BUSY WHILE WRITING 1000 BYTES.   *
 1045                          *      READY/BUSY TEST                                                *
 1046                          *                                                                     *
 1047                          * 3402 NO INTERRUPT RECEIVED AFTER WRITING 1000 BYTES.               *
 1048                          *      READY/BUSY TEST                                                *
 1049                          *                                                                     *
 1050                          * 3403 TIO  OR TDV STATUS ERROR ON WRITING A 1000 BYTE RECORD.       *
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| LINE NO. | MEM PROT KEY | MEMORY ADDRESS | MEMORY CONTENTS | ORIG | LABEL | OPERATION | OPERAND | COMMENTS |

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          17
 1051                          *      READY/BUSY TEST                                              *
 1052                          *                                                                   *
 1053                          * 3404 TIO ERROR. CONTROLER SHOULD BE BUSY WHILE READING 1000 BYTES. *
 1054                          *      READY/BUSY TEST                                              *
 1055                          *                                                                   *
 1056                          * 3405 NO INTERRUPT RECEIVED AFTER READING A RECORD BKW WITH 1000 BYTES*
 1057                          *      READY/BUSY TEST                                              *
 1058                          *                                                                   *
 1059                          * 3406 SIO ERROR. CONTROLLER SHOULD BE BUSY ON INITIATING REWIND     *
 1060                          *      READY/BUSY TEST                                              *
 1061                          *                                                                   *
 1062                          * 3407 TIO ERROR. DEVICE SHOULD BE BUSY ON REWINDING.               *
 1063                          *      READY/BUSY TEST                                              *
 1064                          *                                                                   *
 1065                          * 3501 TIO OR TDV STATUS ERROR ON WRITING A 96 BYTE RECORD.         *
 1066                          *      TAPE CREEP TEST                                              *
 1067                          *                                                                   *
 1068                          * 3502 TIO OR TDV STATUS ERROR WHEN WRITING A 12 BYTE RECORD        *
 1069                          *      TAPE CREEP TEST                                              *
 1070                          *                                                                   *
 1071                          * 3503 TIO OR TDV STATUS ERROR WHEN WRITING A 12 BYTE RECORD.       *
 1072                          *      TAPE CREEP TEST                                              *
 1073                          *                                                                   *
 1074                          * 3504 TIO OR TDV STATUS ERROR WHEN SPACING BACKWARD OVER A 12 BYTE REC*
 1075                          *      TAPE CREEP TEST                                              *
 1076                          *                                                                   *
 1077                          * 3505 TIO OR TDV STATUS ERROR SPACING BACKWARD OVER 96 BYTES.       *
 1078                          *      TAPE CREEP TEST                                              *
 1079                          *                                                                   *
 1080                          * 3506 TIO OR TDV STATUS ERROR READING A 96 BYTE RECORD.            *
 1081                          *      TAPE CREEP TEST                                              *
 1082                          *                                                                   *
 1083                          * 3507 INFORMATION ERROR READING A 96 BYTE RECORD.                  *
 1084                          *      TAPE CREEP TEST                                              *
 1085                          *                                                                   *
 1086                          * 3508 TAPE CREEP TOLERANCE EXCEEDED IN THE TAPE CREEP TEST.        *
 1087                          *      TAPE CREEP TEST                                              *
 1088                          *                                                                   *
 1089                          * 3509 TAPE CREEP NEGATIVE IN THE TAPE CREEP TEST.                  *
 1090                          *      TAPE CREEP TEST                                              *
 1091                          *                                                                   *
 1092                          * 3701 TIO OR TDV STATUS ERROR WRITING 12 BYTES IN THE I.R.G. TEST. *
 1093                          *      GAP LENGTH TIMING TEST                                       *
 1094                          *                                                                   *
 1095                          * 3702 TIO OR TDV STATUS ERROR ON SPACING BACKWARD OVER 12 BYTES.    *
 1096                          *      GAP LENGTH TIMING TEST                                       *
 1097                          *                                                                   *
 1098                          * 3703 TIO OR TDV STATUS ERROR WRITING 12 BYTES IN THE I.R.G. TEST. *
 1099                          *      GAP LENGTH TIMING TEST                                       *
 1100                          *                                                                   *
 1101                          * 3704 TIO OR TDV STATUS ERROR ON SPACING BACKWARD OVER 12 BYTES.    *
 1102                          *      GAP LENGTH TIMING TEST                                       *
 1103                          *                                                                   *
 1104                          * 3705 I.R.G. TIME IS INCORRECT. SEE PRINTOUT.                      *
 1105                          *      GAP LENGTH TIMING TEST                                       *
 1106                          *                                                                   *
 1107                          * 3801 TIO  OR TDV ERROR WRITING 1000 BYTES IN THE END OF TAPE TEST. *
 1108                          *      END OF TAPE TEST                                             *
 1109                          *                                                                   *
 1110                          * 3802 TIO  OR TDV ERROR WRITING 1000 BYTES BEYOND EOT INDICATION.   *
 1111                          *      END OF TAPE FLAG SHOULD BE SET.                              *
 1112                          *      END OF TAPE TEST                                             *
 1113                          *                                                                   *
 1114                          * 3803 TIO OR TDV STATUS ERROR SPACING BACKWARD OVER 1000 BYTES AT EOT.*
 1115                          *      EOT FLAG SHOULD BE SET.                                      *
 1116                          *      END OF TAPE TEST                                             *
 1117                          *                                                                   *
 1118                          * 3804 TIO OR TDV STATUS ERROR SPACING BKW OVER 1000 BYTES NEAR EOT. *
 1119                          *      EOT FLAG SHOULD BE RESET.                                    *
 1120                          *      END OF TAPE TEST                                             *
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL  OPERATION  OPERAND  COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          18
  1121                          *                                                                  *
  1122                          * 4001 STATUS ERROR ON WRITING A RECORD DESIGNATING UNIT 0,1,2,3,4,5,6,7
  1123                          *      OPERATOR CONTROL PANEL TEST                                 *
  1124                          *                                                                  *
  1125                          * 4002 STATUS ERROR SPACING BKW WITH UNIT DESIGNATION 1,2,3,4,5,6,7.
  1126                          *      OPERATOR CONTROL PANEL TEST                                 *
  1127                          *                                                                  *
  1128                          * 4004 STATUS ERROR ON READING FWD WITH DESIGNATION UNIT 0,1,2,3,4,5,6,7
  1129                          *      OPERATOR CONTROL PANEL TEST                                 *
  1130                          *                                                                  *
  1131                          * 4005 INFORMATION ERROR READING FWD RECORD FROM UNIT 0,1,2,3,4,5,6,7.
  1132                          *      OPERATOR CONTROL PANEL TEST                                 *
  1133                          *                                                                  *
  1134                          * 4006 STATUS ERROR WHEN TRYING TO WRITE ON A UNIT WITH THE WRITE RING
  1135                          *      REMOVED. A WRITE PROTECT IS EXPECTED.                       *
  1136                          *      OPERATOR CONTROL PANEL TEST                                 *
  1137                          *                                                                  *
  1138                          * 4007 STATUS ERROR WHEN TRYING TO WRITE A TAPE MARK WITH THE WRITE
  1139                          *      RING REMOVED. A WRITE PROTECT IS EXPECTED.                  *
  1140                          *      OPERATOR CONTROL PANEL TEST                                 *
  1141                          *                                                                  *
  1142                          * 4008 NO INTERRUPT WAS RECEIVED WHEN THE ATTENTION BUTTON WAS SET
  1143                          *      BY THE OPERATOR.                                            *
  1144                          *      OPERATOR CONTROL PANEL TEST                                 *
  1145                          *                                                                  *
  1146                          * 4009 STATUS ERROR ON REWIND AND PUT OFF LINE. THE DEVICE SHOULD BE
  1147                          *      MANUAL AND THE CONTROLLER READY.                            *
  1148                          *      OPERATOR CONTROL PANEL TEST                                 *
  1149                          *                                                                  *
  1150                          * 4010 TDV STATUS INCORRECT. LOAD POINT AND READY EXPECTED.
  1151                          *      OPERATOR CONTROL PANEL TEST                                 *
  1152                          *                                                                  *
  1153                          * 4013 THE DENSITY DIAL IS SET INCORRECTLY OR THE ACTUAL DENSITY
  1154                          *      OF THE 1000 BYTE RECORD WAS INCORRECT.                      *
  1155                          *      OPERATOR CONTROL PANEL TEST                                 *
  1156                          *                                                                  *
  1157                          * 4014 TIO OR TDV STATUS ERROR ON WRITING A 96 BYTE RECORD WITH THE
  1158                          *      DENSITY DIAL SET TO A PARTICULAR DENSITY.                   *
  1159                          *      OPERATOR CONTROL PANEL TEST                                 *
  1160                          *                                                                  *
  1161                          * 4015 TIO OR TDV STATUS ERROR ON SPACING BACKWARD OVER A RECORD WITH
  1162                          *      THE DENSITY DIAL SET AT A PARTICULAR DENSITY.               *
  1163                          *      OPERATOR CONTROL PANEL TEST                                 *
  1164                          *                                                                  *
  1165                          * 4016 TIO OF TDV STATUS ERROR READING 96 BYTES WITH THE DENSITY DIAL
  1166                          *      SET AT A PARTICULAR DENSITY.                                *
  1167                          *      OPERATOR CONTROL PANEL TEST                                 *
  1168                          *                                                                  *
  1169                          * 4017 INFORMATION ERROR ON THE 96 BYTE RECORD READ WITH THE DENSITY
  1170                          *      DIAL SET AT A PARTICULAR DENSITY.                           *
  1171                          *      OPERATOR CONTROL PANEL TEST                                 *
  1172                          *                                                                  *
  1173                          *                                                                  *
  1174                          *                                                                  *
  1175                          *                                                                  *
  1176                          *                                                                  *
  1177                          *                                                                  *
  1178                          *
  1179          00000000        R0        EQU       0
  1180          00000001        R1        EQU       1
  1181          00000002        R2        EQU       2
  1182          00000003        R3        EQU       3
  1183          00000004        R4        EQU       4
  1184          00000005        R5        EQU       5
  1185          00000006        R6        EQU       6
  1186          00000007        R7        EQU       7
  1187          00000008        R8        EQU       8
  1188          00000009        R9        EQU       9
  1189          0000000A        R10       EQU       X'A'
  1190          0000000B        R11       EQU       X'B'
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          19
  1191          0000000C          R12       EQU       X'C'
  1192          0000000D          R13       EQU       X'D'
  1193          0000000E          R14       EQU       X'E'
  1194          0000000F          R15       EQU       X'F'
  1195    01 00200                          ORG       X'200'
          01 00200
  1196                            *
  1197                            * PROCEDURE
  1198                            *
  1199                                      OPEN      PAGE              THIS INHIBITS
  1200          00000000          PAGE      CNAME                        PAGE
  1201                                      PROC                          DIRECTIVE
  1202                                      PEND                          TO PERMIT MAX. LINAGE/PAGE
  1203                            *
  1204                            * PROCEDURE
  1205                            *
  1206          00000000          :TSEQ     CNAME
  1207                                      PROC
  1208                            LF        EQU       $
  1209                            I         SET I
  1210                                      DO        NUM(AF)/4+1
  1211                                      GEN,8,8,8,8  AF(I),AF(I+1),AF(I+2),AF(I+3)
  1212                            I         SET       I+4
  1213                                      FIN
  1214                                      PEND
  1215                            *
  1216                            *
  1217                            *         PROCEDURE
  1218                            *
  1219          00000000          :TSEQEQU  CNAME
  1220                                      PROC
  1221                            LF(1)     EQU       AF(1)
  1222                            LF(2)     EQU       AF(1)+1
  1223                            LF(3)     EQU       AF(1)+2
  1224                            LF(4)     EQU       AF(1)+3
  1225                            LF(5)     EQU       AF(1)+4
  1226                            LF(6)     EQU       AF(1)+5
  1227                            LF(7)     EQU       AF(1)+6
  1228                            LF(8)     EQU       AF(1)+7
  1229                                      PEND
  1230                            *
  1231                            *  PROCEDURES
  1232                            *  ----------
  1233                            *
  1234                            *  PROCEDURE  FOR GENERATING DICTONARY DOUBLE WORDS
  1235                            *
  1236          00000000          :PROCDIC  CNAME
  1237                                      PROC
  1238                            LF        GEN,32,3,3,3,3,4,16  AF(1),ABSVAL(AF(2)),ABSVAL(AF(3)),;
  1239                                                           ABSVAL(AF(4)),ABSVAL(AF(5)),;
  1240                                                           ABSVAL(AF(6)),ABSVAL(AF(7))
  1241                                      PEND
  1242                            *
  1243                                      PAGE
  1244                            *
  1245                            *  MONITOR LINK TABLE
  1246                            *  ------------------
  1247                            *                        THIS TABLE IS LOADED BY THE MONITOR FOR THE
  1248                            *  PURPOSE OF ESTABLISHING COMMUNICATIONS BETWEEN THE TEST PROGRAM AND
  1249                            *  THE MONITOR (DPM).
  1250                            *
  1251    00 00000                ASECTMLT  ASECT
  1252    00 00200                          ORG       X'200'
          00 00200
  1253          00 00200          :MLT      EQU       $                 ABSOLUTE RECOVERY LOCATION
  1254          00 00201          :P1       EQU       :MLT+1            DIRECTIVE PARAMETER 1
  1255          00 00202          :P2       EQU       :MLT+2            DIRECTIVE PARAMETER 2
  1256          00 00203          :P3       EQU       :MLT+3            DIRECTIVE PARAMETER 3
  1257          00 00204          :P4       EQU       :MLT+4            DIRECTIVE PARAMETER 4
  1258          00 0020F          :DUMP     EQU       :MLT+15           ADDR OF MEMORY DUMP ROUTINE
```

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          20
  1259          00 00211          :PSW      EQU      :MLT+17          PARAMETER STATUS WORD
  1260          00 00213          :BCDC     EQU      :MLT+19          ADDR OF BCD FORMAT CONVERSION
  1261          00 00214          :MONITOR  EQU      :MLT+20          DIRECTIVE RETURN ADDRESS
  1262          00 00215          :LGFLAG   EQU      :MLT+21          LOAD AND GO FLAG; LOAD & GO IF * -
  1263          00 00216          :BINC     EQU      :MLT+22          ADDR OF BINARY FORMAT CONVERSION R
  1264          00 00217          :DECC     EQU      :MLT+23          ADDR OF DECIMAL FORMAT CONVERSION
  1265          00 00218          :HEXC     EQU      :MLT+24          ADDR OF HEXADEC FORMAT CONVERSION
  1266          00 00219          :1BYTEIN  EQU      :MLT+25          ADDR OF 1 BYTE INPUT ROUTINE
  1267          00 0021A          :CURBCNT  EQU      :MLT+26          CURRENT BYTE COUNT
  1268          00 0021B          :ERROR    EQU      :MLT+27          ADDR OF ERROR REPORT ROUTINE
  1269          00 0021C          :PRINT    EQU      :MLT+28          ADDR OF MESSAGE PRINT ROUTINE
  1270          00 0021D          :SENSE    EQU      :MLT+29          ADDR OF SENSE SWITCH 1,3 TESTS
  1271          00 0021E          :MONWAIT  EQU      :MLT+30          MONITOR WAIT
  1272          00 0021F          :MRECOVR  EQU      :MLT+31          BRANCH TO ABSOLUTE RECOVERY LOCATION
  1273          00 00220          :MSGOUT   EQU      :MLT+32          MSG OUTPUT DEVICE, TYPE AND ADDR
  1274          00 00221          :MSGIN    EQU      :MLT+33          MSG INPUT DEVICE, TYPE AND ADDR
  1275          00 00222          :LOADIN   EQU      :MLT+34          ADDR OF INITIAL LOADING DEVICE
  1276          00 00223          :ERRORC   EQU      :MLT+35          PROGRAM ERROR COUNT
  1277          00 00224          :KSRADR   EQU      :MLT+36          KEYBOARD/PRINTER DEVICE ADDR X'001
  1278          00 00225          :MACHINE  EQU      :MLT+37          MACHINE TYPE CODE
  1279          00 00226          :RELBIAS  EQU      :MLT+38          RELOCATION BIAS
  1280          00 00227          :RLOADER  EQU      :MLT+39          ADDR OF RESIDENT LOADER
  1281          00 00228          :DTLFLAG  EQU      :MLT+40          DIAGNOSTIC TAPE LIBRARY FLAG
  1282          00 00229          :PREPORT  EQU      :MLT+41          ADDR OF PARAMETER ERROR REPORT
  1283          00 0022A          :SCT      EQU      :MLT+42          ADDR OF SYSTEM CONTEXT TABLE (SCT)
  1284          00 0022B          :SCTLEN   EQU      :MLT+43          LENGTH OF SYSTEM CONTEXT TABLE (SC
  1285          00 0022C          :DICINDX  EQU      :MLT+44          ADDR OF DICTIONARY INDEX
  1286          00 0022D          :DICILEN  EQU      :MLT+45          LENGTH OF DICTIONARY INDEX
  1287          00 0022E          :MEMSIZE  EQU      :MLT+46          SYSTEM MEMORY SIZE
  1288          00 0022F          :MEMLAST  EQU      :MLT+47          ADDR OF LAST USABLE MEMORY LOCATIO
  1289          00 00230          :MONIOBF  EQU      :MLT+48          ADDR OF MONITOR IO BUFFER
  1290          00 00231          :MONPBF   EQU      :MLT+49          ADDR OF ABSOLUTE RECOVERY ROUTINE
  1291          00 00240          :MLTEND   EQU      :MLT+64          LAST LOCATION OF MONITOR LINK TABL
  1292                            *
  1293                            *  PROGRAM INTERFACE TABLE
  1294                            *  -----------------------
  1295                            *                          THIS TABLE IS LOADED BY THE TEST PROGRAM FOR
  1296                            *  THE PURPOSE OF ESTABLISHING COMMUNICATIONS BETWEEN THE MONITOR (DPM)
  1297                            *  AND THE USER PROGRAM.
  1298                            *
  1299   00 00000                 ASECTPIT ASECT
  1300   00 00300                          ORG      X'300'
         00 00300
  1301   00 00300    0000033E 02  :PIT0     DATA     :CATALOG         ADDR OF LOC. CONTAINING CATALOG NO.
  1302   00 00301    0000033F 02  :PIT1     DATA     :PROGID          ADDR OF PROGRAM ID MESSAGE.
  1303   00 00302    00000320 02  :PIT2     DATA     :DIC             ADDR OF DIRECTIVE DICTIONARY
  1304   00 00303    0000000E A   :PIT3     DATA     :DICEND-:DIC     LENGTH OF DIRECTIVE DICTIONARY
  1305   00 00304    0000051B 02  :PIT4     DATA     :RECOVER         ADDR OF ABSOLUTE RECOVERY ROUTINE
  1306   00 00305    0000032E 02  :PIT5     DATA     :CDT             ADDR OF CONTEXT DISCRIPTION TABLE
  1307   00 00306    00000002 A   :PIT6     DATA     :CDTEND-:CDT     LENGTH OF CONTEXT DESCRIPTION TABLE
  1308   00 00307    00000000 A   :PIT7     DATA     0
  1309   00 00308    000003BD 02  :PIT8     DATA     :INITIAL         ADDR OF INITIALIZER ROUTINE
  1310   00 00309    00000000 A   :PIT9     DATA     0                LAST MODEL NUMBER STORED IN CDB
  1311   00 0030A    00000000 A   :PIT10    DATA     0                PARAMETER NUMBER, PARAMETER IN ERROR
  1312   00 0030B    00000000 A   :PIT11    DATA     0                ADDR OF MSG TO BE PRINTED AFTER INIT
  1313   00 0030C    00000000 A   :PIT12    DATA     0                RUNFLAG, RUN PROG IF FLAG = -1
  1314   00 0030D    00000000 A   :PIT13    DATA     0                NOT USED
  1315   00 0030E    00000000 A   :PIT14    DATA     0                NOT USED
  1316   00 0030F    00000000 A   :PIT15    DATA     0                ADR OF MEM PARITY AND FAULT INT HAND
  1317          00 00310          :PITLAST  EQU      $
  1318          00 0031B          :PITEND   EQU      :PIT0+27
  1319          0000000B                    DO       :PITEND-:PITLAST CLEAR LOCATIONS UP TO PIT27
  1320   00 00310    00000000 A             DATA     0
  1321                                       FIN
         00 00311    00000000 A
         00 00312    00000000 A
         00 00313    00000000 A
         00 00314    00000000 A
         00 00315    00000000 A
         00 00316    00000000 A
```

```
LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          21
          00 00317    00000000 A
          00 00318    00000000 A
          00 00319    00000000 A
          00 0031A    00000000 A
  1322    00 0031B    000020C5 02  :PIT27   DATA       BUFF1            END OF USER PROGRAM
  1323    00 0031C    00000000 A             DATA       0,0,0,0
          00 0031D    00000000 A
          00 0031E    00000000 A
          00 0031F    00000000 A
  1324                                       PAGE
  1325                                *
  1326                                *  DIRECTIVE DICTIONARY
  1327                                *  --------------------
  1328                                *                              THIS TABLE SUPPLIES THE MONITOR WITH
  1329                                *  INFORMATION ABOUT EACH DIRECTIVE AVAILABLE IN THE TEST PROGRAM.
  1330                                *  EACH DICTIONARY ENTRY CONSISTS OF 2 WORDS (64 BITS) WHICH ARE
  1331                                *  DEFINED AS FOLLOWS:
  1332                                *
  1333                                *  BITS 00 THRU 31  4 BYTE MNEMONIC IDENTIFIER IN EBCDIC
  1334                                *  BITS 32 THRU 34  TYPE OF CONVERSION FOR PARAMETER 1.
  1335                                *  BITS 35 THRU 37  TYPE OF CONVERSION FOR PARAMETER 2.
  1336                                *  BITS 38 THRU 40  TYPE OF CONVERSION FOR PARAMETER 3.
  1337                                *  BITS 41 THRU 43  TYPE OF CONVERSION FOR PARAMETER 4.
  1338                                *  BITS 44 THRU 47  NOT ASSIGNED; MUST BE EQUAL TO ZERO
  1339                                *  BITS 48 THRU 63  ROUTINE ADDRESS
  1340                                *
  1341                                *  TYPE OF PARAMETER CONVERSION
  1342                                *
  1343                                *  000   HEXADECIMAL CONVERSION
  1344                                *  001   DECIMAL CONVERSION TO BINARY
  1345                                *  002   ALPHANUMERIC
  1346                                *
  1347    02 00000                    CSECTDIC CSECT
  1348    02 00320                             ORG        X'320'
          02 00320
  1349         02 00320               :DIC       EQU        $
  1350    02 00320    E3E2E3F0 A               :PROCDIC 'TST0',1,1,7,7,0,TST0      COMPREHENSIVE TEST
                      27F0047F
  1351    02 00322    E3E2E3F1 A               :PROCDIC 'TST1',1,1,7,7,0 TST1       FUNCTIONAL TEST
                      27F00498
  1352    02 00324    E3E2E3F2 A               :PROCDIC 'TST2',1,1,7,7,0,TST2      RANDOM EXERCISER
                      27F004DD
  1353    02 00326    E3E2E3F3 A               :PROCDIC 'TST3',1,1,1,1,0,TST3      UTILITY TESTS
                      249004F8
  1354    02 00328    C4C1E3C1 A               :PROCDIC 'DATA',1,0,0,0,0,DATTA     DATA
                      20000535
  1355    02 0032A    00D3C5D5 A               :PROCDIC 'LEN',1,7,7,7,0,LEN        LENGTH
                      3FF0052A
  1356    02 0032C    D3C9D4E3 A               :PROCDIC 'LIMT',1,1,7,7,0,:LIMIT     LIMIT
                      27F0055D
  1357                                *
  1358                                *
  1359         02 0032E               :DICEND    EQU        $
  1360                                           PAGE
  1361                                *
  1362                                *  CONTEXT DESCRIPTION TABLE
  1363                                *  -------------------------
  1364                                *                                  THE CONTEXT DESCRIPTION TABLE ALLOWS
  1365                                *  THE MONITOR TO PASS-ON ENVIRONMENTAL INFORMATION FROM THE 'SYST'
  1366                                *  DIRECTIVE TO THE TEST PROGRAM. NORMALLY ONLY ONE ENTRY WILL BE
  1367                                *  REQUIRED. EACH CONTEXT DESCRIPTION TABLE ENTRY CONSISTS OF 2 WORDS
  1368                                *  (64 BITS) WHICH ARE DEFINED AS FOLLOWS:
  1369                                *
  1370                                *  BITS 00 THRU 08  LENGTH OF CONTEXT DATA BLOCK
  1371                                *  BITS 09 THRU 27  NOT ASSIGNED; MUST BE EQUAL TO ZERO
  1372                                *  BITS 28 THRU 31  NUMBER OF DEVICE MODEL NUMBERS
  1373                                *  BITS 32 THRU 61  ADDR OF CONTEXT DATA BLOCK
  1374                                *
  1375         02 0032E               :CDT       EQU        :DICEND
  1376    02 0032E    05000004 N               GEN,9,19,4,32 :CDBEND-:CDB,0,:CDBMEND-:CDBM,:CDB
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          22
                00000334
  1377          02 00330            :CDTEND  EQU      $
  1378                              *
  1379                              *
  1380                              *  CONTEXT DATA BLOCK
  1381                              *  ------------------
  1382                              *                        THE CONTEXT DATA BLOCK CONTAINS ENVIRONMENTAL
  1383                              *  INFORMATION FOR THE TEST PROGRAM.
  1384                              *
  1385          02 00330            :CDBM    EQU      $
  1386    02 00330    00001CC2 A              DATA     7362              37.5 IPS   STD PACKED BINARY
  1387    02 00331    00001CC5 A              DATA     7365
  1388    02 00332    00001CCC A              DATA     7372              75 IPS     STD BINARY AND DECIMAL
  1389    02 00333    00001CCE A              DATA     7374
  1390                              *
  1391          02 00334            :CDBMEND EQU      $
  1392                              *
  1393          02 00334            :CDB     EQU      $
  1394    02 00334    00031CCC A              GEN,16,16 3,7372           CURRENTLY SELECTED DEVICE ADDRESS
  1395    02 00335    00000000 A              DATA     0
  1396    02 00336    00000080 A    SYTDEVA   DATA     X'080'            DEVICE ADDRESS OF FIRST UNIT
  1397    02 00337    00000000 A              DATA     0                 DEVICE ADDRESS OF SECOND UNIT
  1398    02 00338    00000000 A              DATA     0                 DEVICE ADDRESS OF THIRD UNIT
  1399    02 00339    00000000 A              DATA     0                 DEVICE ADDRESS OF FOURTH UNIT
  1400    02 0033A    00000000 A              DATA     0                 DEVICE ADDRESS OF FIFTH UNIT
  1401    02 0033B    00000000 A              DATA     0                 DEVICE ADDRESS OF SIXTH UNIT
  1402    02 0033C    00000000 A              DATA     0                 DEVICE ADDRESS OF SEVENTH UNIT
  1403    02 0033D    00000000 A              DATA     0                 DEVICE ADDRESS OF EIGHTH UNIT
  1404          02 0033E            :CDBEND  EQU      $
  1405                              *
  1406                              *
  1407                              *
  1408                              *
  1409          02 0033E            :CATALOG EQU      $                 PROGRAM CATALOG NUMBER
  1410    02 0033E    000AC4C7 A              DATA     705735            PROGRAM CATALOG NUMBER
  1411                              *
  1412          02 0033F            :PROGID  EQU      $                 PROGRAM IDENTIFICATION MESSAGE
  1413                                       TEXTC    'SIGMA 5/7 7-CHANNEL MAGNETIC TAPE TEST  ',;
  1414    02 0033F    51E2C9C7 A              'PROGRAM NO. 705735-A00 MANUAL NO. 901682A'
          02 00340    D4C140F5 A
          02 00341    61F740F7 A
          02 00342    60C3C8C1 A
          02 00343    D5D5C5D3 A
          02 00344    40D4C1C7 A
          02 00345    D5C5E3C9 A
          02 00346    C340E3C1 A
          02 00347    D7C540E3 A
          02 00348    C5E2E340 A
          02 00349    15D7D9D6 A
          02 0034A    C7D9C1D4 A
          02 0034B    40D5D64B A
          02 0034C    40F7F0F5 A
          02 0034D    F7F3F560 A
          02 0034E    C1F0F040 A
          02 0034F    D4C1D5E4 A
          02 00350    C1D340D5 A
          02 00351    D64B40F9 A
          02 00352    F0F1F6F8 A
          02 00353    F2C14040 A
  1415                                       PAGE
  1416                              *
  1417                              *
  1418                              *  SUBTEST LINK TABLE
  1419                              *
  1420    02 00354    000003A4      :TISLT   DATA     :TIMRETN          MONITOR RETURN ADDRESS
  1421    02 00355    0000056C              DATA     :TIST01           THESE SUBTESTS
  1422    02 00356    00000592              DATA     :TIST02             CAN BE EXECUTED IN THE
  1423    02 00357    000005BD              DATA     :TIST03               AUTOMATIC MODE.
  1424    02 00358    000005D4              DATA     :TIST04                 NO MANUAL INTERVENTION
  1425    02 00359    000005D5              DATA     :TIST05                   IS REQUIRED.
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          23
  1426   02 0035A    000005D6                DATA     :TIST06
  1427   02 0035B    000005D7                DATA     :TIST07
  1428   02 0035C    00000626                DATA     :TIST08
  1429   02 0035D    0000064B                DATA     :TIST09
  1430   02 0035E    00000681                DATA     :TIST10
  1431   02 0035F    00000682                DATA     :TIST11
  1432   02 00360    000006D5                DATA     :TIST12
  1433   02 00361    000006FE                DATA     :TIST13
  1434   02 00362    00000715                DATA     :TIST14
  1435   02 00363    0000073F                DATA     :TIST15
  1436   02 00364    00000773                DATA     :TIST16
  1437   02 00365    000007A0                DATA     :TIST17
  1438   02 00366    000007A1                DATA     :TIST18
  1439   02 00367    000007E9                DATA     :TIST19
  1440   02 00368    00000874                DATA     :TIST20
  1441   02 00369    000008A8                DATA     :TIST21
  1442   02 0036A    00000907                DATA     :TIST22
  1443   02 0036B    00000934                DATA     :TIST23
  1444   02 0036C    000009A8                DATA     :TIST24
  1445   02 0036D    000009B9                DATA     :TIST25
  1446   02 0036E    000009BA                DATA     :TIST26
  1447   02 0036F    00000A20                DATA     :TIST27
  1448   02 00370    00000A56                DATA     :TIST28
  1449   02 00371    00000B00                DATA     :TIST29
  1450   02 00372    00000B8E                DATA     :TIST30
  1451   02 00373    00000BF4                DATA     :TIST31
  1452   02 00374    00000C7B                DATA     :TIST32
  1453   02 00375    00000D31                DATA     :TIST33
  1454   02 00376    00000DD1                DATA     :TIST34
  1455   02 00377    00000E30                DATA     :TIST35
  1456   02 00378    00000ED2                DATA     :TIST36
  1457   02 00379    00000ED3    :TISLT1     DATA     :TIST37          THE FOLLOWING TESTS MAY REQUIRE
  1458   02 0037A    00000F67                DATA     :TIST38          INTERVENTION
  1459   02 0037B    00000FA7                DATA     :TIST39
  1460   02 0037C    00000FA8                DATA     :TIST40
  1461   02 0037D    00001089                DATA     :TIST41
  1462        02 0037E            :TISLT2  EQU      $
  1463                            *
  1464                            *  END OF SUBTEST LINK TABLE
  1465                            *
  1466                            *
  1467                            *              *** INTERRUPT/TRAP HANDLER ***
  1468                            *
  1469                            * PARAMETERS REQ'D:
  1470                            * ----------------
  1471                            *    ITHTEST - TEST BEING PERFORMED (1=TST1,2=TST2,3=TST3)
  1472                            *    ITHSUBT - SUBTEST BEING PERFORMED (TST1 ONLY)
  1473                            *    ITHRST  - RESTART ADDRESS
  1474                            *
  1475   02 0037E    35F00395    ITHDLR  STW,15   ITHSAVE          SAVE RETURN ADDRESS
  1476   02 0037F    32C00392            LW,12    ITHTEST          TEST NUMBER
  1477   02 00380    EAF00218 A          BAL,15   *:HEXC           CONVERT TO EBCDIC
  1478   02 00381    75F20397            STB,15   ITHM2+1,1         ENTER INTO MSG
  1479   02 00382    EAF0021C A          BAL,15   *:PRINT
  1480   02 00383    00000396            DATA     ITHM2            'TSTX WILL BE RESTARTED'
  1481   02 00384    31100392            CW,1     ITHTEST          TST1?
  1482   02 00385    6930038B            BNE      $+6              NO
  1483   02 00386    32C00393            LW,12    ITHSUBT          SUBTEST NUMBER
  1484   02 00387    EAF00217 A          BAL,15   *:DECC           CONVERT TO EBCDIC
  1485   02 00388    55F2039F            STH,15   ITHM3+3,1         ENTER INTO MSG
  1486   02 00389    EAF0021C A          BAL,15   *:PRINT
  1487   02 0038A    0000039C            DATA     ITHM3            'SUBTEST NO. XX'
  1488   02 0038B    32C018B5            LW,12    :DEVADDR         DEVICE ADDRESS
  1489   02 0038C    EAF00218 A          BAL,15   *:HEXC           CONVERT TO EBCDIC
  1490   02 0038D    35F003A3            STH,15   ITHM4+3           ENTER INTO MSG
  1491   02 0038E    EAF0021C A          BAL,15   *:PRINT
  1492   02 0038F    000003A0            DATA     ITHM4            'DEVICE NO.XXXX'
  1493   02 00390    32F00394            LW,15    ITHRST           (R15)=RESTART ADDRESS
  1494   02 00391    E8000395            B        *ITHSAVE         RETURN TO MONITOR INTER/TRAP HANDLER
  1495                            *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          24
  1496   02 00392    00000000 A   ITHTEST  DATA     0
  1497   02 00393    00000000 A   ITHSUBT  DATA     0
  1498   02 00394    00000000 A   ITHRST   DATA     0
  1499   02 00395    00000000 A   ITHSAVE  DATA     0
  1500   02 00396    1740E3E2 A   ITHM2    TEXTC    ' TSTX WILL BE RESTARTED'
         02 00397    E3E740E6 A
         02 00398    C9D3D340 A
         02 00399    C2C540D9 A
         02 0039A    C5E2E3C1 A
         02 0039B    D9E3C5C4 A
  1501   02 0039C    0F40E2E4 A   ITHM3    TEXTC    ' SUBTEST NO. XX'
         02 0039D    C2E3C5E2 A
         02 0039E    E340D5D6 A
         02 0039F    4B40E7E7 A
  1502   02 003A0    0F40C4C5 A   ITHM4    TEXTC    ' DEVICE NO.XXXX'
         02 003A1    E5C9C3C5 A
         02 003A2    40D5D64B A
         02 003A3    E7E7E7E7 A
  1503                            *
  1504                            *
  1505                            *
  1506                            *
  1507                            *  TEST 1 SEQUENCER (MONITOR)
  1508                            *
  1509   02 003A4    35F003BC     :TIMRETN STW,15   :TIMEXIT          SAVE EXIT ADDRESS
  1510   02 003A5    324003BA              LW,4     :TICUR           FETCH CURRENT INDEX
  1511   02 003A6    314003BB              CW,4     :TILAST          COMPARE TO LAST SUBTEST NUMBER
  1512   02 003A7    E92003BC              BCS,2    *:TIMEXIT        EXIT - ALL SUBTESTS EXECUTED
  1513   02 003A8    20400354              AI,4     :TISLT           BRANCH TO SUBTEST
  1514   02 003A9    2250037E              LI,5     ITHDLR       FETCH TRAP INT. HANDLER ADDRS
  1515   02 003AA    3550030F A            STW,5    :PIT15       STORE INTO PIT + 15
  1516   02 003AB    35100392              STW,1    ITHTEST      STORE TEST NUMBER INTO ITHTEST
  1517   02 003AC    325003BA              LW,5     :TICUR       FETCH CURRENT SUBTEST NUMBER
  1518   02 003AD    35500393              STW,5    ITHSUBT      STORE NUMBER INTO SUBTEST PARAMETER
  1519   02 003AE    22500499              LI,5     TSTI+1       FETCH RESTART ADDRESS
  1520   02 003AF    35500394              STW,5    ITHRST       STORE INTO RESTART ADDRESS PAMTR
  1521   02 003B0    B2500004 A            LW,5     *4               NEXT SUBTEST POINTER
  1522   02 003B1    E8000005 A            B        *5               BRANCH TO NEXT SUBTEST
  1523   02 003B2    331003BA     :TIM     MTW,1    :TICUR           INCREMENT INDEX
  1524   02 003B3    32F0207E              LW,15    =X'0000FF00'     RESTORE TE IN OSB
  1525   02 003B4    35F0206A              STW,15   :SAVETAB+2
  1526   02 003B5    32F0207F              LW,15    =X'0000BB00'     SET UP TDV WITH TE CHECK
  1527   02 003B6    35F0206C              STW,15   :SAVETAB+4
  1528   02 003B7    680003A5              B        :TIMRETN+1       LOOP
  1529                            *
  1530                            *
  1531   02 003B8    00000025 A   :TIAUTO  DATA     :TISLT1-:TISLT   NUMBER OF SUBTESTS IN AUTOMATIC MODE
  1532   02 003B9    0000002A A   :TIALL   DATA     :TISLT2-:TISLT   TOTAL NUMBER OF SUBTEST AVAILABLE
  1533   02 003BA    00000000 A   :TICUR   DATA     0                CURRENT SUBTEST LINK TABLE INDEX
  1534   02 003BB    00000000 A   :TILAST  DATA     0                LAST SUBTEST TO BE EXECUTED
  1535   02 003BC    00000000 A   :TIMEXIT DATA     0                STORAGE FOR REGISTER 15
  1536                            *
  1537                            *
  1538                            *
  1539                            *
  1540                            *
  1541                            *
  1542                            *
  1543                            *
  1544                            *                                   INITIAL ENTRY TO PROGRAM
  1545                            *                                   ------------------------------------
  1546                            *                                                                      *
  1547                            * THIS ROUTINE IS ACCESSED BY THE MONITOR AFTER LOADING THE TEST       *
  1548                            * PROGRAM AND WHENEVER A SYST DIRECTIVE IS EXECUTED BY THE USER.       *
  1549                            *                                                                      *
  1550                            *
  1551   02 003BD    35F018A0     :INITIAL STW,15   ST15             SAVE RETURN ADDRESS
  1552   02 003BE    6AF0051B              BAL,15   :RECOVER         GO TO RECOVER ROUTINE
  1553   02 003BF    3290022F A            LW,9     :MEMLAST
  1554   02 003C0    209FDF3B N            AI,9     -BUFF1           GENERATE BUFFER SIZE
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          25
  1555   02 003C1   21904000 A            CI,9     X'4000'            WORD COUNT TOO LARGE
  1556   02 003C2   691003C4              BL       $+2
  1557   02 003C3   22903FF8 A            LI,9     X'3FF8'
  1558   02 003C4   4B902080             AND,9    =X'FFF8'           MAKE DOUBLE WORD
  1559   02 003C5   359018C9             STW,9    MAXREC             NUMBER OF WORDS IN I/O AREA
  1560   02 003C6   25900002 A           SLS,9    2
  1561   02 003C7   359018C8             STW,9    MAXBYT             MAX BYTES IN I/O AREA
  1562   02 003C8   55921859             STH,9    RFSPEC+1,1
  1563   02 003C9   5592185B             STH,9    RFSPEC1+1,1
  1564   02 003CA   2590007F A           SLS,9    -1
  1565   02 003CB   359018CA             STW,9    MAXREADB           MAX BYTES IN ONE BUFFER
  1566   02 003CC   2590007E A           SLS,9    -2                 MAX WORDS IN I/O AREA
  1567   02 003CD   359018CB             STW,9    MAXREAD            WORDS IN ONE BUFFER
  1568   02 003CE   209020C5             AI,9     WA(BUFF1)
  1569   02 003CF   4B902081             AND,9    =X'FFFFFFFE'       MAKE DOUBLE WORD ADDRESS
  1570   02 003D0   3590207D             STW,9    BUFF2              WA(BUFF1)+ WORDS/2
                                *                                    BUFFER 2 SET UP IN DOUBLE WORDS
  1571                          *                                    DEVICE ADDRESS WITHIN LIMITS
  1572                          *                                    ----------------------------------
  1573
  1574   02 003D1   52A00334             LH,10    :CDB               CHECK FOR DEVICE NUMBERS
  1575   02 003D2   21A00002 A           CI,10    2
  1576   02 003D3   692003D9             BG       INITIAL2
  1577                          *        ERROR NO DEVICE NUMBERS GIVEN
  1578   02 003D4   22000000 A           LI,0     0
  1579   02 003D5   3500030C A           STW,0    :PIT12             RESET RUN FLAG
  1580   02 003D6   35000215 A           STW,0    :LGFLAG            RESET LOAD AND GO FLAG
  1581   02 003D7   3520030A A           STW,2    :PIT10             PARAMETER 2 IN ERROR
  1582   02 003D8   E80018A0             B        *ST15              EXIT FROM INITIALIZER
  1583   02 003D9   5A500334   INITIAL2  LCH,5    :CDB
  1584   02 003DA   20500002 A           AI,5     2                  NUMBER FO DEVICES TO CHECK
  1585   02 003DB   22600000 A           LI,6     0
  1586   02 003DC   327C0336   INITIAL3  LW,7     SYTDEVA,6
  1587   02 003DD   683003EF             BEZ      INITIAL5           LAST DEVICE CHECKED
  1588   02 003DE   31702082             CW,7     =X'1FFF'       WITHIN LIMITS
  1589   02 003DF   692003E9             BG       INITIAL4
  1590   02 003E0   31702083             CW,7     =X'00000080'       CORRECT BIT SET
  1591   02 003E1   684003E9             BCR,4    INITIAL4
  1592   02 003E2   31702084             CW,7     =X'00000008'       0-7 ONLY
  1593   02 003E3   694003E9             BCS,4    INITIAL4
  1594   02 003E4   357C18B6             STW,7    SAVDEV,6           SAVE DEVICE NUMBER IN TABLE
  1595   02 003E5   20600001 A           AI,6     1
  1596   02 003E6   655003DC             BIR,5    INITIAL3
  1597   02 003E7   356018BE             STW,6    SAVNUMB            SAVE NUMBER OF DEVICES
  1598   02 003E8   680003EF             B        INITIAL5
  1599                          *        DEVICE NUMBER INCORRECT
  1600   02 003E9   22000000 A   INITIAL4 LI,0     0
  1601   02 003EA   3500030C A           STW,0    :PIT12             RESET RUN FLAG
  1602   02 003EB   35000215 A           STW,0    :LGFLAG            RESET LOAD AND GO FLAG
  1603   02 003EC   20600003 A           AI,6     3
  1604   02 003ED   3560030A A           STW,6    :PIT10             PARAMETER IN ERROR
  1605   02 003EE   E80018A0             B        *ST15              EXIT FROM INITIALIZER
  1606   02 003EF   22A00334   INITIAL5 LI,10    :CDBMEND           SELECT MODEL NUMBER
  1607   02 003F0   20AFFCD0 N           AI,10    -:CDBM
  1608   02 003F1   3A80000A A           LCW,8    10
  1609   02 003F2   22600000 A           LI,6     0
  1610   02 003F3   52720334             LH,7     :CDB,1             SELECTED MODEL NUMBER
  1611   02 003F4   317C0330             CW,7     :CDBM,6
  1612   02 003F5   683003FC             BE       INITIAL6
  1613   02 003F6   20600001 A           AI,6     1
  1614   02 003F7   658003F4             BIR,8    $-3
  1615                          *        ERROR MODEL NUMBER NOT LISTED
  1616   02 003F8   3510030A A           STW,1    :PIT10
  1617   02 003F9   22000000 A           LI,0     0
  1618   02 003FA   3500030C A           STW,0    :PIT12             RESET RUN FLAG
  1619   02 003FB   E80018A0             B        *ST15              EXIT FROM INITIALIZER
  1620   02 003FC   35701B08   INITIAL6 STW,7     SAVMODEL           SAVE MODEL NUMBER
  1621                          *        DETERMINE IPS, STANDARD SYSTEM, AND OPTIONS HERE
  1622   02 003FD   21700008 A           CI,7     8                  75 IPS
  1623   02 003FE   68400425             BCR,4    INITIAL7
  1624                          *                                    **  75 IPS  **
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			26
1625	02	003FF	311019CE			CW,1	MODEFLAG	PACKED BINARY SET
1626	02	00400	69300403			BNE	$+3	
1627	02	00401	22800C62	A		LI,8	3170	CHARACTER TIME PACKED
1628	02	00402	68000404			B	$+2	
1629	02	00403	22800990	A		LI,8	2448	AT 800 BPI
1630	02	00404	358018D6			STW,8	CHARTR	TIMES FOR TIMING SECTION
1631	02	00405	21700002	A		CI,7	2	
1632	02	00406	6840040C			BCR,4	$+6	
1633	02	00407	3510188E			STW,1	OPTPB	PACKED BINARY OPTION INSTALLED
1634	02	00408	351019CE			STW,1	MODEFLAG	PACKED BINARY
1635	02	00409	351019A7			STW,1	NOPKPRT	CLEAR PACKED PRINTOUT FLG
1636	02	0040A	3510189C			STW,1	FLGRG	PRINT PACKED
1637	02	0040B	68000411			B	$+6	
1638	02	0040C	22800000	A		LI,8	0	
1639	02	0040D	3580188E			STW,8	OPTPB	RESET PACKED BINARY OPTION FLAG
1640	02	0040E	352019A7			STW,2	NOPKPRT	SET NO PACKED PRINTOUT FLAG
1641	02	0040F	3520189C			STW,2	FLGRG	NO PACKED PRINTOUT
1642	02	00410	358019CE			STW,8	MODEFLAG	UNPACKED
1643	02	00411	22800000	A		LI,8	0	
1644	02	00412	35801890			STW,8	FL37IPS	RESET 37.5 IPS FLAG
1645	02	00413	3580188D			STW,8	STDPB	
1646	02	00414	35101891			STW,1	FL75IPS	SET 75 IPS FLAG
1647	02	00415	3510188C			STW,1	STDBCD	BINARY AND DECIMAL STANDARD
1648	02	00416	22800038	A		LI,8	56	
1649	02	00417	358018AF			STW,8	ERTMAX	MAX ERASE TIME
1650	02	00418	2280002E	A		LI,8	46	
1651	02	00419	358018B0			STW,8	ERTMIN	MIN ERASE TIME
1652	02	0041A	22802DE6	A		LI,8	11750	
1653	02	0041B	358018B1			STW,8	IRGMAX	MAX IRG TIME
1654	02	0041C	22802304	A		LI,8	8964	
1655	02	0041D	358018B2			STW,8	IRGMIN	MIN IRG TIME
1656	02	0041E	228004B0	A		LI,8	1200	MAX CREEP
1657	02	0041F	358018B3			STW,8	CRPMAX	MAX CREEP
1658	02	00420	22800F9F	A		LI,8	3999	
1659	02	00421	358018B4			STW,8	WTRT	WRITE TO READ TIME
1660	02	00422	22800514	A		LI,8	1300	BACKWARD DIFFERENTIAL
1661	02	00423	358018D8			STW,8	STOPDIF	
1662	02	00424	68000444			B	INITIAL8	
1663					*			** 37.5 IPS **
1664	02	00425	22802535	A	INITIAL7	LI,8	9525	AT 556 BPI PACKED (+1/4)
1665	02	00426	358018D6			STW,8	CHARTR	
1666	02	00427	351019CE			STW,1	MODEFLAG	SET PACKED FLAG
1667	02	00428	351019A7			STW,1	NOPKPRT	CLEAR PACKED PRINTOUT FLG
1668	02	00429	3510189C			STW,1	FLGRG	PRINT PACKED
1669	02	0042A	21700001	A		CI,7	1	BINARY AND DECIMAL OPTION INSTALLED
1670	02	0042B	6840042E			BCR,4	$+3	
1671	02	0042C	3510188F			STW,1	OPTBCD	SET BINARY AND DECIMAL OPTION
1672	02	0042D	68000430			B	$+3	
1673	02	0042E	22800000	A		LI,8	0	
1674	02	0042F	3580188F			STW,8	OPTBCD	RESET BINARY AND DECIMAL FLAG
1675	02	00430	35101890			STW,1	FL37IPS	SET 37.5 IPS FLAG
1676	02	00431	22800000	A		LI,8	0	
1677	02	00432	35801891			STW,8	FL75IPS	RESSET 75 IPS FLAG
1678	02	00433	3510188D			STW,1	STDPB	PACKED BINARY STANDARD
1679	02	00434	22800000	A		LI,8	0	
1680	02	00435	3580188C			STW,8	STDBCD	RESET BINARY AND DECIMAL FLAG
1681	02	00436	22800070	A		LI,8	112	
1682	02	00437	358018AF			STW,8	ERTMAX	ERASE MAX
1683	02	00438	2280005C	A		LI,8	92	
1684	02	00439	358018B0			STW,8	ERTMIN	ERASE MIN
1685	02	0043A	22805A0A	A		LI,8	23050	
1686	02	0043B	358018B1			STW,8	IRGMAX	MAX IRG TIME
1687	02	0043C	22804608	A		LI,8	17928	
1688	02	0043D	358018B2			STW,8	IRGMIN	MIN IRG TIME
1689	02	0043E	228007D0	A		LI,8	2000	MAX CREEP
1690	02	0043F	358018B3			STW,8	CRPMAX	
1691	02	00440	22801F3E	A		LI,8	7998	
1692	02	00441	358018B4			STW,8	WTRT	WRITE TO READ TIME
1693	02	00442	22800514	A		LI,8	1300	BACKWARD DIFFERENTIAL
1694	02	00443	358018D8			STW,8	STOPDIF	

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          27
 LINE  MEM PROT  MEMORY   MEMORY    ORIG  LABEL      OPERATION  OPERAND          COMMENTS
 NO.   KEY       ADDRESS  CONTENTS
 1695    02 00444   32700336        INITIAL8 LW,7       SYTDEVA          SET UP FIRST DEVICE
 1696    02 00445   35701885                 STW,7      :DEVADDR
 1697                                *                                     SET UP WRITES AND READS
 1698    02 00446   311019CE                 CW,1       MODEFLAG         PACKED BINARY MODE SET
 1699    02 00447   68300451                 BE         INITIAL1
 1700    02 00448   32C02085                 LW,12      =X'06000000'     READ BINARY
 1701    02 00449   32D02086                 LW,13      =X'05000000'     WRITE BINARY
 1702    02 0044A   32802087                 LW,8       =X'08FF0000'     UNPACKED
 1703    02 0044B   32902088                 LW,9       =X'08BF0000'
 1704    02 0044C   22A00014 A               LI,10      X'14'            INCORRECT LENGTH SET
 1705    02 0044D   75A017F1                 STB,10     RFRAND+1
 1706    02 0044E   75A017F3                 STB,10     TST3RF+1         TAPE TEST
 1707    02 0044F   158019CC                 STD,8      CHKBITT
 1708    02 00450   68000459                 B          INITIAL9-3
 1709    02 00451   32C02089        INITIAL1 LW,12      =X'02000000'     READ PACKED BINARY
 1710    02 00452   32D0208A                 LW,13      =X'01000000'     WRITE PACKED
 1711    02 00453   3280208B                 LW,8       =X'087F0000'     PACKED  SET
 1712    02 00454   3290208C                 LW,9       =X'083F0000'
 1713    02 00455   158019CC                 STD,8      CHKBITT
 1714    02 00456   22A00016 A               LI,10      X'16'            INCORRECT LENGTH SUPPRESSED
 1715    02 00457   75A017F3                 STB,10     TST3RF+1         TAPE TEST
 1716    02 00458   75A017F1                 STB,10     RFRAND+1
 1717                                *                                     SET UP BUFFER 2 IN DOUBLE WORD ADR
 1718    02 00459   3290207D                 LW,9       BUFF2
 1719    02 0045A   25900002 A               SLS,9      2                BA OF BUFFER 2
 1720    02 0045B   22AFFFF1 A               LI,10      -15
 1721    02 0045C   228017DC        INITIAL9 LI,8       TRFBC            SET UP READ ADDRESSES
 1722    02 0045D   32B0000C A               LW,11      12
 1723    02 0045E   30B00009 A               AW,11      9
 1724    02 0045F   B5B00008 A               STW,11     *8
 1725    02 00460   20800002 A               AI,8       2                NEXT DOUBLE WORD
 1726    02 00461   65A0045D                 BIR,10     INITIAL9+1
 1727    02 00462   227FFFF6 A               LI,7       -10              SPECIAL READS
 1728    02 00463   228017FA                 LI,8       RPBT
 1729    02 00464   B2A00008 A               LW,10      *8               GET ORDER
 1730    02 00465   4BA0208D                 AND,10     =X'FF000000'     SAVE ORDER
 1731    02 00466   30A00009 A               AW,10      9                BUFF2
 1732    02 00467   B5A00008 A               STW,10     *8               STORE
 1733    02 00468   20800002 A               AI,8       2
 1734    02 00469   65700464                 BIR,7      $-5
 1735                                *                                     SET UP WRITES
 1736    02 0046A   22AFFFF1 A               LI,10      -15
 1737    02 0046B   228017AC                 LI,8       TWBC             FIRST WRITE ADDRESS
 1738    02 0046C   B2B00008 A               LW,11      *8
 1739    02 0046D   4BB0208E                 AND,11     =X'00FFFFFF'     SAVE ADDRESS
 1740    02 0046E   30B0000D A               AW,11      13               GET ORDER
 1741    02 0046F   B5B00008 A               STW,11     *8
 1742    02 00470   20800002 A               AI,8       2                SET UP NEXT DOUBLE WORD ADR
 1743    02 00471   65A0046C                 BIR,10     $-5
 1744    02 00472   329017F8                 LW,9       TRFDC48+2
 1745    02 00473   20900030 A               AI,9       48
 1746    02 00474   359017F8                 STW,9      TRFDC48+2        SET UP DATA CHAIN
 1747    02 00475   72E017DC                 LB,14      TRFBC            GET ORDER
 1748    02 00476   75E01858                 STB,14     RFSPEC
 1749    02 00477   75E0185A                 STB,14     RFSPEC1
 1750    02 00478   72E017AC                 LB,14      TWBC             GET WRITE ORDER
 1751    02 00479   75E0185E                 STB,14     TPDMP1
 1752    02 0047A   75E01860                 STB,14     TPDMP1+2
 1753    02 0047B   75E01862                 STB,14     TPDMP1+4
 1754    02 0047C   227FFFFF A               LI,7       -1
 1755    02 0047D   3570030C A               STW,7      :PIT12           RUN PROGRAM FLAG SET
 1756                                *
 1757                                *                                     INITIALIZE ALL PARAMETERS
 1758    02 0047E   E80018A0                 B          *ST15            EXIT FROM INITIALIZER
 1759                                *
 1760                                *
 1761                                *
 1762                                *
 1763                                *
 1764                                *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          28
  1765                          *                                                                  *
  1766                          *                    *** TST0 - COMPREHENSIVE TEST                 *
  1767                          *                        ------------------------                  *
  1768                          * THIS DIRECTIVE ALLOWS THE USER TO TEST ALL FUNCTIONS ASSOCIATED WITH *
  1769                          * THE 7-TRACK MAGNETIC TAPE SYSTEM AND CONCLUDES THE TEST WITH A RANDOM*
  1770                          * EXERCISER AFTER A SUCCESSFUL COMPLETION OF THE FUNCTIONAL TESTS.     *
  1771                          *                                                                  *
  1772  02 0047F  32700201 A    TST0     LW,7     :P1              NUMBER OF LOOPS IN RANDOM EXER
  1773  02 00480  69300482               BNEZ     $+2
  1774  02 00481  227003E8 A             LI,7     1000             1000 PASSES IF ZERO
  1775  02 00482  35701888               STW,7    NMLOOP
  1776  02 00483  32700202 A             LW,7     :P2              NUMBER OF RETRIES IN RANDOM EXER
  1777  02 00484  69300488               BNEZ     $+4
  1778  02 00485  32800201 A             LW,8     :P1
  1779  02 00486  69300488               BNEZ     $+2              P1 NOT ZERO
  1780  02 00487  22700005 A             LI,7     5                5 RETRIES IF P1 =0, P2 =0
  1781  02 00488  35701887               STW,7    CRTRY            RETRIES FOR RANDOM EXER
  1782  02 00489  327003B8     TST0A    LW,7     :T1AUTO
  1783  02 0048A  357003BB               STW,7    :T1LAST          LAST SUBTEST
  1784  02 0048B  35700202 A             STW,7    :P2
  1785  02 0048C  351003BA               STW,1    :T1CUR           FIRST SUBTEST
  1786  02 0048D  35100201 A             STW,1    :P1
  1787  02 0048E  22700491               LI,7     WA(TST001)
  1788  02 0048F  557204C6               STH,7    TST103,1         RETURN ADDRESS FROM TST1
  1789  02 00490  680004B4               B        TST101           RETURN FROM TST1
  1790  02 00491  22700494     TST001   LI,7     WA(TST002)
  1791  02 00492  557204F3               STH,7    TST203,1         STORE RETURN ADDRESS FROM TST2
  1792  02 00493  680004E7               B        TST202+3         GO TO RANDOM EXERCISER
  1793  02 00494  EAF0021D A    TST002   BAL,15   *:SENSE          CHECK SENSE SWITCHES
  1794  02 00495  2E000495               WAIT     $                HALT
  1795  02 00496  68000489               B        TST0A
  1796  02 00497  E8000214 A             B        *:MONITOR        GO TO MONITOR
  1797                          *
  1798                          *
  1799                          *                                                                  *
  1800                          *                                                                  *
  1801                          *                                                                  *
  1802                          *                    *** TST1 - FUNCTIONAL TEST                    *
  1803                          *                        ----------------------                    *
  1804                          * THIS DIRECTIVE PREFORMS A SYSTEMATIC TEST OF ALL LOGIC FUNCTIONS     *
  1805                          * ASSOCIATED WITH THE 7-TRACK MAGNETIC TAPE SYSTEM. THE FUNCTIONAL     *
  1806                          * TEST CONSISTS OF A NUMBER OF SUBTESTS WHICH MAY BE SELECTED          *
  1807                          * INDIVIDUALLY OR IN GROUPS.                                         *
  1808                          *                                                                    *
  1809                          *     P1  FIRST SUBTEST TO BE PREFORMED. ERROR IF P1 <0 OR >41.       *
  1810                          *     P2  LAST SUBTEST TO BE PREFORMED. ERROR IF P2 <0 OR >41 OR <P1. *
  1811                          *     P3  NOT USED                                                   *
  1812                          *     P4  NOT USED                                                   *
  1813                          *                                                                    *
  1814  02 00498  2B0004CC     TST1     STM,0    DATASAVE         SAVE ALL REGISTERS
  1815  02 00499  32800202 A             LW,8     :P2              LAST TEST
  1816  02 0049A  32700201 A             LW,7     :P1              FIRST SUBTEST
  1817  02 0049B  693004A3               BNEZ     TST101D
  1818  02 0049C  31800001 A             CW,8     1
  1819  02 0049D  681004B2               BGE      TST101B          P1=0, P2 NOT 0
  1820  02 0049E  35100007 A             STW,1    7                FIRST SUBTEST
  1821  02 0049F  35100201 A             STW,1    :P1
  1822  02 004A0  328003B8               LW,8     :T1AUTO          LAST AUTOMATIC SUBTEST
  1823  02 004A1  35800202 A             STW,8    :P2
  1824  02 004A2  680004A9               B        TST101C
  1825  02 004A3  21700029 A    TST101D  CI,7     41               P1 >41
  1826  02 004A4  692004AE               BG       TST101A
  1827  02 004A5  21800029 A             CI,8     41               P2 >41
  1828  02 004A6  692004B2               BG       TST101B          P2 >40
  1829  02 004A7  31700008 A             CW,7     8                P1 >P2
  1830  02 004A8  692004B2               BG       TST101B
  1831  02 004A9  357003BA     TST101C  STW,7     :T1CUR           FIRST SUBTEST
  1832  02 004AA  358003BB               STW,8    :T1LAST          LAST SUBTEST
  1833  02 004AB  228004C7               LI,8     TST103+1         TST1 RETURN ADDRESS
  1834  02 004AC  558204C6               STH,8    TST103,1
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          29
 1835    02 004AD    680004B4              B       TST101
 1836                                *       PARAMETER P1 INCORRECT
 1837    02 004AE    3510030A A    TST101A STW,1   :PIT10          P1 IN ERROR
 1838    02 004AF    EAF00229 A            BAL,15  *:PREPORT       REPORT BAD PARAMETER
 1839    02 004B0    00000322              DATA    :DIC+2
 1840    02 004B1    E8000214 A            B       *:MONITOR       RETURN TO MONITOR
 1841                                *       PARAMETER P2 INCORRECT
 1842    02 004B2    3520030A A    TST101B STW,2   :PIT10          P2 IN ERROR
 1843    02 004B3    680004AF              B       $-4
 1844    02 004B4    3A5018BE      TST101  LCW,5   SAVNUMB         FROM TST0
 1845                                *                             R5 AND R6 DISTURBED
 1846    02 004B5    22600000 A            LI,6    0               DEVICE NUMBER
 1847    02 004B6    356004DC              STW,6   SAVESIX
 1848    02 004B7    326004DC      TST102  LW,6    SAVESIX
 1849    02 004B8    327C18B6              LW,7    SAVDEV,6
 1850    02 004B9    357018B5              STW,7   :DEVADDR        ADDRESS OF DEVICE TO BE TESTED
 1851    02 004BA    32C018B5              LW,12   :DEVADDR        DEVICE
 1852    02 004BB    EAF00218 A            BAL,15  *:HEXC          CONVERT
 1853    02 004BC    35F019B8              STW,15  DEVPRT0+3       STORE
 1854    02 004BD    EAF0021C A            BAL,15  *:PRINT         MESSAGE
 1855    02 004BE    00001988              DATA    DEVPRT0
 1856    02 004BF    32700201 A            LW,7    :P1             RESTORE FIRST TEST
 1857    02 004C0    357003BA              STW,7   :TICUR
 1858    02 004C1    6AF003A4              BAL,15  :TIMRETN        GO TO SEQUENCER
 1859                                *       ALL SUBTESTS DONE ON ONE UNIT
 1860    02 004C2    331004DC              MTW,1   SAVESIX
 1861    02 004C3    326004DC              LW,6    SAVESIX
 1862    02 004C4    316018BE              CW,6    SAVNUMB         HAVE ALL UNITS BEEN TESTED
 1863    02 004C5    69100487              BCS,1   TST102
 1864    02 004C6    680004C7      TST103  B       $+1             TST0 RETURN HERE
 1865    02 004C7    EAF0021D A            BAL,15  *:SENSE         CHECK SENSE SWITCHES
 1866    02 004C8    2E0004C8              WAIT    $               HALT
 1867    02 004C9    68000498              B       TST1            LOOP ON TST1
 1868    02 004CA    2A0004CC              LM,0    DATASAVE        RESTORE ALL REGISTERS
 1869    02 004CB    E8000214 A            B       *:MONITOR       GO TO MONITOR
 1870                                *
 1871                                          BOUND   8
 1872    02 004CC                      DATASAVE RES    16
 1873    02 004DC    00000000 A        SAVESIX DATA    0
 1874                                *
 1875                                *
 1876                                *
 1877                                *                                                              *
 1878                                *                                                              *
 1879                                *                                                              *
 1880                                *                *** TST2 - RANDOM EXERCISER                    *
 1881                                *                    ----------------------                    *
 1882                                * THIS DIRECTIVE OPERATES A TAPE SYSTEM WITH A PSEUDO -RANDOM TYPE *
 1883                                * OPERATION ORDER SEQUENCE, RANDOM DATA PATTERN, I/O AREA, TIME *
 1884                                * DELAY, AND RECORD SIZE FOR THE PURPOSE OF DETECTING INTERMITTENT *
 1885                                * FAILURES AND EXERCISING ALL TAPE UNITS. ALL UNITS SPECIFIED WITH *
 1886                                * THE 'SYST' DIRECTIVE WILL BE EXERCISED.                       *
 1887                                * THE RANDOM EXERCISER CAN BE RUN AT ANY DENSITY IF 75 IPS.     *
 1888                                *                                                              *
 1889                                *     P1  NUMBER OF CYCLES TO BE PERFORMED. ERROR IF P1 <0. P1 IS *
 1890                                *         SET TO 1000 IF P1 =0.                                *
 1891                                *     P2  ERROR RETRY COUNT                                    *
 1892                                *     P3  NOT USED                                             *
 1893                                *     P4  NOT USED                                             *
 1894                                *                                                              *
 1895    02 004DD    32700201 A    TST2    LW,7    :P1             NUMBER OF CYCLES
 1896    02 004DE    691004ED              BLZ     TST201A         P1<0
 1897    02 004DF    692004E1              BGZ     TST201          P1>0
 1898    02 004E0    227003E8 A            LI,7    1000
 1899    02 004E1    35701888      TST201  STW,7   NMLOOP          NUMBER OF CYCLES STORED
 1900    02 004E2    32700202 A            LW,7    :P2             NUMBER OF RETRIES
 1901    02 004E3    691004F1              BLZ     TST201B         P2<0
 1902    02 004E4    35701887      TST202  STW,7   CRTRY           NUMBER OF RETRIES STORED
 1903    02 004E5    227004F4              LI,7    TST203+1        TST2 RETURN ADDRESS
 1904    02 004E6    557204F3              STH,7   TST203,1
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          30
 1905    02 004E7    2270037E              LI,7      ITHDLR          FETCH TRAP INT. HANDLER ADDRS
 1906    02 004E8    3570030F A            STW,7     :PIT15          STORE INTO PIT + 15
 1907    02 004E9    35200392              STW,2     ITHTEST         STORE TEST NUMBER INTO ITHTEST
 1908    02 004EA    227004DD              LI,7      TST2            FETCH RESTART ADDRESS
 1909    02 004EB    35700394              STW,7     ITHRST          STORE INTO RESTART ADDRESS PAMTR
 1910    02 004EC    6800108A              B         T2RE
 1911                                *     PARAMETER P1 INCORRECT
 1912    02 004ED    3510030A A    TST201A STW,1     :PIT10            P1 IN ERROR
 1913    02 004EE    EAF00229 A            BAL,15    *:PREPORT         REPORT BAD PARAMETER
 1914    02 004EF    00000324              DATA      :DIC+4
 1915    02 004F0    E8000214 A            B         *:MONITOR         RETURN TO MONITOR
 1916                                *     PARAMETER P2 INCORRECT
 1917    02 004F1    3520030A A    TST201B STW,2     :PIT10            P2 IN ERROR
 1918    02 004F2    680004EE              B         $-4
 1919    02 004F3    680004F4      TST203  B         $+1               TST0 RETURN HERE
 1920    02 004F4    EAF0021D A            BAL,15    *:SENSE           CHECK SENSE SWITCHES
 1921    02 004F5    2E0004F5              WAIT      $                 HALT
 1922    02 004F6    680004DD              B         TST2              LOOP
 1923    02 004F7    E8000214 A            B         *:MONITOR         GO TO MONITOR
 1924                                *
 1925                                *
 1926                                *                                                              *
 1927                                *                                                              *
 1928                                *                    *** TST3 - UTILITY TEST                   *
 1929                                *                        ------------------                    *
 1930                                * THIS DIRECTIVE ALLOWS THE USER TO SELECT SEVERAL UTILITY TESTS BY    *
 1931                                * SPECIFYING IN PARAMETER 1 THE DESIRED TEST. PARAMETERS 2,3, AND 4    *
 1932                                * ARE SPECIFICALLY INDICATED IN THE DESCRIPTION OF THE SUBTEST IF      *
 1933                                * APPLICABLE. THE UTILITY TESTS CAN RUN AT ANY DENSITY IF 75 IPS.      *
 1934                                *                                                              *
 1935                                *     P1 =1 TAPE TEST                                          *
 1936                                *     ---------------                                          *
 1937                                *                   THIS TEST ALLOWS THE USER TO WRITE, READ FORWARD,  *
 1938                                *                   READ BACKWARD, OR READ FORWARD AND BACKWARD P3     *
 1939                                *                   RECORDS. THE 'DATA' AND 'LEN' DIRECTIVES CAN BE   *
 1940                                *                   SELECTED TO DEFINE THE PATTERN AND RECORD SIZE.    *
 1941                                *                                                              *
 1942                                *     P2 =0 WRITE, REWIND, READ FORWARD, AND READ BACKWARD P3 RECORDS.  *
 1943                                *        =1 WRITE P3 RECORDS.                                  *
 1944                                *        =2 READ FORWARD P3 RECORDS.                           *
 1945                                *        =3 READ BACKWARD P3 RECORDS.                          *
 1946                                *        =4 READ FORWARD AND BACKWARD P3 RECORDS IN SEQUENCE.  *
 1947                                *        =8 WRITE, REWIND, READ FWD, SPACE BKW P3 RECORDS (BCD).  *
 1948                                *        =9 WRITE P3 RECORDS (BCD).                            *
 1949                                *       =10 READ FORWARD P3 RECORDS (BCD).                     *
 1950                                *       =12 READ FWD AND SPACE BKW P3 RECORDS (BCD).           *
 1951                                *     P3 =NUMBER OF RECORDS TO BE WRITTEN OR READ. IF P3 =0, CONTINUE  *
 1952                                *         UNTIL E.O.T. OR B.O.T. IS REACHED.                   *
 1953                                *     P4 =DELAY IN MILLESICONDS BETWEEN OPERATION SETS.        *
 1954                                *                                                              *
 1955                                *     P1 =2 DESKEW TEST                                        *
 1956                                *     -----------------                                        *
 1957                                *                   THIS TEST IS PROVIDED AS A SCOPING AID DURING      *
 1958                                *                   CHECKING AND ADJUSTING THE READ/WRITE SKEW. A      *
 1959                                *                   PATTERN OF ALL ONES WILL BE RECORDED AS A          *
 1960                                *                   CONTINUOUS RECORD.                                 *
 1961                                *     P2 =0,1 WRITE UNTIL E.O.T. IS REACHED AND REWIND         *
 1962                                *        =2 READ FORWARD UNTIL E.O.T. IS REACHED AND REWIND     *
 1963                                *        =3 READ BACKWARD UNTIL BOT IS REACHED                 *
 1964                                *        =4 READ FWD UNTIL E.O.T., SPACE BKW UNITL B.O.T. NO REWINDS.  *
 1965                                *     P3 NOT USED                                              *
 1966                                *     P4 NOT USED                                              *
 1967                                *                                                              *
 1968                                *     P1 =3 SYNC ON A CHARACTER TEST                           *
 1969                                *     ------------------------------                           *
 1970                                *                   THIS TEST IS PROVIDED AS A SCOPING AID BY EXECUTING*
 1971                                *                   A UNIQUE I/O INSTRUCTION (TDV) AFTER THE BYTE COUNT*
 1972                                *                   SPECIFIED HAS BEEN REACHED.                *
 1973                                *     P2 =1 READ FORWARD AND SPACE RECORD BACKWARD              *
 1974                                *        =2 READ BACKWARD AND SPACE RECORD FORWARD              *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          31
  1975                          *    P3 BYTE TO SYNC ON.                                          *
  1976                          *    P4 DELAY IN MILLISECONDS BETWEEN SYNCS.                      *
  1977                          *                                                                 *
  1978                          *     P1 =4 COMPATABILITY AND NOISE PATTERN TEST                   *
  1979                          *     ------------------------------------------                  *
  1980                          *                  THIS TEST ALLOWS THE USER TO WRITE, READ FORWARD,*
  1981                          *                  READ BACKWARD, OR READ FORWARD AND BACKWARD A   *
  1982                          *                  PREDETERMINED, INCREMENTED RECORD PATTERN. WHEN *
  1983                          *                  THE MAXIMUM RECORD COUNT IS REACHED A PERMANENT *
  1984                          *                  AND TEMPORARY WRITE AND READ ERROR TALLY IS PRINTED.
  1985                          *     P2 =0,1 WRITE, READ BACKWARD AND READ FORWARD               *
  1986                          *        =2 SPACE FORWARD, READ BACKWARD AND READ FORWARD         *
  1987                          *        =3 READ FORWARD, READ BACKWARD, AND SPACE FORWARD        *
  1988                          *        =4 READ FORWARD ONLY                                     *
  1989                          *        =5 WRITE ONLY                                            *
  1990                          *     P3 NOT USED                                                 *
  1991                          *     P4 NOT USED                                                 *
  1992                          *                                                                 *
  1993                          *     P1 =5 READ/SPACE TEST                                       *
  1994                          *     ---------------------                                       *
  1995                          *                  THIS TEST ALLOWS THE USER TO READ OR SPACE N RECORDS*
  1996                          *                  WITH OR WITHOUT REWIND. ONLY NON-RECOVERABLE TRANS- *
  1997                          *                  MISSION ERRORS WILL CAUSE ERROR PRINTOUT, BACKSPACE,*
  1998                          *                  AND A HALT.                                     *
  1999                          *     P2   =0 REWIND AND READ FWD N RECORDS.                      *
  2000                          *          =1 REWIND AND SPACE FWD N RECORDS.                     *
  2001                          *          =2 DONT REWIND, READ FWD N RECORDS.                    *
  2002                          *          =3 DONT REWIND, SPACE FWD N RECORDS.                   *
  2003                          *          =4 DONT REWIND, SPACE BKW N RECORDS.                   *
  2004                          *          =8 REWIND AND READ FWD N RECORDS (BCD).                *
  2005                          *         =10 DONT REWIND, READ FWD N RECORDS (BCD).              *
  2006                          *     P3   NUMBER OF RECORS TO READ OR SPACE.                     *
  2007                          *     P4   =0 DONT PRINOUT RECORD.                                *
  2008                          *          =1 PRINTOUT RECORD IN ERROR.                           *
  2009                          *          =2 PRINTOUT NTH RECORD.                                *
  2010                          *                                                                 *
  2011   02 004F8  22600000 A   TST3    LI,6    0              DEVICE NO
  2012   02 004F9  356004DC              STW,6   SAVESIX
  2013   02 004FA  326004DC              LW,6    SAVESIX
  2014   02 004FB  327C18B6              LW,7    SAVDEV,6
  2015   02 004FC  35701885              STW,7   :DEVADDR           SET UP DEVICE ADDRESS
  2016   02 004FD  2270037E              LI,7    ITHDLR         FETCH TRAP INT. HANDLER ADDRS
  2017   02 004FE  3570030F A            STW,7   :PIT15         STORE INTO PIT + 15
  2018   02 004FF  35300392              STW,3   ITHTEST        STORE TEST NUMBER INTO ITHTEST
  2019   02 00500  227004F8              LI,7    TST3           FETCH RESTART ADDRESS
  2020   02 00501  35700394              STW,7   ITHRST         STORE INTO RESTART ADDRESS PAMTR
  2021   02 00502  32700201 A            LW,7    :P1                P1
  2022   02 00503  21700001 A            CI,7    1
  2023   02 00504  6830125F              BEZ     TST31              GO TO TST3,1
  2024   02 00505  21700002 A            CI,7    2
  2025   02 00506  683013A9              BEZ     TST32              GO TO TST3,2
  2026   02 00507  21700003 A            CI,7    3
  2027   02 00508  68301403              BEZ     TST33              GO TO TST3,3
  2028   02 00509  21700004 A            CI,7    4
  2029   02 0050A  68301456              BEZ     TST34              GO TO TST3,4
  2030   02 0050B  21700005 A            CI,7    5
  2031   02 0050C  683014D9              BEZ     TST35              GO TO TST3,5
  2032                          *         ERROR P1 INCORRECT
  2033   02 0050D  3510030A A            STW,1   :PIT10             P1 IN ERROR
  2034   02 0050E  EAF00229 A            BAL,15  *:PREPORT          REPORT BAD PARAMETER
  2035   02 0050F  00000326              DATA    :DIC+6
  2036   02 00510  E8000214 A            B       *:MONITOR          RETURN TO MONITOR
  2037   02 00511  31100201 A   TST36    CW,1    :P1                CHANGE DEVICES FOR TST3,1 ONLY
  2038   02 00512  69300517              BNE     TST37
  2039   02 00513  331004DC              MTW,1   SAVESIX
  2040   02 00514  326004DC              LW,6    SAVESIX
  2041   02 00515  316018BE              CW,6    SAVNUMB            ALL UNITS TESTED
  2042   02 00516  691004F9              BCS,1   TST3+1
  2043   02 00517  EAF0021D A   TST37    BAL,15  *:SENSE            CHECK SENSE SWITCHES
  2044   02 00518  2E000518              WAIT    $                  HALT
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          32
  2045    02 00519    680004F8              B          TST3             LOOP
  2046    02 00051A   E8000214  A           B          *:MONITOR        GO TO MONITOR
  2047                                      *
  2048                                      *
  2049                                      *
  2050                                      *
  2051                                      *
  2052                                      *                           ABSOLUTE RECOVERY ROUTINE
  2053                                      *                           ------------------------
  2054                                      *
  2055    02 00051B   35F018D2              :RECOVER STW,15   ST1155           SAVE RETURN ADDRESS
  2056    02 00051C   22100001  A                    LI,1      1
  2057    02 00051D   22200002  A                    LI,2      2
  2058    02 00051E   22300003  A                    LI,3      3
  2059    02 00051F   324019CF                       LW,4      XPSD1            I/O INTERRUPT
  2060    02 00520    3540005C  A                    STW,4     X'5C'
  2061    02 00521    32401E42                       LW,4      :DELXPSD         ZERO INTERRUPT
  2062    02 00522    3540005B  A                    STW,4     X'5B'
  2063    02 00523    32401E43                       LW,4      :DELMTW          CLOCK INTERRUPT
  2064    02 00524    35400055  A                    STW,4     X'55'
  2065    02 00525    32400200  A                    LW,4      :MLT             ABSOLUTE RECOVERY
  2066    02 00526    35400026  A                    STW,4     X'26'
  2067    02 00527    22400020  A                    LI,4      X'20'            DISARM INTERRUPT
  2068    02 00528    6D401100  A                    WD,4      X'1100'
  2069    02 00529    E80018D2                       B         *ST1155          BRANCH BACK
  2070                                      *
  2071                                      *
  2072                                      *
  2073                                      *
  2074                                      *                                                           *
  2075                                      *
  2076                                      *                   *** LEN DIRECTIVE                       *
  2077                                      *                   -------------                           *
  2078                                      * THIS DIRECTIVE DEFINES THE RECORD LENGTH TO BE USED IN THE UTILITY *
  2079                                      * TESTS TO ALTER PREDEFINED BYTE COUNT                        *
  2080                                      *                                                           *
  2081                                      *     P1 FIXED RECORD LENGTH OF N BYTES                     *
  2082                                      *     P2 NOT USED                                           *
  2083                                      *     P3 NOT USED                                           *
  2084                                      *     P4 NOT USED                                           *
  2085                                      *                                                           *
  2086    02 0052A    32700201  A           LEN        LW,7      :P1              LENGTH INTO R7
  2087    02 00528    69200530                         BGZ       LEN1
  2088                                      *          ERROR P1 =0 OR P1 NEGATIVE
  2089    02 0052C    3510030A  A                      STW,1     :P1T10           P1 IN ERROR
  2090    02 0052D    EAF00229  A                      BAL,15    *:PREPORT        REPORT BAD PARAMETER
  2091    02 0052E    0000032A                         DATA      :DIC+10
  2092    02 0052F    E8000214  A                      B         *:MONITOR
  2093    02 00530    317018CA              LEN1       CW,7      MAXREADB         MAXIMUM READ BYTE COUNT
  2094    02 00531    68200533                         BLE       $+2
  2095    02 00532    327018CA                         LW,7      MAXREADB         USE MAXIMUM
  2096    02 00533    357019A6                         STW,7     LENGTH
  2097    02 00534    E8000214  A                      B         *:MONITOR        GO TO MONITOR
  2098                                      *
  2099                                      *
  2100                                      *
  2101                                      *
  2102                                      *                   *** DATA DIRECTIVE                      *
  2103                                      *                   --------------                          *
  2104                                      * THIS DIRECTIVE DEFINES THE DATA PATTERN TO BE USED IN THE UTILITY *
  2105                                      * TESTS TO ALTER PREDEFINED DATA PATTERNS.                    *
  2106                                      *     P1 =0 FIXED PATTERN (PATTERN IN P2)                   *
  2107                                      *        =2 RANDOM PATTERN (SEED IN P2)                     *
  2108                                      *        =5 BIT CROWDING PATTERN (TRACKS IN P2, DATA IN P3 AND P4) *
  2109                                      *     P2 FIXED PATTERN IF P1 =0.                            *
  2110                                      *        RANDOM PATTERN SEED IF P1 =2.                      *
  2111                                      *        TRACK NUMBERS IF P1=5 (TWO TRACKS 12 TO 76)        *
  2112                                      *     P3 BINARY DIGIT STRING FOR FIRST TRACK IF P1 =5.      *
  2113                                      *     P4 BINARY DIGIT STRING FOR SECOND TRACK IF P1 =5.     *
  2114                                      *                                                           *
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70                33
  2115                          *
  2116    02 00535    32700201 A   DATTA     LW,7       :P1              PATTERN TYPE
  2117    02 00536    21700002 A   DATTA1    CI,7       2                P1 =2
  2118    02 00537    69300540                BNEZ       DATTA2
  2119    02 00538    357019A0                STW,7      PATTYPE          RANDOM PATTERN
  2120    02 00539    32700202 A              LW,7       :P2              SEED IF P1 =2
  2121    02 0053A    6930053C                BNEZ       DATTA1A
  2122                                *       ERROR SEED P2 =0
  2123    02 0053B    68000556                B          DATTA5           P2 IN ERROR
  2124    02 0053C    3570199F    DATTA1A     STW,7      PATTSED
  2125    02 0053D    35701D39                STW,7      :PATID+1         SEED
  2126    02 0053E    35201D38                STW,2      :PATID           TYPE RANDOM
  2127    02 0053F    6800055C                B          DATTA9
  2128    02 00540    21700000 A   DATTA2    CI,7       0                P1 =0
  2129    02 00541    69300548                BNEZ       DATTA3
  2130    02 00542    357019A0                STW,7      PATTYPE          FIXED PATTERN
  2131    02 00543    35701D38                STW,7      :PATID           TYPE OF PATTERN
  2132    02 00544    32700202 A              LW,7       :P2              FIXED PATTERN IF P1 =0
  2133    02 00545    35701D39                STW,7      :PATID+1         WORD TO SMEAR
  2134    02 00546    357019A4                STW,7      PATTFIX          PATTERN =0 OR NEGATIVE OK
  2135    02 00547    6800055C                B          DATTA9
  2136    02 00548    21700005 A   DATTA3    CI,7       5
  2137    02 00549    6830054E                BEZ        DATTA4
  2138                                *                  ERROR IF P1 IS NOT 0,2,5
  2139    02 0054A    3510030A A              STW,1      :PIT10           P1 IN ERROR
  2140    02 0054B    EAF00229 A              BAL,15     *:PREPORT        REPORT BAD PARAMETER
  2141    02 0054C    00000328                DATA       :DIC+8
  2142    02 0054D    E8000214 A              B          *:MONITOR        GO TO MONITOR
  2143    02 0054E    357019A0    DATTA4      STW,7      PATTYPE          P1 =5
  2144    02 0054F    32700202 A              LW,7       :P2              BIT CROWDING
  2145    02 00550    21700012 A              CI,7       X'12'            MINIMUM
  2146    02 00551    69100556                BCS,1      DATTA5
  2147    02 00552    21700076 A              CI,7       X'76'            MAXIMUM
  2148    02 00553    69200556                BCS,2      DATTA5
  2149    02 00554    357019A1                STW,7      PATTTK           STORE TRACKS TO CROWD
  2150    02 00555    68000558                B          DATTA6
  2151                                *       ERROR TRACKS NOT WITHIN LIMITS
  2152    02 00556    3520030A A   DATTA5    STW,2      :PIT10           P2 IN ERROR
  2153    02 00557    6800054B                B          DATTA3+3
  2154    02 00558    32700203 A   DATTA6    LW,7       :P3              BINARY STRING FOR 1 ST DIGIT
  2155    02 00559    357019A2                STW,7      PATTTS1
  2156    02 0055A    32700204 A              LW,7       :P4              BINARY STRING FOR 2 ND DIGIT
  2157    02 0055B    357019A3                STW,7      PATTTS2
  2158    02 0055C    E8000214 A   DATTA9    B          *:MONITOR        GO TO MONITOR
  2159                                *
  2160                                *
  2161                                *
  2162                                *
  2163                                *                  *******LIMIT DIRECTIVE**********
  2164                                *       THIS DIRECTIVE ALLOWS THE USER TO LIMIT PROGRAM OPERATIONS
  2165                                *       SPECIFIED BY PARAMETERS P1 AND P2.
  2166                                *
  2167                                *                  P1 =1 LIMIT COMPARE ERROR PRINTOUT TO P2 LINES.
  2168                                *
  2169    02 0055D    3520030A A   :LIMIT   STW,2      :PIT10           SET ILLEGAL PARAMETER NO.
  2170    02 0055E    72820211 A              LB,8       :PSW,1           FETCH PAR COUNT
  2171    02 0055F    21800002 A              CI,8       2
  2172    02 00560    68300564                BE         :LIM1            B: PAR COUNT =2
  2173    02 00561    EAF00229 A   :LIM0     BAL,15     *:PREPORT        REPORT PAR ERROR
  2174    02 00562    0000032E                DATA       :DIC+14
  2175    02 00563    E8000214 A              B          *:MONITOR        RETURN TO MONITOR
  2176    02 00564    3510030A A   :LIM1     STW,1      :PIT10           SET PAR NO =1
  2177    02 00565    31100201 A              CW,1       :P1
  2178    02 00566    69300561                BNE        :LIM0            B: PAR ERROR P1>1
  2179    02 00567    32800202 A              LW,8       :P2              FETCH PAR P2
  2180    02 00568    6920056A                BGZ        :LIM2            B: P2 =0
  2181    02 00569    2280FFFF A              LI,8       X'FFFF'          SET LIMIT TO HI NUMBER
  2182    02 0056A    35801DBE    :LIM2       STW,8      :COMPLIN         SAVE COMPARE LIMIT COUNT
  2183    02 0056B    E8000214 A              B          *:MONITOR        RETURN TO PROGRAM
  2184                                *
```

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          34
  2185                          *
  2186                          *
  2187                          *
  2188                          *
  2189                          *
  2190                          *
  2191                          *
  2192                          *                                        TST1,1 AIO,HIO,TIO,TDV TEST
  2193                          *                                        ---------------------------
  2194                          *
  2195                          * CHECK THE ABILITY OF THE 7-TRACK MAG TAPE SYSTEM TO CORRECTLY          *
  2196                          * RESPOND TO THE AIO, HIO AND THE TDV INSTRUCTIONS. AIO WILL ONLY        *
  2197                          * CHECK THE NO INTERRUPT PENDING CONDITION. VERIFY ADDRESS RECOGNITION   *
  2198                          * AND STATUS RESPONSE TO THESE INSTRUCTIONS. ANY ERROR IN THIS TEST      *
  2199                          * MAY INDICATE A POSSIBLE PROBLEM IN THE SUB-CONTROLLER AREA.            *
  2200                          *                                                                      *
  2201                          *
  2202   02 0056C   22500020 A  :TIST01  LI,5     X'20'           AIO
  2203   02 0056D   6D501100 A           WD,5     X'1100'         DISABLE I/O INTERRUPT
  2204   02 0056E   6EC00000 A           AIO,12   0               AIO
  2205   02 0056F   69800575           BCS,8    TIST0102        NO IP
  2206                          *        ERROR EXIT
  2207   02 00570   EAF0021B A           BAL,15   *:ERROR         #0101
  2208   02 00571   00000065 A           DATA     0101            NO INTERRUPT EXPECTED ON AIO
  2209   02 00572   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2210   02 00573   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2211   02 00574   6800056C             B        :TIST01         LOOP ON ERROR
  2212   02 00575   6AF01640     TIST0102 BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  2213   02 00576   32E0208F             LW,14    =X'E700C000'    MASK AUTOMATIC ONLY
  2214   02 00577   6AF01BA9             BAL,15   :HIO            HIO
  2215   02 00578   6800057E             B        TIST0103
  2216                          *        ERROR EXIT
  2217   02 00579   EAF0021B A           BAL,15   *:ERROR         #0102
  2218   02 0057A   00000066 A           DATA     0102            INCORRECT STATUS RESPONSE ON HIO
  2219   02 0057B   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2220   02 0057C   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2221   02 0057D   68000575             B        TIST0102        LOOP ON ERROR
  2222   02 0057E   6AF01640     TIST0103 BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  2223   02 0057F   32E02090             LW,14    =X'EF00C000'    MASK AUTOMATIC ONLY
  2224   02 00580   6AF01B9E             BAL,15   :TIO            TIO
  2225   02 00581   68000587             B        TIST0104
  2226                          *        ERROR EXIT
  2227   02 00582   EAF0021B A           BAL,15   *:ERROR         #0103
  2228   02 00583   00000067 A           DATA     0103            INCORRECT STATUS RESPONSE ON TIO
  2229   02 00584   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2230   02 00585   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2231   02 00586   68000575             B        TIST0102        LOOP ON ERROR, REPEAT HIO
  2232   02 00587   6AF01640     TIST0104 BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  2233   02 00588   32E02091             LW,14    =X'BB00C000'    WRITE PERMIT AND LOAD PT OK
  2234   02 00589   6AF01BB4             BAL,15   :TDV
  2235   02 0058A   68000591             B        TIST0105
  2236                          *        ERROR EXIT
  2237   02 0058B   EAF0021B A           BAL,15   *:ERROR         #0104
  2238   02 0058C   00000068 A           DATA     0104            INCORRECT STATUS RESPONSE ON TDV
  2239   02 0058D   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2240   02 0058E   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2241   02 0058F   68000587             B        TIST0104        LOOP ON ERROR
  2242   02 00590   6AF01640             BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  2243   02 00591   68000382     TIST0105 B        :TIM            GO TO SEQUENCER
  2244                          *
  2245                          *
  2246                          *                                        TST1,2 INVALID ORDER TEST
  2247                          *                                        ---------------------------
  2248                          *
  2249                          * CHECK THE INVALID ORDER DETECTION BY ISSUING TWO SIO'S WITH INVALID    *
  2250                          * ORDER CODES (X'0C',X'03'). THIS TEST IS DESIGNED TO CHECK ORDER        *
  2251                          * DECODING, ORDER-OUTPUT AND ORDER-INPUT PHASES IN THE CONTROLLER AND    *
  2252                          * UNUSUAL END DETECTION. THE REMAINING BYTE COUNT WILL BE TESTED TO      *
  2253                          * VERIFY THAT NO DATA PHASES WERE EXECUTED. CHECK THE ABILITY OF THE     *
  2254                          * HIO TO RESET UE CONDITION.                                            *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          35
  2255                                *
  2256                                *
  2257                                *
  2258   02 00592    32E0208F         :TIST02  LW,14    =X'E700C000'      AUTOMATIC ONLY
  2259   02 00593    22000BC7                  LI,0     DA(TWR1)          INVALID READ BACKWARD
  2260   02 00594    6AF01640                  BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  2261   02 00595    6AF01B93                  BAL,15   :SIO
  2262   02 00596    6800059A                  B        $+4
  2263   02 00597    EAF0021B A                BAL,15   *:ERROR          0201
  2264   02 00598    000000C9 A                DATA     0201             SIO NOT ACCEPTED
  2265   02 00599    6800059F                  B        $+6
  2266   02 0059A    6AF01EC4                  BAL,15   :ERRORT           TEST
  2267   02 0059B    00005E10                  DATA     BA(TSEQ034)      NO INTERRUPT PENDING  , UE
  2268   02 0059C    680005A2                  B        TIST0201
  2269                                *        ERROR EXIT
  2270   02 0059D    EAF0021B A                BAL,15   *:ERROR          0202
  2271   02 0059E    000000CA A                DATA     0202             STATUS ERROR
  2272   02 0059F    EAF0021D A                BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  2273   02 005A0    2E000000 A                WAIT                      HALT ON ERROR IF SS3 RESET
  2274   02 005A1    68000592                  B        :TIST02          LOOP ON ERROR
  2275   02 005A2    CFA018B5         TIST0201 HIO,10   *:DEVADDR        HIO TO RESET UE
  2276   02 005A3    CDC018B5                  TIO,12   *:DEVADDR        UE SHOULD BE RESET
  2277   02 005A4    31D02092                  CW,13    =X'08000000'
  2278   02 005A5    684005AB                  BCR,4    TIST0202         UE SHOULD BE RESET
  2279                                *        ERROR EXIT
  2280   02 005A6    EAF0021B A                BAL,15   *:ERROR          0203
  2281   02 005A7    000000CB A                DATA     0203             INCORRECT STATUS RESPONSE
  2282   02 005A8    EAF0021D A                BAL,15   *:SENSE          CHECK SENSE SWITCHES
  2283   02 005A9    2E000000 A                WAIT                      HALT
  2284   02 005AA    68000592                  B        :TIST02
  2285   02 005AB    32E0208F         TIST0202 LW,14    =X'E700C000'      AUTOMATIC ONLY
  2286   02 005AC    6AF01640                  BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  2287   02 005AD    22000BC8                  LI,0     DA(TWR2)         INVALID SET CORRECTION
  2288   02 005AE    6AF01B93                  BAL,15   :SIO
  2289   02 005AF    680005B3                  B        $+4
  2290   02 005B0    EAF0021B A                BAL,15   *:ERROR          0204
  2291   02 005B1    000000CC A                DATA     0204             SIO NOT ACCEPTED
  2292   02 005B2    680005B8                  B        $+6
  2293   02 005B3    6AF01EC4                  BAL,15   :ERRORT           TEST
  2294   02 005B4    00005E10                  DATA     BA(TSEQ034)      NO INTERRUPT PENDING  , UE
  2295   02 005B5    680005BB                  B        TIST0203
  2296                                *        ERROR EXIT
  2297   02 005B6    EAF0021B A                BAL,15   *:ERROR          0205
  2298   02 005B7    000000CD A                DATA     0205             INCORRECT STATUS RESPONSE ON SIO
  2299   02 005B8    EAF0021D A                BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  2300   02 005B9    2E000000 A                WAIT                      HALT ON ERROR IF SS3 RESET
  2301   02 005BA    680005AB                  B        TIST0202         LOOP ON ERROR
  2302   02 005BB    6AF01640         TIST0203 BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  2303   02 005BC    680003B2                  B        :TIM             GO TO SEQUENCER
  2304                                *
  2305                                *
  2306                                *
  2307                                *
  2308                                *                                  TSTI,3 ERASE ORDER TEST
  2309                                *                                  ----------------------------------
  2310                                *
  2311                                * CHECK THE EXECUTION OF THE FIRST VALID ORDER. THIS TEST IS DESIGNED  *
  2312                                * TO FURTHER CHECK ORDER DECODING, ORDER-OUTPUT AND ORDER-INPUT PHASES *
  2313                                * IN THE CONTROLLER, AND ORDER TERMINATION WITHOUT UNUSUAL END. THE    *
  2314                                * REMAINING BYTE COUNT WILL BE TESTED TO VARIFY THAT NO DATA PHASES    *
  2315                                * WERE EXECUTED. THE STATUS RESPONSE WILL BE TESTED.                  *
  2316                                *                                                                    *
  2317                                *
  2318   02 005BD    32E02093         :TIST03  LW,14    =X'0000C000'      AUTOMATIC ONLY
  2319   02 005BE    22000BCB                  LI,0     DA(TSE3)         SET ERASE BC = 2 NO INTERRUPT
  2320   02 005BF    6AF01640                  BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  2321   02 005C0    6AF01B93                  BAL,15   :SIO             SET ERASE
  2322   02 005C1    680005C7                  B        TIST0302
  2323                                *        ERROR EXIT
  2324   02 005C2    EAF0021B A                BAL,15   *:ERROR          #0301
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          36
  2325    02 005C3    0000012D A            DATA     0301              INCORRECT STATUS RESPONSE ON SIO
  2326    02 005C4    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  2327    02 005C5    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  2328    02 005C6    680005BD              B        :TIST03           LOOP ON ERROR
  2329    02 005C7    22E00032 A  TIST0302 LI,14    50                DELAY
  2330    02 005C8    6AF01E26              BAL,15   :DELAY            WAIT NO INTERRUPT
  2331    02 005C9    680005CA              B        $+1
  2332    02 005CA    6AF01EC4              BAL,15   :ERRORT           TEST
  2333    02 005CB    00005DF8              DATA     BA(TSEQ030)       READY, BC=2 , NO UE
  2334    02 005CC    680005D2              B        TIST0304
  2335                            *         ERROR EXIT
  2336    02 005CD    EAF0021B A            BAL,15   *:ERROR           #0302
  2337    02 005CE    0000012E A            DATA     0302              INCORRECT STATUS RESPONSE ON TIO
  2338    02 005CF    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  2339    02 005D0    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  2340    02 005D1    680005BD              B        :TIST03           LOOP ON ERROR
  2341    02 005D2    6AF01640    TIST0304 BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
  2342    02 005D3    680003B2              B        :TIM              GO TO SEQUENCER
  2343                            *
  2344                            *
  2345                            *
  2346                            *                                   TST1,4 NO OPERATION TEST
  2347                            *                                   ------------------------------------
  2348                            *
  2349    02 005D4    680003B2    :TIST04  B        :TIM              GO TO SEQUENCER
  2350                            *                                                                      *
  2351                            *
  2352                            *
  2353                            *
  2354                            *                                   TST1,5 NO OPERATION TEST
  2355                            *                                   ------------------------------------
  2356                            *
  2357    02 005D5    680003B2    :TIST05  B        :TIM              GO TO SEQUENCER
  2358                            *                                                                      *
  2359                            *
  2360                            *
  2361                            *
  2362                            *
  2363                            *                                   TST1,6 NO OPERATION
  2364                            *                                   ------------------------------------
  2365                            *
  2366                            *
  2367    02 005D6    680003B2    :TIST06  B        :TIM              NO TEST
  2368                            *
  2369                            *
  2370                            *                                   TST1,7 INTERRUPT ON UE, CE AND AIO *
  2371                            *                                   ------------------------------------
  2372                            *
  2373                            *  CHECK THE ABILITY OF THE CONTROLLER TO GENERATE AN INTERRUPT ON      *
  2374                            *  UNUSUAL END AND CHANNEL END USING A READ BACKWARD AND               *
  2375                            *  THE SET ERASE ORDER IN THAT SEQUENCE. CHECK THE EXECUTION           *
  2376                            *  OF THE AIO INSTRUCTION. VERIFY THAT AIO AND HIO CAN RESET THE       *
  2377                            *  INTERRUPT PENDING CONDITION. ALL STATUS RESPONSES WILL BE TESTED.   *
  2378                            *                                                                      *
  2379                            *
  2380    02 005D7    6AF01638    :TIST07  BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  2381    02 005D8    22000BC9              LI,0     DA(TWR3)          READ BKW WITH UE SET
  2382    02 005D9    32E02093              LW,14    =X'0000C000'      DEVICE ADDRESS OK
  2383    02 005DA    6AF01893              BAL,15   :SIO              WRITE BKW UE SET
  2384    02 005DB    680005E1              B        TIST0702
  2385                            *         ERROR EXIT
  2386    02 005DC    EAF0021B A            BAL,15   *:ERROR           #0701
  2387    02 005DD    000002BD A            DATA     0701              INCORRECT STATUS RESPONSE ON SIO
  2388    02 005DE    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  2389    02 005DF    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  2390    02 005E0    680005D7              B        :TIST07           LOOP ON ERROR
  2391    02 005E1    22E00064 A  TIST0702 LI,14    100               100 MS DELAY
  2392    02 005E2    6AF01E26              BAL,15   :DELAY
  2393    02 005E3    680005E9              B        TIST0703
  2394                            *         ERROR EXIT TIMEOUT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          37
 2395   02 005E4    EAF0021B A          BAL,15   *:ERROR          #0702
 2396   02 005E5    000002BE A          DATA     0702             TIMEOUT ON SIO
 2397   02 005E6    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
 2398   02 005E7    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
 2399   02 005E8    680005D7            B        :TIST07          LOOP ON ERROR
 2400   02 005E9    6AF01EC4      TIST0703 BAL,15   :ERRORT
 2401   02 005EA    00005D48            DATA     BA(TSEQ001)      AIO-IUE, HIO-IP RESET-UE SET
 2402                               *                             TIO- UE RESET (BY HIO)
 2403   02 005EB    680005F1            B        TIST0704
 2404                               *    ERROR EXIT
 2405   02 005EC    EAF0021B A          BAL,15   *:ERROR          #0703
 2406   02 005ED    000002BF A          DATA     0703             INCORRECT BITS ON TEST
 2407   02 005EE    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
 2408   02 005EF    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
 2409   02 005F0    680005D7            B        :TIST07          LOOP ON ERROR
 2410   02 005F1    22000BCC      TIST0704 LI,0     DA(TSE)
 2411   02 005F2    32E02093            LW,14    =X'0000C000'     DEVICE ADDRESS OK
 2412   02 005F3    6AF01638            BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
 2413   02 005F4    6AF01B93            BAL,15   :SIO              ERASE CE SET
 2414   02 005F5    680005FB            B        TIST0705
 2415                               *    ERROR EXIT
 2416   02 005F6    EAF0021B A          BAL,15   *:ERROR          #0704
 2417   02 005F7    000002C0 A          DATA     0704             INCORRECT STATUS RESPONSE ON SIO
 2418   02 005F8    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
 2419   02 005F9    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
 2420   02 005FA    680005F1            B        TIST0704         LOOP ON ERROR
 2421   02 005FB    22E00064 A    TIST0705 LI,14    100              100 MSDELAY
 2422   02 005FC    6AF01E26            BAL,15   :DELAY
 2423   02 005FD    68000603            B        TIST0706
 2424                               *    ERROR EXIT TIMEOUT
 2425   02 005FE    EAF0021B A          BAL,15   *:ERROR          #0705
 2426   02 005FF    000002C1 A          DATA     0705             TIMEOUT ON SIO
 2427   02 00600    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
 2428   02 00601    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
 2429   02 00602    680005F1            B        TIST0704         LOOP ON ERROR
 2430   02 00603    6AF01EC4      TIST0706 BAL,15   :ERRORT
 2431   02 00604    00005D4C            DATA     BA(TSEQ002)      AIO,ICE,TIO IP RESET
 2432   02 00605    6800060B            B        TIST0710
 2433                               *    ERROR EXIT
 2434   02 00606    EAF0021B A          BAL,15   *:ERROR          #0706
 2435   02 00607    000002C2 A          DATA     0706             INCORRECT BITS ON TEST
 2436   02 00608    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
 2437   02 00609    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
 2438   02 0060A    680005F1            B        TIST0704         LOOP ON ERROR
 2439                               *    INTERRUPT ON ZBC CHECKED LATER
 2440   02 0060B    6AF01640      TIST0710 BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
 2441   02 0060C    32E02093            LW,14    =X'0000C000'     DEVICE ADDRESS OK
 2442   02 0060D    22000BC9            LI,0     DA(TWR3)         READ BKW WITH UE SET
 2443   02 0060E    6AF01B93            BAL,15   :SIO              SIO
 2444   02 0060F    22E00064 A          LI,14    100
 2445   02 00610    6AF01E26            BAL,15   :DELAY            DELAY
 2446   02 00611    68000612            B        $+1
 2447   02 00612    CFC018B5            HIO,12   *:DEVADDR         HIO
 2448   02 00613    22EFFF38 A          LI,14    -200             DELAY
 2449   02 00614    65E00614            BIR,14   $
 2450   02 00615    31D02094            CW,13    =X'88000000'     UE AND IP SET
 2451   02 00616    6940061C            BCS,4    TIST0711
 2452                               *    ERROR EXIT
 2453   02 00617    EAF0021B A          BAL,15   *:ERROR          0710
 2454   02 00618    000002C6 A          DATA     0710             INCORRECT BITS ON TEST
 2455   02 00619    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTIONG
 2456   02 0061A    2E000000 A          WAIT
 2457   02 0061B    6800060B            B        TIST0710         LOOP ON ERROR
 2458   02 0061C    CDC018B5      TIST0711 TIO,12   *:DEVADDR         TIO
 2459   02 0061D    31D02095            CW,13    =X'80000000'     IP SET
 2460   02 0061E    68400624            BCR,4    TIST0712
 2461                               *    ERROR EXIT
 2462   02 0061F    EAF0021B A          BAL,15   *:ERROR          0711
 2463   02 00620    000002C7 A          DATA     0711
 2464   02 00621    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          38
  2465    02 00622    2E000000 A            WAIT
  2466    02 00623    6800060B              B         TIST0710          LOOP ON ERROR
  2467    02 00624    6AF01640      TIST0712 BAL,15    CLRDARM           CLEAR AND DISARM INTERRUPT
  2468    02 00625    680003B2              B         :TIM              GO TO SEQUENCER
  2469                                *
  2470                                *
  2471                                *                                   TST1,8 I/O INTERRUPT TEST
  2472                                *                                   ------------------------------------
  2473                                *
  2474                                *  CHECK THE ABILITY OF THE IOP AND CPU TO INTERRUPT THE PROGRAM       *
  2475                                *  WHENEVER AN INTERRUPT CALL IS GENERATED BY THE CONTROLLER. VERIFY   *
  2476                                *  PROPER OPERATION OF INTERRUPT ARM/DISARM AND ENABLE/DISABLE MODES.  *
  2477                                *                                                                      *
  2478                                *
  2479    02 00626    6AF01640      :TIST08  BAL,15    CLRDARM           CLEAR AND DISARM INTERRUPT
  2480    02 00627    22000BE6              LI,0      DA(TWRUE)
  2481    02 00628    CCC018B5              SIO,12    *:DEVADDR         READ BKW UE SET
  2482    02 00629    228FFFC4 A            LI,8      -60               DELAY
  2483    02 0062A    6580062A              BIR,8     $
  2484    02 0062B    CDC018B5              TIO,12    *:DEVADDR         TIO
  2485    02 0062C    32E02096              LW,14     L(X'98000002')
  2486    02 0062D    31E0000D A            CW,14     13                AUTOMATIC AND UE SET- IP SET
  2487    02 0062E    68300634              BEZ       TIST0802
  2488                                *       ERROR EXIT
  2489    02 0062F    EAF0021B A            BAL,15    *:ERROR           #0801
  2490    02 00630    00000321 A            DATA      0801              INCORRECT STATUS RESPONSE ON TIO
  2491    02 00631    EAF0021D A            BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  2492    02 00632    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  2493    02 00633    68000626              B         :TIST08           LOOP ON ERROR
  2494    02 00634    22F00020 A    TIST0802 LI,15     X'20'
  2495    02 00635    6DF01300 A            WD,15     X'1300'           ARM AND DISABLE INTERRUPT
  2496    02 00636    CDC018B5              TIO,12    *:DEVADDR         TIO
  2497    02 00637    32E02096              LW,14     L(X'98000002')
  2498    02 00638    31E0000D A            CW,14     13
  2499    02 00639    6830063F              BEZ       TIST0803
  2500                                *       ERROR EXIT
  2501    02 0063A    EAF0021B A            BAL,15    *:ERROR           #0802
  2502    02 0063B    00000322 A            DATA      0802              INCORRECT STATUS RESPONSE ON TIO
  2503    02 0063C    EAF0021D A            BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  2504    02 0063D    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  2505    02 0063E    68000626              B         :TIST08           LOOP ON ERROR
  2506    02 0063F    22F00020 A    TIST0803 LI,15     X'20'
  2507    02 00640    6DF01400 A            WD,15     X'1400'           ENABLE INTERRUPT
  2508    02 00641    22E0012C A            LI,14     300               300 MS DELAY
  2509    02 00642    6AF01E26              BAL,15    :DELAY
  2510    02 00643    68000649              B         TIST0804
  2511                                *       ERROR EXIT TIMEOUT
  2512    02 00644    EAF0021B A            BAL,15    *:ERROR           #0803
  2513    02 00645    00000323 A            DATA      0803              TIMEOUT ON TIO
  2514    02 00646    EAF0021D A            BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  2515    02 00647    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  2516    02 00648    68000626              B         :TIST08           LOOP ON ERROR
  2517    02 00649    6AF01640      TIST0804 BAL,15    CLRDARM           CLEAR AND DISARM AND DISABLE INT
  2518    02 0064A    680003B2              B         :TIM              GO TO SEQUENCER
  2519                                *
  2520                                *
  2521                                *
  2522                                *                                   TST1,9 COMMAND CHAINING
  2523                                *                                   ------------------------------------
  2524                                *
  2525                                *  TEST THE COMMAND CHAINING ABILITY OF THE CONTROLLER BY ISSUING AN   *
  2526                                *  SET ERASE/ READ BACKWARD ORDER SEQUENCE. TEST THE TERMINATION OF    *
  2527                                *  THE COMMAND CHAINING SEQUENCE BY ISSUING A READ-BKW/ SET ERASE      *
  2528                                *  ORDER SEQUENCE. ALL STATUS RESPONSES WILL BE TESTED                 *
  2529                                *                                                                      *
  2530                                *
  2531    02 0064B    6AF01638      :TIST09  BAL,15    CLRARM            CLEAR AND ARM INTERRUPT
  2532    02 0064C    32E02093              LW,14     =X'0000C000'      DEVICE ADDRESS OK
  2533    02 0064D    22000BCD              LI,0      DA(TSECC)
  2534    02 0064E    6AF01B93              BAL,15    :SIO              SIO CC SET ERASE, READ BKW
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          39
  2535    02 0064F    68000655                B         TIST0902
  2536                                *       ERROR EXIT
  2537    02 00650    EAF0021B A              BAL,15    *:ERROR          #0901
  2538    02 00651    00000385 A              DATA      0901             INCORRECT STATUS RESPONSE ON SIO
  2539    02 00652    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
  2540    02 00653    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
  2541    02 00654    6800064B                B         :TIST09          LOOP ON ERROR
  2542    02 00655    22E00064 A  TIST0902    LI,14     100              100 MS DELAY
  2543    02 00656    6AF01E26                BAL,15    :DELAY
  2544    02 00657    6800065D                B         TIST0903
  2545                                *       ERROR EXIT TIMEOUT
  2546    02 00658    EAF0021B A              BAL,15    *:ERROR          #0902
  2547    02 00659    00000386 A              DATA      0902             TIMEOUT ON SIO
  2548    02 0065A    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
  2549    02 0065B    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
  2550    02 0065C    6800064B                B         :TIST09          LOOP ON ERROR
  2551    02 0065D    CDC018B5    TIST0903    TIO,12    *:DEVADDR        TIO
  2552    02 0065E    21C00BCE                CI,12     DA(TWBK)         LAST DA ADDRESS
  2553    02 0065F    68300665                BEZ       TIST0904
  2554                                *       ERROR EXIT
  2555    02 00660    EAF0021B A              BAL,15    *:ERROR          #0903
  2556    02 00661    00000387 A              DATA      0903             INCORRECT LAST OPERATION ON CC
  2557    02 00662    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
  2558    02 00663    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
  2559    02 00664    6800064B                B         :TIST09          LOOP ON ERROR
  2560    02 00665    6AF01638    TIST0904    BAL,15    CLRARM           CLEAR AND ARM INTERRUPT
  2561    02 00666    32E02093                LW,14     =X'0000C000'     DEVICE ADDRESS OK
  2562    02 00667    22000BD0                LI,0      DA(TWRCC)
  2563    02 00668    6AF01B93                BAL,15    :SIO             SIO CC READ BKW, SET ERASE
  2564    02 00669    6800066F                B         TIST0905
  2565                                *       ERROR EXIT
  2566    02 0066A    EAF0021B A              BAL,15    *:ERROR          #0904
  2567    02 0066B    00000388 A              DATA      0904             INCORRECT STATUS RESPONSE ON SIO
  2568    02 0066C    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
  2569    02 0066D    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
  2570    02 0066E    68000665                B         TIST0904         LOOP ON ERROR
  2571    02 0066F    22E00064 A  TIST0905    LI,14     100              100 MS DELAY
  2572    02 00670    6AF01E26                BAL,15    :DELAY
  2573                                *       ERROR EXIT TIMEOUT
  2574    02 00671    68000677                B         TIST0906
  2575    02 00672    EAF0021B A              BAL,15    *:ERROR          #0905
  2576    02 00673    00000389 A              DATA      0905             TIMEOUT ON SIO
  2577    02 00674    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
  2578    02 00675    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
  2579    02 00676    68000665                B         TIST0904         LOOP ON ERROR
  2580    02 00677    CDC018B5    TIST0906    TIO,12    *:DEVADDR        TIO
  2581    02 00678    21C00BD0                CI,12     DA(TWRCC)        LAST DOUBLE WORD
  2582    02 00679    6830067F                BEZ       TIST0907
  2583                                *       ERROR EXIT
  2584    02 0067A    EAF0021B A              BAL,15    *:ERROR          #0906
  2585    02 0067B    0000038A A              DATA      0906             INCORRECT LAST OPERATION ON CC
  2586    02 0067C    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
  2587    02 0067D    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
  2588    02 0067E    68000665                B         TIST0904         LOOP ON ERROR
  2589    02 0067F    6AF01640    TIST0907    BAL,15    CLRDARM          CLEAR AND DISARM INTERRUPT
  2590    02 00680    680003B2                B         :TIM             GO TO SEQUENCER
  2591                                *
  2592                                *
  2593                                *
  2594                                *                                  TIST,10 NO OPPERATION
  2595                                *                                  ----------------------------------
  2596                                *
  2597                                *
  2598    02 00681    68000382    :TIST10     B         :TIM             GO TO SEQUENCER
  2599                                *
  2600                                *
  2601                                *                                  TIST,11 REWIND TEST
  2602                                *                                  ----------------------------------
  2603                                *  CHECK THE EXECUTION OF A REWIND ON-LINE ORDER. THE TEST WILL VERIFY *
  2604                                *  THAT THE TAPE IS POSITIONED AT LOAD POINT AFTER COMPLETION OF THE   *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          40
  2605                          *  REWIND ORDER  CHECK THE EXECUTION OF A REWIND AND INTERRUPT ORDER.  *
  2606                          *  THIS TEST WILL VERIFY THAT THE TAPE REMAINS AT LOAD POINT AND THAT  *
  2607                          *  THE DEVICE INITIATES AN INTERRUPT REQUEST. VERIFY THAT AN AIO AND HIO
  2608                          *  INSTRUCTION CAN RESET THE INTERRUPT PENDING CONDITION IN THE TAPE   *
  2609                          *  CONTROLLER AND THE TAPE STATION. VERIFY THAT DEVICE END STATUS IS   *
  2610                          *  RETURNED DURING THE AIO. ALL STATUS RESPONSES WILL BE TESTED.       *
  2611                          *                                                                      *
  2612                          *
  2613                          *
  2614   02 00682   6AF01638    :TIST11  BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  2615   02 00683   22000BD2             LI,0     DA(TRWOL)       REWIND ON LINE
  2616   02 00684   CCC018B5             SIO,12   *:DEVADDR       SIO
  2617   02 00685   CDA018B5   TIST1102  TIO,10   *:DEVADDR       TIO FOR BUSY
  2618   02 00686   32E02097             LW,14    =X'66000000'    BUSY OR REWINDING
  2619   02 00687   31E0000B A           CW,14    11              STATUS
  2620   02 00688   69400685             BCS,4    TIST1102        LOOP TILL NOT BUSY
  2621   02 00689   32E02098             LW,14    =X'04000000'    LOAD POINT ONLY
  2622   02 0068A   CEC018B5             TDV,12   *:DEVADDR       TDV AFTER REWIND
  2623   02 0068B   31D0000E A           CW,13    14
  2624   02 0068C   69400692             BCS,4    TIST1103
  2625                         *         ERROR EXIT
  2626   02 0068D   EAF0021B A           BAL,15   *:ERROR         #1101
  2627   02 0068E   0000044D A           DATA     1101            INCORRECT BITS ON TEST
  2628   02 0068F   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2629   02 00690   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2630   02 00691   68000682             B        :TIST11         LOOP ON ERROR
  2631   02 00692   6AF01640   TIST1103  BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  2632   02 00693   22000BD3             LI,0     DA(TRWAI)       REWIND AND INTERRUPT
  2633   02 00694   CCC018B5             SIO,12   *:DEVADDR
  2634   02 00695   227FFF9C A           LI,7     -100            DELAY
  2635   02 00696   65700696             BIR,7    $
  2636   02 00697   CDA018B5   TIST1104  TIO,10   *:DEVADDR
  2637   02 00698   32E02095             LW,14    =X'80000000'    INTERRUPT PENDING
  2638   02 00699   31E0000B A           CW,14    11              STATUS INT PENDING SET
  2639   02 0069A   694006A0             BCS,4    TIST1105
  2640                         *         ERROR EXIT
  2641   02 0069B   EAF0021B A           BAL,15   *:ERROR         #1102
  2642   02 0069C   0000044E A           DATA     1102            INCORRECT STATUS RESPONSE, ON TIO
  2643   02 0069D   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2644   02 0069E   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2645   02 0069F   68000692             B        TIST1103        LOOP ON ERROR
  2646   02 006A0   CFA018B5   TIST1105  HIO,10   *:DEVADDR
  2647   02 006A1   32E02095             LW,14    =X'80000000'    INTERRUPT PENDING
  2648   02 006A2   CDC018B5             TIO,12   *:DEVADDR       TIO
  2649   02 006A3   4BE0000D A           AND,14   13
  2650   02 006A4   683006AA             BEZ      TIST1106
  2651                         *         ERROR EXIT
  2652   02 006A5   EAF0021B A           BAL,15   *:ERROR         #1103
  2653   02 006A6   0000044F A           DATA     1103            INCORRECT STATUS RESPONSE ON HIO
  2654   02 006A7   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2655   02 006A8   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2656   02 006A9   68000692             B        TIST1103        LOOP ON ERROR
  2657   02 006AA   6AF01640   TIST1106  BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  2658   02 006AB   22000BD3             LI,0     DA(TRWAI)       REWIND AND INTERRUPT
  2659   02 006AC   CCC018B5             SIO,12   *:DEVADDR
  2660   02 006AD   227FFF9C A           LI,7     -100            DELAY
  2661   02 006AE   657006AE             BIR,7    $
  2662   02 006AF   CDA018B5             TIO,10   *:DEVADDR
  2663   02 006B0   32E02095             LW,14    =X'80000000'    INTERRUPT PENDING
  2664   02 006B1   31E0000B A           CW,14    11              STATUS INT PENDING SET
  2665   02 006B2   694006B8             BCS,4    TIST1107
  2666                         *         ERROR EXIT              AIO
  2667   02 006B3   EAF0021B A           BAL,15   *:ERROR         #1104
  2668   02 006B4   00000450 A           DATA     1104            INCORRECT STATUS RESPONSE ON SIO
  2669   02 006B5   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2670   02 006B6   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2671   02 006B7   680006AA             B        TIST1106        LOOP ON ERROR
  2672   02 006B8   6EB00000 A  TIST1107 AIO,11   0               AIO
  2673   02 006B9   32E02099             LW,14    =X'40000000'    DEVICE END
  2674   02 006BA   31E0000B A           CW,14    11              STATUS DEVICE END SET
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          41
 2675   02 006BB    694006C1                BCS,4     TIST1108
 2676                                *       ERROR EXIT
 2677   02 006BC    EAF0021B A              BAL,15    *:ERROR          #1105
 2678   02 006BD    00000451 A              DATA      1105             INCORRECT STATUS RESPONSE ON AIO
 2679   02 006BE    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
 2680   02 006BF    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
 2681   02 006C0    680006AA                B         TIST1106         LOOP ON ERROR
 2682   02 006C1    CDA018B5        TIST1108 TIO,10     *:DEVADDR        TIO
 2683   02 006C2    32E02095                LW,14     =X'80000000'     INTERRUPT PENDING
 2684   02 006C3    31E0000B A              CW,14     11               STATUS INT PENDING
 2685   02 006C4    684006CA                BCR,4     TIST1109
 2686                                *       ERROR EXIT
 2687   02 006C5    EAF0021B A              BAL,15    *:ERROR          #1106
 2688   02 006C6    00000452 A              DATA      1106             INCORRECT STATUS RESPONSE ON TIO
 2689   02 006C7    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
 2690   02 006C8    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
 2691   02 006C9    680006C1                B         TIST1108         LOOP ON ERROR
 2692   02 006CA    32E02098        TIST1109 LW,14      =X'04000000'     LOAD POINT ONLY
 2693   02 006CB    CEC018B5                TDV,12    *:DEVADDR        TDV AFTER REWIND
 2694   02 006CC    31D0000E A              CW,13     14
 2695   02 006CD    694006D3                BCS,4     TIST1110
 2696                                *       ERROR EXIT
 2697   02 006CE    EAF0021B A              BAL,15    *:ERROR          #1107
 2698   02 006CF    00000453 A              DATA      1107             INCORRECT BITS ON TEST
 2699   02 006D0    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
 2700   02 006D1    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
 2701   02 006D2    680006AA                B         TIST1106         LOOP ON ERROR
 2702   02 006D3    6AF01640        TIST1110 BAL,15     CLRDARM          CLEAR AND DISARM INTERRUPT
 2703   02 006D4    680003B2                B         :TIM             GO TO SEQUENCER
 2704                                *
 2705                                *
 2706                                *
 2707                                *
 2708                                *                                  TST1,12  SPACE RECORD AND FILE
 2709                                *                                        BACKWARD FROM BOT TEST
 2710                                *                                  ----------------------------------
 2711                                *
 2712                                *  CHECK THE EXECUTION OF SPACE RECORD AND SPACE FILE ORDERS          *
 2713                                *  IN THE BACKWARD DIRECTION WITH TAPE POSITIONED AT LOAD POINT       *
 2714                                *  VERIFY THAT THE CONTROLLER RESPONDS WITH UNUSUAL END, END OF FILE  *
 2715                                *  (TDV AND AIO) AND LOAD POINT STATUS. THE TEST WILL CHECK THAT THE  *
 2716                                *  TAPE REMAINS AT LOAD POINT. THE BYTE COUNT FOR ALL ORDERS SPECIFIED *
 2717                                *  MUST REMAIN UNCHANGED.                                             *
 2718                                *                                                                     *
 2719                                *
 2720   02 006D5    6AF0160C        :TIST12  BAL,15    RWTLP            REWIND AND TEST FOR LOAD POINT
 2721   02 006D6    6AF01638        TIST1203 BAL,15    CLRARM           CLEAR AND ARM INTERRUPT
 2722   02 006D7    22000C09                LI,0      DA(SBR1)         SPACE BKW UE SET BC=2
 2723   02 006D8    6AF01CA2                BAL,15    :IOEXEC          EXECUTE SIO
 2724   02 006D9    32E00064 A              LW,14     100              100 MS DELAY
 2725   02 006DA    6AF01E26                BAL,15    :DELAY
 2726   02 006DB    680006E1                B         TIST1204
 2727                                *       ERROR EXIT TIMEOUT
 2728   02 006DC    EAF0021B A              BAL,15    *:ERROR          #1203
 2729   02 006DD    000004B3 A              DATA      1203             TIMEOUT ON SIO
 2730   02 006DE    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
 2731   02 006DF    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
 2732   02 006E0    680006D6                B         TIST1203         LOOP ON ERROR
 2733   02 006E1    6AF01EC4        TIST1204 BAL,15    :ERRORT          TEST
 2734   02 006E2    00005D5C                DATA      BA(TSEQ006)      UE,LOAD PT, BYTECOUNT =2
 2735   02 006E3    680006E9                B         TIST1205
 2736                                *       ERROR EXIT
 2737   02 006E4    EAF0021B A              BAL,15    *:ERROR          #1204
 2738   02 006E5    000004B4 A              DATA      1204             INCORRECT BITS ON TEST
 2739   02 006E6    EAF0021D A              BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
 2740   02 006E7    2E000000 A              WAIT                       HALT ON ERROR IF SS3 RESET
 2741   02 006E8    680006D6                B         TIST1203         LOOP ON ERROR
 2742   02 006E9    6AF01638        TIST1205 BAL,15    CLRARM           CLEAR AND ARM INTERRUPT
 2743   02 006EA    22000C0A                LI,0      DA(SBF1)         SPACE FILE BACKWARD
 2744   02 006EB    6AF01CA2                BAL,15    :IOEXEC          EXECUTE SIO
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          42
  2745    02 006EC    32E00064 A          LW,14    100              100 MS DELAY
  2746    02 006ED    6AF01E26            BAL,15   :DELAY
  2747    02 006EE    680006F4            B        TIST1206
  2748                                *     ERROR EXIT TIMEOUT
  2749    02 006EF    EAF0021B A          BAL,15   *:ERROR          #1205
  2750    02 006F0    000004B5 A          DATA     1205             TIMEOUT ON SIO
  2751    02 006F1    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  2752    02 006F2    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
  2753    02 006F3    680006E9            B        TIST1205         LOOP ON ERROR
  2754    02 006F4    6AF01EC4       TIST1206 BAL,15   :ERRORT          TEST
  2755    02 006F5    00005D64            DATA     BA(TSEQ0007)     UE,LP, NO EOF
  2756    02 006F6    680006FC            B        TIST1207
  2757                                *     ERROR EXIT
  2758    02 006F7    EAF0021B A          BAL,15   *:ERROR          #1206
  2759    02 006F8    000004B6 A          DATA     1206             INCORRECT BITS ON TEST
  2760    02 006F9    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  2761    02 006FA    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
  2762    02 006FB    680006E9            B        TIST1205         LOOP ON ERROR
  2763    02 006FC    6AF01640       TIST1207 BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  2764    02 006FD    680003B2            B        :TIM             GO TO SEQUENCER
  2765                                *
  2766                                *
  2767                                *
  2768                                *
  2769                                *                              TST1,13 WRITE TAPE MARK TEST AT BOT
  2770                                *                              ----------------------------------
  2771                                *
  2772                                *  CHECK THE EXECUTION OF A WRITE TAPE MARK ORDER. THE TEST WILL       *
  2773                                *  VERIFY THAT TAPE CAN BE MOVED OFF LOAD POINT AND THAT THE ORDER CAN *
  2774                                *  BE TERMINATED WITH BOTH CONTROLLER AND STATION RETURNING TO READY.  *
  2775                                *  IF TAPE RUN-AWAY, ISSUE HIO. REWIND TAPE AND TEST LOAD POINT. END   *
  2776                                *  OF FILE STATUS WILL NOT BE TESTED. THE BYTE COUNT FOR THE ORDER     *
  2777                                *  MUST REMAIN UNCHANGED.                                              *
  2778                                *                                                                      *
  2779                                *
  2780    02 006FE    6AF0160C       :TIST13  BAL,15   RWTLP           REWIND TAPE TEST FOR LOAD PT
  2781    02 006FF    6AF01638            BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  2782    02 00700    22000BD4            LI,0     DA(TWTM)         WRITE TAPE MARK CE SET BC=2
  2783    02 00701    6AF01CA2            BAL,15   :IOEXEC          EXECUTE SIO
  2784    02 00702    22E0012C A          LI,14    300              300 MS
  2785    02 00703    6AF01E26            BAL,15   :DELAY
  2786    02 00704    6800070B            B        TIST1302
  2787                                *     ERROR EXIT TIMEOUT
  2788    02 00705    6AF01620            BAL,15   RESETS           RESET WITH HIO, TAPE RUNAWAY
  2789    02 00706    EAF0021B A          BAL,15   *:ERROR          #1301
  2790    02 00707    00000515 A          DATA     1301             TIMEOUT ON SIO
  2791    02 00708    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  2792    02 00709    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
  2793    02 0070A    680006FE            B        :TIST13          LOOP ON ERROR
  2794    02 0070B    6AF01EC4       TIST1302 BAL,15   :ERRORT          TEST
  2795    02 0070C    00005D68            DATA     BA(TSEQ0008)     DEV AND CONTR READY, BC=2
  2796    02 0070D    68000713            B        TIST1303
  2797                                *     ERROR EXIT
  2798    02 0070E    EAF0021B A          BAL,15   *:ERROR          #1302
  2799    02 0070F    00000516 A          DATA     1302             INCORRECT BITS ON TEST
  2800    02 00710    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  2801    02 00711    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
  2802    02 00712    680006FE            B        :TIST13          LOOP ON ERROR
  2803    02 00713    6AF01640       TIST1303 BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  2804    02 00714    680003B2            B        :TIM             GO TO SEQUENCER
  2805                                *
  2806                                *
  2807                                *
  2808                                *
  2809                                *                              TST1,14 SPACE RECORD FORWARD TEST
  2810                                *                              --------------------------------
  2811                                *
  2812                                * CHECK THE EXECUTION OF A SPACE FORWARD ORDER. THE TEST WILL VERIFY   *
  2813                                * THAT TAPE CAN BE MOVED OFF THE LOAD POINT AND THAT THE ORDER CAN BE  *
  2814                                * TERMINATED WITH BOTH CONTROLLER AND STATION RETURNING TO READY.      *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          43
  2815                          * IF TAPE RUN-AWAY, ISSUE HIO. REWIND TAPE AND TEST FOR LOAD POINT.  *
  2816                          * END OF FILE AND UNUSUAL END STATUS WILL NOT BE TESTED. THE BYTE     *
  2817                          * COUNT FOR THE ORDER MUST REMAIN UNCHANGED.                          *
  2818                          *                                                                    *
  2819                          *
  2820   02 00715   6AF0160C    :TIST14  BAL,15   RWTLP           REWIND TAPE AND TEST FOR LOAD PT
  2821   02 00716   6AF01638             BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  2822   02 00717   22000BD4             LI,0     DA(TWTM)        WRITE TAPE MARK
  2823   02 00718   6AF01CA2             BAL,15   :IOEXEC         EXECUTE SIO
  2824   02 00719   22E0012C A           LI,14    300             300 MS DELAY
  2825   02 0071A   6AF01E26             BAL,15   :DELAY
  2826   02 0071B   68000722             B        TIST1401
  2827                          *        ERROR EXIT TIMEOUT
  2828   02 0071C   6AF01620             BAL,15   RESETS          RESET WITH HIO, TAPE RUNAWAY
  2829   02 0071D   EAF0021B A           BAL,15   *:ERROR         #1401
  2830   02 0071E   00000579 A           DATA     1401            TIMEOUT ON TEST
  2831   02 0071F   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2832   02 00720   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2833   02 00721   68000715             B        :TIST14         LOOP ON ERROR
  2834   02 00722   6AF0160C    TIST1401 BAL,15   RWTLP           REWIND AND TEST FOR LOAD POINT
  2835   02 00723   6AF01638             BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  2836   02 00724   22000C0B             LI,0     DA(SFRI)        SPACE FWD CE SET, BC=2
  2837   02 00725   6AF01CA2             BAL,15   :IOEXEC         EXECUTE SIO
  2838   02 00726   22E0012C A           LI,14    300             DELAY
  2839   02 00727   6AF01E26             BAL,15   :DELAY
  2840   02 00728   6800072F             B        TIST1402
  2841                          *        ERROR EXIT TIMEOUT
  2842   02 00729   6AF01620             BAL,15   RESETS          RESET WITH HIO, TAPE RUNAWAY
  2843   02 0072A   EAF0021B A           BAL,15   *:ERROR         1402
  2844   02 0072B   0000057A A           DATA     1402
  2845   02 0072C   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCHES
  2846   02 0072D   2E00072D             WAIT     $
  2847   02 0072E   68000715             B        :TIST14         LOOP ON ERROR
  2848   02 0072F   CDA018B5    TIST1402 TIO,10   *:DEVADDR       TIO
  2849   02 00730   21B00002 A           CI,11    2               BC=2
  2850   02 00731   69400735             BCS,4    $+4
  2851   02 00732   EAF0021B A           BAL,15   *:ERROR         1403    CC NOT 2
  2852   02 00733   0000057B A           DATA     1403
  2853   02 00734   68000739             B        TIST1403-3
  2854   02 00735   31B0209A             CW,11    =X'E6000000'    READY
  2855   02 00736   6840073C             BCR,4    TIST1403
  2856                          *        ERROR EXIT
  2857   02 00737   EAF0021B A           BAL,15   *:ERROR         1404   INCORRECT STATUS ON TIO
  2858   02 00738   0000057C A           DATA     1404
  2859   02 00739   EAF0021D A           BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  2860   02 0073A   2E000000 A           WAIT                     HALT ON ERROR IF SS3 RESET
  2861   02 0073B   68000715             B        :TIST14         LOOP ON ERROR
  2862   02 0073C   6AF0160C    TIST1403 BAL,15   RWTLP           REWIND TAPE AND TEST FOR LOAD PT
  2863   02 0073D   6AF01640             BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  2864   02 0073E   680003B2             B        :TIM            GO TO SEQUENCER
  2865                          *
  2866                          *
  2867                          *                                 TST1,15 WRITE TEST (BYTE 1 TO 64)
  2868                          *                                 ---------------------------------
  2869                          *
  2870                          *
  2871                          * CHECK THE EXECUTION OF WRITE ORDERS USING X'FF' AS DATA PATTERN AND  *
  2872                          * A STARTING AT A BYTE OF ONE UP TO A MAXIMUM BYTE COUNT OF 64. THE    *
  2873                          * TEST WILL VERIFY THAT TAPE CAN BE MOVED OFF THE LOAD POINT, THAT THE *
  2874                          * ORDER CAN BE TERMINATED WITH BOTH CONTROLLER AND TAPE STATION        *
  2875                          * RETURNING TO READY, THAT A DATA-OUTPUT OPERATION IS ACTUALLY         *
  2876                          * PERFORMED, AND THAT THE BYTE COUNT IS ALWAYS REDUCED TO ZERO. VERIFY *
  2877                          * THAT INCORRECT LENGTH IS NOT DETECTED. REWIND TAPE AND TEST FOR LOAD *
  2878                          * POINT.                                                               *
  2879                          * TE ( TRANSMISSION ERRORS) NOT CHECKED IN THIS TEST.                  *
  2880                          * INTERRUPT ON ZBC CHECKED IN THIS SUBTEST.                            *
  2881                          *                                                                    *
  2882                          *
  2883   02 0073F   6AF01651    :TIST15  BAL,15   SMEARPTR        SMEAR PATTERN AND SET UP COMPARE
  2884   02 00740   32F0209B             LW,15    =X'0000B300'    REMOVE TE FROM TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          44
 2885    02 00741    35F0206C              STW,15   :SAVETAB+4
 2886    02 00742    32F0209C              LW,15    =X'0000BF00'      REMOVE TE IN OSB TEST
 2887    02 00743    35F0206A              STW,15   :SAVETAB+2
 2888    02 00744    6AF0160C              BAL,15   RWTLP             REWIND TAPE,TEST FOR LOAD POINT
 2889    02 00745    551217AD              STH,1    TWBC+1,1          SET BYTE COUNT =1 OF TWBC
 2890    02 00746    6AF01638    TIST1502  BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
 2891    02 00747    22000BD6              LI,0     DA(TWBC)          WRITE RECORD 1 TO 64 BYTES
 2892    02 00748    6AF01CA2              BAL,15   :IOEXEC           EXECUTE SIO
 2893    02 00749    6AF0162F              BAL,15   MYDELAY           DELAY TILL INTERRUPT
 2894    02 0074A    6AF01EC4    TIST1503  BAL,15   :ERRORT           TEST
 2895    02 0074B    00005D78              DATA     BA(TSEQ0010)      DEV,CONTR READY,LENGTH OK, BC=00
 2896    02 0074C    68000757              B        TIST1504
 2897                            *         ERROR EXIT
 2898    02 0074D    12C017AC              LD,12    TWBC              IOCD PRINTOUT
 2899    02 0074E    6AF01EAF              BAL,15   IOCDMSG
 2900    02 0074F    EAF0021B A            BAL,15   *:ERROR           1501
 2901    02 00750    000005DD A            DATA     1501              INCORRECT BITS SET ON TEST
 2902    02 00751    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
 2903    02 00752    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
 2904    02 00753    68000755              B        $+2
 2905    02 00754    68000757              B        TIST1504          CONTINUE
 2906    02 00755    6AF0160C              BAL,15   RWTLP             REWIND TO LOAD POINT
 2907    02 00756    68000746              B        TIST1502          LOOP ON ERROR
 2908    02 00757    331017AD    TIST1504  MTH,1    TWBC+1            BC=BC+1
 2909    02 00758    22700040 A            LI,7     64
 2910    02 00759    517217AD              CH,7     TWBC+1,1          BC =64
 2911    02 0075A    69300746              BNE      TIST1502
 2912    02 0075B    6AF01638    TIST1505  BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
 2913    02 0075C    22000BD7              LI,0     DA(TW64)          WRITE 64 BYTES AND INTERRUPT ON ZBC
 2914    02 0075D    6AF01CA2              BAL,15   :IOEXEC           TIO, SIO
 2915    02 0075E    22E0012C A            LI,14    300               DELAY TILL INTERRUPT
 2916    02 0075F    6AF01E26              BAL,15   :DELAY
 2917    02 00760    68000766              B        TIST1506
 2918                            *         ERROR EXIT DELAY TIMEOUT
 2919    02 00761    EAF0021B A            BAL,15   *:ERROR           NO INTERRUPT ON ZBC
 2920    02 00762    000005DE A            DATA     1502              1502
 2921    02 00763    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
 2922    02 00764    2E000000 A            WAIT
 2923    02 00765    6800075B              B        TIST1505          LOOP ON ERROR
 2924    02 00766    22F01D4C A  TIST1506  LI,15    7500 DELAY FOR CE
 2925    02 00767    64F00767              BDR,15   $
 2926    02 00768    6AF01EC4              BAL,15   :ERRORT           TEST
 2927    02 00769    00005D50              DATA     BA(TSEQ0003)      AIO-ZBC, TIO-IP RESET
 2928    02 0076A    68000770              B        TIST1507
 2929                            *         ERROR EXIT
 2930    02 0076B    EAF0021B A            BAL,15   *:ERROR           1503
 2931    02 0076C    000005DF A            DATA     1503
 2932    02 0076D    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
 2933    02 0076E    2E000000 A            WAIT
 2934    02 0076F    6800075B              B        TIST1505          LOOP ON ERROR
 2935    02 00770    6AF0160C    TIST1507  BAL,15   RWTLP             REWIND TO LOAD POINT
 2936    02 00771    6AF01640              BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
 2937    02 00772    680003B2              B        :TIM              GO TO SEQUENCER
 2938                            *
 2939                            *
 2940                            *
 2941                            *                                   TST1,16 READ TEST
 2942                            *                                   ---------------------------------
 2943                            *
 2944                            * TEST THE EXECUTION OF READ ORDERS USING A STARTING BYTE COUNT OF ONE  *
 2945                            * UP TO A MAXIMUM COUNT OF 64. WRITE 64 RECORDS WITH A FIXED BYTE      *
 2946                            * COUNT OF 100 BYTES (PATTERN =X'FF') AND REWIND TAPE. THIS TEST WILL  *
 2947                            * CHECK THE RESPONSE TO A READ FORWARD OPERATION (OFF LOAD POINT,       *
 2948                            * ORDER TRANSMISSION, DATA INPUT OPERATION, BYTE COUNT REDUCED TO      *
 2949                            * ZERO). REWIND TAPE AND TEST LOAD POINT.                              *
 2950                            * TE ( TRANSMISSION ERRORS) NOT CHECKED IN THIS TEST.                  *
 2951                            *
 2952    02 00773    6AF01651    :TIST16   BAL,15   SMEARPTR          SMEAR PATTERN AND SET UP COMPARE
 2953    02 00774    32F0209B              LW,15    =X'0000B300'      REMOVE TE FROM TEST
 2954    02 00775    35F0206C              STW,15   :SAVETAB+4
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          45
  2955    02 00776    32F0209C              LW,15    =X'0000BF00'       REMOVE TE IN OSB TEST
  2956    02 00777    35F0206A              STW,15   :SAVETAB+2
  2957    02 00778    6AF0160C    TIST1602  BAL,15   RWTLP              REWIND TAPE, TEST FOR LOAD POINT
  2958    02 00779    22AFFFC0 A            LI,10    -64
  2959    02 0077A    6AF01638    TIST1603  BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  2960    02 0077B    22000BD8              LI,0     DA(TW100B)         WRITE 100 BYTES ALL BITS ON
  2961    02 0077C    6AF01CA2              BAL,15   :IOEXEC            EXECUTE SIO
  2962    02 0077D    6AF0162F              BAL,15   MYDELAY            DELAY TILL INTERRUPT
  2963    02 0077E    6AF01EC4    TIST1604  BAL,15   :ERRORT            TEST
  2964    02 0077F    00005E20              DATA     BA(TSEQ0036)       NO UE, BC=00, READY
  2965    02 00780    68000786              B        TIST1605
  2966                            *         ERROR EXIT
  2967    02 00781    EAF0021B A            BAL,15   *:ERROR           1601
  2968    02 00782    00000641 A            DATA     1601               INCORRECT BITS SET ON TEST
  2969    02 00783    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  2970    02 00784    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  2971    02 00785    6800077A              B        TIST1603           LOOP ON ERROR
  2972    02 00786    65A0077A    TIST1605  BIR,10   TIST1603           DO 64 RECORDS OF 100 BYTES
  2973    02 00787    6AF0160C    TIST1606  BAL,15   RWTLP              REWIND TAPE, TEST FOR LOAD POINT
  2974    02 00788    551217DD              STH,1    TRFBC+1,1          SET BYTE COUNT =1
  2975    02 00789    22AFFFC0 A            LI,10    -64
  2976    02 0078A    6AF01638    TIST1607  BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  2977    02 0078B    22000BEE              LI,0     DA(TRFBC)          READ FORWARD 100 BYTES WITH BC=1-64
  2978    02 0078C    6AF01CA2              BAL,15   :IOEXEC            EXECUTE SIO
  2979    02 0078D    6AF0162F              BAL,15   MYDELAY            DELAY TILL INTERRUPT
  2980    02 0078E    6AF01EC4    TIST1608  BAL,15   :ERRORT            TEST
  2981    02 0078F    00005D8C              DATA     BA(TSEQ0012)       READY,UE,NO ZBC, INCORRECT LENGTH
  2982    02 00790    6800079B              B        TIST1609
  2983                            *         ERROR EXIT
  2984    02 00791    12C017DC              LD,12    TRFBC              PRINTOUT IOCD
  2985    02 00792    6AF01EAF              BAL,15   IOCDMSG
  2986    02 00793    EAF0021B A            BAL,15   *:ERROR           1602
  2987    02 00794    00000642 A            DATA     1602               INCORRECT BITS SET ON TEST
  2988    02 00795    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  2989    02 00796    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  2990    02 00797    68000799              B        $+2
  2991    02 00798    6800079B              B        TIST1609           CONTINUE
  2992    02 00799    6AF0160C              BAL,15   RWTLP              REWIND TO LOAD POINT
  2993    02 0079A    6800078A              B        TIST1607           LOOP ON ERROR
  2994    02 0079B    331017DD    TIST1609  MTW,1    TRFBC+1            BYTE COUNT =BYTE CONT+1
  2995    02 0079C    65A0078A              BIR,10   TIST1607           DO 1 TO 64 BYTES
  2996    02 0079D    6AF0160C              BAL,15   RWTLP              REWIND AND TEST FOR LOAD POINT
  2997    02 0079E    6AF01640              BAL,15   CLRDARM            CLEAR AND DISARM INTERRUPT
  2998    02 0079F    680003B2              B        :TIM               GO TO SEQUENCER
  2999                            *
  3000                            *
  3001                            *
  3002                            *
  3003                            *                                    TST1,17  NO OPERATION TEST
  3004                            *                                    ----------------------------------
  3005                            *
  3006                            *
  3007    02 007A0    680003B2    :TIST17   B        :TIM               GO TO SEQUENCER
  3008                            *
  3009                            *                                    TST1,18 WRITE READ DATA TEST
  3010                            *                                    ----------------------------------
  3011                            *
  3012                            * WRITE N RECORDS WITH A FIXED BYTE COUNT AND DATA PATTERN OF X'FF'.   *
  3013                            * REWIND TAPE AND READ N RECORDS IN THE FORWARD DIRECTION. VERIFY THAT *
  3014                            * DATA CAN BE RECORDED AND READ FROM EACH TRACK.                       *
  3015                            * TE ( TRANSMISSION ERRORS) NOT CHECKED IN THIS TEST.
  3016                            *                                                                     *
  3017                            *
  3018    02 007A1    6AF01651    :TIST18   BAL,15   SMEARPTR           SMEAR PATTERN AND SET UP COMPARE
  3019    02 007A2    32F0209B              LW,15    =X'0000B300'       REMOVE TE FROM TEST
  3020    02 007A3    35F0206C              STW,15   :SAVETAB+4
  3021    02 007A4    32F0209C              LW,15    =X'0000BF00'       REMOVE TE IN OSB TEST
  3022    02 007A5    35F0206A              STW,15   :SAVETAB+2
  3023    02 007A6    311019CE              CW,1     MODEFLAG           PACKED BINARY SET
  3024    02 007A7    683007AB              BE       $+4
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          46
  3025    02 007A8    32E0207D          LW,14    BUFF2
  3026    02 007A9    20E00019 A        AI,14    25
  3027    02 007AA    680007AC          B        $+2
  3028    02 007AB    22E021A6          LI,14    BUFF1+225
  3029    02 007AC    35E019BC          STW,14   RESLOC           COMPARE ADDRESS
  3030    02 007AD    225FFFFA A        LI,5     -6               FETCH -6
  3031    02 007AE    22600000 A        LI,6     0                CLEAR TALLY ERROR AREA
  3032    02 007AF    356A1B61          STW,6    :TALLYO+6,5
  3033    02 007B0    655007AF          BIR,5    $-1
  3034    02 007B1    6AF0160C    TIST1802 BAL,15   RWTLP            REWIND TAPE, TEST FOR LOAD POINT
  3035    02 007B2    22AFFF9C A        LI,10    -100
  3036    02 007B3    6AF01638    TIST1803 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3037    02 007B4    22000BD8          LI,0     DA(TWI00B)       WRITE 100 BYTES ALL BITS ON
  3038    02 007B5    6AF01CA2          BAL,15   :IOEXEC          EXECUTE SIO
  3039    02 007B6    6AF0162F          BAL,15   MYDELAY          DELAY TILL INTERRUPT
  3040    02 007B7    6AF01EC4    TIST1804 BAL,15   :ERRORT          GO TO SUBR.
  3041    02 007B8    00005E20          DATA     BA(TSEQ036)      NO UE, BC=00, READY
  3042    02 007B9    680007BC          B        TIST1805
  3043                            *      ERROR EXIT
  3044    02 007BA    EAF0021B A        BAL,15   *:ERROR          1801
  3045    02 007BB    00000709 A        DATA     1801             INCORRECT BITS SET ON TEST
  3046    02 007BC    65A007B3    TIST1805 BIR,10   TIST1803
  3047    02 007BD    6AF0160C          BAL,15   RWTLP            REWIND TAPE, TEST FOR LOAD POINT
  3048    02 007BE    22AFFF9C A        LI,10    -100
  3049    02 007BF    6AF01638    TIST1806 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3050    02 007C0    6AF01CE8          BAL,15   :CLEAR           CLEAR READ IN BUFFER
  3051    02 007C1    22000BEF          LI,0     DA(TRFI00B)      READ FORWARD 100 BYTES ALL ON
  3052    02 007C2    6AF01CA2          BAL,15   :IOEXEC          EXECUTE SIO
  3053    02 007C3    6AF0162F          BAL,15   MYDELAY          DELAY TILL INTERRUPT
  3054    02 007C4    35101DBD          STW,1    :COMFLAG         INHIBIT PRINTOUT
  3055    02 007C5    6AF01D47    TIST1807 BAL,15   :COMPARE          COMPARE INFORMATION
  3056    02 007C6    680007D4          B        TIST1808
  3057                            *      ERROR EXIT
  3058    02 007C7    311019CE          CW,1     MODEFLAG         PACKED OPTION SET
  3059    02 007C8    693007CA          BNE      $+2
  3060    02 007C9    6AF01717          BAL,15   UNPACK           UNPACK INFORMATION
  3061    02 007CA    225FFFFA A        LI,5     -6               FETCH -6
  3062    02 007CB    22800020 A        LI,8     X'20'            FETCH X'20'
  3063    02 007CC    226FFF9C A        LI,6     -100             FETCH -100
  3064    02 007CD    32E019BC          LW,14    RESLOC
  3065    02 007CE    F18C000E A        CB,8     *14,6            COMPARE
  3066    02 007CF    694007D1          BCS,4    $+2              BRANCH CONDITION CODE SET
  3067    02 007D0    331A1B61          MTW,1    :TALLYO+6,5      TALLYO+1
  3068    02 007D1    656007CE          BIR,6    $-3              BRANCH INCREMENT REG.
  3069    02 007D2    2580027F A        SCS,8    -1               SHIFT ONE SPACE
  3070    02 007D3    655007CC          BIR,5    $-7              BRANCH INCREMENT REGISTER
  3071    02 007D4    65A007BF    TIST1808 BIR,10   TIST1806         READ 100 RECORDS
  3072    02 007D5    225FFFFA A        LI,5     -6               FETCH -6
  3073    02 007D6    22A02710 A        LI,10    10000            FETCH 10000
  3074    02 007D7    35AA1B5B          STW,10   :TALLYE+6,5       STORE 10000 INTO TALLYE
  3075    02 007D8    655007D7          BIR,5    $-1              BRANCH INCREMENT REG.5
  3076    02 007D9    32A0209D          LW,10    =X'3F3F3F3F'     FETCH WORD
  3077    02 007DA    35A01B53          STW,10   :TALLYP          STORE INTO TALLP
  3078    02 007DB    22A00012 A        LI,10    18               FETCH TEST NO.
  3079    02 007DC    35A01B54          STW,10   TESTNO           STORE INTO TESTNO
  3080    02 007DD    22801888          LI,8     T;ST18M          FETCH MSG
  3081    02 007DE    35801B45          STW,8    :TALLYMA         STORE INTO TALLYMA
  3082    02 007DF    6AF01B09          BAL,15   ERRPNTI          GO TO ERROR PRINT SUBR.
  3083    02 007E0    680007E4          B        TIST1809         BRANCH
  3084    02 007E1    EAF0021D A        BAL,15   *:SENSE          TEST SENSE SW
  3085    02 007E2    2E0007E2          WAIT     $
  3086    02 007E3    680007A1          B        :TIST18          LOOP ON ERROR
  3087    02 007E4    22000000 A  TIST1809 LI,0     0                FETCH ZERO
  3088    02 007E5    35001DBD          STW,0    :COMFLAG         RESET COMFLAG
  3089    02 007E6    6AF0160C          BAL,15   RWTLP            REWIND TO LOAD POINT
  3090    02 007E7    6AF01640          BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  3091    02 007E8    6AF003B2          BAL,15   :TIM             GO TO SEQUENCER
  3092                            *
  3093                            *
  3094                            *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          47
  3095                          *
  3096                          *
  3097                          *                                        TST1,19 WRITE, READ DATA TEST
  3098                          *                                              DATA X'00' TO X'20'
  3099                          *                                        ---------------------------------
  3100                          *
  3101                          * WRITE N RECORDS WITH A FIXED BYTE COUNT AND THE CURRENT DATA PATTERN *
  3102                          * DATA WILL BE VARIED FROM X'00' THRU x'20'. REWIND TAPE AND READ N    *
  3103                          * RECORDS IN THE FORWARD DIRECTION. VERIFY FOR EACH PASS THAT ONLY ONE *
  3104                          * TRACK CONTAINS INFORMATION AND THAT ALL OTHER TRACKS ARE ZERO. AFTER *
  3105                          * EACH PASS LOOP ON THE DATA PATTERN WHICH HAS CAUSED AN ERROR AND     *
  3106                          * CONTINUE TESTING UNTIL A SUCCESSFUL PASS HAS BEEN MADE.              *
  3107                          *                                                                     *
  3108                          *
  3109   02 007E9   227018E0     :TIST19  LI,7     PTOO
  3110   02 007EA   22F00000 A           LI,15    0
  3111   02 007EB   35F018F5              STW,15   SPFLAG              RESET FLAG
  3112   02 007EC   557207F6              STH,7    TIST1903,1         STARTING ADDRESS OF PATTERN
  3113   02 007ED   22701979              LI,7     PBTSAT
  3114   02 007EE   557207FD              STH,7    TIST1904,1         PACKED BINARY SET UP
  3115   02 007EF   22700000 A           LI,7     0                  CLEAR ERROR TALLIES
  3116   02 007F0   357018A5              STW,7    FLG1               CLEAR 1 ONLY FLAG
  3117   02 007F1   22600000 A   TIST1901 LI,6     0                  CLEAR TALLY AREA
  3118   02 007F2   22700000 A           LI,7     0
  3119   02 007F3   156018DC              STD,6    PTOOT
  3120   02 007F4   156018DE              STD,6    PTOOT+2
  3121   02 007F5   6AF0160C              BAL,15   RWTLP               REWIND TO LOAD POINT
  3122   02 007F6   327018E0     TIST1903 LW,7     PTOO
  3123   02 007F7   35701D39              STW,7    :PATID+1
  3124   02 007F8   6AF0164F              BAL,15   SMEARSP             SMEAR SPECIAL PATTERN
  3125   02 007F9   311019CE              CW,1     MODEFLAG           PACKED FLAG SET
  3126   02 007FA   69300806              BNE      TIST1902
  3127   02 007FB   22800004 A           LI,8     4
  3128   02 007FC   35801D38              STW,8    :PATID             3 WORD PATTERN
  3129   02 007FD   22801979     TIST1904 LI,8     PBTSAT             3 WORD PATTERN ADDRESS
  3130   02 007FE   35801D39              STW,8    :PATID+1
  3131   02 007FF   22800022 A           LI,8     34
  3132   02 00800   35801D3B              STW,8    :PATWC             WORD COUNT
  3133   02 00801   6AF01CF9              BAL,15   :PATTERN           SMEAR 3 WORD PACKED PATTERN
  3134   02 00802   22E021A6              LI,14    BUFF1+225
  3135   02 00803   35E019BC              STW,14   RESLOC              SET UP PACKED COMPARE
  3136   02 00804   35701D39              STW,7    :PATID+1
  3137   02 00805   68000809              B        $+4
  3138   02 00806   32E0207D     TIST1902 LW,14    BUFF2
  3139   02 00807   20E00019 A           AI,14    25
  3140   02 00808   35E019BC              STW,14   RESLOC              SET UP UNPACKED COMPARE
  3141   02 00809   225FFFFA A           LI,5     -6
  3142   02 0080A   22600000 A           LI,6     0                  CLEAR TALLY ERROR AREA
  3143   02 0080B   356A1B61              STW,6    :TALLYO+6,5
  3144   02 0080C   6550080B              BIR,5    $-1
  3145   02 0080D   22AFFF9C A           LI,10    -100
  3146   02 0080E   6AF01638     TIST1906 BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3147   02 0080F   22000BD8              LI,0     DA(TWI00B)         WRITE 100 BYTES
  3148   02 00810   6AF01CA2              BAL,15   :IOEXEC            EXECUTE SIO
  3149   02 00811   6AF0162F              BAL,15   MYDELAY            DELAY TILL INTERRUPT
  3150   02 00812   CDC018B5     TIST1907 TIO,12   *:DEVADDR          TEST FOR ERRORS
  3151   02 00813   31D0209E              CW,13    =X'00400000'       TE ONLY
  3152   02 00814   68400816              BCR,4    TIST1909
  3153   02 00815   331018DC     TIST1908 MTW,1    PTOOT              WRITE ERROR TALLY+1
  3154   02 00816   65A0080E     TIST1909 BIR,10   TIST1906           WRITE 100 RECORDS
  3155   02 00817   6AF0160C              BAL,15   RWTLP              REWIND AND TEST FOR LOAD POINT
  3156   02 00818   22AFFF9C A           LI,10    -100
  3157   02 00819   6AF01638     TIST1910 BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3158   02 0081A   6AF01CE8              BAL,15   :CLEAR             CLEAR READ IN BUFFER
  3159   02 0081B   22000BEF              LI,0     DA(TRF100B)        READ FORWARD 100 BYTES
  3160   02 0081C   6AF01CA2              BAL,15   :IOEXEC            EXECUTE SIO
  3161   02 0081D   6AF0162F              BAL,15   MYDELAY            DELAY TILL INTERRUPT
  3162   02 0081E   CDC018B5     TIST1911 TIO,12   *:DEVADDR          TEST FOR ERRORS
  3163   02 0081F   31D0209E              CW,13    =X'00400000'       TE ONLY
  3164   02 00820   68400822              BCR,4    $+2
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          48
  3165    02 00821    331018DD     TIST1912 MTW,1    PTOOT+1           READ ERROR TALLY+1
  3166    02 00822    35101DBD              STW,1    :COMFLAG          INHIBIT PRINTOUT
  3167    02 00823    6AF01D47              BAL,15   :COMPARE          COMPARE INFORMATION
  3168    02 00824    6800083B              B        TIST1915
  3169                             *         ERROR EXIT, DATA INCORRECT
  3170    02 00825    311019CE              CW,1     MODEFLAG          PACKED FLAG OPTION
  3171    02 00826    69300828              BNE      $+2
  3172    02 00827    6AF01717              BAL,15   UNPACK
  3173    02 00828    331018DE     TIST1914 MTW,1    PTOOT+2           INFO ERROR TALLY+1
  3174    02 00829    225FFFFA A            LI,5     -6                FETCH -6
  3175    02 0082A    22800020 A            LI,8     X'20'             FETCH X'20'
  3176    02 0082B    226FFF9C A   TIST1917 LI,6      -100              FETCH TOTAL NUMBER OF BYTES
  3177    02 0082C    71801D39              CB,8     :PATID+1          COMPARE PATTERNS
  3178    02 0082D    68300834              BE       TIST1913
  3179    02 0082E    32E019BC     TIST1905 LW,14    RESLOC            COMPARE ADDRESS
  3180    02 0082F    F18C000E A            CB,8     *14,6             COMPARE
  3181    02 00830    68400832              BCR,4    $+2
  3182    02 00831    331A1B61              MTW,1    :TALLYO+6,5       ADD 1 TO ERROR NO. COUNT
  3183    02 00832    6560082F              BIR,6    $-3
  3184    02 00833    68000839              B        TIST1915-2        OK
  3185    02 00834    32E019BC     TIST1913 LW,14    RESLOC            COMPARE ADDRESS
  3186    02 00835    F18C000E A            CB,8     *14,6             COMPARE
  3187    02 00836    69400838              BCS,4    $+2
  3188    02 00837    331A1B61              MTW,1    :TALLYO+6,5       ADD 1 TO ERROR NO. COUNT
  3189    02 00838    65600835              BIR,6    $-3
  3190    02 00839    2580027F A            SCS,8    -1                SHIFT ONE BIT
  3191    02 0083A    6550082B              BIR,5    TIST1917
  3192    02 0083B    65A00819     TIST1915 BIR,10   TIST1910          READ 100 RECORDS
  3193                             *         PRINTOUT PATTERN THAT FAILED, WRITE ERRORS, READ ERRORS
  3194    02 0083C    326018DC              LW,6     PTOOT
  3195    02 0083D    306018DD              AW,6     PTOOT+1
  3196    02 0083E    306018DE              AW,6     PTOOT+2
  3197    02 0083F    68300868              BEZ      TIST1916          NO PRINTOUT ON THIS PATTERN
  3198    02 00840    331018F5              MTW,1    SPFLAG            ERROR +1
  3199    02 00841    EAF0021B A            BAL,15   *:ERROR           1901
  3200    02 00842    0000076D A            DATA     1901              WRITE, READ, OR INFO ERRORS
  3201    02 00843    32C01D39              LW,12    :PATID+1
  3202    02 00844    EAF00218 A            BAL,15   *:HEXC            CONVERT FOR MESSAGE
  3203    02 00845    35F01AB9              STW,15   MESER+3
  3204    02 00846    32C018DC              LW,12    PTOOT
  3205    02 00847    EAF00217 A            BAL,15   *:DECC            CONVERT FOR PRINTOUT
  3206    02 00848    35F01ABC              STW,15   MESER+6
  3207    02 00849    32C018DD              LW,12    PTOOT+1
  3208    02 0084A    EAF00217 A            BAL,15   *:DECC            CONVERT FOR PRINTOUT
  3209    02 0084B    35F01ABF              STW,15   MESER+9
  3210    02 0084C    32C018DE              LW,12    PTOOT+2
  3211    02 0084D    EAF00217 A            BAL,15   *:DECC            CONVERT FOR PRINTOUT
  3212    02 0084E    35F01AC2              STW,15   MESER+12
  3213    02 0084F    EAF0021C A            BAL,15   *:PRINT           PRINT MESSAGE
  3214    02 00850    00001AA8              DATA     MSER1
  3215    02 00851    EAF0021C A            BAL,15   *:PRINT           PRINT OUT MESSAGE
  3216    02 00852    00001AB6              DATA     MESER
  3217    02 00853    EAF0021C A            BAL,15   *:PRINT           PRINT
  3218    02 00854    00001AA8              DATA     MSER1
  3219    02 00855    22800020 A            LI,8     X'20'             FETCH NO. X'20'
  3220    02 00856    225FFFFA A            LI,5     -6                FETCH -6
  3221    02 00857    22A00000 A            LI,10    0                 FETCH EXP. COUNT
  3222    02 00858    71801D39              CB,8     :PATID+1          COMPARE BYTES
  3223    02 00859    6830085C              BE       $+3
  3224    02 0085A    35AA1B5B              STW,10   :TALLYE+6,5       STORE EXP. COUNT
  3225    02 0085B    6800085E              B        $+3
  3226    02 0085C    22B02710 A            LI,11    10000             FETCH EXP. COUNT
  3227    02 0085D    35BA1B5B              STW,11   :TALLYE+6,5       STORE EXP. COUNT
  3228    02 0085E    2580027F A            SCS,8    -1                SHIFT ONE BIT
  3229    02 0085F    65500858              BIR,5    $-7
  3230    02 00860    32A01D39              LW,10    :PATID+1          FETCH PATTERN
  3231    02 00861    35A01B53              STW,10   :TALLYP           STORE PATTERN
  3232    02 00862    22A00013 A            LI,10    19                FETCH TEST NO.
  3233    02 00863    35A01B54              STW,10   TESTNO            STORE TEST NO.
  3234    02 00864    22801B88              LI,8     TIST18M
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          49
  3235    02 00865    35801B45              STW,8    :TALLYMA
  3236    02 00866    6AF01B09              BAL,15   ERRPNTI
  3237    02 00867    68000868              B        $+1
  3238                                *       CHANGE PATTERN
  3239    02 00868    331007F6    TIST1916  MTW,1    TIST1903          DO NEXT PATTERN
  3240    02 00869    333007FD              MTW,3    TIST1904          GO TO NEXT PACKED PATTERN
  3241    02 0086A    227018E7              LI,7     PT80-1
  3242    02 0086B    517207F6              CH,7     TIST1903,1
  3243    02 0086C    692007F1              BG       TIST1901
  3244    02 0086D    32F018F5              LW,15    SPFLAG
  3245    02 0086E    68300872              BEZ      $+4
  3246    02 0086F    EAF0021D A            BAL,15   *:SENSE
  3247    02 00870    2E000870              WAIT     $
  3248    02 00871    680007E9              B        :TIST19
  3249    02 00872    6AF01640              BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
  3250    02 00873    680003B2              B        :TIM              GO TO SEQUENCER
  3251                                *
  3252                                *
  3253                                *                                 TIST,20 SET ERASE-WRITE TEST
  3254                                *                                 ------------------------------------
  3255                                *
  3256                                * CHECK THE CAPABILITY OF THE TAPE STATION TO SKIP OVER AN AREA ON THE *
  3257                                * TAPE BY CHECKING THE DELAY BETWEEN THE START OF THE WRITE ORDER AND  *
  3258                                * THE START OF THE DATA TRANSFER.                                      *
  3259                                *                                                                     *
  3260                                *
  3261    02 00874    22500000 A  :TIST20  LI,5     0                 CLEAR TALLY
  3262    02 00875    226FFFF0 A           LI,6     -16
  3263    02 00876    328018A1             LW,8     CLOCK             CHANGE CLOCK INTERRUPT FOR THIS SECT
  3264    02 00877    35800055 A           STW,8    X'55'
  3265    02 00878    6AF01638             BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  3266    02 00879    22000BCA             LI,0     DA(TSE1)          SET ERASE
  3267    02 0087A    6AF01CA2             BAL,15   :IOEXEC           EXECUTE SIO
  3268    02 0087B    6AF0162F             BAL,15   MYDELAY           DELAY TILL INTERRUPT
  3269    02 0087C    6AF01638    TIST2001 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  3270    02 0087D    22000BD9             LI,0     DA(TWIB)          WRITE 1 BYTE BCZ SET
  3271    02 0087E    22F01040 A           LI,15    X'1040'           ARM AND ENABLE CLOCK
  3272    02 0087F    6DF01200 A           WD,15    X'1200'
  3273    02 00880    22800000 A           LI,8     0
  3274    02 00881    CCA018B5             SIO,10   *:DEVADDR         SIO
  3275    02 00882    46700008 A           XW,7     8
  3276    02 00883    32F01EA6             LW,15    :INTRECF          INTERRUPT RECEIVED FLAG
  3277    02 00884    68300883             BCR,3    $-1
  3278    02 00885    46800007 A           XW,8     7                 R8 NOW HAS TALLY
  3279    02 00886    22F01040 A           LI,15    X'1040'           DISARM INTERRUPT
  3280    02 00887    6DF01100 A           WD,15    X'1100'
  3281    02 00888    30500008 A           AW,5     8
  3282    02 00889    CDC018B5             TIO,12   *:DEVADDR         WAIT FOR DEVICE
  3283    02 0088A    69C00889             BCS,12   $-1
  3284    02 0088B    65600878             BIR,6    TIST2001-4        DO 16 TIMES
  3285    02 0088C    2550007D A           SLS,5    -3                R5 HAS AVERAGE TIME IN MS
  3286    02 0088D    315018B0    TIST2002 CW,5     ERTMIN            MINIMUM
  3287    02 0088E    69100894             BL       TIST2003
  3288    02 0088F    315018AF             CW,5     ERTMAX            MAXIMUM
  3289    02 00890    691008A4             BL       TIST2004
  3290                                *       ERROR EXIT TOO LONG
  3291    02 00891    EAF0021B A           BAL,15   *:ERROR           2001
  3292    02 00892    000007D1 A           DATA     2001              ERASE TIME TOO LONG
  3293    02 00893    68000896             B        TIST2003+2        GO TO MESSAGE PRINTOUT
  3294                                *       ERROR EXIT TOO SHORT
  3295    02 00894    EAF0021B A  TIST2003 BAL,15   *:ERROR           2002
  3296    02 00895    000007D2 A           DATA     2002              ERASE TIME TOO SHORT
  3297    02 00896    32C00005 A           LW,12    5                 ERASE TIME IN MS
  3298    02 00897    EAF00217 A           BAL,15   *:DECC            CONVERT TO DECIMAL
  3299    02 00898    35F01A99             STW,15   MESEGT+3
  3300    02 00899    32C018B0             LW,12    ERTMIN            MINIMUM
  3301    02 0089A    EAF00217 A           BAL,15   *:DECC            CONVERT
  3302    02 0089B    35F01A9E             STW,15   MESEGT+8          STORE
  3303    02 0089C    32C018AF             LW,12    ERTMAX            MAXIMUM
  3304    02 0089D    EAF00217 A           BAL,15   *:DECC            CONVERT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          50
  3305    02 0089E    35F01AA0              STW,15   MESEGT+10          STORE
  3306    02 0089F    EAF0021C A            BAL,15   *:PRINT            PRINT MESSAGE
  3307    02 008A0    00001A96              DATA     MESEGT
  3308    02 008A1    EAF0021D A            BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  3309    02 008A2    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  3310    02 008A3    68000874              B        :TIST20
  3311    02 008A4    6AF01640       TIST2004 BAL,15   CLRDARM            CLEAR AND DISARM INTERRUPT
  3312    02 008A5    32801E43              LW,8     :DELMTW            RESTORE CLOCK FOR DELAY
  3313    02 008A6    35800055 A            STW,8    X'55'
  3314    02 008A7    680003B2              B        :TIM               GO TO SEQUENCER
  3315                                *
  3316                                *
  3317                                *                                   TST1,21 WRITE,SPACE FWD AND BKW TEST
  3318                                *                                   ------------------------------------
  3319                                *
  3320                                *
  3321                                * WRITE N RECORDS WITH A FIXED BYTE COUNT. REWIND TAPE TO LOAD POINT.  *
  3322                                * SPACE ONE RECORD IN THE FORWARD AND BACKWARD DIRECTION. SPACE ANOTHER*
  3323                                * RECORD IN THE BACKWARD DIRECTION AND CHECK LOAD POINT INDICATOR.      *
  3324                                * SPACE N RECORDS IN THE FORWARD DIRECTION AND THEN THE REVERSE        *
  3325                                * DIRECTION. CHECK ALL STATUS RESPONSE. REWIND TO LOAD POINT.          *
  3326                                *                                                                     *
  3327                                *
  3328    02 008A8    6AF0160C       :TIST21  BAL,15   RWTLP              REWIND TO LOAD POINT
  3329    02 008A9    6AF01651              BAL,15   SMEARPTR           SMEAR PATTERN AND SET UP COMPARE
  3330    02 008AA    228FFF9C A            LI,8     -100
  3331    02 008AB    6AF01638       TIST2101 BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3332    02 008AC    22000BD8              LI,0     DA(TW100B)         WRITE 100 BYTES
  3333    02 008AD    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  3334    02 008AE    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  3335    02 008AF    6AF01EC4       TIST2102 BAL,15   :ERRORT            TEST
  3336    02 008B0    00005D84              DATA     BA(TSEQ011)        NO UE, READY, BC=00
  3337    02 008B1    680008B7              B        TIST2103
  3338                                *       ERROR EXIT
  3339    02 008B2    EAF0021B A            BAL,15   *:ERROR            #2101
  3340    02 008B3    00000835 A            DATA     2101               INCORRECT BITS ON TEST
  3341    02 008B4    EAF0021D A            BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  3342    02 008B5    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  3343    02 008B6    680008AB              B        TIST2101           LOOP ON ERROR
  3344    02 008B7    658008AB       TIST2103 BIR,8    TIST2101           DO 100 RECORDS
  3345    02 008B8    6AF0160C              BAL,15   RWTLP              REWIND TO LOAD POINT
  3346    02 008B9    6AF01638              BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3347    02 008BA    22000C0C              LI,0     DA(SF100)          SPACE RECORD FORWARD
  3348    02 008BB    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  3349    02 008BC    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  3350    02 008BD    6AF01EC4       TIST2104 BAL,15   :ERRORT            TEST
  3351    02 008BE    00005D84              DATA     BA(TSEQ011)        NO UE, READYBC=00
  3352    02 008BF    680008C6              B        TIST2105
  3353                                *       ERROR EXIT
  3354    02 008C0    EAF0021B A            BAL,15   *:ERROR            #2102
  3355    02 008C1    00000836 A            DATA     2102               INCORRECT BITS ON TEST
  3356    02 008C2    EAF0021D A            BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  3357    02 008C3    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  3358    02 008C4    680008B8              B        TIST2103+1         LOOP ON ERROR
  3359    02 008C5    68000904              B        TIST2117+3         GO TO END OF TEST
  3360    02 008C6    6AF01638       TIST2105 BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3361    02 008C7    22000C0D              LI,0     DA(SB100)          SPACE RECORD BACKWARD
  3362    02 008C8    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  3363    02 008C9    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  3364    02 008CA    6AF01EC4       TIST2107 BAL,15   :ERRORT            TEST
  3365    02 008CB    00005D84              DATA     BA(TSEQ011)        NO UE, READY, BC=00
  3366    02 008CC    680008D3              B        TIST2108
  3367                                *       ERROR EXIT
  3368    02 008CD    EAF0021B A            BAL,15   *:ERROR            #2103
  3369    02 008CE    00000837 A            DATA     2103               INCORRECT BITS ON TEST
  3370    02 008CF    EAF0021D A            BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  3371    02 008D0    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  3372    02 008D1    680008B8              B        TIST2103+1         LOOP ON ERROR
  3373    02 008D2    68000904              B        TIST2117+3         GO TO END OF TEST
  3374    02 008D3    6AF01638       TIST2108 BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          51
  3375    02 008D4    22000C0D              LI,0     DA(SB100)          SPACE RECORD BACKWARD
  3376    02 008D5    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  3377    02 008D6    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  3378    02 008D7    6AF01EC4    TIST2110  BAL,15   :ERRORT            TEST
  3379    02 008D8    00005D9C              DATA     BA(TSEQ014)        UE AND LOAD POINT
  3380    02 008D9    680008E0              B        TIST2109
  3381                            *         ERROR EXIT
  3382    02 008DA    EAF0021B A            BAL,15   *:ERROR           #2104
  3383    02 008DB    00000838 A            DATA     2104               INCORRECT BITS ON TEST
  3384    02 008DC    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  3385    02 008DD    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  3386    02 008DE    68000888              B        TIST2103+1         LOOP ON ERROR
  3387    02 008DF    68000904              B        TIST2117+3         GO TO END OF TEST
  3388    02 008E0    228FFF9C A  TIST2109  LI,8     -100
  3389    02 008E1    6AF01638    TIST2111  BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3390    02 008E2    22F00000 A            LI,15    0
  3391    02 008E3    35F018F5              STW,15   SPFLAG             RESET FLAG
  3392    02 008E4    22000C0C              LI,0     DA(SF100)          SPACE FORWARD 100 BYTES
  3393    02 008E5    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  3394    02 008E6    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  3395    02 008E7    6AF01EC4    TIST2113  BAL,15   :ERRORT            TEST
  3396    02 008E8    00005D84              DATA     BA(TSEQ011)        NO UE,READY, BC=00
  3397    02 008E9    680008ED              B        TIST2112
  3398                            *         ERROR EXIT
  3399    02 008EA    EAF0021B A            BAL,15   *:ERROR           #2105
  3400    02 008EB    00000839 A            DATA     2105               INCORRECT BITS ON TEST
  3401    02 008EC    331018F5              MTW,1    SPFLAG             ERROR FLAG +1
  3402    02 008ED    658008E1    TIST2112  BIR,8    TIST2111           SPACE FWD 100 RECORDS
  3403    02 008EE    32F018F5              LW,15    SPFLAG
  3404    02 008EF    683008F6 .            BEZ      TIST2114-1         ERROR FLAG =0
  3405    02 008F0    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  3406    02 008F1    2E000000 A            WAIT
  3407    02 008F2    680008F4              B        $+2                LOOP ON ERROR BRANCH
  3408    02 008F3    68000904              B        TIST2117+3         GO TO END OF TEST
  3409    02 008F4    6AF0160C              BAL,15   RWTLP             REWIND TO LOAD POINT
  3410    02 008F5    680008E0              B        TIST2109
  3411    02 008F6    228FFF9C A            LI,8     -100
  3412    02 008F7    6AF01638    TIST2114  BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3413    02 008F8    22000C0D              LI,0     DA(SB100)          SPACE RECORD BACKWARD
  3414    02 008F9    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  3415    02 008FA    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  3416    02 008FB    6AF01EC4    TIST2116  BAL,15   :ERRORT            TEST
  3417    02 008FC    00005D84              DATA     BA(TSEQ011)        NO UE, READY, BC=00
  3418    02 008FD    68000901              B        TIST2117
  3419                            *         ERROR EXIT
  3420    02 008FE    EAF0021B A            BAL,15   *:ERROR           #2106
  3421    02 008FF    0000083A A            DATA     2106               INCORRECT BITS ON TEST
  3422    02 00900    331018F5              MTW,1    SPFLAG             ERROR FLAG +1
  3423    02 00901    658008F7    TIST2117  BIR,8    TIST2114           SPACE 100 RECORDS FORWARD
  3424    02 00902    32F018F5              LW,15    SPFLAG
  3425    02 00903    693008F0              BNEZ     TIST2112+3
  3426    02 00904    6AF0160C              BAL,15   RWTLP             REWIND TO LOAD POINT
  3427    02 00905    6AF01640              BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
  3428    02 00906    680003B2              B        :TIM               GO TO SEQUENCER
  3429                            *
  3430                            *
  3431                            *                                    TST1,22 WRITE TAPE MARK TEST
  3432                            *                                    ----------------------------
  3433                            *
  3434                            * WRITE N TAPE MARKS AND VERIFY THAT END OF FILE STATUS IS REPORTED    *
  3435                            * AFTER EACH ORDER. ALL TAPE MARKS ARE READ FORWARD AND SPACE BKW.
  3436                            *                                                                     *
  3437                            *
  3438    02 00907    6AF0160C    :TIST22   BAL,15   RWTLP             REWIND TO LOAD POINT
  3439    02 00908    228FFF9C A            LI,8     -100
  3440    02 00909    6AF01638    TIST2201  BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  3441    02 0090A    22000BD4              LI,0     DA(TWTM)           WRITE TM
  3442    02 0090B    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  3443    02 0090C    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  3444    02 0090D    6AF01EC4    TIST2203  BAL,15   :ERRORT            TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          52
  3445    02 0090E    00005DA0              DATA     BA(TSE0015)       READY, NO UE, TM
  3446    02 0090F    68000915              B        TIST2204
  3447                                *     ERROR EXIT
  3448    02 00910    EAF0021B A            BAL,15   *:ERROR           #2201
  3449    02 00911    00000899 A            DATA     2201              INCORRECT BITS ON TEST
  3450    02 00912    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  3451    02 00913    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  3452    02 00914    68000909              B        TIST2201          LOOP ON ERROR
  3453    02 00915    65800909    TIST2204  BIR,8    TIST2201          WRITE 100 TAPE MARKS
  3454    02 00916    228FFF9C A            LI,8     -100              SPACE 100 RECORDS BACKWARD
  3455    02 00917    6AF01638    TIST2205  BAL,15   CLRARM            CLEAR AND ARM INTTERUPT
  3456    02 00918    22000C19              LI,0     DA(SPBRAND)       SPACE BKW OVER TAPE MARK
  3457    02 00919    6AF01CA2              BAL,15   :IOEXEC           TIO,SIO
  3458    02 0091A    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  3459    02 0091B    6AF01EC4              BAL,15   :ERRORT           TEST
  3460    02 0091C    00005E30              DATA     BA(TSE0038)       UE, TAPE MARK, NO TE
  3461    02 0091D    68000923              B        TIST2206
  3462                                *     ERROR EXIT
  3463    02 0091E    EAF0021B A            BAL,15   *:ERROR           #2202
  3464    02 0091F    0000089A A            DATA     2202
  3465    02 00920    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  3466    02 00921    2E000000 A            WAIT
  3467    02 00922    68000923              B        $+1               CANNOT LOOP ON ERROR
  3468    02 00923    65800917    TIST2206  BIR,8    TIST2205          DO 100 TIMES
  3469    02 00924    228FFF9C A            LI,8     -100              READ 100 RECORDS FWD
  3470    02 00925    6AF01638    TIST2207  BAL,15   CLRARM            CLEARN AND ARM INTERRUPT
  3471    02 00926    22000BF6              LI,0     DA(RF100B)        READ FWD OVER TAPE MARK
  3472    02 00927    6AF01CA2              BAL,15   :IOEXEC           TIO,SIO
  3473    02 00928    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  3474    02 00929    6AF01EC4              BAL,15   :ERRORT           TEST
  3475    02 0092A    00005E28              DATA     BA(TSE0037)       UE, TAPE MARK
  3476    02 0092B    68000931              B        TIST2208
  3477                                *     ERROR EXIT
  3478    02 0092C    EAF0021B A            BAL,15   *:ERROR           #2203
  3479    02 0092D    0000089B A            DATA     2203
  3480    02 0092E    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  3481    02 0092F    2E000000 A            WAIT
  3482    02 00930    68000931              B        $+1               CANNOT LOOP ON ERROR
  3483    02 00931    65800925    TIST2208  BIR,8    TIST2207          DO 100 TIMES
  3484    02 00932    6AF01640              BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
  3485    02 00933    68000382              B        :TIM              GO TO SEQUENCER
  3486                                *
  3487                                *
  3488                                *
  3489                                *
  3490                                *                                  TST1,23 WRITE TAPE MARK -SPACE FILE
  3491                                *                                          AND SPACE RECORD TEST
  3492                                *                                  ------------------------------------
  3493                                *
  3494                                *
  3495                                * WRITE N TAPE MARKS AND REWIND TO LOAD POINT. SPACE FILE IN THE        *
  3496                                * FORWARD DIRECTION AND VERIFY END OF FILE AND NO UNUSUAL END STATUS.   *
  3497                                * SPACE FILE BACKWARD AND CHECK END OF FILE AND NO UNUSUAL END. SPACE   *
  3498                                * FILE BACKWARD AGAIN AND CHECK END OF FILE, BEGINNING OF TAPE AND NO  *
  3499                                * UNUSUAL END. VERIFY ALL OTHER STATUS. VERIFY THAT UNUSUAL END AND    *
  3500                                * END OF FILE STATUS IS REPORTED WHEN SPACING OR READING OVER A TAPE   *
  3501                                * MARK. WRITE N RECORDS FOLLOWED BY A TAPE MARK. VERIFY SPACE RECORD   *
  3502                                * IN BOTH DIRECTIONS.                                                  *
  3503                                *                                                                     *
  3504                                *
  3505    02 00934    6AF0160C    :TIST23   BAL,15   RWTLP             REWIND TO LOAD POINT
  3506    02 00935    228FFF9C A            LI,6     -100
  3507    02 00936    6AF01638    TIST2301  BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  3508    02 00937    22000BD4              LI,0     DA(TWTM)          WRITE TM
  3509    02 00938    6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  3510    02 00939    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  3511    02 0093A    6AF01EC4    TIST2303  BAL,15   :ERRORT           TEST
  3512    02 0093B    00005DA0              DATA     BA(TSE0015)       READY, TAPE MARK, NO UE
  3513    02 0093C    68000942              B        TIST2304
  3514                                *     ERROR EXIT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          53
  3515    02 0093D    EAF0021B A            BAL,15   *:ERROR          #2301
  3516    02 0093E    000008FD A            DATA     2301             INCORRECT BITS ON TEST
  3517    02 0093F    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3518    02 00940    2E000000 A            WAIT                      HALT ON ERROR IF SS3 RESET
  3519    02 00941    68000936              B        TIST2301         LOOP ON ERROR
  3520    02 00942    65800936    TIST2304  BIR,8    TIST2301         WRITE 100 TAPE MARKS
  3521    02 00943    6AF0160C              BAL,15   RWTLP            REWIND TO LOAD POINT
  3522    02 00944    6AF01638              BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3523    02 00945    22000C0E              LI,0     DA(TSFF)         SPACE FILE FWD
  3524    02 00946    6AF01CA2              BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3525    02 00947    6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3526    02 00948    6AF01EC4    TIST2306  BAL,15   :ERRORT          TEST
  3527    02 00949    00005DA0              DATA     BA(TSEQ0015)     READY, NO UE, TAPE MARK
  3528    02 0094A    68000951              B        TIST2307
  3529                            *         ERROR EXIT
  3530    02 0094B    EAF0021B A            BAL,15   *:ERROR          #2302
  3531    02 0094C    000008FE A            DATA     2302             INCORRECT BITS ON TEST
  3532    02 0094D    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3533    02 0094E    2E000000 A            WAIT
  3534    02 0094F    68000943              B        TIST2304+1       LOOP ON ERROR
  3535    02 00950    680009A6              B        TIST2326         GO TO END OF TEST
  3536    02 00951    22000C0F    TIST2307  LI,0     DA(TSFB)         SPACE FILE BKW
  3537    02 00952    6AF01638              BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3538    02 00953    6AF01CA2              BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3539    02 00954    6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3540    02 00955    6AF01EC4    TIST2309  BAL,15   :ERRORT          TEST
  3541    02 00956    00005DA0              DATA     BA(TSEQ0015)     READY, NO UE, TAPE MARK
  3542    02 00957    6800095E              B        TIST2310
  3543                            *         ERROR EXIT
  3544    02 00958    EAF0021B A            BAL,15   *:ERROR          #2303
  3545    02 00959    000008FF A            DATA     2303             INCORRECT BITS ON TEST
  3546    02 0095A    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3547    02 0095B    2E000000 A            WAIT                      HALT ON ERROR IF SS3 RESET
  3548    02 0095C    68000943              B        TIST2304+1       LOOP ON ERROR
  3549    02 0095D    680009A6              B        TIST2326         GO TO END OF TEST
  3550    02 0095E    22000C0F    TIST2310  LI,0     DA(TSFB)         SPACE FILE BKW AT BOT
  3551    02 0095F    6AF01638              BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3552    02 00960    6AF01CA2              BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3553    02 00961    6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3554    02 00962    6AF01EC4    TIST2312  BAL,15   :ERRORT          TEST
  3555    02 00963    00005E18              DATA     BA(TSEQ0035)     EOF,LP, NO UE
  3556    02 00964    6800096B              B        TIST2313
  3557                            *         ERROR EXIT
  3558    02 00965    EAF0021B A            BAL,15   *:ERROR          #2304
  3559    02 00966    00000900 A            DATA     2304             INCORRECT BITS ON TEST
  3560    02 00967    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3561    02 00968    2E000000 A            WAIT                      HALT ON ERROR IF SS3 RESET
  3562    02 00969    68000943              B        TIST2304+1       LOOP ON ERROR
  3563    02 0096A    680009A6              B        TIST2326         GO TO END OF TEST
  3564    02 0096B    228FFFEC A  TIST2313  LI,8     -20
  3565    02 0096C    6AF01638    TIST2314  BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3566    02 0096D    22000BD8              LI,0     DA(TWI00B)       WRITE 100 BYTES
  3567    02 0096E    6AF01CA2              BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3568    02 0096F    6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3569    02 00970    6AF01EC4    TIST2316  BAL,15   :ERRORT          TEST
  3570    02 00971    00005D84              DATA     BA(TSEQ0011)     NO UE, BC=00
  3571    02 00972    68000978              B        TIST2317
  3572                            *         ERROR EXIT
  3573    02 00973    EAF0021B A            BAL,15   *:ERROR          #2305
  3574    02 00974    00000901 A            DATA     2305             INCORRECT BITS ON TEST
  3575    02 00975    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3576    02 00976    2E000000 A            WAIT                      HALT ON ERROR IF SS3 RESET
  3577    02 00977    6800096C              B        TIST2314         LOOP ON ERROR
  3578    02 00978    6580096C    TIST2317  BIR,8    TIST2314         WRITE 20 RECORDS
  3579    02 00979    6AF01638              BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3580    02 0097A    22000BD4              LI,0     DA(TWTM)         WRITE TAPE MARK
  3581    02 0097B    6AF01CA2              BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3582    02 0097C    6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3583    02 0097D    6AF01EC4    TIST2319  BAL,15   :ERRORT          TEST
  3584    02 0097E    00005DA0              DATA     BA(TSEQ0015)     READY, TAPE MARK
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          54
  3585   02 0097F   68000988              B        TIST2320
  3586                              *      ERROR EXIT
  3587   02 00980   EAF0021B A             BAL,15   *:ERROR          #2306
  3588   02 00981   00000902 A             DATA     2306             INCORRECT BITS ON TEST
  3589   02 00982   EAF0021D A             BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3590   02 00983   2E000000 A             WAIT                      HALT ON ERROR IF SS3 RESET
  3591   02 00984   68000986               B        $+2              LOOP ON ERROR BRANCH
  3592   02 00985   680009A6               B        TIST2326         GO TO END OF TEST
  3593   02 00986   6AF0160C               BAL,15   RWTLP            REWIND TO LOAD POINT
  3594   02 00987   6800096C               B        TIST2314
  3595   02 00988   6AF01638    TIST2320   BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3596   02 00989   22000C0D               LI,0     DA(SB100)        SPACE RECORD BACKWARD
  3597   02 0098A   6AF01CA2               BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3598   02 0098B   6AF0162F               BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3599   02 0098C   6AF01EC4    TIST2322   BAL,15   :ERRORT          TEST
  3600   02 0098D   00005DA4               DATA     BA(TSEQ016)      UE, READY, TAPE MARK
  3601   02 0098E   68000997               B        TIST2323
  3602                              *      ERROR EXIT
  3603   02 0098F   EAF0021B A             BAL,15   *:ERROR          #2307
  3604   02 00990   00000903 A             DATA     2307             INCORRECT BITS ON TEST
  3605   02 00991   EAF0021D A             BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3606   02 00992   2E000000 A             WAIT                      HALT ON ERROR IF SS3 RESET
  3607   02 00993   68000995               B        $+2              LOOP ON ERROR
  3608   02 00994   680009A6               B        TIST2326         GO TO END OF TEST
  3609   02 00995   6AF0160C               BAL,15   RWTLP            REWIND TO LOAD POINT
  3610   02 00996   6800096C               B        TIST2314
  3611   02 00997   6AF01638    TIST2323   BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3612   02 00998   22000C0C               LI,0     DA(SF100)        SPACE RECORD FORWARD
  3613   02 00999   6AF01CA2               BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3614   02 0099A   6AF0162F               BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3615   02 0099B   6AF01EC4    TIST2325   BAL,15   :ERRORT          TEST
  3616   02 0099C   00005DA4               DATA     BA(TSEQ016)      UE, READY, TAPE MARK
  3617   02 0099D   680009A6               B        TIST2326
  3618                              *      ERROR EXIT
  3619   02 0099E   EAF0021B A             BAL,15   *:ERROR          #2308
  3620   02 0099F   00000904 A             DATA     2308             INCORRECT BITS ON TEST
  3621   02 009A0   EAF0021D A             BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3622   02 009A1   2E000000 A             WAIT                      HALT ON ERROR IF SS3 RESET
  3623   02 009A2   680009A4               B        $+2              LOOP ON ERROR
  3624   02 009A3   680009A6               B        TIST2326         GO TO END OF TEST
  3625   02 009A4   6AF0160C               BAL,15   RWTLP            REWIND TO LOAD POINT
  3626   02 009A5   6800096C               B        TIST2314
  3627   02 009A6   6AF01640    TIST2326   BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  3628   02 009A7   680003B2               B        :TIM             GO TO SEQUENCER
  3629                              *
  3630                              *
  3631                              *
  3632                              *                               TSTI,24  TAPE LOOP TEST
  3633                              *               ---------------------------------
  3634                              *
  3635                              * REWIND WITH COMMAND CHAIN. WRITE WITH DATA CHAIN 27,000 WORDS LOOP   *
  3636                              * BACK TO REWIND. THIS SEQUENCE IS REPEATED 10 TIMES IN AN EFFORT      *
  3637                              * TO CAUSE THE TAPE TO LOOP OUT IN THE VACUUM COLUMNS.                 *
  3638                              *                                                                     *
  3639                              *                                                                     *
  3640                              *                                                                     *
  3641                              *
  3642   02 009A8   6AF01640    :TIST24    BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  3643   02 009A9   2270000A A             LI,7     10               DO 10 TIMES
  3644   02 009AA   22000C2E    TIST2402   LI,0      DA(TPDMP)        REWIND, CC WRITE WITH DATA CHAIN
  3645   02 009AB   CCA018B5               SIO,10   *:DEVADDR
  3646   02 009AC   CDC018B5               TIO,12   *:DEVADDR         TIO
  3647   02 009AD   69C009AC               BCS,12   $-1               WAIT TILL DONE
  3648   02 009AE   647009AA               BDR,7    TIST2402
  3649   02 009AF   6AF01EC4               BAL,15   :ERRORT           TEST
  3650   02 009B0   00005E06               DATA     BA(TSEQ033)      READY, NO UE
  3651   02 009B1   680009B7               B        TIST2403         GOOD EXIT
  3652                              *      ERROR EXIT
  3653   02 009B2   EAF0021B A             BAL,15   *:ERROR          2401
  3654   02 009B3   00000961 A             DATA     2401             INCORRECT BITS IN TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          55
  3655   02 009B4    EAF0021D A           BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3656   02 009B5    2E000000 A           WAIT
  3657   02 009B6    68000987             B        $+1              CANNOT LOOP ON THIS ERROR
  3658   02 009B7    6AF01640     TIST2403 BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  3659   02 009B8    680003B2             B        :TIM             RETURN TO SEQUENCER
  3660                            *
  3661                            *
  3662                            *
  3663                            *
  3664                            *
  3665                            *
  3666                            *                                 TST1,25 NO OPERATION TEST
  3667                            *                                 ------------------------------------
  3668                            *                                                                     *
  3669                            *
  3670                            *
  3671                            *
  3672   02 009B9    680003B2     :TIST25  B        :TIM             GO TO SEQUENCER
  3673                            *
  3674                            *
  3675                            *                                 TST1,26 INCORRECT LENGTH TEST
  3676                            *                                 ------------------------------------
  3677                            *
  3678                            * WRITE A RECORD AND READ IN THE FORWARD DIRECTION USING A BYTE COUNT-1*
  3679                            * BYTE COUNT +1 FOR THE READ ORDERS. VERIFY INCORRECT LENGTH AND ALL  *
  3680                            * OTHER STATUS INDICATIONS. SUPPRESS INCORRECT LENGTH FEATURE IN THE  *
  3681                            * IOP WILL ALSO BE TESTED.                                           *
  3682                            *
  3683                            *
  3684   02 009BA    6AF01638     :TIST26  BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3685   02 009BB    22F00000 A           LI,15    0
  3686   02 009BC    35F018F5             STW,15   SPFLAG           CLEAR ERROR FLAG
  3687   02 009BD    6AF01651             BAL,15   SMEARPTR         SMEAR PATTERN AND SET UP COMPARE
  3688   02 009BE    22000BE4             LI,0     DA(WR96B)        WRITE 96 BYTES
  3689   02 009BF    6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3690   02 009C0    6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3691   02 009C1    6AF01EC4     TIST2603 BAL,15   :ERRORT          TEST
  3692   02 009C2    00005D84             DATA     BA(TSEQ011)      READY,BC=00, NO UE
  3693   02 009C3    680009C9             B        TIST2604
                            *            ERROR EXIT
  3695   02 009C4    EAF0021B A           BAL,15   *:ERROR          #2601
  3696   02 009C5    00000A29 A           DATA     2601             INCORRECT BITS ON TEST
  3697   02 009C6    EAF0021D A           BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3698   02 009C7    2E000000 A           WAIT                      HALT ON ERROR IF SS3 RESET
  3699   02 009C8    680009BA             B        :TIST26          LOOP ON ERROR
  3700   02 009C9    6AF01638     TIST2604 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3701   02 009CA    22000C19             LI,0     DA(SPBRAND)      SPACE BKW
  3702   02 009CB    6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3703   02 009CC    6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3704   02 009CD    6AF01EC4     TIST2606 BAL,15   :ERRORT          TEST
  3705   02 009CE    00005D84             DATA     BA(TSEQ011)      READY, NO UE
  3706   02 009CF    680009D3             B        TIST2607
                            *            ERROR EXIT
  3708   02 009D0    EAF0021B A           BAL,15   *:ERROR          #2602
  3709   02 009D1    00000A2A A           DATA     2602             INCORRECT BITS ON TEST
  3710   02 009D2    331018F5             MTW,1    SPFLAG           ERROR FLAG +1
  3711   02 009D3    6AF01638     TIST2607 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3712   02 009D4    22000BFA             LI,0     DA(RF96B)        READ FWD 96 BYTES
  3713   02 009D5    6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3714   02 009D6    6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3715   02 009D7    6AF01EC4     TIST2609 BAL,15   :ERRORT          TEST
  3716   02 009D8    00005D78             DATA     BA(TSEQ010)      BC=00,READY,NO UE, NO INC LENGTH
  3717   02 009D9    680009DD             B        TIST2610
                            *            ERROR EXIT
  3719   02 009DA    EAF0021B A           BAL,15   *:ERROR          #2603
  3720   02 009DB    00000A2B A           DATA     2603             INCORRECT BITS ON TEST
  3721   02 009DC    331018F5             MTW,1    SPFLAG           ERROR FLAG +1
  3722   02 009DD    6AF01638     TIST2610 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3723   02 009DE    22000C19             LI,0     DA(SPBRAND)      SPACE BKW
  3724   02 009DF    6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO,SIO
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          56
  3725    02 009E0    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3726    02 009E1    6AF01EC4   TIST2612 BAL,15   :ERRORT          TEST
  3727    02 009E2    00005D84            DATA     BA(TSEQ011)      READY, NO UE
  3728    02 009E3    680009E7            B        TIST2613
  3729                            *       ERROR EXIT
  3730    02 009E4    EAF0021B A          BAL,15   *:ERROR          #2604
  3731    02 009E5    00000A2C A          DATA     2604             INCORRECT BITS ON TEST
  3732    02 009E6    331018F5            MTW,1    SPFLAG           ERROR FLAG +1
  3733    02 009E7    6AF01638   TIST2613 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3734    02 009E8    22000BF0            LI,0     DA(RF95B)        READ FWD 95 BYTES
  3735    02 009E9    6AF01CA2            BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3736    02 009EA    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3737    02 009EB    6AF01EC4   TIST2615 BAL,15   :ERRORT          TEST
  3738    02 009EC    00005D8C            DATA     BA(TSEQ012)      BC=0, INC LENGTH, UE, READY
  3739    02 009ED    680009F1            B        TIST2616
  3740                            *       ERROR EXIT
  3741    02 009EE    EAF0021B A          BAL,15   *:ERROR          #2605
  3742    02 009EF    00000A2D A          DATA     2605             INCORRECT BITS ON TEST
  3743    02 009F0    331018F5            MTW,1    SPFLAG           ERROR FLAG +1
  3744    02 009F1    6AF01638   TIST2616 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3745    02 009F2    22000C19            LI,0     DA(SPBRAND)      SPACE BKW
  3746    02 009F3    6AF01CA2            BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3747    02 009F4    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3748    02 009F5    6AF01EC4   TIST2618 BAL,15   :ERRORT          TEST
  3749    02 009F6    00005D84            DATA     BA(TSEQ011)      READY, NO UE
  3750    02 009F7    680009FB            B        TIST2619
  3751                            *       ERROR EXIT
  3752    02 009F8    EAF0021B A          BAL,15   *:ERROR          #2606
  3753    02 009F9    00000A2E A          DATA     2606             INCORRECT BITS ON TEST
  3754    02 009FA    331018F5            MTW,1    SPFLAG           ERROR FLAG +1
  3755    02 009FB    6AF01638   TIST2619 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3756    02 009FC    22000BF1            LI,0     DA(RF97B)        READ FWD 97 BYTES
  3757    02 009FD    6AF01CA2            BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3758    02 009FE    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3759    02 009FF    6AF01EC4   TIST2621 BAL,15   :ERRORT          TEST
  3760    02 00A00    00005DA8            DATA     BA(TSEQ017)      BC=1, NO UE, INC LENGTH SET
  3761    02 00A01    68000A05            B        TIST2622
  3762                            *       ERROR EXIT
  3763    02 00A02    EAF0021B A          BAL,15   *:ERROR          #2607
  3764    02 00A03    00000A2F A          DATA     2607             INCORRECT BITS ON TEST
  3765    02 00A04    331018F5            MTW,1    SPFLAG           ERROR FLAG +1
  3766    02 00A05    6AF01638   TIST2622 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3767    02 00A06    22000C19            LI,0     DA(SPBRAND)      SPACE BKW
  3768    02 00A07    6AF01CA2            BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3769    02 00A08    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3770    02 00A09    6AF01EC4   TIST2624 BAL,15   :ERRORT          TEST
  3771    02 00A0A    00005D84            DATA     BA(TSEQ011)      READY, NO UE
  3772    02 00A0B    68000A0F            B        TIST2625
  3773                            *       ERROR EXIT
  3774    02 00A0C    EAF0021B A          BAL,15   *:ERROR          #2608
  3775    02 00A0D    00000A30 A          DATA     2608             INCORRECT BITS ON TEST
  3776    02 00A0E    331018F5            MTW,1    SPFLAG           ERROR +1
  3777    02 00A0F    6AF01638   TIST2625 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  3778    02 00A10    22000BF2            LI,0     DA(RF95BS)       READ FWD 95 BYTES, SUP INC LENGTH
  3779    02 00A11    6AF01CA2            BAL,15   :IOEXEC          EXECUTE TIO,SIO
  3780    02 00A12    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  3781    02 00A13    6AF01EC4   TIST2627 BAL,15   :ERRORT          TEST
  3782    02 00A14    00005DB4            DATA     BA(TSEQ019)      READY,NO UE, BC=00, INC LENGTH
  3783    02 00A15    68000A19            B        TIST2627+6
  3784                            *       ERROR EXIT
  3785    02 00A16    EAF0021B A          BAL,15   *:ERROR          #2609
  3786    02 00A17    00000A31 A          DATA     2609             INCORRECT BITS ON TEST
  3787    02 00A18    331018F5            MTW,1    SPFLAG           ERROR +1
  3788    02 00A19    32F018F5            LW,15    SPFLAG
  3789    02 00A1A    68300A1E            BEZ      TIST2628         ERROR FLAG =0
  3790    02 00A1B    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  3791    02 00A1C    2E000000 A          WAIT                      HALT ON ERROR IF SS3 RESET
  3792    02 00A1D    680009BA            B        :TIST26
  3793    02 00A1E    6AF01640   TIST2628 BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  3794    02 00A1F    68000382            B        :TIM             GO TO SEQUENCER
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          57
  3795                          *
  3796                          *
  3797                          *
  3798                          *
  3799                          *                                   TST1,27 DATA CHAINING TEST
  3800                          *                                   ---------------------------------
  3801                          *
  3802                          * TEST THE DATA CHAINING CAPABILITY OF THE IOP USING WRITE AND READ     *
  3803                          * ORDERS.                                                               *
  3804                          *                                                                      *
  3805                          *
  3806                          *
  3807  02 00A20  6AF01638      :TIST27  BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  3808  02 00A21  22F00000 A             LI,15    0
  3809  02 00A22  35F018F5               STW,15   SPFLAG          RESET FLAG
  3810  02 00A23  6AF01651               BAL,15   SMEARPTR        SMEAR PATTERN AND SET UP COMPARE
  3811  02 00A24  32F0189C               LW,15    FLGRG           REGULAR PRINTOUT FLAG
  3812  02 00A25  35F019A7               STW,15   NOPKPRT
  3813  02 00A26  22700018 A             LI,7     24              24 WORDS TO COMPARE
  3814  02 00A27  35701DBA               STW,7    :COMWCNT
  3815  02 00A28  22000BDA               LI,0     DA(TWDC02)      WRITE 2 DATA CHAIN 94 BYTES
  3816  02 00A29  6AF01CA2               BAL,15   :IOEXEC         EXECUTE TIO,SIO
  3817  02 00A2A  6AF0162F               BAL,15   MYDELAY         WAIT FOR INTERRUPT
  3818  02 00A2B  6AF01EC4      TIST2703 BAL,15   :ERRORT         TEST
  3819  02 00A2C  00005D84               DATA     BA(TSEQ011)     BC=0, READY, NO UE
  3820  02 00A2D  68000A35               B        TIST2704
  3821                          *        ERROR EXIT
  3822  02 00A2E  EAF0021B A             BAL,15   *:ERROR         #2701
  3823  02 00A2F  00000A8D A             DATA     2701            INCORRECT BITS ON TEST
  3824  02 00A30  EAF0021D A             BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  3825  02 00A31  2E000000 A             WAIT                     HALT ON ERROR IF SS3 RESET
  3826  02 00A32  68000A20               B        :TIST27         LOOP ON ERROR
  3827  02 00A33  22700000 A             LI,7     0
  3828  02 00A34  357018F5               STW,7    SPFLAG          CLEAR ERROR FLAG
  3829  02 00A35  6AF01638      TIST2704 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  3830  02 00A36  22000C19               LI,0     DA(SPBRAND)     SPACE BKW
  3831  02 00A37  6AF01CA2               BAL,15   :IOEXEC         EXECUTE TIO,SIO
  3832  02 00A38  6AF0162F               BAL,15   MYDELAY         WAIT FOR INTERRUPT
  3833  02 00A39  6AF01EC4      TIST2706 BAL,15   :ERRORT         TEST
  3834  02 00A3A  00005D84               DATA     BA(TSEQ011)     READY, NO UE
  3835  02 00A3B  68000A3F               B        TIST2708
  3836                          *        ERROR EXIT
  3837  02 00A3C  EAF0021B A             BAL,15   *:ERROR         #2702
  3838  02 00A3D  00000A8E A             DATA     2702            INCORRECT BITS ON TEST
  3839  02 00A3E  331018F5               MTW,1    SPFLAG          ERROR +1
  3840  02 00A3F  6AF01638      TIST2708 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  3841  02 00A40  6AF01CE8               BAL,15   :CLEAR          CLEAR READ IN BUFFER
  3842  02 00A41  22000BFB               LI,0     DA(TRFDC48)     READ FWD DC 48 BYTES
  3843  02 00A42  6AF01CA2               BAL,15   :IOEXEC         EXECUTE TIO,SIO
  3844  02 00A43  6AF0162F               BAL,15   MYDELAY         WAIT FOR INTERRUPT
  3845  02 00A44  6AF01EC4      TIST2709 BAL,15   :ERRORT         TEST
  3846  02 00A45  00005D78               DATA     BA(TSEQ010)     READY,NO UE, NO INC. LENGTH, BC=00
  3847  02 00A46  68000A4A               B        TIST2710
  3848                          *        ERROR EXIT
  3849  02 00A47  EAF0021B A             BAL,15   *:ERROR         #2704
  3850  02 00A48  00000A90 A             DATA     2704            INCORRECT BITS ON TEST
  3851  02 00A49  331018F5               MTW,1    SPFLAG          ERROR +1
  3852  02 00A4A  6AF01D47      TIST2710 BAL,15   :COMPARE        COMPARE INFORMATION
  3853  02 00A4B  68000A4F               B        TIST2710+5
  3854                          *        ERROR EXIT INFO INCORRECT
  3855  02 00A4C  EAF0021B A             BAL,15   *:ERROR         #2705
  3856  02 00A4D  00000A91 A             DATA     2705            INCORRECT INFORMATION
  3857  02 00A4E  331018F5               MTW,1    SPFLAG          ERROR +1
  3858  02 00A4F  32F018F5               LW,15    SPFLAG
  3859  02 00A50  68300A54               BEZ      TIST2711        ERROR FLAG =0
  3860  02 00A51  EAF0021D A             BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  3861  02 00A52  2E000000 A             WAIT                     HALT ON ERROR IF SS3 RESET
  3862  02 00A53  68000A20               B        :TIST27         RESTART TEST
  3863  02 00A54  6AF01640      TIST2711 BAL,15   CLRDARM         CLEAR AND DISARM INTERRUPT
  3864  02 00A55  680003B2               B        :TIM            GO TO SEQUENCER
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          58
  3865                          *
  3866                          *
  3867                          *                                        TST1,28 BYTE BOUNDRY TEST
  3868                          *                                        ------------------------------------
  3869                          *
  3870                          * THIS TEST PERFORMS READ AND WRITE OPERATIONS FROM ALL POSSIBLE          *
  3871                          * MEMORY BOUNDARIES.                                                      *
  3872                          *                                                                        *
  3873                          *
  3874   02 00A56   6AF01651     :TIST28  BAL,15   SMEARPTR          SMEAR PATTERN AND SET UP COMPARE
  3875   02 00A57   32F0189C              LW,15    FLGRG             REGULAR PRINTOUT FLAG
  3876   02 00A58   35F019A7              STW,15   NOPKPRT
  3877   02 00A59   22808314              LI,8     BA(BUFF1)         BC=4, WORD ADDRESS CHANGES
  3878   02 00A5A   327017B8              LW,7     WFBAD
  3879   02 00A5B   4B70208D              AND,7    =X'FF000000'
  3880   02 00A5C   30700008 A            AW,7     8
  3881   02 00A5D   357017B8              STW,7    WFBAD             INITIALIZE BYTE ADDRESS
  3882   02 00A5E   3270207D              LW,7     BUFF2             OBSERVED PATTERN
  3883   02 00A5F   25700002 A            SLS,7    2
  3884   02 00A60   328017E6              LW,8     RFBAD
  3885   02 00A61   4B80208D              AND,8    =X'FF000000'
  3886   02 00A62   30800007 A            AW,8     7
  3887   02 00A63   358017E6              STW,8    RFBAD
  3888   02 00A64   22500000 A            LI,5     0
  3889   02 00A65   355018CC              STW,5    NOREAD            RESET READ FLAG
  3890   02 00A66   35501DBD              STW,5    :COMFLAG          PRINTOUT FLAG
  3891   02 00A67   311019CE              CW,1     MODEFLAG          PACKED FLAG SET
  3892   02 00A68   69300A6C              BNE      $+4
  3893   02 00A69   22700005 A            LI,7     5
  3894   02 00A6A   2260198E              LI,6     COMPSPD           PACKED INFORMATION
  3895   02 00A6B   68000A6E              B        $+3
  3896   02 00A6C   22700004 A            LI,7     4
  3897   02 00A6D   226020C5              LI,6     BUFF1             UNPACKED INFORMATION
  3898   02 00A6E   35601DBB              STW,6    :COMBFRA          SET UP COMPARE
  3899   02 00A6F   3280209F              LW,8     =X'12131415'      UNPACKED BINARY
  3900   02 00A70   329020A0              LW,9     =X'32333435'
  3901   02 00A71   557217E7              STH,7    RFBAD+1,1
  3902   02 00A72   358020C5              STW,8    BUFF1
  3903   02 00A73   359020C6              STW,9    BUFF1+1
  3904   02 00A74   22500002 A            LI,5     2
  3905   02 00A75   35501DBA              STW,5    :COMWCNT          SET UP COMPARE
  3906   02 00A76   226FFFFC A            LI,6     -4
  3907   02 00A77   6AF01638     TIST2801 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  3908   02 00A78   22F00000 A            LI,15    0
  3909   02 00A79   35F018F5              STW,15   SPFLAG            RESET FLAG
  3910   02 00A7A   22000BDC              LI,0     DA(WFBAD)         WRITE FROM WA, WA+1, WA+2, WA+3
  3911   02 00A7B   6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  3912   02 00A7C   6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  3913   02 00A7D   6AF01EC4     TIST2803 BAL,15   :ERRORT           TEST
  3914   02 00A7E   00005D84              DATA     BA(TSEQ011)       BC=0, READY, NO UE
  3915   02 00A7F   68000A85              B        TIST2804
  3916                          *        ERROR EXIT
  3917   02 00A80   EAF0021B A            BAL,15   *:ERROR           #2801
  3918   02 00A81   00000AF1 A            DATA     2801              INCORRECT BITS ON TEST
  3919   02 00A82   EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  3920   02 00A83   2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  3921   02 00A84   68000A77              B        TIST2801          LOOP ON ERROR
  3922   02 00A85   6AF01638     TIST2804 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  3923   02 00A86   22000C19              LI,0     DA(SPBRAND)       SPACE BKW
  3924   02 00A87   6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  3925   02 00A88   6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  3926   02 00A89   6AF01EC4     TIST2806 BAL,15   :ERRORT           TEST
  3927   02 00A8A   00005D84              DATA     BA(TSEQ011)       READY, NO UE
  3928   02 00A8B   68000A8F              B        TIST2808
  3929                          *        ERROR EXIT
  3930   02 00A8C   EAF0021B A            BAL,15   *:ERROR           #2802
  3931   02 00A8D   00000AF2 A            DATA     2802              INCORRECT BITS ON TEST
  3932   02 00A8E   331018F5              MTW,1    SPFLAG            ERROR FLAG +1
  3933   02 00A8F   6AF01638     TIST2808 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  3934   02 00A90   958[illegible]7D              STD,8    *BUFF2
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          59
 3935    02 00A91    22000BF3              LI,0      DA(RFBAD)       READ INTO WA, WA+1, WA+2, WA+3
 3936    02 00A92    6AF01CA2              BAL,15    :IOEXEC         EXECUTE TIO,SIO
 3937    02 00A93    6AF0162F              BAL,15    MYDELAY         WAIT FOR INTERRUPT
 3938    02 00A94    6AF01EC4    TIST2810  BAL,15    :ERRORT         TEST
 3939    02 00A95    00005D78              DATA      BA(TSE0010)     NO INC LENGTH, READY, NO UE, BC=00
 3940    02 00A96    68000A9A              B         TIST2811
 3941                            *         ERROR EXIT
 3942    02 00A97    EAF0021B A            BAL,15    *:ERROR         #2804
 3943    02 00A98    00000AF4 A            DATA      2804            INCORRECT BITS ON TEST
 3944    02 00A99    331018F5              MTW,1     SPFLAG          ERROR FLAG +1
 3945    02 00A9A    6AF01D47    TIST2811  BAL,15    :COMPARE        COMPARE
 3946    02 00A9B    68000A9F              B         TIST2812-5      GO CHECK ERROR FLAG
 3947    02 00A9C    EAF0021B A            BAL,15    *:ERROR         #2805
 3948    02 00A9D    00000AF5 A            DATA      2805            INCORRECT INFORMATION
 3949    02 00A9E    331018F5              MTW,1     SPFLAG          ERROR FLAG +1
 3950    02 00A9F    32F018F5              LW,15     SPFLAG
 3951    02 00AA0    68300AA4              BEZ       TIST2812        NO ERRORS
 3952    02 00AA1    EAF0021D A            BAL,15    *:SENSE         CHECK SENSE SWITCH SETTINGS
 3953    02 00AA2    2E000000 A            WAIT                      HALT ON ERROR IF SS3 RESET
 3954    02 00AA3    68000A77              B         TIST2801        LOOP ON ERROR
 3955    02 00AA4    331017B8    TIST2812  MTW,1     WFBAD           WA= WA+1 BYTE, ETC
 3956    02 00AA5    331017E6              MTW,1     RFBAD
 3957    02 00AA6    311019CE              CW,1      MODEFLAG        PACKED FLAG SET
 3958    02 00AA7    69300AA9              BNE       $+2
 3959    02 00AA8    33201DBB              MTW,2     :COMBFRA        NEXT PACKED COMPARE
 3960    02 00AA9    65600A77              BIR,6     TIST2801        DO 4 TIMES
 3961    02 00AAA    311019CE              CW,1      MODEFLAG        PACKED FLAG SET
 3962    02 00AAB    68300AAE              BE        $+3
 3963    02 00AAC    32F0209D              LW,15     =X'3F3F3F3F'    UNPACKED BINARY
 3964    02 00AAD    68000AAF              B         $+2
 3965    02 00AAE    32F020A1              LW,15     =X'FFFFFFFF'    PACKED BINARY
 3966    02 00AAF    3A9018CB              LCW,9     MAXREAD         MAXIMUM WORDS IN BUFFER AREA
 3967    02 00AB0    22700000 A            LI,7      0
 3968    02 00AB1    35FE20C5              STW,15    BUFF1,7         STORE WORD
 3969    02 00AB2    33100007 A            MTW,1     7
 3970    02 00AB3    65900AB1              BIR,9     $-2
 3971    02 00AB4    22A020C5              LI,10     BUFF1           CORRECT INFORMATION ON COMPARE
 3972    02 00AB5    35A01DBB              STW,10    :COMBFRA
 3973    02 00AB6    32A0207D              LW,10     BUFF2
 3974    02 00AB7    35A01DBC              STW,10    :COMBFRB        OBSERVED INFORMATION
 3975                            *                                   WORD ADDRESS, BYTE COUNT CHANGES
 3976                            *                                   START WITH 1 WORD IN THIS SECTION
 3977    02 00AB8    22400004 A            LI,4      4               START WITH 1 WORD
 3978    02 00AB9    554217BB              STH,4     WBCC+1,1
 3979    02 00ABA    311019CE              CW,1      MODEFLAG        PACKED FLAG SET
 3980    02 00ABB    69300ABD              BNE       $+2
 3981    02 00ABC    33100004 A            MTW,1     4               BYTE COUNT +1
 3982    02 00ABD    554217E9              STH,4     RFCC+1,1
 3983    02 00ABE    35101DBA              STW,1     :COMWCNT        COMPARE 1 WORD
 3984    02 00ABF    6AF01638    TIST2813  BAL,15    CLRARM          CLEAR AND ARM INTERRUPT
 3985    02 00AC0    22F00000 A            LI,15     0
 3986    02 00AC1    35F018F5              STW,15    SPFLAG          CLEAR ERROR FLAG
 3987    02 00AC2    22000BDD              LI,0      DA(WBCC)        WRITE RECORD, BYTE COUNT CHANGES
 3988    02 00AC3    6AF01CA2              BAL,15    :IOEXEC         EXECUTE TIO,SIO
 3989    02 00AC4    6AF0162F              BAL,15    MYDELAY         WAIT FOR INTERRUPT
 3990    02 00AC5    6AF01EC4    TIST2815  BAL,15    :ERRORT         TEST
 3991    02 00AC6    00005D84              DATA      BA(TSE0011)     BC=0, READY, NO UE
 3992    02 00AC7    68000ACD              B         TIST2816
 3993                            *         ERROR EXIT
 3994    02 00AC8    EAF0021B A            BAL,15    *:ERROR         #2806
 3995    02 00AC9    00000AF6 A            DATA      2806            INCORRECT BITS ON TEST
 3996    02 00ACA    EAF0021D A            BAL,15    *:SENSE         CHECK SENSE SWITCH SETTINGS
 3997    02 00ACB    2E000000 A            WAIT                      HALT ON ERROR IF SS3 RESET
 3998    02 00ACC    68000ABF              B         TIST2813        LOOP ON ERROR
 3999    02 00ACD    311018CC    TIST2816  CW,1      NOREAD          RECORD TOO LARGE TO READ
 4000    02 00ACE    68300AEE              BEZ       TIST2828        BYPASS READS
 4001    02 00ACF    6AF01638              BAL,15    CLRARM          CLEAR AND ARM INTERRUPT
 4002    02 00AD0    22000C19              LI,0      DA(SPBRAND)     SPACE BKW
 4003    02 00AD1    6AF01CA2              BAL,15    :IOEXEC         EXECUTE TIO, SIO
 4004    02 00AD2    6AF0162F              BAL,15    MYDELAY         WAIT FOR INTERRUPT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          60
 4005   02 00AD3   6AF01EC4     TIST2818 BAL,15   :ERRORT           TEST
 4006   02 00AD4   00005D84               DATA     BA(TSEQ011)       READY, NO UE
 4007   02 00AD5   68000AD9               B        TIST2822
 4008                            *        ERROR EXIT
 4009   02 00AD6   EAF0021B A             BAL,15   *:ERROR           #2807
 4010   02 00AD7   00000AF7 A             DATA     2807              INCORRECT BITS ON TEST
 4011   02 00AD8   331018F5               MTW,1    SPFLAG            ERROR FLAG +1
 4012   02 00AD9   6AF01638     TIST2822 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
 4013   02 00ADA   6AF01CE8               BAL,15   :CLEAR            CLEAR READ IN BUFFER
 4014   02 00ADB   22000BF4               LI,0     DA(RFCC)
 4015   02 00ADC   6AF01CA2               BAL,15   :IOEXEC           EXECUTE TIO,SIO
 4016   02 00ADD   6AF0162F               BAL,15   MYDELAY           WAIT FOR INTERRUPT
 4017   02 00ADE   6AF01EC4     TIST2824 BAL,15   :ERRORT           TEST
 4018   02 00ADF   00005D78               DATA     BA(TSEQ010)       NO INC LENGTH, READY, NO UE, BC=00
 4019   02 00AE0   68000AE4               B        TIST2825
 4020                            *        ERROR EXIT
 4021   02 00AE1   EAF0021B A             BAL,15   *:ERROR           2809
 4022   02 00AE2   00000AF9 A             DATA     2809              INCORRECT BITS SET ON TEST
 4023   02 00AE3   331018F5               MTW,1    SPFLAG            ERROR FLAG +1
 4024   02 00AE4   6AF01D47     TIST2825 BAL,15   :COMPARE          COMPARE INFORMATION
 4025   02 00AE5   68000AE9               B        TIST2828-5
 4026                            *        INFO ERROR
 4027   02 00AE6   EAF0021B A             BAL,15   *:ERROR           2810
 4028   02 00AE7   00000AFA A             DATA     2810              INCORRECT INFO ON READ FWD.
 4029   02 00AE8   331018F5               MTW,1    SPFLAG            ERROR FLAG +1
 4030   02 00AE9   32F018F5               LW,15    SPFLAG
 4031   02 00AEA   68300AEE               BEZ      TIST2828          NO ERROR SET
 4032   02 00AEB   EAF0021D A             BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
 4033   02 00AEC   2E000000 A             WAIT                       HALT ON ERROR IF SS3 RESET
 4034   02 00AED   68000ABF               B        TIST2813          LOOP ON ERROR
 4035   02 00AEE   327017B8     TIST2828 LW,7     WBCC+1
 4036   02 00AEF   4B7020A2               AND,7    =X'000FFFFF'      OLD BYTE COUNT
 4037   02 00AF0   25700001 A             SLS,7    1                 SHIFT 1 BIT TO LEFT
 4038   02 00AF1   317018C8               CW,7     MAXBYT            RECORD GREATER THAN I/O AREA
 4039   02 00AF2   69200AFE               BCS,2    TIST2830
 4040   02 00AF3   317018CA               CW,7     MAXREADB          RECORD TOO LARGE TO READ
 4041   02 00AF4   69100AF6               BCS,1    TIST2829
 4042   02 00AF5   351018CC               STW,1    NOREAD
 4043   02 00AF6   557217B8     TIST2829 STH,7    WBCC+1,1          STORE NEW BYTE COUNT
 4044   02 00AF7   311019CE               CW,1     MODEFLAG          PACKED FLAG SET
 4045   02 00AF8   69300AFA               BNE      $+2
 4046   02 00AF9   33100007 A             MTW,1    7                 BYTE COUNT +1
 4047   02 00AFA   557217E9               STH,7    RFCC+1,1
 4048   02 00AFB   2570007E A             SLS,7    -2                DEVIDE BY 4
 4049   02 00AFC   35701DBA               STW,7    :COMWCNT          WORD COUNT FOR COMPARE
 4050   02 00AFD   68000ABF               B        TIST2813
 4051   02 00AFE   6AF01640     TIST2830 BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
 4052   02 00AFF   680003B2               B        :TIM              GO TO SEQUENCER
 4053                            *
 4054                            *
 4055                            *
 4056                            *
 4057                            *
 4058                            *
 4059                            *
 4060                            *
 4061                            *                                  TSTI,29 DECIMAL (BCD) MODE DATA TEST
 4062                            *                                  ----------------------------------
 4063                            *
 4064                            * THIS TEST WILL WRITE DATA USING TRANSLATION. THE DATA WILL BE READ   *
 4065                            * AND THE INFORMATION VERIFIED WITH AND WITHOUT TRANSLATION. TRANS-    *
 4066                            * MISSION ERRORS WILL BE EXPECTED ON READING WITHOUT TRANSLATION.      *
 4067                            *                                                                     *
 4068                            *
 4069   02 00B00   3270188C     :TIST29  LW,7     STDBCD            CHECK TO SEE IF OPTION ON SYSTEM
 4070   02 00B01   69300B04               BNEZ     $+3
 4071   02 00B02   3270188F               LW,      OPTBCD
 4072   02 00B03   68300B8A               BEZ      TIST2912          BYPASS TEST
 4073                            *                                  WRITE BCD TRANSLATION CHARACTER SET
 4074   02 00B04   352019A7               STW,2    NOPKPRT           SET NO PACKED PRINTOUT FLAG
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          6i
  4075    02 00B05    22A00010 A            LI,10    16
  4076    02 00B06    35A01DBA              STW,10   :COMWCNT          WORD COUNT
  4077    02 00B07    22A01947              LI,10    BCDVALID
  4078    02 00B08    35A01DBB              STW,10   :COMBFRA          EXPECTED PATTERN
  4079    02 00B09    32A0207D              LW,10    BUFF2
  4080    02 00B0A    35A01DBC              STW,10   :COMBFRB          OBSERVED INFORMATION
  4081    02 00B0B    228FFF9C A            LI,8     -100
  4082    02 00B0C    6AF01638     TIST2901 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4083    02 00B0D    22000BEC              LI,0     DA(TWBCD)        WRITE BCD CHARACTER SET
  4084    02 00B0E    6AF01CA2              BAL,15   :IOEXEC          TIO SIO
  4085    02 00B0F    6AF0162F              BAL,15   MYDELAY          DELAY FOR INTERRUPT
  4086    02 00B10    6AF01EC4              BAL,15   :ERRORT          TEST
  4087    02 00B11    00005D84              DATA     BA(TSEQ011)      READY, NOUE, BC=0
  4088    02 00B12    68000B18              B        TIST2902
  4089                            *         ERROR EXIT
  4090    02 00B13    EAF0021B A            BAL,15   *:ERROR          #2901
  4091    02 00B14    00000B55 A            DATA     2901             INCORRECT BITS ON TEST
  4092    02 00B15    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  4093    02 00B16    2E000000 A            WAIT
  4094    02 00B17    68000B0C              B        TIST2901         LOOP ON ERROR
  4095    02 00B18    22700000 A   TIST2902 LI,7     0
  4096    02 00B19    357018F5              STW,7    SPFLAG           CLEAR ERROR FLAG
  4097    02 00B1A    6AF01638              BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4098    02 00B1B    22000C0D              LI,0     DA(SB100)        SPACE BKW OVER RECORD
  4099    02 00B1C    6AF01CA2              BAL,15   :IOEXEC          TIO,SIO
  4100    02 00B1D    6AF0162F              BAL,15   MYDELAY          DELAY FOR INTERRUPT
  4101    02 00B1E    6AF01EC4              BAL,15   :ERRORT          TEST
  4102    02 00B1F    00005D84              DATA     BA(TSEQ011)      READY, NO UE
  4103    02 00B20    68000B24              B        TIST2903
  4104                            *         ERROR EXIT
  4105    02 00B21    EAF0021B A            BAL,15   *:ERROR          #2902
  4106    02 00B22    00000B56 A            DATA     2902             INCORRECT BITS ON TEST
  4107    02 00B23    331018F5              MTW,1    SPFLAG
  4108    02 00B24    6AF01638     TIST2903 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4109    02 00B25    22000C03              LI,0     DA(TRBCD)        READ BCD CHARACTER SET
  4110    02 00B26    6AF01CA2              BAL,15   :IOEXEC          TIO SIO
  4111    02 00B27    6AF0162F              BAL,15   MYDELAY          DELAY FOR INTERRUPT
  4112    02 00B28    6AF01EC4              BAL,15   :ERRORT          TEST
  4113    02 00B29    00005D78              DATA     BA(TSEQ010)      READY, NO INC. LENGTH  NO UE
  4114    02 00B2A    68000B2E              B        TIST2904
  4115                            *         ERROR EXIT
  4116    02 00B2B    EAF0021B A            BAL,15   *:ERROR          #2903
  4117    02 00B2C    00000B57 A            DATA     2903             INCORRECT BITS ON TEST
  4118    02 00B2D    331018F5              MTW,1    SPFLAG           ERROR FLAG +1
  4119    02 00B2E    6AF01D47     TIST2904 BAL,15   :COMPARE         COMPARE INFORMATION
  4120    02 00B2F    68000B33              B        TIST2904+5
  4121                            *         INFORMATION ERROR
  4122    02 00B30    EAF0021B A            BAL,15   *:ERROR          #2904
  4123    02 00B31    00000B58 A            DATA     2904             INFORMATION ERROR
  4124    02 00B32    331018F5              MTW,1    SPFLAG           ERROR+1
  4125    02 00B33    327018F5              LW,7     SPFLAG           CHECK ERROR FLAG
  4126    02 00B34    68300B39              BEZ      TIST2905-4
  4127    02 00B35    EAF0021D A            BAL,15   *:SENSE
  4128    02 00B36    2E000000 A            WAIT                      CHECK SENSE SWITCH SETTINGS
  4129    02 00B37    68000B18              B        TIST2902         LOOP ON ERROR
  4130    02 00B38    65800B0C              BIR,8    TIST2901         DO 100 TIMES
  4131                            *                                   CHECK READ WITHOUT TRANSLATION
  4132    02 00B39    22A01959              LI,10    DCDNOTRN
  4133    02 00B3A    35A01DBB              STW,10   :COMBFRA          EXPECTED PATTERN
  4134    02 00B3B    22700000 A            LI,7     0                CLEAR ERROR FLAG
  4135    02 00B3C    357018F5              STW,7    SPFLAG           CHECK READ WITHOUT TRANSLATION
  4136    02 00B3D    6AF01638     TIST2905 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4137    02 00B3E    22000C0D              LI,0     DA(SB100)        SPACE BKW OVER BCD RECORD
  4138    02 00B3F    6AF01CA2              BAL,15   :IOEXEC          TIO,SIO
  4139    02 00B40    6AF0162F              BAL,15   MYDELAY          DELAY FOR INTERRUPT
  4140    02 00B41    6AF01EC4              BAL,15   :ERRORT          TEST
  4141    02 00B42    00005D84              DATA     BA(TSEQ011)      READY, NO UE
  4142    02 00B43    68000B47              B        TIST2906
  4143                            *         ERROR EXIT
  4144    02 00B44    EAF0021B A            BAL,15   *:ERROR          #2905
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          62
  4145    02 00B45    00000B59 A          DATA     2905              INCORRECT BITS IN TEST
  4146    02 00B46    331018F5            MTW,1    SPFLAG            ERROR+1
  4147    02 00B47    6AF01638    TIST2906 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  4148    02 00B48    22000C04            LI,0     DA(TRBCDWT)       READ BCD RECORD WITHOUT TRANSLATION
  4149    02 00B49    6AF01CA2            BAL,15   :IOEXEC           TIO,SIO
  4150    02 00B4A    6AF0162F            BAL,15   MYDELAY           WAIT FOR INTERRUPT
  4151    02 00B4B    6AF01EC4            BAL,15   :ERRORT           TEST
  4152    02 00B4C    00005DCC            DATA     BA(TSEQ023)       TRANSMISSION ERRORS EXPECTED
  4153    02 00B4D    68000B51            B        TIST2907
  4154                            *       ERROR EXIT
  4155    02 00B4E    EAF0021B A          BAL,15   *:ERROR           #2906
  4156    02 00B4F    00000B5A A          DATA     2906
  4157    02 00B50    331018F5            MTW,1    SPFLAG            ERROR+1
  4158    02 00B51    6AF01D47    TIST2907 BAL,15   :COMPARE          COMPARE INFROMATION
  4159    02 00B52    68000B56            B        TIST2907+5
  4160                            *       INFORMATION ERROR
  4161    02 00B53    EAF0021B A          BAL,15   *:ERROR           #2907
  4162    02 00B54    00000B5B A          DATA     2907              INCORRECT INFORMATION
  4163    02 00B55    331018F5            MTW,1    SPFLAG            ERROR+1
  4164    02 00B56    327018F5            LW,7     SPFLAG            CHECK ERROR FLAG
  4165    02 00B57    68300B5B            BEZ      TIST2908
  4166    02 00B58    EAF0021D A          BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  4167    02 00B59    2E000000 A          WAIT
  4168    02 00B5A    68000B3B            B        TIST2905-2        LOOP ON ERROR
  4169                            *                                 CHECK ZERO TRANSLATION
  4170    02 00B5B    22A01958    TIST2908 LI,10    CPBCDZ
  4171    02 00B5C    35A01DBB            STW,10   :COMBFRA          EXPECTED PATTERN
  4172    02 00B5D    35101DBA            STW,1    :COMWCNT          WORD COUNT
  4173    02 00B5E    6AF01638            BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  4174    02 00B5F    22000BED            LI,0     DA(TWBCDZ)        WRITE RECORD BCD ZERO TRANSLATION
  4175    02 00B60    6AF01CA2            BAL,15   :IOEXEC           TIO,SIO
  4176    02 00B61    6AF0162F            BAL,15   MYDELAY           WAIT FOR INTERRUPT
  4177    02 00B62    6AF01EC4            BAL,15   :ERRORT           TEST
  4178    02 00B63    00005D84            DATA     BA(TSEQ011)       READY, NO UE
  4179    02 00B64    68000B6A            B        TIST2909-2
  4180                            *       ERROR EXIT
  4181    02 00B65    EAF0021B A          BAL,15   *:ERROR           #2908
  4182    02 00B66    00000B5C A          DATA     2908              INCORRECT BITS IN TEST
  4183    02 00B67    EAF0021D A          BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  4184    02 00B68    2E000000 A          WAIT
  4185    02 00B69    68000B5B            B        TIST2908          LOOP ON ERROR
  4186    02 00B6A    22700000 A          LI,7     0
  4187    02 00B6B    357018F5            STW,7    SPFLAG            CLEAR ERROR FLAG
  4188    02 00B6C    6AF01638    TIST2909 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  4189    02 00B6D    22000C0D            LI,0     DA(SB100)         SPACE BKW OVER RECORD
  4190    02 00B6E    6AF01CA2            BAL,15   :IOEXEC           TIO,SIO
  4191    02 00B6F    6AF0162F            BAL,15   MYDELAY           WAIT FOR INTERRUPT
  4192    02 00B70    6AF01EC4            BAL,15   :ERRORT           TEST
  4193    02 00B71    00005D84            DATA     BA(TSEQ011)       READY, NO UE
  4194    02 00B72    68000B76            B        TIST2910
  4195                            *       ERROR EXIT
  4196    02 00B73    EAF0021B A          BAL,15   *:ERROR           #2909
  4197    02 00B74    00000B5D A          DATA     2909              INCORRECT BITS IN TEST
  4198    02 00B75    331018F5            MTW,1    SPFLAG            ERROR +1
  4199    02 00B76    6AF01638    TIST2910 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  4200    02 00B77    22000C05            LI,0     DA(TRBCDZ)        READ RECORD BCD ZERO TRANSLATION
  4201    02 00B78    6AF01CA2            BAL,15   :IOEXEC           TIO,SIO
  4202    02 00B79    6AF0162F            BAL,15   MYDELAY           WAIT FOR INTERRUPT
  4203    02 00B7A    6AF01EC4            BAL,15   :ERRORT           TEST
  4204    02 00B7B    00005D78            DATA     BA(TSEQ010)       READY, NO INC. LENGTH; NO UE
  4205    02 00B7C    68000B80            B        TIST2911
  4206                            *       ERROR EXIT
  4207    02 00B7D    EAF0021B A          BAL,15   *:ERROR           #2911
  4208    02 00B7E    00000B5F A          DATA     2911              INCORRECT BITS IN TEST
  4209    02 00B7F    331018F5            MTW,1    SPFLAG
  4210    02 00B80    6AF01D47    TIST2911 BAL,15   :COMPARE          COMPARE INFORMATION
  4211    02 00B81    68000B85            B        TIST2911+5
  4212                            *       INFORMATION ERROR
  4213    02 00B82    EAF0021B A          BAL,15   *:ERROR           #2912
  4214    02 00B83    00000B60 A          DATA     2912              INCORRECT INFORMATION
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          63
  4215    02 00B84    331018F5              MTW,1    SPFLAG           ERROR+1
  4216    02 00B85    327018F5              LW,7     SPFLAG           CHECK ERROR FLAG
  4217    02 00B86    68300B8A              BEZ      TIST2912
  4218    02 00B87    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  4219    02 00B88    2E000000 A            WAIT
  4220    02 00B89    6800066A              B        TIST2909-2       LOOP ON ERROR
  4221    02 00B8A    6AF01640    TIST2912  BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  4222    02 00B8B    32F0189C              LW,15    FLGRG            REGULAR PRINTOUT FLAG
  4223    02 00B8C    35F019A7              STW,15   NOPKPRT
  4224    02 00B8D    680003B2              B        :TIM             GO TO SEQUENCER
  4225                                    *
  4226                                    *
  4227                                    *
  4228                                    *
  4229                                    *
  4230                                    *
  4231                                    *                         TST1,30 BINARY MODE DATA TEST
  4232                                    *                         ------------------------------
  4233                                    *
  4234                                    * THIS TEST WILL WRITE DATA USING THE BINARY MODE. THE DATA WILL BE      *
  4235                                    * READ AND THE INFORMATION VERIFIED WITH AND WITHOUT TRANSLATION.        *
  4236                                    * TRANSMISSION ERRORS WILL BE EXPECTED ON READING WITH TRANSLATION.      *
  4237                                    *                                                                       *
  4238                                    *                                                                       *
  4239                                    *
  4240    02 00B8E    3270188C    :TIST30   LW,7     STDBCD           CHECK TO SEE IF BINARY ON SYSTEM
  4241    02 00B8F    69300B92              BNEZ     $+3
  4242    02 00B90    3270188F              LW,7     OPTBCD
  4243    02 00B91    68300BF0              BEZ      TIST3009         BYPASS TEST
  4244    02 00B92    352019A7              STW,2    NOPKPRT          SET NO PACKED PRINTOUT FLAG
  4245    02 00B93    225FFFF0 A            LI,5     -16
  4246    02 00B94    22700000 A            LI,7     0
  4247    02 00B95    32C020A3              LW,12    =X'00010203'     SMEAR PATTERN 00-3F FOR BINARY TEST
  4248    02 00B96    35CE20C5              STW,12   BUFF1,7
  4249    02 00B97    30C020A4              AW,12    =X'04040404'
  4250    02 00B98    33100007 A            MTW,1    7
  4251    02 00B99    65500B96              BIR,5    $-3
  4252    02 00B9A    22A00010 A            LI,10    16
  4253    02 00B9B    35A01DBA              STW,10   :COMWCNT         WORDS TO COMPARE
  4254    02 00B9C    22A020C5              LI,10    BUFF1
  4255    02 00B9D    35A01DBB              STW,10   :COMBFRA         CORRECT INFORMATION
  4256    02 00B9E    32A0207D              LW,10    BUFF2
  4257    02 00B9F    35A01DBC              STW,10   :COMBFRB         OBSERVED INFORMATION
  4258    02 00BA0    228FFF9C A            LI,8     -100
  4259    02 00BA1    6AF01638    TIST3001  BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4260    02 00BA2    22000BEB              LI,0     DA(WBINT)        WRITE BINARY RECORD 00-3F
  4261    02 00BA3    6AF01CA2              BAL,15   :IOEXEC          EXECUTE TIO,SIO
  4262    02 00BA4    6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4263    02 00BA5    6AF01EC4              BAL,15   :ERRORT          TEST
  4264    02 00BA6    00005D84              DATA     BA(TSEQ011)      READY, NO UE
  4265    02 00BA7    68000BAD              B        TIST3002-2
  4266                            *         ERROR EXIT
  4267    02 00BA8    EAF0021B A            BAL,15   *:ERROR          #3001
  4268    02 00BA9    00000BB9 A            DATA     3001             INCORRECT BITS IN TEST
  4269    02 00BAA    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  4270    02 00BAB    2E000000 A            WAIT
  4271    02 00BAC    68000BA1              B        TIST3001         LOOP ON ERROR
  4272    02 00BAD    22700000 A            LI,7     0
  4273    02 00BAE    357018F5              STW,7    SPFLAG           CLEAR ERROR FLAG
  4274    02 00BAF    6AF01638    TIST3002  BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4275    02 00BB0    22000C0D              LI,0     DA(SB100)        SPACE OVER RECORD
  4276    02 00BB1    6AF01CA2              BAL,15   :IOEXEC          TIO,SIO
  4277    02 00BB2    6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4278    02 00BB3    6AF01EC4              BAL,15   :ERRORT          TEST
  4279    02 00BB4    00005D84              DATA     BA(TSEQ011)      READY, NO UE
  4280    02 00BB5    68000BB9              B        TIST3003
  4281                            *         ERROR EXIT
  4282    02 00BB6    331018F5              MTW,1    SPFLAG
  4283    02 00BB7    EAF0021B A            BAL,15   *:ERROR          #3002
  4284    02 00BB8    00000BBA A            DATA     3002             INCORRECT BITS ON TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          64
 4285   02 00BB9    6AF01638     TIST3003 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
 4286   02 00BBA    22000C01              LI,0      DA(RBINT)        READ FWD BINARY RECORD 00-3F
 4287   02 00BBB    6AF01CA2              BAL,15    :IOEXEC          TIO,SIO
 4288   02 00BBC    6AF0162F              BAL,15    MYDELAY          WAIT FOR INTERRUPT
 4289   02 00BBD    6AF01EC4              BAL,15    :ERRORT          TEST
 4290   02 00BBE    00005D78              DATA      BA(TSEQ010)      NO INC LENGTH, READY, NO UE
 4291   02 00BBF    68000BC3              B         TIST3004
 4292                                    *         ERROR EXIT
 4293   02 00BC0    331018F5              MTW,1     SPFLAG           ERROR+1
 4294   02 00BC1    EAF0021B A            BAL,15    *:ERROR          #3003
 4295   02 00BC2    00000BBB A            DATA      3003             INCORRECT BITS ON TEST
 4296   02 00BC3    6AF01D47     TIST3004 BAL,15    :COMPARE         COMPARE INFORMATION
 4297   02 00BC4    68000BC8              B         TIST3004+5
 4298                                    *         INFORMATION ERROR
 4299   02 00BC5    EAF0021B A            BAL,15    *:ERROR          #3004
 4300   02 00BC6    00000BBC A            DATA      3004             INCORRECT INFORMATION
 4301   02 00BC7    331018F5              MTW,1     SPFLAG           ERROR+1
 4302   02 00BC8    327018F5              LW,7      SPFLAG
 4303   02 00BC9    68300BCD              BEZ       TIST3005
 4304   02 00BCA    EAF0021D A            BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
 4305   02 00BCB    2E000000 A            WAIT
 4306   02 00BCC    68000BAD              B         TIST3002-2
 4307   02 00BCD    65800BA1     TIST3005 BIR,8     TIST3001         DO 100 TIMES
 4308                                    *                          CHECK READ WITH TRANSLATION
 4309   02 00BCE    22700000 A            LI,7      0
 4310   02 00BCF    22A01969              LI,10     BINTRLS
 4311   02 00BD0    35A01DBB              STW,10    :COMBFRA         CORRECT INFORMATION
 4312   02 00BD1    357018F5              STW,7     SPFLAG           CLEAR ERROR FLAG
 4313   02 00BD2    6AF01638     TIST3006 BAL,15    CLRARM           CLEAR AND ARM INTERRUPT
 4314   02 00BD3    22000C0D              LI,0      DA(SB100)        SPACE OVER RECORD
 4315   02 00BD4    6AF01CA2              BAL,15    :IOEXEC          TIO,SIO
 4316   02 00BD5    6AF0162F              BAL,15    MYDELAY          WAIT FOR INTERRUPT
 4317   02 00BD6    6AF01EC4              BAL,15    :ERRORT          TEST
 4318   02 00BD7    00005D84              DATA      BA(TSEQ011)      READY, NO UE
 4319   02 00BD8    68000BDC              B         TIST3007
 4320                                    *         ERROR EXIT
 4321   02 00BD9    EAF0021B A            BAL,15    *:ERROR          #3005
 4322   02 00BDA    00000BBD A            DATA      3005             INCORRECT BITS IN TEST
 4323   02 00BDB    331018F5              MTW,1     SPFLAG           ERROR+1
 4324   02 00BDC    6AF01638     TIST3007 BAL,15    CLRARM           CLEAR AND ARM INTERRUPT
 4325   02 00BDD    22000C02              LI,0      DA(REPOPR)       READ ODD P RECORD WITH EVEN P (BCD)
 4326   02 00BDE    6AF01CA2              BAL,15    :IOEXEC          TIO,SIO
 4327   02 00BDF    6AF0162F              BAL,15    MYDELAY          DELAY FOR INTERRUPT
 4328   02 00BE0    6AF01EC4              BAL,15    :ERRORT          TEST
 4329   02 00BE1    00005DCC              DATA      BA(TSEQ023)      TE EXPECTED
 4330   02 00BE2    68000BE6              B         TIST3008
 4331                                    *         ERROR EXIT
 4332   02 00BE3    EAF0021B A            BAL,15    *:ERROR          #3006
 4333   02 00BE4    00000BBE A            DATA      3006             INCORRECT BITS IN TEST
 4334   02 00BE5    331018F5              MTW,1     SPFLAG           ERROR+1
 4335   02 00BE6    6AF01D47     TIST3008 BAL,15    :COMPARE         COMPARE INFORMATION
 4336   02 00BE7    68000BEB              B         TIST3008+5
 4337                                    *         INFORMATION ERROR
 4338   02 00BE8    EAF0021B A            BAL,15    *:ERROR          3007
 4339   02 00BE9    00000BBF A            DATA      3007             INCORRECT INFORMATION
 4340   02 00BEA    331018F5              MTW,1     SPFLAG           ERROR+1
 4341   02 00BEB    327018F5              LW,7      SPFLAG           CHECK ERROR FLAG
 4342   02 00BEC    68300BF0              BEZ       TIST3009
 4343   02 00BED    EAF0021D A            BAL,15    *:SENSE          CHECK SENSE SWITCH SETTINGS
 4344   02 00BEE    2E000000 A            WAIT
 4345   02 00BEF    68000BCE              B         TIST3006-4       LOOP ON ERROR
 4346   02 00BF0    6AF01640     TIST3009 BAL,15    CLRDARM          CLEAR AND DISARM INTERRUPT
 4347   02 00BF1    32F0189C              LW,15     FLGRG            REGULAR PRINTOUT FLAG
 4348   02 00BF2    35F019A7              STW,15    NOPKPRT
 4349   02 00BF3    680003B2              B         :TIM             GO TO SEQUENCER
 4350                                    *
 4351                                    *
 4352                                    *
 4353                                    *
 4354                                    *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          65
  4355                          *
  4356                          *                                        TST1,31  PACKED BINARY DATA TEST
  4357                          *                                        ------------------------------
  4358                          *                                                                       *
  4359                          *  THIS TEST WILL WRITE DATA X'00' - X'FF' USING THE PACKED BINARY      *
  4360                          *  MODE. THE DATA WILL BE READ AND VERIFIED. THIS SUBTEST WILL BE       *
  4361                          *  BYPASSED IF NOT APPLICABLE TO THE SYSTEM.                            *
  4362                          *                                                                       *
  4363                          *
  4364
  4365   02 00BF4   3270188D     :TIST31  LW,7     STDPB            CHECK FOR PACKED BINARY STD OR OPT
  4366   02 00BF5   69300BFB              BNE7    TIST3101
  4367   02 00BF6   3270188E              LW,7    OPTPB
  4368   02 00BF7   68300C77              BEZ     TIST3113         BYPASS TEST
  4369   02 00BF8   22700000 A  TIST3101  LI,7     0                SMEAR PATTERN 00-FF
  4370   02 00BF9   22AFFFE0 A            LI,10   -32
  4371   02 00BFA   32C020A3              LW,12   =X'00010203'
  4372   02 00BFB   3AD0000C A            LCW,13  12
  4373   02 00BFC   35CE20C5              STW,12  BUFF1,7          STORE WORD
  4374   02 00BFD   35DE20E5              STW,13  BUFF1+32,7
  4375   02 00BFE   30C020A4              AW,12   =X'04040404'
  4376   02 00BFF   33100007 A            MTW,1   7
  4377   02 00C00   65A00BFB              BIR,10  $-5
  4378   02 00C01   351019A7              STW,1   NOPKPRT
  4379   02 00C02   22A00040 A            LI,10   64
  4380   02 00C03   35A01DBA              STW,10  :COMWCNT         WORDS TO COMPARE
  4381   02 00C04   22A020C5              LI,10   BUFF1
  4382   02 00C05   35A01DBB              STW,10  :COMBFRA         CORRECT INFORMATION
  4383   02 00C06   32A0207D              LW,10   BUFF2
  4384   02 00C07   35A01DBC              STW,10  :COMBFRB         OBSERVED INFORMATION
  4385   02 00C08   228FFF9C A            LI,8    -100
  4386   02 00C09   6AF01638     TIST3102 BAL,15  CLRARM           CLEAR AND ARM INTERRUPT
  4387   02 00C0A   22000BE7              LI,0    DA(WPBT)         WRITE PACKED BINARY RECORD 00-FF
  4388   02 00C0B   6AF01CA2              BAL,15  :IOEXEC          TIO,SIO
  4389   02 00C0C   6AF0162F              BAL,15  MYDELAY          WAIT FOR INTERRUPT
  4390   02 00C0D   6AF01EC4              BAL,15  :ERRORT          TEST
  4391   02 00C0E   00005D84              DATA    BA(TSEQ011)      BC=0, READY, NO UE
  4392   02 00C0F   68000C15              B       TIST3103-2
  4393                          *         ERROR   EXIT
  4394   02 00C10   EAF0021B A            BAL,15  *:ERROR          #3101
  4395   02 00C11   00000C1D A            DATA    3101             INCORRECT BITS IN TEST
  4396   02 00C12   EAF0021D A            BAL,15  *:SENSE          CHECK SENSE SWITCH SETTINGS
  4397   02 00C13   2E000000 A            WAIT
  4398   02 00C14   68000C09              B       TIST3102         LOOP ON ERROR
  4399   02 00C15   22700000 A            LI,7    0
  4400   02 00C16   357018F5              STW,7   SPFLAG           CLEAR ERROR FLAG
  4401   02 00C17   6AF01638     TIST3103 BAL,15  CLRARM           CLEAR AND ARM INTERRUPT
  4402   02 00C18   22000C0D              LI,0    DA(SB100)        SPACE BKW OVER RECORD
  4403   02 00C19   6AF01CA2              BAL,15  :IOEXEC          TIO,SIO
  4404   02 00C1A   6AF0162F              BAL,15  MYDELAY          WAIT FOR INTERRUPT
  4405   02 00C1B   6AF01EC4              BAL,15  :ERRORT          TEST
  4406   02 00C1C   00005D84              DATA    BA(TSEQ011)      READY, NO UE
  4407   02 00C1D   68000C21              B       TIST3104
  4408                          *         ERROR   EXIT
  4409   02 00C1E   331018F5              MTW,1   SPFLAG           ERROR+1
  4410   02 00C1F   EAF0021B A            BAL,15  *:ERROR          #3102
  4411   02 00C20   00000C1E A            DATA    3102             INCORRECT BITS IN TEST
  4412   02 00C21   6AF01638     TIST3104 BAL,15  CLRARM           CLEAR AND ARM INTERRUPT
  4413   02 00C22   22000BFD              LI,0    DA(RPBT)         READ FWD PACKED BINARY RECORD 00-FF
  4414   02 00C23   6AF01CA2              BAL,15  :IOEXEC          TIO,SIO
  4415   02 00C24   6AF0162F              BAL,15  MYDELAY          WAIT FOR INTERRUPT
  4416   02 00C25   6AF01EC4              BAL,15  :ERRORT          TEST
  4417   02 00C26   00005D78              DATA    BA(TSEQ010)      NO INC LENGTH, READY, NO UE
  4418   02 00C27   68000C2B              B       TIST3105
  4419                          *         ERROR EXIT
  4420   02 00C28   331018F5              MTW,1   SPFLAG           ERROR+1
  4421   02 00C29   EAF0021B A            BAL,15  *:ERROR          #3103
  4422   02 00C2A   00000C1F A            DATA    3103             INCORRECT BITS IN TEST
  4423   02 00C2B   6AF01D47     TIST3105 BAL,15  :COMPARE         COMPARE INFORMATION
  4424   02 00C2C   68000C30              B       TIST3105+5
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          66
  4425                    *       INFORMATION ERROR
  4426   02 00C2D   EAF0021B A            BAL,15   *:ERROR          #3104
  4427   02 00C2E   00000C20 A            DATA     3104             INCORRECT INFORMATION
  4428   02 00C2F   331018F5              MTW,1    SPFLAG           ERROR+1
  4429   02 00C30   327018F5              LW,7     SPFLAG           CHECK ERROR FLAG
  4430   02 00C31   68300C35              BEZ      TIST3106
  4431   02 00C32   EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  4432   02 00C33   2E000000 A            WAIT
  4433   02 00C34   68000C15              B        TIST3103-2       LOOP ON ERROR
  4434   02 00C35   65800C09     TIST3106 BIR,8    TIST3102         DO 100 RECORDS
  4435                    *                                        END CONDITION TEST
  4436   02 00C36   35301DBA              STW,3    :COMWCNT         WORD COUNT
  4437   02 00C37   22701996              LI,7     COPEC            COMPARE INFORMATION
  4438   02 00C38   35701DBB              STW,7    :COMBFRA
  4439   02 00C39   22A00003 A            LI,10    3
  4440   02 00C3A   22700006 A            LI,7     6                6 BYTES
  4441   02 00C3B   557217CB              STH,7    WSPKEC+1,1       WRITE 6,7,8 BYTES
  4442   02 00C3C   5572180D              STH,7    RSPKEC+1,1       READ 6,8,9 BYTES
  4443   02 00C3D   328020A5     TIST3107 LW,8     =X'AAAAAAAA'     WRITE PATTERN
  4444   02 00C3E   329020A1              LW,9     =X'FFFFFFFF'     SMEAR IN READ IN AREA
  4445   02 00C3F   225FFFFD A            LI,5     -3               3 WORDS
  4446   02 00C40   22600000 A            LI,6     0
  4447   02 00C41   358C20C5              STW,8    BUFF1,6
  4448   02 00C42   B59C207D              STW,9    *BUFF2,6
  4449   02 00C43   33100006 A            MTW,1    6
  4450   02 00C44   65500C41              BIR,5    $-3
  4451   02 00C45   6AF01638     TIST3108 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4452   02 00C46   22000BE5              LI,0     DA(WSPKEC)       WRITE 6 BYTES FOR END CONDITION
  4453   02 00C47   6AF01CA2              BAL,15   :IOEXEC          TIO,SIO
  4454   02 00C48   6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4455   02 00C49   6AF01EC4              BAL,15   :ERRORT          TEST
  4456   02 00C4A   00005D84              DATA     BA(TSEQ011)      READY, NO UE, BC=0
  4457   02 00C4B   68000C51              B        TIST3109
  4458                    *       ERROR EXIT
  4459   02 00C4C   EAF0021B A            BAL,15   *:ERROR          3105
  4460   02 00C4D   00000C21 A            DATA     3105             INCORRECT BITS ON TEST
  4461   02 00C4E   EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCHES
  4462   02 00C4F   2E000000 A            WAIT
  4463   02 00C50   68000C45              B        TIST3108         LOOP ON ERROR
  4464   02 00C51   22800000 A     TIST3109 LI,8     0
  4465   02 00C52   358018F5              STW,8    SPFLAG           CLEAR ERROR FLAG
  4466   02 00C53   6AF01638              BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4467   02 00C54   22000C0D              LI,0     DA(SB100)        SPACE BKW OVER RECORD
  4468   02 00C55   6AF01CA2              BAL,15   :IOEXEC          TIO,SIO
  4469   02 00C56   6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4470   02 00C57   6AF01EC4              BAL,15   :ERRORT          TEST
  4471   02 00C58   00005D78              DATA     BA(TSEQ010)      READY, NO UE
  4472   02 00C59   68000C5D              B        TIST3110
  4473                    *       ERROR EXIT
  4474   02 00C5A   EAF0021B A            BAL,15   *:ERROR          3106
  4475   02 00C5B   00000C22 A            DATA     3106             INCORRECT BITS ON TEST
  4476   02 00C5C   331018F5              MTW,1    SPFLAG           ERROR +1
  4477   02 00C5D   6AF01638     TIST3110 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4478   02 00C5E   22000C06              LI,0     DA(RSPKEC)       READ 6 BYTES END CONDITION
  4479   02 00C5F   6AF01CA2              BAL,15   :IOEXEC          TIO,SIO
  4480   02 00C60   6AF0162F              BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4481   02 00C61   6AF01EC4              BAL,15   :ERRORT          TEST
  4482   02 00C62   00005D78              DATA     BA(TSEQ010)      READY, NO UE
  4483   02 00C63   68000C67              B        TIST3111
  4484                    *       ERROR EXIT
  4485   02 00C64   EAF0021B A            BAL,15   *:ERROR          3107
  4486   02 00C65   00000C23 A            DATA     3107             INCORRECT BITS ON TEST
  4487   02 00C66   331018F5              MTW,1    SPFLAG           ERROR +1
  4488   02 00C67   6AF01D47     TIST3111 BAL,15   :COMPARE         COMPARE INFORMATION
  4489   02 00C68   68000C6C              B        TIST3111+5
  4490                    *       INFORMATION ERROR
  4491   02 00C69   EAF0021B A            BAL,15   *:ERROR          3108
  4492   02 00C6A   00000C24 A            DATA     3108             INFORMATION ERROR
  4493   02 00C6B   331018F5              MTW,1    SPFLAG           ERROR +1
  4494   02 00C6C   32F018F5              LW,15    SPFLAG           CHECK ERROR FLAG
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          67
  4495    02 00C6D    68300C71                BEZ       TIST3112
  4496    02 00C6E    EAF0021D A              BAL,15    *:SENSE           CHECK SENSE SWITCHES
  4497    02 00C6F    2E000000 A              WAIT
  4498    02 00C70    68000C51                B         TIST3109          LOOP ON ERROR
  4499    02 00C71    331017CB    TIST3112    MTW,1     WSPKEC+1          3N, 3N+1, 3N+2
  4500    02 00C72    321017CB                LW,4      WSPKEC+1
  4501    02 00C73    33100004 A              MTW,1     4
  4502    02 00C74    3540180D                STW,4     RSPKEC+1          READ 6, 8, 9 BYTES
  4503    02 00C75    33301DBB                MTW,3     :COMBFRA          NEXT COMPARE
  4504    02 00C76    64A00C3D                BDR,10    TIST3107
  4505    02 00C77    6AF01640    TIST3113    BAL,15    CLRDARM           CLEAR AND DISARM INTERRUPT
  4506    02 00C78    32F0189C                LW,15     FLGRG             REGULAR PRINTOUT FLAG
  4507    02 00C79    35F019A7                STW,15    NOPKPRT
  4508    02 00C7A    680003B2                B         :TIM
  4509                                *
  4510                                *
  4511                                *
  4512                                *
  4513                                *
  4514                                *
  4515                                *
  4516                                *
  4517                                *
  4518                                *
  4519                                *
  4520                                *
  4521                                *                                   TST1,32  LRC TEST
  4522                                *                                   ----------------
  4523                                *
  4524                                *  CHECK THE ABILITY TO SET ALL BITS IN THE LRC CHARACTER. THE LRC WILL*
  4525                                *  BE TESTED IN THE PACKED BINARY, BINARY, AND DECIMAL (BCD) MODE. ANY *
  4526                                *  SECTION NOT APPLICABLE TO THE UNIT BEING TESTED WILL BE BYPASSED.   *
  4527                                *                                                                      *
  4528                                *                                   PACKED BINARY SECTION
  4529    02 00C7B    22706490    :TIST32     LI,7      BA(LRCPK)         INITILIZE WRITE INSTRUCTION
  4530    02 00C7C    557217D0                STH,7     WLRCPK,1
  4531    02 00C7D    32C0188E                LW,12     OPTPB             CHECK FOR PACKED BINARY STD OR OPT
  4532    02 00C7E    69300C81                BNEZ      $+3
  4533    02 00C7F    32C0188D                LW,12     STDPB
  4534    02 00C80    68300CB9                BEZ       TIST3205+5        BYPASS SECTION
  4535    02 00C81    351019A7                STW,1     NOPKPRT
  4536    02 00C82    35301DBA                STW,3     :COMWCNT          WORDS TO COMPARE
  4537    02 00C83    22A01924                LI,10     LRCPK
  4538    02 00C84    35A01DBB                STW,10    :COMBFRA          CORRECT INFORMATION
  4539    02 00C85    32A0207D                LW,10     BUFF2
  4540    02 00C86    35A01DBC                STW,10    :COMBFRB          OBSERVED INFORMATION
  4541    02 00C87    228FFFF9 A              LI,8      -7
  4542    02 00C88    6AF01638    TIST3201    BAL,15    CLRARM            CLEAR AND ARM INTERRUPT
  4543    02 00C89    22000BE8                LI,0      DA(WLRCPK)        WRITE LRC USING PACKED BINARY REC.
  4544    02 00C8A    6AF01CA2                BAL,15    :IOEXEC           TIO, SIO
  4545    02 00C8B    6AF0162F                BAL,15    MYDELAY           WAIT FOR INTERRUPT
  4546    02 00C8C    6AF01EC4                BAL,15    :ERRORT           TEST
  4547    02 00C8D    00005D84                DATA      BA(TSEQ011)       READY, NO UE, BC=0
  4548    02 00C8E    68000C94                B         TIST3202-2
  4549                                *       ERROR EXIT
  4550    02 00C8F    EAF0021B A              BAL,15    *:ERROR           #3201
  4551    02 00C90    00000C81 A              DATA      3201              INCORRECT BITS ON TEST
  4552    02 00C91    EAF0021D A              BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  4553    02 00C92    2E000000 A              WAIT
  4554    02 00C93    68000C88                B         TIST3201          LOOP ON ERROR
  4555    02 00C94    22700000 A              LI,7      0
  4556    02 00C95    357018F5                STW,7     SPFLAG            CLEAR ERROR TALLY
  4557    02 00C96    6AF01638    TIST3202    BAL,15    CLRARM            CLEAR AND ARM INTERRUPT
  4558    02 00C97    22000C0D                LI,0      DA(SB100)         SPACE BKW OVER RECORD
  4559    02 00C98    6AF01CA2                BAL,15    :IOEXEC           TIO, SIO
  4560    02 00C99    6AF0162F                BAL,15    MYDELAY           WAIT FOR INTERRUPT
  4561    02 00C9A    6AF01EC4                BAL,15    :ERRORT           TEST
  4562    02 00C9B    00005D78                DATA      BA(TSEQ010)       READY, NO UE
  4563    02 00C9C    68000CA0                B         TIST3203
  4564                                *       ERROR EXIT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          68
 4565    02 00C9D    EAF0021B A           BAL,15   *:ERROR          #3202
 4566    02 00C9E    00000C82 A           DATA     3202             INCORRECT BITS IN TEST
 4567    02 00C9F    331018F5             MTW,1    SPFLAG           ERROR+1
 4568    02 00CA0    6AF01638     TIST3203 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
 4569    02 00CA1    22000BFE             LI,0     DA(RLRCPK)       READ FWD LRC RECORD PACKED BINARY
 4570    02 00CA2    6AF01CA2             BAL,15   :IOEXEC          TIO, SIO
 4571    02 00CA3    6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
 4572    02 00CA4    6AF01EC4             BAL,15   :ERRORT          TEST
 4573    02 00CA5    00005D78             DATA     BA(TSEQ010)      READY, NO UE, BC =0
 4574    02 00CA6    68000CAA             B        TIST3204
 4575                             *        ERROR EXIT
 4576    02 00CA7    EAF0021B A           BAL,15   *:ERROR          #3203
 4577    02 00CA8    00000C83 A           DATA     3203             INCORRECT BITS IN TEST
 4578    02 00CA9    331018F5             MTW,1    SPFLAG           ERROR+1
 4579    02 00CAA    6AF01D47     TIST3204 BAL,15   :COMPARE         COMPARE INFORMATION
 4580    02 00CAB    68000CAF             B        TIST3204+5
 4581                             *        INFORMATION ERROR
 4582    02 00CAC    EAF0021B A           BAL,15   *:ERROR          #3204
 4583    02 00CAD    00000C84 A           DATA     3204             INCORRECT INFORMATION
 4584    02 00CAE    331018F5             MTW,1    SPFLAG           ERROR+1
 4585    02 00CAF    32E018F5             LW,14    SPFLAG           CHECK ERROR FLAG
 4586    02 00CB0    68300CB4             BEZ      TIST3205
 4587    02 00CB1    EAF0021D A           BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
 4588    02 00CB2    2E000000 A           WAIT
 4589    02 00CB3    68000C94             B        TIST3202-2       LOOP ON ERROR
 4590    02 00CB4    32C017D0     TIST3205 LW,12    WLRCPK           NEXT RECORD
 4591    02 00CB5    20C0000C A           AI,12    12
 4592    02 00CB6    35C017D0             STW,12   WLRCPK           STORE
 4593    02 00CB7    33301DBB             MTW,3    :COMBFRA         NEXT COMPARE
 4594    02 00CB8    65800C88             BIR,8    TIST3201
 4595                             *                                  BINARY -ODD PARITY SECTION
 4596    02 00CB9    32C0188F             LW,12    OPTBCD           CHECK FOR DECIMAL OPTION OR STD
 4597    02 00CBA    69300CBD             BNEZ     $+3
 4598    02 00CBB    32C0188C             LW,12    STDBCD
 4599    02 00CBC    68300CF3             BEZ      TIST3210+3       BYPASS SECTION
 4600    02 00CBD    352019A7             STW,2    NOPKPRT          SET NO PACKED PRINTOUT FLAG
 4601    02 00CBE    35101DBA             STW,1    :COMWCNT         WORDS TO COMPARE
 4602    02 00CBF    227064E4             LI,7     BA(LRCOP)        SET UP WRITE
 4603    02 00CC0    557217D2             STH,7    WLRCOP,1
 4604    02 00CC1    22A01939             LI,10    LRCOP
 4605    02 00CC2    35A01DBB             STW,10   :COMBFRA         CORRECT INFORMATION
 4606    02 00CC3    228FFFF9 A           LI,8     -7
 4607    02 00CC4    6AF01638     TIST3206 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
 4608    02 00CC5    22000BE9             LI,0     DA(WLRCOP)       WRITE LRC ODD PARITY BINARY MODE
 4609    02 00CC6    6AF01CA2             BAL,15   :IOEXEC          TIO,SIO
 4610    02 00CC7    6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
 4611    02 00CC8    6AF01EC4             BAL,15   :ERRORT          TEST
 4612    02 00CC9    00005D84             DATA     BA(TSEQ011)      READY, NO UE, BC=0
 4613    02 00CCA    68000CD0             B        TIST3207-2
 4614                             *        ERROR EXIT
 4615    02 00CCB    EAF0021B A           BAL,15   *:ERROR          #3205
 4616    02 00CCC    00000C85 A           DATA     3205
 4617    02 00CCD    EAF0021D A           BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
 4618    02 00CCE    2E000000 A           WAIT
 4619    02 00CCF    68000CC4             B        TIST3206         LOOP ON ERROR
 4620    02 00CD0    22700000 A           LI,7     0
 4621    02 00CD1    357018F5             STW,7    SPFLAG           CLEAR ERROR FLAG
 4622    02 00CD2    6AF01638     TIST3207 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
 4623    02 00CD3    22000C0D             LI,0     DA(SB100)        SPACE BKW OVER RECORD
 4624    02 00CD4    6AF01CA2             BAL,15   :IOEXEC          TIO,SIO
 4625    02 00CD5    6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
 4626    02 00CD6    6AF01EC4             BAL,15   :ERRORT          TEST
 4627    02 00CD7    00005D78             DATA     BA(TSEQ010)      READY, NO UE
 4628    02 00CD8    68000CDC             B        TIST3208
 4629                             *        ERROR EXIT
 4630    02 00CD9    331018F5             MTW,1    SPFLAG           ERROR+1
 4631    02 00CDA    EAF0021B A           BAL,15   *:ERROR          #3206
 4632    02 00CDB    00000C86 A           DATA     3206
 4633    02 00CDC    6AF01638     TIST3208 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
 4634    02 00CDD    22000BFF             LI,0     DA(RLRCOP)       READ FWD ODD PARITY
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          69
  4635    02 00CDE    6AF01CA2            BAL,15   :IOEXEC          TIO,SIO
  4636    02 00CDF    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4637    02 00CE0    6AF01EC4            BAL,15   :ERRORT          TEST
  4638    02 00CE1    00005D78            DATA     BA(TSEQ010)     READY, NO UE, BC=0
  4639    02 00CE2    68000CE6            B        TIST3209
  4640                                *   ERROR EXIT
  4641    02 00CE3    331018F5            MTW,1    SPFLAG          ERROR+1
  4642    02 00CE4    EAF0021B A          BAL,15   *:ERROR         #3207
  4643    02 00CE5    00000C87 A          DATA     3207
  4644    02 00CE6    6AF01D47    TIST3209 BAL,15   :COMPARE         COMPARE INFORMATION
  4645    02 00CE7    68000CEB            B        TIST3209+5
  4646                                *   INFORMATION ERROR
  4647    02 00CE8    EAF0021B A          BAL,15   *:ERROR         #3208
  4648    02 00CE9    00000C88 A          DATA     3208
  4649    02 00CEA    331018F5            MTW,1    SPFLAG          ERROR+1
  4650    02 00CEB    32E018F5            LW,14    SPFLAG          CHECK ERROR FLAG
  4651    02 00CEC    68300CF0            BEZ      TIST3210
  4652    02 00CED    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  4653    02 00CEE    2E000000 A          WAIT
  4654    02 00CEF    68000CD0            B        TIST3207-2      LOOP ON ERROR
  4655    02 00CF0    334017D2    TIST3210 MTW,4    WLRCOP          NEXT RECORD
  4656    02 00CF1    33101DBB            MTW,1    :COMBFRA        NEXT COMPARE
  4657    02 00CF2    65800CC4            BIR,8    TIST3206
  4658                                *                            DECIMAL (BCD), EVEN PARITY SECTION
  4659    02 00CF3    32C0188C            LW,12    STDBCD
  4660    02 00CF4    69300CF7            BNEZ     $+3
  4661    02 00CF5    32C0188F            LW,12    OPTBCD          CHECK IF BCD-EVEN PARITY AVAILABLE
  4662    02 00CF6    68300D2D            BEZ      TIST3216        BYPASS TEST
  4663    02 00CF7    352019A7            STW,2    NOPKPRT         SET NO PACKED PRINTOUT FLAG
  4664    02 00CF8    228FFFF9 A          LI,8     -7
  4665    02 00CF9    35101DBA            STW,1    :COMWCNT        WORDS TO COMPARE
  4666    02 00CFA    22706500            LI,7     BA(LRCEP)       SET UP WRITE
  4667    02 00CFB    557217D4            STH,7    WLRCEP,1
  4668    02 00CFC    22A01940            LI,10    LRCEP
  4669    02 00CFD    35A01DBB            STW,10   :COMBFRA        CORRECT INFORMATION
  4670    02 00CFE    6AF01638    TIST3211 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  4671    02 00CFF    22000BEA            LI,0     DA(WLRCEP)      WRITE LRC EVEN PARITY MODE
  4672    02 00D00    6AF01CA2            BAL,15   :IOEXEC          TIO,SIO
  4673    02 00D01    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4674    02 00D02    6AF01EC4            BAL,15   :ERRORT          TEST
  4675    02 00D03    00005D84            DATA     BA(TSEQ011)     READY, NO UE, BC=0
  4676    02 00D04    68000D0A            B        TIST3212-2
  4677                                *   ERROR EXIT
  4678    02 00D05    EAF0021B A          BAL,15   *:ERROR         #3209
  4679    02 00D06    00000C89 A          DATA     3209
  4680    02 00D07    EAF0021D A          BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  4681    02 00D08    2E000000 A          WAIT
  4682    02 00D09    68000CFE            B        TIST3211        LOOP ON ERROR
  4683    02 00D0A    22700000 A          LI,7     0
  4684    02 00D0B    357018F5            STW,7    SPFLAG          CLEAR ERROR FLAG
  4685    02 00D0C    6AF01638    TIST3212 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  4686    02 00D0D    22000C0D            LI,0     DA(SB100)       SPACE BKW OVER RECORD
  4687    02 00D0E    6AF01CA2            BAL,15   :IOEXEC          TIO,SIO
  4688    02 00D0F    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4689    02 00D10    6AF01EC4            BAL,15   :ERRORT          TEST
  4690    02 00D11    00005D78            DATA     BA(TSEQ010)     READY, NO UE
  4691    02 00D12    68000D16            B        TIST3213
  4692                                *   ERROR EXIT
  4693    02 00D13    331018F5            MTW,1    SPFLAG
  4694    02 00D14    EAF0021B A          BAL,15   *:ERROR         #3210
  4695    02 00D15    00000C8A A          DATA     3210
  4696    02 00D16    6AF01638    TIST3213 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  4697    02 00D17    22000C00            LI,0     DA(RLRCEP)      READ LRC RECORD EVEN PARITY
  4698    02 00D18    6AF01CA2            BAL,15   :IOEXEC          TIO,SIO
  4699    02 00D19    6AF0162F            BAL,15   MYDELAY          WAIT FOR INTERRUPT
  4700    02 00D1A    6AF01EC4            BAL,15   :ERRORT          TEST
  4701    02 00D1B    00005D78            DATA     BA(TSEQ010)     READY, NO UE, BC=0
  4702    02 00D1C    68000D20            B        TIST3214
  4703                                *   ERROR EXIT
  4704    02 00D1D    EAF0021B A          BAL,15   *:ERROR         #3211
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70              70
  4705    02 00D1E     00000C8B A            DATA     3211
  4706    02 00D1F     331018F5              MTW,1    SPFLAG -          ERROR+1
  4707    02 00D20     6AF01D47      TIST3214 BAL,15   :COMPARE          COMPARE INFORMATION
  4708    02 00D21     68000D25              B        TIST3214+5
  4709                              *         INFORMATION ERROR
  4710    02 00D22     EAF0021B A            BAL,15   *:ERROR           #3212
  4711    02 00D23     00000C8C A            DATA     3212
  4712    02 00D24     331018F5              MTW,1    SPFLAG            ERROR +1
  4713    02 00D25     327018F5              LW,7     SPFLAG
  4714    02 00D26     68300D2A              BEZ      TIST3215
  4715    02 00D27     EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  4716    02 00D28     2E000000 A            WAIT
  4717    02 00D29     68000D0A              B        TIST3212-2        LOOP ON ERROR
  4718    02 00D2A     334017D4      TIST3215 MTW,4    WLRCEP            NEXT RECORD
  4719    02 00D2B     33101DBB              MTW,1    :COMBFRA          NEXT COMPARE
  4720    02 00D2C     65800CFE              BIR,8    TIST3211
  4721    02 00D2D     6AF01640      TIST3216 BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
  4722    02 00D2E     32F0189C              LW,15    FLGRG             REGULAR PRINTOUT FLAG
  4723    02 00D2F     35F019A7              STW,15   NOPKPRT
  4724    02 00D30     680003B2              B        :TIM              GO TO SEQUENCER
  4725                              *
  4726                              *
  4727                              *
  4728                              *
  4729                              *
  4730                              *
  4731                              *
  4732                              *                                  TST1,33 DATA TEST NOISE PATTERNS
  4733                              *                                          AND BIT CROUDING
  4734                              *                                  ----------------------------------
  4735                              *
  4736                              * THIS TEST WILL WRITE AND READ VARIABLE DATA PATTERNS. THE SEQUENCE    *
  4737                              * WILL ALWAYS BE WRITE, SPACE REVERSE AND READ FORWARD. THE RECORD      *
  4738                              * SIZE WILL BE VARIED AFTER EACH RECORD. NOISE SENSITIVE AND BIT        *
  4739                              * CROWDING DATA PATTERN WILL BE USED. WRITE AND READ RETRIES WILL BE    *
  4740                              * ALLOWED.                                                             *
  4741                              *                                                                     *
  4742    02 00D31     6AF0160C      :TIST33  BAL,15   RWTLP             REWIND TO LOAD POINT
  4743    02 00D32     22500000 A            LI,5     0
  4744    02 00D33     35501DBD              STW,5    :COMFLAG          PRINTOUT ERRORS
  4745    02 00D34     227020C5              LI,7     WA(BUFF1)
  4746    02 00D35     35701DBB              STW,7    :COMBFRA          BUFFER EXPECTED
  4747    02 00D36     3270207D              LW,7     BUFF2
  4748    02 00D37     35701DBC              STW,7    :COMBFRB          BUFFER OBSERVED
  4749    02 00D38     22700003 A            LI,7     3                 3 WORDS
  4750    02 00D39     35701DBA              STW,7    :COMWCNT
  4751    02 00D3A     22600000 A            LI,6     0
  4752    02 00D3B     22C018E0              LI,12    PT00              SET UP FIRST TRK SATURATION PTRN
  4753    02 00D3C     55C20D43              STH,12   TIST3301,1
  4754    02 00D3D     22C01979              LI,12    PBTSAT
  4755    02 00D3E     55C20D54              STH,12   TIST3306,1
  4756    02 00D3F     32F0189C              LW,15    FLGRG             REGULAR PRINTOUT FLAG
  4757    02 00D40     35F019A7              STW,15   NOPKPRT
  4758    02 00D41     311019CE              CW,1     MODEFLAG          PACKED FLAG SET
  4759    02 00D42     68300D4D              BE       TIST3306-7
  4760    02 00D43     32E018E0      TIST3301 LW,14    PT00              PATTERNS 00 TO 20
  4761    02 00D44     22DFFFF6 A            LI,13    -10               10 WORDS EACH TRACK
  4762    02 00D45     35EC20C5              STW,14   BUFF1,6           STORE PATTERN
  4763    02 00D46     33100006 A            MTW,1    6
  4764    02 00D47     65D00D45              BIR,13   $-2
  4765    02 00D48     33100D43              MTW,1    TIST3301          CHANGE PATTERN
  4766    02 00D49     228018E7              LI,8     PT80-1            LAST PATTERN DONE
  4767    02 00D4A     51820D43              CH,8     TIST3301,1
  4768    02 00D4B     69200D43              BG       TIST3301
  4769    02 00D4C     68000D5D              B        TIST3303-10
  4770    02 00D4D     225FFFF9 A            LI,5     -7
  4771    02 00D4E     22800021 A            LI,8     33
  4772    02 00D4F     35801D38              STW,8    :PATWC        WORD COUNT
  4773    02 00D50     22800004 A            LI,8     4
  4774    02 00D51     35801D38              STW,8    :PATID            3 WORD PACKED PATTERN
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          71
  4775    02 00D52    228020C5              LI,8     BUFF1              STARTING BUFFER AREA
  4776    02 00D53    35801D3C              STW,8    :PATBFR
  4777    02 00D54    22801979    TIST3306  LI,8     PBTSAT             3 WORD PACKED PATTERN
  4778    02 00D55    35801D39              STW,8    :PATID+1
  4779    02 00D56    6AF01CF9              BAL,15   :PATTERN           SMEAR PATTERN
  4780    02 00D57    20600021 A            AI,6     33
  4781    02 00D58    33300D54              MTW,3    TIST3306
  4782    02 00D59    32801D3C              LW,8     :PATBFR
  4783    02 00D5A    20800021 A            AI,8     33                 NEXT SPREAD AREA
  4784    02 00D5B    35801D3C              STW,8    :PATBFR
  4785    02 00D5C    65500D54              BIR,5    TIST3306           DO 7 TIMES
  4786    02 00D5D    3A5018CB              LCW,5    MAXREAD            MAXIMUM RECORD SIZE
  4787    02 00D5E    32E020A6              LW,14    =X'51F99F15'       PATTERN TO SHIFT
  4788    02 00D5F    3270188D              LW,7     STDPB              CHECK FOR PACKED BINARY
  4789    02 00D60    69300D67              BNEZ     TIST3303
  4790    02 00D61    3270188E              LW,7     OPTPB              OPTION PACKED BINARY
  4791    02 00D62    69300D67              BNEZ     TIST3303
  4792    02 00D63    35E0000D A            STW,14   13                 UNPACKED BINARY
  4793    02 00D64    4BD0209D              AND,13   =X'3F3F3F3F'
  4794    02 00D65    35DC20C5              STW,13   BUFF1,6            STORE UNPACKED
  4795    02 00D66    68000D68              B        TIST3303+1
  4796    02 00D67    35EC20C5    TIST3303  STW,14   BUFF1,6            STORE PACKED BINARY
  4797    02 00D68    25E00201 A            SCS,14   1                  SHIFT CIRCULAR
  4798    02 00D69    33100006 A            MTW,1    6
  4799    02 00D6A    65500D5F              BIR,5    $-11               SMEAR MAXIMUM I/O AREA
  4800    02 00D6B    2250000C A            LI,5     12                 12 BYTES
  4801    02 00D6C    555217BD              STH,5    TWNP+1,1
  4802    02 00D6D    555217EB              STH,5    RFNP+1,1
  4803    02 00D6E    22900000 A            LI,9     0                  CLEAR RETRY TALLY
  4804    02 00D6F    6AF01638    TIST3302  BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  4805    02 00D70    22000BDE              LI,0     DA(TWNP)           WRITE RECORD WITH SPECIAL PATTERN
  4806    02 00D71    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  4807    02 00D72    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  4808    02 00D73    6AF01EC4    TIST3304  BAL,15   :ERRORT            TEST
  4809    02 00D74    00005D84              DATA     BA(TSEQ011)        BC=0, READY, NO UE
  4810    02 00D75    68000D88              B        TIST3305-1
  4811                            *         ERROR EXIT
  4812    02 00D76    EAF0021B A            BAL,15   *:ERROR            #3301
  4813    02 00D77    00000CE5 A            DATA     3301               INCORRECT BITS IN TEST
  4814    02 00D78    EAF0021D A            BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  4815    02 00D79    2E000000 A            WAIT                        HALT ON ERROR IF SS3 RESET
  4816    02 00D7A    68000D7C              B        $+2                LOOP ON ERROR
  4817    02 00D7B    68000D88              B        TIST3305-1         CONTINUE
  4818                            *                                     WRITE RETRY
  4819    02 00D7C    6AF01638              BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  4820    02 00D7D    22000C19              LI,0     DA(SPBRAND)        SPACE BKW
  4821    02 00D7E    6AF01CA2              BAL,15   :IOEXEC            TIO, SIO
  4822    02 00D7F    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  4823    02 00D80    33100009 A            MTW,1    9                  TALLY +1
  4824    02 00D81    21900005 A            CI,9     5                  TALLY =5
  4825    02 00D82    69100D6F              BL       TIST3302
  4826    02 00D83    6AF01638              BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  4827    02 00D84    22000BCA              LI,0     DA(TSE1)           SET ERASE
  4828    02 00D85    6AF01CA2              BAL,15   :IOEXEC            TIO, SIO
  4829    02 00D86    6AF0162F              BAL,15   MYDELAY            DELAY FOR INTERRUPT
  4830    02 00D87    68000D6E              B        TIST3302-1         GO RETRY AFTER SET ERASE
  4831    02 00D88    22900000 A            LI,9     0                  CLEAR RETRY TALLY
  4832    02 00D89    6AF01638    TIST3305  BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  4833    02 00D8A    22F00000 A            LI,15    0
  4834    02 00D8B    35F018F5              STW,15   SPFLAG             CLEAR ERROR FLAG
  4835    02 00D8C    6AF01CE8              BAL,15   :CLEAR             CLEAR READ IN BUFFER
  4836    02 00D8D    22000C19              LI,0     DA(SPBRAND)        SPACE BKW OVER RECORD
  4837    02 00D8E    6AF01CA2              BAL,15   :IOEXEC            EXECUTE TIO,SIO
  4838    02 00D8F    6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  4839    02 00D90    6AF01EC4    TIST3307  BAL,15   :ERRORT            TEST
  4840    02 00D91    00005D84              DATA     BA(TSEQ011)        READY, NO UE
  4841    02 00D92    68000DA5              B        TIST3309
  4842                            *         ERROR EXIT
  4843    02 00D93    EAF0021B A            BAL,15   *:ERROR            #3302
  4844    02 00D94    00000CE6 A            DATA     3302               INCORRECT BITS IN TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70                72
  4845    02 00D95    331018F5              MTW,1    SPFLAG              ERROR +1
  4846    02 00D96    32F018F5              LW,15    SPFLAG
  4847    02 00D97    68300DA4              BE       TIST3309-1
  4848    02 00D98    EAF0021D A            BAL,15   *:SENSE             CHECK SENSE SWITCH SETTINGS
  4849    02 00D99    2E000000 A            WAIT                         HALT ON ERROR IF SS3 RESET
  4850    02 00D9A    68000D9C              B        $+2                 LOOP ON ERROR
  4851    02 00D9B    68000DC5              B        TIST3313            GO TO NEXT SIZE RECORD
  4852                                      *                            READ BACKWARD RETRY
  4853    02 00D9C    33100009 A            MTW,1    9                   TALLY +1
  4854    02 00D9D    21900006 A            CI,9     6
  4855    02 00D9E    68300DC5              BE       TIST3313            GO TO NEXT SIZE RECORD
  4856    02 00D9F    6AF01638              BAL,15   CLRARM              CLEAR AND ARM INTERRUPT
  4857    02 00DA0    22000C1A              LI,0     DA(SPFRAND)         SPACE FWD
  4858    02 00DA1    6AF01CA2              BAL,15   :IOEXEC             TIO, SIO
  4859    02 00DA2    6AF0162F              BAL,15   MYDELAY             WAIT FOR INTERRUPT
  4860    02 00DA3    68000D89              B        TIST3305            RETRY READ
  4861    02 00DA4    22900000 A            LI,9     0                   CLEAR RETRY TALLY
  4862    02 00DA5    6AF01638    TIST3309  BAL,15   CLRARM              CLEAR AND ARM INTERRUPT
  4863    02 00DA6    22F00000 A            LI,15    0
  4864    02 00DA7    35F018F5              STW,15   SPFLAG              RESET FLAG
  4865    02 00DA8    6AF01CE8              BAL,15   :CLEAR              CLEAR READ IN BUFFER
  4866    02 00DA9    22000BF5              LI,0     DA(RFNP)            READ RECORD FORWARD
  4867    02 00DAA    6AF01CA2              BAL,15   :IOEXEC             EXECUTE TIO,SIO
  4868    02 00DAB    6AF0162F              BAL,15   MYDELAY             WAIT FOR INTERRUPT
  4869    02 00DAC    6AF01EC4    TIST3311  BAL,15   :ERRORT             TEST
  4870    02 00DAD    00005D78              DATA     BA(TSE0010)         NO UE, BC=00,READY, NO INC LENGHT
  4871    02 00DAE    68000DB2              B        TIST3312
  4872                                      *        ERROR EXIT
  4873    02 00DAF    EAF0021B A            BAL,15   *:ERROR             #3303
  4874    02 00DB0    00000CE7 A            DATA     3303                INCORRECT BITS ON TEST
  4875    02 00DB1    331018F5              MTW,1    SPFLAG              ERROR +1
  4876    02 00DB2    6AF01D47    TIST3312  BAL,15   :COMPARE            COMPARE INFORMATION
  4877    02 00DB3    68000DB7              B        TIST3312+5
  4878                                      *        INFORMATION ERROR
  4879    02 00DB4    EAF0021B A            BAL,15   *:ERROR             #3304
  4880    02 00DB5    00000CE8 A            DATA     3304                INCORRECT INFORMATION
  4881    02 00DB6    331018F5              MTW,1    SPFLAG              ERROR +1
  4882    02 00DB7    32F018F5              LW,15    SPFLAG
  4883    02 00DB8    68300DC5              BEZ      TIST3313            NO ERRORS
  4884    02 00DB9    EAF0021D A            BAL,15   *:SENSE             CHECK SENSE SWITCH SETTINGS
  4885    02 00DBA    2E000000 A            WAIT                         HALT ON ERROR IF SS3 RESET
  4886    02 00DBB    68000DBD              B        $+2                 LOOP ON ERROR
  4887    02 00DBC    68000DC5              B        TIST3313            GO TO NEXT SIZE RECORD
  4888                                      *                            READ FORWARD RETRY
  4889    02 00DBD    33100009 A            MTW,1    9                   TALLYH61
  4890    02 00DBE    21900006 A            CI,9     6
  4891    02 00DBF    68300DC5              BE       TIST3313            GO TO NEXT SIZE RECORD
  4892    02 00DC0    6AF01638              BAL,15   CLRARM              CLEAR AND ARM INTERRUPT
  4893    02 00DC1    22000C19              LI,0     DA(SPBRAND)         SPACE BKW
  4894    02 00DC2    6AF01CA2              BAL,15   :IOEXEC             TIO, SIO
  4895    02 00DC3    6AF0162F              BAL,15   MYDELAY             WAIT FOR INTERRUPT
  4896    02 00DC4    68000DA5              B        TIST3309            RETRY READ
  4897    02 00DC5    32701DBA    TIST3313  LW,7     :COMWCNT            INCREMENT RECORD SIZE
  4898    02 00DC6    2070000C A            AI,7     12                  12 WORDS
  4899    02 00DC7    35701DBA              STW,7    :COMWCNT
  4900    02 00DC8    527217BD              LH,7     TWNP+1,1
  4901    02 00DC9    20700030 A            AI,7     48                  48 BYTES
  4902    02 00DCA    557217BD              STH,7    TWNP+1,1
  4903    02 00DCB    557217EB              STH,7    RFNP+1,1
  4904    02 00DCC    317018CA              CW,7     MAXREADB            RECORD TOO LARGE TO READ
  4905    02 00DCD    69100D6E              BCS,1    TIST3302-1          BRANCH IF LESS THAN MAXIMUM BYTES
  4906    02 00DCE    6AF0160C    TIST3314  BAL,15   RWTLP               REWIND TO LOAD POINT
  4907    02 00DCF    6AF01640              BAL,15   CLRDARM             CLEAR AND DISARM INTERRUPT
  4908    02 00DD0    680003B2              B        :TIM                GO TO SEQUENCER
  4909                                      *
  4910                                      *
  4911                                      *
  4912                                      *
  4913                                      *                            TST1, 34 READY - BUSY TEST
  4914                                      *                            ----------------------------------
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          73
  4915                          *
  4916                          *
  4917                          * CHECK THE BUSY CONDITION AFTER ISSUANCE OF AN ORDER. THE TEST WILL   *
  4918                          * ALSO ATTEMPT TO ISSUE AN SIO TO A BUSY CONTROLLER AND TO A READY     *
  4919                          * CONTROLLER AND A BUSY STATION.                                       *
  4920                          *
  4921                          *
  4922   02 00DD1   22AFFFF6 A  :TIST34  LI,10    -10
  4923   02 00DD2   6AF01651            BAL,15    SMEARPTR          SMEAR PATTERN
  4924   02 00DD3   6AF01638     TIST3401 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  4925   02 00DD4   22000BE0            LI,0      DA(TWI000)        WRITE 1000 BYTES
  4926   02 00DD5   CCC018B5            SIO,12    *:DEVADDR         SIO
  4927   02 00DD6   225FFFE2 A         LI,5      -30
  4928   02 00DD7   65500DD7           BIR,5     $
  4929   02 00DD8   CD8018B5     TIST3402 TIO,8    *:DEVADDR         TIO WITH CONTROLLER BUSY
  4930   02 00DD9   4B9020A7           AND,9     =X'60000000'      DEVICE BUSY
  4931   02 00DDA   319020A7           CW,9      =X'60000000'
  4932   02 00DDB   68300DE1           BEZ       TIST3403
  4933                          *       ERROR EXIT
  4934   02 00DDC   EAF0021B A         BAL,15    *:ERROR           3401
  4935   02 00DDD   00000D49 A         DATA      3401              INCORRECT RESPONSE ON TIO
  4936   02 00DDE   EAF0021D A         BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  4937   02 00DDF   2E000000 A         WAIT                        HALT ON ERROR IF SS3 RESET
  4938   02 00DE0   68000DD3           B         TIST3401          LOOP ON ERROR
  4939   02 00DE1   22E0012C A  TIST3403 LI,14    300               300 MS
  4940   02 00DE2   6AF01E26           BAL,15    :DELAY            DELAY
  4941   02 00DE3   68000DE9           B         TIST3404
  4942                          *       ERROR EXIT TIMEOUT
  4943   02 00DE4   EAF0021B A         BAL,15    *:ERROR           3402
  4944   02 00DE5   00000D4A A         DATA      3402              TIMEOUT ON SIO
  4945   02 00DE6   EAF0021D A         BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  4946   02 00DE7   2E000000 A         WAIT                        HALT ON ERROR IF SS3 RESET
  4947   02 00DE8   68000DD3           B         TIST3401          LOOP ON ERROR
  4948   02 00DE9   6AF01EC4     TIST3404 BAL,15   :ERRORT           TEST
  4949   02 00DEA   00005D84           DATA      BA(TSEQ011)       READY, NO UE BC=00
  4950   02 00DEB   68000DF1           B         TIST3405
  4951                          *       ERROR EXIT
  4952   02 00DEC   EAF0021B A         BAL,15    *:ERROR           3403
  4953   02 00DED   00000D4B A         DATA      3403              INCORRECT BITS ON TEST
  4954   02 00DEE   EAF0021D A         BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  4955   02 00DEF   2E000000 A         WAIT                        HALT ON ERROR IF SS3 RESET
  4956   02 00DF0   68000DD3           B         TIST3401          LOOP ON ERROR
  4957   02 00DF1   65A00DD3     TIST3405 BIR,10   TIST3401          DO 10 TIMES
  4958   02 00DF2   6AF01638           BAL,15    CLRARM            CLEAR AND ARM INTERRUPT
  4959   02 00DF3   22000BE0           LI,0      DA(TWI000)        WRITE 1000 BYTES
  4960   02 00DF4   CCC018B5           SIO,12    *:DEVADDR         SIO
  4961   02 00DF5   22000BF6     TIST3406 LI,0     DA(RF100B)        READ FWD
  4962   02 00DF6   CC8018B5           SIO,8     *:DEVADDR         SIO BUSY CHANNEL
  4963   02 00DF7   4B902085           AND,9     =X'06000000'      BUSY
  4964   02 00DF8   31902085           CW,9      =X'06000000'      CONTROLLER BUSY
  4965   02 00DF9   68300DFF           BEZ       TIST3407
  4966                          *       ERROR EXIT
  4967   02 00DFA   EAF0021B A         BAL,15    *:ERROR           3404
  4968   02 00DFB   00000D4C A         DATA      3404              INCORRECT STATUS RESPONSE ON SIO
  4969   02 00DFC   EAF0021D A         BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  4970   02 00DFD   2E000000 A         WAIT                        HALT ON ERROR IF SS3 RESET
  4971   02 00DFE   68000DF2           B         TIST3405+1        LOOP ON ERROR
  4972   02 00DFF   22E00258 A  TIST3407 LI,14    600               DELAY
  4973   02 00E00   6AF01E26           BAL,15    :DELAY            DELAY
  4974   02 00E01   68000E07           B         TIST3408
  4975                          *       ERROR EXIT TIMEOUT
  4976   02 00E02   EAF0021B A         BAL,15    *:ERROR           3405
  4977   02 00E03   00000D4D A         DATA      3405              TIMEOUT ON SIO
  4978   02 00E04   EAF0021D A         BAL,15    *:SENSE           CHECK SENSE SWITCH SETTINGS
  4979   02 00E05   2E000000 A         WAIT                        HALT ON ERROR IF SS3 RESET
  4980   02 00E06   68000DF2           B         TIST3405+1        LOOP ON ERROR
  4981   02 00E07   22E0001E A  TIST3408 LI,14    30                DELAY
  4982   02 00E08   6AF01E26           BAL,15    :DELAY
  4983   02 00E09   68000E0A           B         $+1
  4984   02 00E0A   22EFC950 A         LI,14     -14000            WAIT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          74
  4985   02 00E0B    65E00E0B              BIR,14   $
  4986   02 00E0C    6AF01638              BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  4987   02 00E0D    22000BD3              LI,0     DA(TRWAI)       REWIND NO INTERRUPT
  4988   02 00E0E    CCC018B5              SIO,12   *:DEVADDR       SIO
  4989   02 00E0F    22000BE0              LI,0     DA(TWI000)      WRITE RECORD
  4990   02 00E10    CC8018B5              SIO,8    *:DEVADDR       SIO WHILE REWINDING
  4991   02 00E11    4B902085              AND,9    =X'06000000'    CONTROLLER BUSY
  4992   02 00E12    31902085              CW,9     =X'06000000'
  4993   02 00E13    68300E1A              BEZ      TIST3409
  4994                              *      ERROR EXIT
  4995   02 00E14    EAF0021B A            BAL,15   *:ERROR          3406
  4996   02 00E15    00000D4E A            DATA     3406            INCORRECT STATUS RESPONSE ON SIO
  4997   02 00E16    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  4998   02 00E17    2E000000 A            WAIT                     HALT ON ERROR IF SS3 RESET
  4999   02 00E18    68000DF2              B        TIST3405+1      LOOP ON ERROR
  5000   02 00E19    68000E2C              B        TIST3410+6      GO TO END DELAY ON CONTINUE
  5001   02 00E1A    225FFFE2 A  TIST3409  LI,5     -30             TIME DELAY TILL DEVICE BUSY
  5002   02 00E1B    65500E1B              BIR,5    $
  5003   02 00E1C    CD8018B5              TIO,8    *:DEVADDR       TIO WHILE REWINDING
  5004   02 00E1D    4B9020A7              AND,9    =X'60000000'    DEVICE BUSY
  5005   02 00E1E    319020A7              CW,9     =X'60000000'
  5006   02 00E1F    68300E26              BEZ      TIST3410
  5007                              *      ERROR EXIT
  5008   02 00E20    EAF0021B A            BAL,15   *:ERROR          3407
  5009   02 00E21    00000D4F A            DATA     3407            INCORRECT STATUS RESPONSE ON TIO
  5010   02 00E22    EAF0021D A            BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  5011   02 00E23    2E000000 A            WAIT                     HALT ON ERROR IF SS3 RESET
  5012   02 00E24    68000DF2              B        TIST3405+1      LOOP ON ERROR
  5013   02 00E25    68000E2C              B        TIST3410+6      GO TO END DELAY ON CONTINUE
  5014   02 00E26    CE8018B5    TIST3410  TDV,8    *:DEVADDR       TEST TILL LOAD POINT
  5015   02 00E27    4B902098              AND,9    =X'04000000'
  5016   02 00E28    68300E26              BEZ      TIST3410        WAIT FOR LOAD POINT
  5017   02 00E29    CD8018B5              TIO,8    *:DEVADDR       DEVICE OR CONTROLER BUSY
  5018   02 00E2A    31902097              CW,9     =X'66000000'
  5019   02 00E2B    69400E29              BCS,4    $-2
  5020   02 00E2C    227FFE0C A            LI,7     -500            WAIT FOR TAPE TO STOP
  5021   02 00E2D    65700E2D              BIR,7    $
  5022   02 00E2E    6AF01640              BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  5023   02 00E2F    680003B2              B        :TIM            GO TO SEQUENCER
  5024                              *
  5025                              *
  5026                              *
  5027                              *
  5028                              *
  5029                              *                               TST1,35 TAPE CREEP TEST
  5030                              *               ---------------------------------------
  5031                              *
  5032                              *
  5033                              * THIS TEST WILL WRITE ONE RECORD FOLLOWED BY A SET ERASE ORDER AND     *
  5034                              * ANOTHER WRITE ORDER. A SPACE RECORD BACKWARD AND REWRITE SEQUENCE     *
  5035                              * WILL NOW BE REPEATED N TIMES. AFTER READING AND VERIFYING THE DATA    *
  5036                              * OF THE FIRST RECORD, READ THE SECOND RECORD AND COMPUTE THE DELAY     *
  5037                              * BETWEEN THE START OF THE READ ORDER AND THE START OF THE DATA         *
  5038                              * TRANSFER. THE DIRECTION OF THE CREEP WILL BE DETERMINED BY COMPARING  *
  5039                              * THE DELAY TO THE ORIGINAL VALUE.                                      *
  5040                              * THE TOLERANCE IS SET FOR 800 BPI IF 75 IPS.                           *
  5041                              *                                                                      *
  5042                              *
  5043   02 00E30    6AF01577    :TIST35   BAL,15   GETTIME         GET TIMES ON LOOPS
  5044   02 00E31    329020A8              LW,9     =X'0F0F0F0F'    CHECKERBOARD PATTERN
  5045   02 00E32    35901D39              STW,9    :PATID+1
  5046   02 00E33    6AF0164F              BAL,15   SMEARSP         SMEAR SPECIAL PATTERN A
  5047   02 00E34    3280209D              LW,8     =X'3F3F3F3F'
  5048   02 00E35    224FFFFC A            LI,4     -4              PATTERN FOR RECORD B
  5049   02 00E36    3588212D              STW,8    BUFF1+104,4
  5050   02 00E37    65400E36              BIR,4    $-1
  5051   02 00E38    22700018 A            LI,7     24              24 WORDS TO COMPARE
  5052   02 00E39    35701DBA              STW,7    :COMWCNT
  5053   02 00E3A    32F0189C              LW,15    FLGRG           REGULAR PRINTOUT FLAG
  5054   02 00E3B    35F019A7              STW,15   NOPKPRT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          75
  5055    02 00E3C    6AF01638     TIST3502 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5056    02 00E3D    22000BE4              LI,0     DA(WR96B)       WRITE 96 BYTES REC A
  5057    02 00E3E    6AF01CA2              BAL,15   :IOEXEC         EXECUTE TIO,SIO
  5058    02 00E3F    6AF0162F              BAL,15   MYDELAY         WAIT FOR INTERRUPT
  5059    02 00E40    6AF01EC4     TIST3504 BAL,15   :ERRORT         TEST
  5060    02 00E41    00005D84              DATA     BA(TSEQ011)     READY, NO UE, BC=0
  5061    02 00E42    68000E48              B        TIST3505
  5062                             *         ERROR EXIT
  5063    02 00E43    EAF0021B A            BAL,15   *:ERROR         #3501
  5064    02 00E44    00000DAD A            DATA     3501            INCORRECT BITS ON TEST
  5065    02 00E45    EAF0021D A            BAL,15   *:SENSE         CHECK SENSE SWITCH SETTINGS
  5066    02 00E46    2E000000 A            WAIT                     HALT ON ERROR IF SS3 RESET
  5067    02 00E47    68000E3C              B        TIST3502        LOOP ON ERROR
  5068    02 00E48    6AF01638     TIST3505 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5069    02 00E49    22000BCA              LI,0     DA(TSE1)        SET ERASE
  5070    02 00E4A    6AF01CA2              BAL,15   :IOEXEC         TIO, SIO
  5071    02 00E4B    6AF0162F              BAL,15   MYDELAY         WAIT FOR INTERRUPT
  5072    02 00E4C    6AF01638              BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5073    02 00E4D    22000BE1              LI,0     DA(TWCREP)      WRITE RECORD B
  5074    02 00E4E    6AF01CA2              BAL,15   :IOEXEC         TIO,SIO
  5075    02 00E4F    6AF0162F              BAL,15   MYDELAY         DELAY TILL INTERRUPT
  5076    02 00E50    6AF01EC4              BAL,15   :ERRORT         TEST
  5077    02 00E51    00005D84              DATA     BA(TSEQ011)     READY, NO UE, BC=0
  5078    02 00E52    68000E58              B        TIST3508
  5079                             *         ERROR EXIT
  5080    02 00E53    EAF0021B A            BAL,15   *:ERROR         3502
  5081    02 00E54    00000DAE A            DATA     3502            INCORRECT BITS IN TEST
  5082    02 00E55    EAF0021D A            BAL,15   *:SENSE         CHECK SENSE SWITCH
  5083    02 00E56    2E000000 A            WAIT
  5084    02 00E57    68000E3C              B        TIST3502        LOOP ON ERROR
  5085    02 00E58    6AF01638     TIST3508 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5086    02 00E59    22000C08              LI,0     DA(SB16B)       SPACE BKW OVER REC B
  5087    02 00E5A    6AF01CA2              BAL,15   :IOEXEC         TIO,SIO
  5088    02 00E5B    6AF0162F              BAL,15   MYDELAY         DELAY TILL INTERRUPT
  5089    02 00E5C    6AF01638              BAL,15   CLRARM          CLEAR AND ARM INTERzUxT
  5090    02 00E5D    22000C07              LI,0     DA(SB100B)      SPACE BKW OVER REC A
  5091    02 00E5E    6AF01CA2              BAL,15   :IOEXEC         TIO,SIO
  5092    02 00E5F    6AF0162F              BAL,15   MYDELAY         DELAY TILL INTERRUPT
  5093                             *                                  POSITIONED FOR COMPUTING TIME I
  5094    02 00E60    6AF01638              BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5095    02 00E61    22000BF6              LI,0     DA(RF100B)      READ FWD REC A
  5096    02 00E62    6AF01CA2              BAL,15   :IOEXEC         TIO,SIO
  5097    02 00E63    6AF0162F              BAL,15   MYDELAY         DELAY TILL INTERRUPT
  5098    02 00E64    6AF01CE8              BAL,15   :CLEAR          CLEAR READ IN AREA
  5099    02 00E65    6AF01638              BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5100    02 00E66    32A0209D              LW,10    =X'3F3F3F3F'
  5101    02 00E67    22000BF7              LI,0     DA(RF16B)       READ FWD REC B
  5102    02 00E68    22500000 A            LI,5     0               TALLY IN R5
  5103    02 00E69    22400000 A            LI,4     0
  5104    02 00E6A    CCC018B5              SIO,12   *:DEVADDR       READ RECORD B
  5105    02 00E6B    33100005 A            MTW,1    5               TALLY =TALLY+1
  5106    02 00E6C    F1A0207D              CB,10    *BUFF2          INFO IN YET ON READ
  5107    02 00E6D    69300E6B              BNEZ     $-2
  5108    02 00E6E    32C01EA6              LW,12    :INTRECF        WAIT FOR INTERRUPT
  5109    02 00E6F    68300E6E              BCR,3    $-1
  5110    02 00E70    374018D4              MW,4     TIME2           R5 HAS TIME IN US
  5111    02 00E71    22AFFFC0 A            LI,10    -64
  5112    02 00E72    6AF01638     TIST3506 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5113    02 00E73    22000C08              LI,0     DA(SB16B)       SPACE BKW OVER RECORD B
  5114    02 00E74    6AF01CA2              BAL,15   :IOEXEC         EXECUTE TIO,SIO
  5115    02 00E75    6AF0162F              BAL,15   MYDELAY         WAIT FOR INTERRUPT
  5116    02 00E76    6AF01638     TIST3509 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  5117    02 00E77    22000BE1              LI,0     DA(TWCREP)      REWRITE RECORD B
  5118    02 00E78    6AF01CA2              BAL,15   :IOEXEC         EXECUTE TIO,SIO
  5119    02 00E79    6AF0162F              BAL,15   MYDELAY         WAIT FOR INTERRUPT
  5120    02 00E7A    6AF01EC4     TIST3511 BAL,15   :ERRORT         TEST
  5121    02 00E7B    00005D84              DATA     BA(TSEQ011)     READY, BC=00, NO UE
  5122    02 00E7C    68000E7F              B        TIST3512
  5123                             *         ERROR EXIT
  5124    02 00E7D    EAF0021B A            BAL,15   *:ERROR         #3503
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          76
  5125    02 00E7E    00000DAF A            DATA     3503              INCORRECT BITS ON TEST
  5126    02 00E7F    65A00E72      TIST3512 BIR,10   TIST3506
  5127    02 00E80    6AF01638              BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  5128    02 00E81    22000C08              LI,0     DA(SB16B)         SPACE BKW OVER RECORD B
  5129    02 00E82    6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  5130    02 00E83    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  5131    02 00E84    6AF01EC4      TIST3514 BAL,15   :EPRORT           TEST
  5132    02 00E85    00005D84              DATA     BA(TSE0011)       READY, BC=00, NO UE
  5133    02 00E86    68000E89              B        TIST3515
  5134                            *         ERROR EXIT
  5135    02 00E87    EAF0021B A            BAL,15   *:ERROR           #3504
  5136    02 00E88    00000DB0 A            DATA     3504              INCORRECT BITS ON TEST
  5137    02 00E89    6AF01638      TIST3515 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  5138    02 00E8A    22000C07              LI,0     DA(SB10OB)        SPACE BKW OVER RECORD A
  5139    02 00E8B    6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  5140    02 00E8C    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  5141    02 00E8D    6AF01EC4      TIST3517 BAL,15   :ERRORT           TEST
  5142    02 00E8E    00005D84              DATA     BA(TSE0011)       READY, BC=0, NO UE
  5143    02 00E8F    68000E92              B        TIST3518
  5144                            *         ERROR EXIT
  5145    02 00E90    EAF0021B A            BAL,15   *:ERROR           #3505
  5146    02 00E91    00000DB1 A            DATA     3505              INCORRECT BITS ON TEST
  5147    02 00E92    6AF01638      TIST3518 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  5148    02 00E93    6AF01CE8              BAL,15   :CLEAR            CLEAR READ IN BUFFER
  5149    02 00E94    22000BFA              LI,0     DA(RF96B)         READ FWD 96 BYTES REC A
  5150    02 00E95    6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  5151    02 00E96    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  5152    02 00E97    6AF01EC4      TIST3520 BAL,15   :ERRORT
  5153    02 00E98    00005D78              DATA     BA(TSE0010)       READY, NO UE, BC=0, NO INC LENGTH
  5154    02 00E99    68000E9C              B        TIST3521
  5155                            *         ERROR EXIT
  5156    02 00E9A    EAF0021B A            BAL,15   *:ERROR           #3506
  5157    02 00E9B    00000DB2 A            DATA     3506              INCORRECT BITS ON TEST
  5158    02 00E9C    6AF01D47      TIST3521 BAL,15   :COMPARE          COMPARE INFORMATION
  5159    02 00E9D    68000EA0              B        TIST3522
  5160                            *         INFORMATION ERROR
  5161    02 00E9E    EAF0021B A            BAL,15   *:ERROR           #3507
  5162    02 00E9F    00000DB3 A            DATA     3507              INCORRECT INFORMATION
  5163    02 00EA0    6AF01638      TIST3522 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  5164    02 00EA1    22000BF7              LI,0     DA(RF16B)         READ FWD 12 BYTES
  5165    02 00EA2    32A0209D              LW,10    =X'3F3F3F3F'      B PATTERN
  5166    02 00EA3    22800000 A            LI,8     0
  5167    02 00EA4    22900000 A            LI,9     0
  5168    02 00EA5    CCC018B5              SIO,12   *:DEVADDR         INIATE WRITE
  5169    02 00EA6    33100009 A            MTW,1    9                 TALLY =TALLY+1
  5170    02 00EA7    F1A0207D              CB,10    *BUFF2            INFO IN YET
  5171    02 00EA8    69300EA6              BNEZ     $-2
  5172    02 00EA9    378018D4              MW,8     TIME2             R9 HAS TIME IN US
  5173    02 00EAA    35900008 A            STW,9    8                 R8=R9
  5174    02 00EAB    35500006 A            STW,5    6                 R5 = R6
  5175    02 00EAC    38900005 A            SW,9     5                 T2-T1
  5176    02 00EAD    69100EB4              BLZ      $+7
  5177    02 00EAE    2590007A A            SLS,9    -6                TIME/64
  5178    02 00EAF    32C01EA6              LW,12    :INTRECF          WAIT FOR INTERRUPT
  5179    02 00EB0    68300EAF              BCR,3    $-1
  5180    02 00EB1    389018D8              SW,9     STOPDIF           - REVERSE DIFFERENTIAL
  5181    02 00EB2    68300ED0              BEZ      TIST3525          NO CREEP
  5182    02 00EB3    69200EC1              BCS,2    TIST3523          POSITIVE CREEP
  5183    02 00EB4    38600008 A            SW,6     8                 T1-T2
  5184    02 00EB5    69100EB9              BLZ      $+4
  5185    02 00EB6    2560007A A            SLS,6    -6                TIME/64
  5186    02 00EB7    316020A9              CW,6     =X'00000014'      NEGATIVE TOLLERANCE
  5187    02 00EB8    68200ED0              BLE      TIST3525          OK
  5188    02 00EB9    EAF0021B A            BAL,15   *:ERROR           NEGATIVE CREEP PRINTOUT
  5189    02 00EBA    00000DB5 A            DATA     3509
  5190    02 00EBB    32C00006 A            LW,12    6
  5191    02 00EBC    EAF00217 A            BAL,15   *:DECC            CONVERT TO DECIMAL
  5192    02 00EBD    35F01A7D              STW,15   MESNCR+3           STORE
  5193    02 00EBE    EAF0021C A            BAL,15   *:PRINT           NEGATIVE CREEP PRINTOUT
  5194    02 00EBF    00001A7A              DATA     MESNCR
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            77
  5195    02 00EC0    68000ECD              B        TIST3525-3        GO CHECK SENSE SWITCHES
  5196    02 00EC1    319018B3    TIST3523  CW,9     CRPMAX            MAXIMUM
  5197    02 00EC2    69100ED0              BL       TIST3525
  5198                            *         ERROR EXIT FOR TAPE CREEP
  5199    02 00EC3    EAF0021B A  TIST3524  BAL,15   *:ERROR           3508
  5200    02 00EC4    00000DB4 A            DATA     3508              TAPE CREEP ERROR
  5201    02 00EC5    32C00009 A            LW,12    9
  5202    02 00EC6    EAF00217 A            BAL,15   *:DECC            CONVERT TO DECIMAL
  5203    02 00EC7    35F01A73              STW,15   MESTPC+3
  5204    02 00EC8    32C018B3              LW,12    CRPMAX
  5205    02 00EC9    EAF00217 A            BAL,15   *:DECC            CONVERT TO DECIMAL
  5206    02 00ECA    35F01A78              STW,15   MESTPC+8
  5207    02 00ECB    EAF0021C A            BAL,15   *:PRINT           PRINT MESSAGE
  5208    02 00ECC    00001A70              DATA     MESTPC
  5209    02 00ECD    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  5210    02 00ECE    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  5211    02 00ECF    68000E3C              B        TIST3502          RESTART TEST
  5212    02 00ED0    6AF01640    TIST3525  BAL,15   CLRDARM           CLEAR AND DISARM INTERRUPT
  5213    02 00ED1    680003B2              B        :TIM              GO TO SEQUENCER
  5214                            *
  5215                            *
  5216                            *
  5217                            *                                   TSTI,36  NO OPERATION TEST
  5218                            *                                   ----------------------------------
  5219                            *
  5220                            *
  5221    02 00ED2    680003B2    :TIST36   B        :TIM              GO TO SEQUENCER
  5222                            *
  5223                            *
  5224                            *
  5225                            *
  5226                            *
  5227                            *                                   TSTI,37 GAP LENGTH TIMING TEST
  5228                            *                                   ----------------------------------
  5229                            * THIS ROUTINE VERIFIES GAP TIMING AND IS INTENDED AS A SCOPING AID     *
  5230                            * FOR ADJUSTING THE FORWARD AND REVERSE RAMP. THE TEST CAN ONLY BE RUN *
  5231                            * ON A SYSTEM WITH A REAL TIME CLOCK.                                   *
  5232                            * THE TOLERANCE IS SET FOR 800 BPI IF 75 IPS.                           *
  5233                            *                                                                      *
  5234                            *
  5235                            *                                   OPERATOR INTERVENTION REQUIRED
  5236                            *                                   IF SS1 IS SET.
  5237                            *
  5238    02 00ED3    6AF01577    :TIST37   BAL,15   GETTIME           GET TIMES ON LOOPS
  5239    02 00ED4    32F0189C              LW,15    FLGRG             REGULAR PRINTOUT FLAG
  5240    02 00ED5    35F019A7              STW,15   NOPKPRT
  5241    02 00ED6    22AFFFF0 A            LI,10    -16
  5242    02 00ED7    329020AA              LW,9     =X'30303030'      SPEC PATTERN
  5243    02 00ED8    224FFFFC A            LI,4     -4                SMEAR PATTERN
  5244    02 00ED9    3598212D              STW,9    BUFFI+104,4
  5245    02 00EDA    65400ED9              BIR,4    $-1
  5246    02 00EDB    22EFB9B0 A            LI,14    -18000            STOP TAPE
  5247    02 00EDC    65E00EDC              BIR,14   $
  5248                            *                                   START TIME
  5249    02 00EDD    6AF01638    TIST3702  BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  5250    02 00EDE    22000BE1              LI,0     DA(TWCREP)        WRITE 12 BYTES
  5251    02 00EDF    6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  5252    02 00EE0    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  5253    02 00EE1    6AF01EC4    TIST3704  BAL,15   :ERRORT           TEST
  5254    02 00EE2    00005D84              DATA     BA(TSEQ011)       NO UE, READY, BC=0
  5255    02 00EE3    68000EE9              B        TIST3705
  5256                            *         ERROR EXIT
  5257    02 00EE4    EAF0021B A            BAL,15   *:ERROR           #3701
  5258    02 00EE5    00000E75 A            DATA     3701              INCORRECT BITS ON TEST
  5259    02 00EE6    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  5260    02 00EE7    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  5261    02 00EE8    68000EDD              B        TIST3702          LOOP ON ERROR
  5262    02 00EE9    65A00EDB    TIST3705  BIR,10   TIST3702-2        DO 16 TIMES
  5263    02 00EEA    22AFFFF0 A            LI,10    -16
  5264    02 00EEB    6AF01638    TIST3706  BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          78
  5265    02 00EEC    22000C08                LI,0     DA(SB16B)          SPACE BKW OVER RECORD
  5266    02 00EED    6AF01CA2                BAL,15   :IOEXEC            EXECUTE TIO, SIO
  5267    02 00EEE    6AF0162F                BAL,15   MYDELAY            WAIT FOR INTERRUPT
  5268    02 00EEF    6AF01EC4     TIST3708   BAL,15   :ERRORT            TEST
  5269    02 00EF0    00005D84                DATA     BA(TSEQ011)        NO UE, READY, BC=0
  5270    02 00EF1    68000EF4                B        TIST3709
  5271                             *          ERROR EXIT
  5272    02 00EF2    EAF0021B A              BAL,15   *:ERROR            #3702
  5273    02 00EF3    00000E76 A              DATA     3702               INCORRECT BITS ON TEST
  5274    02 00EF4    65A00EEB     TIST3709   BIR,10   TIST3706           DO 16 TIMES
  5275    02 00EF5    326020AA                LW,6     =X'30303030'
  5276    02 00EF6    22AFFFF0 A              LI,10    -16
  5277    02 00EF7    22400000 A              LI,4     0
  5278    02 00EF8    22500000 A              LI,5     0
  5279    02 00EF9    6AF01638     TIST3710   BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  5280    02 00EFA    22EFB9B0 A   TIST3711   LI,14    -18000             STOP TAPE
  5281    02 00EFB    65E00EFB                BIR,14   $
  5282    02 00EFC    22900000 A              LI,9     0                  NO INTERRUPT EXPECTED
  5283    02 00EFD    B590207D                STW,9    *BUFF2             CLEAR AREA
  5284    02 00EFE    22000BF7                LI,0     DA(RF16B)          READ FWD 12 BYTES
  5285    02 00EFF    CCC018B5                SIO,12   *:DEVADDR          SIO
  5286    02 00F00    33100005 A              MTW,1    5                  TALLY =TALLY+1
  5287    02 00F01    F160207D     TIST3712   CB,6     *BUFF2             INFO IN YET
  5288    02 00F02    69300F00                BNE      TIST3712-1
  5289    02 00F03    32C01EA6                LW,12    :INTRECF           WAIT FOR INTERRUPT
  5290    02 00F04    68300F03                BCR,3    $-1
  5291    02 00F05    65A00EF9                BIR,10   TIST3710           DO 16 TIMES
  5292    02 00F06    2550007C A              SLS,5    -4                 R5/16
  5293    02 00F07    374018D4                MW,4     TIME2              R5 HAS TIME IN US
  5294    02 00F08    385018B4                SW,5     WTRT               - WRITE TO READ TIME
  5295    02 00F09    205FFA24 A              AI,5     -1500              - WRITE DELAY TIME
  5296    02 00F0A    355018A7                STW,5    STRTME             START TIME
  5297    02 00F0B    22AFFFF7 A   TIST3714   LI,10    -9                 IRG TIME
  5298    02 00F0C    22E00010 A              LI,14    16                 16 MS TO STOP TAPE
  5299    02 00F0D    6AF01E26                BAL,15   :DELAY             DELAY
  5300    02 00F0E    68000F0F                B        $+1
  5301    02 00F0F    22000BE1     TIST3715   LI,0     DA(TWCREP)         WRITE 12 BYTES
  5302    02 00F10    6AF01638                BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  5303    02 00F11    6AF01CA2                BAL,15   :IOEXEC            EXECUTE TIO, SIO
  5304    02 00F12    6AF0162F                BAL,15   MYDELAY            WAIT FOR INTERRUPT
  5305    02 00F13    6AF01EC4     TIST3716   BAL,15   :ERRORT            TEST
  5306    02 00F14    00005D84                DATA     BA(TSEQ011)        READY, NO UE, BC=0
  5307    02 00F15    68000F1B                B        TIST3717
  5308                             *          ERROR EXIT
  5309    02 00F16    EAF0021B A              BAL,15   *:ERROR            #3703
  5310    02 00F17    00000E77 A              DATA     3703               INCORRECT BITS ON TEST
  5311    02 00F18    EAF0021D A              BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  5312    02 00F19    2E000000 A              WAIT                        HALT ON ERROR IF SS3 RESET
  5313    02 00F1A    68000F0F                B        TIST3715           LOOP ON ERROR
  5314    02 00F1B    65A00F0C     TIST3717   BIR,10   TIST3714+1         LOOP
  5315    02 00F1C    22600000 A              LI,6     0
  5316    02 00F1D    356018AE                STW,6    IRGTM              CLEAR TIME
  5317    02 00F1E    22AFFFF7 A              LI,10    -9
  5318    02 00F1F    6AF01638     TIST3718   BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  5319    02 00F20    22000C08                LI,0     DA(SB16B)          SPACE BKW OVER RECORD
  5320    02 00F21    6AF01CA2                BAL,15   :IOEXEC            EXECUTE TIO, SIO
  5321    02 00F22    6AF0162F                BAL,15   MYDELAY            WAIT FOR INTERRUPT
  5322    02 00F23    6AF01EC4     TIST3719   BAL,15   :ERRORT            TEST
  5323    02 00F24    00005D84                DATA     BA(TSEQ011)        READY, NO UE, BC=0
  5324    02 00F25    68000F28                B        TIST3720
  5325                             *          ERROR EXIT
  5326    02 00F26    EAF0021B A              BAL,15   *:ERROR            #3704
  5327    02 00F27    00000E78 A              DATA     3704               INCORRECT BITS ON TEST
  5328    02 00F28    65A00F1F     TIST3720   BIR,10   TIST3718           LOOP
  5329    02 00F29    6AF01638                BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  5330    02 00F2A    22600000 A              LI.6     0
  5331    02 00F2B    22700000 A              LI,7     0
  5332    02 00F2C    22000C10                LI,0     DA(SF16CC)         SPACE FWD 9 RECORDS USING CC
  5333    02 00F2D    CC4018B5                SIO,4    *:DEVADDR          SIO
  5334    02 00F2E    33100007 A              MTW,1    7                  TALLY =TALLY+1
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          79
  5335    02 00F2F    CDC018B5              TIO,12    *:DEVADDR          WAIT WHILE BUSY
  5336    02 00F30    69C00F2E              BCS,12    $-2
  5337    02 00F31    376018D5              MW,6      TIME3              R7 HAS TIME IN US
  5338    02 00F32    387018A7              SW,7      STRTME             - START TIME
  5339    02 00F33    387018D6              SW,7      CHARTR             - CHARACTER TIME FOR 9 RECORDS
  5340    02 00F34    387018B4              SW,7      WTRT               - WRITE TO READ TIME
  5341    02 00F35    207FFA24 A            AI,7      -1500              - WRITE DELAY TIME
  5342    02 00F36    2570007D A            SLS,7     -3                 TIME/8
  5343    02 00F37    357018AE    TIST3721  STW,7     IRGTM              SAVE IRG TIME
  5344                            *         COMPARE TIMES TO CORRECT TIMES AND PRINTOUT IF INCORRECT
  5345    02 00F38    317018B2              CW,7      IRGMIN             MINIMUM
  5346    02 00F39    69100F3C              BL        $+3
  5347    02 00F3A    317018B1              CW,7      IRGMAX             MAXIMUM
  5348    02 00F3B    69100F65              BL        TIST3726           GO TO END OF TEST
  5349                            *         ERROR EXIT
  5350    02 00F3C    EAF0021B A            BAL,15    *:ERROR            ERROR PRINTOUT
  5351    02 00F3D    00000E79 A            DATA      3705               TIME NOT WITHIN TOLERANCE
  5352    02 00F3E    32C018A7              LW,12     STRTME             START TIME
  5353    02 00F3F    EAF00217 A            BAL,15    *:DECC             CONVERT
  5354    02 00F40    35F01A6D              STW,15    MESSTRT+5          STORE
  5355    02 00F41    EAF00217 A            BAL,15    *:DECC             CONVERT TO DECIMAL
  5356    02 00F42    35F01A6C              STW,15    MESSTRT+4
  5357    02 00F43    32C018AE              LW,12     IRGTM              I R G TIME
  5358    02 00F44    EAF00217 A            BAL,15    *:DECC             CONVERT TO DECIMAL
  5359    02 00F45    35F01A5E              STW,15    MESIRG+4           STORE
  5360    02 00F46    EAF00217 A            BAL,15    *:DECC             CONVERT TO DECIMAL
  5361    02 00F47    35F01A5D              STW,15    MESIRG+3
  5362    02 00F48    32C018B1              LW,12     IRGMAX             IRG MAXIMUM
  5363    02 00F49    EAF00217 A            BAL,15    *:DECC             CONVERT TO DECIMAL
  5364    02 00F4A    35F01A67              STW,15    MESIRG+13          STORE
  5365    02 00F4B    EAF00217 A            BAL,15    *:DECC             CONVERT TO DECIMAL
  5366    02 00F4C    35F01A66              STW,15    MESIRG+12
  5367    02 00F4D    32C018B2              LW,12     IRGMIN             IRG MINIMUM
  5368    02 00F4E    EAF00217 A            BAL,15    *:DECC             CONVERT TO DECIMAL
  5369    02 00F4F    35F01A64              STW,15    MESIRG+10          STORE
  5370    02 00F50    EAF00217 A            BAL,15    *:DECC             CONVERT TO DECIMAL
  5371    02 00F51    35F01A63              STW,15    MESIRG+9
  5372    02 00F52    EAF0021C A            BAL,15    *:PRINT            PRINT MESSAGE
  5373    02 00F53    00001A5A              DATA      MESIRG
  5374    02 00F54    EAF0021C A            BAL,15    *:PRINT
  5375    02 00F55    00001A68              DATA      MESSTRT            START TIME
  5376                            *                                      PRINTOUT START TIME, IRG TIMES
  5377                            *                                      IF SSI SET OPERATOR CAN SCOPE
  5378                            *                                      ------------------------------------
  5379                            *
  5380                            *                                      START/STOP TIMES. 1000 RECORDS
  5381    02 00F56    EAF0021D A            BAL,15    *:SENSE            CHECK SSI AND SS3
  5382    02 00F57    2E000000 A            WAIT
  5383    02 00F58    68000F5A              B         TIST3722           SSI ON
  5384    02 00F59    68000F65              B         TIST3726           BYPASS SCOPING AID FOR START/STOP
  5385    02 00F5A    6AF0160C    TIST3722  BAL,15    RWTLP              REWIND TO LOAD POINT
  5386    02 00F5B    226FFC18 A            LI,6      -1000
  5387    02 00F5C    6AF01638    TIST3723  BAL,15    CLRARM             CLEAR AND ARM INTERRUPT
  5388    02 00F5D    22000BDF              LI,0      DA(TWI6B)          WRITE 16 BYTES
  5389    02 00F5E    6AF01CA2              BAL,15    :IOEXEC            EXECUTE TIO,SIO
  5390    02 00F5F    6AF0162F              BAL,15    MYDELAY            WAIT FOR INTERRUPT
  5391    02 00F60    65600F5C    TIST3724  BIR,6     TIST3723
  5392    02 00F61    6AF0160C    TIST3725  BAL,15    RWTLP              REWIND TO LOAD POINT
  5393    02 00F62    EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
  5394    02 00F63    2E000000 A            WAIT
  5395    02 00F64    68000ED4              B         :TIST37+1          RESTART TEST
  5396    02 00F65    6AF01640    TIST3726  BAL,15    CLRDARM            CLEAR AND DISARM INTERRUPT
  5397    02 00F66    680003B2              B         :TIM               GO TO SEQUENCER
  5398                            *
  5399                            *                                      TST1,38 END OF TAPE TEST
  5400                            *                                      ------------------------------------
  5401                            *
  5402                            *
  5403                            * THIS TEST WILL CONTINUE TO WRITE N RECORDS UNTIL THE END OF TAPE     *
  5404                            * INDICATOR IS DETECTED. ONE ADDITIONAL RECORD WILL BE RECORDED AND    *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          80
  5405                          * THE EOT CONDITION WILL BE VERIFIED AGAIN. TWO RECORDS WILL BE SPACED *
  5406                          * IN THE BACKWARD DIRECTION. AFTER THE SECOND SPACE, THE EOT          *
  5407                          * INDICATOR SHOULD BE RESET. THE TAPE WILL BE REWOUND.                *
  5408                          *                                                                    *
  5409                          *
  5410   02 00F67   6AF0160C    :TIST38  BAL,15   RWTLP            REWIND TO LOAD POINT
  5411   02 00F68   6AF01638    TIST3802 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5412   02 00F69   22000BE0             LI,0     DA(TWI000)       WRITE RECORD FROM BUFFER 1
  5413   02 00F6A   6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO, SIO
  5414   02 00F6B   6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5415   02 00F6C   CEA018B5    TIST3803 TDV,10   *:DEVADDR        TDV
  5416   02 00F6D   31B02089             CW,11    =X'02000000'     EOT SET
  5417   02 00F6E   69400F77             BCS,4    TIST3804
  5418   02 00F6F   CDA018B5             TIO,10   *:DEVADDR        TIO
  5419   02 00F70   31B02092             CW,11    =X'08000000'     UE SET
  5420   02 00F71   68400F68             BCR,4    TIST3802         LOOP TILL EOT
  5421                          *        ERROR EXIT - ERROR NOT EOT
  5422   02 00F72   EAF0021B A           BAL,15   *:ERROR          #3801
  5423   02 00F73   00000ED9 A           DATA     3801             INCORRECT BITS ON TEST
  5424   02 00F74   EAF0021D A           BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  5425   02 00F75   2E000000 A           WAIT                      HALT ON ERROR IF SS3 RESET
  5426   02 00F76   68000F68             B        TIST3802         LOOP ON ERROR
  5427   02 00F77   6AF01638    TIST3804 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5428   02 00F78   22F00000 A           LI,15    0
  5429   02 00F79   35F018F5             STW,15   SPFLAG           CLEAR ERROR FLAG
  5430   02 00F7A   22000BE0             LI,0     DA(TWI000)       WRITE RECORD BEYOND EOT
  5431   02 00F7B   6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO,SIO
  5432   02 00F7C   6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5433   02 00F7D   6AF01EC4    TIST3805 BAL,15   :ERRORT          TEST
  5434   02 00F7E   00005DBC             DATA     BA(TSEQ020)      EOT SET
  5435   02 00F7F   68000F83             B        TIST3806
  5436                          *        ERROR EXIT EOT SHOULD BE SET
  5437   02 00F80   EAF0021B A           BAL,15   *:ERROR          #3802
  5438   02 00F81   00000EDA A           DATA     3802             INCORRECT BITS ON TEST
  5439   02 00F82   331018F5             MTW,1    SPFLAG           ERROR +1
  5440   02 00F83   6AF01638    TIST3806 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5441   02 00F84   22000C19             LI,0     DA(SPBRAND)      SPACE BKW
  5442   02 00F85   6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO, SIO
  5443   02 00F86   6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5444   02 00F87   6AF01EC4             BAL,15   :ERRORT          TEST
  5445   02 00F88   00005DBC             DATA     BA(TSEQ020)      EOT SET
  5446   02 00F89   68000F8D             B        TIST3807
  5447                          *        ERROR EXIT EOT SHOULD BE SET
  5448   02 00F8A   EAF0021B A           BAL,15   *:ERROR          #3803
  5449   02 00F8B   00000EDB A           DATA     3803             INCORRECT BITS ON TEST
  5450   02 00F8C   331018F5             MTW,1    SPFLAG           ERROR FLAG +1
  5451   02 00F8D   6AF01638    TIST3807 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5452   02 00F8E   22000C19             LI,0     DA(SPBRAND)      SPACE BKW
  5453   02 00F8F   6AF01CA2             BAL,15   :IOEXEC          EXECUTE TIO, SIO
  5454   02 00F90   6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5455   02 00F91   6AF01EC4    TIST3808 BAL,15   :ERRORT          TEST
  5456   02 00F92   00005DC0             DATA     BA(TSEQ021)      EOT RESET
  5457   02 00F93   68000F97             B        TIST3808+6
  5458                          *        ERROR EXIT - EOT NOT RESET
  5459   02 00F94   EAF0021B A           BAL,15   *:ERROR          #3804
  5460   02 00F95   00000EDC A           DATA     3804             INCORRECT BITS ON TEST
  5461   02 00F96   331018F5             MTW,1    SPFLAG           ERROR FLAG +1
  5462   02 00F97   32F018F5             LW,15    SPFLAG
  5463   02 00F98   68300FA4             BEZ      TIST3809
  5464   02 00F99   EAF0021D A           BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  5465   02 00F9A   2E000000 A           WAIT                      HALT ON ERROR IF SS3 RESET
  5466   02 00F9B   68000F9D             B        $+2              LOOP ON ERROR
  5467   02 00F9C   68000FA4             B        TIST3809         CONTINUE
  5468   02 00F9D   22BFFFEC A           LI,11    -20              SPACE BACKWARD 20 RECORDS FOR RETRY
  5469   02 00F9E   6AF01638             BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5470   02 00F9F   22000C19             LI,0     DA(SPBRAND)      SPACE BKW
  5471   02 00FA0   6AF01CA2             BAL,15   :IOEXEC          TIO, SIO
  5472   02 00FA1   6AF0162F             BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5473   02 00FA2   65B00F9E             BIR,11   $-4
  5474   02 00FA3   68000F68             B        TIST3802         GO RETRY EOT TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          81
  5475   02 00FA4    6AF0160C      TIST3809 BAL,15   RWTLP            REWIND TO LOAD POINT
  5476   02 00FA5    6AF01640               BAL,15   CLRDARM          CLEAR AND DISARM INTERRUPT
  5477   02 00FA6    680003B2               B        :TIM             GO TO SEQUENCER
  5478                                    *
  5479                                    *
  5480                                    *                         TST1,39 MO OPERATION TEST
  5481                                    *                         ------------------------------------
  5482                                    *                                                            *
  5483                                    *                                                            *
  5484   02 00FA7    680003B2      :TIST39  B        :TIM             GO TO SEQUENCER
  5485                                    *
  5486                                    *
  5487                                    *
  5488                                    *                         TST1,40 OPERATOR CONTROL PANEL TEST
  5489                                    *                         ------------------------------------
  5490                                    * THIS TEST WILL CHECK EVERY SWITCH ON THE OPERATOR CONTROL PANEL IN   *
  5491                                    * THE SEQUENCE SPECIFIED BY THE PROGRAM AND VERIFY THE WRITE PROTECT   *
  5492                                    * FEATURE                                                            *
  5493                                    *                                                                   *
  5494                                    *                         OPERATOR INTERVENTION REQUIRED
  5495   02 00FA8    229FFFF8 A    :TIST40  LI,9      -8
  5496   02 00FA9    6AF01651               BAL,15   SMEARPTR         SMEAR PATTERN AND SET UP COMPARE
  5497   02 00FAA    32F0189C               LW,15    FLGRG            REGULAR PRINTOUT FLAG
  5498   02 00FAB    35F019A7               STW,15   NOPKPRT
  5499   02 00FAC    328018B5               LW,8     :DEVADDR         SAVE DEVICE ADDRESS
  5500   02 00FAD    22700018 A             LI,7     24               24 WORDS TO COMPARE
  5501   02 00FAE    35701DBA               STW,7    :COMWCNT
  5502   02 00FAF    32500008 A             LW,5     8
  5503   02 00FB0    4B5020AB               AND,5    =X'0000FFF0'
  5504   02 00FB1    355018B5      TIST4002 STW,5    :DEVADDR         CHANGE DEVICE DESIGNATION
  5505   02 00FB2    32C00005 A             LW,12    5
  5506   02 00FB3    EAF00218 A             BAL,15   *:HEXC           CONVERT FOR MESSAGE
  5507   02 00FB4    35F01AA6               STW,15   OPMESG7+4
  5508   02 00FB5    EAF0021C A             BAL,15   *:PRINT          PRINT MESSAGE
  5509   02 00FB6    0000FAA2               DATA     OPMESG7
  5510                                    *        MESSAGE TO OPERATOR TO DESIGNATE UNIT 0(1,2,3,4,5,6,7)
  5511   02 00FB7    2E000000 A             WAIT
  5512   02 00FB8    6AF01638               BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5513   02 00FB9    22000BE4               LI,0     DA(WR96B)        WRITE 96 BYTES DEV 0,1,2,3,4,5,6,7
  5514   02 00FBA    6AF01CA2               BAL,15   :IOEXEC          EXECUTE TIO, SIO
  5515   02 00FBB    6AF0162F               BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5516   02 00FBC    6AF01EC4      TIST4003 BAL,15   :ERRORT          TEST
  5517   02 00FBD    00005D84               DATA     BA(TSEQ011)      NO UE, BC=0, READY
  5518   02 00FBE    68000FC4               B        TIST4004
  5519                                    *        ERROR EXIT
  5520   02 00FBF    EAF0021B A             BAL,15   *:ERROR          #4001
  5521   02 00FC0    00000FA1 A             DATA     4001             INCORRECT BITS ON TEST
  5522   02 00FC1    EAF0021D A             BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  5523   02 00FC2    2E000000 A             WAIT                      HALT ON ERROR IF SS3 RESET
  5524   02 00FC3    68000FB8               B        TIST4003-4       LOOP ON ERROR
  5525   02 00FC4    6AF01638      TIST4004 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5526   02 00FC5    6AF01CE8               BAL,15   :CLEAR           CLEAR READ IN BUFFER
  5527   02 00FC6    22000C19               LI,0     DA(SPBRAND)      SPACE BKW
  5528   02 00FC7    6AF01CA2               BAL,15   :IOEXEC          EXECUTE TIO, SIO
  5529   02 00FC8    6AF0162F               BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5530   02 00FC9    6AF01EC4      TIST4005 BAL,15   :ERRORT          TEST
  5531   02 00FCA    00005D84               DATA     BA(TSEQ011)      READY AND NO UE
  5532   02 00FCB    68000FD1               B        TIST4007
  5533                                    *        ERROR EXIT
  5534   02 00FCC    EAF0021B A             BAL,15   *:ERROR          #4002
  5535   02 00FCD    00000FA2 A             DATA     4002             INCORRECT BITS ON TEST
  5536   02 00FCE    EAF0021D A             BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  5537   02 00FCF    2E000000 A             WAIT                      HALT ON ERROR IF SS3 RESET
  5538   02 00FD0    68000FB8               B        TIST4003-4       LOOP ON ERROR
  5539   02 00FD1    6AF01638      TIST4007 BAL,15   CLRARM           CLEAR AND ARM INTERRUPT
  5540   02 00FD2    6AF01CE8               BAL,15   :CLEAR           CLEAR READ IN BUFFER
  5541   02 00FD3    22000BFA               LI,0     DA(RF96B)        READ FWD 96 BYTES
  5542   02 00FD4    6AF01CA2               BAL,15   :IOEXEC          EXECUTE TIO, SIO
  5543   02 00FD5    6AF0162F               BAL,15   MYDELAY          WAIT FOR INTERRUPT
  5544   02 00FD6    6AF01EC4      TIST4008 BAL,15   :ERRORT          TEST
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          82
  5545   02 00FD7    00005D78              DATA     BA(TSE0010)       NO UE, BC=0, READY, NO INC LENGTH
  5546   02 00FD8    68000FDE              B        TIST4009
  5547                                *     ERROR EXIT
  5548   02 00FD9    EAF0021B A            BAL,15   *:ERROR           #4004
  5549   02 00FDA    00000FA4 A            DATA     4004              INCORRECT BITS ON TEST
  5550   02 00FDB    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  5551   02 00FDC    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  5552   02 00FDD    68000FDE              B        $+1               CANNOT LOOP ON THIS ERROR
  5553   02 00FDE    6AF01D47     TIST4009 BAL,15   :COMPARE          COMPARE
  5554   02 00FDF    68000FE5              B        TIST4010
  5555                                *     INFORMATION ERROR
  5556   02 00FE0    EAF0021B A            BAL,15   *:ERROR           #4005
  5557   02 00FE1    00000FA5 A            DATA     4005              INCORRECT INFORMATION
  5558   02 00FE2    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  5559   02 00FE3    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  5560   02 00FE4    68000FB8              B        TIST4003-4        LOOP ON ERROR
  5561   02 00FE5    33100005 A   TIST4010 MTW,1    5
  5562   02 00FE6    32700005 A            LW,7     5
  5563   02 00FE7    4B7020AC              AND,7    =X'0000000F'
  5564   02 00FE8    21700007 A            CI,7     7                 LAST DEVICE ADDRESS USED
  5565   02 00FE9    68200FB1              BLE      TIST4002
  5566   02 00FEA    358018B5              STW,8    :DEVADDR          RESTORE UNIT DESIGNATION
  5567                                *     MESSAGE TO OPERATOR TO REMOVE WRITE RING MAKE CORRECT UNIT
  5568   02 00FEB    EAF0021C A            BAL,15   *:PRINT           MESSAGE TO OPERATOR
  5569   02 00FEC    00001A50              DATA     OPMESG6
  5570   02 00FED    2E000000 A            WAIT                       WAIT FOR OPERATOR
  5571   02 00FEE    6AF01638     TIST4011 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  5572   02 00FEF    22000BD8              LI,0     DA(TW100B)        WRITE 100 BYTES
  5573   02 00FF0    6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO, SIO
  5574   02 00FF1    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  5575   02 00FF2    6AF01EC4     TIST4012 BAL,15   :ERRORT           TEST
  5576   02 00FF3    00005DE0              DATA     BA(TSE0026)       READY,UE, WRITE PROTECT
  5577   02 00FF4    68000FFA              B        TIST4013
  5578                                *     ERROR EXIT
  5579   02 00FF5    EAF0021B A            BAL,15   *:ERROR           #4006
  5580   02 00FF6    00000FA6 A            DATA     4006              INCORRECT BITS ON TEST
  5581   02 00FF7    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  5582   02 00FF8    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  5583   02 00FF9    68000FEB              B        TIST4011-3        LOOP ON ERROR
  5584   02 00FFA    6AF01638     TIST4013 BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  5585   02 00FFB    22000BD5              LI,0     DA(TWTM3)         WRITE TAPE MARK CE AND UE
  5586   02 00FFC    6AF01CA2              BAL,15   :IOEXEC           EXECUTE TIO,SIO
  5587   02 00FFD    6AF0162F              BAL,15   MYDELAY           WAIT FOR INTERRUPT
  5588   02 00FFE    6AF01EC4     TIST4014 BAL,15   :ERRORT           TEST
  5589   02 00FFF    00005DE0              DATA     BA(TSE0026)       READY, UE, WRITE PROTECT
  5590   02 01000    68001006              B        TIST4015
  5591                                *     ERROR EXIT
  5592   02 01001    EAF0021B A            BAL,15   *:ERROR           #4007
  5593   02 01002    00000FA7 A            DATA     4007              INCORRECT BITS ON TEST
  5594   02 01003    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  5595   02 01004    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  5596   02 01005    68000FFA              B        TIST4013          LOOP ON ERROR
  5597   02 01006    EAF0021C A   TIST4015 BAL,15   *:PRINT           MESSAGE TO OPERATOR
  5598   02 01007    00001A2A              DATA     OPMESG5
  5599                                *     MESSAGE TO OPERATOR  RESET, ATTENTION, START TO GENERATE INT.
  5600   02 01008    2E000000 A            WAIT                       WAIT FOR OPERATOR
  5601   02 01009    22E0012C A            LI,14    300               300 MS
  5602   02 0100A    6AF01E26              BAL,15   :DELAY            DELAY
  5603   02 0100B    68001011              B        TIST4016
  5604                                *     ERROR EXIT NO INTERRUPT RECIEVED
  5605   02 0100C    EAF0021B A            BAL,15   *:ERROR           #4008
  5606   02 0100D    00000FA8 A            DATA     4008              TIMEOUT ON SIO
  5607   02 0100E    EAF0021D A            BAL,15   *:SENSE           CHECK SENSE SWITCH SETTINGS
  5608   02 0100F    2E000000 A            WAIT                       HALT ON ERROR IF SS3 RESET
  5609   02 01010    68001006              B        TIST4015          LOOP ON ERROR
  5610   02 01011    EAF0021C A   TIST4016 BAL,15   *:PRINT           MESSAGE TO OPERATOR
  5611   02 01012    00001A1C              DATA     OPMESG3
  5612                                *     MESSAGE FOR OPERATOR TO MAKE UNIT READY, WRITE RING, UNIT OK
  5613   02 01013    2E000000 A            WAIT                       WAIT FOR OPERATOR
  5614   02 01014    6AF01638              BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          83
 5615    02 01015   22000C1B              LI,0      DA(TRWOF)          REWIND AND PUT OFFLINE (MANUAL)
 5616    02 01016   6AF01CA2              BAL,15    :IOEXEC            EXECUTE TIO, SIO
 5617    02 01017   6AF0162F              BAL,15    MYDELAY            WAIT FOR INTERRUPT
 5618    02 01018   6AF01EC4   TIST4017   BAL,15    :ERRORT            TEST
 5619    02 01019   00005DE8              DATA      BA(TSEQ027)        DEVICE MANUAL, CONTROLLER READY
 5620    02 0101A   68001020              B         TIST4018
 5621                          *           ERROR EXIT
 5622    02 0101B   EAF0021B A            BAL,15    *:ERROR            #4009
 5623    02 0101C   00000FA9 A            DATA      4009               INCORRECT BITS ON TEST
 5624    02 0101D   EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
 5625    02 0101E   2E000000 A            WAIT                         HALT ON ERROR IF SS3 RESET
 5626    02 0101F   68001014              B         TIST4017+4         LOOP ON ERROR
 5627    02 01020   EAF0021C A   TIST4018 BAL,15    *:PRINT            MESSAGE TO OPERATOR
 5628    02 01021   00001A24              DATA      OPMESG4
 5629                          *           MESSAGE TO OPERATOR TO PUT DEVICE AUTOMATIC
 5630    02 01022   2E000000 A            WAIT                         WAIT FOR OPERATOR
 5631    02 01023   6AF01EC4              BAL,15    :ERRORT            TEST
 5632    02 01024   00005D58              DATA      BA(TSEQ005)        LOAD POINT
 5633    02 01025   6800102B              B         TIST4019
 5634                          *           ERROR EXIT
 5635    02 01026   EAF0021B A            BAL,15    *:ERROR            #4010
 5636    02 01027   00000FAA A            DATA      4010               INCORRECT BITS ON TEST
 5637    02 01028   EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
 5638    02 01029   2E000000 A            WAIT                         HALT ON ERROR IF SS3 RESET
 5639    02 0102A   68001020              B         TIST4018
 5640                          *                                      DENSITY DIAL TEST
 5641    02 0102B   31101891    TIST4019  CW,1      FL75IPS            75 IPS
 5642    02 0102C   69301087              BNE       TIST4028
 5643    02 0102D   22E01A44              LI,14     ERMSG1
 5644    02 0102E   35E0104F              STW,14    TIST4022
 5645    02 0102F   311019CE              CW,1      MODEFLAG           PACKED FLAG SET
 5646    02 01030   68301033              BE        $+3
 5647    02 01031   22E019B3              LI,14     TOL8001
 5648    02 01032   68001034              B         $+2
 5649    02 01033   22E019AF              LI,14     TOL800             SET UP TOLERANCE
 5650    02 01034   55E21048              STH,14    TIST4021,1
 5651    02 01035   32E019AC              LW,14     OPP1               SET UP MESSAGE
 5652    02 01036   35E01038              STW,14    $+2
 5653    02 01037   EAF0021C A   TIST4020 BAL,15    *:PRINT
 5654    02 01038   00001A32              DATA      OPMESGA
 5655    02 01039   2E000000 A            WAIT
 5656    02 0103A   32E018A1              LW,14     CLOCK
 5657    02 0103B   35E00055 A            STW,14    X'55'              CHANGE CLOCK INTERRUPT.
 5658    02 0103C   6AF01638              BAL,15    CLRARM             CLEAR AND ARM INTERRUPT
 5659    02 0103D   22000BE0              LI,0      DA(TW1000)         WRITE 1000 BYTES
 5660    02 0103E   22F01040 A            LI,15     X'1040'            ARM AND ENABLE CLOCK
 5661    02 0103F   6DF01200 A            WD,15     X'1200'
 5662    02 01040   22800000 A            LI,8      0
 5663    02 01041   CCA018B5              SIO,10    *:DEVADDR          SIO
 5664    02 01042   46700008 A            XW,7      8
 5665    02 01043   32F01EA6              LW,15     :INTRECF           INTERRUPT FLAG
 5666    02 01044   68301043              BCR,3     $-1
 5667    02 01045   46800007 A            XW,8      7                  R8 HAS TALLY
 5668    02 01046   22F01040 A            LI,15     X'1040'            DISARM INTERRUPT
 5669    02 01047   6DF01100 A            WD,15     X'1100'
 5670    02 01048   318019AF    TIST4021  CW,8      TOL800             800,556,200 TOLERANCE
 5671    02 01049   6920104C              BG        TIST4022-3         ERROR
 5672    02 0104A   81821048              CW,8      *TIST4021,1
 5673    02 0104B   68101053              BGE       TIST4023
 5674                          *           ERROR EXIT
 5675    02 0104C   EAF0021B A            BAL,15    *:ERROR            4013
 5676    02 0104D   00000FAD A            DATA      4013               NOT CORRECT DENSITY
 5677    02 0104E   EAF0021C A            BAL,15    *:PRINT
 5678    02 0104F   00001A44    TIST4022  DATA      ERMSG1
 5679    02 01050   EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
 5680    02 01051   2E000000 A            WAIT
 5681    02 01052   68001037              B         TIST4020           LOOP ON ERROR
 5682    02 01053   32801E43    TIST4023  LW,8      :DELMTW            RESTORE CLOCK
 5683    02 01054   35800055 A            STW,8     X'55'
 5684    02 01055   6AF01638              BAL,15    CLRARM             CLEAR AND ARM INTERRUPT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          84
  5685    02 01056    22000BE4              LI,0      DA(WR96B)          WRITE 96 BYTES
  5686    02 01057    6AF01CA2              BAL,15    :IOEXEC            TIO,SIO
  5687    02 01058    6AF0162F              BAL,15    MYDELAY            WAIT FOR INTERRUPT
  5688    02 01059    6AF01EC4              BAL,15    :ERRORT            TEST
  5689    02 0105A    00005D84              DATA      BA(TSEQ011)        NO UE, BC=0, READY
  5690    02 0105B    68001061              B         TIST4024
  5691                                    *           ERROR EXIT
  5692    02 0105C    EAF0021B A            BAL,15    *:ERROR            4014
  5693    02 0105D    00000FAE A            DATA      4014               INCORRECT BITS IN TEST
  5694    02 0105E    EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
  5695    02 0105F    2E000000 A            WAIT
  5696    02 01060    68001055              B         TIST4023+2
  5697    02 01061    6AF01638    TIST4024  BAL,15    CLRARM             CLEAR AND ARM INTERRUPT
  5698    02 01062    22000C19              LI,0      DA(SPBRAND)        SPACE BKW
  5699    02 01063    6AF01CA2              BAL,15    :IOEXEC            TIO,SIO
  5700    02 01064    6AF0162F              BAL,15    MYDELAY            WAIT FOR INTERRUPT
  5701    02 01065    6AF01EC4              BAL,15    :ERRORT            TEST
  5702    02 01066    00005D84              DATA      BA(TSEQ011)        READY AND NO UE
  5703    02 01067    6800106D              B         TIST4025
  5704                                    *           ERROR EXIT
  5705    02 01068    EAF0021B A            BAL,15    *:ERROR            4015
  5706    02 01069    00000FAF A            DATA      4015               INCORRECT BITS IN TEST
  5707    02 0106A    EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
  5708    02 0106B    2E000000 A            WAIT
  5709    02 0106C    68001055              B         TIST4023+2         LOOP ON ERROR
  5710    02 0106D    6AF01CE8    TIST4025  BAL,15    :CLEAR             CLEARAREA
  5711    02 0106E    6AF01638              BAL,15    CLRARM             CLEAR AND ARM INTERRUPT
  5712    02 0106F    22000BFA              LI,0      DA(RF96B)          READ FWD 96 BYTES
  5713    02 01070    6AF01CA2              BAL,15    :IOEXEC            TIO,SIO
  5714    02 01071    6AF0162F              BAL,15    MYDELAY            WAIT FOR INTERRUPT
  5715    02 01072    6AF01EC4              BAL,15    :ERRORT            TEST
  5716    02 01073    00005D78              DATA      BA(TSEQ010)        NO UE, BC=0, NO INC LENGTH
  5717    02 01074    6800107A              B         TIST4026
  5718                                    *           ERROR EXIT
  5719    02 01075    EAF0021B A            BAL,15    *:ERROR            4016
  5720    02 01076    00000FB0 A            DATA      4016               INCORRECT BITS IN TEST
  5721    02 01077    EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
  5722    02 01078    2E000000 A            WAIT
  5723    02 01079    6800107A              B         $+1                CANT LOOP IN TEST
  5724    02 0107A    6AF01D47    TIST4026  BAL,15    :COMPARE           COMPARE INFORMATION
  5725    02 0107B    68001081              B         TIST4027
  5726                                    *           INFORMATION ERROR
  5727    02 0107C    EAF0021B A            BAL,15    *:ERROR            4017
  5728    02 0107D    00000FB1 A            DATA      4017               INFORMATION ERROR
  5729    02 0107E    EAF0021D A            BAL,15    *:SENSE            CHECK SENSE SWITCH SETTINGS
  5730    02 0107F    2E000000 A            WAIT
  5731    02 01080    68001055              B         TIST4023+2         LOOP ON ERROR
  5732    02 01081    33601038    TIST4027  MTW,6     TIST4020+1         CHANGE MESSAGE
  5733    02 01082    3340104F              MTW,4     TIST4022
  5734    02 01083    33101048              MTW,1     TIST4021           CHANGE TOLERANCE
  5735    02 01084    22901A50              LI,9      ERMSG3+4           DO 200, 556, 800 BPI
  5736    02 01085    5192104F              CH,9      TIST4022,1
  5737    02 01086    69201037              BG        TIST4020
  5738    02 01087    6AF01640    TIST4028  BAL,15    CLRDARM            CLEAR AND DISARM INTERRUPT
  5739    02 01088    680003B2              B         :TIM               GO TO SEQUENCER
  5740                                    *
  5741                                    *                            TST1,41 NO OPERATION TEST
  5742                                    *                            ----------------------------------
  5743                                    *
  5744                                    *
  5745    02 01089    680003B2    :TIST41   B         :TIM               GO TO SEQUENCER
  5746                                    *
  5747                                    *
  5748                                    *
  5749                                    *
  5750                                    *                            TST2 RANDOM EXERCISER
  5751                                    *                            ----------------------------------
  5752                                    *       THIS TEST PROVIDES A MEANS OF OPERATING A MAGNETIC*
  5753                                    *       TAPE SYSTEM WITH PSEUDO-RANDOM OPERATION, ORDER   *
  5754                                    *       SEQUENCE, DATA PATTERN, I/O AREA, TIME DELAY, AND *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          85
  5755                    *                    RECORD SIZE FOR THE PURPOSE OF DETECTING INTERMIT-*
. 5756                    *                    TENT FAILURES AND EXERCISING ALL TAPE UNITS.      *
  5757                    *                                                                      *
  5758                    *                    THE RANDOM EXERCISER TEST WILL REPORT ERRORS AS   *
  5759                    *                    THEY OCCUR, BUT ONLY AS TO THE FUNCTION THAT      *
  5760                    *                    FAILED. NO ERROR LOOPING IS PROVIDED EXCEPT FOR   *
  5761                    *                    LIMITED RETRIES.                                  *
  5762                    *                                                                      *
  5763                    *                              D1 =NUMBER OF CYCLES, SET TO 1000 IF 0. *
  5764                    *                              D2 =NUMBER OF ERROR RETRIES.            *
  5765                    *                                                                      *
  5766                    *  FROM THE RANDOM SEED THE FOLLOWING MASKS ARE USED TO GET TYPE OF    *
  5767                    *  OPERATION, WORD SIZE OF RECORD, AND TIME DELAY IN MILLISECONDS      *
  5768                    *        X'00003FF0' TO GET RANDOM RECORD WORD SIZE                    *
  5769                    *        X'001F0000' TO GET RANDOM TIME DELAY IN MILLISECONDS          *
  5770                    *        X'0000000F' TO GET RANDOM OPERATION SET                       *
  5771                    *                 0  WRITE,WRITE,WRITE,WRITE,WRITE                     *
  5772                    *                 1  WRITE,WRITE,WRITE,WRITE,SPACE BKW                 *
  5773                    *                 2  WRITE,WRITE,WRITE,SPACE BKW,SPACE BKW             *
  5774                    *                 3  WRITE,WRITE,WRITE,SPACE BKW,READ FWD              *
  5775                    *                 4  WRITE,WRITE,SPACE BKW,READ FWD,SPACE BKW          *
  5776                    *                 5  WRITE,WRITE,SPACE BKW,SPACE BKW,READ FWD          *
  5777                    *                 6  WRITE,WRITE,SPACE BKW,SPACE BKW,SPACE FWD         *
  5778                    *                 7  WRITE,SPACE BKW,READ FWD,WRITE,WRITE              *
  5779                    *                 8  WRITE,SPACE BKW,READ FWD,WRITE,SPACE BKW          *
  5780                    *                 9  WRITE,SPACE BKW,WRITE,SPACE BKW,READ FWD          *
  5781                    *                 A  WRITE,SPACE BKW,READ FWD,SPACE BKW,WRITE          *
  5782                    *                 B  WRITE,SPACE BKW,READ FWD,SPACE BKW,READ FWD       *
  5783                    *                 C  WRITE,SPACE BKW,SPACE FWD,WRITE,WRITE             *
  5784                    *                 D  WRITE,SPACE BKW,WRITE,SPACE BKW,SPACE FWD         *
  5785                    *                 E  WRITE,SPACE BKW,READ FWD,SPACE BKW,READ FWD       *
  5786                    *                 F  WRITE,SPACE BKW,SPACE FWD,SPACE BKW,READ FWD      *
  5787                    *                                                                      *
  5788                    *                                                                      *
  5789  02 0108A  32C020AD      T2RE     LW,12    =X'12B9B0A1'      M1
  5790  02 0108B  32D020AE               LW,13    =X'1033C4D7'      M2
  5791  02 0108C  32E020AF               LW,14    =X'544B2FBA'      SEED
  5792  02 0108D  6AF01CD7               BAL,15   :RANDOMY          1ST RANDOM SEED ALWAYS THE SAME
  5793  02 0108E  226010C6               LI,6     T2RE02            SET UP EOT
  5794  02 0108F  5562120F               STH,6    T2RE06C,1
  5795  02 01090  22600000 A            LI,6     0                 CLEAR TALLY
  5796  02 01091  356018F3               STW,6    NZFLAG            SET RE FLAG
  5797  02 01092  35101885               STW,1    LOOPTLY           SET FIRST LOOP TO 1
  5798  02 01093  3560189E               STW,6    REWONLY           RESET FLAG TO REWIND UNITS
  5799  02 01094  227FFFE0 A            LI,7     -32
  5800  02 01095  356E1884               STW,6    TWTALLY+32,7      CLEAR TALLY
  5801  02 01096  65701095               BIR,7    $-1
  5802  02 01097  32F0189C               LW,15    FLGRG             REGULAR PRINTOUT FLAG
  5803  02 01098  35F019A7               STW,15   NOPKPRT
  5804  02 01099  6800109B               B        T2RE01+1
  5805  02 0109A  6AF01CDA      T2RE01   BAL,15   :RANDOMX          RANDOM SEED RETURNS IN R14
  5806  02 0109B  35E018A8               STW,14   SAVESEED          SAVE SEED FOR NEXT PASS
  5807  02 0109C  35E0000D A            STW,14   13                SEED IN R14 AND R13
  5808  02 0109D  4BD020AC      T2RE01A  AND,13   =X'0000000F'      GET RANDOM OPERATION SET
  5809  02 0109E  35D01889               STW,13   OPFLAG
  5810  02 0109F  35E0000D A            STW,14   13
  5811  02 010A0  25D0007C A            SLS,13   -4
  5812  02 010A1  4BD020B0               AND,13   =X'000003FF'      GET RANDOM WORD SIZE
  5813  02 010A2  693010A4               BNEZ     T2RE01B
  5814  02 010A3  20D00001 A            AI,13    1                 DO AT LEAST 1 WORD
  5815  02 010A4  35D018A9      T2RE01B  STW,13   REWORDS
  5816  02 010A5  35D01DBA               STW,13   :COMWCNT          COMPARE WORD COUNT
  5817  02 010A6  35D01CF4               STW,13   :CLRSIZE          CLEAR BUFFER WORD COUNT
  5818  02 010A7  35D01D3B               STW,13   :PATWC            SPREAD PATTERN SIZE
  5819  02 010A8  25D00002 A            SLS,13   2                 GET BYTE COUNT
  5820  02 010A9  55D217C5               STH,13   WRRAND+1,1        WRITE
  5821  02 010AA  55D217F1               STH,13   RFRAND+1,1        READ FWD
  5822  02 010AB  32F0207D               LW,15    BUFF2
  5823  02 010AC  35F01CF3               STW,15   :CLRADDR          CLEAR ADDRESS
  5824  02 010AD  35E0000D A            STW,14   13
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          86

  LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

  5825   02 010AE    25D00070  A            SLS,13    -16
  5826   02 010AF    4BD020B1               AND,13    =X'0000001F'
  5827   02 010B0    35D0188B               STW,13    RETIME           RANDOM TIME DELAY 0 - 1023 MS
  5828   02 010B1    35201D38               STW,2     :PATID           SET UP RANDOM PATTERNED AREA
  5829   02 010B2    35E01D39               STW,14    :PATID+1
  5830   02 010B3    22C020C5               LI,12     WA(BUFF1)
  5831   02 010B4    35C01D3C               STW,12    :PATBFR          RANDOM PATTERN
  5832   02 010B5    35C01DBB               STW,12    :COMBFRA         COMPARE EXPECTED BUFFER
  5833   02 010B6    32C0207D               LW,12     BUFF2
  5834   02 010B7    35C01DBC               STW,12    :COMBFRB         COMPARE OBSERVED PATTERN
  5835   02 010B8    22C00000  A            LI,12     0
  5836   02 010B9    35C01DBD               STW,12    :COMFLAG         ERROR PRINTOUT
  5837   02 010BA    6AF01CF9               BAL,15    :PATTERN         SMEAR PATTERN
  5838   02 010BB    311019CE               CW,1      MODEFLAG         PACKED BINARY
  5839   02 010BC    683010C4               BE        T2RE02-2
  5840                                  *                              NO PACKED BINARY STD OR OPTION
  5841   02 010BD    32C01DBA               LW,12     :COMWCNT         NUMBER OF WORDS
  5842   02 010BE    22D020C5               LI,13     BUFF1
  5843   02 010BF    B2E0000D  A  T2RE01C   LW,14    *13
  5844   02 010C0    4BE0209D               AND,14    =X'3F3F3F3F'     MASK FOR BINARY
  5845   02 010C1    B5E0000D  A            STW,14    *13
  5846   02 010C2    3310000D  A            MTW,1     13
  5847   02 010C3    64C010BF               BDR,12    T2RE01C          MASK ALL WORDS
  5848                                  *
  5849                                  *
  5850   02 010C4    3110189E               CW,1      REWONLY          REWIND UNIT
  5851   02 010C5    683010CD               BE        T2RE04+3
  5852   02 010C6    6AF01648     T2RE02    BAL,15    DOALL            DO ALL UNITS
  5853   02 010C7    680010C9               B         T2RE03+1
  5854   02 010C8    6AF0164A     T2RE03    BAL,15    DOALL1           SET UP 1 UNIT
  5855   02 010C9    6AF0160C               BAL,15    RWTLP            REWIND TO LOAD POINT
  5856   02 010CA    20700001  A  T2RE04    AI,7      1                DO NEXT UNIT
  5857   02 010CB    655010C8               BIR,5     T2RE03           DO ALL UNITS
  5858   02 010CC    3510189E               STW,1     REWONLY          SET NO REWIND FLAG
  5859                                  *
  5860                                  *
  5861   02 010CD    32401889               LW,4      OPFLAG           SET OF OPERATIONS
  5862   02 010CE    683010DF               BEZ       T2RE050          OP =0
  5863   02 010CF    680810CF               B         $,4
  5864   02 010D0    680010EF               B         T2RE051          OP =1
  5865   02 010D1    680010FF               B         T2RE052          OP =2
  5866   02 010D2    6800110F               B         T2RE053          OP =3
  5867   02 010D3    6800111F               B         T2RE054          OP =4
  5868   02 010D4    6800112F               B         T2RE055          OP =5
  5869   02 010D5    6800113F               B         T2RE056          OP =6
  5870   02 010D6    6800114F               B         T2RE057          OP =7
  5871   02 010D7    6800115F               B         T2RE058          OP =8
  5872   02 010D8    6800116F               B         T2RE059          OP =9
  5873   02 010D9    6800117F               B         T2RE05A          OP =A
  5874   02 010DA    6800118F               B         T2RE05B          OP =B
  5875   02 010DB    6800119F               B         T2RE05C          OP =C
  5876   02 010DC    680011AF               B         T2RE05D          OP =D
  5877   02 010DD    680011BF               B         T2RE05E          OP =E
  5878   02 010DE    680011CF               B         T2RE05F          OP =F
  5879                                  *
  5880                                  *
  5881                                  *
  5882                                  *
  5883   02 010DF    224010E2     T2RE050   LI,4       $+3              RETURN ADDRESS
  5884   02 010E0    5542121D               STH,4     T2REWR,1
  5885   02 010E1    68001207               B         T2REW            WRITE A RECORD
  5886   02 010E2    224010E5               LI,4      $+3
  5887   02 010E3    5542121D               STH,4     T2REWR,1
  5888   02 010E4    68001207               B         T2REW            WRITE A RECORD
  5889   02 010E5    224010E8               LI,4      $+3
  5890   02 010E6    5542121D               STH,4     T2REWR,1
  5891   02 010E7    68001207               B         T2REW            WRITE A RECORD
  5892   02 010E8    224010EB               LI,4      $+3
  5893   02 010E9    5542121D               STH,4     T2REWR,1
  5894   02 010EA    68001207               B         T2REW            WRITE A RECORD
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			87
5895	02	010EB	224010EE			LI,4	$+3	
5896	02	010EC	5542121D			STH,4	T2REWR,1	
5897	02	010ED	68001207			B	T2REW	WRITE A RECORD
5898	02	010EE	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
5899					*			
5900	02	010EF	224010F2		T2RE051	LI,4	$+3	RETURN ADDRESS
5901	02	010F0	5542121D			STH,4	T2REWR,1	
5902	02	010F1	68001207			B	T2REW	WRITE A RECORD
5903	02	010F2	224010F5			LI,4	$+3	
5904	02	010F3	5542121D			STH,4	T2REWR,1	
5905	02	010F4	68001207			B	T2REW	WRITE A RECORD
5906	02	010F5	224010F8			LI,4	$+3	
5907	02	010F6	5542121D			STH,4	T2REWR,1	
5908	02	010F7	68001207			B	T2REW	WRITE A RECORD
5909	02	010F8	224010FB			LI,4	$+3	
5910	02	010F9	5542121D			STH,4	T2REWR,1	
5911	02	010FA	68001207			B	T2REW	WRITE A RECORD
5912	02	010FB	224010FE			LI,4	$+3	
5913	02	010FC	5542122E			STH,4	T2RESBR,1	
5914	02	010FD	6800121E			B	T2RESB	SPACE BKW OVER RECORD
5915	02	010FE	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
5916					*			
5917	02	010FF	22401102		T2RE052	LI,4	$+3	RETURN ADDRESS
5918	02	01100	5542121D			STH,4	T2REWR,1	
5919	02	01101	68001207			B	T2REW	WRITE A RECORD
5920	02	01102	22401105			LI,4	$+3	
5921	02	01103	5542121D			STH,4	T2REWR,1	
5922	02	01104	68001207			B	T2REW	WRITE A RECORD
5923	02	01105	22401108			LI,4	$+3	
5924	02	01106	5542121D			STH,4	T2REWR,1	
5925	02	01107	68001207			B	T2REW	WRITE A RECORD
5926	02	01108	2240110B			LI,4	$+3	
5927	02	01109	5542122E			STH,4	T2RESBR,1	
5928	02	0110A	6800121E			B	T2RESB	SPACE BKW OVER RECORD
5929	02	0110B	2240110E			LI,4	$+3	
5930	02	0110C	5542122E			STH,4	T2RESBR,1	
5931	02	0110D	6800121E			B	T2RESB	SPACE RECORD BKW
5932	02	0110E	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
5933					*			
5934	02	0110F	22401112		T2RE053	LI,4	$+3	RETURN ADDRESS
5935	02	01110	5542121D			STH,4	T2REWR,1	
5936	02	01111	68001207			B	T2REW	WRITE A RECORD
5937	02	01112	22401115			LI,4	$+3	
5938	02	01113	5542121D			STH,4	T2REWR,1	
5939	02	01114	68001207			B	T2REW	WRITE A RECORD
5940	02	01115	22401118			LI,4	$+3	
5941	02	01116	5542121D			STH,4	T2REWR,1	
5942	02	01117	68001207			B	T2REW	WRITE A RECORD
5943	02	01118	2240111B			LI,4	$+3	
5944	02	01119	5542122E			STH,4	T2RESBR,1	
5945	02	0111A	6800121E			B	T2RESB	SPACE BKW OVER RECORD
5946	02	0111B	2240111E			LI,4	$+3	
5947	02	0111C	5542125E			STH,4	T2RERFR,1	
5948	02	0111D	68001240			B	T2RERF	READ RECORD FWD
5949	02	0111E	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
5950					*			
5951	02	0111F	22401122		T2RE054	LI,4	$+3	RETURN ADDRESS
5952	02	01120	5542121D			STH,4	T2REWR,1	
5953	02	01121	68001207			B	T2REW	WRITE A RECORD
5954	02	01122	22401125			LI,4	$+3	
5955	02	01123	5542121D			STH,4	T2REWR,1	
5956	02	01124	68001207			B	T2REW	WRITE A RECORD
5957	02	01125	22401128			LI,4	$+3	
5958	02	01126	5542122E			STH,4	T2RESBR,1	
5959	02	01127	6800121E			B	T2RESB	SPACE BKW OVER RECORD
5960	02	01128	2240112B			LI,4	$+3	
5961	02	01129	5542125E			STH,4	T2RERFR,1	
5962	02	0112A	68001240			B	T2RERF	READ RECORD FWD
5963	02	0112B	2240112E			LI,4	$+3	
5964	02	0112C	5542122E			STH,4	T2RESBR,1	

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          88
  5965   02 0112D   6800121E            B       T2RESB          SPACE RECORD BKW
  5966   02 0112E   680011DF            B       T2RE60A         GO TO TALLY AND NEW SET
  5967                                  *
  5968   02 0112F   22401132  T2RE055   LI,4     $+3             RETURN ADDRESS
  5969   02 01130   5542121D            STH,4   T2REWR,1
  5970   02 01131   68001207            B       T2REW           WRITE A RECORD
  5971   02 01132   22401135            LI,4    $+3
  5972   02 01133   5542121D            STH,4   T2REWR,1
  5973   02 01134   68001207            B       T2REW           WRITE A RECORD
  5974   02 01135   22401138            LI,4    $+3
  5975   02 01136   5542122E            STH,4   T2RESBR,1
  5976   02 01137   6800121E            B       T2RESB          SPACE BKW OVER RECORD
  5977   02 01138   22401138            LI,4    $+3
  5978   02 01139   5542122E            STH,4   T2RESBR,1
  5979   02 0113A   6800121E            B       T2RESB          SPACE RECORD BKW
  5980   02 0113B   22401138            LI,4    $+3
  5981   02 0113C   5542125E            STH,4   T2RERFR,1
  5982   02 0113D   68001240            B       T2RERF          READ RECORD FWD
  5983   02 0113E   680011DF            B       T2RE60A         GO TO TALLY AND NEW SET
  5984                                  *
  5985   02 0113F   22401142  T2RE056   LI,4    $+3             RETURN ADDRESS
  5986   02 01140   5542121D            STH,4   T2REWR,1
  5987   02 01141   68001207            B       T2REW           WRITE A RECORD
  5988   02 01142   22401145            LI,4    $+3
  5989   02 01143   5542121D            STH,4   T2REWR,1
  5990   02 01144   68001207            B       T2REW           WRITE A RECORD
  5991   02 01145   22401148            LI,4    $+3
  5992   02 01146   5542122E            STH,4   T2RESBR,1
  5993   02 01147   6800121E            B       T2RESB          SPACE BKW OVER RECORD
  5994   02 01148   22401148            LI,4    $+3
  5995   02 01149   5542122E            STH,4   T2RESBR,1
  5996   02 0114A   6800121E            B       T2RESB          SPACE RECORD BKW
  5997   02 0114B   2240114E            LI,4    $+3
  5998   02 0114C   5542123F            STH,4   T2RESFR,1
  5999   02 0114D   6800122F            B       T2RESF          SPACE FWD OVER RECORD
  6000   02 0114E   680011DF            B       T2RE60A         GO TO TALLY AND NEW SET
  6001                                  *
  6002   02 0114F   22401152  T2RE057   LI,4    $+3             RETURN ADDRESS
  6003   02 01150   5542121D            STH,4   T2REWR,1
  6004   02 01151   68001207            B       T2REW           WRITE A RECORD
  6005   02 01152   22401155            LI,4    $+3
  6006   02 01153   5542122E            STH,4   T2RESBR,1
  6007   02 01154   6800121E            B       T2RESB          SPACE BKW OVER RECORD
  6008   02 01155   22401158            LI,4    $+3
  6009   02 01156   5542125E            STH,4   T2RERFR,1
  6010   02 01157   68001240            B       T2RERF          READ RECORD FWD
  6011   02 01158   2240115B            LI,4    $+3
  6012   02 01159   5542121D            STH,4   T2REWR,1
  6013   02 0115A   68001207            B       T2REW           WRITE A RECORD
  6014   02 0115B   2240115E            LI,4    $+3
  6015   02 0115C   5542121D            STH,4   T2REWR,1
  6016   02 0115D   68001207            B       T2REW           WRITE A RECORD
  6017   02 0115E   680011DF            B       T2RE60A         GO TO TALLY AND NEW SET
  6018                                  *
  6019   02 0115F   22401162  T2RE058   LI,4    $+3             RETURN ADDRESS
  6020   02 01160   5542121D            STH,4   T2REWR,1
  6021   02 01161   68001207            B       T2REW           WRITE A RECORD
  6022   02 01162   22401165            LI,4    $+3
  6023   02 01163   5542122E            STH,4   T2RESBR,1
  6024   02 01164   6800121E            B       T2RESB          SPACE BKW OVER RECORD
  6025   02 01165   22401168            LI,4    $+3
  6026   02 01166   5542125E            STH,4   T2RERFR,1
  6027   02 01167   68001240            B       T2RERF          READ RECORD FWD
  6028   02 01168   2240116B            LI,4    $+3
  6029   02 01169   5542121D            STH,4   T2REWR,1
  6030   02 0116A   68001207            B       T2REW           WRITE A RECORD
  6031   02 0116B   2240116E            LI,4    $+3
  6032   02 0116C   5542122E            STH,4   T2RESBR,1
  6033   02 0116D   6800121E            B       T2RESB          SPACE BKW OVER RECORD
  6034   02 0116E   680011DF            B       T2RE60A         GO TO TALLY AND NEW SET
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			89
6035					*			
6036	02	0116F	22401172		T2RE059	LI,4	$+3	RETURN ADDRESS
6037	02	01170	5542121D			STH,4	T2REWR,1	
6038	02	01171	68001207			B	T2REW	WRITE A RECORD
6039	02	01172	22401175			LI,4	$+3	
6040	02	01173	5542122E			STH,4	T2RESBR,1	
6041	02	01174	6800121E			B	T2RESB	SPACE BKW OVER RECORD
6042	02	01175	22401178			LI,4	$+3	
6043	02	01176	5542121D			STH,4	T2REWR,1	
6044	02	01177	68001207			B	T2REW	WRITE A RECORD
6045	02	01178	2240117B			LI,4	$+3	
6046	02	01179	5542122E			STH,4	T2RESBR,1	
6047	02	0117A	6800121E			B	T2RESB	SPACE BKW OVER RECORD
6048	02	0117B	2240117E			LI,4	$+3	
6049	02	0117C	5542125E			STH,4	T2RERFR,1	
6050	02	0117D	68001240			B	T2RERF	READ RECORD FWD
6051	02	0117E	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
6052					*			
6053	02	0117F	22401182		T2RE05A	LI,4	$+3	RETURN ADDRESS
6054	02	01180	5542121D			STH,4	T2REWR,1	
6055	02	01181	68001207			B	T2REW	WRITE A RECORD
6056	02	01182	22401185			LI,4	$+3	
6057	02	01183	5542122E			STH,4	T2RESBR,1	
6058	02	01184	6800121E			B	T2RESB	SPACE BKW OVER RECORD
6059	02	01185	22401188			LI,4	$+3	
6060	02	01186	5542125E			STH,4	T2RERFR,1	
6061	02	01187	68001240			B	T2RERF	READ RECORD FWD
6062	02	01188	2240118B			LI,4	$+3	
6063	02	01189	5542122E			STH,4	T2RESBR,1	
6064	02	0118A	6800121E			B	T2RESB	SPACE BKW OVER RECORD
6065	02	0118B	2240118E			LI,4	$+3	
6066	02	0118C	5542121D			STH,4	T2REWR,1	
6067	02	0118D	68001207			B	T2REW	WRITE A RECORD
6068	02	0118E	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
6069					*			
6070	02	0118F	22401192		T2RE05B	LI,4	$+3	RETURN ADDRESS
6071	02	01190	5542121D			STH,4	T2REWR,1	
6072	02	01191	68001207			B	T2REW	WRITE A RECORD
6073	02	01192	22401195			LI,4	$+3	
6074	02	01193	5542122E			STH,4	T2RESBR,1	
6075	02	01194	6800121E			B	T2RESB	SPACE BKW OVER RECORD
6076	02	01195	22401198			LI,4	$+3	
6077	02	01196	5542125E			STH,4	T2RERFR,1	
6078	02	01197	68001240			B	T2RERF	READ RECORD FWD
6079	02	01198	2240119B			LI,4	$+3	
6080	02	01199	5542122E			STH,4	T2RESBR,1	
6081	02	0119A	6800121E			B	T2RESB	SPACE RECORD BKW
6082	02	0119B	2240119E			LI,4	$+3	
6083	02	0119C	5542125E			STH,4	T2RERFR,1	
6084	02	0119D	68001240			B	T2RERF	READ RECORD FWD
6085	02	0119E	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
6086					*			
6087	02	0119F	224011A2		T2RE05C	LI,4	$+3	RETURN ADDRESS
6088	02	011A0	5542121D			STH,4	T2REWR,1	
6089	02	011A1	68001207			B	T2REW	WRITE A RECORD
6090	02	011A2	224011A5			LI,4	$+3	
6091	02	011A3	5542122E			STH,4	T2RESBR,1	
6092	02	011A4	6800121E			B	T2RESB	SPACE BKW OVER RECORD
6093	02	011A5	224011A8			LI,4	$+3	
6094	02	011A6	5542123F			STH,4	T2RESFR,1	
6095	02	011A7	6800122F			B	T2RESF	SPACE FWD OVER RECORD
6096	02	011A8	224011AB			LI,4	$+3	
6097	02	011A9	5542121D			STH,4	T2REWR,1	
6098	02	011AA	68001207			B	T2REW	WRITE A RECORD
6099	02	011AB	224011AE			LI,4	$+3	
6100	02	011AC	5542121D			STH,4	T2REWR,1	
6101	02	011AD	68001207			B	T2REW	WRITE A RECORD
6102	02	011AE	680011DF			B	T2RE60A	GO TO TALLY AND NEW SET
6103					*			
6104	02	011AF	224011B2		T2RE05D	LI,4	$+3	RETURN ADDRESS

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          90
  6105   02 011B0   5542121D              STH,4    T2REWR,1
  6106   02 011B1   68001207              B        T2REW          WRITE A RECORD
  6107   02 011B2   224011B5              LI,4     $+3
  6108   02 011B3   5542122E              STH,4    T2RESBR,1
  6109   02 011B4   6800121E              B        T2RESB         SPACE BKW OVER RECORD
  6110   02 011B5   224011B8              LI,4     $+3
  6111   02 011B6   5542121D              STH,4    T2REWR,1
  6112   02 011B7   68001207              B        T2REW          WRITE A RECORD
  6113   02 011B8   224011BB              LI,4     $+3
  6114   02 011B9   5542122E              STH,4    T2RESBR,1
  6115   02 011BA   6800121E              B        T2RESB         SPACE BKW OVER RECORD
  6116   02 011BB   224011BE              LI,4     $+3
  6117   02 011BC   5542123F              STH,4    T2RESFR,1
  6118   02 011BD   6800122F              B        T2RESF         SPACE FWD OVER RECORD
  6119   02 011BE   680011DF              B        T2RE60A        GO TO TALLY AND NEW SET
  6120                                    *
  6121   02 011BF   224011C2    T2RE05E   LI,4     $+3            RETURN ADDRESS
  6122   02 011C0   5542121D              STH,4    T2REWR,1
  6123   02 011C1   68001207              B        T2REW          WRITE A RECORD
  6124   02 011C2   224011C5              LI,4     $+3
  6125   02 011C3   5542122E              STH,4    T2RESBR,1
  6126   02 011C4   6800121E              B        T2RESB         SPACE BKW OVER RECORD
  6127   02 011C5   224011C8              LI,4     $+3
  6128   02 011C6   5542125E              STH,4    T2RERFR,1
  6129   02 011C7   68001240              B        T2RERF         READ RECORD FWD
  6130   02 011C8   224011CB              LI,4     $+3
  6131   02 011C9   5542122E              STH,4    T2RESBR,1
  6132   02 011CA   6800121E              B        T2RESB         SPACE RECORD BKW
  6133   02 011CB   224011CE              LI,4     $+3
  6134   02 011CC   5542125E              STH,4    T2RERFR,1
  6135   02 011CD   68001240              B        T2RERF         READ RECORD FWD
  6136   02 011CE   680011DF              B        T2RE60A        GO TO TALLY AND NEW SET
  6137                                    *
  6138   02 011CF   224011D2    T2RE05F   LI,4     $+3            RETURN ADDRESS
  6139   02 011D0   5542121D              STH,4    T2REWR,1
  6140   02 011D1   68001207              B        T2REW          WRITE A RECORD
  6141   02 011D2   224011D5              LI,4     $+3
  6142   02 011D3   5542122E              STH,4    T2RESBR,1
  6143   02 011D4   6800121E              B        T2RESB         SPACE RECORD BKW
  6144   02 011D5   224011D8              LI,4     $+3
  6145   02 011D6   5542123F              STH,4    T2RESFR,1
  6146   02 011D7   6800122F              B        T2RESF         SPACE RECORD FWD
  6147   02 011D8   224011DB              LI,4     $+3
  6148   02 011D9   5542122E              STH,4    T2RESBR,1
  6149   02 011DA   6800121E              B        T2RESB         SPACE BKW OVER RECORD
  6150   02 011DB   224011DE              LI,4     $+3
  6151   02 011DC   5542125E              STH,4    T2RERFR,1
  6152   02 011DD   68001240              B        T2RERF         READ RECORD FWD
  6153   02 011DE   680011DF              B        T2RE60A        GO TO TALLY AND NEW SET
  6154                                    *
  6155                                    *
  6156   02 011DF   680011E0    T2RE60A   B        $+1            INCREMENT TALLY AND GO TO NEXT SET
  6157   02 011E0   22E00000 A            LI,14    0
  6158   02 011E1   35E01EA6              STW,14   :INTRECF       CLEAR INTERRUPT FLAG
  6159   02 011E2   32E0188B              LW,14    RETIME         RANDOM DELAY TIME
  6160   02 011E3   6AF01E26              BAL,15   :DELAY         DELAY
  6161   02 011E4   680011E5              B        $+1
  6162   02 011E5   33101885              MTW,1    LOOPTLY        TALLY OF PASSES +1
  6163   02 011E6   32601885              LW,6     LOOPTLY
  6164   02 011E7   31601888              CW,6     NMLOOP
  6165   02 011E8   6820109A              BLE      T2RE01
  6166   02 011E9   32601887              LW,6     CRTRY          NUMBER OF RETRIES
  6167   02 011EA   68201200              BLE      T2RE60C-2      NO RETRIES NO PRINTOUT
  6168   02 011EB   22700000 A  T2RE60B   LI,7     0              PRINTOUT ERROR TALLIES
  6169   02 011EC   3A5018BE              LCW,5    SAVNUMB        NUMBER OF DEVICES
  6170   02 011ED   32CE18B6              LW,12    SAVDEV,7       DEVICE
  6171   02 011EE   EAF00218 A            BAL,15   *:HEXC         CONVERT
  6172   02 011EF   35F01ADC              STW,15   REMESG3+2
  6173   02 011F0   32CE186C              LW,12    PWTALLY,7      PERM WRITE ERROR TALLY
  6174   02 011F1   EAF00217 A            BAL,15   *:DECC         CONVERT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          91
  6175    02 011F2    35F01ADF                STW,15   REMESG3+5
  6176    02 011F3    32CE1864                LW,12    TWTALLY,7          TEMP WRITE ERROR TALLY
  6177    02 011F4    EAF00217 A              BAL,15   *:DECC             CONVERT
  6178    02 011F5    35F01AE2                STW,15   REMESG3+8
  6179    02 011F6    32CE1874                LW,12    PRFTALLY,7         PERM READ FWD ERROR TALLY
  6180    02 011F7    EAF00217 A              BAL,15   *:DECC             CONVERT
  6181    02 011F8    35F01AE5                STW,15   REMESG3+11
  6182    02 011F9    32CE187C                LW,12    TRFTALLY,7         TEMP READ FWD ERROR TALLY
  6183    02 011FA    EAF00217 A              BAL,15   *:DECC             CONVERT
  6184    02 011FB    35F01AE8                STW,15   REMESG3+14          STORE
  6185    02 011FC    EAF0021C A              BAL,15   *:PRINT            PRINT MESSAGE
  6186    02 011FD    00001ADA                DATA     REMESG3
  6187    02 011FE    20700001 A              AI,7     1                  NEXT DEVICE
  6188    02 011FF    655011ED                BIR,5    T2RE60B+2
  6189                                *                                   REWIND ALL UNITS
  6190    02 01200    6AF01648                BAL,15   DOALL              REWIND ALL UNITS
  6191    02 01201    68001203                B        $+2
  6192    02 01202    6AF0164A        T2RE60C BAL,15   DOALL1            SET UP ONE UNIT
  6193    02 01203    6AF0160C                BAL,15   RWTLP              REWIND TO LOAD POINT
  6194    02 01204    20700001 A              AI,7     1                  DO NEXT UNIT
  6195    02 01205    65501202                BIR,5    T2RE60C            DO ALL UNITS
  6196    02 01206    680004F3                B        TST203             RETURN TO TST2
  6197                                *
  6198                                *
  6199                                *
  6200    02 01207    6AF01648        T2REW   BAL,15   DOALL              SET UP ALL UNITS
  6201    02 01208    6800120A                B        T2RE06A+1
  6202    02 01209    6AF0164A        T2RE06A BAL,15   DOALL1            SET UP 1 UNIT
  6203    02 0120A    22000BE2                LI,0     DA(WRRAND)         WRITE RECORD
  6204    02 0120B    6AF01CA2                BAL,15   :IOEXEC            EXECUTE TIO, SIO
  6205    02 0120C    6AF0162F                BAL,15   MYDELAY            WAIT FOR INTERRUPT
  6206    02 0120D    CEA018B5                TDV,10   *:DEVADDR          TDV TO SEE IF AT EOT
  6207    02 0120E    31B02089                CW,11    =X'02000000'
  6208    02 0120F    6940100C6       T2RE06C BCS,4    T2RE02             REWIND ALL UNITS
  6209    02 01210    CDA018B5                TIO,10   *:DEVADDR          TIO
  6210    02 01211    31B019CD                CW,11    CHKBIT             UE,INC LENGTH,IOP,MEMORY ERRORS
  6211    02 01212    69401216                BCS,4    $+4                ERROR
  6212    02 01213    31B0209E                CW,11    =X'00400000'       TRANSMISSION ERROR ONLY
  6213    02 01214    694015CC                BCS,4    TWRTRY             GO TO RETRY SUBROUTINE
  6214    02 01215    6800121B                B        T2RE07
  6215    02 01216    12C017C4        T2RE06B LD,12    WRRAND             SET UP IOCD PRINTOUT
  6216    02 01217    6AF01669                BAL,15   MYERROR            ERROR PRINTOUT
  6217    02 01218    EAF0021D A              BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  6218    02 01219    2E000000 A              WAIT
  6219    02 0121A    6800121B                B        $+1                CANNOT LOOP ON ERROR
  6220    02 0121B    20700001 A      T2RE07  AI,7     1
  6221    02 0121C    65501209                BIR,5    T2RE06A            DO ALL UNITS
  6222    02 0121D    6800121D        T2REWR  B        $                  RETURN TO OPERATOR SET
  6223                                *
  6224                                *
  6225                                *
  6226    02 0121E    6AF01648        T2RESB  BAL,15   DOALL              SET UP ALL UNITS
  6227    02 0121F    68001221                B        T2RE13A+1
  6228    02 01220    6AF0164A        T2RE13A BAL,15   DOALL1            SET UP 1 UNIT
  6229    02 01221    22000C19                LI,0     DA(SPBRAND)        SPACE BKW OVER RECORD
  6230    02 01222    6AF01CA2                BAL,15   :IOEXEC            EXECUTE TIO, SIO
  6231    02 01223    6AF0162F                BAL,15   MYDELAY            WAIT FOR INTERRUPT
  6232    02 01224    CDA018B5                TIO,10   *:DEVADDR          TIO
  6233    02 01225    31B019CD                CW,11    CHKBIT             UE,INC LENGTH,IOP,MEMORY ERRORS
  6234    02 01226    6840122C                BCR,4    T2RE14
  6235    02 01227    12C01832                LD,12    SPBRAND            SET UP IOCD PRINTOUT
  6236    02 01228    6AF01669                BAL,15   MYERROR            PRINTOUT ERROR ROUTINE
  6237    02 01229    EAF0021D A              BAL,15   *:SENSE            CHECK SENSE SWITCH SETTINGS
  6238    02 0122A    2E000000 A              WAIT
  6239    02 0122B    6800122C                B        $+1                CANNOT LOOP ON ERROR
  6240    02 0122C    20700001 A      T2RE14  AI,7     1
  6241    02 0122D    65501220                BIR,5    T2RE13A            DO ALL UNITS
  6242    02 0122E    6800122E        T2RESBR B        $                  RETURN TO OPERATION SET
  6243                                *
  6244                                *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          92
 LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS
  6245                                                     *
  6246    02  0122F      6AF01648         T2RESF    BAL,15   DOALL            SET UP ALL UNITS
  6247    02  01230      68001232                   B        T2RE15A+1
  6248    02  01231      6AF0164A         T2RE15A   BAL,15   DOALLI           SET UP 1 UNIT
  6249    02  01232      22000C1A                   LI,0     DA(SPFRAND)      SPACE FWD OVER RECORD
  6250    02  01233      6AF01CA2                   BAL,15   :IOEXEC          EXECUTE TIO, SIO
  6251    02  01234      6AF0162F                   BAL,15   MYDELAY          WAIT FOR INTERRUPT
  6252    02  01235      CDA018B5                   TIO,10   *:DEVADDR        TIO
  6253    02  01236      31B019CD                   CW,11    CHKBIT           UE,INC LENGTH,IOP,MEMORY ERRORS
  6254    02  01237      6840123D                   BCR,4    T2RE17
  6255    02  01238      12C01834                   LD,12    SPFRAND          SET UP IOCD PRINTOUT
  6256    02  01239      6AF01669                   BAL,15   MYERROR          PRINTOUT ERROR ROUTINE
  6257    02  0123A      EAF0021D  A                BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  6258    02  0123B      2E000000  A                WAIT
  6259    02  0123C      6800123D                   B        $+1              CANNOT LOOP ON ERROR
  6260    02  0123D      20700001  A      T2RE17    AI,7     1
  6261    02  0123E      65501231                   BIR,5    T2RE15A          DO ALL UNITS
  6262    02  0123F      6800123F         T2RESFR   B        $                RETURN TO OPERATION SET
  6263                                                     *
  6264                                                     *
  6265                                                     *
  6266                                                     *
  6267    02  01240      6AF01648         T2RERF    BAL,15   DOALL            SET UP ALL UNITS
  6268    02  01241      68001243                   B        T2RE18B+1
  6269    02  01242      6AF0164A         T2RE18B   BAL,15   DOALLI           SET UP 1 UNIT
  6270    02  01243      6AF01CE8                   BAL,15   :CLEAR           CLEAR BUFFER
  6271    02  01244      22000BF8                   LI,0     DA(RFRAND)       READ RECORD FWD
  6272    02  01245      6AF01CA2                   BAL,15   :IOEXEC          EXECUTE TIO, SIO
  6273    02  01246      6AF0162F                   BAL,15   MYDELAY          WAIT FOR INTERRUPT
  6274    02  01247      CDA018B5                   TIO,10   *:DEVADDR        TIO
  6275    02  01248      31B019CD                   CW,11    CHKBIT           UE,INC LENGTH,IOP,MEMORY ERRORS
  6276    02  01249      69401250                   BCS,4    $+7
  6277    02  0124A      CEE018B5                   TDV,14   *:DEVADDR        TDV
  6278    02  0124B      31F02092                   CW,15    =X'08000000'     UNCORRECTABLE READ ERROR
  6279    02  0124C      694015EF                   BCS,4    RFRTRY
  6280    02  0124D      31B0209E                   CW,11    =X'00400000'     TRANSMISSION ERROR ONLY
  6281    02  0124E      694015EF                   BCS,4    RFRTRY           GO TO RETRY SUBROUTINE
  6282    02  0124F      68001255                   B        T2RE18D
  6283    02  01250      12C017F0         T2RE017E  LD,12    RFRAND           SET UP IOCD PRINTOUT
  6284    02  01251      6AF01669                   BAL,15   MYERROR          ERROR PRINTOUT
  6285    02  01252      EAF0021D  A                BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  6286    02  01253      2E000000  A                WAIT
  6287    02  01254      68001255                   B        $+1              CANNOT LOOP ON ERROR
  6288    02  01255      6AF01D47         T2RE18D   BAL,15   :COMPARE         COMPARE INFO
  6289    02  01256      6800125C                   B        T2RE18C
  6290                                                     *        INFORMATION ERROR EXIT
  6291    02  01257      12C017F0                   LD,12    RFRAND           SET UP IOCD INFORMATION
  6292    02  01258      6AF01669                   BAL,15   MYERROR          PRINTOUT INFO ON ERROR
  6293    02  01259      EAF0021D  A                BAL,15   *:SENSE          CHECK SENSE SWITCH SETTINGS
  6294    02  0125A      2E000000  A                WAIT
  6295    02  0125B      6800125C                   B        $+1              CANNOT LOOP ON ERROR
  6296    02  0125C      20700001  A      T2RE18C   AI,7     1
  6297    02  0125D      65501242                   BIR,5    T2RE18B          DO ALL UNITS
  6298    02  0125E      6800125E         T2RERFR   B        $                RETURN TO OPERATION SET
  6299                                                     *
  6300                                                     *
  6301                                                     *
  6302                                                     *
  6303                                                     *
  6304                                                     *                  UTILITY TESTS TST3
  6305                                                     *                  ------------------
  6306                                                     *
  6307                                                     *     THE UTILITY TEST ROUTINE  ALLOWS THE USER TO SELECT
  6308                                                     *     A SPECIFIC FUNCTION AND TO CONTROL THE DATA PATTERN
  6309                                                     *     (SEE DATA DIRECTIVE) AND THE RECORD LENGTH (SEE   *
  6310                                                     *     'LEN' DIRECTIVE).                                 *
  6311                                                     *   PARAMETERS D1 UTILITY TEST SELECTION                *
  6312                                                     *             D1 1 TAPE TEST                            *
  6313                                                     *             D1 2 DESKEW TEST                          *
  6314                                                     *             D1 3 SYNC ON A CHARACTER TEST             *
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          93
  6315                                *                              D1 4 COMPATABILITY AND NOISE PATTERN TEST  *
  6316                                *                              D1 5 READ/SPACE TEST                      *
  6317                                *                              D2 OPERATIONS REQUESTED ACCORDING TO TEST *
  6318                                *                              D3 PARAMETER REQUESTED ACCORDING TO TEST  *
  6319                                *                              D4 PARAMETER REQUESTED ACCORDING TO TEST  *
  6320                                *                                                                       *
  6321                                *                                                                       *
  6322                                *                                                                       *
  6323                                *                                      TST3,1  -TAPE TEST               *
  6324                                *                                                                       *
  6325                                *                                THIS TEST ALLOWS THE USER TO WRITE, READ FORWARD, *
  6326                                *                                SPACE BACKWARD,READ FORWARD AND SPACE BACKWARD, OR*
  6327                                *                                WRITE FOLLOWED BY REWIND,READ FORWARD AND SPACE  *
  6328                                *                                BACKWARD N RECORDS OR UNTIL EOT IS REACHED.      *
  6329                                *                                                                       *
  6330                                *                                      D1 1 TAPE TEST                   *
  6331                                *                                         D2 0 WRITE,REWIND,READ FORWARD,SPACE  *
  6332                                *                                            BACKWARD D3 RECORDS.         *
  6333                                *                                            1 WRITE D3 RECORDS.          *
  6334                                *                                            2 READ FORWARD D3 RECORDS.   *
  6335                                *                                            3 SPACE BACKWARD D3 RECORDS  *
  6336                                *                                            4 READ FORWARD AND SPACE BACKWARD D3 *
  6337                                *                                              RECORDS IN SEQUENCE.       *
  6338                                *                                            8 WRITE, REWIND, READ FWD, SPACE BKW *
  6339                                *                                              D3 RECORDS (BCD).          *
  6340                                *                                            9 WTITE D3 RECORDS (BCD).    *
  6341                                *                                           10 READ FWD D3 RECORDS (BCD). *
  6342                                *                                           12 READ FWD, SPACE BKW D3 RECORDS(BCD)*
  6343                                *                                         D3 NUMBER OF RECORDS TO BE WRITTEN OR  *
  6344                                *                                            READ. IF D3 =0 CONTINUE UNTIL EOT  *
  6345                                *                                            OR BOT IS REACHED.         *
  6346                                *                                         D4 DELAY IN MILLISECONDS BETWEEN  *
  6347                                *                                            OPERATION SETS.            *
  6348                                *                          EXAMPLE       TST3,1,1,1000,5                  *
  6349                                *                          -------                                        *
  6350                                *                                        WRITE 1000 RECORDS WITH A 5 MILLISECOND  *
  6351                                *                                        DELAY AFTER EACH WRITE OPERATION         *
  6352                                *                                                                       *
  6353                                *                                                 ----------------------------------
  6354   02 0125F   32F0189C          TST31     LW,15    FLGRG                        REGULAR PRINTOUT FLAG
  6355   02 01260   35F019A7                    STW,15   NOPKPRT
  6356   02 01261   32700204 A                  LW,7     :P4                          TIME DELAY
  6357   02 01262   68101268                    BGEZ     TST3102
  6358                                *          ERROR P4 INCORRECT                    P3 NEGATIVE
  6359   02 01263   22700004 A                  LI,7     4
  6360   02 01264   3570030A A                  STW,7    :PITIO                       REPORT BAD PARAMETER
  6361   02 01265   EAF00229 A                  BAL,15   *:PREPORT
  6362   02 01266   00000326                    DATA     :DIC+6
  6363   02 01267   E8000214 A                  B        *:MONITOR                    GO TO MONITOR
  6364   02 01268   32700203 A   TST3102  LW,7     :P3                          NUMBER OF RECORDS TO BE WRITTEN
  6365   02 01269   6920126C                    BGZ      TST3103                      P0 >0
  6366   02 0126A   327020A2                    LW,7     =X'FFFFF'                    P3 =0  WRITE TILL EOT, BOT
  6367   02 0126B   35700203 A                  STW,7    :P3                          P3 SET TO LARGEST BYTE
  6368   02 0126C   32600202 A   TST3103  LW,6     :P2
  6369   02 0126D   21600008 A                  CI,6     8                            8 BIT SET
  6370   02 0126E   68401275                    BCR,4    $+7
  6371   02 0126F   2270000E A                  LI,7     X'0E'                        BCD OPTION
  6372   02 01270   2280000D A                  LI,8     X'0D'
  6373   02 01271   352019A7                    STW,2    NOPKPRT
  6374   02 01272   206FFFF8 A                  AI,6     -8
  6375   02 01273   35600202 A                  STW,6    :P2
  6376   02 01274   68001277                    B        $+3
  6377   02 01275   727017DC                    LB,7     TRFBC                        REGULAR READ
  6378   02 01276   728017AC                    LB,8     TWBC                         REGULAR WRITE
  6379   02 01277   758017C6                    STB,8    TST3WRT                      SET UP WRITE
  6380   02 01278   757017F2                    STB,7    TST3RF                       SET UP READ
  6381   02 01279   21600004 A                  CI,6     4                            P2 >4
  6382   02 0127A   6820127D                    BLE      $+3
  6383   02 0127B   22700002 A                  LI,7     2
  6384   02 0127C   68001264                    B        TST3102-4                    GO TO ERROR PRINTOUT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          94
  6385    02 0127D    326019A6                LW,6    LENGTH          CHECK ODD BYTE COUNT
  6386    02 0127E    48600003 A              AND,6   3
  6387    02 0127F    21600003 A              CI,6    3
  6388    02 01280    68401286                BCR,4   TST3101A
  6389    02 01281    68301288                BE      TST3101B
  6390    02 01282    21600001 A              CI,6    1
  6391    02 01283    6830128A                BE      TST3101C
  6392    02 01284    328020B2                LW,8    =X'FFFF0000'    +2 BYTES
  6393    02 01285    6800128B                B       TST3101C+1
  6394    02 01286    328020A1        TST3101A LW,8   =X'FFFFFFFF'    +0 BYTES
  6395    02 01287    6800128B                B       TST3101C+1
  6396    02 01288    328020B3        TST3101B LW,8   =X'FFFFFF00'    +3 BYTES
  6397    02 01289    6800128B                B       TST3101C+1
  6398    02 0128A    3280208D        TST3101C LW,8   =X'FF000000'    +1 BYTES
  6399    02 0128B    358019AB                STW,8   MASKBYT         SAVE MASK
  6400    02 0128C    327019A6                LW,7    LENGTH          LENGTH OF RECORD
  6401    02 0128D    317020B4                CW,7    =X'00000003'    ODD BYTE SIZE
  6402    02 0128E    68401290                BCR,4   $+2
  6403    02 0128F    20700004 A              AI,7    4               GO TO NEXT WORD SIZE FOR COMPARE
  6404    02 01290    2570007E A              SLS,7   -2              GET WORD SIZE
  6405    02 01291    228020C5                LI,8    BUFF1           WRITE AREA
  6406    02 01292    30800007 A              AW,8    7               WORD COUNT
  6407    02 01293    33F00008 A              MTW,-1  8
  6408    02 01294    358018D7                STW,8   LASTWDW          LOCATION OF LAST WORD WRITTEN
  6409    02 01295    3280207D                LW,8    BUFF2           READ AREA
  6410    02 01296    30800007 A              AW,8    7               WORD COUNT
  6411    02 01297    33F00008 A              MTW,-1  8
  6412    02 01298    358018D9                STW,8   LASTWDR         LOCATION OF LAST WORD IN READ AREA
  6413    02 01299    317018CB        TST3104 CW,7    MAXREAD         RECORD TOO LARGE TO READ
  6414    02 0129A    6820129C                BCR,2   $+2
  6415    02 0129B    327018CB                LW,7    MAXREAD         SET UP LARGEST RECORD SIZE
  6416    02 0129C    35701D3B                STW,7   :PATWC          SET UP WORD SIZE IN SMEAR
  6417    02 0129D    35701CF4                STW,7   :CLRSIZE        SET UP WORD SIZE FOR CLEAR
  6418    02 0129E    35701DBA                STW,7   :COMWCNT        SET UP WORD SIZE IN COMPARE
  6419    02 0129F    228020C5                LI,8    BUFF1
  6420    02 012A0    35801D3C                STW,8   :PATBFR         BUFFER FOR PATTERN
  6421                                                                COMPARE INFORMATION SETUP
  6422    02 012A1    35801DBB                STW,8   :COMBFRA        CORRECT INFORMATION
  6423    02 012A2    3270207D                LW,7    BUFF2           OBSERVED PATTERN
  6424    02 012A3    35701DBC                STW,7   :COMBFRB        OBSERVED INFORMATION
  6425    02 012A4    35701CF3                STW,7   :CLRADDR        CLEAR ADDRESS
  6426    02 012A5    32E019A6                LW,14   LENGTH          BYTE SIZE
  6427    02 012A6    55E217C7                STH,14  TST3WRT+1,1    SET UP IOCD
  6428    02 012A7    55E217F3                STH,14  TST3RF+1,1
  6429    02 012A8    22700000 A              LI,7    0
  6430    02 012A9    35701DBD                STW,7   :COMFLAG        PRINTOUT ERRORS
  6431    02 012AA    327019A0                LW,7    PATTYPE         CHECK PATTERN TYPE
  6432    02 012AB    21700000 A              CI,7    0
  6433    02 012AC    693012BC                BNEZ    TST3105
  6434    02 012AD    327019A4                LW,7    PATTFIX         FIXED PATTERN
  6435    02 012AE    72E017C6                LB,14   TST3WRT         BCD CHECK
  6436    02 012AF    71E020B5                CB,14   =X'0D000000'    MASK
  6437    02 012B0    683012B4                BE      $+4
  6438    02 012B1    311019CE                CW,1    MODEFLAG        PACKED FLAG SET
  6439    02 012B2    683012B4                BE      $+2
  6440    02 012B3    4B70209D                AND,7   =X'3F3F3F3F'    MASK
  6441    02 012B4    35701D39                STW,7   :PATID+1        PATTERN TO SPREAD
  6442    02 012B5    22800000 A              LI,8    0
  6443    02 012B6    35801D38                STW,8   :PATID          FIXED WORD PATTERN
  6444    02 012B7    6AF01CF9                BAL,15  :PATTERN        SMEAR PATTERN
  6445    02 012B8    B28018D7                LW,8    *LASTWDW
  6446    02 012B9    4B8019AB                AND,8   MASKBYT         MASK ODD BYTE COUNT
  6447    02 012BA    B58018D7                STW,8   *LASTWDW
  6448    02 012BB    680012FE                B       TST3111
  6449    02 012BC    21700002 A      TST3105 CI,7    2               DATA PI =2 RANDOM PATTERN
  6450    02 012BD    693012C6                BNEZ    TST3107
  6451    02 012BE    35201D38                STW,2   :PATID          RANDOM PATTERN
  6452    02 012BF    3270199F                LW,7    PATTSED
  6453    02 012C0    311019CE                CW,1    MODEFLAG        PACKED FLAG SET
  6454    02 012C1    683012C3                BE      $+2
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          95
  6455    02 012C2   4B70209D              AND,7    =X'3F3F3F3F'      MASK SEED
  6456    02 012C3   35701D39              STW,7    :PATID+1          SEED FOR RANDOM PATTERN
  6457    02 012C4   357020C5              STW,7    BUFF1
  6458    02 012C5   680012FE              B        TST3111
  6459    02 012C6   327019A1    TST3107   LW,7     PATTTk            DATA P1=5 BIT CROWDING
  6460    02 012C7   2570007C A             SLS,7    -4                SHIFT
  6461    02 012C8   2170000A A             CI,7     10
  6462    02 012C9   691012CB              BL       TST3108
  6463                           *         ERROR    :P3 TOO LARGE
  6464    02 012CA   E8000214 A             B        *:MONITOR
  6465    02 012CB   329E18E0    TST3108   LW,9     PT00,7            X'01010101' TO X'80808080'
  6466    02 012CC   25900068 A             SLS,9    -24               R9 1ST TRACK INFO
  6467    02 012CD   327019A1              LW,7     PATTTk
  6468    02 012CE   4B7020AC              AND,7    =X'0000000F'
  6469    02 012CF   2170000A A             CI,7     10
  6470    02 012D0   691012D2              BL       TST3109
  6471                           *         ERROR    :P4 TOO LARGE
  6472    02 012D1   E8000214 A             B        *:MONITOR
  6473    02 012D2   32AE18E0    TST3109   LW,10    PT00,7            X'01010101' TO X'80808080'
  6474    02 012D3   25A00068 A             SLS,10   -24               R10 2ND TRACK INFO
  6475    02 012D4   22600000 A             LI,6     0
  6476    02 012D5   22500000 A             LI,5     0
  6477    02 012D6   22EFFFFC A    TST3109A LI,14    -4
  6478    02 012D7   22700000 A             LI,7     0
  6479    02 012D8   22B00000 A             LI,11    0
  6480    02 012D9   32C019A2    TST3110   LW,12    PATTTS1           1ST TRACK PATTERN
  6481    02 012DA   32D019A3              LW,13    PATTTS2           2ND TRACK PATTERN
  6482    02 012DB   25CC0061 A             SLS,12   -31,6
  6483    02 012DC   25DC0061 A             SLS,13   -31,6
  6484    02 012DD   31C00001 A             CW,12    1
  6485    02 012DE   684012E0              BCR,4    $+2
  6486    02 012DF   49B00009 A             OR,11    9
  6487    02 012E0   31D00001 A             CW,13    1
  6488    02 012E1   684012E3              BCR,4    $+2
  6489    02 012E2   49B0000A A             OR,11    10
  6490    02 012E3   20700001 A             AI,7     1
  6491    02 012E4   21700004 A             CI,7     4
  6492    02 012E5   683012E7              BE       $+2               BYPASS SHIFT
  6493    02 012E6   25B00008 A             SLS,11   8                 SHIFT WORD
  6494    02 012E7   20600001 A             AI,6     1
  6495    02 012E8   65E012D9              BIR,14   TST3110
  6496    02 012E9   35BA19BD              STW,11   CSMEAR,5          STORE INFO FOR BOTH TRACKS
  6497    02 012EA   20500001 A             AI,5     1
  6498    02 012EB   21500008 A             CI,5     8
  6499    02 012EC   691012D6              BL       TST3109A          LOOP
  6500                           *                                    8 WORDS OF TRACK INFO TO SMEAR
  6501    02 012ED   32A01D3B              LW,10    :PATWC            WORD SIZE
  6502    02 012EE   31A00003 A             CW,10    3                 ODD WORD COUNT
  6503    02 012EF   684012F1              BCR,4    $+2
  6504    02 012F0   20A00008 A             AI,10    8
  6505    02 012F1   25A0007D A             SLS,10   -3                NUMBER OF LOOPS
  6506    02 012F2   22700000 A             LI,7     0
  6507    02 012F3   228FFFF8 A    TST310A  LI,8     -8
  6508    02 012F4   22600000 A             LI,6     0
  6509    02 012F5   329C19BD              LW,9     CSMEAR,6          LOAD BIT STRING WORD
  6510    02 012F6   359E20C5              STW,9    BUFF1,7           STORE
  6511    02 012F7   33100006 A             MTW,1    6
  6512    02 012F8   33100007 A             MTW,1    7
  6513    02 012F9   658012F5              BIR,8    TST310A+2         8 WORDS EACH PASS
  6514    02 012FA   64A012F3              BDR,10   TST310A           FILL WORD COUNT
  6515    02 012FB   B28018D7              LW,8     *LASTWDW          SET UP ODD BYTES
  6516    02 012FC   4B8019AB              AND,8    MASKBYT
  6517    02 012FD   B58018D7              STW,8    *LASTWDW
  6518    02 012FE   31100202 A    TST3111  CW,1     :P2               WRITE ONLY  P2 =1
  6519    02 012FF   68101305              BGE      TST3112           BRANCH IF P2 =0,1
  6520    02 01300   31200202 A             CW,2     :P2               READ FORWARD ONLY P2 =2
  6521    02 01301   6830133A              BEZ      TST3116-2         REWIND, READ RECORDS FWD
  6522    02 01302   31300202 A             CW,3     :P2               SPACE BACKWARD ONLY P2 =3
  6523    02 01303   68301387              BE       TST3119
  6524    02 01304   6800133A              B        TST3116-2         P2 =4 READ FWD AND SPACE BKW
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          96
  6525                                *                                WRITE RECORD
  6526    02 01305    6AF0160C        TST3112  BAL,15   RWTLP       REWIND TO LOAD POINT
  6527    02 01306    22A00000 A              LI,10    0
  6528    02 01307    312019A0                CW,2     PATTYPE     RANDOM PATTERN
  6529    02 01308    69301312                BNE      $+10
  6530    02 01309    32E020C5                LW,14    BUFF1       CHANGE RANDOM SEED
  6531    02 0130A    21A00000 A              CI,10    0           FIRST PASS
  6532    02 0130B    68301310                BE       $+5
  6533    02 0130C    6AF01CD9                BAL,15   :RANDOM     GET NEW SEED
  6534    02 0130D    311019CE                CW,1     MODEFLAG    PACKED FLAG SET
  6535    02 0130E    68301310                BE       $+2
  6536    02 0130F    4BE0209D                AND,14   =X'3F3F3F3F' MASK WORD
  6537    02 01310    35E01D39                STW,14   :PATID+1    STORE
  6538    02 01311    6AF01CF9                BAL,15   :PATTERN    CHANGE PATTERN
  6539    02 01312    B28018D7                LW,8     *LASTWDW
  6540    02 01313    4B8019AB                AND,8    MASKBYT     MASK ODD BYTE COUNT
  6541    02 01314    B58018D7                STW,8    *LASTWDW
  6542    02 01315    22900000 A              LI,9     0           CLEAR RETRY TALLY
  6543    02 01316    6AF01638                BAL,15   CLRARM      CLEAR AND ARM INTERRUPT
  6544    02 01317    220008E3                LI,0     DA(TST3WRT) WRITE RECORD
  6545    02 01318    6AF01CA2                BAL,15   :IOEXEC     EXECUTE SIO
  6546    02 01319    6AF0162F                BAL,15   MYDELAY     DELAY FOR INTERRUPT
  6547    02 0131A    CEE018B5                TDV,14   *:DEVADDR   TDV
  6548    02 0131B    31F02089                CW,15    =X'02000000' EOT SET
  6549    02 0131C    69401336                BCS,4    TST3115-1   GO TO REWIND
  6550    02 0131D    6AF01EC4                BAL,15   :ERRORT     TEST
  6551    02 0131E    00005D84                DATA     BA(TSEQ011) READY, NO UE, ETC
  6552    02 0131F    6800132E                B        TST3114
  6553                                *       ERROR NOT EOT
  6554    02 01320    12C017C6                LD,12    TST3WRT     IOCD PRINTOUT
  6555    02 01321    6AF01EAF                BAL,15   IOCDMSG
  6556                                *                            SPACE BACKWARD TO LOOP ON ERROR
  6557    02 01322    6AF01638                BAL,15   CLRARM      CLEAR AND ARM INTERRUPT
  6558    02 01323    22000C19                LI,0     DA(SPBRAND) SPACE BKW
  6559    02 01324    6AF01CA2                BAL,15   :IOEXEC     TIO, SIO
  6560    02 01325    6AF0162F                BAL,15   MYDELAY     WAIT FOR INTERRUPT
  6561    02 01326    33100009 A              MTW,1    9           TALLY +1
  6562    02 01327    21900006 A              CI,9     6
  6563    02 01328    69101310                BL       TST3112+11  GO WRITE RECORD
  6564    02 01329    6AF01638                BAL,15   CLRARM      CLEAR AND ARM INTERRUPT
  6565    02 0132A    22000BCA                LI,0     DA(TSE1)    SET ERASE
  6566    02 0132B    6AF01CA2                BAL,15   :IOEXEC     TIO, SIO
  6567    02 0132C    6AF0162F                BAL,15   MYDELAY     WAIT FOR INTERRUPT
  6568    02 0132D    6800130F                B        TST3112+10  LOOP ON ERROR
  6569    02 0132E    20A00001 A  TST3114     AI,10    1
  6570    02 0132F    22F00000 A              LI,15    0
  6571    02 01330    35F01EA6                STW,15   :INTRECF    CLEAR INTERRUPT FLAG
  6572    02 01331    32E00204 A              LW,14    :P4         ALL RECORDS WRITTEN
  6573    02 01332    6AF01E26                BAL,15   :DELAY      DELAY P4 MS
  6574    02 01333    68001334                B        $+1
  6575    02 01334    31A00203 A              CW,10    :P3         LOOP TILL EOT OR RECORD COUNT DONE
  6576    02 01335    69101307                BL       TST3112+2
  6577    02 01336    6AF0160C                BAL,15   RWTLP        REWIND TO LOAD POINT
  6578    02 01337    31100202 A  TST3115     CW,1     :P2         END OF WRITE ONLY P2 =1
  6579    02 01338    6930133A                BNE      TST3116-2
  6580    02 01339    680013A6                B        TST3122+1   RETURN TO CONTROL PROGRAM
  6581                                *                            P2=2 READ RECORD FORWARD
  6582    02 0133A    6AF0160C                BAL,15   RWTLP        REWIND TO LOAD POINT
  6583    02 0133B    22A00000 A              LI,10    0
  6584    02 0133C    22900000 A  TST3116     LI,9     0           CLEAR RETRY TALLY
  6585    02 0133D    6AF01638                BAL,15   CLRARM      CLEAR AND ARM INTERRUPT
  6586    02 0133E    6AF01CE8                BAL,15   :CLEAR      CLEAR AREA
  6587    02 0133F    B28018D7                LW,8     *LASTWDW    SET UP FOR ODD BYTE SIZE
  6588    02 01340    4B8019AB                AND,8    MASKBYT     MASK ODD BYTE COUNT
  6589    02 01341    B58018D9                STW,8    *LASTWDR
  6590    02 01342    22000BF9                LI,0     DA(TST3RF)  READ RECORD FORWARD
  6591    02 01343    6AF01CA2                BAL,15   :IOEXEC     EXECUTE SIO
  6592    02 01344    6AF0162F                BAL,15   MYDELAY     DELAY FOR INTERRUPT
  6593    02 01345    CEE018B5                TDV,14   *:DEVADDR   TDV
  6594    02 01346    31F02089                CW,15    =X'02000000' EOT SET
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          97
  6595    02 01347    69401383              BCS,4     TST3119-4
  6596    02 01348    311019CE      TST3117 CW,1      MODEFLAG          PACKED OPTION SET
  6597    02 01349    6930134D              BNE       $+4
  6598    02 0134A    CDE018B5              TIO,14    *:DEVADDR         TIO
  6599    02 0134B    31F0208B              CW,15     =X'087F0000'      ELIMINATE INCORRECT LENGTH
  6600    02 0134C    6840135A              BCR,4     TST3117A
  6601    02 0134D    6AF01EC4              BAL,15    :ERRORT           TEST
  6602    02 0134E    00005D78              DATA      BA(TSEQ010)       READY, NO UE
  6603    02 0134F    6800135A              B         TST3117A
  6604                              *       ERROR EXIT NOT EOT
  6605    02 01350    12C017F2              LD,12     TST3RF            IOCD PRINTOUT
  6606    02 01351    6AF01EAF              BAL,15    IOCDMSG
  6607                              *                                 SPACE BACKWARD TO LOOP ON ERROR
  6608    02 01352    33100009 A            MTW,1     9                 TALLY +1
  6609    02 01353    21900006 A            CI,9      6
  6610    02 01354    6830135A              BE        TST3117A          RETRIES DONE
  6611    02 01355    6AF01638              BAL,15    CLRARM            CLEAR AND ARM INTERRUPT
  6612    02 01356    22000C19              LI,0      DA(SPBRAND)       SPACE BACKWARD
  6613    02 01357    6AF01CA2              BAL,15    :IOEXEC           TIO, SIO
  6614    02 01358    6AF0162F              BAL,15    MYDELAY           WAIT FOR INTERRUPT
  6615    02 01359    6800133D              B         TST3116+1         GO RETRY READ
  6616                              *                                 COMPARE INFORMATION
  6617    02 0135A    312019A0      TST3117A CW,2     PATTYPE           RANDOM PATTERN
  6618    02 0135B    69301362              BNE       TST3117A+8
  6619    02 0135C    B280207D              LW,8      *BUFF2            GET SEED FOR RECORD
  6620    02 0135D    311019CE              CW,1      MODEFLAG          PACKED FLAG SET
  6621    02 0135E    68301360              BE        $+2
  6622    02 0135F    4B80209D              AND,8     =X'3F3F3F3F'      MASK SEED
  6623    02 01360    35801D39              STW,8     :PATID+1          STORE WORD SEED
  6624    02 01361    6AF01CF9              BAL,15    :PATTERN          SPREAD PATTERN FOR COMPARE
  6625    02 01362    72E017C6              LB,14     TST3WRT           BCD WRITE
  6626    02 01363    71E020B5              CB,14     =X'0D000000'      MASK
  6627    02 01364    6830136E              BE        TST3117B-6        BYPASS MASK
  6628    02 01365    311019CE              CW,1      MODEFLAG          PACKED FLAG SET
  6629    02 01366    6830136E              BE        $+8
  6630    02 01367    3A801DBA              LCW,8     :COMWCNT          WORDS COMPARE
  6631    02 01368    22600000 A            LI,6      0
  6632    02 01369    32EC20C5              LW,14     BUFF1,6
  6633    02 0136A    4BE0209D              AND,14    =X'3F3F3F3F'      MASK SEED
  6634    02 0136B    35EC20C5              STW,14    BUFF1,6           STORE WORD
  6635    02 0136C    33100006 A            MTW,1     6
  6636    02 0136D    65801369              BIR,8     $-4
  6637    02 0136E    B28018D7              LW,8      *LASTWDW
  6638    02 0136F    4B8019AB              AND,8     MASKBYT           MASK ODD BYTE COUNT
  6639    02 01370    B58018D7              STW,8     *LASTWDW
  6640    02 01371    B28018D9              LW,8      *LASTWDR
  6641    02 01372    4B8019AB              AND,8     MASKBYT           MASK ODD BYTE COUNT
  6642    02 01373    B58018D9              STW,8     *LASTWDR
  6643    02 01374    6AF01D47      TST3117B BAL,15   :COMPARE
  6644    02 01375    6800137B              B         TST3118
  6645                              *       INFORMATION ERROR
  6646    02 01376    12C017F2              LD,12     TST3RF            IOCD PRINTOUT
  6647    02 01377    6AF01EAF              BAL,15    IOCDMSG
  6648    02 01378    EAF0021D A            BAL,15    *:SENSE           CHECK SENSE SWITCHES
  6649    02 01379    2E000000 A            WAIT                        HALT
  6650    02 0137A    6800137B              B         $+1               CANT LOOP
  6651    02 0137B    20A00001 A    TST3118 AI,10     1
  6652    02 0137C    22E00000 A            LI,14     0
  6653    02 0137D    35E01EA6              STW,14    :INTRECF          CLEAR INTERRUPT FLAG
  6654    02 0137E    32E00204 A            LW,14     :P4               DELAY IN MS
  6655    02 0137F    6AF01E26              BAL,15    :DELAY
  6656    02 01380    68001381              B         $+1
  6657    02 01381    31A00203 A            CW,10     :P3               LOOP TILL EOT OR RECORD COUNT DONE
  6658    02 01382    6910133C              BL        TST3116
  6659    02 01383    31200202 A            CW,2      :P2
  6660    02 01384    69301387              BNE       TST3119           P2 =2 END OF READ FWD
  6661    02 01385    6AF0160C              BAL,15    RWTLP             REWIND TO LOAD POINT
  6662    02 01386    680013A6              B         TST3122+1         RETURN TO CONTROL PROGRAM
  6663                              *                                 READ RECORD BACKWARD
  6664    02 01387    22A00000 A    TST3119 LI,10     0
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          98
  6665   02 01388   22900000 A            LI,9     0                  CLEAR RETRY TALLY
  6666   02 01389   6AF01638              BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  6667   02 0138A   22000C19              LI,0     DA(SPBRAND)        SPACE BACKWARD
  6668   02 0138B   6AF01CA2              BAL,15   :IOEXEC            EXECUTE SIO
  6669   02 0138C   6AF0162F              BAL,15   MYDELAY            DELAY FOR INTERRUPT
  6670   02 0138D   CEE018B5              TDV,14   *:DEVADDR          TDV
  6671   02 0138E   31F02098              CW,15    =X'04000000'       BOT SET
  6672   02 0138F   694013A5              BCS,4    TST3122
  6673   02 01390   6AF01EC4   TST3120    BAL,15   :ERRORT            TEST
  6674   02 01391   00005D78              DATA     BA(TSE0010)        READY, NO UE
  6675   02 01392   6800139D              B        TST3120A
  6676                         *          ERROR EXIT NOT LOAD POINT
  6677   02 01393   12C01832              LD,12    SPBRAND            IOCD PRINTOUT
  6678   02 01394   6AF01EAF              BAL,15   IOCDMSG
  6679                         *                                      SPACE FORWARD TO LOOP ON ERROR
  6680   02 01395   33100009 A            MTW,1    9                  TALLY +1
  6681   02 01396   21900006 A            CI,9     6
  6682   02 01397   6830139D              BE       TST3120A           RETRIES DONE
  6683   02 01398   6AF01638              BAL,15   CLRARM             CLEAR AND ARM INTERRUPT
  6684   02 01399   22000C1A              LI,0     DA(SPFRAND)        SPACE FORWARD
  6685   02 0139A   6AF01CA2              BAL,15   :IOEXEC            TIO, SIO
  6686   02 0139B   6AF0162F              BAL,15   MYDELAY            WAIT FOR INTERRUPT
  6687   02 0139C   68001389              B        TST3119+2          GO RETRY READ
  6688                         *                                      COMPARE INFORMATION READ
  6689   02 0139D   20A00001 A   TST3120A AI,10    1
  6690   02 0139E   22E00000 A            LI,14    0
  6691   02 0139F   35E01EA6              STW,14   :INTRECF           CLEAR INTERRUPT FLAG
  6692   02 013A0   32E00204 A            LW,14    :P4                DELAY P4 MS
  6693   02 013A1   6AF01E26              BAL,15   :DELAY
  6694   02 013A2   680013A3              B        $+1
  6695   02 013A3   31A00203 A            CW,10    :P3                LOOP TILL BOT OR RECORD COUNT DONE
  6696   02 013A4   69101388              BL       TST3119+1
  6697   02 013A5   6AF0160C   TST3122    BAL,15   RWTLP              REWIND TO LOAD POINT
  6698   02 013A6   32F0189C              LW,15    FLGRG              REGULAR PRINTOUT FLAG
  6699   02 013A7   35F019A7              STW,15   NOPKPRT
  6700   02 013A8   68000511              B        TST36              RETURN TO CONTROL PROGRAM
  6701                         *
  6702                         *
  6703                         *
  6704                         *
  6705                         *
  6706                         *
  6707                         *
  6708                         *                                      TST3,2 DESKEW UTILITY TEST
  6709                         *                                      ---------------------------------
  6710                         *                THIS TEST IS PROVIDED AS A SCOPING AID DURING      *
  6711                         *                CHECKING AND ADJUSTING THE READ/WRITE SKEW. A      *
  6712                         *                PATTERN OF ALL ONES WILL BE RECORDED AS A CONTIN-  *
  6713                         *                UOUS RECORD. AT EOT THE TAPE WILL BE REWOUND.      *
  6714                         *                                                                   *
  6715                         *                      D1 2 DESKEW TEST                             *
  6716                         *                         D2 0,1 WRITE UNTIL EOT IS REACHED AND     *
  6717                         *                              REWIND.                              *
  6718                         *                            2 READ FORWARD UTIL EOT AND REWIND.    *
  6719                         *                            3 SPACE BACKWARD INTIL BOT IS REACHED  *
  6720                         *                            4 READ FWD TILL EOT, SPACE BKW TILL    *
  6721                         *                              BOT, NO REWINDS.                     *
  6722                         *                         D3 NOT USED                               *
  6723                         *                         D4 NOT USED                               *
  6724                         *                EXAMPLE                                            *
  6725                         *                -------  TST3,2,2                                  *
  6726                         *                         READ FORWARD UNTIL EOT AND REWIND         *
  6727                         *                                                                   *
  6728                         *
  6729   02 013A9   22700064 A   TST32     LI,7     100                SMEAR PATTERN
  6730   02 013AA   328020A1              LW,8     =X'FFFFFFFF'       ALL BITS ON
  6731   02 013AB   358E20C4              STW,8    BUFF1-1,7          STORE WORD 400 BYTE RECORD
  6732   02 013AC   647013AB              BDR,7    $-1
  6733   02 013AD   32701838              LW,7     TST32W             WRITE
  6734   02 013AE   3280183C              LW,8     TST32RF            READ FWD
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          99
  6735    02 013AF    311019CE              CW,1     MODEFLAG          PACKED BINARY FLAG SET
  6736    02 013B0    683013B4              BE       TST3201
  6737    02 013B1    49702086              OR,7     =X'05000000'      BINARY WRITE
  6738    02 013B2    49802085              OR,8     =X'06000000'      BINARY READ
  6739    02 013B3    680013B6              B        $+3
  6740    02 013B4    4B7020B6    TST3201   AND,7    =X'01FFFFFF'      PACKED BINARY WRITE
  6741    02 013B5    4B8020B7              AND,8    =X'02FFFFFF'      PACKED BINARY READ
  6742    02 013B6    35701838              STW,7    TST32W            STORE WRITE
  6743    02 013B7    3580183C              STW,8    TST32RF           STORE READ
  6744    02 013B8    31100202 A            CW,1     :P2               P2 =0,1 WRITE CONTINUOUS
  6745    02 013B9    681013C5              BGE      TST3202
  6746    02 013BA    31200202 A            CW,2     :P2               P2 =2    READ FWD TIL EOT
  6747    02 013BB    683013E6              BEZ      TST3205
  6748    02 013BC    31300202 A            CW,3     :P2               P2 =3 SPACE BKW TILL BOT
  6749    02 013BD    683013DC              BEZ      TST3203
  6750    02 013BE    32700202 A            LW,7     :P2
  6751    02 013BF    21700004 A            CI,7     4
  6752    02 013C0    683013E7              BE       TST3206           P2 =4 NO REWINDS,READ FWD,READ BKW *
  6753                            *                  ERROR P2 IS NOT 0,1,2,3,4
  6754    02 013C1    3520030A A            STW,2    :PIT10            REPORT BAD PARAMETER
  6755    02 013C2    EAF00229 A            BAL,15   *:PREPORT
  6756    02 013C3    00000326              DATA     :DIC+6
  6757    02 013C4    E8000214 A            B        *:MONITOR
  6758    02 013C5    6AF0160C    TST3202   BAL,15   RWTLP             REWIND TO LOAD POINT
  6759    02 013C6    6AF01638              BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  6760    02 013C7    22000C1C              LI,0     DA(TST32W)        WRITE RECORD WITH DATA CHAINING
  6761    02 013C8    CC8018B5              SIO,8    *:DEVADDR         WRITE
  6762    02 013C9    2270E000 A            LI,7     X'E000'
  6763    02 013CA    32C01EA6              LW,12    :INTRECF          WAIT FOR INTERRUPT
  6764    02 013CB    693013D4              BNEZ     TST3202A
  6765    02 013CC    647013CA              BDR,7    $-2
  6766    02 013CD    CFC018B5              HIO,12   *:DEVADDR         HIO
  6767    02 013CE    CEA018B5              TDV,10   *:DEVADDR         TDV
  6768    02 013CF    31B02089              CW,11    =X'02000000'      EOT SET
  6769    02 013D0    694013C5              BCS,4    TST3202
  6770    02 013D1    EAF0021C A            BAL,15   *:PRINT           PRINT OUT TIMEOUT MESSAGE
  6771    02 013D2    00001A0A              DATA     TIMEOUT
  6772    02 013D3    680013C6              B        TST3202+1         CONTINUE WITH OPERATION
  6773                            *                                    TAPE WRITTEN ALL BITS ON CONTUOUS
  6774    02 013D4    CEC018B5    TST3202A  TDV,12   *:DEVADDR         LOOK FOR EOT
  6775    02 013D5    31D02089              CW,13    =X'02000000'      EOT
  6776    02 013D6    694013DA              BCS,4    $+4
  6777    02 013D7    2270E000 A            LI,7     X'E000'
  6778    02 013D8    6AF01E44              BAL,15   :INTAE            ARM INTERRUPT
  6779    02 013D9    680013CA              B        TST3202+5
  6780    02 013DA    CFC018B5              HIO,12   *:DEVADDR         HIO
  6781    02 013DB    680013C5              B        TST3202           GO TO REWIND
  6782    02 013DC    6AF01638    TST3203   BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  6783    02 013DD    22000C0A              LI,0     DA(SBF1)          SPACE FILE BKW
  6784    02 013DE    CC8018B5              SIO,8    *:DEVADDR         INIATE SPACE BKW
  6785    02 013DF    32C01EA6              LW,12    :INTRECF          WAIT FOR INTERRUPT
  6786    02 013E0    683013DF              BCR,3    $-1
  6787    02 013E1    CFC018B5              HIO,12   *:DEVADDR         HIO
  6788    02 013E2    CEA018B5              TDV,10   *:DEVADDR         TDV
  6789    02 013E3    31B02098              CW,11    =X'04000000'      BOT SET
  6790    02 013E4    694013E7              BCS,4    TST3206
  6791    02 013E5    680013DC              B        TST3203           CONTINUE WITH OPERATION
  6792    02 013E6    6AF0160C    TST3205   BAL,15   RWTLP             REWIND TO LOAD POINT
  6793    02 013E7    6AF01638    TST3206   BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  6794    02 013E8    22000C1E              LI,0     DA(TST32RF)       READ FWD TILL EOT  P2 =2
  6795    02 013E9    CC8018B5              SIO,8    *:DEVADDR         READ FWD
  6796    02 013EA    2270E000 A            LI,7     X'E000'
  6797    02 013EB    32C01EA6              LW,12    :INTRECF          WAIT FOR INTERRUPT
  6798    02 013EC    693013F5              BNEZ     TST3206A
  6799    02 013ED    647013EB              BDR,7    $-2
  6800    02 013EE    CFC018B5              HIO,12   *:DEVADDR         HIO
  6801    02 013EF    CEA018B5              TDV,10   *:DEVADDR         TDV
  6802    02 013F0    31B02089              CW,11    =X'02000000'      EOT SET
  6803    02 013F1    694013FC              BCS,4    TST3207
  6804    02 013F2    EAF0021C A            BAL,15   *:PRINT           PRINT OUT TIMEOUT MESSAGE
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            100
  6805    02 013F3    00001A0A               DATA     TIMEOUT
  6806    02 013F4    680013E7               B        TST3206          CONTINUE WITH OPERATION
  6807    02 013F5    CEC018B5     TST3206A  TDV,12   *:DEVADDR        LOOK FOR EOT
  6808    02 013F6    31D02089               CW,13    =X'02000000'     EOT
  6809    02 013F7    694013FB               BCS,4    $+4
  6810    02 013F8    2270E000 A             LI,7     X'E000'
  6811    02 013F9    6AF01E44               BAL,15   :INTAE           ARM INTERRUPT
  6812    02 013FA    680013EB               B        TST3206+4
  6813    02 013FB    CFC018B5               HIO,12   *:DEVADDR
  6814    02 013FC    31300202 A   TST3207    CW,3     :P2              P2 =3
  6815    02 013FD    683013DC               BE       TST3203          GO SPACE
  6816    02 013FE    32700202 A             LW,7     :P2
  6817    02 013FF    21700004 A             CI,7     4
  6818    02 01400    683013DC               BE       TST3203          P2 =4 READ FWD,SPACE BKW,NO REWIND
  6819    02 01401    680013E6               B        TST3205          REWIND AND READ FORWARD AGAIN
  6820                          *
  6821    02 01402    68000511               B        TST36            GO BACK TO CONTROL PROGRAM
  6822                          *
  6823                          *
  6824                          *                                      TST3,3 SYNC ON A CHARACTER UTILITY
  6825                          *                                      ----------------------------------
  6826                          *                                                                       *
  6827                          *                                                                       *
  6828                          *                  THIS TEST IS PROVIDED AS A SCOPING AID BY EXECUTING  *
  6829                          *                  A UNIQUE I/O INSTRUCTION (TDV) AFTER THE BYTE COUNT  *
  6830                          *                  SPECIFIED IN THE TEST HAS BEEN REACHED.              *
  6831                          *                        D1 3 SYNC ON A CHARACTER TEST                  *
  6832                          *                           D2 1 READ FORWARD AND SPACE RECORD          *
  6833                          *                              BACKWARD.                                *
  6834                          *                           D3 BYTE TO SYNC ON.                         *
  6835                          *                           D4 DELAY IN MILLISECONDS BETWEEN SYNCS.     *
  6836                          *                                                                       *
  6837                          *                  EXAMPLE                                              *
  6838                          *                  -------  TST3,3,1,375,10                            *
  6839                          *                                                                       *
  6840                          *                           READ FORWARD 375 BYTES, SIGNAL (TDV) AND    *
  6841                          *                           DELAY 10 MILLISECONDS. SPACE BACKWARD.      *
  6842                          *                                                                       *
  6843    02 01403    32700203 A   TST33     LW,7     :P3              GET BYTE COUNT TO SYNC ON
  6844    02 01404    68201410               BLEZ     TST3301
  6845    02 01405    32700204 A             LW,7     :P4              P4 =0 OK
  6846    02 01406    6810140A               BGEZ     $+4
  6847    02 01407    22700004 A             LI,7     4
  6848    02 01408    3570030A A             STW,7    :PIT10           PARAMETER 4 ERROR
  6849    02 01409    68001411               B        TST3301+1
  6850    02 0140A    229FFFF5 A             LI,9     -11              MAX BYTE BUFFER AREA
  6851    02 0140B    22800000 A             LI,8     0
  6852    02 0140C    308018C8               AW,8     MAXBYT
  6853    02 0140D    6590140C               BIR,9    $-1              11 X MAXBYTE LIMIT
  6854    02 0140E    31800007 A             CW,8     7
  6855    02 0140F    68101414               BGE      TST3302          P3 OK
  6856                          *            ERROR EXIT P3 TOO LARGE, NEGATIVE OR ZERO
  6857    02 01410    3530030A A   TST3301   STW,3    :PIT10           PARAMETER 3 ERROR
  6858    02 01411    EAF00229 A             BAL,15   *:PREPORT
  6859    02 01412    00000326               DATA     :DIC+6
  6860    02 01413    E8000214 A             B        *:MONITOR
  6861    02 01414    22700000 A   TST3302   LI,7     0
  6862    02 01415    328018C8               LW,8     MAXBYT           MAX BYTE SIZE OF I/O AREA
  6863    02 01416    308020B8               AW,8     =X'91000000'     DC,CE,SKIP
  6864    02 01417    225FFFF5 A             LI,5     -11
  6865    02 01418    358E1843               STW,8    TST33R+1,7       SET UP DC FLAG
  6866    02 01419    33200007 A             MTW,2    7
  6867    02 0141A    E5501418               BIR,5    $-2              SET UP DATA CHAIN FLAG IN ALL IOCD
  6868    02 0141B    32700203 A             LW,7     :P3              GET BYTE TO SYNC ON
  6869    02 0141C    229FFFF5 A             LI,9     -11
  6870    02 0141D    22600000 A             LI,6     0
  6871    02 0141E    328018C8     TST3303   LW,8     MAXBYT           LARGEST RECORD POSSIBLE IN I/O AREA
  6872    02 0141F    31800007 A             CW,8     7
  6873    02 01420    68101425               BGE      TST3304          LAST BYTE SET UP
  6874    02 01421    387018C8               SW,7     MAXBYT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          101
 6875    02 01422    308018C8              AW,8      MAXBYT
 6876    02 01423    33200006 A            MTW,2     6
 6877    02 01424    6590141E              BIR,9     TST3303             LOOP
 6878    02 01425    4B70208E    TST3304   AND,7     =X'00FFFFFF'        GET LAST BYTE COUNT
 6879    02 01426    307020B9              AW,7      =X'50000000'        ZBC AND CE INTERRUPT
 6880    02 01427    357C1843              STW,7     TST33R+1,6
 6881    02 01428    31100202 A            CW,1      :P2                 READ FWD, SPACE BkW
 6882    02 01429    6830142C              BEZ       TST3306
 6883                                      *         ERROR IF P1 NOT 1
 6884    02 0142A    3520030A A            STW,2     :PIT10              REPORT BAD PARAMETER
 6885    02 0142B    68001411              B         TST3302-3
 6886                                      *                             FORWARD READ SET UP
 6887    02 0142C    22908314    TST3306   LI,9      BA(BUFF1)           BA OF BUFF1
 6888    02 0142D    311019CE              CW,1      MODEFLAG            PACKED BINARY FLAG SET
 6889    02 0142E    68301431              BE        $+3
 6890    02 0142F    30902085              AW,9      =X'06000000'        BINARY READ
 6891    02 01430    68001432              B         $+2
 6892    02 01431    30902089              AW,9      =X'02000000'        PACKED BINARY READ
 6893    02 01432    22700000 A            LI,7      0
 6894    02 01433    226FFFF5 A            LI,6      -11
 6895    02 01434    359E1842              STW,9     TST33R,7            SET UP ALL READS
 6896    02 01435    33200007 A            MTW,2     7
 6897    02 01436    65601434              BIR,6     $-2
 6898                                      *                             READ RECORD FORWARD
 6899    02 01437    6AF01638    TST3309   BAL,15    CLRARM              CLEAR AND ARM INTERRUPT
 6900    02 01438    22000C21              LI,0      DA(TST33R)          READ
 6901    02 01439    CC8018B5              SIO,8     *:DEVADDR           SIO READ
 6902    02 0143A    22E02328 A            LI,14     9000                9 SEC DELAY
 6903    02 0143B    6AF01E26              BAL,15    :DELAY              WAIT FOR INTERRUPT
 6904    02 0143C    6800143E              B         TST3310
 6905                                      *                             DELAY TIMEOUT
 6906    02 0143D    68001451              B         TST3311
 6907    02 0143E    CEC018B5    TST3310   TDV,12    *:DEVADDR           TDV SIGNAL AT ZBC
 6908    02 0143F    327020BA              LW,7      =X'00FF0000'        DELAY
 6909    02 01440    CDC018B5              TIO,12    *:DEVADDR           TIO
 6910    02 01441    31D02097              CW,13     =X'66000000'        DEVICE OR CONTROLLER BUSY
 6911    02 01442    68401445              BCR,4     $+3
 6912    02 01443    64701440              BDR,7     $-3                 LOOP
 6913    02 01444    68001451              B         TST3311             TIMEOUT ERROR
 6914    02 01445    22E00000 A            LI,14     0
 6915    02 01446    35E01EA6              STW,14    :INTRECF            CLEAR INTERRUPT FLAG
 6916    02 01447    32E00204 A            LW,14     :P4                 DELAY FOR SMALL RECORDS
 6917    02 01448    6AF01E26              BAL,15    :DELAY
 6918    02 01449    6800144A              B         $+1
 6919    02 0144A    6AF01638              BAL,15    CLRARM              CLEAR AND ARM INTERRUPT
 6920    02 0144B    22000C20              LI,0      DA(TST33S)          SPACE
 6921    02 0144C    CC8018B5              SIO,8     *:DEVADDR           SIO SPACE
 6922    02 0144D    22E01F40 A            LI,14     8000                8 SEC DELAY
 6923    02 0144E    6AF01E26              BAL,15    :DELAY
 6924    02 0144F    68001437              B         TST3309
 6925    02 01450    68000511              B         TST36
 6926    02 01451    CFC018B5    TST3311   HIO,12    *:DEVADDR           HIO
 6927    02 01452    EAF0021C A            BAL,15    *:PRINT             PRINT MESSAGE
 6928    02 01453    00001A0A              DATA      TIMEOUT
 6929    02 01454    6AF0160C              BAL,15    RWTLP               REWIND TO LOAD POINT
 6930    02 01455    68000511              B         TST36
 6931                                      *
 6932                                      *
 6933                                      *
 6934                                      *
 6935                                      *
 6936                                      *                  TST3,4 COMPATABILITY AND NOISE PATTERN TEST
 6937                                      *                  ------------------------------------------
 6938                                      *                                                            *
 6939                                      *                    THIS TEST ALLOWS THE USER TO WRITE, READ FORWARD, *
 6940                                      *                    READ BACKWARD, OR READ FORWARD AND BACKWARD A PRE-*
 6941                                      *                    DETERMINED INCREMENTED NOISE PATTERN.             *
 6942                                      *                                                                      *
 6943                                      *                          D1 4 COMPATABILITY AND NOISE PATTERN TEST  *
 6944                                      *                             D2 0,1 WRITE,SPACE BACKWARD,AND READ   *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          102
  6945                          *                                    FORWARD ALL RECORDS.                *
  6946                          *                                  2 SPACE FORWARD,SPACE BACKWARD,READ   *
  6947                          *                                    FORWARD ALL RECORDS.                *
  6948                          *                                  3 READ FORWARD,SPACE BACKWARD,SPACE   *
  6949                          *                                    FORWARD ALL RECORDS.                *
  6950                          *                                  4 READ FORWARD ALL RECORDS.           *
  6951                          *                                  5 WRITE ALL RECORDS.                  *
  6952                          *                               D3 NOT USED                              *
  6953                          *                               D4 NOT USED                              *
  6954                          *                        EXAMPLE                                         *
  6955                          *                        -------    TST3,4,5                             *
  6956                          *                                                                       *
  6957                          *                                   WRITE ALL RECORDS.                  *
  6958                          *
  6959   02 01456   32800202 A  TST34    LW,8      :P2              OPERATIONS FLAG
  6960   02 01457   21800006 A           CI,8      6
  6961   02 01458   6910145D             BL        TST3401
  6962                          *                                    PARAMETER ERROR
  6963   02 01459   3520030A A           STW,2     :PIT10
  6964   02 0145A   EAF00229 A           BAL,15    *:PREPORT
  6965   02 0145B   00000326             DATA      :DIC+6
  6966   02 0145C   E8000214 A           B         *:MONITOR        GO TO MONITOR
  6967   02 0145D   358018F4   TST3401   STW,8     P2FLAG
  6968   02 0145E   32F0189C             LW,15     FLGRG            REGULAR PRINTOUT FLAG
  6969   02 0145F   35F019A7             STW,15    NOPKPRT
  6970   02 01460   228005DC A           LI,8      1500             MAXIMUM PASSES
  6971   02 01461   358018F6             STW,8     LOOPMAX
  6972   02 01462   351020C5             STW,1     BUFF1
  6973   02 01463   35101885             STW,1     LOOPTLY          RECORD 1
  6974   02 01464   351018F3             STW,1     NZFLAG           NOISE FLAG
  6975   02 01465   22600000 A           LI,6      0                CLEAR TALLIES OF ERRORS
  6976   02 01466   227FFFE0 A           LI,7      -32
  6977   02 01467   356E1884             STW,6     TWTALLY+32,7     CLEAR TALLY
  6978   02 01468   65701467             BIR,7     $-1
  6979   02 01469   22700005 A           LI,7      5                SET UP 5 RETRIES
  6980   02 0146A   35701887             STW,7     CRTRY
  6981   02 0146B   227014BD             LI,7      TST3412-2        SET UP EOT
  6982   02 0146C   5572120F             STH,7     T2RE06C,1
  6983                          *                                    SMEAR PATTERNS
  6984   02 0146D   22D00003 A           LI,13     3                START WITH 3 WORDS
  6985   02 0146E   35D01DBA             STW,13    :COMWCNT         COMPARE
  6986   02 0146F   35D01CF4             STW,13    :CLRSIZE         CLEAR
  6987   02 01470   6AF0169F             BAL,15    MYTSTPT          PATTERNS IN BUFFER AREA
  6988   02 01471   2250000C A           LI,5      12               SET UP STARTING BYTE SIZE
  6989   02 01472   555217C5             STH,5     WRRAND+1,1       WRITE
  6990   02 01473   555217F1             STH,5     RFRAND+1,1       READ FWD
  6991   02 01474   32F0207D             LW,15     BUFF2
  6992   02 01475   35F01CF3             STW,15    :CLRADDR         CLEAR ADDRESS
  6993   02 01476   35F01DBC             STW,15    :COMBFRB         COMPARE OBSERVED LOCATION
  6994   02 01477   22F020C5             LI,15     BUFF1            OUTPUT AREA
  6995   02 01478   35F01DBB             STW,15    :COMBFRA         PATTERN
  6996   02 01479   22C00000 A           LI,12     0
  6997   02 0147A   35C01DBD             STW,12    :COMFLAG         ERROR PRINTOUT
  6998                          *                                    REWIND ALL UNITS
  6999   02 0147B   6AF01648   TST3403   BAL,15    DOALL            DO ALL UNITS
  7000   02 0147C   6800147E             B         $+2
  7001   02 0147D   6AF0164A   TST3404   BAL,15    DOALL1           SET UP 1 UNIT
  7002   02 0147E   6AF0160C             BAL,15    RWTLP            REWIND TO LOAD PT
  7003   02 0147F   20700001 A           AI,7      1                DO NEXT UNIT
  7004   02 01480   6550147D             BIR,5     TST3404          ALL UNITS DONE
  7005                          *
  7006   02 01481   324018F4   TST3405   LW,4      P2FLAG           GET TYPE OF OPERATION
  7007   02 01482   68301489             BEZ       TST3406
  7008   02 01483   68081483             B         $,4
  7009   02 01484   68001489             B         TST3406          WRITE,SPACE BKW,READ FWD
  7010   02 01485   68001493             B         TST3407          SPACE FWD,SPACE BKW,READ FWD
  7011   02 01486   6800149D             B         TST3408          READ FWD,SPACE BKW,SPACE FWD
  7012   02 01487   680014A7             B         TST3408A         READ FWD ONLY
  7013   02 01488   680014AB             B         TST3409          WRITE ONLY
  7014                          *
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			103
7015					*			
7016	02	01489	2240148C		TST3406	LI,4	$+3	SET UP RETURN
7017	02	0148A	5542121D			STH,4	T2REWR,1	
7018	02	0148B	68001207			B	T2REW	WRITE
7019	02	0148C	2240148F			LI,4	$+3	SET UP RETURN
7020	02	0148D	5542122E			STH,4	T2RESBR,1	
7021	02	0148E	6800121E			B	T2RESB	SPACE BkW OVER RECORD
7022	02	0148F	22401492			LI,4	$+3	SET UP RETURN
7023	02	01490	5542125E			STH,4	T2RERFR,1	SET UP RETURN
7024	02	01491	68001240			B	T2RERF	READ FORWARD
7025	02	01492	680014AF			B	TST3410	GO TO TALLY
7026	02	01493	22401496		TST3407	LI,4	$+3	SET UP RETURN
7027	02	01494	5542123F			STH,4	T2RESFR,1	SET UP RETURN
7028	02	01495	6800122F			B	T2RESF	SPACE FWD
7029	02	01496	22401499			LI,4	$+3	SET UP RETURN
7030	02	01497	5542122E			STH,4	T2RESBR,1	
7031	02	01498	6800121E			B	T2RESB	SPACE BkW OVER RECORD
7032	02	01499	2240149C			LI,4	$+3	SET UP RETURN
7033	02	0149A	5542125E			STH,4	T2RERFR,1	SET UP RETURN
7034	02	0149B	68001240			B	T2RERF	READ FORWARD
7035	02	0149C	680014AF			B	TST3410	GO TO TALLY
7036	02	0149D	224014A0		TST3408	LI,4	$+3	SET UP RETURN
7037	02	0149E	5542125E			STH,4	T2RERFR,1	SET UP RETURN
7038	02	0149F	68001240			B	T2RERF	READ FORWARD
7039	02	014A0	224014A3			LI,4	$+3	SET UP RETURN
7040	02	014A1	5542122E			STH,4	T2RESBR,1	
7041	02	014A2	6800121E			B	T2RESB	SPACE BkW OVER RECORD
7042	02	014A3	224014A6			LI,4	$+3	SET UP RETURN ADDRESS
7043	02	014A4	5542123F			STH,4	T2RESFR,1	SET UP RETURN
7044	02	014A5	6800122F			B	T2RESF	SPACE FORWARD
7045	02	014A6	680014AF			B	TST3410	GO TO TALLY
7046	02	014A7	224014AA		TST3408A	LI,4	$+3	SET UP RETURN
7047	02	014A8	5542125E			STH,4	T2RERFR,1	SET UP RETURN
7048	02	014A9	68001240			B	T2RERF	READ FORWARD
7049	02	014AA	680014AF			B	TST3410	GO TO TALLY
7050	02	014AB	224014AE		TST3409	LI,4	$+3	SET UP RETURN
7051	02	014AC	5542121D			STH,4	T2REWR,1	
7052	02	014AD	68001207			B	T2REW	WRITE
7053	02	014AE	680014AF			B	TST3410	GO TO TALLY
7054					*			
7055					*			
7056	02	014AF	529217C5		TST3410	LH,9	WRRAND+1,1	INCREMENT RECORD SIZE
7057	02	014B0	2090000C	A		AI,9	12	BYTE COUNT +12
7058	02	014B1	559217C5			STH,9	WRRAND+1,1	SET UP NEW BYTE SIZE
7059	02	014B2	559217F1			STH,9	RFRAND+1,1	
7060					*			ALL PASSES DONE
7061	02	014B3	32901DBA			LW,9	:COMWCNT	INCREMENT WORD SIZE
7062	02	014B4	20900003	A		AI,9	3	WORD COUNT +3
7063	02	014B5	35901DBA			STW,9	:COMWCNT	COMPARE WORDS
7064	02	014B6	35901CF4			STW,9	:CLRSIZE	CLEAR
7065	02	014B7	33101885			MTW,1	LOOPTLY	
7066	02	014B8	32901885			LW,9	LOOPTLY	
7067	02	014B9	359020C5			STW,9	BUFF1	SET UP NEXT SEQUENCE NO. IN RECORD
7068	02	014BA	359018F8			STW,9	NZSEQNO	
7069	02	014BB	319018F6			CW,9	LOOPMAX	ALL PASSES DONE
7070	02	014BC	68201481			BLE	TST3405	DO ANOTHER LOOP
7071					*			
7072					*		ALL PASSES DONE	
7073	02	014BD	22700000	A		LI,7	0	PRINTOUT ERROR TALLIES
7074	02	014BE	3A5018BE			LCW,5	SAVNUMB	NUMBER OF UNITS
7075	02	014BF	32CE18B6		TST3412	LW,12	SAVDEV,7	DEVICE
7076	02	014C0	EAF00218	A		BAL,15	*:HEXC	CONVERT
7077	02	014C1	35F01ADC			STW,15	REMESG3+2	STORE
7078	02	014C2	32CE186C			LW,12	PWTALLY,7	PERM WRITE TALLY
7079	02	014C3	EAF00217	A		BAL,15	*:DECC	CONVERT
7080	02	014C4	35F01ADF			STW,15	REMESG3+5	STORE
7081	02	014C5	32CE1864			LW,12	TWTALLY,7	TEMP WRITE TALLY
7082	02	014C6	EAF00217	A		BAL,15	*:DECC	CONVERT
7083	02	014C7	35F01AE2			STW,15	REMESG3+8	STORE
7084	02	014C8	32CE1874			LW,12	PRFTALLY,7	PERM READ FWD

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 LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

 7085      02            014C9          EAF00217  A             BAL,15    *:DECC           CONVERT
 7086      02            014CA          35F01AE5                STW,15    REMESG3+11
 7087      02            014CB          32CE187C                LW,12     TRFTALLY,7       TEMP READ FWD
 7088      02            014CC          EAF00217  A             BAL,15    *:DECC           CONVERT
 7089      02            014CD          35F01AE8                STW,15    REMESG3+14       STORE
 7090      02            014CE          EAF0021C  A             BAL,15    *:PRINT          PRINT MESSAGE
 7091      02            014CF          00001ADA                DATA      REMESG3
 7092      02            014D0          20700001  A             AI,7      1                NEXT DEVICE
 7093      02            014D1          655014BF                BIR,5     TST3412
 7094      02            014D2          6AF01648                BAL,15    DOALL            REWIND ALL UNITS
 7095      02            014D3          680014D5                B         $+2
 7096      02            014D4          6AF0164A        TST3411 BAL,15    DOALLI           SET UP ONE UNIT
 7097      02            014D5          6AF0160C                BAL,15    RWTLP            REWIND TO LOAD POINT
 7098      02            014D6          20700001  A             AI,7      1                DO NEXT UNIT
 7099      02            014D7          655014D4                BIR,5     TST3411          DO ALL UNITS
 7100      02            014D8          68000511                B         TST36            RETURN TO CONTROL PROGRAM
 7101                                   *
 7102                                   *
 7103                                   *
 7104                                   *                       TST3,5  READ/SPACE TEST                                  *
 7105                                   *                       -------------------------                                *
 7106                                   *                                                                                *
 7107                                   *                       THIS TEST ALLOWS THE USER TO READ OR SPACE N RECORDS,*
 7108                                   *                       WITH OR WITHOUT REWIND. ONLY NON-RECOVERABLE TRANS-  *
 7109                                   *                       MISSION ERRORS WILL CAUSE ERROR PRINTOUT, BACKSPACE, *
 7110                                   *                       AND A HALT.                                          *
 7111                                   *                                                                            *
 7112                                   *                                 D1 5 READ/SPACE TEST                       *
 7113                                   *                                 D2 0 REWIND AND READ FWD N RECORDS.        *
 7114                                   *                                    1 REWIND AND SPACE FWD N RECORDS.       *
 7115                                   *                                    2 DONT REWIND, READ FWD N RECORDS       *
 7116                                   *                                    3 DONT REWIND, SPACE FWD N RECORDS.     *
 7117                                   *                                    4 DONT REWIND, SPACE BKW N RECORDS.     *
 7118                                   *                                    8 REWIND, READ FWD N RECORDS WITH EVEN  *
 7119                                   *                                      PARITY, DECIMAL (BCD).                *
 7120                                   *                                   10 DONT REWIND, READ FWD WITH EVEN PARITY*
 7121                                   *                                      PARITY, DECIMAL (BCD).                *
 7122                                   *                                 D3 NUMBER OF RECORDS TO READ OR SPACE      *
 7123                                   *                                 D4 0 DONT PRINTOUT RECORD                  *
 7124                                   *                                    1 PRINTOUT RECORD IN ERROR.             *
 7125                                   *                                    2 PRINTOUT NTH RECORD.                  *
 7126                                   *                                                                            *
 7127                                   *                       EXAMPLE          TST3,5,0,100,1                      *
 7128                                   *                       -------          REWIND,READ 100 RECORDS.PRINT OUT ERROR REC*
 7129                                   *                                                                            *
 7130                                   *                                                                            *
 7131                                   *
 7132                                   *
 7133      02            014D9          32700202  A     TST35   LW,7      :P2
 7134      02            014DA          21700008  A             CI,7      8                EVEN PARITY REQUESTED
 7135      02            014DB          684014E0                BCR,4     $+5              NO
 7136      02            014DC          207FFFF8  A             AI,7      -8
 7137      02            014DD          35700202  A             STW,7     :P2
 7138      02            014DE          2280000E  A             LI,8      X'0E'            READ FWD EVEN PARITY
 7139      02            014DF          680014E1                B         $+2
 7140      02            014E0          728017DC                LB,8      TRFBC            REGULAR READ
 7141      02            014E1          75801858                STB,8     RFSPEC           SET UP BCD
 7142      02            014E2          7580185A                STB,8     RFSPEC1
 7143      02            014E3          32700202  A             LW,7      :P2
 7144      02            014E4          21700005  A             CI,7      5
 7145      02            014E5          691014EA                BL        TST3501
 7146                                   *                                                PARAMETER ERROR
 7147      02            014E6          3520030A  A             STW,2     :PIT10
 7148      02            014E7          EAF00229  A             BAL,15    *:PREPORT
 7149      02            014E8          00000326                DATA      :DIC+6
 7150      02            014E9          E8000214  A             B         *:MONITOR        GO TO MONITOR
 7151      02            014EA          32700203  A     TST3501 LW,7      :P3
 7152      02            014EB          692014EE                BGZ       TST3502
 7153                                   *                                                PARAMETER ERROR
 7154      02            014EC          3530030A  A             STW,3     :PIT10
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  7155   02 014ED   680014E7              B       TST3501-3
  7156   02 014EE   32700204 A  TST3502   LW,7    :P4
  7157   02 014EF   21700003 A            CI,7    3
  7158   02 014F0   691014F4              BL      TST3503
  7159                          *                                PARAMETER ERROR
  7160   02 014F1   22700004 A            LI,7    4
  7161   02 014F2   3570030A A            STW,7   :PIT10
  7162   02 014F3   680014E7              B       TST3501-3
  7163   02 014F4   351019A8     TST3503  STW,1   TLOOP            START WITH LOOP 1
  7164   02 014F5   32700203 A            LW,7    :P3
  7165   02 014F6   357019A9              STW,7   CMAX
  7166   02 014F7   31100202 A            CW,1    :P2
  7167   02 014F8   691014FA              BL      $+2
  7168   02 014F9   6AF0160C              BAL,15  RWTLP            0,1 REWIND TO LOAD POINT
  7169   02 014FA   32700202 A  TST3504   LW,7    :P2
  7170   02 014FB   21700004 A            CI,7    4
  7171   02 014FC   68301545              BE      TST3508          BACKSPACE ONLY
  7172   02 014FD   21700001 A            CI,7    1
  7173   02 014FE   69401538              BCS,4   TST3507          SPACE FWD ONLY
  7174   02 014FF   22700000 A  TST3505   LI,7    0
  7175   02 01500   357019AA              STW,7   RRTT             CLEAR RETRY TALLY
  7176   02 01501   6AF01638              BAL,15  CLRARM           CLEAR AND ARM INTERRUPT
  7177   02 01502   22000C2C              LI,0    DA(RFSPEC)       READ FORWAD INTO MAX I/O AREA
  7178   02 01503   6AF01CA2              BAL,15  :IOEXEC          TIO,SIO
  7179   02 01504   6AF0162F              BAL,15  MYDELAY          WAIT FOR INT ON ZBC OR CE
  7180   02 01505   22EFFCE0 A            LI,14   -800             WAIT FOR LONGEST RECORD
  7181   02 01506   65E01506              BIR,14  $
  7182   02 01507   CEA018B5              TDV,10  *:DEVADDR        TDV TO SEE IF AT EOT
  7183   02 01508   31B02089              CW,11   =X'02000000'     EOT
  7184   02 01509   6940154D              BCS,4   TST3510          GO TO HALT,EXIT
  7185   02 0150A   CDA018B5              TIO,10  *:DEVADDR        TIO
  7186   02 0150B   32C018C8              LW,12   MAXBYT           MAXIMUM BYTES
  7187   02 0150C   58C2000B A            SH,12   11,1             -BYTE COUNT LEFT
  7188   02 0150D   35C018DA              STW,12  BYTECN
  7189   02 0150E   328019A8              LW,8    TLOOP
  7190   02 0150F   318019A9              CW,8    CMAX
  7191   02 01510   69301514              BNE     $+4
  7192   02 01511   31200204 A            CW,2    :P4              PRINTOUT NTH RECORD
  7193   02 01512   69301514              BNE     $+2
  7194   02 01513   6AF0154F              BAL,15  TST3511          GO TO PRINTOUT
  7195   02 01514   3180209E              CW,11   =X'00400000'     TE ONLY
  7196   02 01515   68401549              BCR,4   TST3509
  7197                          *                                TRANSMISSION ERROR RETRY ROUTINE
  7198   02 01516   6AF01638              BAL,15  CLRARM           CLEAR AND ARM INTERRUPT
  7199   02 01517   22000C19              LI,0    DA(SPBRAND)      SPACE BKW
  7200   02 01518   6AF01CA2              BAL,15  :IOEXEC          TIO,SIO
  7201   02 01519   6AF0162F              BAL,15  MYDELAY          DELAY FOR INTERRUPT
  7202   02 0151A   331019AA              MTW,1   RRTT             RETRY+1
  7203   02 0151B   327019AA              LW,7    RRTT             RETRIES MAXIMUM
  7204   02 0151C   2170000B A            CI,7    11
  7205   02 0151D   69101501              BL      TST3505+2
  7206                          *                                10 RETRIES , PRINTOUT AND HALT
  7207   02 0151E   32C019A8              LW,12   TLOOP            RECORD IN ERROR
  7208   02 0151F   EAF00217 A            BAL,15  *:DECC           CONVERT
  7209   02 01520   35F01A89              STW,15  MRTE+5           STORE
  7210   02 01521   EAF00217 A            BAL,15  *:DECC           CONVERT
  7211   02 01522   55F21A88              STH,15  MRTE+4,1         STORE
  7212   02 01523   6AF01638              BAL,15  CLRARM           CLEAR AND ARM INTERRUPT
  7213   02 01524   22000C2D              LI,0    DA(RFSPEC1)      READ FWD WITH HTE
  7214   02 01525   6AF01CA2              BAL,15  :IOEXEC          TIO,SIO
  7215   02 01526   6AF0162F              BAL,15  MYDELAY          DELAY FOR INTERRUPT
  7216   02 01527   CDA018B5              TIO,10  *:DEVADDR        TIO
  7217   02 01528   32C018C8              LW,12   MAXBYT           MAXIMUM BYTES
  7218   02 01529   58C2000B A            SH,12   11,1             - BYTE COUNT FROM TIO
  7219   02 0152A   EAF00217 A            BAL,15  *:DECC           CONVERT
  7220   02 0152B   35F01A8C              STW,15  MRTE+8           STORE
  7221   02 0152C   EAF00217 A            BAL,15  *:DECC           CONVERT
  7222   02 0152D   55F21A8B              STH,15  MRTE+7,1         STORE
  7223   02 0152E   EAF0021C A            BAL,15  *:PRINT          PRINT MESSAGE
  7224   02 0152F   00001A84              DATA    MRTE
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          106
  7225    02 01530    6AF01638              BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  7226    02 01531    22000C19              LI,0     DA(SPBRAND)     SPACE BKW
  7227    02 01532    6AF01CA2              BAL,15   :IOEXEC         TIO,SIO
  7228    02 01533    6AF0162F              BAL,15   MYDELAY         DELAY FOR INTERRUPT
  7229    02 01534    31100204 A            CW,1     :P4             PRINTOUT ERROR RECORD
  7230    02 01535    69301537              BNE      $+2
  7231    02 01536    6AF0154F              BAL,15   TST3511         GO TO PRINTOUT
  7232    02 01537    6800154D              B        TST3510
  7233                                *
                                                                     SPACE FWD N RECORDS
  7234    02 01538    327019A8        TST3507 LW,7     TLOOP           NTH RECORD
  7235    02 01539    317019A9              CW,7     CMAX
  7236    02 0153A    6930153D              BNE      $+3             NO
  7237    02 0153B    31200204 A            CW,2     :P4             YES
  7238    02 0153C    683014FF              BE       TST3505         READ NTH RECORD IF P4=2
  7239    02 0153D    6AF01638              BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  7240    02 0153E    22000C1A              LI,0     DA(SPFRAND)     SPACE FWD
  7241    02 0153F    6AF01CA2              BAL,15   :IOEXEC         TIO,SIO
  7242    02 01540    6AF0162F              BAL,15   MYDELAY         WAIT FOR INTERRUPT
  7243    02 01541    CEA018B5              TDV,10   *:DEVADDR       TDV TO SEE IF AT EOT
  7244    02 01542    31B02089              CW,11    =X'02000000'    EOT
  7245    02 01543    6940154D              BCS,4    TST3510         GO TO HALT,EXIT
  7246    02 01544    68001549              B        TST3509
  7247                                *
                                                                     SPACE BKW N RECORDS
  7248    02 01545    6AF01638        TST3508 BAL,15   CLRARM          CLEAR AND ARM INTERRUPT
  7249    02 01546    22000C19              LI,0     DA(SPBRAND)     SPACE BKW
  7250    02 01547    6AF01CA2              BAL,15   :IOEXEC         TIO,SIO
  7251    02 01548    6AF0162F              BAL,15   MYDELAY         WAIT FOR INTERRUPT
  7252    02 01549    331019A8        TST3509 MTW,1    TLOOP           TALLY+1
  7253    02 0154A    327019A8              LW,7     TLOOP
  7254    02 0154B    317019A9              CW,7     CMAX            MAXIMUM LOOPS
  7255    02 0154C    682014FA              BLE      TST3504
  7256    02 0154D    2E000000 A      TST3510 WAIT                     HALT
  7257    02 0154E    68000511              B        TST36           RETURN TO CONTROL PROGRAM
  7258                                *
                                                                     PRINTOUT NTH RECORD OR ERROR RECORD
  7259    02 0154F    35F018D2        TST3511 STW,15   ST1155          SAVE RETURN ADDRESS
  7260    02 01550    32C018DA              LW,12    BYTECN          NUMBER OF BYTES
  7261    02 01551    EAF00217 A            BAL,15   *:DECC          CONVERT
  7262    02 01552    35F01A94              STW,15   RECOUT+6         STORE
  7263    02 01553    EAF00217 A            BAL,15   *:DECC          CONVERT
  7264    02 01554    55F21A93              STH,15   RECOUT+5,1        STORE
  7265    02 01555    32C019A8              LW,12    TLOOP           RECORD NUMBER
  7266    02 01556    EAF00217 A            BAL,15   *:DECC          CONVERT
  7267    02 01557    35F01A90              STW,15   RECOUT+2         STORE
  7268    02 01558    EAF00217 A            BAL,15   *:DECC          CONVERT
  7269    02 01559    55F21A8F              STH,15   RECOUT+1,1        STORE
  7270    02 0155A    EAF0021C A            BAL,15   *:PRINT         PRINT MESSAGE
  7271    02 0155B    00001A8E              DATA     RECOUT
  7272    02 0155C    22600000 A            LI,6     0
  7273    02 0155D    327018DA              LW,7     BYTECN
  7274    02 0155E    25700001 A            SLS,7    1
  7275    02 0155F    21700048 A      TST3514 CI,7     72
  7276    02 01560    68201565              BLE      TST3512
  7277    02 01561    2280004B A            LI,8     75              MAX BYTE COUNT FOR ONE LINE
  7278    02 01562    75801AEA              STB,8    OUTMSG
  7279    02 01563    207FFFB8 A            AI,7     -72             MESSAGE >72
  7280    02 01564    68001568              B        TST3513-2
  7281    02 01565    20700003 A      TST3512 AI,7     3               MESSAGE = 72 BYTES
  7282    02 01566    75701AEA              STB,7    OUTMSG
  7283    02 01567    22700000 A            LI,7     0
  7284    02 01568    22BFFFF7 A            LI,11    -9
  7285    02 01569    22500000 A            LI,5     0
  7286    02 0156A    32CC20C5        TST3513 LW,12    BUFF1,6         GET WORD FROM READ AREA
  7287    02 0156B    EAF00218 A            BAL,15   *:HEXC          CONVERT
  7288    02 0156C    35FA1AEC              STW,15   OUTMSG+2,5       STORE
  7289    02 0156D    EAF00218 A            BAL,15   *:HEXC          CONVERT
  7290    02 0156E    35FA1AEB              STW,15   OUTMSG+1,5       STORE
  7291    02 0156F    33200005 A            MTW,2    5
  7292    02 01570    33100006 A            MTW,1    6
  7293    02 01571    65B0156A              BIR,11   TST3513
  7294    02 01572    EAF0021C A            BAL,15   *:PRINT         PRINT ONE LINE
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          107
 7295    02 01573    00001AEA                DATA    OUTMSG
 7296    02 01574    21700000 A              CI,7    0
 7297    02 01575    E82018D2                BLE     *ST1155          RETURN TO PROGRAM AFTER PRINT
 7298    02 01576    6800155F                B       TST3514
 7299                                *
 7300                                *
 7301                                *
 7302                                *
 7303                                *                                SUBROUTINE TO DETERMINE TIMING LOOP
 7304                                *                                ----------------------------------
 7305                                *
 7306    02 01577    35F018D2        GETTIME STW,15   ST1155          SAVE RETURN ADDRESS
 7307    02 01578    22F01593                LI,15    GETT2           SET UP RETURN ADDRESS ON ZBC
 7308    02 01579    35F015C6                STW,15   STOP2T+2
 7309    02 01579    22F0158B                LI,15    GETTI1          SET UP FIRST TIME ADDRESS
 7310    02 0157B    35F015CA                STW,15   STOPIT+2
 7311    02 0157C    22500000 A      GETTI   LI,5     0               CLEAR REGISTERS
 7312    02 0157D    22700000 A              LI,7     0
 7313    02 0157E    32E020BB                LW,14    =X'7FFFFFFF'
 7314    02 0157F    22900000 A              LI,9     0
 7315    02 01580    22400000 A              LI,4     0
 7316    02 01581    32D015C3                LW,13    STOP2
 7317    02 01582    32F01E43                LW,15    :DELMTW
 7318    02 01583    35F00055 A              STW,15   X'55'             CLOCK COUNTER INTERRUPT
 7319    02 01584    32F015C2                LW,15    STOPI
 7320    02 01585    35F0005B A              STW,15   X'5B'             INTERRUPT ON ZERO COUNT
 7321    02 01586    2280000A A              LI,8     10
 7322    02 01587    35201E3B                STW,2    :DELTIME
 7323    02 01588    22F01040 A              LI,15    X'1040'
 7324    02 01589    6DF01200 A              WD,15    X'1200'
 7325    02 0158A    6800158A                B        $               WAIT TO GET IN SYNC.
 7326    02 0158B    22F01040 A      GETTI1  LI,15    X'1040'         START CLOCK
 7327    02 0158C    6DF01200 A              WD,15    X'1200'
 7328    02 0158D    35D0005B A              STW,13   X'5B'            CHANGE INTERRUPT
 7329    02 0158E    35801E3B                STW,8    :DELTIME        RESET TIME TO 10
 7330    02 0158F    33100005 A              MTW,1    5               TALLY =TALLY+1
 7331    02 01590    CEA018B5                TDV,10   *:DEVADDR
 7332    02 01591    51E2000B A              CH,14    11,1
 7333    02 01592    6920158F                BCS,2    $-3
 7334    02 01593    22F01040 A      GETT2   LI,15    X'1040'         DISARM CLOCK
 7335    02 01594    6DF01100 A              WD,15    X'1100'
 7336    02 01595    22A00000 A              LI,10    0
 7337    02 01596    32B020BC                LW,11    =20000          SET UP DIVISION IN R10 AND R11
 7338    02 01597    36A00005 A              DW,10    5               TIME/ LOOP TALLY
 7339    02 01598    35B018D3                STW,11   TIME1           R11 HAS TALLY VALUE
 7340    02 01599    22F0159E                LI,15    GETTI2
 7341    02 0159A    35F015CA                STW,15   STOPIT+2
 7342    02 0159B    22F015A5                LI,15    GETT3           SET UP RETURN ADDRESS ON ZBC
 7343    02 0159C    35F015C6                STW,15   STOP2T+2
 7344    02 0159D    6800157C                B        GETTI
 7345    02 0159E    22F01040 A      GETTI2  LI,15    X'1040'         START CLOCK
 7346    02 0159F    6DF01200 A              WD,15    X'1200'
 7347    02 015A0    35D0005B A              STW,13   X'5B'            CHANGE INTERRUPT
 7348    02 015A1    35801E3B                STW,8    :DELTIME        RESET TIME TO 10
 7349    02 015A2    33100009 A              MTW,1    9               TALLY =TALLY+1
 7350    02 015A3    F1A0207D                CB,10    *BUFF2
 7351    02 015A4    693015A2                BNEZ     $-2
 7352    02 015A5    22F01040 A      GETT3   LI,15    X'1040'         DISARM CLOCK
 7353    02 015A6    6DF01100 A              WD,15    X'1100'
 7354    02 015A7    22A00000 A              LI,10    0
 7355    02 015A8    32B020BC                LW,11    =20000          SET UP DIVISION IN R10 AND R11
 7356    02 015A9    36A00009 A              DW,10    9               TIME/ LOOP TALLY
 7357    02 015AA    35B018D4                STW,11   TIME2           R11 HAS TALLY VALUE
 7358    02 015AB    22F015B0                LI,15    GETTI3
 7359    02 015AC    35F015CA                STW,15   STOPIT+2
 7360    02 015AD    22F015B7                LI,15    GETT4           SET UP RETURN ADDRESS ON ZBC
 7361    02 015AE    35F015C6                STW,15   STOP2T+2
 7362    02 015AF    6800157C                B        GETTI
 7363    02 015B0    22F01040 A      GETTI3  LI,15    X'1040'         START CLOCK
 7364    02 015B1    6DF01200 A              WD,15    X'1200'
```

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            108

LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND          COMMENTS

 7365     02  015B2     35D0005B  A                      STW,13     X'5B'            CHANGE INTERRUPT
 7366     02  015B3     35801E3B                         STW,8      :DELTIME         RESET TIME TO 10
 7367     02  015B4     33100007  A                      MTW,1      7                TALLY =TALLY+1
 7368     02  015B5     CDA018B5                         TIO,10     *:DEVADDR
 7369     02  015B6     68C015B4                         BCR,12     $-2
 7370     02  015B7     22F01040  A            GETT4     LI,15      X'1040'          DISARM CLOCK
 7371     02  015B8     6DF01100  A                      WD,15      X'1100'
 7372     02  015B9     22A00000  A                      LI,10      0
 7373     02  015BA     32B020BC                         LW,11      =20000           SET UP DIVISION IN R10 AND R11
 7374     02  015BB     36A00007  A                      DW,10      7                TIME/ LOOP TALLY
 7375     02  015BC     35B018D5                         STW,11     TIME3            R11 HAS TALLY VALUE
 7376     02  015BD     32801E43                         LW,8       :DELMTW          CLOCK INTERRUPT
 7377     02  015BE     35800055  A                      STW,8      X'55'
 7378     02  015BF     32801E42                         LW,8       :DELXPSD         RESTORE CLOCK 5B INTERRUPT
 7379     02  015C0     3580005B  A                      STW,8      X'5B'
 7380     02  015C1     EAF018D2                         BAL,15     *STI155          GO BACK TO PROGRAM
 7381                                          *
 7382                                          *
 7383                                          *
 7384     02  015C2     0F0015C8            STOP1     XPSD,0     STOP1T
 7385     02  015C3     0F0015C4            STOP2     XPSD,0     STOP2T
 7386                                                  BOUND      8
 7387     02  015C4     00000000  A         STOP2T    DATA       0,0,GETT2,0
          02  015C5     00000000  A
          02  015C6     00001593
          02  015C7     00000000  A
 7388                                                  BOUND      8
 7389     02  015C8     00000000  A         STOP1T    DATA       0,0,GETT11,0
          02  015C9     00000000  A
          02  015CA     0000158B
          02  015CB     00000000  A
 7390                                          *
 7391                                          *
 7392                                          *
 7393                                          *
 7394                                          *
 7395                                          *                                  WRITE RETRY SUBROUTINE
 7396                                          *                                  ----------------------
 7397     02  015CC     32601887            TWRTRY    LW,6       CRTRY            NUMBER OF RETRIES
 7398     02  015CD     68201216                      BLE        T2RE06B          NO RETRIES
 7399     02  015CE     15601892                      STD,6      RTRYSVE          SAVE R6 AND R7
 7400     02  015CF     6AF01638            TWRTRY2   BAL,15     CLRARM           CLEAR AND ARM INTERRUPT
 7401     02  015D0     22000C19                      LI,0       DA(SPBRAND)      SPACE BKW
 7402     02  015D1     6AF01CA2                      BAL,15     :IOEXEC          EXECUTE TIO, SIO
 7403     02  015D2     6AF0162F                      BAL,15     MYDELAY
 7404     02  015D3     6AF01638            TWRTRY3   BAL,15     CLRARM           CLEAR AND ARM INTERRUPT
 7405     02  015D4     22000BE2                      LI,0       DA(WRRAND)       RE-WRITE RECORD
 7406     02  015D5     6AF01CA2                      BAL,15     :IOEXEC          EXECUTE TIO, SIO
 7407     02  015D6     6AF0162F                      BAL,15     MYDELAY          DELAY TILL INTERRUPT
 7408     02  015D7     CDE018B5                      TIO,14     *:DEVADDR        TIO
 7409     02  015D8     31F019CC                      CW,15      CHKBITT          UE,INC LENGTH,TE, ERRORS
 7410     02  015D9     684015EA                      BCR,4      TWRTRY4          NO ERRORS
 7411                                          *       ERROR MESSAG NOT DONE HERE
 7412     02  015DA     646015CF                      BDR,6      TWRTRY2
 7413                                          *       PERMANT WRITE ERROR + 1
 7414     02  015DB     331E186C                      MTW,1      PWTALLY,7        PERM WRITE ERROR TALLY +1
 7415     02  015DC     12C017C4                      LD,12      WRRAND           SET UP IOCD
 7416     02  015DD     6AF01669                      BAL,15     MYERROR          PRINTOUT PERM ERROR
 7417     02  015DE     EAF0021D  A                   BAL,15     *:SENSE          CHECK SENSE SWITCH SETTINGS
 7418     02  015DF     2E000000  A                   WAIT
 7419     02  015E0     680015E1                      B          $+1              CANNOT LOOP ON ERROR
 7420     02  015E1     32601887                      LW,6       CRTRY            RESET RETRY TALLY
 7421     02  015E2     6AF01638                      BAL,15     CLRARM           CLEAR AND ARM INTERRUPT
 7422     02  015E3     22000C19                      LI,0       DA(SPBRAND)      SPACE BKW OVER BAD RECORD
 7423     02  015E4     6AF01CA2                      BAL,15     :IOEXEC          EXECUTE TIO, SIO
 7424     02  015E5     6AF0162F                      BAL,15     MYDELAY          WAIT FOR INTERRUPT
 7425     02  015E6     22000BCA                      LI,0       DA(TSE1)         SET ERASE OVER BAD SPOT ON TAPE
 7426     02  015E7     6AF01CA2                      BAL,15     :IOEXEC          EXECUTE TIO, SIO
 7427     02  015E8     6AF0162F                      BAL,15     MYDELAY          WAIT FOR INTERRUPT
 7428     02  015E9     680015D3                      B          TWRTRY3          WRITE A RECORD WITH ERASE SET
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          109
  7429                          *       TEMPORARY WRITE ERROR +1
  7430   02 015EA   31601887     TWRTRY4 CW,6    CRTRY           GOOD WRITE
  7431   02 015EB   683015ED             BE      $+2
  7432   02 015EC   331E1864             MTW,1   TWTALLY,7       TEMP WRITE ERROR TALLY +1
  7433   02 015ED   12601892     TWRTRY5 LD,6    RTRYSVE
  7434   02 015EE   6800121B             B       T2RE07          RETURN TO PROGRAM
  7435                          *
  7436                          *
  7437                          *                               READ FORWARD ERROR RETRY SUBROUTINE
  7438                          *                               ----------------------------------
  7439                          *
  7440   02 015EF   32601887     RFRTRY  LW,6    CRTRY           NUMBER OF RETRIES =0
  7441   02 015F0   68201250             BLE     T2RE017E        NO RETRIES
  7442   02 015F1   15601892             STD,6   RTRYSVE         SAVE R6 AND R7
  7443   02 015F2   6AF01638     RFRTRY2 BAL,15  CLRARM          CLEAR AND ARM INTERRUPT
  7444   02 015F3   22000C19             LI,0    DA(SPBRAND)     SPACE BACKWARD
  7445   02 015F4   6AF01CA2             BAL,15  :IOEXEC         EXECUTE TIO, SIO
  7446   02 015F5   6AF0162F             BAL,15  MYDELAY         WAIT FOR INTERRUPT
  7447   02 015F6   6AF01638     RFRTRY3 BAL,15  CLRARM          CLEAR AND ARM INTERRUPT
  7448   02 015F7   22000BF8             LI,0    DA(RFRAND)      RE-READ RECORD FORWARD
  7449   02 015F8   6AF01CA2             BAL,15  :IOEXEC         EXECUTE TIO, SIO
  7450   02 015F9   6AF0162F             BAL,15  MYDELAY         WAIT FOR INTERRUPT
  7451   02 015FA   CDE018B5             TIO,14  *:DEVADDR       TIO
  7452   02 015FB   31F019CD             CW,15   CHKBIT          UE,INC LENGTH,IOP,MEMORY ERRORS
  7453   02 015FC   684015FF             BCR,4   $+3
  7454   02 015FD   331E187C             MTW,1   TRFTALLY,7      TEMP READ FWD TALLY
  7455   02 015FE   68001603             B       RFRTRY4-6       BRANCH TO ERROR PRINTOUT
  7456   02 015FF   31F0209E             CW,15   =X'00400000'    TE ERROR
  7457   02 01600   68401609             BCR,4   RFRTRY4         NO ERRORS
  7458   02 01601   646015F2             BDR,6   RFRTRY2
  7459                          *       PERMANT READ FWD ERROR + 1
  7460   02 01602   331E1874             MTW,1   PRFTALLY,7      PERM READ FWD ERROR TALLY +1
  7461   02 01603   12C017F0             LD,12   RFRAND          SET UP IOCD
  7462   02 01604   6AF01669             BAL,15  MYERROR         PRINTOUT PERM ERROR
  7463   02 01605   EAF0021D A           BAL,15  *:SENSE         CHECK SENSE SWITCH SETTINGS
  7464   02 01606   2E000000 A           WAIT
  7465   02 01607   68001608             B       $+1             CANNOT LOOP ON ERROR
  7466   02 01608   6800160A             B       RFRTRY5
  7467   02 01609   331E187C     RFRTRY4 MTW,1   TRFTALLY,7      TEMP READ FWD ERROR TALLY +1
  7468   02 0160A   12601892     RFRTRY5 LD,6    RTRYSVE         RESTORE R6, R7
  7469   02 0160B   68001255             B       T2RE18D         RETURN TO PROGRAM
  7470                          *
  7471                          *
  7472                          *
  7473                          *
  7474                          *
  7475                          *
  7476                          *
  7477                          *
  7478                          *
  7479                          *                               REWIND AND TEST FOR LOAD POINT
  7480                          *                               ------------------------------
  7481   02 0160C   35F018A0     RWTLP   STW,15  ST15            SAVE RETURN ADDRESS
  7482   02 0160D   6AF01640             BAL,15  CLRDARM         CLEAR AND DISARM INTERRUPT
  7483   02 0160E   22000BD2             LI,0    DA(TRWOL)       REWIND ON LINE
  7484   02 0160F   32E02097             LW,14   =X'66000000'
  7485   02 01610   CCA018B5             SIO,10  *:DEVADDR       SIO
  7486   02 01611   CDC018B5             TIO,12  *:DEVADDR       TIO
  7487   02 01612   31E0000D A           CW,14   13              BUSY OR REWINDING
  7488   02 01613   69401611             BCS,4   $-2
  7489   02 01614   32E02098     RWTLP1  LW,14   =X'04000000'    LOAD POINT ONLY
  7490   02 01615   CEC018B5             TDV,12  *:DEVADDR       TDV AFTER REWIND
  7491   02 01616   31D0000E A           CW,13   14
  7492   02 01617   6940161D             BCS,4   RWTLP2
  7493                          *       ERROR EXIT NO LOAD POINT
  7494   02 01618   EAF0021C A           BAL,15  *:PRINT         PRINTOUT MESSAGE
  7495   02 01619   00001A0E             DATA    NOLOAD
  7496   02 0161A   EAF0021D A           BAL,15  *:SENSE         CHECK SENSE SWITCHES
  7497   02 0161B   2E000000 A           WAIT
  7498   02 0161C   6800161D             B       $+1
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          110
 7499    02 0161D    22FFFED4 A  RWTLP2   LI,15    -300              LOAD POINT DELAY
 7500    02 0161E    65F0161E            BIR,15   $
 7501    02 0161F    E80018A0            B        *ST15             GO BACK TO PROGRAM
 7502                                *
 7503                                *
 7504                                *                              I/O RESET ROUTINE
 7505                                *                              ---------------------------------
 7506                                *
 7507                                *                              I/O RESET ROUTINE
 7508    02 01620    1540189A    RESETS  STD,4    SAVE45            MYDELAY SUBROUTINE ENTRY
 7509    02 01621    35F018A0            STW,15   ST15             SAVE R15
 7510    02 01622    225FEC78 A          LI,5     -5000
 7511    02 01623    6D000042 A          WD,0     X'0042'           TURN ON FF
 7512    02 01624    65501624            BIR,5    $                 DELAY
 7513    02 01625    225FEC78 A          LI,5     -5000
 7514    02 01626    6D000042 A          WD,0     X'0042'           TURN OFF FF
 7515    02 01627    65501627            BIR,5    $                 DELAY
 7516    02 01628    CFA018B5            HIO,10   *:DEVADDR         HALT I/O OPERATION
 7517    02 01629    EAF0021C A          BAL,15   *:PRINT           TIMEOUT ERROR PRINTOUT
 7518    02 0162A    00001A0A            DATA     TIMEOUT
 7519    02 0162B    EAF0021D A          BAL,15   *:SENSE           CHECK SENSE SWITCHES
 7520    02 0162C    2E000000 A          WAIT
 7521    02 0162D    1240189A            LD,4     SAVE45            RESTORE REGISTERS
 7522    02 0162E    E80018A0            B        *ST15             RETURN TO PROGRAM
 7523                                *
 7524                                *
 7525                                *                              DELAY AND WAIT FOR INTERRUPT
 7526                                *                              ---------------------------------
 7527    02 0162F    15E01898    MYDELAY STD,14   STDELAY           SAVE R14,R15
 7528    02 01630    22E00F00 A          LI,14    X'F00'            ALLOW FOR LARGEST RECORD
 7529    02 01631    6AF01E26            BAL,15   :DELAY            DELAY SUBROUTINE
 7530    02 01632    68001636            B        MYDELAYI
 7531                                *       ERROR MESSAGE TIMEOUT NO INTERRUPT
 7532    02 01633    EAF0021C A          BAL,15   *:PRINT           PRINTOUT MESSAGE
 7533    02 01634    00001A12            DATA     DELSUB
 7534    02 01635    6AF01620            BAL,15   RESETS            RESET OR HIO IN CASE OF TAPE RUNAWAY
 7535    02 01636    12E01898    MYDELAYI LD,14   STDELAY           RESTORE REGISTERS
 7536    02 01637    E800000F A          B        *R15
 7537                                *
 7538                                        BOUND    8
 7539                                *
 7540                                *
 7541                                *
 7542                                *                              THIS SUBROUTINE RESETS INTERRUPT
 7543                                *                                          CLEARS TEST FLAGS
 7544                                *                                          AND ARMS INTERRUPT
 7545                                *                              ---------------------------------
 7546                                *
 7547    02 01638    35F018AD    CLRARM  STW,15   ST151            SAVE RETURN ADDRESS
 7548    02 01639    6ED00000 A          AIO,13   0                 RESET INTERRUPT IF ANY
 7549    02 0163A    6AF02028            BAL,15   :SAVECLR          CLEAR TEST FLAGS
 7550    02 0163B    22F00000 A          LI,15    0
 7551    02 0163C    35F01EA6            STW,15   :INTRECF          CLEAR INTERRUPT FLAG
 7552    02 0163D    22F00020 A          LI,15    X'20'             ARM INTERRUPT
 7553    02 0163E    6DF01200 A          WD,15    X'1200'
 7554    02 0163F    E80018AD            B        *ST151            RETURN TO PROGRAM
 7555                                *
 7556                                *
 7557                                *
 7558                                *
 7559                                *
 7560                                *
 7561                                *                              THIS SUBROUTINE RESETS INTERRUPT
 7562                                *                                          CLEARS TEST FLAGS
 7563                                *                                          AND DISARMS INTERUPT
 7564                                *                              ---------------------------------
 7565                                *
 7566                                *
 7567    02 01640    35F018AD    CLRDARM STW,15   ST151            SAVE RETURN ADDRESS
 7568    02 01641    6ED00000 A          AIO,13   0                 RESET INTERRUPT IF ANY
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          111
  7569    02 01642    6AF02028              BAL,15   :SAVECLR          CLEAR TEST FLAGS
  7570    02 01643    22F00000 A            LI,15    0
  7571    02 01644    35F01EA6              STW,15   :INTRECF          CLEAR INTERRUPT FLAG
  7572    02 01645    22F00020 A            LI,15    X'20'             DISARM INTERRUPT
  7573    02 01646    6DF01100 A            WD,15    X'1100'
  7574    02 01647    E80018AD              B        *ST151            RETURN TO PROGRAM
  7575                                *
  7576                                *
  7577                                *
  7578                                *
  7579                                *                                  SUBROUTINE ARMS, SET UP DEV ADDR.
  7580                                *                                  ---------------------------------
  7581                                *
  7582                                *
  7583    02 01648    22700000 A      DOALL     LI,7     0                 CLEAR R7
  7584    02 01649    3A5018BE                  LCW,5    SAVNUMB           NUMBER OF UNITS LISTED
  7585    02 0164A    35F0189F        DOALL1    STW,15   ST1512            SAVE R15
  7586    02 0164B    6AF01638                  BAL,15   CLRARM            CLEAR AND ARM INTERRUPT
  7587    02 0164C    32FE18B6                  LW,15    SAVDEV,7          NEXT UNIT
  7588    02 0164D    35F018B5                  STW,15   :DEVADDR
  7589    02 0164E    E800189F                  B        *ST1512           RETURN TO PROGRAM
  7590                                *
  7591                                *
  7592                                *
  7593                                *
  7594                                *                                  SMEAR PATTERN AND SET UP COMPARE
  7595                                *                                  --------------------------------
  7596                                *
  7597    02 0164F    35F018AD        SMEARSP   STW,15   ST151             SAVE RETURN ADDRESS
  7598    02 01650    6800165A                  B        SMEARPTA+1
  7599    02 01651    35F018AD        SMEARPTR  STW,15   ST151             SAVE RETURN ADDRESS
  7600    02 01652    3110188D                  CW,1     STDPB             PACKED BINARY STANDARD
  7601    02 01653    68301658                  BE       $+5
  7602    02 01654    3110188E                  CW,1     OPTPB             PACKED BINARY OPTION
  7603    02 01655    68301658                  BE       $+3
  7604    02 01656    32F0209D                  LW,15    =X'3F3F3F3F'      BINARY PATTERN
  7605    02 01657    68001659                  B        $+2
  7606    02 01658    32F020A1                  LW,15    =X'FFFFFFFF'      ALL BITS ON
  7607    02 01659    35F01D39        SMEARPTA  STW,15   :PATID+1          STORE PATTERN
  7608    02 0165A    22F00000 A                LI,15    0
  7609    02 0165B    35F01D38                  STW,15   :PATID            FIXED WORD PATTERN
  7610    02 0165C    35F01DBD                  STW,15   :COMFLAG          ERROR PRINTOUT WANTED
  7611    02 0165D    22F00019 A                LI,15    25
  7612    02 0165E    35F01D3B                  STW,15   :PATWC            WORD COUNT
  7613    02 0165F    35F01CF4                  STW,15   :CLRSIZE          WORD COUNT FOR BUFFER CLEARING
  7614    02 01660    35F01DBA                  STW,15   :COMWCNT          NUMBER OF WORDS TO COMPARE
  7615    02 01661    22F020C5                  LI,15    BUFF1
  7616    02 01662    35F01D3C                  STW,15   :PATBFR           EXPECTED PATTERN
  7617    02 01663    35F01DBB                  STW,15   :COMBFRA
  7618    02 01664    32F0207D                  LW,15    BUFF2
  7619    02 01665    35F01CF3                  STW,15   :CLRADDR          ADDRESS FOR CLEAR BUFFER
  7620    02 01666    35F01DBC                  STW,15   :COMBFRB          OBSERVED PATTERN
  7621    02 01667    6AF01CF9                  BAL,15   :PATTERN          SMEAR PATTERN
  7622    02 01668    E80018AD                  B        *ST151            RETURN TO PROGRAM
  7623                                *
  7624                                *
  7625                                *
  7626                                *                                  RANDOM EXERCISER ERROR MESSAGE
  7627                                *                                  ------------------------------
  7628                                *
  7629    02 01669    35F01894        MYERROR   STW,15   SAVIT             SAVE R15
  7630    02 0166A    6AF01EAF                  BAL,15   IOCDMSG           GET IOCD PRINTOUT
  7631    02 0166B    32E020B2                  LW,14    =X'FFFF0000'      GET TIO PRINTOUT
  7632    02 0166C    6AF01B9E                  BAL,15   :TIO              TIO
  7633    02 0166D    6800166E                  B        $+1
  7634    02 0166E    32E020B2                  LW,14    =X'FFFF0000'      GET TDV PRINTOUT
  7635    02 0166F    6AF01BB4                  BAL,15   :TDV              TDV
  7636    02 01670    68001671                  B        $+1
  7637    02 01671    311018F3                  CW,1     NZFLAG            RE OR NOISE PATTERNS
  7638    02 01672    6930167E                  BNE      MYERROR1          GO TO RE PRINTOUT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          112

 LINE  MEM PROT  MEMORY   MEMORY    ORIG  LABEL      OPERATION  OPERAND          COMMENTS
 NO.   KEY      ADDRESS  CONTENTS

 7639    02 01673   32C018B5          LW,12     :DEVADDR         DEVICE
 7640    02 01674   EAF00218 A        BAL,15    *:HEXC           CONVERT
 7641    02 01675   35F01B00          STW,15    REMESG32+2       IN PRINTOUT
 7642    02 01676   32C01885          LW,12     LOOPTLY          CURRENT RECORD TALLY
 7643    02 01677   EAF00218 A        BAL,15    *:HEXC           CONVERT
 7644    02 01678   35F01B07          STW,15    REMESG32+9
 7645    02 01679   EAF00218 A        BAL,15    *:HEXC           CONVERT
 7646    02 0167A   35F01B06          STW,15    REMESG32+8
 7647    02 0167B   EAF0021C A        BAL,15    *:PRINT          PRINT MESSAGE
 7648    02 0167C   00001AFE          DATA      REMESG32
 7649    02 0167D   6800169D          B         MYERROR2         RETURN TO  TEST
 7650    02 0167E   32C018A8  MYERROR1  LW,12   SAVESEED
 7651    02 0167F   EAF00218 A        BAL,15    *:HEXC           CONVERT
 7652    02 01680   35F01AC8          STW,15    REMESG1+4
 7653    02 01681   32C018A8          LW,12     SAVESEED
 7654    02 01682   25C00070 A        SLS,12    -16
 7655    02 01683   EAF00218 A        BAL,15    *:HEXC           CONVERT FOR MESSAGE
 7656    02 01684   35F01AC7          STW,15    REMESG1+3        SEED IN PRINTOUT
 7657    02 01685   32C01885          LW,12     :DEVADDR         DEVICE NUMBER
 7658    02 01686   EAF00218 A        BAL,15    *:HEXC           CONVERT
 7659    02 01687   35F01ACB          STW,15    REMESG1+7
 7660    02 01688   32C01885          LW,12     LOOPTLY          CURRENT TALLY OF PASSES
 7661    02 01689   EAF00218 A        BAL,15    *:HEXC           CONVERT
 7662    02 0168A   35F01AD0          STW,15    REMESG1+12       STORE
 7663    02 0168B   32C01885          LW,12     LOOPTLY
 7664    02 0168C   25C00070 A        SLS,12    -16              SHIFT
 7665    02 0168D   EAF00218 A        BAL,15    *:HEXC           CONVERT
 7666    02 0168E   35F01ACF          STW,15    REMESG1+11       STORE
 7667    02 0168F   EAF0021C A        BAL,15    *:PRINT          PRINT MESSAGE
 7668    02 01690   00001AC4          DATA      REMESG1
 7669    02 01691   22C019DA          LI,12     REDAPT           ADDRESS OF FIRST SET
 7670    02 01692   30C01889          AW,12     OPFLAG
 7671    02 01693   30C01889          AW,12     OPFLAG
 7672    02 01694   30C01889          AW,12     OPFLAG
 7673    02 01695   B2F0000C A        LW,15     *12              FIRST WORD OF MESSAGE
 7674    02 01696   35F01AD6          STW,15    REMESG2+4
 7675    02 01697   B2F2000C A        LW,15     *12,1            SECOND WORD
 7676    02 01698   35F01AD7          STW,15    REMESG2+5
 7677    02 01699   B2F4000C A        LW,15     *12,2            THIRD WORD OF MESSAGE
 7678    02 0169A   35F01AD8          STW,15    REMESG2+6
 7679    02 0169B   EAF0021C A        BAL,15    *:PRINT          PRINT MESSAGE
 7680    02 0169C   00001AD2          DATA      REMESG2
 7681    02 0169D   32F01894  MYERROR2 LW,15    SAVIT            RETURN ADDRESS
 7682    02 0169E   E800000F A        B         *R15             RETURN TO PROGRAM
 7683                          *
 7684                          *
 7685                          *
 7686                          *
 7687                          *
 7688                          *
 7689                          *                                  SMEAR NOISE PATTERNS
 7690                          *                                  ----------------------------
 7691                          *
 7692                          *
 7693    02 0169F   351020C5  MYTSTPT  STW,1     BUFF1            SET UP FIRST SEQ NO
 7694    02 016A0   22600001 A        LI,6      1                WORD COUNT
 7695    02 016A1   311019CE          CW,1      MODEFLAG         PACKED INFORMATION
 7696    02 016A2   683016D8          BE        MYTSTPT8-3
 7697    02 016A3   229FFFFB A        LI,9      -5
 7698    02 016A4   22700000 A        LI,7      0
 7699    02 016A5   225FFFFB A        LI,5      -5
 7700    02 016A6   22D018F9  MYTSTPT1 LI,13    NZDATA1          PULSE CROWDING AND WRITE SKEW
 7701    02 016A7   55D216A8          STH,13    MYTSTPT2,1       STARTING PATTERN
 7702    02 016A8   32E018F9  MYTSTPT2 LW,14    NZDATA1          DATA PATTERN
 7703    02 016A9   35EC20C5          STW,14    BUFF1,6          STORE PATTERN
 7704    02 016AA   33100006 A        MTW,1     6
 7705    02 016AB   331016A8          MTW,1     MYTSTPT2
 7706    02 016AC   655016A8          BIR,5     MYTSTPT2         5 PATTERNS
 7707    02 016AD   659016A4          BIR,9     MYTSTPT1-2       5 TIMES
 7708    02 016AE   22CFFFF6 A        LI,12     -10
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          113

 LINE  MEM PROT  MEMORY   MEMORY    ORIG  LABEL     OPERATION  OPERAND        COMMENTS
 NO.   KEY       ADDRESS  CONTENTS

 7709    02 016AF   229FFFFA A            LI,9      -6
 7710    02 016B0   22700000 A            LI,7      0
 7711    02 016B1   32EE18FE     MYTSTPT4 LW,14     NZDATA2,7      WRITE CROSS TALK AND READ SKEW
 7712    02 016B2   35EC20C5              STW,14     BUFF1,6        STORE PATTERN
 7713    02 016B3   33100006 A            MTW,1      6
 7714    02 016B4   33100007 A            MTW,1      7
 7715    02 016B5   659016B1              BIR,9      MYTSTPT4       6 PATTERNS
 7716    02 016B6   65C016AF              BIR,12     MYTSTPT4-2     10 TIMES
 7717    02 016B7   22CFFFFB A            LI,12      -5
 7718    02 016B8   356018F7              STW,6      SAVE6          SAVE WORD LOCATION
 7719    02 016B9   22700000 A            LI,7       0
 7720    02 016BA   229FFFCE A            LI,9       -50
 7721    02 016BB   32EE1904     MYTSTPT5 LW,14     NZDATA3,7      BASELINE NOISE PATTERN
 7722    02 016BC   35EC20C5              STW,14     BUFF1,6        STORE PATTERN
 7723    02 016BD   33100006 A            MTW,1      6
 7724    02 016BE   659016BC              BIR,9      $-2            50 WORDS OF PATTERN
 7725    02 016BF   33100007 A            MTW,1      7
 7726    02 016C0   65C016BA              BIR,12     MYTSTPT5-1     CHANGE PATTERNS
 7727    02 016C1   22E03F3F A            LI,14      X'3F3F'        ALL BITS ON
 7728    02 016C2   328018F7              LW,8       SAVE6          SAVE WORD LOCATION
 7729    02 016C3   208020C5              AI,8       BUFF1
 7730    02 016C4   558216C9              STH,8      MYTSTPT6,1
 7731    02 016C5   229FFFFB A            LI,9       -5
 7732    02 016C6   22700000 A            LI,7       0
 7733    02 016C7   552216CA              STH,2      MYTSTPT7,1
 7734    02 016C8   22AFFFEE A            LI,10      -18            DO 18 TIMES
 7735    02 016C9   75EE20C5     MYTSTPT6 STB,14     BUFF1,7        STORE ALL BITS SPACING XYXXYXXXY
 7736    02 016CA   20700002 A    MYTSTPT7 AI,7       2                CHANGE SPACING
 7737    02 016CB   331016CA              MTW,1      MYTSTPT7
 7738    02 016CC   65A016C9              BIR,10     MYTSTPT6
 7739    02 016CD   20800032 A            AI,8       50
 7740    02 016CE   558216C9              STH,8      MYTSTPT6,1
 7741    02 016CF   659016C6              BIR,9      MYTSTPT6-3     CHANGE PATTERNS
 7742    02 016D0   22500000 A            LI,5       0
 7743    02 016D1   326018CB              LW,6       MAXREAD        SMEAR REMAINING I/O AREA
 7744    02 016D2   206FFEB1 A            AI,6       -335
 7745    02 016D3   32CA20C6              LW,12      BUFF1+1,5
 7746    02 016D4   35CA2214              STW,12     BUFF1+335,5    STORE WORD
 7747    02 016D5   33100005 A            MTW,1      5
 7748    02 016D6   646016D3              BDR,6      $-3
 7749    02 016D7   E800000F A            B          *15            RETURN TO PROGRAM
 7750                          *                                    PACKED INFORMATION SMEAR
 7751    02 016D8   22600000 A            LI,6       0
 7752    02 016D9   229FFFEC A            LI,9       -20
 7753    02 016DA   225FFFFD A            LI,5       -3             20 TIMES FOR 3 PATTERNS
 7754    02 016DB   22D01909     MYTSTPT8 LI,13      NZPK1          SET UP FIRST PATTERN
 7755    02 016DC   55D216DD              STH,13     MYTSTPT9,1
 7756    02 016DD   32E01909     MYTSTPT9 LW,14     NZPK1
 7757    02 016DE   35EC20C5              STW,14     BUFF1,6        STORE WORD
 7758    02 016DF   33100006 A            MTW,1      6
 7759    02 016E0   331016DD              MTW,1      MYTSTPT9
 7760    02 016E1   655016DD              BIR,5      MYTSTPT9
 7761    02 016E2   659016DA              BIR,9      MYTSTPT8-1     60 WORDS IN PATTERN
 7762    02 016E3   229FFFF1 A            LI,9       -15
 7763    02 016E4   225FFFFC A            LI,5       -4             4 WORDS 15 TIMES
 7764    02 016E5   22D0190C              LI,13      NZPK2
 7765    02 016E6   55D216E7              STH,13     MYTSTPTA,1
 7766    02 016E7   32E0190C     MYTSTPTA LW,14     NZPK2
 7767    02 016E8   35EC20C5              STW,14     BUFF1,6        STORE WORD
 7768    02 016E9   33100006 A            MTW,1      6
 7769    02 016EA   331016E7              MTW,1      MYTSTPTA
 7770    02 016EB   655016E7              BIR,5      MYTSTPTA
 7771    02 016EC   659016E4              BIR,9      MYTSTPTA-3     60 WORDS
 7772    02 016ED   351020C5              STW,1      BUFF1
 7773    02 016EE   356018F7              STW,6      SAVE6          SAVE REGISTER
 7774    02 016EF   22700000 A            LI,7       0
 7775    02 016F0   229FFFF1 A            LI,9       -15
 7776    02 016F1   225FFFFD A            LI,5       -3
 7777    02 016F2   22D01910              LI,13      NZPK3          3 WORDS 15 TIMES EACH PATTERN(5 PAT)
 7778    02 016F3   55D216F4              STH,13     MYTSTPTB,1
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          114

  LINE   MEM PROT   MEMORY    MEMORY     ORIG  LABEL      OPERATION  OPERAND          COMMENTS
  NO.    KEY        ADDRESS   CONTENTS

  7779    02 016F4    32EE1910      MYTSTPTB LW,14    NZPK3,7
  7780    02 016F5    35EC20C5               STW,14    BUFF1,6
  7781    02 016F6    33100006 A             MTW,1     6
  7782    02 016F7    331016F4               MTW,1     MYTSTPTB
  7783    02 016F8    655016F4               BIR,5     MYTSTPTB
  7784    02 016F9    659016F1               BIR,9     MYTSTPTB-3
  7785    02 016FA    33300007 A             MTW,3     7
  7786    02 016FB    2170000F A             CI,7      15                ALL PATTERNS DONE
  7787    02 016FC    691016F0               BL        MYTSTPTB-4        5 PATTERNS
  7788    02 016FD    229FFFFB A             LI,9      -5
  7789    02 016FE    326018F7               LW,6      SAVE6
  7790    02 016FF    206020C5               AI,6      BUFF1             FIRST ADDRESS
  7791    02 01700    55621706               STH,6     MYTSTPTC,1        SET UP FIRST ADDRESS
  7792    02 01701    22600000 A             LI,6      0
  7793    02 01702    22700000 A             LI,7      0
  7794    02 01703    32EC191F               LW,14     NZPK4,6           SET UP BYTE
  7795    02 01704    55321707               STH,3     MYTSTPTD,1
  7796    02 01705    22AFFFFA A             LI,10     -6
  7797    02 01706    55EE20C5      MYTSTPTC STH,14    BUFF1,7           STORE HALF WORD
  7798    02 01707    20700003 A    MYTSTPTD AI,7      3
  7799    02 01708    33301707               MTW,3     MYTSTPTD
  7800    02 01709    65A01706               BIR,10    MYTSTPTC
  7801    02 0170A    33100006 A             MTW,1     6                 NEXT BYTE
  7802    02 0170B    52E21706               LH,14     MYTSTPTC,1
  7803    02 0170C    20E0002D A             AI,14     45
  7804    02 0170D    55E21706               STH,14    MYTSTPTC,1        NEXT PATTERN
  7805    02 0170E    65901702               BIR,9     MYTSTPTC-4
  7806    02 0170F    326018CB               LW,6      MAXREAD           MAXIMUM SIZE FOR READ
  7807    02 01710    206FFEA7 A             AI,6      -345
  7808    02 01711    22500000 A             LI,5      0                 R5 =0
  7809    02 01712    32CA20C5               LW,12     BUFF1,5
  7810    02 01713    35CA221E               STW,12    BUFF1+345,5       STORE WORD
  7811    02 01714    33100005 A             MTW,1     5
  7812    02 01715    64601712               BDR,6     $-3
  7813    02 01716    E800000F A             B         *15               RETURN TO PROGRAM
  7814                            *
  7815                            *
  7816                            *
  7817                            *
  7818                            *
  7819                            *                                      SUBROUTINE TO UNPACK DATA
  7820                            *                                      ----------------------------------
  7821                            *
  7822                            *
  7823    02 01717    35F0174A      UNPACK   STW,15    SVE15             SAVE RETURN ADDRESS
  7824    02 01718    1560174C               STD,6     SAVEON            SAVE REGISTERS
  7825    02 01719    1580174E               STD,8     SAVEON1
  7826    02 0171A    15A01750               STD,10    SAVEON2
  7827    02 0171B    22F0218D               LI,15     BUFF1+200         UNPACKED AREA
  7828    02 0171C    35F01CF3               STW,15    :CLRADDR
  7829    02 0171D    6AF01CE8               BAL,15    :CLEAR            CLEAR AREA
  7830    02 0171E    22700000 A             LI,7      0
  7831    02 0171F    22600000 A             LI,6      0
  7832    02 01720    B2BC207D      UNPACK1  LW,11     *BUFF2,6          GET PACKED WORD
  7833    02 01721    229FFFFB A             LI,9      -5                DO 5 TIMES
  7834    02 01722    22A00000 A             LI,10     0
  7835    02 01723    25A00106 A             SLD,10    6                 GET 6 BITS
  7836    02 01724    75AE218D               STB,10    BUFF1+200,7
  7837    02 01725    33100007 A             MTW,1     7                 MODIFY BYTE COUNT
  7838    02 01726    65901722               BIR,9     $-4
  7839    02 01727    22A00000 A             LI,10     0
  7840    02 01728    25A00102 A             SLD,10    2                 2 EXTRA BYTES
  7841    02 01729    33100006 A             MTW,1     6                 MODIFY WORD COUNT
  7842    02 0172A    B2BC207D               LW,11     *BUFF2,6          GET PACKED WORD
  7843    02 0172B    25A00104 A             SLD,10    4
  7844    02 0172C    75AE218D               STB,10    BUFF1+200,7
  7845    02 0172D    33100007 A             MTW,1     7                 MODIFY BYTE COUNT
  7846    02 0172E    229FFFFC A             LI,9      -4                DO 4  TIMES
  7847    02 0172F    22A00000 A             LI,10     0
  7848    02 01730    25A00106 A             SLD,10    6                 GET 6 BITS
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          115

 LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND        COMMENTS

 7849    02 01731    75AE218D           STB,10     BUFF1+200,7      STORE BYTE
 7850    02 01732    33100007 A         MTW,1      7
 7851    02 01733    6590172F           BIR,9      $-4
 7852    02 01734    33100006 A         MTW,1      6                GET NEXT PACKED WORD
 7853    02 01735    22A00004 A         LI,10      4                4 BYTES LEFT OVER
 7854    02 01736    25A00104 A         SLD,10     4
 7855    02 01737    B2BC207D           LW,11      *BUFF2,6         GET PACKED WORD
 7856    02 01738    25A00102 A         SLD,10     2
 7857    02 01739    75AE218D           STB,10     BUFF1+200,7      STORE BYTE
 7858    02 0173A    33100007 A         MTW,1      7                MODIFY BYTE COUNT
 7859    02 0173B    229FFFFB A         LI,9       -5               DO 5 TIMES
 7860    02 0173C    22A00000 A         LI,10      0
 7861    02 0173D    25A00106 A         SLD,10     6
 7862    02 0173E    75AE218D           STB,10     BUFF1+200,7
 7863    02 0173F    33100007 A         MTW,1      7                MODIFY BYTE COUNT
 7864    02 01740    6590173C           BIR,9      $-4
 7865    02 01741    33100006 A         MTW,1      6                MODIFY WORD COUNT
 7866    02 01742    21600022 A         CI,6       34
 7867    02 01743    68201720           BLE        UNPACK1
 7868    02 01744    32C0207D           LW,12      BUFF2
 7869    02 01745    35C01CF3           STW,12     :CLRADDR
 7870    02 01746    1260174C           LD,6       SAVEON           RESTORE REGISTERS
 7871    02 01747    1280174E           LD,8       SAVEON1
 7872    02 01748    12A01750           LD,10      SAVEON2
 7873    02 01749    E800174A           B          *SVE15           RETURN TO PROGRAM
 7874                                   *
 7875                                   *
 7876                                   *
 7877                                   *
 7878                                   *
 7879                                   *
 7880                                   *
 7881                                   *
 7882                                              BOUND      8
 7883    02 0174A    00000000 A         SVE15      DATA       0
 7884    02 0174B    00000000 A         WDCNT      DATA       0
 7885    02 0174C    00000000 A         SAVEON     DATA       0,0
         02 0174D    00000000 A
 7886    02 0174E    00000000 A         SAVEON1    DATA       0,0
         02 0174F    00000000 A
 7887    02 01750    00000000 A         SAVEON2    DATA       0,0
         02 01751    00000000 A
 7888                                   *
 7889                                   *
 7890                                   *
 7891                                   *
 7892                                   *                                  ----------
 7893                                   *                                  ----------
 7894                                   *                                  ----------
 7895                                   *
 7896                                   *
 7897                                              BOUND      8
 7898    02 01752    7C101C00 A         TSEQ0001   :TSEQ      ISBT4,TIOF0,TIOT4       IP RESET AND UE
 7899    02 01753    30100000 A         TSEQ0002   :TSEQ      HIOF0,TIOF0         INT PENDING RESET HIO, TIO
 7900    02 01754    7A100000 A         TSEQ0003   :TSEQ      ISBT2,TIOF0         ZBC, INT PEND RESET
 7901    02 01755    101C0000 A         TSEQ0004   :TSEQ      TIOF0,TIOT4                  INT PENDING RESET, UE
 7902    02 01756    4B4D0000 A         TSEQ0005   :TSEQ      TDVT3,TDVT5         LOAD POINT AND EOF
 7903    02 01757    1C4D21E3 A         TSEQ0006   :TSEQ      TIOT4,TDVT5,OSBF1,BYT02 LP,UE,BC=2
         02 01758    00000000 A
 7904    02 01759    1C4D2100 A         TSEQ0007   :TSEQ      TIOT4,TDVT5,OSBF1     UE AND LP
 7905    02 0175A    144B21E3 A         TSEQ0008   :TSEQ      TIOF4,TDVT3,OSBF1,BYT02       NO UE,BC=2, EOF
         02 0175B    00000000 A
 7906    02 0175C    11121C15 A         TSEQ0009   :TSEQ      TIOF1,TIOF2,TIOT4,TIOF5,TIOF6,BYT02  SAME + UE
         02 0175D    16E30000 A
 7907    02 0175E    11121415 A         TSEQ0010   :TSEQ      TIOF1,TIOF2,TIOF4,TIOF5,TIOF6,OSBF0,BYT00,TDVT1  READ
         02 0175F    1620E149 A
         02 01760    00000000 A
 7908    02 01761    144921E1 A         TSEQ0011   :TSEQ      TIOF4,TDVT1,OSBF1,BYT00   WRITE NO UE
         02 01762    00000000 A
 7909    02 01763    1C787B7C A         TSEQ0012   :TSEQ      TIOT4,ISBT0,ISBT3,ISBT4,TDVF0,BYT00   INC LENG, UE
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            116
        02 01764    40E10000 A
  7910  02 01765    144429E1 A  TSEQ0013  :TSEQ    T1OF4,TDVF4,OSBT1,BYT00       NO UE, BC= 0
        02 01766    00000000 A
  7911  02 01767    1C4B4D00 A  TSEQ0014  :TSEQ    T1OT4,TDVT3,TDVT5            UE, LP, EOF
  7912  02 01768    144B2100 A  TSEQ0015  :TSEQ    T1OF4,TDVT3,OSBF1          NONE, TM
  7913  02 01769    1C4B2100 A  TSEQ0016  :TSEQ    T1OT4,TDVT3,OSBF1          UE, TM
  7914  02 0176A    142840E2 A  TSEQ0017  :TSEQ    T1OF4,OSBT0,TDVF0,BYT01   NO UE, INC LENGTH ,BC=1
        02 0176B    00000000 A
  7915  02 0176C    1440E200 A  TSEQ0018  :TSEQ    T1OF4,TDVF0,BYT01      NO UE, BC =1
  7916  02 0176D    142840E1 A  TSEQ0019  :TSEQ    T1OF4,OSBT0,TDVF0,BYT00   SAME BC=0
        02 0176E    00000000 A
  7917  02 0176F    4E000000 A  TSEQ0020  :TSEQ    TDVT6                          END OF TAPE
  7918  02 01770    46000000 A  TSEQ0021  :TSEQ    TDVF6                          NO END OF TAPE
  7919  02 01771    29797C1C A  TSEQ0022  :TSEQ    OSBT1,ISBT1,ISBT4,T1OT4,TDVF0   TRNS ERROR UE
        02 01772    40000000 A
  7920  02 01773    29797B44 A  TSEQ0023  :TSEQ    OSBT1,ISBT1,ISBT3,TDVF4,T1OF4    CORRECTABLE TE
        02 01774    14000000 A
  7921  02 01775    29797B4C A  TSEQ0024  :TSEQ    OSBT1,ISBT1,ISBT3,TDVT4,T1OF4     TE UNCORRECTABLE
        02 01776    14000000 A
  7922  02 01777    14400000 A  TSEQ0025  :TSEQ    T1OF4,TDVF0       NO UE
  7923  02 01778    1C4A6A21 A  TSEQ0026  :TSEQ    T1OT4,TDVT2,A1OT2,OSBF1        WRITE PROTECT
        02 01779    00000000 A
  7924  02 0177A    111A1315 A  TSEQ0027  :TSEQ    T1OF1,T1OT2,T1OF3,T1OF5,T1OF6       DEVICE MANUAL
        02 0177B    16000000 A
  7925  02 0177C    4C000000 A  TSEQ0028  :TSEQ    TDVT4             INCORRECTABLE READ ERROR
  7926  02 0177D    1C4D0000 A  TSEQ0029  :TSEQ    T1OT4,TDVT5       UE AND LP
  7927  02 0177E    144321E3 A  TSEQ0030  :TSEQ    T1OF4,TDVF3,OSBF1,BYT02      NO UE, READY, BC=2
        02 0177F    00000000 A
  7928  02 01780    49484E00 A  TSEQ0031  :TSEQ    TDVT1,TDVT3,TDVT6 EOT OR EOF
  7929  02 01781    21222300 A  TSEQ0032  :TSEQ    OSBF1,OSBF2,OSBF3 NO TRANSMISSION ERROR
  7930  02 01782    101B1415 A  TSEQ0033  :TSEQ    T1OF0,T1OT3,T1OF4,T1OF5,T1OF6       READY,NOUE,NO IN P
        02 01783    16000000 A
  7931  02 01784    101B1C21 A  TSEQ0034  :TSEQ    T1OF0,T1OT3,T1OT4,OSBF1,TDVF0  UE, INT PENDING
        02 01785    40000000 A
  7932  02 01786    144B4D21 A  TSEQ0035  :TSEQ    T1OF4,TDVT3,TDVT5,OSBF1     EOF,LP, NO UE
        02 01787    00000000 A
  7933  02 01788    144920E1 A  TSEQ0036  :TSEQ    T1OF4,TDVT1,OSBF0,BYT00       READY, NO UE, BC=00
        02 01789    00000000 A
  7934  02 0178A    1C4B2821 A  TSEQ0037  :TSEQ    T1OT4,TDVT3,OSBT0,OSBF1  TAPE MARK, UE, NO TE
        02 0178B    00000000 A
  7935  02 0178C    1C4B2021 A  TSEQ0038  :TSEQ    T1OT4,TDVT3,OSBF0,OSBF1   TAPE MARK, UE, NO TE
        02 0178D    00000000 A
  7936                        *
  7937                        *
  7938                        *
  7939                        *
  7940                        *
  7941                        *           BOUND    8
  7942  02 0178E    0C0087C4    TWR1        GEN,8,24 X'0C',BA(BUFF1+300)       INVALID READ BKW
  7943  02 0178F    00000002 A              GEN,8,24 X'0',2
  7944  02 01790    03008314    TWR2        GEN,8,24 X'03',BA(BUFF1)           INVALID SET CORRECTION
  7945  02 01791    00000002 A              GEN,8,24 X'0',2
  7946  02 01792    0C0087C4    TWR3        GEN,8,24 X'0C',BA(BUFF1+300)       INVALID READ BKW
  7947  02 01793    04000001 A              GEN,8,24 4,1                  UE SET
  7948  02 01794    63008314    TSE1        GEN,8,24 X'63',BA(BUFF1)   SET ERASE BC=2
  7949  02 01795    14000002 A              GEN,8,24 X'14',2           UE AND CE
  7950  02 01796    63008314    TSE3        GEN,8,24 X'63',BA(BUFF1)   SET ERASE BC =2 NO INTERRUPT
  7951  02 01797    00000002 A              GEN,8,24 0,2
  7952  02 01798    63008314    TSE         GEN,8,24 X'63',BA(BUFF1)   SET ERASE CE SET
  7953  02 01799    10000001 A              GEN,8,24 X'10',1
  7954  02 0179A    63008314    TSECC       GEN,8,24 X'63',BA(BUFF1)   COMMAND CHAIN ERASE
  7955  02 0179B    20000001 A              GEN,8,24 X'20',1
  7956  02 0179C    0C0087C4    TWBK        GEN,8,24 X'0C',BA(BUFF1+300)       INVALID READ BKW
  7957  02 0179D    04000002 A              GEN,8,24 X'04',2           END OF CHAIN
  7958  02 0179E    63008314    TSNS4       GEN,8,24 X'63',BA(BUFF1)           SET ERASE
  7959  02 0179F    40000001 A              GEN,8,24 X'40',1           IZC SET
  7960  02 017A0    0C0087C4    TWRCC       GEN,8,24 X'0C',BA(BUFF1+300)       READ BKW COMMAND CHAIN
  7961  02 017A1    24000001 A              GEN,8,24 X'24',1           CC AND UE SET
  7962  02 017A2    63008314                GEN,8,24 X'63',BA(BUFF1)   SET ERASE
  7963  02 017A3    00000002 A              GEN,8,24 0,2
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          117
  7964   02 017A4   33008314      TRWOL   GEN,8,24 X'33',BA(BUFF1)   REWIND ON LINE
  7965   02 017A5   00000000 A            GEN,8,24 X'0',0
  7966   02 017A6   13008314      TRWAI   GEN,8,24 X'13',BA(BUFF1)   REWIND AND INTERRUPT
  7967   02 017A7   00000000 A            GEN,8,24 0,0               NO INTERRUPT
  7968   02 017A8   73008314      TWTM    GEN,8,24 X'73',BA(BUFF1)   WRITE TAPE MARK CE SET, BC=2
  7969   02 017A9   10000002 A            GEN,8,24 X'10',2
  7970   02 017AA   73008314      TWTM3   GEN,8,24 X'73',BA(BUFF1)       WRITE TAPE MARK CE, UE
  7971   02 017AB   14000002 A            GEN,8,24 X'14',2
  7972   02 017AC   01008314      TWBC    GEN,8,24 X'01',BA(BUFF1)   WRITE RECORD 1-64 BYTES,UE SET
  7973   02 017AD   14000001 A            GEN,8,24 X'14',1
  7974   02 017AE   01008314      TW64    GEN,8,24 X'01',BA(BUFF1)   WRITE 64 BYTES INTERRUPT ON ZBC
  7975   02 017AF   40000040 A            GEN,8,24 X'40',64
  7976   02 017B0   01008314      TW100B  GEN,8,24 X'01',BA(BUFF1)   WRITE 100 BYTES, UE SET, CE
  7977   02 017B1   14000064 A            GEN,8,24 X'14',100
  7978   02 017B2   01008314      TW1B    GEN,8,24 X'01',BA(BUFF1)   WRITE 1 BYTE,BCZ SET
  7979   02 017B3   40000001 A            GEN,8,24 X'40',1
  7980   02 017B4   01008314      TWDC02  GEN,8,24 X'01',BA(BUFF1)   WRITE 2 DC 94 BYTES
  7981   02 017B5   84000002 A            GEN,8,24 X'84',2
  7982   02 017B6   01008316             GEN,8,24 X'01',BA(BUFF1)+2
  7983   02 017B7   1400005E A            GEN,8,24 X'14',94
  7984   02 017B8   01008314      WFBAD   GEN,8,24 X'01',BA(BUFF1)   WRITE FROM WA, WA+1, WA+2, WA+3 BC=4
  7985   02 017B9   14000004 A            GEN,8,24 X'14',4
  7986   02 017BA   01008314      WBCC    GEN,8,24 X'01',BA(BUFF1)   WRITE RECORD BYTE COUNT  01-8000
  7987   02 017BB   14000001 A            GEN,8,24 X'14',1           UE SET, CE SET
  7988   02 017BC   01008314      TWNP    GEN,8,24 X'01',BA(BUFF1)   WRITE RECORD 20-MAX BYTES NOISE PTN
  7989   02 017BD   14000014 A            GEN,8,24 X'14',20          UE,CE
  7990   02 017BE   01008314      TW16B   GEN,8,24 X'01',BA(BUFF1)   WRITE 16 BYTES IRG TEST
  7991   02 017BF   14000010 A            GEN,8,24 X'14',16
  7992   02 017C0   01008314      TW1000  GEN,8,24 X'01',BA(BUFF1)   WRITE 1000 BYTES
  7993   02 017C1   140003E8 A            GEN,8,24 X'14',1000
  7994   02 017C2   010084A4      TWCREP  GEN,8,24 X'01',BA(BUFF1+100) WRT RECORD B CREEP TEST
  7995   02 017C3   1400000C A            GEN,8,24 X'14',12
  7996   02 017C4   01008314      WRRAND  GEN,8,24 X'01',BA(BUFF1)   WRITE RANDOM RECORD
  7997   02 017C5   14000014 A            GEN,8,24 X'14',20
  7998   02 017C6   01008314      TST3WRT GEN,8,24 X'01',BA(BUFF1)    WRITE RECORD IN UNIT TEST
  7999   02 017C7   140003E8 A            GEN,8,24 X'14',1000        UE,CE
  8000   02 017C8   01008314      WR96B   GEN,8,24 X'01',BA(BUFF1)    WRITE 96 BYTES
  8001   02 017C9   14000060 A            GEN,8,24 X'14',96
  8002   02 017CA   01008314      WSPKEC  GEN,8,24 X'01',BA(BUFF1)   WRITE 6,7,8 BYTES FOR END CONDIT
  8003   02 017CB   14000006 A            GEN,8,24 X'14',6
  8004   02 017CC   0C0087C4      TWRUE   GEN,8,24 X'0C',BA(BUFF1+300)    READ BKW UE SET
  8005   02 017CD   04000002 A            GEN,8,24 X'04',2
  8006   02 017CE   01008314      WPBT    GEN,8,24 X'01',BA(BUFF1)   WRITE 00-FF RECORD PACKED BINARY
  8007   02 017CF   14000100 A            GEN,8,24 X'14',256         CE AND UE
  8008   02 017D0   01006490      WLRCPK  GEN,8,24 X'01',BA(LRCPK)   WRITE PACKED BINARY LRC, 3 WORDS
  8009   02 017D1   1400000C A            GEN,8,24 X'14',12
  8010   02 017D2   050064E4      WLRCOP  GEN,8,24 X'05',BA(LRCOP)   WRITE ODD PARITY LRC, 1 WORD
  8011   02 017D3   14000004 A            GEN,8,24 X'14',4
  8012   02 017D4   0D006500      WLRCEP  GEN,8,24 X'0D',BA(LRCEP)   WRITE EVEN PARITY LRC, 1 WORD
  8013   02 017D5   14000004 A            GEN,8,24 X'14',4
  8014   02 017D6   05008314      WBINT   GEN,8,24 X'05',BA(BUFF1)   WRITE BINARY  00-3F DATA ODD P
  8015   02 017D7   14000040 A            GEN,8,24 X'14',64
  8016   02 017D8   0D00651C      TWBCD   GEN,8,24 X'0D',BA(BCDVALID)       WRITE BCD CHAR SET E PARITY
  8017   02 017D9   14000040 A            GEN,8,24 X'14',64
  8018   02 017DA   0D00655C      TWBCDZ  GEN,8,24 X'0D',BA(BCDZERO)      WRITE FOR BCD ZERO TRANSLATION
  8019   02 017DB   14000004 A            GEN,8,24 X'14',4
  8020   02 017DC   020081F4      TRFBC   GEN,8,24 X'02',BA(BUFF2)   READ FWD 100 BYTES, BC= 1-64, UE SET
  8021   02 017DD   1C000001 A            GEN,8,24 X'1C',1           HTE SET
  8022   02 017DE   020061F4      TRF100B GEN,8,24 X'02',BA(BUFF2)   READ FWD 100 BYTES ,UE SET, CE
  8023   02 017DF   14000064 A            GEN,8,24 X'14',100
  8024   02 017E0   020081F4      RF95B   GEN,8,24 X'02',BA(BUFF2)   READ FWD 95 BYTES, UE, CE SET
  8025   02 017E1   1C00005F A            GEN,8,24 X'1C',95          HTE
  8026   02 017E2   020081F4      RF97B   GEN,8,24 X'02',BA(BUFF2)   READ FWD 97 BYTES, UE, CE SET
  8027   02 017E3   16000061 A            GEN,8,24 X'16',97
  8028   02 017E4   020081F4      RF95BS  GEN,8,24 X'02',BA(BUFF2)   READ FWD 95 BYTES INC LENGTH SUP
  8029   02 017E5   1600005F A            GEN,8,24 X'16',95
  8030   02 017E6   020081F4      RFBAD   GEN,8,24 X'02',BA(BUFF2)   READ FWD INTO WA, WA+1, WA+2, WA+3
  8031   02 017E7   14000004 A            GEN,8,24 X'14',4
  8032   02 017E8   020081F4      RFCC    GEN,8,24 X'02',BA(BUFF2)   READ FWD BYTE COUNT 01-8000 CHANGE
  8033   02 017E9   14000001 A            GEN,8,24 X'14',1           UE,CE
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          118
  8034   02 017EA    020081F4      RFNP     GEN,8,24 X'02',BA(BUFF2)   READ  FWD 20-MAX BYTES NOISE PATTERN
  8035   02 017EB    14000014 A             GEN,8,24 X'14',20          UE,CE
  8036   02 017EC    020081F4      RF100B   GEN,8,24 X'02',BA(BUFF2)   READ FWD RECORD A CREEP TEST
  8037   02 017ED    14000064 A             GEN,8,24 X'14',100
  8038   02 017EE    020081F4      RF16B    GEN,8,24 X'02',BA(BUFF2)   READ FWD RECORD B CREEP TEST
  8039   02 017EF    1400000C A             GEN,8,24 X'14',12
  8040   02 017F0    020081F4      RFRAND   GEN,8,24 X'02',BA(BUFF2)   READ FWD RANDOM RECORD
  8041   02 017F1    14000014 A             GEN,8,24 X'14',20
  8042   02 017F2    020081F4      TST3RF   GEN,8,24 X'02',BA(BUFF2)   READ FORWARD RECORD UNIT TEST
  8043   02 017F3    140003E8 A             GEN,8,24 X'14',1000        UE,CE
  8044   02 017F4    02008314      RF96B    GEN,8,24 X'02',BA(BUFF1)    READ FWD 96 BYTES
  8045   02 017F5    14000060 A             GEN,8,24 X'14',96
  8046   02 017F6    020081F4      TRFDC48  GEN,8,24 X'02',BA(BUFF2)   READ FWD 48 BYTES DC 48
  8047   02 017F7    84000030 A             GEN,8,24 X'84',48
  8048   02 017F8    020082B4               GEN,8,24 X'02',BA(BUFF2+48)
  8049   02 017F9    14000030 A             GEN,8,24 X'14',48
  8050   02 017FA    020081F4      RPBT     GEN,8,24 X'02',BA(BUFF2)   READ 00-FF RECORD PACKED BINARY
  8051   02 017FB    14000101 A             GEN,8,24 X'14',257         CE AND UE BC+1
  8052   02 017FC    020081F4      RLRCPK   GEN,8,24 X'02',BA(BUFF2)   READ PACKED BINARY LRC RECORD
  8053   02 017FD    1400000C A             GEN,8,24 X'14',12
  8054   02 017FE    060081F4      RLRCOP   GEN,8,24 X'06',BA(BUFF2)   READ ODD PARITY LRC RECORD
  8055   02 017FF    14000004 A             GEN,8,24 X'14',4
  8056   02 01800    0E0081F4      RLRCEP   GEN,8,24 X'0E',BA(BUFF2)   READ EVEN PARITY LRC RECORD
  8057   02 01801    14000004 A             GEN,8,24 X'14',4
  8058   02 01802    060081F4      RBINT    GEN,8,24 X'06',BA(BUFF2)   READ TAPE BINARY 00-3F DATA ODD P
  8059   02 01803    14000040 A             GEN,8,24 X'14',64
  8060   02 01804    0E0081F4      REPOPR   GEN,8,24 X'0E',BA(BUFF2)   READ TAPE WITH TRANSLATION 00-3F
  8061   02 01805    14000040 A             GEN,8,24 X'14',64
  8062   02 01806    0E0081F4      TRBCD    GEN,8,24 X'0E',BA(BUFF2)   READ WITH TRANSLATION(BCD) EVEN P
  8063   02 01807    14000040 A             GEN,8,24 X'14',64
  8064   02 01808    060081F4      TRBCDWT  GEN,8,24 X'06',BA(BUFF2)   READ BCD RECORD WITHOUT TRANSLATION
  8065   02 01809    14000040 A             GEN,8,24 X'14',64
  8066   02 0180A    0E0081F4      TRBCDZ   GEN,8,24 X'0E',BA(BUFF2)   READ ZERO RECORD BCD TRANSLATION
  8067   02 0180B    14000004 A             GEN,8,24 X'14',4
  8068   02 0180C    020081F4      RSPKEC   GEN,8,24 X'02',BA(BUFF2)   READ 6,8,9 BYTES FOR END CONDIT
  8069   02 0180D    14000006 A             GEN,8,24 X'14',6
  8070   02 0180E    4B000000 A    SB100B   GEN,8,24 X'4B',0           SPACE BKW OVER RECORD A CREEP TEST
  8071   02 0180F    14000000 A             GEN,8,24 X'14',0
  8072   02 01810    4B000000 A    SB16B    GEN,8,24 X'4B',0           SPACE BKW OVER RECORD B CREEP TEST
  8073   02 01811    14000000 A             GEN,8,24 X'14',0
  8074   02 01812    4B000000 A    SBR1     GEN,8,24 X'4B',0           SPACE BKW, UE SET,BC=2
  8075   02 01813    14000002 A             GEN,8,24 X'14',2
  8076   02 01814    5B000000 A    SBF1     GEN,8,24 X'5B',0           SPACE FILE BKW
  8077   02 01815    14000000 A             GEN,8,24 X'14',0
  8078   02 01816    33000000 A    SFR1     GEN,8,24 X'33',0           SPACE RECORD FWD CE SET, BC=2
  8079   02 01817    10000002 A             GEN,8,24 X'10',2
  8080   02 01818    43000000 A    SF100    GEN,8,24 X'43',0           SPACE RECORD FWD , UE SET , CE
  8081   02 01819    14000000 A             GEN,8,24 X'14',0
  8082   02 0181A    4B000000 A    SB100    GEN,8,24 X'4B',0           SPACE RECORD BKW , UE SET , CE
  8083   02 0181B    14000000 A             GEN,8,24 X'14',0
  8084   02 0181C    53000000 A    TSFF     GEN,8,24 X'53',0           SPACE FILE FWD, UE SET, CE
  8085   02 0181D    14000000 A             GEN,8,24 X'14',0
  8086   02 0181E    5B000000 A    TSFB     GEN,8,24 X'5B',0           SPACE FILE BKW, UE SET, CE
  8087   02 0181F    14000000 A             GEN,8,24 X'14',0
  8088   02 01820    43000000 A    SF16CC   GEN,8,24 X'43',0           SPACE FWD 9 RECORDS USING CC
  8089   02 01821    24000000 A             GEN,8,24 X'24',0
  8090   02 01822    43000000 A             GEN,8,24 X'43',0           CC
  8091   02 01823    24000000 A             GEN,8,24 X'24',0
  8092   02 01824    43000000 A             GEN,8,24 X'43',0           CC
  8093   02 01825    24000000 A             GEN,8,24 X'24',0
  8094   02 01826    43000000 A             GEN,8,24 X'43',0           CC
  8095   02 01827    24000000 A             GEN,8,24 X'24',0
  8096   02 01828    43000000 A             GEN,8,24 X'43',0           CC
  8097   02 01829    24000000 A             GEN,8,24 X'24',0
  8098   02 0182A    43000000 A             GEN,8,24 X'43',0           CC
  8099   02 0182B    24000000 A             GEN,8,24 X'24',0
  8100   02 0182C    43000000 A             GEN,8,24 X'43',0           CC
  8101   02 0182D    24000000 A             GEN,8,24 X'24',0
  8102   02 0182E    43000000 A             GEN,8,24 X'43',0           CC
  8103   02 0182F    24000000 A             GEN,8,24 X'24',0
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            119
 8104    02 01830    43000000 A          GEN,8,24 X'43',0            NO CC
 8105    02 01831    14000000 A          GEN,8,24 X'14',0
 8106    02 01832    4B000000 A  SPBRAND GEN,8,24 X'4B',0            SPACE BKW RANDOM RECORD
 8107    02 01833    14000000 A          GEN,8,24 X'14',0
 8108    02 01834    43000000 A  SPFRAND GEN,8,24 X'43',0            SPACE FWD RANDOM RECORD
 8109    02 01835    14000000 A          GEN,8,24 X'14',0
 8110    02 01836    23000000 A  TRWOF   GEN,8,24 X'23',0            REWIND AND PUT OFF LINE
 8111    02 01837    14000000 A          GEN,8,24 X'14',0
 8112    02 01838    01008314    TST32W  GEN,8,24 X'01',BA(BUFF1)    WRITE 1 RECORD DATA CHAIN
 8113    02 01839    C0000190 A          GEN,8,24 X'C0',400          DC AND ZBC
 8114    02 0183A    08000C1C            GEN,8,8,16 X'08',0,DA(TST32W)       TRANSFER IN CHANNEL
 8115    02 0183B    00000000 A          DATA     0
 8116    02 0183C    020084A4    TST32RF GEN,8,24 X'02',BA(BUFF1+100) READ FWD 1 RECORD DATA CHAIN
 8117    02 0183D    C0000190 A          GEN,8,24 X'C0',400          DC AND ZBC
 8118    02 0183E    08000C1E            GEN,8,8,16 X'08',0,DA(TST32RF)      TRANSFER IN CHANNEL
 8119    02 0183F    00000000 A          DATA     0
 8120    02 01840    4B008314    TST33S  GEN,8,24 X'4B',BA(BUFF1)    SPACE BKW
 8121    02 01841    10000000 A          GEN,8,24 X'10',0
 8122    02 01842    00008314    TST33R  GEN,8,24 0,BA(BUFF1)        READ FWD OR BKW AND DATA CHAIN
 8123    02 01843    40000000 A          GEN,8,24 X'40',0
 8124    02 01844    00008314            GEN,8,24 0,BA(BUFF1)
 8125    02 01845    40000000 A          GEN,8,24 X'40',0
 8126    02 01846    00008314            GEN,8,24 0,BA(BUFF1)
 8127    02 01847    40000000 A          GEN,8,24 X'40',0
 8128    02 01848    00008314            GEN,8,24 0,BA(BUFF1)
 8129    02 01849    40000000 A          GEN,8,24 X'40',0
 8130    02 0184A    00008314            GEN,8,24 0,BA(BUFF1)
 8131    02 0184B    40000000 A          GEN,8,24 X'40',0
 8132    02 0184C    00008314            GEN,8,24 0,BA(BUFF1)
 8133    02 0184D    40000000 A          GEN,8,24 X'40',0
 8134    02 0184E    00008314            GEN,8,24 0,BA(BUFF1)
 8135    02 0184F    40000000 A          GEN,8,24 X'40',0
 8136    02 01850    00008314            GEN,8,24 0,BA(BUFF1)
 8137    02 01851    40000000 A          GEN,8,24 X'40',0
 8138    02 01852    00008314            GEN,8,24 0,BA(BUFF1)
 8139    02 01853    40000000 A          GEN,8,24 X'40',0
 8140    02 01854    00008314            GEN,8,24 0,BA(BUFF1)
 8141    02 01855    40000000 A          GEN,8,24 X'40',0
 8142    02 01856    00008314            GEN,8,24 0,BA(BUFF1)
 8143    02 01857    40000000 A          GEN,8,24 X'40',0
 8144    02 01858    02008314    RFSPEC  GEN,8,24 X'02',BA(BUFF1)    READ INTO MAX BUFFER INT ON CE, ZBC
 8145    02 01859    50001388 A          GEN,8,24 X'50',5000
 8146    02 0185A    02008314    RFSPEC1 GEN,8,24 X'02',BA(BUFF1)    READ WITH HTE
 8147    02 0185B    5A001388 A          GEN,8,24 X'5A',5000
 8148    02 0185C    33000000 A  TPDMP   GEN,8,24 X'33',0            REWIND AND COMMAND CHAIN
 8149    02 0185D    20000000 A          GEN,8,24 X'20',0
 8150    02 0185E    01000064 A  TPDMP1  GEN,8,24 X'01',100          WRITE WITH DATA CHAIN
 8151    02 0185F    80009000 A          GEN,8,24 X'80',X'9000'
 8152    02 01860    01000064 A          GEN,8,24 X'01',100
 8153    02 01861    80009000 A          GEN,8,24 X'80',X'9000'
 8154    02 01862    01000064 A          GEN,8,24 X'01',100          WRITE NO DATA CHAIN
 8155    02 01863    00009000 A          GEN,8,24 X'00',X'9000'
 8156                                    BOUND    8
 8157    02 01864    00000000 A  TWTALLY DATA     0,0,0,0,0,0,0,0    TEMP WRITE ERROR TALLY
         02 01865    00000000 A
         02 01866    00000000 A
         02 01867    00000000 A
         02 01868    00000000 A
         02 01869    00000000 A
         02 0186A    00000000 A
         02 0186B    00000000 A
 8158    02 0186C    00000000 A  PWTALLY DATA     0,0,0,0,0,0,0,0    PERM WRITE ERROR TALLY
         02 0186D    00000000 A
         02 0186E    00000000 A
         02 0186F    00000000 A
         02 01870    00000000 A
         02 01871    00000000 A
         02 01872    00000000 A
         02 01873    00000000 A
 8159    02 01874    00000000 A  PRFTALLY DATA     0,0,0,0,0,0,0,0    PERM READ FWD ERROR TALLY
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          120

LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL      OPERATION  OPERAND                  COMMENTS

          02  01875    00000000  A
          02  01876    00000000  A
          02  01877    00000000  A
          02  01878    00000000  A
          02  01879    00000000  A
          02  0187A    00000000  A
          02  0187B    00000000  A
  8160    02  0187C    00000000  A  TRFTALLY  DATA      0,0,0,0,0,0,0,0          TEMP READ FWD ERROR TALLY
          02  0187D    00000000  A
          02  0187E    00000000  A
          02  0187F    00000000  A
          02  01880    00000000  A
          02  01881    00000000  A
          02  01882    00000000  A
          02  01883    00000000  A
  8161    02  01884    00000000  A             DATA      0
  8162    02  01885    00000000  A  LOOPTLY   DATA      0
  8163    02  01886    00000000  A  SVESEED   DATA      0                        SAVE SEED EACH PASS
  8164    02  01887    00000000  A  CRTRY     DATA      0                        NUMBER OF RETRIES ALLOWED
  8165    02  01888    00000000  A  NMLOOP    DATA      0                        LOOP LIMIT FROM USER
  8166    02  01889    00000000  A  OPFLAG   DATA      0                        RANDOM SET OF EXERCISES
  8167    02  0188A    00000000  A  REWRDS    DATA      0                        RANDOM NUMBER OF WORDS
  8168    02  0188B    00000000  A  RETIME    DATA      0                        RANDOM TIME DELAY
  8169    02  0188C    00000000  A  STDBCD    DATA      0
  8170    02  0188D    00000000  A  STDPB     DATA      0
  8171    02  0188E    00000000  A  OPTPB     DATA      0
  8172    02  0188F    00000000  A  OPTBCD    DATA      0
  8173    02  01890    00000000  A  FL37IPS   DATA      0
  8174    02  01891    00000000  A  FL75IPS   DATA      0
  8175                                        BOUND     8
  8176    02  01892    00000000  A  RTRYSVE   DATA      0,0
          02  01893    00000000  A
  8177    02  01894    00000000  A  SAVIT     DATA      0,0
          02  01895    00000000  A
  8178    02  01896    00000000  A  RTRYRT    DATA      0
  8179                                        BOUND     8
  8180    02  01898    00000000  A  STDELAY   DATA      0,0
          02  01899    00000000  A
  8181    02  0189A    00000000  A  SAVE45    DATA      0,0
          02  0189B    00000000  A
  8182    02  0189C    00000001  A  FLGRG     DATA      1
  8183    02  0189D    00000000  A  FLAGINC   DATA      0
  8184    02  0189E    00000000  A  REWONLY   DATA      0
  8185    02  0189F    00000000  A  ST1512    DATA      0
  8186    02  018A0    00000000  A  ST15      DATA      0
  8187    02  018A1    33100007  A  CLOCK     MTW,I     7                        CLOCK COUNTER
  8188    02  018A2    00000000  A  TSNSIO    DATA      0
  8189    02  018A3    00000000  A  TSCID     DATA      0
  8190    02  018A4    00000000  A  FLGINT    DATA      0
  8191    02  018A5    00000000  A  FLGI      DATA      0
  8192    02  018A6    00000000  A  CSENSE    DATA      0
  8193    02  018A7    00000000  A  STRTME    DATA      0
  8194    02  018A8    00000000  A  SAVESEED  DATA      0
  8195    02  018A9    00000000  A  REWORDS   DATA      0
  8196    02  018AA    00000000  A  UNITSAV   DATA      0
  8197    02  018AB    01020408  A  CORBYT    DATA      X'01020408',X'10204080'
          02  018AC    10204080  A
  8198    02  018AD    00000000  A  ST151     DATA      0                        SAVE R15
  8199    02  018AE    00000000  A  IRGTM     DATA      0
  8200    02  018AF    00000000  A  ERTMAX    DATA      0
  8201    02  018B0    00000000  A  ERTMIN    DATA      0
  8202    02  018B1    00000000  A  IRGMAX    DATA      0
  8203    02  018B2    00000000  A  IRGMIN    DATA      0
  8204    02  018B3    00000000  A  CRPMAX    DATA      0
  8205    02  018B4    00000000  A  WTRT      DATA      0
  8206    02  018B5    00000000  A  :DEVADDR  DATA      0
  8207    02  018B6                SAVDEV    RES       8                        DEVICE NUMBERS BEING TESTED
  8208    02  018BE    00000000  A  SAVNUMB   DATA      0                        NUMBER OF DEVICE NUMBERS LISTED
  8209    02  018BF                SAVDEVR   RES       8                        DEVICE NUMBERS THAT ARE READY
  8210    02  018C7    00000000  A  PROGLAST  DATA      0                        LAST ADDRESS OF PROGRAM
```

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			121
8211	02	018C8	00000000	A	MAXBYT	DATA	0	MAXIMUM BYTE COUNT OF BUFFER
8212	02	018C9	00000000	A	MAXREC	DATA	0	MEMORY MAXIMUM-BUFF1
8213	02	018CA	00000000	A	MAXREADB	DATA	0	MAX BYTES IN EACH BUFFER
8214	02	018CB	00000000	A	MAXREAD	DATA	0	BUFF1 TO BUFF2
8215	02	018CC	00000000	A	NOREAD	DATA	0	TOO LARGE TO READ FLAG
8216	02	018CD	00000000	A	TNS1D	DATA	0	
8217	02	018CE	00000000	A	TNS20	DATA	0	
8218	02	018CF	00000000	A	TNS10	DATA	0	
8219	02	018D0	FF000000	A	TSC2D	DATA	X'FF000000'	
8220	02	018D1	FF000000	A	TSNS20	DATA	X'FF000000'	
8221	02	018D2	00000000	A	STI155	DATA	0	
8222	02	018D3	00000000	A	TIME1	DATA	0	
8223	02	018D4	00000000	A	TIME2	DATA	0	
8224	02	018D5	00000000	A	TIME3	DATA	0	
8225	02	018D6	000000DC	A	CHARTR	DATA	220	
8226	02	018D7	00000000	A	LASTWDW	DATA	0	
8227	02	018D8	00000AF0	A	STOPDIF	DATA	2800	
8228	02	018D9	00000000	A	LASTWDR	DATA	0	
8229	02	018DA	00000000	A	BYTECN	DATA	0	
8230						BOUND	8	
8231	02	018DC	00000000	A	PT00T	DATA	0,0,0,0	
	02	018DD	00000000	A				
	02	018DE	00000000	A				
	02	018DF	00000000	A				
8232	02	018E0	00000000	A	PT00	DATA	0	PATTERNS 00 -80
8233	02	018E1	01010101	A		DATA	X'01010101'	
8234	02	018E2	02020202	A		DATA	X'02020202'	
8235	02	018E3	04040404	A		DATA	X'04040404'	
8236	02	018E4	08080808	A		DATA	X'08080808'	
8237	02	018E5	10101010	A		DATA	X'10101010'	
8238	02	018E6	20202020	A		DATA	X'20202020'	
8239	02	018E7	40404040	A		DATA	X'40404040'	
8240	02	018E8	80808080	A	PT80	DATA	X'80808080'	
8241	02	018E9	00000000	A		DATA	X'00000000'	
8242	02	018EA	5C00AE80	A	CRCDAT	DATA	X'5C00AE80'	
8243	02	018EB	AE002E00	A		DATA	X'AE002E00'	
8244	02	018EC	EE008E00	A		DATA	X'EE008E00'	
8245	02	018ED	BE00A600	A		DATA	X'BE00A600'	
8246	02	018EE	AA000000	A		DATA	X'AA000000'	
8247	02	018EF	D7000000	A	CRCBL	DATA	X'D7000000'	
8248	02	018F0	00000000	A	PTCKIT	DATA	0,0,0	
	02	018F1	00000000	A				
	02	018F2	00000000	A				
8249	02	018F3	00000000	A	NZFLAG	DATA	0	
8250	02	018F4	00000000	A	P2FLAG	DATA	0	
8251	02	018F5	00000000	A	SPFLAG	DATA	0	
8252	02	018F6	00000000	A	LOOPMAX	DATA	0	
8253	02	018F7	00000000	A	SAVE6	DATA	0	
8254	02	018F8	00000000	A	NZSEQNO	DATA	0	
8255	02	018F9	07070707	A	NZDATA1	DATA	X'07070707'	
8256	02	018FA	17000000	A		DATA	X'17000000'	
8257	02	018FB	00170707	A		DATA	X'00170707'	
8258	02	018FC	07071700	A		DATA	X'07071700'	
8259	02	018FD	00000017	A		DATA	X'00000017'	
8260	02	018FE	3E3E3E3E	A	NZDATA2	DATA	X'3E3E3E3E'	
8261	02	018FF	3E1D1D1D	A		DATA	X'3E1D1D1D'	
8262	02	01900	1D1D3737	A		DATA	X'1D1D3737'	
8263	02	01901	3737371B	A		DATA	X'3737371B'	
8264	02	01902	1B1B1B1B	A		DATA	X'1B1B1B1B'	
8265	02	01903	36363636	A		DATA	X'36363636'	
8266	02	01904	2E2E2E2E	A	NZDATA3	DATA	X'2E2E2E2E'	
8267	02	01905	3B3B3B3B	A		DATA	X'3B3B3B3B'	
8268	02	01906	1D1D1D1D	A		DATA	X'1D1D1D1D'	
8269	02	01907	37373737	A		DATA	X'37373737'	
8270	02	01908	3E3E3E3E	A		DATA	X'3E3E3E3E'	
8271	02	01909	1C71C71C	A	NZPK1	DATA	X'1C71C71C'	
8272	02	0190A	75C00000	A		DATA	X'75C00000'	
8273	02	0190B	000171C7	A		DATA	X'000171C7'	
8274	02	0190C	FBEFBEF9	A	NZPK2	DATA	X'FBEFBEF9'	
8275	02	0190D	D75DDF7D	A		DATA	X'D75DDF7D'	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			122
8276	02	0190E	F7DD6DB6	A		DATA	X'F7DD6DB6'	
8277	02	0190F	DBFBEFBE	A		DATA	X'DBFBEFBE'	
8278	02	01910	BAEBAEBA	A	NZPK3	DATA	X'BAEBAEBA'	
8279	02	01911	EBAEBAEB	A		DATA	X'EBAEBAEB'	
8280	02	01912	AEBAEBAE	A		DATA	X'AEBAEBAE'	
8281	02	01913	EFBEFBEF	A		DATA	X'EFBEFBEF'	
8282	02	01914	BEFBEFBE	A		DATA	X'BEFBEFBE'	
8283	02	01915	FBEFBEFB	A		DATA	X'FBEFBEFB'	
8284	02	01916	75D75D75	A		DATA	X'75D75D75'	
8285	02	01917	D75D75D7	A		DATA	X'D75D75D7'	
8286	02	01918	5D75D75D	A		DATA	X'5D75D75D'	
8287	02	01919	DF7DF7DF	A		DATA	X'DF7DF7DF'	
8288	02	0191A	7DF7DF7D	A		DATA	X'7DF7DF7D'	
8289	02	0191B	F7DF7DF7	A		DATA	X'F7DF7DF7'	
8290	02	0191C	FBEFBEFB	A		DATA	X'FBEFBEFB'	
8291	02	0191D	EFBEFBEF	A		DATA	X'EFBEFBEF'	
8292	02	0191E	BEFBEFBE	A		DATA	X'BEFBEFBE'	
8293	02	0191F	FEEBFEEB	A	NZPK4	DATA	X'FEEBFEEB'	
8294	02	01920	FFBEFFBE	A		DATA	X'FFBEFFBE'	
8295	02	01921	FDD7FDD7	A		DATA	X'FDD7FDD7'	
8296	02	01922	FF7DFF7D	A		DATA	X'FF7DFF7D'	
8297	02	01923	FFEFFFEF	A		DATA	X'FFEFFFEF'	
8298	02	01924	FFFFFFFF	A	LRCPK	DATA	X'FFFFFFFF'	3WORDS EACH RECORD
8299	02	01925	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8300	02	01926	FFFFF000	A		DATA	X'FFFFF000'	
8301	02	01927	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8302	02	01928	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8303	02	01929	FFFFF800	A		DATA	X'FFFFF800'	
8304	02	0192A	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8305	02	0192B	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8306	02	0192C	FFFFF400	A		DATA	X'FFFFF400'	
8307	02	0192D	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8308	02	0192E	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8309	02	0192F	FFFFF200	A		DATA	X'FFFFF200'	
8310	02	01930	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8311	02	01931	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8312	02	01932	FFFFF100	A		DATA	X'FFFFF100'	
8313	02	01933	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8314	02	01934	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8315	02	01935	FFFFF080	A		DATA	X'FFFFF080'	
8316	02	01936	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8317	02	01937	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8318	02	01938	FFFFF040	A		DATA	X'FFFFF040'	
8319	02	01939	3F3F3F00	A	LRCOP	DATA	X'3F3F3F00'	1 WORD EACH RECORD
8320	02	0193A	3F3F3F20	A		DATA	X'3F3F3F20'	
8321	02	0193B	3F3F3F10	A		DATA	X'3F3F3F10'	
8322	02	0193C	3F3F3F08	A		DATA	X'3F3F3F08'	
8323	02	0193D	3F3F3F04	A		DATA	X'3F3F3F04'	
8324	02	0193E	3F3F3F02	A		DATA	X'3F3F3F02'	
8325	02	0193F	3F3F3F01	A		DATA	X'3F3F3F01'	
8326	02	01940	4F4F4F4F	A	LRCEP	DATA	X'4F4F4F4F'	1 WORD EACH RECORD
8327	02	01941	4F4F4F6F	A		DATA	X'4F4F4F6F'	
8328	02	01942	4F4F4F5F	A		DATA	X'4F4F4F5F'	
8329	02	01943	4F4F4FC7	A		DATA	X'4F4F4FC7'	
8330	02	01944	4F4F4F4B	A		DATA	X'4F4F4F4B'	
8331	02	01945	4F4F4F4D	A		DATA	X'4F4F4F4D'	
8332	02	01946	4F4F4F4E	A		DATA	X'4F4F4F4E'	
8333	02	01947	F0F1F2F3	A	BCDVALID	DATA	X'F0F1F2F3'	DATA FOR TRANSLATION
8334	02	01948	F4F5F6F7	A		DATA	X'F4F5F6F7'	
8335	02	01949	F8F9E2E3	A		DATA	X'F8F9E2E3'	
8336	02	0194A	E4E5E6E7	A		DATA	X'E4E5E6E7'	
8337	02	0194B	E8E9D1D2	A		DATA	X'E8E9D1D2'	
8338	02	0194C	D3D4D5D6	A		DATA	X'D3D4D5D6'	
8339	02	0194D	D7D8D9C1	A		DATA	X'D7D8D9C1'	
8340	02	0194E	C2C3C4C5	A		DATA	X'C2C3C4C5'	
8341	02	0194F	C6C7C8C9	A		DATA	X'C6C7C8C9'	
8342	02	01950	F07B7C7D	A		DATA	X'F07B7C7D'	
8343	02	01951	7E7F6061	A		DATA	X'7E7F6061'	
8344	02	01952	6B6C6D6E	A		DATA	X'6B6C6D6E'	
8345	02	01953	6F505A5B	A		DATA	X'6F505A5B'	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			123
8346	02	01954	5C5D5E5F	A		DATA	X'5C5D5E5F'	
8347	02	01955	404A4B4C	A		DATA	X'404A4B4C'	
8348	02	01956	4D4E4F40	A		DATA	X'4D4E4F40'	
8349	02	01957	3A7ABAFA	A	BCDZERO	DATA	X'3A7ABAFA'	ZERO TRANSLATION
8350	02	01958	F0F0F0F0	A	CPBCDZ	DATA	X'F0F0F0F0'	
8351	02	01959	0A010203	A	DCDNOTRN	DATA	X'0A010203'	NO TRANSLATION CHARACTER SET
8352	02	0195A	04050607	A		DATA	X'04050607'	
8353	02	0195B	08091213	A		DATA	X'08091213'	
8354	02	0195C	14151617	A		DATA	X'14151617'	
8355	02	0195D	18192122	A		DATA	X'18192122'	
8356	02	0195E	23242526	A		DATA	X'23242526'	
8357	02	0195F	27282931	A		DATA	X'27282931'	
8358	02	01960	32333435	A		DATA	X'32333435'	
8359	02	01961	36373839	A		DATA	X'36373839'	
8360	02	01962	0A0B0C0D	A		DATA	X'0A0B0C0D'	
8361	02	01963	0E0F2011	A		DATA	X'0E0F2011'	
8362	02	01964	1B1C1D1E	A		DATA	X'1B1C1D1E'	
8363	02	01965	1F302A2B	A		DATA	X'1F302A2B'	
8364	02	01966	2C2D2E2F	A		DATA	X'2C2D2E2F'	
8365	02	01967	103A3B3C	A		DATA	X'103A3B3C'	
8366	02	01968	3D3E3F10	A		DATA	X'3D3E3F10'	
8367	02	01969	F0F1F2F3	A	BINTRLS	DATA	X'F0F1F2F3'	
8368	02	0196A	F4F5F6F7	A		DATA	X'F4F5F6F7'	
8369	02	0196B	F8F9F07B	A		DATA	X'F8F9F07B'	
8370	02	0196C	7C7D7E7F	A		DATA	X'7C7D7E7F'	
8371	02	0196D	4061E2E3	A		DATA	X'4061E2E3'	
8372	02	0196E	E4E5E6E7	A		DATA	X'E4E5E6E7'	
8373	02	0196F	E8E96A6B	A		DATA	X'E8E96A6B'	
8374	02	01970	6C6D6E6F	A		DATA	X'6C6D6E6F'	
8375	02	01971	60D1D2D3	A		DATA	X'60D1D2D3'	
8376	02	01972	D4D5D6D7	A		DATA	X'D4D5D6D7'	
8377	02	01973	D8D95A5B	A		DATA	X'D8D95A5B'	
8378	02	01974	5C5D5E5F	A		DATA	X'5C5D5E5F'	
8379	02	01975	50C1C2C3	A		DATA	X'50C1C2C3'	
8380	02	01976	C4C5C6C7	A		DATA	X'C4C5C6C7'	
8381	02	01977	C8C94A4B	A		DATA	X'C8C94A4B'	
8382	02	01978	4C4D4E4F	A		DATA	X'4C4D4E4F'	
8383	02	01979	00000000	A	PBTSAT	DATA	0	
8384	02	0197A	00000000	A		DATA	0	
8385	02	0197B	00000000	A		DATA	0	
8386	02	0197C	04104104	A		DATA	X'04104104'	
8387	02	0197D	10410410	A		DATA	X'10410410'	
8388	02	0197E	41041041	A		DATA	X'41041041'	
8389	02	0197F	08208208	A		DATA	X'08208208'	
8390	02	01980	20820820	A		DATA	X'20820820'	
8391	02	01981	82082082	A		DATA	X'82082082'	
8392	02	01982	10410410	A		DATA	X'10410410'	
8393	02	01983	41041041	A		DATA	X'41041041'	
8394	02	01984	04104104	A		DATA	X'04104104'	
8395	02	01985	20820820	A		DATA	X'20820820'	
8396	02	01986	82082082	A		DATA	X'82082082'	
8397	02	01987	08208208	A		DATA	X'08208208'	
8398	02	01988	41041041	A		DATA	X'41041041'	
8399	02	01989	04104104	A		DATA	X'04104104'	
8400	02	0198A	10410410	A		DATA	X'10410410'	
8401	02	0198B	82082082	A		DATA	X'82082082'	
8402	02	0198C	08208208	A		DATA	X'08208208'	
8403	02	0198D	20820820	A		DATA	X'20820820'	
8404	02	0198E	12131415	A	COMPSPD	DATA	X'12131415'	
8405	02	0198F	00333435	A		DATA	X'00333435'	
8406	02	01990	12131415	A		DATA	X'12131415'	
8407	02	01991	32003435	A		DATA	X'32003435'	
8408	02	01992	12131415	A		DATA	X'12131415'	
8409	02	01993	32330035	A		DATA	X'32330035'	
8410	02	01994	12131415	A		DATA	X'12131415'	
8411	02	01995	32333400	A		DATA	X'32333400'	
8412	02	01996	AAAAAAAA	A	COPEC	DATA	X'AAAAAAAA'	
8413	02	01997	AAAAFFFF	A		DATA	X'AAAAFFFF'	
8414	02	01998	FFFFFFFF	A		DATA	X'FFFFFFFF'	
8415	02	01999	AAAAAAAA	A		DATA	X'AAAAAAAA'	

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          124
  8416    02 0199A    AAAAAA00 A            DATA     X'AAAAAA00'
  8417    02 0199B    FFFFFFFF A            DATA     X'FFFFFFFF'
  8418    02 0199C    AAAAAAAA A            DATA     X'AAAAAAAA'
  8419    02 0199D    AAAAAAAA A            DATA     X'AAAAAAAA'
  8420    02 0199E    00FFFFFF A            DATA     X'00FFFFFF'
  8421    02 0199F    00000000 A  PATTSED    DATA     0                  SEED FOR PATTERN
  8422    02 019A0    00000000 A  PATTYPE    DATA     0                  PATTERN TYPE 0=FIXED,1=RANDOM,5=BIT
  8423    02 019A1    00000000 A  PATTTK     DATA     0                  TRACKS IF BIT CROWDING PATTERN
  8424    02 019A2    00000000 A  PATTTS1    DATA     0                  PATTERN FOR 1ST TRACK
  8425    02 019A3    00000000 A  PATTTS2    DATA     0
  8426    02 019A4    00000000 A  PATTFIX    DATA     0                  FIXED PATTERN
  8427    02 019A5    00000000 A  LENGTHB    DATA     0                  LENGTH REVISED
  8428    02 019A6    00000000 A  LENGTH     DATA     0                  BYTE LENGTH FROM DIRECTIVE
  8429    02 019A7    00000001 A  NOPKPRT    DATA     1
  8430    02 019A8    00000001 A  TLOOP      DATA     1
  8431    02 019A9    00000000 A  CMAX       DATA     0
  8432    02 019AA    00000000 A  RRTT       DATA     0
  8433    02 019AB    00000000 A  MASKBYT    DATA     0
  8434    02 019AC    00001A32    OPP1       DATA     OPMESGA
  8435    02 019AD    00001A38               DATA     OPMESG8
  8436    02 019AE    00001A3E               DATA     OPMESG9
  8437    02 019AF    00000055 A  TOL800     DATA     85
  8438    02 019B0    0000001E A             DATA     30
  8439    02 019B1    00000014 A             DATA     20
  8440    02 019B2    00000006 A             DATA     06
  8441    02 019B3    00000046 A  TOL8001    DATA     70
  8442    02 019B4    0000001D A             DATA     29
  8443    02 019B5    00000010 A             DATA     16
  8444    02 019B6    00000005 A             DATA     05
  8445                                       BOUND    8
  8446    02 019B8    0FE3E2E3 A  DEVPRTO    TEXTC    'TSTI-DEV.         '
          02 019B9    F160C4C5 A
          02 019BA    E54B4040 A
          02 019BB    40404040 A
  8447    02 019BC    0000218D    RESLOC     DATA     BUFF1+200
  8448    02 019BD    00000000 A  CSMEAR     DATA     0,0,0,0,0,0,0,0,0,0,0,0,0,
          02 019BE    00000000 A
          02 019BF    00000000 A
          02 019C0    00000000 A
          02 019C1    00000000 A
          02 019C2    00000000 A
          02 019C3    00000000 A
          02 019C4    00000000 A
          02 019C5    00000000 A
          02 019C6    00000000 A
          02 019C7    00000000 A
          02 019C8    00000000 A
          02 019C9    00000000 A
  8449    02 019CA    00000000 A  LENBUF1    DATA     0                  LENGTH IN BYTES OF REC BUFFER 1
  8450    02 019CB    00000000 A  LENBUF2    DATA     0                  LENGTH IN BYTES OF REC BUFFER 2
  8451                                       BOUND    8
  8452    02 019CC    08FF0000 A  CHKBITT    DATA     X'08FF0000'
  8453    02 019CD    08BF0000 A  CHKBIT     DATA     X'08BF0000'
  8454    02 019CE    00000000 A  MODEFLAG   DATA     0
  8455    02 019CF    0F0019D0    XPSD1      XPSD,0   INTSVV              INTERRUPT ADDRESS
  8456                                       BOUND    8
  8457    02 019D0    00000000 A  INTSVV     DATA     0,0,:INTSV,0
          02 019D1    00000000 A
          02 019D2    00001E7C
          02 019D3    00000000 A
  8458    02 019D4    0F0019D6    XPSD4      XPSD,0   INTMY               INTERRUPT FOR UTILITY TEST 2
  8459                                       BOUND    8
  8460    02 019D6    00000000 A  INTMY      DATA     0,0,TST3207,0
          02 019D7    00000000 A
          02 019D8    000013FC
          02 019D9    00000000 A
  8461                                       BOUND    8
  8462    02 019DA    E66BE66B A  REDAPT     TEXT     'W,W,W,W           '
          02 019DB    E66BE640 A
          02 019DC    40404040 A
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70						SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70		125
8463	02	019DD	E66BE66B	A		TEXT	'W,W,W,SB '	
	02	019DE	E66BE2C2	A				
	02	019DF	40404040	A				
8464	02	019E0	E66BE66B	A		TEXT	'W,W,SB,SB '	
	02	019E1	E2C26BE2	A				
	02	019E2	C2404040	A				
8465	02	019E3	E66BE66B	A		TEXT	'W,W,SB,RF '	
	02	019E4	E2C26BD9	A				
	02	019E5	C6404040	A				
8466	02	019E6	E66BE2C2	A		TEXT	'W,SB,RF,SB '	
	02	019E7	6BD9C66B	A				
	02	019E8	E2C24040	A				
8467	02	019E9	E66BE2C2	A		TEXT	'W,SB,SB,RF '	
	02	019EA	6BE2C26B	A				
	02	019EB	D9C64040	A				
8468	02	019EC	E66BE2C2	A		TEXT	'W,SB,SB,SF '	
	02	019ED	6BE2C26B	A				
	02	019EE	E2C64040	A				
8469	02	019EF	E2C26BD9	A		TEXT	'SB,RF,W,W '	
	02	019F0	C66BE66B	A				
	02	019F1	E6404040	A				
8470	02	019F2	E2C26BD9	A		TEXT	'SB,RF,W,SB '	
	02	019F3	C66BE66B	A				
	02	019F4	E2C24040	A				
8471	02	019F5	E2C26BE6	A		TEXT	'SB,W,SB,RF '	
	02	019F6	6BE2C26B	A				
	02	019F7	D9C64040	A				
8472	02	019F8	E2C26BD9	A		TEXT	'SB,RF,SB,W '	
	02	019F9	C66BE2C2	A				
	02	019FA	6BE64040	A				
8473	02	019FB	E2C26BD9	A		TEXT	'SB,RF,SB,RF '	
	02	019FC	C66BE2C2	A				
	02	019FD	6BD9C640	A				
8474	02	019FE	E2C26BE2	A		TEXT	'SB,SF,W,W '	
	02	019FF	C66BE66B	A				
	02	01A00	E6404040	A				
8475	02	01A01	E2C26BE6	A		TEXT	'SB,W,SB,SF '	
	02	01A02	6BE2C26B	A				
	02	01A03	E2C64040	A				
8476	02	01A04	E2C26BD9	A		TEXT	'SB,RF,SB,RF '	
	02	01A05	C66BE2C2	A				
	02	01A06	6BD9C640	A				
8477	02	01A07	E2C26BE2	A		TEXT	'SB,SF,SB,RF '	
	02	01A08	C66BE2C2	A				
	02	01A09	6BD9C640	A				
8478						BOUND	8	
8479	02	01A0A	0DE3C9D4	A	TIMEOUT	TEXTC	'TIMEOUT ERROR'	
	02	01A0B	C5D6E4E3	A				
	02	01A0C	40C5D9D9	A				
	02	01A0D	D6D94040	A				
8480						BOUND	8	
8481	02	01A0E	0DD5D640	A	NOLOAD	TEXTC	'NO LOAD POINT'	
	02	01A0F	D3D6C1C4	A				
	02	01A10	40D7D6C9	A				
	02	01A11	D5E34040	A				
8482						BOUND	8	
8483	02	01A12	10C4C5D3	A	DELSUB	TEXTC	'DELAY SUBROUTINE'	
	02	01A13	C1E840E2	A				
	02	01A14	E4C2D9D6	A				
	02	01A15	E4E3C9D5	A				
	02	01A16	C5404040	A				
8484						BOUND	8	
8485	02	01A18	0FD9C5D4	A	OPMESG2	TEXTC	'REMOVE JUMPER '	
	02	01A19	D6E5C540	A				
	02	01A1A	D1E4D4D7	A				
	02	01A1B	C5D94040	A				
8486						BOUND	8	
8487	02	01A1C	1BD9C5D7	A	OPMESG3	TEXTC	'REPLACE WRITE RING, READY '	
	02	01A1D	D3C1C3C5	A				
	02	01A1E	40E6D9C9	A				

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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND                                  COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70                          126
          02 01A1F    E3C540D9 A
          02 01A20    C9D5C76B A
          02 01A21    40D9C5C1 A
          02 01A22    C4E84040 A
  8488                                                BOUND     8
  8489    02 01A24    17D9C5E2 A   OPMESG4   TEXTC     'RESTORE UNIT TO READY  '
          02 01A25    E3D6D9C5 A
          02 01A26    40E4D5C9 A
          02 01A27    E340E3D6 A
          02 01A28    40D9C5C1 A
          02 01A29    C4E84040 A
  8490                                                BOUND     8
  8491    02 01A2A    1FD9C5E2 A   OPMESG5   TEXTC     'RESET, ATTENTION, FOR INTERRUPT'
          02 01A2B    C5E36B40 A
          02 01A2C    C1E3E3C5 A
          02 01A2D    D5E3C9D6 A
          02 01A2E    D56B40C6 A
          02 01A2F    D6D940C9 A
          02 01A30    D5E3C5D9 A
          02 01A31    D9E4D7E3 A
  8492                                                BOUND     8
  8493    02 01A32    13E2C5E3 A   OPMESGA   TEXTC     'SET DIAL TO 200 BPI'
          02 01A33    40C4C9C1 A
          02 01A34    D340E3D6 A
          02 01A35    40F2F0F0 A
          02 01A36    40C2D7C9 A
  8494                                                BOUND     8
  8495    02 01A38    13E2C5E3 A   OPMESG8   TEXTC     'SET DIAL TO 556 BPI'
          02 01A39    40C4C9C1 A
          02 01A3A    D340E3D6 A
          02 01A3B    40F5F5F6 A
          02 01A3C    40C2D7C9 A
  8496                                                BOUND     8
  8497    02 01A3E    13E2C5E3 A   OPMESG9   TEXTC     'SET DIAL TO 800 BPI'
          02 01A3F    40C4C9C1 A
          02 01A40    D340E3D6 A
          02 01A41    40F8F0F0 A
          02 01A42    40C2D7C9 A
  8498                                                BOUND     8
  8499    02 01A44    0BD5D6E3 A   ERMSG1    TEXTC     'NOT 200 BPI'
          02 01A45    40F2F0F0 A
          02 01A46    40C2D7C9 A
  8500                                                BOUND     8
  8501    02 01A48    0BD5D6E3 A   ERMSG2    TEXTC     'NOT 556 BPI'
          02 01A49    40F5F5F6 A
          02 01A4A    40C2D7C9 A
  8502                                                BOUND     8
  8503    02 01A4C    0BD5D6E3 A   ERMSG3    TEXTC     'NOT 800 BPI'
          02 01A4D    40F8F0F0 A
          02 01A4E    40C2D7C9 A
  8504                                                BOUND     8
  8505    02 01A50    26D9C5D4 A   OPMESG6   TEXTC     'REMOVE WRITE RING, READY, CORRECT UNIT'
          02 01A51    D6E5C540 A
          02 01A52    E6D9C9E3 A
          02 01A53    C540D9C9 A
          02 01A54    D5C76B40 A
          02 01A55    D9C5C1C4 A
          02 01A56    E86B40C3 A
          02 01A57    D6D9D9C5 A
          02 01A58    C3E340E4 A
          02 01A59    D5C9E340 A
  8506                                                BOUND     8
  8507                                    MESIRG    TEXTC     'I R G TIME          US  TOLERANCE      ',;
  8508    02 01A5A    37C940D9 A                                '     TO          '
          02 01A5B    40C740E3 A
          02 01A5C    C9D4C540 A
          02 01A5D    40404040 A
          02 01A5E    40404040 A
          02 01A5F    40E4E240 A
          02 01A60    40E3D6D3 A
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          127

          02 01A61    C5D9C1D5 A
          02 01A62    C3C54040 A
          02 01A63    40404040 A
          02 01A64    40404040 A
          02 01A65    40E3D640 A
          02 01A66    40404040 A
          02 01A67    40404040 A
 8509                                      BOUND    8
 8510     02 01A68    1BE2E3C1 A  MESSTRT  TEXTC    'START TIME IS            US'
          02 01A69    D9E340E3 A
          02 01A6A    C9D4C540 A
          02 01A6B    C9E24040 A
          02 01A6C    40404040 A
          02 01A6D    40404040 A
          02 01A6E    4040E4E2 A
 8511                                      BOUND    8
 8512     02 01A70    26E3C1D7 A  MESTPC   TEXTC    'TAPE CREEP      US   TOLERANCE      US'
          02 01A71    C540C3D9 A
          02 01A72    C5C5D740 A
          02 01A73    40404040 A
          02 01A74    40E4E240 A
          02 01A75    4040E3D6 A
          02 01A76    D3C5D9C1 A
          02 01A77    D5C3C540 A
          02 01A78    40404040 A
          02 01A79    40E4E240 A
 8513                                      BOUND    8
 8514     02 01A7A    22D5C5C7 A  MESNCR   TEXTC    'NEG. CREEP      IN TAPE CREEP TEST'
          02 01A7B    4B40C3D9 A
          02 01A7C    C5C5D740 A
          02 01A7D    40404040 A
          02 01A7E    40C9D540 A
          02 01A7F    E3C1D7C5 A
          02 01A80    40C3D9C5 A
          02 01A81    C5D740E3 A
          02 01A82    C5E2E340 A
 8515                                      BOUND    8
 8516     02 01A84    23E3D9C1 A  MRTE     TEXTC    'TRANS ERROR  REC XXXXXX  BYT XXXXXX'
          02 01A85    D5E240C5 A
          02 01A86    D9D9D6D9 A
          02 01A87    4040D9C5 A
          02 01A88    C340E7E7 A
          02 01A89    E7E7E7E7 A
          02 01A8A    4040C2E8 A
          02 01A8B    E340E7E7 A
          02 01A8C    E7E7E7E7 A
 8517                                      BOUND    8
 8518     02 01A8E    1BD9C5C3 A  RECOUT   TEXTC    'REC  XXXXXX  BYT CNT XXXXXX'
          02 01A8F    4040E7E7 A
          02 01A90    E7E7E7E7 A
          02 01A91    4040C2E8 A
          02 01A92    E340C3D5 A
          02 01A93    E340E7E7 A
          02 01A94    E7E7E7E7 A
 8519                                      BOUND    8
 8520     02 01A96    2EC5D9C1 A  MESEGT   TEXTC    'ERASE TIME      MS, TOLERANCE      -      MS'
          02 01A97    E2C540E3 A
          02 01A98    C9D4C540 A
          02 01A99    40404040 A
          02 01A9A    40D4E26B A
          02 01A9B    40E3D6D3 A
          02 01A9C    C5D9C1D5 A
          02 01A9D    C3C54040 A
          02 01A9E    40404040 A
          02 01A9F    40604040 A
          02 01AA0    40404040 A
          02 01AA1    40D4E240 A
 8521                                      BOUND    8
 8522     02 01AA2    13C4C5E2 A  OPMESG7  TEXTC    'DESIGNATE UNIT XXXX'
          02 01AA3    C9C7D5C1 A
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL     OPERATION  OPERAND                                                  COMMENTS

0   16:42  AUG 03, '70                  SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70                                  128
          02  01AA4    E3C54[illegible]  A
          02  01AA5    D5C9E[illegible]  A
          02  01AA6    E7E7E7E7  A
  8523                                             BOUND     8
  8524    02  01AA8    345C5C5C  A     MSER1     TEXTC     '**************************************************'
          02  01AA9    5C5C5C5C  A
          02  01AAA    5C5C5C5C  A
          02  01AAB    5C5C5C5C  A
          02  01AAC    5C5C5C5C  A
          02  01AAD    5C5C5C5C  A
          02  01AAE    5C5C5C5C  A
          02  01AAF    5C5C5C5C  A
          02  01AB0    5C5C5C5C  A
          02  01AB1    5C5C5C5C  A
          02  01AB2    5C5C5C5C  A
          02  01AB3    5C5C5C5C  A
          02  01AB4    5C5C5C5C  A
          02  01AB5    5C404040  A
  8525                                             BOUND     8
  8526    02  01AB6    33D9C5C3  A     MESER     TEXTC     'REC 100 PT XXXX WRT ER XXXX  RF ER XXXX INF ER XXXX'
          02  01AB7    40F1F0F0  A
          02  01AB8    40D7E340  A
          02  01AB9    E7E7E7E7  A
          02  01ABA    40E6D9E3  A
          02  01ABB    40C5D940  A
          02  01ABC    E7E7E7E7  A
          02  01ABD    4040D9C6  A
          02  01ABE    40C5D940  A
          02  01ABF    E7E7E7E7  A
          02  01AC0    40C9D5C6  A
          02  01AC1    40C5D940  A
          02  01AC2    E7E7E7E7  A
  8527                                             BOUND     8
  8528    02  01AC4    33D9C1D5  A     REMESG1   TEXTC     'RAND. WORD            DEV.        PASS HEX          '
          02  01AC5    C44B40E6  A
          02  01AC6    D6D9C440  A
          02  01AC7    40404040  A
          02  01AC8    40404040  A                                                '
          02  01AC9    404040C4  A
          02  01ACA    C5E54B40  A
          02  01ACB    40404040  A
          02  01ACC    404040D7  A
          02  01ACD    C1E2E240  A
          02  01ACE    C8C5E740  A
          02  01ACF    40404040  A
          02  01AD0    40404040  A
  8529                                             BOUND     8
  8530    02  01AD2    1BC6C1C9  A     REMESG2   TEXTC     'FAILING SEQ: W,                                 '
          02  01AD3    D3C9D5C7  A
          02  01AD4    40E2C5D8  A
          02  01AD5    7A40E66B  A
          02  01AD6    40404040  A
          02  01AD7    40404040  A
          02  01AD8    40404040  A
  8531                                             BOUND     8
  8532                                  REMESG3   TEXTC     'DEVICE        PWT          TWT          PRFT      ',;
  8533    02  01ADA    3BC4C5E5  A                            '    TRFT                                        '
          02  01ADB    C9C3C540  A
          02  01ADC    40404040  A
          02  01ADD    404040D7  A
          02  01ADE    E6E34040  A
          02  01ADF    40404040  A
          02  01AE0    404040E3  A
          02  01AE1    E6E34040  A
          02  01AE2    40404040  A
          02  01AE3    404040D7  A
          02  01AE4    D9C6E340  A
          02  01AE5    40404040  A
          02  01AE6    404040E3  A
          02  01AE7    D9C6E340  A
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          129

LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL      OPERATION  OPERAND          COMMENTS

          02            01AE8           40404040         A
8534                                                               BOUND      8
8535                                                     OUTMSG    TEXTC      '                                '.;
8536      02            01AEA           4A404040         A                                '
          02            01AEB           40404040         A
          02            01AEC           40404040         A
          02            01AED           40404040         A
          02            01AEE           40404040         A
          02            01AEF           40404040         A
          02            01AF0           40404040         A
          02            01AF1           40404040         A
          02            01AF2           40404040         A
          02            01AF3           40404040         A
          02            01AF4           40404040         A
          02            01AF5           40404040         A
          02            01AF6           40404040         A
          02            01AF7           40404040         A
          02            01AF8           40404040         A
          02            01AF9           40404040         A
          02            01AFA           40404040         A
          02            01AFB           40404040         A
          02            01AFC           40404040         A
8537                                                               BOUND      8
8538      02            01AFE           274040C4         A       REMESG32   TEXTC      '  DEV.          FAILING REC HEX          '
          02            01AFF           C5E54B40         A
          02            01B00           40404040         A
          02            01B01           40404040         A
          02            01B02           C6C1C9D3         A
          02            01B03           C9D5C740         A
          02            01B04           D9C5C340         A
          02            01B05           C8C5E740         A
          02            01B06           40404040         A
          02            01B07           40404040         A
8539      02            01B08           00000000         A       SAVMODEL   DATA       0                MODEL NUMBER BEING TESTED
8540                                                               *
8541                                                               *
8542      02            01B09           35F01B52                 ERRPNT1    STW,15     ERREXIT          STORE RETURN ADDR
8543      02            01B0A           22B00000         A                  LI,11      0                FETCH ZERO
8544      02            01B0B           226FFFFA         A                  LI,6       -6               FETCH -6
8545      02            01B0C           328C1B61                            LW,8       :TALLYO+6,6      FETCH OBS. COUNT
8546      02            01B0D           69301B10                            BNEZ       $+3              BRANCH NOT EQUAL ZERO
8547      02            01B0E           65601B0C                            BIR,6      $-2              BRANCH INCREMENT REG. 6
8548      02            01B0F           E8001B52                            B          *ERREXIT         EXIT - NO ERRORS
8549      02            01B10           226FFFFA         A                  LI,6       -6               FETCH -6
8550      02            01B11           32CC1B5B                 ERRPNT2    LW,12      :TALLYE+6,6      FETCH EXP. COUNT
8551      02            01B12           68301B2D                            BEZ        ERRPNT5          BRANCH IF EQUAL ZERO
8552      02            01B13           38CC1B61                            SW,12      :TALLYO+6,6      IF NOT EQUAL SUBTRACT OBS. COUNT
8553      02            01B14           21C02710         A                  CI,12      10000            COMPARE IMMEDIATE
8554      02            01B15           68301B1D                            BE         ERRPNT3A         BRANCH IF EQUAL
8555      02            01B16           21C026AC         A                  CI,12      9900             COMPARE IMMEDIATE
8556      02            01B17           68101B20                            BGE        ERRPNT3          BRANCH IF GREATER OR EQUAL
8557      02            01B18           21C01388         A                  CI,12      5000             COMPARE IMMEDIATE
8558      02            01B19           68101B23                            BGE        ERRPNT4          BRANCH IF GREATER OR EQUAL
8559      02            01B1A           02200030         A       ERRPNT2A   LCI        3                LOAD CONDITION CONTROL IMMEDIATE
8560      02            01B1B           2A801B82                            LM,8       ERRNO6           LOAD MULTIPLE
8561      02            01B1C           68001B25                            B          $+9              BRANCH
8562      02            01B1D           02200030         A       ERRPNT3A   LCI        3                LOAD CONDITION CONTROL IMMEDIATE
8563      02            01B1E           2A801B85                            LM,8       ERRNO7           FETCH MULTIPLE
8564      02            01B1F           68001B25                            B          $+6              BRANCH
8565      02            01B20           02200030         A       ERRPNT3    LCI        3                LOAD CONDITION CONTROL IMMEDIATE
8566      02            01B21           2A801B7F                            LM,8       ERRNO5           LOAD MULTIPLE
8567      02            01B22           68001B25                            B          $+3              BRANCH
8568      02            01B23           02200030         A       ERRPNT4    LCI        3                LOAD CONDITION CONTROL IMMEDIATE
8569      02            01B24           2A801B7C                            LM,8       ERRNO4           LOAD MULTIPLE
8570      02            01B25           55821B79                            STH,8      ERRNO3+11,1      STORE HALF WORD INTO ERRNO3
8571      02            01B26           02200020         A                  LCI        2                LOAD CONDITION CONTROL IMMEDIATE
8572      02            01B27           2B901B7A                            STM,9      ERRNO3+12        STORE MULTIPLE
8573      02            01B28           EAF00217         A                  BAL,15     *:DECC           CONVERSION SUBR.
8574      02            01B29           35F01B78                            STW,15     ERRNO3+10        STORE THE RESULT INTO ERRNO3
8575      02            01B2A           EAF00217         A                  BAL,15     *:DECC           CONVERSION SUBR.
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          130
  8576    02 01B28    75F61B77              STB,15   ERRNO3+9,3        STORE THE RESULT INTO ERRNO3
  8577    02 01B2C    68001B35              B        ERRPNT6          BRANCH TO ERRPNT6
  8578    02 01B2D    32CC1B61    ERRPNT5   LW,12    :TALLYO+6,6      FETCH OBS. COUNT
  8579    02 01B2E    21C00000 A            CI,12    0                COMPARE IMMEDIATE
  8580    02 01B2F    68301B1D              BE       ERRPNT3A         BRANCH IF EQUAL
  8581    02 01B30    21C00064 A            CI,12    100              COMPARE IMMEDIATE
  8582    02 01B31    68201B20              BLE      ERRPNT3          BRANCH IF LESS OR EQUAL
  8583    02 01B32    21C01388 A            CI,12    5000             COMPARE IMMEDIATE
  8584    02 01B33    68201B23              BLE      ERRPNT4          BRANCH IF LESS OR EQUAL
  8585    02 01B34    68001B1A              B        ERRPNT2A         BRANCH
  8586    02 01B35    72C6000B A  ERRPNT6   LB,12    11,3             FETCH BYTE
  8587    02 01B36    EAF00217 A            BAL,15   *:DECC           CONVERSION SUBR.
  8588    02 01B37    75F41B70              STB,15   ERRNO3+2,2       STORE THE RESULT INTO ERRNO3
  8589    02 01B38    32C01B54              LW,12    TESTNO           FETCH TEST NO.
  8590    02 01B39    EAF00217 A            BAL,15   *:DECC           CONVERSION SUBR.
  8591    02 01B3A    55F21B62              STH,15   ERRNO1+1,1        STORE THE RESULT INTO ERRNO1
  8592    02 01B3B    32CC1B5B              LW,12    :TALLYE+6,6      FETCH EXP. COUNT
  8593    02 01B3C    EAF00217 A            BAL,15   *:DECC           CONVERSION SUBR.
  8594    02 01B3D    35F01B75              STW,15   ERRNO3+7          STORE THE RESULT INTO ERRNO3
  8595    02 01B3E    EAF00217 A            BAL,15   *:DECC           CONVERSION SUBR.
  8596    02 01B3F    75F61B74              STB,15   ERRNO3+6,3        STORE THE RESULT INTO ERRNO3
  8597    02 01B40    216FFFFA A            CI,6     -6
  8598    02 01B41    69301B4D              BNE      LINE3
  8599    02 01B42    EAF0021C A            BAL,15   *:PRINT          GO TO PRINT SUBR.
  8600    02 01B43    00001B61              DATA     ERRNO1
  8601    02 01B44    EAF0021C A            BAL,15   *:PRINT          GO TO PRINT SUBR.
  8602    02 01B45    00000000 A  :TALLYMA  DATA     0
  8603    02 01B46    32C01B53              LW,12    :TALLYP          FETCH TALLYP
  8604    02 01B47    EAF00218 A            BAL,15   *:HEXC           CONVERSION SUBR.
  8605    02 01B48    35F01B6D              STW,15   ERRNO2+6          STORE THE RESULT
  8606    02 01B49    EAF00218 A            BAL,15   *:HEXC           CONVERSION SUBR.
  8607    02 01B4A    35F01B6C              STW,15   ERRNO2+5          STORE THE RESULT
  8608    02 01B4B    EAF0021C A            BAL,15   *:PRINT          GO TO PRINT SURB.
  8609    02 01B4C    00001B67              DATA     ERRNO2
  8610    02 01B4D    EAF0021C A  LINE3     BAL,15   *:PRINT          GO TO PRINT SUBR.
  8611    02 01B4E    00001B6E              DATA     ERRNO3
  8612    02 01B4F    3310000B A  ERRPNT7   MTW,1    11               ADD 1 TO REG. 11
  8613    02 01B50    65601B11              BIR,6    ERRPNT2
  8614    02 01B51    E8021B52              B        *ERREXIT,1       ERROR EXIT
  8615    02 01B52    00000000 A  ERREXIT   DATA     0
  8616    02 01B53    00000000 A  :TALLYP   DATA     0
  8617    02 01B54    00000000 A  TESTNO    DATA     0
  8618    02 01B55                :TALLYE   RES      6
  8619    02 01B5B                :TALLYO   RES      6
  8620    02 01B61    15E3E2E3 A  ERRNO1    TEXTC    'TSTI,XX FAULT SUMMARY'
          02 01B62    F16BE7E7 A
          02 01B63    40C6C1E4 A
          02 01B64    D3E340E2 A
          02 01B65    E4D4D4C1 A
          02 01B66    D9E84040 A
  8621    02 01B67    1BC3E4D9 A  ERRNO2    TEXTC    'CURRENT PATTERN:   XXXXXXXX'
          02 01B68    D9C5D5E3 A
          02 01B69    40D7C1E3 A
          02 01B6A    E3C5D9D5 A
          02 01B6B    7A404040 A
          02 01B6C    E7E7E7E7 A
          02 01B6D    E7E7E7E7 A
  8622                            ERRNO3    TEXTC    ;
  8623    02 01B6E    37C4C1E3 A   'DATA BIT N TOTAL BITS EXP XXXXX   OBS XXXXX
          02 01B6F    C140C2C9 A
          02 01B70    E340D540 A
          02 01B71    E3D6E3C1 A
          02 01B72    D340C2C9 A
          02 01B73    E3E240C5 A
          02 01B74    E7D740E7 A
          02 01B75    E7E7E7E7 A
          02 01B76    404040D6 A
          02 01B77    C2E240E7 A
          02 01B78    E7E7E7E7 A
          02 01B79    40404040 A
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
	02	01B7A	40404040	A				
	02	01B7B	40404040	A				
8624	02	01B7C	4040D4C1	A	ERRN04	TEXT	' MARGINAL '	
	02	01B7D	D9C7C9D5	A				
	02	01B7E	C1D34040	A				
8625	02	01B7F	4040C9D5	A	ERRN05	TEXT	' INTERMIT '	
	02	01B80	E3C5D9D4	A				
	02	01B81	C9E34040	A				
8626	02	01B82	4040E3D9	A	ERRN06	TEXT	' TRACK BAD '	
	02	01B83	C1C3D240	A				
	02	01B84	C2C1C440	A				
8627	02	01B85	4040E3D9	A	ERRN07	TEXT	' TRACK OK '	
	02	01B86	C1C3D240	A				
	02	01B87	40D6D240	A				
8628	02	01B88	2BD9C5C1	A	TIST18M	TEXTC	'READ FORWARD - 100 RECORDS (100 BYTES EACH)'	
	02	01B89	C440C6D6	A				
	02	01B8A	D9E6C1D9	A				
	02	01B8B	C4406040	A				
	02	01B8C	F1F0F040	A				
	02	01B8D	D9C5C3D6	A				
	02	01B8E	D9C4E240	A				
	02	01B8F	4DF1F0F0	A				
	02	01B90	40C2E8E3	A				
	02	01B91	C5E240C5	A				
	02	01B92	C1C3C85D	A				
8629						*		
8630						*		
8631						*		
8632						*	*** ISSUE SIO, TIO, HIO, TDV, AIO ***	
8633						*		
8634						*	THE ISSUE SUBROUTINE ISSUES AN SIO, TIO, HIO, TDV, OR AIO TO	
8635						*	SPECIFIED DEVICE. STATUS MASK IS COMPARED WITH RETURNED DEVICE	
8636						*	STATUS, CONDITION CODES. ERROR CONDITIONS ARE PRINTED.	
8637						*		
8638						*	INPUT PARAMETERS:	
8639						*		
8640						*	REG 0 -DA(IOCD)-FOR SIO ONLY	
8641						*	REG 14-STATUS MASK	
8642						*	BITS 0-15: DEVICE STATUS MASK	
8643						*	BITS 16,17: CONDITION CODES 1,2 MASK	
8644						*	BITS 18-23: ZEROS	
8645						*	BITS 24-31: PRINT INHIBIT (INHIBIT IF <>0)	
8646						*		
8647						*	(NOTE: ERROR CONDITION EXISTS IF	
8648						*	A MASK BIT LOGICALLY AND'D WITH	
8649						*	A CORRESPONDING DEVICE STATUS OR	
8650						*	CC1,2 BIT EQUALS 1)	
8651						*	REG 15-RETURN ADDRESS	
8652						*		
8653						*	REGISTERS DISTURBED:	
8654						*		
8655						*	4,11	
8656						*		
8657						*	OUTPUT PARAMETERS:	
8658						*		
8659						*	NORMAL EXIT-RETURN ADDRESS	
8660						*	ERROR EXIT -RETURN ADDRESS+1	
8661						*	REG 12 -COMMAND ADDRESS	
8662						*	REG 13 -DEVICE STATUS, BYTE COUNT	
8663						*	:CC12 -RETURNED CONDITION CODES 1,2 (BIT POSITIONS 30,31)	
8664						*		
8665						*	ISSUE SIO	
8666						*		
8667	02	01B93	CCC018B5		:SIO	SIO,R12	*:DEVADDR	ISSUE SIO
8668	02	01B94	32B0000D	A		LW,R11	R13	DEVICE STATUS, BYTE COUNT
8669	02	01B95	22400002	A		LI,R4	2	INDEX=2
8670	02	01B96	7408000B	A		STCF	R11,R4	ENTER COND CODES 1-4 AND FLOAT CTR
8671	02	01B97	22400001	A		LI,R4	1	INDEX=1
8672	02	01B98	4BB0000E	A		AND,R11	R14	(DEV STATUS).(STATUS MASK)
8673	02	01B99	4BB020BD			AND,R11	=X'FFFFC000'	REMOVE BYTE CNT, CC3,4 AND FLT CTR

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  8674    02 01B9A    E830000F A          BCR,3    *R15          NO 1-BITS COMPARE-EXIT NORMAL
  8675    02 01B9B    22400000 A          LI,R4    0
  8676    02 01B9C    35401C18            STW,R4   :TYPE         ISSUE TYPE=0
  8677    02 01B9D    68001BCA            B        :STATEST      REPORT SIO STATUS ERROR
  8678                                    *
  8679                                    *          ISSUE TIO
  8680                                    *
  8681    02 01B9E    CDC01BB5    :TIO    TIO,R12  *:DEVADDR     ISSUE TIO
  8682    02 01B9F    32B0000D A          LW,R11   R13           DEVICE STATUS, BYTE COUNT
  8683    02 01BA0    22400002 A          LI,R4    2             INDEX=2
  8684    02 01BA1    7408000B A          STCF     R11,R4        ENTER COND CODES 1-4 AND FLOAT CTR
  8685    02 01BA2    22400001 A          LI,R4    1             INDEX=1
  8686    02 01BA3    4BB0000E A          AND,R11  R14           (DEV STATUS).(STATUS MASK)
  8687    02 01BA4    4BB020BD            AND,R11  =X'FFFFC000'  REMOVE BYTE CNT, CC3,4 AND FLT CTR
  8688    02 01BA5    E830000F A          BCR,3    *R15          NO 1-BITS COMPARE-EXIT NORMAL
  8689    02 01BA6    22400001 A          LI,R4    1
  8690    02 01BA7    35401C18            STW,R4   :TYPE         ISSUE TYPE=1
  8691    02 01BA8    68001BCA            B        :STATEST      REPORT TIO STATUS ERROR
  8692                                    *
  8693                                    *          ISSUE HIO
  8694                                    *
  8695    02 01BA9    CFC01BB5    :HIO    HIO,R12  *:DEVADDR     ISSUE HIO
  8696    02 01BAA    32B0000D A          LW,R11   R13           DEVICE STATUS, BYTE COUNT
  8697    02 01BAB    22400002 A          LI,R4    2             INDEX=2
  8698    02 01BAC    7408000B A          STCF     R11,R4        ENTER COND CODES 1-4 AND FLOAT CTR
  8699    02 01BAD    22400001 A          LI,R4    1             INDEX=1
  8700    02 01BAE    4BB0000E A          AND,R11  R14           (DEV STATUS).(STATUS MASK)
  8701    02 01BAF    4BB020BD            AND,R11  =X'FFFFC000'  REMOVE BYTE CNT, CC3,4 AND FLT CTR
  8702    02 01BB0    E830000F A          BCR,3    *R15          NO 1-BITS COMPARE-EXIT NORMAL
  8703    02 01BB1    22400002 A          LI,R4    2
  8704    02 01BB2    35401C18            STW,R4   :TYPE         ISSUE TYPE=2
  8705    02 01BB3    68001BCA            B        :STATEST      REPORT HIO STATUS ERROR
  8706                                    *
  8707                                    *          ISSUE TDV
  8708                                    *
  8709    02 01BB4    CEC01BB5    :TDV    TDV,R12  *:DEVADDR     ISSUE TDV
  8710    02 01BB5    32B0000D A          LW,R11   R13           DEVICE STATUS, BYTE COUNT
  8711    02 01BB6    22400002 A          LI,R4    2             INDEX=2
  8712    02 01BB7    7408000B A          STCF     R11,R4        ENTER COND CODES 1-4 AND FLOAT CTR
  8713    02 01BB8    22400001 A          LI,R4    1             INDEX=1
  8714    02 01BB9    4BB0000E A          AND,R11  R14           (DEV STATUS).(STATUS MASK)
  8715    02 01BBA    4BB020BD            AND,R11  =X'FFFFC000'  REMOVE BYTE CNT, CC3,4 AND FLT CTR
  8716    02 01BBB    E830000F A          BCR,3    *R15          NO 1-BITS COMPARE-EXIT NORMAL
  8717    02 01BBC    22400003 A          LI,R4    3
  8718    02 01BBD    35401C18            STW,R4   :TYPE         ISSUE TYPE=3
  8719    02 01BBE    68001BCA            B        :STATEST      REPORT TDV STATUS ERROR
  8720                                    *
  8721                                    *          ISSUE AIO
  8722                                    *
  8723    02 01BBF    6ED00000 A    :AIO  AIO,R13  0             ISSUE AIO
  8724    02 01BC0    32B0000D A          LW,R11   R13           DEVICE STATUS, BYTE COUNT
  8725    02 01BC1    22400002 A          LI,R4    2             INDEX=2
  8726    02 01BC2    7408000B A          STCF     R11,R4        ENTER COND CODES 1-4 AND FLOAT CTR
  8727    02 01BC3    22400001 A          LI,R4    1             INDEX=1
  8728    02 01BC4    4BB0000E A          AND,R11  R14           (DEV STATUS).(STATUS MASK)
  8729    02 01BC5    4BB020BD            AND,R11  =X'FFFFC000'  REMOVE BYTE CNT, CC3,4 AND FLT CTR
  8730    02 01BC6    E830000F A          BCR,3    *R15          NO 1-BITS COMPARE-EXIT NORMAL
  8731    02 01BC7    22400004 A          LI,R4    4
  8732    02 01BC8    35401C18            STW,R4   :TYPE         ISSUE TYPE=4
  8733    02 01BC9    68001BCA            B        :STATEST      REPORT AIO STATUS ERROR
  8734                                    *
  8735                                    *                      PROCESS CC, STATUS ERRORS
  8736    02 01BCA    74000004 A  :STATEST STCF    R4            COND CODES 1-4, FLOAT CTRL
  8737    02 01BCB    72400004 A          LB,R4    R4            MOVE CC1,2 TO BIT POSITIONS 30,31
  8738    02 01BCC    2540007A A          SLS,R4   -6
  8739    02 01BCD    35401C17            STW,R4   :CC12         SAVE CC1,2
  8740    02 01BCE    3310000F A          MTW,1    R15           RETURN ADDRESS +1
  8741    02 01BCF    22400003 A          LI,R4    3             INDEX=3
  8742    02 01BD0    7248000E A          LB,R4    R14,R4        STATUS MASK PRINT INHIBIT
  8743    02 01BD1    E920000F A          BCS,2    *R15          PRINT INHIBIT <>0 -ERROR EXIT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          133
  8744   02 01BD2   02200000 A            LCI     0
  8745   02 01BD3   28001C19              STM,R0  :REGSAVE          SAVE ALL REGISTERS
  8746   02 01BD4   22400002 A            LI,R4   2                 INDEX=2
  8747   02 01BD5   7248000B A            LB,R4   R11,R4            MASKED CC1,2
  8748   02 01BD6   68301BFB              BCR,3   :STATERR          NO CC ERROR-GO TO STATUS ERROR TEST
  8749   02 01BD7   32401C17              LW,R4   :CC12             CC1,2
  8750   02 01BD8   21400003 A            CI,R4   3
  8751   02 01BD9   68301BED              BCR,3   :CCERR3           CC1,2=11
  8752   02 01BDA   21400002 A            CI,R4   2
  8753   02 01BDB   68301BE7              BCR,3   :CCERR2           CC1,2=10
  8754                              *                               CC1,2=01
  8755   02 01BDC   32401C18    :CCERR1   LW,R4   :TYPE             ISSUE TYPE
  8756   02 01BDD   21400003 A            CI,R4   3
  8757   02 01BDE   69301BE2              BCS,3   $+4               TYPE NOT 3
  8758   02 01BDF   32C01C17              LW,R12  :CC12             COND CODES 1,2
  8759   02 01BE0   EAF00216 A            BAL,R15 *:BINC            CONVERT TO BINARY IN EBCDIC
  8760   02 01BE1   55F01C52              STH,R15 :CCERM4+9         ENTER INTO TDV MSG
  8761   02 01BE2   32481C29              LW,R4   :ERRADR1,R4       ERROR MSG ADDRESS
  8762   02 01BE3   35401BE5              STW,R4  $+2
  8763   02 01BE4   EAF0021C A            BAL,R15 *:PRINT           PRINT ERROR MSG
  8764   02 01BE5   00000000 A            DATA    0
  8765   02 01BE6   68001BFB              B       :STATERR          GO TO STATUS ERROR TEST
  8766                              *                               CC1,2=10
  8767   02 01BE7   32401C18    :CCERR2   LW,R4   :TYPE             ISSUE TYPE
  8768   02 01BE8   3248IC2E              LW,R4   :ERRADR2,R4       ERROR MSG ADDRESS
  8769   02 01BE9   35401BEB              STW,R4  $+2
  8770   02 01BEA   EAF0021C A            BAL,R15 *:PRINT           PRINT ERROR MSG
  8771   02 01BEB   00000000 A            DATA    0
  8772   02 01BEC   68001BFB              B       :STATERR          GO TO STATUS ERROR TEST
  8773                              *                               CC1,2=11
  8774   02 01BED   32501C18    :CCERR3   LW,R5   :TYPE             ISSUE TYPE
  8775   02 01BEE   324A1C33              LW,R4   :ERRADR3,R5       ERROR MSG ADDRESS
  8776   02 01BEF   21500004 A            CI,R5   4
  8777   02 01BF0   68301BF5              BCR,3   $+5               ISSUE TYPE 4-NO DEV ADDR REQ'D
  8778   02 01BF1   32C018B5              LW,R12  :DEVADDR          DEVICE ADDRESS
  8779   02 01BF2   EAF00218 A            BAL,R15 *:HEXC            CONVERT TO HEXADECIMAL IN EBCDIC
  8780   02 01BF3   22500004 A            LI,R5   4                 INDEX=4
  8781   02 01BF4   B5FA0004 A            STW,R15 *R4,R5            DEV ADDR TO ERROR MSG
  8782   02 01BF5   35401BF7              STW,R4  $+2
  8783   02 01BF6   EAF0021C A            BAL,R15 *:PRINT           PRINT ERROR MSG
  8784   02 01BF7   00000000 A            DATA    0
  8785   02 01BF8   02200000 A            LCI     0
  8786   02 01BF9   2A001C19              LM,R0   :REGSAVE          RESTORE ALL REGISTERS
  8787   02 01BFA   E800000F A            B       *R15              ERROR EXIT
  8788                              *                               TEST MASKED STATUS
  8789   02 01BFB   5240000B A    :STATERR LH,R4   R11               MASKED STATUS
  8790   02 01BFC   68301BF8              BCR,3   $-4               NO STATUS ERROR-ERROR EXIT
  8791   02 01BFD   EAF0021C A            BAL,R15 *:PRINT           PRINT STATUS ERROR HEADER MSG
  8792   02 01BFE   00001C86              DATA    :STATEM1
  8793   02 01BFF   32401C18              LW,R4   :TYPE             ISSUE TYPE
  8794   02 01C00   32481C9D              LW,R4   :STATTYP,R4       ENTER TYPE INTO STATUS ERROR MSG
  8795   02 01C01   72501C92              LB,R5   :STATEM2          SAVE ERROR MSG BYTE COUNT
  8796   02 01C02   35401C92              STW,R4  :STATEM2
  8797   02 01C03   75501C92              STB,R5  :STATEM2          RESTORE BYTE COUNT
  8798   02 01C04   22500012 A            LI,R5   18                MSG BYTE INDEX=18
  8799   02 01C05   52C0000D A            LH,R12  R13               DEV STATUS
  8800   02 01C06   22400004 A            LI,R4   4                 MINOR INDEX=4
  8801   02 01C07   EAF00216 A            BAL,R15 *:BINC            CONVERT TO BINARY IN EBCDIC
  8802   02 01C08   75FA1C95              STB,R15 :STATEM2+3,R5     STATUS BIT TO ERROR MSG
  8803   02 01C09   33F00005 A            MTW,-1  R5                BYTE INDEX-1
  8804   02 01C0A   25F00078 A            SLS,R15 -8                ADJUST CONVERTED STATUS BITS
  8805   02 01C0B   64401C08              BDR,R4  $-3               MINOR INDEX-1 NOT ZERO
  8806   02 01C0C   64501C06              BDR,R5  $-6               BYTE INDEX-1 NOT ZERO
  8807   02 01C0D   32C01C17              LW,R12  :CC12             COND CODES 1,2
  8808   02 01C0E   EAF00216 A            BAL,R15 *:BINC            CONVERT TO BINARY IN EBCDIC
  8809   02 01C0F   22400001 A            LI,R4   1                 INDEX=1
  8810   02 01C10   55F81C9A              STH,R15 :STATEM2+8,R4     COND CODES 1,2 TO ERROR MSG
  8811   02 01C11   32C018B5              LW,R12  :DEVADDR          DEVICE ADDRESS
  8812   02 01C12   EAF00218 A            BAL,R15 *:HEXC            CONVERT TO HEXADECIMAL IN EBCDIC
  8813   02 01C13   35F01C9C              STW,R15 :STATEM2+10       DEV ADDR TO ERROR MSG
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          134
  8814    02 01C14    EAF0021C A            BAL,R15  *:PRINT           PRINT STATUS MSG
  8815    02 01C15    00001C92              DATA     :STATEM2
  8816    02 01C16    68001BF8              B        :STATERR-3        GO TO ERROR EXIT
  8817                                  *
  8818    02 01C17    00000000 A    :CC12   DATA     0                 CC1,2
  8819    02 01C18    00000000 A    :TYPE   DATA     0                 ISSUE TYPE
  8820    02 01C19                  :REGSAVE RES     16                REGISTERS 0-15
  8821    02 01C29    00001C38      :ERRADR1 DATA    :CCERM1           ERROR ADDRESS 1-F
  8822    02 01C2A    00001C3D              DATA     :CCERM2
  8823    02 01C2B    00001C43              DATA     :CCERM3
  8824    02 01C2C    00001C49              DATA     :CCERM4
  8825    02 01C2D    00001C53              DATA     :CCERM5
  8826    02 01C2E    00001C58      :ERRADR2 DATA    :CCERM6
  8827    02 01C2F    00001C5C              DATA     :CCERM7
  8828    02 01C30    00001C60              DATA     :CCERM8
  8829    02 01C31    00001C64              DATA     :CCERM9
  8830    02 01C32    00001C68              DATA     :CCERMA
  8831    02 01C33    00001C6C      :ERRADR3 DATA    :CCERMB
  8832    02 01C34    00001C71              DATA     :CCERMC
  8833    02 01C35    00001C76              DATA     :CCERMD
  8834    02 01C36    00001C7B              DATA     :CCERME
  8835    02 01C37    00001C80              DATA     :CCERMF
  8836    02 01C38    10E2C9D6 A    :CCERM1 TEXTC    'SIO-NOT ACCEPTED'
          02 01C39    60D5D6E3 A
          02 01C3A    40C1C3C3 A
          02 01C3B    C5D7E3C5 A
          02 01C3C    C4404040 A
  8837    02 01C3D    14E3C9D6 A    :CCERM2 TEXTC    'TIO-SIO NOT POSSIBLE'
          02 01C3E    60E2C9D6 A
          02 01C3F    40D5D6E3 A
          02 01C40    40D7D6E2 A
          02 01C41    E2C9C2D3 A
          02 01C42    C5404040 A
  8838    02 01C43    14C8C9D6 A    :CCERM3 TEXTC    'HIO-DEV BUSY AT HALT'
          02 01C44    60C4C5E5 A
          02 01C45    40C2E4E2 A
          02 01C46    E840C1E3 A
          02 01C47    40C8C1D3 A
          02 01C48    E3404040 A
  8839    02 01C49    25E3C4E5 A    :CCERM4 TEXTC    'TDV-DEV DEPENDENT CONDITION CC1,2=    '
          02 01C4A    60C4C5E5 A
          02 01C4B    40C4C5D7 A
          02 01C4C    C5D5C4C5 A
          02 01C4D    D5E340C3 A
          02 01C4E    D6D5C4C9 A
          02 01C4F    E3C9D6D5 A
          02 01C50    40C3C3F1 A
          02 01C51    68F27E40 A
          02 01C52    40404040 A
  8840    02 01C53    10C1C9D6 A    :CCERM5 TEXTC    'AIO-UE INTERRUPT'
          02 01C54    60E4C540 A
          02 01C55    C9D5E3C5 A
          02 01C56    D9D9E4D7 A
          02 01C57    E3404040 A
  8841    02 01C58    0DE2C9D6 A    :CCERM6 TEXTC    'SIO-BUSY SIOP'
          02 01C59    60C2E4E2 A
          02 01C5A    E840E2C9 A
          02 01C5B    D6D74040 A
  8842    02 01C5C    0DE3C9D6 A    :CCERM7 TEXTC    'TIO-BUSY SIOP'
          02 01C5D    60C2E4E2 A
          02 01C5E    E840E2C9 A
          02 01C5F    D6D74040 A
  8843    02 01C60    0CC8C9D6 A    :CCERM8 TEXTC    'HIO-CC1,2=10'
          02 01C61    60C3C3F1 A
          02 01C62    68F27EF1 A
          02 01C63    F0404040 A
  8844    02 01C64    0DE3C4E5 A    :CCERM9 TEXTC    'TDV-BUSY SIOP'
          02 01C65    60C2E4E2 A
          02 01C66    E840E2C9 A
          02 01C67    D6D74040 A
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          135
 8845    02 01C68    0CC1C9D6 A   :CCERMA  TEXTC    'AIO-CC1,2=10'
         02 01C69    60C3C3F1 A
         02 01C6A    6BF27EF1 A
         02 01C6B    F0404040 A
 8846    02 01C6C    13E2C9D6 A   :CCERMB  TEXTC    'SIO-NO AR-DEV  XXXX'
         02 01C6D    60D5D640 A
         02 01C6E    C1D960C4 A
         02 01C6F    C5E54040 A
         02 01C70    E7E7E7E7 A
 8847    02 01C71    13E3C9D6 A   :CCERMC  TEXTC    'TIO-NO AR-DEV  XXXX'
         02 01C72    60D5D640 A
         02 01C73    C1D960C4 A
         02 01C74    C5E54040 A
         02 01C75    E7E7E7E7 A
 8848    02 01C76    13C8C9D6 A   :CCERMD  TEXTC    'HIO-NO AR-DEV  XXXX'
         02 01C77    60D5D640 A
         02 01C78    C1D960C4 A
         02 01C79    C5E54040 A
         02 01C7A    E7E7E7E7 A
 8849    02 01C7B    13E3C4E5 A   :CCERME  TEXTC    'TDV-NO AR-DEV  XXXX'
         02 01C7C    60D5D640 A
         02 01C7D    C1D960C4 A
         02 01C7E    C5E54040 A
         02 01C7F    E7E7E7E7 A
 8850    02 01C80    16C1C9D6 A   :CCERMF  TEXTC    'AIO-NO INTERRUPT RECOG'
         02 01C81    60D5D640 A
         02 01C82    C9D5E3C5 A
         02 01C83    D9D9E4D7 A
         02 01C84    E340D9C5 A
         02 01C85    C3D6C740 A
 8851    02 01C86    2D404040 A   :STATEM1 TEXTC    '            0123 4567 8901 2345 CC1,2 DEV ADDR'
         02 01C87    40404040 A
         02 01C88    40404040 A
         02 01C89    F0F1F2F3 A
         02 01C8A    40F4F5F6 A
         02 01C8B    F740F8F9 A
         02 01C8C    F0F140F2 A
         02 01C8D    F3F4F540 A
         02 01C8E    C3C3F16B A
         02 01C8F    F240C4C5 A
         02 01C90    E540C1C4 A
         02 01C91    C4D94040 A
 8852    02 01C92    2B404040 A   :STATEM2 TEXTC    '    STATUS XXXX XXXX XXXX XXXX   XX    XXXX'
         02 01C93    40E2E3C1 A
         02 01C94    E3E4E240 A
         02 01C95    E7E7E7E7 A
         02 01C96    40E7E7E7 A
         02 01C97    E740E7E7 A
         02 01C98    E7E740E7 A
         02 01C99    E7E7E740 A
         02 01C9A    4040E7E7 A
         02 01C9B    40404040 A
         02 01C9C    E7E7E7E7 A
 8853    02 01C9D    40E2C9D6 A   :STATTYP TEXT     ' SIO',' TIO',' HIO',' TDV',' AIO'
         02 01C9E    40E3C9D6 A
         02 01C9F    40C8C9D6 A
         02 01CA0    40E3C4E5 A
         02 01CA1    40C1C9D6 A
 8854                                      PAGE
 8855                                *
 8856                                *              *** IO EXECUTE ***
 8857                                *
 8858                                * THE IO EXECUTE SUBROUTINE ISSUES A TIO, SIO TO SPECIFIED DEVICE.
 8859                                *  THE SUBROUTINE LOOPS UPON DETECTION OF STATUS OR CC ERROR.
 8860                                *
 8861                                *       INPUT PARAMETERS:
 8862                                *
 8863                                *         REG 0   -DA(IOCD)
 8864                                *         REG 15  -RETURN ADDRESS
 8865                                *         :DEVADDR-DEVICE ADDRESS
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          136
  8866                                *
  8867                                *       REGISTERS DISTURBED:
  8868                                *
  8869                                *         (NONE)
  8870                                *
  8871                                *       OUTPUT PARAMETERS:
  8872                                *
  8873                                *         REG 12-SIO COMMAND ADDRESS
  8874                                *         REG 13-SIO DEVICE STATUS, BYTE COUNT
  8875                                *
  8876                                *       WAIT CONDITION-PROGRAM ENTERS WAIT STATE (1) AFTER UNSUCCESSFUL
  8877                                *                    HIO, IO RESET, TIO SEQUENCE OR (2) IF DEVICE
  8878                                *                    MANUAL CONDITION IS DETECTED.
  8879                                *
  8880   02 01CA2   35401CC8     :IOEXEC  STW,R4    :IOSAVE          SAVE REGISTERS 4,11,14,15
  8881   02 01CA3   35B01CC9              STW,R11   :IOSAVE+1
  8882   02 01CA4   15E01CCA              STD,R14   :IOSAVE+2
  8883   02 01CA5   32E020BE     :IOEXEC1 LW,R14    =X'E600C000'     STATUS MASK
  8884   02 01CA6   6AF01B9E              BAL,R15   :TIO             ISSUE TIO
  8885   02 01CA7   68001CA9              B         $+2
  8886   02 01CA8   68001CB2              B         :IOERR1          TIO STATUS ERROR
  8887   02 01CA9   4BD020BF              AND,R13   =X'10000000'     MASK DEV STATUS FOR AUTO TEST
  8888   02 01CAA   68301CBF              BCR,3     :IOERR2          DEVICE MANUAL ERROR
  8889   02 01CAB   6AF01B93              BAL,R15   :SIO             ISSUE SIO
  8890   02 01CAC   68001CAE              B         $+2
  8891   02 01CAD   68001CA5              B         :IOEXEC1         SIO STATUS ERROR-LOOP TO ISSUE TIO
  8892   02 01CAE   32401CC8              LW,R4     :IOSAVE          RESTORE REGISTERS 4,11,14,15
  8893   02 01CAF   32B01CC9              LW,R11    :IOSAVE+1
  8894   02 01CB0   12E01CCA              LD,R14    :IOSAVE+2
  8895   02 01CB1   E800000F A           B         *R15             EXIT
  8896                               *                              TIO STATUS ERROR
  8897   02 01CB2   32E020C0     :IOERR1  LW,R14    =X'80004000'     STATUS MASK
  8898   02 01CB3   6AF01BA9              BAL,R15   :HIO             ISSUE HIO
  8899   02 01CB4   68001CB6              B         $+2
  8900   02 01CB5   68001CA5              B         :IOEXEC1         HIO STATUS ERROR-LOOP TO ISSUE TIO
  8901   02 01CB6   6D000042 A           WD,0      X'42'            IO RESET
  8902   02 01CB7   6D000042 A           WD,0      X'42'
  8903   02 01CB8   32E020BE             LW,R14    =X'E600C000'     STATUS MASK
  8904   02 01CB9   6AF01B9E              BAL,R15   :TIO             ISSUE TIO
  8905   02 01CBA   68001CA5              B         :IOEXEC1         LOOP TO ISSUE TIO
  8906                               *                              ENTER WAIT STATE
  8907   02 01CBB   EAF0021C A   :IOERR1A BAL,R15    *:PRINT          'CLEAR WAIT TO CONTINUE'
  8908   02 01CBC   00001CCC              DATA      :IOERM1
  8909   02 01CBD   2E000000 A           WAIT
  8910   02 01CBE   68001CA5              B         :IOEXEC1         LOOP TO ISSUE TIO
  8911                               *                              DEVICE MANUAL ERROR
  8912   02 01CBF   32C018B5     :IOERR2  LW,R12    :DEVADDR         DEVICE ADDRESS
  8913   02 01CC0   EAF00218 A           BAL,R15   *:HEXC           CONVERT TO HEXADECIMAL IN EBCDIC
  8914   02 01CC1   55F01CD4              STH,15    :IOERM2+2      STORE 1ST HALF OF DEV. ADDRS
  8915   02 01CC2   25F00070 A           SLS,15    -16            SLIDE TO GET OTHER HALF
  8916   02 01CC3   55F21CD3             STH,15    :IOERM2+1,1
  8917   02 01CC4   EAF0021C A           BAL,R15   *:PRINT          PRINT ERROR MSG
  8918   02 01CC5   00001CD2             DATA      :IOERM2
  8919   02 01CC6   68001CBB             B         :IOERR1A         GO TO WAIT
  8920                               *
  8921                                    BOUND     8
  8922   02 01CC8                 :IOSAVE  RES       4              REGISTERS 4,11,14,15
  8923   02 01CCC   16C3D3C5 A   :IOERM1  TEXTC     'CLEAR WAIT TO CONTINUE'
         02 01CCD   C1D940E6 A
         02 01CCE   C1C9E340 A
         02 01CCF   E3D640C3 A
         02 01CD0   D6D5E3C9 A
         02 01CD1   D5E4C540 A
  8924   02 01CD2   11C4C5E5 A   :IOERM2  TEXTC     'DEV  XXXX  MANUAL'
         02 01CD3   4040E7E7 A
         02 01CD4   E7E74040 A
         02 01CD5   D4C1D5E4 A
         02 01CD6   C1D34040 A
  8925                                    PAGE
  8926                               *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          137
  8927                          *       MODIFIED PSEUDORANDOM NUMBER GENERATOR
  8928                          *
  8929                          *                THE ALGORITHM
  8930                          *
  8931                          *       THE CALCULATION OF THE NEXT NUMBER X(N+1) DEPENDS ON THE
  8932                          *                PREVIOUS NUMBER X(N) AND THE VALUE OF TWO INTERNAL
  8933                          *                COUNTERS M1 AND M2.  THE TWO COUNTERS ARE CHANGED
  8934                          *                BY UNITY EACH TIME A RANDOM NUMBER IS GENERATED, THE
  8935                          *                ONE COUNTER INCREASING AND THE OTHER DECREASING.
  8936                          *
  8937                          *                THE PROCEDURE
  8938                          *
  8939                          *       X(N+1) = M1 (+) M2 (+) M(X(N)), WHERE (+)-EXCLUSIVE OR
  8940                          *
  8941                          *       OPTION-1, USES INTERNAL VALUES OF M1, M2 AND X.  RESULTS
  8942                          *                FOUND IN REGISTER-14.
  8943                          *
  8944                          *       OPTION-1 CALLING SEQUENCE
  8945                          *
  8946                          *       BAL,15   :RANDOMX
  8947                          *
  8948                          *       OPTION-2, USES INTERNAL VALUES OF M1 AND M2.  USER PROVIDES
  8949                          *                SEED IN REGISTER-14.  RESULT IN REGISTER-14.
  8950                          *
  8951                          *       OPTION-2 CALLING SEQUENCE
  8952                          *
  8953                          *       LW,14    :SEED              SEED IN REGISTER-14.
  8954                          *       BAL,15   :RANDOM
  8955                          *
  8956                          *       OPTION-3, USER PROVIDES M1,M2 AND X.  RESULT IN REGISTER-14.
  8957                          *
  8958                          *       OPTION-3 CALLING SEQUENCE
  8959                          *
  8960                          *       LW,12    :M1                M1 = VALUE OF COUNTER 1
  8961                          *       LW,13    :M2                M2 = VALUE OF COUNTER 2
  8962                          *       LW,14    :SEED              SEED = RANDOM NUMBER SEED
  8963                          *       BAL,15   :RANDOMY
  8964                          *
  8965                          *
  8966  02 01CD7  35C01CE4       :RANDOMY STW,12   :M1              OPTION-3 ENTRY
  8967  02 01CD8  35D01CE5                STW,13   :M2              SAVE PARAMETERS
  8968                          *
  8969  02 01CD9  35E01CE6       :RANDOM  STW,14   :SEED            OPTION-2 ENTRY
  8970                          *
  8971  02 01CDA  33101CE4       :RANDOMX MTW,1    :M1              OPTION-1 ENTRY
  8972  02 01CDB  68301CDD                BCR,3    $+2              TEST, M1 + 1 = 0
  8973  02 01CDC  33F01CE5                MTW,-1   :M2              NO, M2 = M2 - 1
  8974  02 01CDD  32E01CE6                LW,14    :SEED
  8975  02 01CDE  25E0020D A              SCS,14   13               GENERATE M(SEED) BY ARITHMETIC MEANS
  8976  02 01CDF  30E01CE7                AW,14    :K               ADD CONSTANT :K
  8977  02 01CE0  48E01CE4                EOR,14   :M1              M(SEED) (+) M1, WHERE (+) = EOR
  8978  02 01CE1  48E01CE5                EOR,14   :M2              M(SEED) (+) M1 (+) M2
  8979  02 01CE2  35E01CE6                STW,14   :SEED            SEED = M(SEED) (+) M1 (+) M2
  8980  02 01CE3  E800000F A             B        *15
  8981                          *
  8982  02 01CE4  12B9B0A1 A    :M1      DATA     314159265         PI - PRE-SET M1 VALUE
  8983  02 01CE5  1033C4D7 A    :M2      DATA     271828183         E - PRE-SET M2 VALUE
  8984  02 01CE6  544B2FBA A    :SEED    DATA     1414213562        SQRT(2) - PRE-SET SEED VALUE
  8985  02 01CE7  22679CB1 A    :K       DATA     577215665         GAMMA - CONSTANT
  8986                                    PAGE
  8987                          *
  8988                          *                *** CLEAR BUFFER ***
  8989                          *
  8990                          * THE CLEAR BUFFER SUBROUTINE CLEARS A SPECIFIED BUFFER AREA.
  8991                          *  BUFFER SIZE SPECIFIED IN NUMBER OF WORDS.
  8992                          *
  8993                          *       INPUT PARAMETERS:
  8994                          *
  8995                          *          REG 15  -RETURN ADDRESS
  8996                          *          :CLRADDR-WA(BUFFER)
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          138
  8997                                *           :CLRSIZE-BUFFER WORD SIZE
  8998                                *
  8999                                *       REGISTERS DISTURBED:
  9000                                *
  9001                                *           (NONE)
  9002                                *
  9003                                *       OUTPUT PARAMETERS:
  9004                                *
  9005                                *           (NONE)
  9006                                *
  9007   02 01CE8   15401CF6          :CLEAR   STD,R4   :CLRSAVE          SAVE REGISTERS 4-6
  9008   02 01CE9   35601CF8                   STW,R6   :CLRSAVE+2
  9009   02 01CEA   32501CF3                   LW,R5    :CLRADDR           BUFFER ADDRESS
  9010   02 01CEB   30501CF4                   AW,R5    :CLRSIZE           BUFFER ADDR + BUFFER SIZE
  9011   02 01CEC   3A401CF4                   LCW,R4   :CLRSIZE           -(BUFFER SIZE)
  9012   02 01CED   22600000 A                 LI,R6    0
  9013   02 01CEE   B5680005 A                 STW,R6   *R5,R4             0 TO BUFFER
  9014   02 01CEF   65401CEE                   BIR,R4   $-1                COUNT NOT 0
  9015   02 01CF0   12401CF6                   LD,R4    :CLRSAVE           RESTORE REGISTERS 4-6
  9016   02 01CF1   32601CF8                   LW,R6    :CLRSAVE+2
  9017   02 01CF2   E800000F A                 B        *R15               EXIT
  9018                                *
  9019   02 01CF3   00000000 A       :CLRADDR DATA     0                   BUFFER ADDRESS
  9020   02 01CF4   00000000 A       :CLRSIZE DATA     0                   BUFFER SIZE
  9021                                         BOUND    8
  9022   02 01CF6                    :CLRSAVE RES      3                   REGISTERS 4-6
  9023                                         PAGE
  9024                                *
  9025                                *                *** PATTERN SPREAD ***
  9026                                *
  9027                                * THE PATTERN SPREAD SUBROUTINE SPREADS A WORD PATTERN ACCORDING TO
  9028                                *  THE TYPE SPECIFIED.
  9029                                *
  9030                                *             TYPE 0 - SPREAD WORD PATTERN
  9031                                *             TYPE 1 - SPREAD AND INCREMENT WORD PATTERN
  9032                                *             TYPE 2 - SPREAD RANDOM PATTERN
  9033                                *             TYPE 3 - SPREAD CONTENTS OF SPECIFIED ADDRESS
  9034                                *             TYPE 4 - SPREAD 3-WORD PATTERN
  9035                                *
  9036                                *       INPUT PARAMETERS:
  9037                                *
  9038                                *           :PATID  - PATTERN IDENTIFICATION (3 WORDS)
  9039                                *                     WORD 1 - TYPE (0-4)
  9040                                *                     WORD 2 - PATTERN (TYPE 0,1)
  9041                                *                              RANDOM GENERATOR SEED (TYPE 2)
  9042                                *                              WA(PATTERN) (TYPE 3,4)
  9043                                *                     WORD 3 - UNUSED (TYPE 0,2,3,4)
  9044                                *                              INCREMENT (TYPE 1)
  9045                                *
  9046                                *           :PATWC  - PATTERN WORD COUNT
  9047                                *           :PATBFR - WA(BUFFER)
  9048                                *
  9049                                *       REGISTERS DISTURBED:
  9050                                *
  9051                                *           (NONE)
  9052                                *
  9053                                *       OUTPUT PARAMETERS:
  9054                                *
  9055                                *           (NONE)
  9056                                *
  9057   02 01CF9   02200050 A       :PATTERN LCI      5
  9058   02 01CFA   28601D3D                   STM,R6   :PATSAVE           SAVE REGISTERS 6-10
  9059   02 01CFB   32701D38                   LW,R7    :PATID             PATTERN ID-TYPE
  9060   02 01CFC   680E1CFD                   B        $+1,R7             GO TO SPECIFIED SPREAD TYPE
  9061   02 01CFD   68001D02                   B        :PAT0
  9062   02 01CFE   68001D0B                   B        :PAT1
  9063   02 01CFF   68001D13                   B        :PAT2
  9064   02 01D00   68001D24                   B        :PAT3
  9065   02 01D01   68001D2B                   B        :PAT4
  9066                                *                                      SPREAD FIXED PATTERN
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          139
 9067    02 01D02    32801D3B      :PAT0    LW,R8     :PATWC          WORD COUNT
 9068    02 01D03    30801D3C               AW,R8     :PATBFR         WRD CNT + BFR ADDR
 9069    02 01D04    3A701D3B               LCW,R7    :PATWC          -(WORD COUNT)
 9070    02 01D05    32901D39               LW,R9     :PATID+1        PATTERN
 9071    02 01D06    B59E0008 A             STW,R9    *R8,R7          ENTER PATTERN
 9072    02 01D07    65701D06               BIR,R7    $-1             WORD COUNT NOT 0
 9073    02 01D08    02200050 A    :PATEXIT LCI       5
 9074    02 01D09    2A601D3D               LM,R6     :PATSAVE        RESTORE REGISTERS 6-10
 9075    02 01D0A    E800000F A             B         *R15            EXIT
 9076                              *                                  SPREAD AND INCREMENT FIXED PATTERN
 9077    02 01D0B    32801D3B      :PAT1    LW,R8     :PATWC          WORD COUNT
 9078    02 01D0C    30801D3C               AW,R8     :PATBFR         WRD CNT + BFR ADDR
 9079    02 01D0D    3A701D3B               LCW,R7    :PATWC          -(WORD COUNT)
 9080    02 01D0E    32901D39               LW,R9     :PATID+1        PATTERN
 9081    02 01D0F    B59E0008 A             STW,R9    *R8,R7          ENTER PATTERN
 9082    02 01D10    30901D3A               AW,R9     :PATID+2        INCR PATTERN
 9083    02 01D11    65701D0F               BIR,R7    $-2             WORD COUNT NOT 0
 9084    02 01D12    68001D08               B         :PATEXIT        GO TO EXIT
 9085                              *                                  SPREAD RANDOM PATTERN
 9086    02 01D13    02200050 A    :PAT2    LCI       5
 9087    02 01D14    2BB01D42               STM,R11   :PATSAVE+5      SAVE REGISTERS 11-15
 9088    02 01D15    32801D3B               LW,R8     :PATWC          WORD COUNT
 9089    02 01D16    30801D3C               AW,R8     :PATBFR         WRD CNT + BFR ADDR
 9090    02 01D17    3A701D3B               LCW,R7    :PATWC          -(WORD COUNT)
 9091    02 01D18    32E01D39               LW,R14    :PATID+1        RANDOM NUM GEN SEED
 9092    02 01D19    B5EE0008 A             STW,R14   *R8,R7          SEED TO PATTERN FIRST WORD
 9093    02 01D1A    65701D1C               BIR,R7    $+2             WORD COUNT NOT 0
 9094    02 01D1B    68001D21               B         :PAT2A          GO TO EXIT
 9095    02 01D1C    32C020AD               LW,R12    =3141592.65     ESTABLISH :M1
 9096    02 01D1D    32D020AE               LW,R13    =2.71828183     ESTABLISH :M2
 9097    02 01D1E    6AF01CD7               BAL,R15   :RANDOMY        RANDOM NUMBER GENERATOR
 9098    02 01D1F    B5EE0008 A             STW,R14   *R8,R7          ENTER NUMBER
 9099    02 01D20    65701D1E               BIR,R7    $-2             WORD COUNT NOT 0
 9100    02 01D21    02200050 A    :PAT2A   LCI       5
 9101    02 01D22    2AB01D42               LM,R11    :PATSAVE+5      RESTORE REGISTERS 11-15
 9102    02 01D23    68001D08               B         :PATEXIT        GO TO EXIT
 9103                              *                                  SPREAD ADDRESS-SPECIFIED PATTERN
 9104    02 01D24    32801D3B      :PAT3    LW,R8     :PATWC          WORD COUNT
 9105    02 01D25    30801D3C               AW,R8     :PATBFR         WRD CNT + BFR ADDR
 9106    02 01D26    3A701D3B               LCW,R7    :PATWC          -(WORD COUNT)
 9107    02 01D27    B2901D39               LW,R9     *:PATID+1       PATTERN
 9108    02 01D28    B59E0008 A             STW,R9    *R8,R7          ENTER PATTERN
 9109    02 01D29    65701D28               BIR,R7    $-1             WRD CNT NOT 0
 9110    02 01D2A    68001D08               B         :PATEXIT        GO TO EXIT
 9111                              *                                  SPREAD 3-WORD,ADDR-SPECIFIED PATTERN
 9112    02 01D2B    32801D3B      :PAT4    LW,R8     :PATWC          WORD COUNT
 9113    02 01D2C    30801D3C               AW,R8     :PATBFR         WRD CNT + BFR ADDR
 9114    02 01D2D    3A701D3B               LCW,R7    :PATWC          -(WORD COUNT)
 9115    02 01D2E    32A01D39               LW,R10    :PATID+1        PATTERN ADDR
 9116    02 01D2F    20A00003 A             AI,R10    3               PATTERN ADDRESS +3
 9117    02 01D30    226FFFFD A             LI,R6     -3
 9118    02 01D31    B29C000A A             LW,R9     *R10,R6         PATTERN
 9119    02 01D32    B59E0008 A             STW,R9    *R8,R7          ENTER PATTERN
 9120    02 01D33    33100007 A             MTW,1     R7              -(WORD COUNT) +1
 9121    02 01D34    68101D08               BCR,1     :PATEXIT        WORD COUNT = 0, EXIT
 9122    02 01D35    65601D31               BIR,R6    $-4             3 WORDS NOT ENTERED
 9123    02 01D36    68001D30               B         $-6
 9124                              *
 9125                                       BOUND     8
 9126    02 01D38    00000000 A    :PATID   DATA      0,0,0           PATTERN IDENTIFICATION
         02 01D39    00000000 A
         02 01D3A    00000000 A
 9127    02 01D3B    00000000 A    :PATWC   DATA      0               WORD COUNT
 9128    02 01D3C    00000000 A    :PATBFR  DATA      0               BUFFER ADDRESS
 9129    02 01D3D                  :PATSAVE RES       10              REGISTERS 6-15
 9130                                       PAGE
 9131                              *
 9132                              *                    *** C O M P A R E ***
 9133                              *
 9134                              * THE COMPARE SUBROUTINE COMPARES TWO BUFFER AREAS A WORD AT A
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            140
  9135                          *  TIME. AN ERROR COUNT IS GENERATED WHEN UNEQUAL COMPARES ARE
  9136                          *   SENSED. UNEQUAL WORDS ARE PRINTED. ERROR EXIT IF ONE OR MORE
  9137                          *    UNEQUAL COMPARES SENSED.
  9138                          *
  9139                          *        INPUT PARAMETERS:
  9140                          *
  9141                          *            REG 15  -RETURN ADDRESS
  9142                          *            :COMWCNT-NUMBER OF WORDS TO BE COMPARED
  9143                          *            :COMBFRA-EXPECTED BUFFER ADDRESS
  9144                          *            :COMBFRB-OBSERVED BUFFER ADDRESS
  9145                          *            :COMFLAG-ERROR PRINTOUT INHIBIT FLAG (INHIBIT IF <>0)
  9146                          *                    (REGISTERS 8 THRU 11 CAN BE USED AS BUFFERS)
  9147                          *
  9148                          *        REGISTERS DISTURBED:
  9149                          *
  9150                          *            (NONE)
  9151                          *
  9152                          *        OUTPUT PARAMETERS:
  9153                          *
  9154                          *            NORMAL EXIT-RETURN ADDRESS
  9155                          *            ERROR EXIT -RETURN ADDRESS +1
  9156                          *            :COMERRT   -COUNT OF COMPARE ERRORS
  9157                          *
  9158  02 01D47  02200000 A    :COMPARE LCI      0
  9159  02 01D48  2B001DA5               STM,R0   :COMTEM1          SAVE REGISTERS 0-15
  9160  02 01D49  22500000 A             LI,R5    0
  9161  02 01D4A  15501DB8               STD,R5   :COMERRT          CLEAR ERROR TOTAL, HDR FLAG
  9162  02 01D4B  32401DBB               LW,R4    :COMBFRA          EXPECTED BUFFER ADDRESS A
  9163  02 01D4C  32501DBC               LW,R5    :COMBFRB          OBSERVED BUFFER ADDRESS B
  9164  02 01D4D  30401DBA               AW,R4    :COMWCNT          BUFFER A + WORD COUNT
  9165  02 01D4E  30501DBA               AW,R5    :COMWCNT          BUFFER B + WORD COUNT
  9166  02 01D4F  15401DB6               STD,R4   :COMTEM2          SAVE FINAL BFR ADDRESSES
  9167  02 01D50  3A401DBA               LCW,R4   :COMWCNT          -(WORD COUNT)
  9168  02 01D51  B2581DB6    :COM1      LW,R5    *:COMTEM2,R4      BUFFER A WORD
  9169  02 01D52  B1581DB7               CW,R5    *:COMTEM2+1,R4    BUFFER A WORD:BUFFER B WORD
  9170  02 01D53  69301D5B               BCS,3    :COM2             UNEQUAL COMPARISON
  9171  02 01D54  65401D51               BIR,R4   :COM1             WORD COUNT NOT 0
  9172  02 01D55  32401DB8               LW,R4    :COMERRT          ERROR TOTAL
  9173  02 01D56  68301D58               BCR,3    $+2               NO ERROR
  9174  02 01D57  33101DB4               MTW,1    :COMTEM1+15       ERROR-RETURN ADDRESS +1
  9175  02 01D58  02200000 A             LCI      0
  9176  02 01D59  2A001DA5               LM,R0    :COMTEM1          RESTORE REGISTERS 0-15
  9177  02 01D5A  E800000F A             B        *R15              EXIT
  9178                          *                                   COMPARE ERROR
  9179  02 01D5B  33101DB8    :COM2      MTW,1    :COMERRT          ERROR TOTAL +1
  9180  02 01D5C  32601DBD               LW,R6    :COMFLAG          PRINT INHIBIT FLAG
  9181  02 01D5D  69301D54               BCS,3    :COM1+3           PRINT INHIBIT <>0 -RETURN TO COMPARE
  9182  02 01D5E  32601DB8               LW,6     :COMERRT          FETCH ERROR COUNT
  9183  02 01D5F  31601DBE               CW,6     :COMPLIN          TEST LIMIT
  9184  02 01D60  69201D57               BG       :COM1+6           EXIT
  9185  02 01D61  32601DB9               LW,R6    :COMTEM3          HEADER FLAG
  9186  02 01D62  69301D77               BCS,3    :COM3             FLAG NOT 0 -NO ERR MSG HDR REQ'D
  9187                          *                                   PRINT ERROR MSG HEADER
  9188  02 01D63  33101DB9               MTW,1    :COMTEM3          SET HDR FLAG
  9189  02 01D64  EAF0021C A             BAL,R15  *:PRINT           PRINT ERROR MSG HEADER
  9190  02 01D65  00001DBF               DATA     :COMERM1
  9191  02 01D66  32C01DBB               LW,R12   :COMBFRA          EXPECTED BUFFER ADDRESS
  9192  02 01D67  EAF00218 A             BAL,R15  *:HEXC            CONVERT TO HEXADECIMAL IN EBCDIC
  9193  02 01D68  22600001 A             LI,R6    1                 INDEX=1
  9194  02 01D69  55F01DC8               STH,R15  :COMERM2+4        BFR ADDR TO MSG
  9195  02 01D6A  52F0000F A             LH,R15   R15
  9196  02 01D6B  55FC1DC7               STH,R15  :COMERM2+3,R6
  9197  02 01D6C  32C01DBC               LW,R12   :COMBFRB          OBSERVED BUFFER ADDRESS
  9198  02 01D6D  EAF00218 A             BAL,R15  *:HEXC            CONVERT TO HEXADECIMAL IN EBCDIC
  9199  02 01D6E  35F01DCC               STW,R15  :COMERM2+8        BFR ADDR TO MSG
  9200  02 01D6F  EAF0021C A             BAL,R15  *:PRINT           PRINT ERROR MSG HEADER
  9201  02 01D70  00001DC4               DATA     :COMERM2
  9202  02 01D71  312019A7               CW,2     NOPKPRT           SUPPRESS PACKED PRINTOUT FLAG
  9203  02 01D72  68301D75               BE       $+3
  9204  02 01D73  311019CE               CW,1     MODEFLAG          PACKED INFORMATION
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          141
  9205    02 01D74    68301D77              BE        :COM3              GET SPECIAL HEADING FOR PACKED
  9206    02 01D75    EAF0021C A            BAL,R15   *:PRINT            PRINT ERROR MSG HEADER
  9207    02 01D76    00001DCD              DATA      :COMERM3
  9208                                  *                                PRINT EXPECTED, OBSERVED WORDS
  9209    02 01D77    311019CE        :COM3 CW,1      MODEFLAG           PACKED OPTION SET
  9210    02 01D78    69301D8B              BNE       :COM6
  9211    02 01D79    312019A7              CW,2      NOPKPRT            SUPPRESS PACKED PRINTOUT FLAG
  9212    02 01D7A    68301D8B              BE        :COM6
  9213    02 01D7B    22C00000 A            LI,12     0
  9214    02 01D7C    32D01DBA              LW,13     :COMWCNT           GET LINE NO
  9215    02 01D7D    30D00004 A            AW,13     4                  R13 HAS WORD THAT FAILED
  9216    02 01D7E    36C00003 A            DW,12     3                  R12 HAS REMAINDER
  9217    02 01D7F    21C00001 A            CI,12     1
  9218    02 01D80    69401D85              BCS,4     $+5
  9219    02 01D81    21C00002 A            CI,12     2
  9220    02 01D82    68401D87              BCR,4     $+5
  9221    02 01D83    22D01DFA              LI,13     :COMPK3            REMAINDER =2
  9222    02 01D84    68001D88              B         :COM5
  9223    02 01D85    22D01DEB              LI,13     :COMPK2            REMAINDER =1
  9224    02 01D86    68001D88              B         :COM5
  9225    02 01D87    22D01DDC              LI,13     :COMPK1            REMAINDER =0
  9226    02 01D88    35D01D8A        :COM5 STW,13    $+2
  9227    02 01D89    EAF0021C A            BAL,15    *:PRINT            PRINT PACKED HEADING
  9228    02 01D8A    00001DDC              DATA      :COMPK1
  9229    02 01D8B    32C01DBA        :COM6 LW,R12    :COMWCNT           GET LINE NO FOR PRINTOUT
  9230    02 01D8C    30C00004 A            AW,R12    R4                 WRD CNT=NUM WORDS + WRD CNT INDEX
  9231    02 01D8D    EAF00218 A            BAL,R15   *:HEXC             CONVERT TO HEXADECIMAL IN EBCDIC
  9232    02 01D8E    35FC1E17              STW,R15   :COMERM4+13        WRD CNT TO MSG
  9233    02 01D8F    B2C81DB6              LW,R12    *:COMTEM2,R4       EXPECTED WORD
  9234    02 01D90    22D01E0A              LI,R13    :COMERM4           ERROR MSG ADDR
  9235    02 01D91    6AE01D9A              BAL,R14   :COM4              ENTER EXP WRD INTO MSG
  9236    02 01D92    EAF0021C A            BAL,R15   *:PRINT            PRINT EXPECTED WORD MSG
  9237    02 01D93    00001E0A              DATA      :COMERM4
  9238    02 01D94    B2C81DB7              LW,R12    *:COMTEM2+1,R4     OBSERVED WORD
  9239    02 01D95    22D01E18              LI,R13    :COMERM5           ERROR MSG ADDR
  9240    02 01D96    6AE01D9A              BAL,R14   :COM4              ENTER OBS WRD INTO MSG
  9241    02 01D97    EAF0021C A            BAL,R15   *:PRINT            PRINT OBSERVED WORD MSG
  9242    02 01D98    00001E18              DATA      :COMERM5
  9243    02 01D99    68001D54              B         :COM1+3            RETURN TO COMPARISON
  9244                                  *                                ENTER STATUS BITS INTO MESSAGE
  9245    02 01D9A    22600030 A      :COM4 LI,R6     48                 BYTE INDEX=48
  9246    02 01D9B    22700004 A            LI,R7     4                  MINOR INDEX=4
  9247    02 01D9C    EAF00216 A            BAL,R15   *:BINC             CONVERT TO BINARY IN EBCDIC
  9248    02 01D9D    F5FC000D A            STB,R15   *R13,R6            BIT TO MSG
  9249    02 01D9E    33F00006 A            MTW,-1    R6                 BYTE INDEX -1
  9250    02 01D9F    25F00078 A            SLS,R15   -8                 ADJUST EBCDIC BITS
  9251    02 01DA0    64701D9D              BDR,R7    $-3                MINOR LOOP INDEX NOT 0
  9252    02 01DA1    33F00006 A            MTW,-1    R6                 BYTE INDEX -1
  9253    02 01DA2    21600009 A            CI,R6     9                  BYTE INDEX:9
  9254    02 01DA3    69201D9B              BCS,2     :COM4+1            BYTE INDEX NOT MINIMUM
  9255    02 01DA4    E800000E A            B         *R14               ENTER COMPLETE-EXIT
  9256                                  *
  9257    02 01DA5                :COMTEM1 RES      16                 REGISTERS 0-15
  9258                                     BOUND     8
  9259    02 01DB6    00000000 A      :COMTEM2 DATA   0,0                BUFFER A ADDR, BUFFER B ADDR
          02 01DB7    00000000 A
  9260    02 01DB8    00000000 A      :COMERRT DATA   0                  COMPARE ERROR TOTAL
  9261    02 01DB9    00000000 A      :COMTEM3 DATA   0                  MESSAGE HEADER FLAG
  9262    02 01DBA    00000000 A      :COMWCNT DATA   0                  BUFFER WORD COUNT
  9263    02 01DBB    00000000 A      :COMBFRA DATA   0                  EXPECTED BUFFER A
  9264    02 01DBC    00000000 A      :COMBFRB DATA   0                  OBSERVED BUFFER B
  9265    02 01DBD    00000000 A      :COMFLAG DATA   0                  PRINT INHIBIT FLAG
  9266    02 01DBE    00000001 A      :COMPLIN DATA   1                  COMPARE LIMIT COUNT
  9267    02 01DBF    12D9C5C1 A      :COMERM1 TEXTC  'READ COMPARE ERROR'
          02 01DC0    C440C3D6 A
          02 01DC1    D4D7C1D9 A
          02 01DC2    C540C5D9 A
          02 01DC3    D9D6D940 A
  9268    02 01DC4    23C5E7D7 A      :COMERM2 TEXTC  'EXP BFR ADDR XXXX OBS BFR ADDR XXXX'
          02 01DC5    40C2C6D9 A
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LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS
0 16:42 AUG 03, '70					SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70			142
	02	01DC6	40C1C4C4	A				
	02	01DC7	D940E7E7	A				
	02	01DC8	E7E740D6	A				
	02	01DC9	C2E240C2	A				
	02	01DCA	C6D940C1	A				
	02	01DCB	C4C4D940	A				
	02	01DCC	E7E7E7E7	A				
9269					:COMERM3	TEXTC	;	
9270	02	01DCD	38404040	A		'	0123 4567 0123 4567 0123 4567 0123 4567 WD CNT'	
	02	01DCE	40404040	A				
	02	01DCF	4040F0F1	A				
	02	01DD0	F2F340F4	A				
	02	01DD1	F5F6F740	A				
	02	01DD2	F0F1F2F3	A				
	02	01DD3	40F4F5F6	A				
	02	01DD4	F740F0F1	A				
	02	01DD5	F2F340F4	A				
	02	01DD6	F5F6F740	A				
	02	01DD7	F0F1F2F3	A				
	02	01DD8	40F4F5F6	A				
	02	01DD9	F74040E6	A				
	02	01DDA	C440C3D5	A				
	02	01DDB	E3404040	A				
9271					:COMPK1	TEXTC	;	
9272	02	01DDC	38404040	A		'	0123 4501 2345 0123 4501 2345 0123 4501 WD CNT'	
	02	01DDD	40404040	A				
	02	01DDE	4040F0F1	A				
	02	01DDF	F2F340F4	A				
	02	01DE0	F5F0F140	A				
	02	01DE1	F2F3F4F5	A				
	02	01DE2	40F0F1F2	A				
	02	01DE3	F340F4F5	A				
	02	01DE4	F0F140F2	A				
	02	01DE5	F3F4F540	A				
	02	01DE6	F0F1F2F3	A				
	02	01DE7	40F4F5F0	A				
	02	01DE8	F14040E6	A				
	02	01DE9	C440C3D5	A				
	02	01DEA	E3404040	A				
9273					:COMPK2	TEXTC	;	
9274	02	01DEB	38404040	A		'	2345 0123 4501 2345 0123 4501 2345 0123 WD CNT'	
	02	01DEC	40404040	A				
	02	01DED	4040F2F3	A				
	02	01DEE	F4F540F0	A				
	02	01DEF	F1F2F340	A				
	02	01DF0	F4F5F0F1	A				
	02	01DF1	40F2F3F4	A				
	02	01DF2	F540F0F1	A				
	02	01DF3	F2F340F4	A				
	02	01DF4	F5F0F140	A				
	02	01DF5	F2F3F4F5	A				
	02	01DF6	40F0F1F2	A				
	02	01DF7	F34040E6	A				
	02	01DF8	C440C3D5	A				
	02	01DF9	E3404040	A				
9275					:COMPK3	TEXTC	;	
9276	02	01DFA	38404040	A		'	4501 2345 0123 4501 2345 0123 4501 2345 WD CNT'	
	02	01DFB	40404040	A				
	02	01DFC	4040F4F5	A				
	02	01DFD	F0F140F2	A				
	02	01DFE	F3F4F540	A				
	02	01DFF	F0F1F2F3	A				
	02	01E00	40F4F5F0	A				
	02	01E01	F140F2F3	A				
	02	01E02	F4F540F0	A				
	02	01E03	F1F2F340	A				
	02	01E04	F4F5F0F1	A				
	02	01E05	40F2F3F4	A				
	02	01E06	F54040E6	A				
	02	01E07	C440C3D5	A				

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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          143
        02 01E08    E3404040 A
 9277                                        BOUND    8
 9278   02 01E0A    37C5E7D7 A   :COMERM4 TEXT     ' EXPECTED   '
        02 01E0B    C5C3E3C5 A
        02 01E0C    C4404040 A
 9279         0000000B                      DO       11
 9280   02 01E0D    40404040 A                DATA     X'40404040'       SPACES
 9281                                        FIN
        02 01E0E    40404040 A
        02 01E0F    40404040 A
        02 01E10    40404040 A
        02 01E11    40404040 A
        02 01E12    40404040 A
        02 01E13    40404040 A
        02 01E14    40404040 A
        02 01E15    40404040 A
        02 01E16    40404040 A
        02 01E17    40404040 A
 9282   02 01E18    34D6C2E2 A   :COMERM5 TEXT     ' OBSERVED   '
        02 01E19    C5D9E5C5 A
        02 01E1A    C4404040 A
 9283         0000000B                      DO       11
 9284   02 01E1B    40404040 A                DATA     X'40404040'       SPACES
 9285                                        FIN
        02 01E1C    40404040 A
        02 01E1D    40404040 A
        02 01E1E    40404040 A
        02 01E1F    40404040 A
        02 01E20    40404040 A
        02 01E21    40404040 A
        02 01E22    40404040 A
        02 01E23    40404040 A
        02 01E24    40404040 A
        02 01E25    40404040 A
 9286                                        PAGE
 9287                                *
 9288                                *                *** DELAY FOR I/O INTERRUPT ***
 9289                                *
 9290                                * THE DELAY SUBROUTINE DELAYS TO AWAIT THE I/O INTERRUPT. TIMEOUT OCCURS
 9291                                *  WHEN SPECIFIED MAXIMUM DELAY TIME IS REACHED.
 9292                                *
 9293                                *        INPUT PARAMETERS:
 9294                                *
 9295                                *          REG 14- MAX DELAY TIME (DELAY =  (R14) MILLISECONDS)
 9296                                *          REG 15- RETURN ADDRESS
 9297                                *
 9298                                *        REGISTERS DISTURBED:
 9299                                *
 9300                                *          (NONE)
 9301                                *
 9302                                *        OUTPUT PARAMETERS:
 9303                                *
 9304                                *          INTERRUPT REC'D E)  T-RETURN ADDRESS
 9305                                *          DELAY TIMEOUT EXIT  -RETURN ADDRESS +1
 9306                                *                              (INTERRUPTS ARMED, ENABLED IF FLAG <>0)
 9307                                *
 9308   02 01E26    35F01E3C     :DELAY   STW,R15  :DELSAVE          SAVE REGISTER 15
 9309   02 01E27    25E0007F A           SLS,R14  -1                DELAY TIME /2
 9310   02 01E28    3310000E A           MTW,1    R14               COMPENSATE FOR IMMEDIATE CTR4 INTER
 9311   02 01E29    35E01E3B             STW,R14  :DELTIME          TIME TO CTR 4 DECR POSITION
 9312   02 01E2A    6AF01E33             BAL,R15  :DELAYAE          ARM AND ENABLE COUNTER 4 INTERRUPTS
 9313   02 01E2B    32F01EA6             LW,R15   :INTRECF          I/O INTERRUPT RECEIVED FLAG
 9314   02 01E2C    68301E2B             BCR,3    $-1               FLAG=0,I/O INTERRUPT NOT RECEIVED
 9315   02 01E2D    6AF01E37             BAL,R15  :DELAYD           DISARM COUNTER 4 INTERRUPTS
 9316   02 01E2E    32F01E3C     :DELEXIT LW,R15   :DELSAVE         RESTORE REGISTER 15
 9317   02 01E2F    E800000F A           B        *R15              EXIT
 9318                                *                              DELAY TIMEOUT
 9319   02 01E30    6AF01E37     :DELTO   BAL,R15  :DELAYD           DISARM COUNTER 4 INTERRUPTS
 9320   02 01E31    33101E3C             MTW,1    :DELSAVE          RETURN ADDRESS +1
 9321   02 01E32    68001E2E             B        :DELEXIT          GO TO DELAY TIMEOUT EXIT
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          144
  9322                          *                                 ARM/ENABLE COUNTER 4 INTERRUPTS
  9323   02 01E33   35F01E3D     :DELAYAE STW,R15  :DELSAVE+1     SAVE REGISTER 15
  9324   02 01E34   22F01040 A            LI,R15   X'1040'        BITS 19,25
  9325   02 01E35   6DF01200 A            WD,R15   X'1200'        ARM AND ENABLE CTR 4 INTERRUPTS
  9326   02 01E36   E8001E3D              B        *:DELSAVE+1    EXIT
  9327                          *                                 DISARM COUNTER 4 INTERRUPTS
  9328   02 01E37   35F01E3D     :DELAYD  STW,R15  :DELSAVE+1     SAVE REGISTER 15
  9329   02 01E38   22F01040 A            LI,R15   X'1040'        BITS 19,25
  9330   02 01E39   6DF01100 A            WD,R15   X'1100'        DISARM COUNTER 4 INTERRUPTS
  9331   02 01E3A   E8001E3D              B        *:DELSAVE+1    EXIT
  9332                          *
  9333   02 01E3B   00000000 A  :DELTIME DATA     0               DELAY TIME CTR 4 DECREMENT POSITION
  9334   02 01E3C   00000000 A  :DELSAVE DATA     0,0             REGISTER 15
         02 01E3D   00000000 A
  9335                                   BOUND    8
  9336   02 01E3E   00000000 A  :DELAYTO DATA     0,0
         02 01E3F   00000000 A
  9337   02 01E40   00001E30              DATA     :DELTO,0
         02 01E41   00000000 A
  9338   02 01E42   0F001E3E     :DELXPSD XPSD,0   :DELAYTO
  9339   02 01E43   33F01E3B     :DELMTW  MTW,-1   :DELTIME
  9340                          *
  9341                          *
  9342                          *                 *** ARM AND ENABLE IO INTERRUPT ***
  9343                          *
  9344   02 01E44   35F01E4E     :INTAE   STW,15   :INTSAV1        SAVE EXIT ADR
  9345   02 01E45   22F00000 A            LI,15    0
  9346   02 01E46   35F01EA6              STW,15   :INTRECF       CLEAR IO INTER REC'D FLAG
  9347   02 01E47   22F00020 A            LI,15    X'20'          ARM AND ENABLE
  9348   02 01E48   6DF01200 A            WD,15    X'1200'          IO INTERRUPT
  9349   02 01E49   E8001E4E              B        *:INTSAV1      EXIT
  9350                          *
  9351                          *
  9352                          *                 *** DISARM IO INTERRUPT ***
  9353                          *
  9354   02 01E4A   35F01E4F     :INTD    STW,15   :INTSAV2        SAVE EXIT ADR
  9355   02 01E4B   22F00020 A            LI,15    X'20'
  9356   02 01E4C   6DF01100 A            WD,15    X'1100'        DISARM IO INTERRUPT
  9357   02 01E4D   E8001E4F              B        *:INTSAV2      EXIT
  9358                          *
  9359   02 01E4E   00000000 A  :INTSAV1 DATA     0               EXIT ADR
  9360   02 01E4F   00000000 A  :INTSAV2 DATA     0
  9361                                   PAGE
  9362                          *
  9363                          *                 *** INTERRUPT ADDRESS TABLE ***
  9364                          *
  9365                          * THIS ROUTINE UPDATES THE INTERRUPT ADDRESS TABLE ACCORDIND TO THE
  9366                          *  ENTRY POINT:
  9367                          *
  9368                          *        :INTADRC - CLEAR INTERRUPT ADR TABLE
  9369                          *        :INTADRM - ENTER CURRENT DEVICE ADR - MULTI UNIT OPERRATION
  9370                          *        :INTADRD - DELETE DEVICE ADR - INDEX VALUE = INTSVX
  9371                          *        :INTADRS - ENTER CURRENT DEVICE ADR - SINGLE UNIT OPERATION
  9372                          *
  9373                          *        INPUT PARAMETERS:
  9374                          *
  9375                          *          REG 15
  9376                          *          :DEVADDR - CURRENT DEVICE ADR
  9377                          *          :INTSVX  - TABLE INDEX OF LAST INTERRUPT
  9378                          *
  9379                          *        REGISTERS DISTURBED:
  9380                          *
  9381                          *          (NONE)
  9382                          *
  9383                          *        OUTPUT PARAMETERS:
  9384                          *
  9385                          *          (NONE)
  9386                          *
  9387   02 01E50   35F01E7A     :INTADRC STW,15   :INTADRE        SAVE EXIT ADR
  9388   02 01E51   22F00000 A            LI,15    0               CLEAR
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL      OPERATION  OPERAND        COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          145
 9389    02 01E52    35F01E79              STW,15   :INTADRX          TABLE INDEX
 9390    02 01E53    22FFFFFF A            LI,15    -1                STORE LAST ENTRY FLAG ( -1 )
 9391    02 01E54    35F01E70              STW,15   :INTTAB             INTO WORD 1 OF TABLE
 9392    02 01E55    E8001E7A              B        *:INTADRE         EXIT
 9393                                *
 9394                                *
 9395    02 01E56    35F01E7A    :INTADRD  STW,15   :INTADRE          SAVE EXIT ADR
 9396    02 01E57    35401E7B              STW,4    :INTADRE+1        SAVE R4
 9397    02 01E58    32401EA7              LW,4     :INTSVX           FETCH ADR TABLE INDEX
 9398    02 01E59    22F00000 A            LI,15    0                 CLEAR ONE WORD
 9399    02 01E5A    35F81E78              STW,15   :INTTAB8,4          IN ADR TABLE (LAST INTER DEV)
 9400    02 01E5B    68001E6D              B        :INTADRZ
 9401                                *
 9402                                *
 9403                                *
 9404    02 01E5C    35401E7B    :INTADRM  STW,4    :INTADRE+1        SAVE R4
 9405    02 01E5D    32401E79              LW,4     :INTADRX          FETCH CURRENT TABLE INDEX
 9406    02 01E5E    21400007 A            CI,4     7                 COMPARE INDEX TO 7
 9407    02 01E5F    69201E62              BCS,2    :INTADRS+1        BRANCH: INDEX > 7
 9408    02 01E60    68001E63              B        :INTADRS+2
 9409    02 01E61    35401E7B    :INTADRS  STW,4    :INTADRE+1        SAVE R4
 9410    02 01E62    22400000 A            LI,4     0                 CURRENT TABLE INDEX = 0
 9411    02 01E63    35F01E7A              STW,15   :INTADRE          SAVE EXIT ADR
 9412    02 01E64    32F018B5              LW,15    :DEVADDR          FETCH CURRENT DEVICE ADR
 9413    02 01E65    35F81E70              STW,15   :INTTAB,4         STORE DEV ADR IN TABLE
 9414    02 01E66    33100004 A            MTW,1    4                 INCREMENT CURRENT  TABLE INDEX
 9415    02 01E67    22FFFFFF A            LI,15    -1                STORE LAST ENTRY FLAG ( -1 )
 9416    02 01E68    35F81E70              STW,15   :INTTAB,4            IN TABLE
 9417    02 01E69    35401E79              STW,4    :INTADRX          SAVE CURRENT TABLE INDEX
 9418    02 01E6A    22F00000 A            LI,15    0                 CLEAR
 9419    02 01E6B    35F01EA4              STW,15   :INTSTAT             INTER STATUS AND
 9420    02 01E6C    35F01EA5              STW,15   :INTCC              AIO COND CODE
 9421    02 01E6D    32401E7B    :INTADRZ  LW,4     :INTADRE+1        RESTORE 4
 9422    02 01E6E    E8001E7A              B        *:INTADRE
 9423                                *
 9424                                *
 9425                                          BOUND    8
 9426        02 01E70            :INTTAB   EQU      $                 INTERRUPT
 9427        00000008                      DO       8
 9428    02 01E70    FFFFFFFF A            DATA     -1                  ADDRESS TABLE
 9429                                          FIN
         02 01E71    FFFFFFFF A
         02 01E72    FFFFFFFF A
         02 01E73    FFFFFFFF A
         02 01E74    FFFFFFFF A
         02 01E75    FFFFFFFF A
         02 01E76    FFFFFFFF A
         02 01E77    FFFFFFFF A
 9430    02 01E78    FFFFFFFF A  :INTTAB8  DATA     -1                     9 WORDS (INITIAL VALUE = -1)
 9431    02 01E79    00000000 A  :INTADRX  DATA     0                 CURRENT ADR TABLE INDEX
 9432    02 01E7A    00000000 A  :INTADRE  DATA     0,0               TEMP STORAGE
         02 01E7B    00000000 A
 9433                                          PAGE
 9434                                *
 9435                                *                 *** INTERRUPT - SERVICE ***
 9436                                *
 9437                                * THIS ROUTINE ACKNOWLEDGES AN IO INTERRUPT AND VERIFIES THE
 9438                                *  INTERRUPT DEVICE ADDRESS. IO INTERRUPT WILL BE DISARMED AND DISABLED
 9439                                *   IF INTERRUPT IS RECOGNIZED AND DEVICE ADDRESS WAS STORED IN TABLE.
 9440                                *       INPUT PARAMETERS
 9441                                *
 9442                                *         (NONE)
 9443                                *
 9444                                *       REGISTERS DISTURBED:
 9445                                *
 9446                                *         (NONE)
 9447                                *
 9448                                *       OUTPUT PARAMETERS:
 9449                                *
 9450                                *         :INTSTAT - INTERRUPT STATUS AND ADR
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          146
  9451                                *          :INTCC    - INTERRUPT CONDITION CODE
  9452                                *          :INTRECF  - INTERRUPT RECEIVED FLAG; RESET = 0, SET > 0
  9453                                *          :INTSVX   - NEG. INTERRUPT TABLE INDEX;
  9454                                *                      CURRENT TABLE WORD = WA(INTTAB8)-INTSVX
  9455                                *
  9456                                *
  9457   02 01E7C   15401E9E         :INTSV    STD,4     :INTSVSR          SAVE
  9458   02 01E7D   15C01EA0                   STD,12    :INTSVSR+2
  9459   02 01E7E   15E01EA2                   STD,14    :INTSVSR+4          REGISTERS
  9460   02 01E7F   6ED00000 A                 AIO,13                      AIO
  9461   02 01E80   69801E95                   BCS,8     :INTSV4           BRANCH: NO INTER RECOG
  9462   02 01E81   74001EA5                   STCF      :INTCC            SAVE COND CODE
  9463   02 01E82   22400001 A                 LI,4      1
  9464   02 01E83   52C2000D A                 LH,12     13,1              LOAD DEV ADR FROM AIO STATUS
  9465   02 01E84   31C018B5         :INTSV1   CW,12     :DEVADDR          COMPARE DEVICE ADDRESS
  9466   02 01E85   69301E8F                   BCS,3     :INTSV3           BRANCH: ADR NOT EQUAL
  9467   02 01E86   35D01EA4                   STW,13    :INTSTAT          SAVE INTERRUPT STATUS
  9468   02 01E87   6AF0204D                   BAL,15    :SAVEAIO          SAVE AIO INFO FOR TEST
  9469   02 01E88   35401EA7                   STW,4     :INTSVX           SAVE ADR TABLE INDEX
  9470   02 01E89   33101EA6                   MTW,1     :INTRECF          SET INTER RECEIVED FLAG
  9471   02 01E8A   6AF01E4A                   BAL,15    :INTD             DISARM IO INTERRUPT
  9472   02 01E8B   12401E9E         :INTSV2   LD,4      :INTSVSR          RESTORE
  9473   02 01E8C   12C01EA0                   LD,12     :INTSVSR+2
  9474   02 01E8D   12E01EA2                   LD,14     :INTSVSR+4          REGISTERS
  9475   02 01E8E   0E2019D0                   LPSD,2    INTSVV            GO BACK TO PROGRAM
  9476                                *
  9477   02 01E8F   22401EA8         :INTSV3   LI,4      :INTSVM           LOAD MSG ADDRESS -SPURIOUS INTERRUPT
  9478   02 01E90   22401EA8                   LI,4      :INTSVM           LOAD MSG ADR (SPURIOUS INTER)
  9479   02 01E91   35401E98                   STW,4     :INTSV6           SAVE MSG ADR
  9480   02 01E92   EAF00218 A                 BAL,R15   *:HEXC            CONVERT TO HEXADECIMAL IN EBCDIC
  9481   02 01E93   35F01EAE                   STW,15    :INTSVM+6         DEV ADR TO MSG
  9482   02 01E94   68001E97                   B         :INTSV5
  9483   02 01E95   22401C80         :INTSV4   LI,4      :CCERMF           LOAD MSG ADR (NO INTER RECOG)
  9484   02 01E96   35401E98                   STW,4     :INTSV6           SAVE MSG ADR
  9485   02 01E97   EAF0021C A       :INTSV5   BAL,15    *:PRINT            PRINT MSG
  9486   02 01E98   00000000 A       :INTSV6   DATA      0                 MSG ADR
  9487   02 01E99   68001E8B                   B         :INTSV2
  9488                                *
  9489                                *
  9490                                          BOUND     8
  9491   02 01E9A   00000000 A       :INTSVDW  DATA      0,0,:INTSV,X'04000000'
         02 01E9B   00000000 A
         02 01E9C   00001E7C
         02 01E9D   04000000 A
  9492   02 01E9E                    :INTSVSR  RES       6                 REGISTERS 4,5,12,13,14,15
  9493   02 01EA4   00000000 A       :INTSTAT  DATA      0                 AIO STATUS AND DEV ADR
  9494   02 01EA5   00000000 A       :INTCC    DATA      0                 AIO COND CODE
  9495   02 01EA6   00000000 A       :INTRECF  DATA      0                 INTER RECEIVED FLAG
  9496   02 01EA7   00000000 A       :INTSVX   DATA      0                 ADR TABLE INDEX
  9497   02 01EA8   1BE2D7E4 A       :INTSVM   TEXTC     'SPURIOUS INTERRUPT DEV XXXX'
         02 01EA9   D9C9D6E4 A
         02 01EAA   E240C9D5 A
         02 01EAB   E3C5D9D9 A
         02 01EAC   E4D7E340 A
         02 01EAD   C4C5E540 A
         02 01EAE   E7E7E7E7 A
  9498                                *
  9499                                *
  9500                                *         *** IOCDMSG - PRINT CURRENT IOCD
  9501                                *
  9502   02 01EAF   35F01EBC         IOCDMSG   STW,15    IOCDMSGX          SAVE RETURN
  9503   02 01EB0   EAF00218 A                 BAL,15    *:HEXC            CONVERT
  9504   02 01EB1   35F01EC0                   STW,15     IOCDMSGM+3
  9505   02 01EB2   EAF00218 A                 BAL,15    *:HEXC
  9506   02 01EB3   35F01EBF                   STW,15     IOCDMSGM+2
  9507   02 01EB4   32C0000D A                 LW,12      13
  9508   02 01EB5   EAF00218 A                 BAL,15    *:HEXC
  9509   02 01EB6   35F01EC3                   STW,15     IOCDMSGM+6
  9510   02 01EB7   EAF00218 A                 BAL,15    *:HEXC
  9511   02 01EB8   35F01EC2                   STW,15     IOCDMSGM+5
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LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL      OPERATION  OPERAND          COMMENTS

0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          147
 9512    02 01EB9    EAF0021C A            BAL,15   *:PRINT
 9513    02 01EBA    00001EBD              DATA     IOCDMSGM
 9514    02 01EBB    E8001EBC              B        *IOCDMSGX          EXIT
 9515    02 01EBC    00000000 A  IOCDMSGX DATA     0
 9516    02 01EBD    1BC9D6C3 A  IOCDMSGM TEXTC    'IOCD = XXXXXXXX    XXXXXXXX'
         02 01EBE    C4407E40 A
         02 01EBF    E7E7E7E7 A
         02 01EC0    E7E7E7E7 A
         02 01EC1    40404040 A
         02 01EC2    E7E7E7E7 A
         02 01EC3    E7E7E7E7 A
 9517                          *                    *** ERROR ROUTINE ***
 9518                          * THIS SUBROUTINE ACCEPTS A STRING OF BYTES, EACH OF WHICH IDENTIFIES
 9519                          * THE STATUS TYPE (BITS 0 - 3), THE BIT TEST (BIT 4) AND THE STATUS
 9520                          * MASK (BITS 5 - 7). THE TESTS WILL BE PERFORMED IN THE SEQUENCE OF THE
 9521                          * BYTE STRING, WITH EACH TEST CHECKING A SPECIFIC STATUS BIT FOR THE
 9522                          * TRUE OR FALSE CONDITION. A ZERO BYTE   WILL INDICATE THE END OF THE
 9523                          * BYTE STRING. AFTER THE BIT TESTS, THE REMAINING BITS OF THE STATUS
 9524                          * PREVIOUSLY SELECTED WILL BE TESTED.
 9525                          *
 9526                          * THE BYTE HAS THE FOLLOWING FORMAT:
 9527                          *
 9528                          * BITS 0 - 3                BIT 4    BITS 5 - 7
 9529                          * ----------                -----    ----------
 9530                          * 0 NOT ALLOWED             0 FALSE  0 MASK X'80', BYT   -, COM2<COM1
 9531                          * 1 TIO STATUS              1 TRUE   1 MASK X'40', BYT = 0, COM2=COM1
 9532                          * 2 OPERATIONAL STATUS (TIO)   TEST  2 MASK X'20', BYT  +1, COM2=COM1+1
 9533                          * 3 HIO STATUS                       3 MASK X'10', BYT  +2, COM2=COM1+2
 9534                          * 4 TDV STATUS                       4 MASK X'08', BYT  +3, COM2=COM1+3
 9535                          * 5 SIO STATUS                       5 MASK X'04', BYT  +4, COM2=COM1+4
 9536                          * 6 AIO STATUS                       6 MASK X'02', BYT  +5, COM2=COM1+5
 9537                          * 7 INTERRUPT STATUS (AIO)           7 MASK X'01', BYT  +6, COM2=COM1+6
 9538                          * 8 NOT ASSIGNED
 9539                          * 9 NOT ASSIGNED
 9540                          * A NOT ASSIGNED
 9541                          * B NOT ASSIGNED
 9542                          * C NOT ASSIGNED
 9543                          * D NOT ASSIGNED
 9544                          * E BYTE COUNT TEST (TIO)
 9545                          * F COMMAND ADDR TEST (TIO)
 9546                          *
 9547                          *
 9548                          * SUBROUTINES ARE PROVIDED TO STORE STATUS INFORMATION INTO A TABLE.
 9549                          * IF THE TIO, HIO, TDV, OSB, BYTE CNT, OR COMMAND ADR HAS NOT BEEN
 9550                          * STORED IN THE TABLE, THE ERROR ROUTINE  SR WILL ISSUE THE APPROPRIATE
 9551                          * I/O INSTRUCTION AND STORE THE STATUS BEFORE TESTING COMMENCES.
 9552                          *
 9553                          * CALLING SEQUENCE: BAL,15 :ERRORT
 9554                          *                   DATA   BA(TSEQNNN)
 9555                          * NORMAL EXIT:      B      (CONTINUE TEST)
 9556                          * ERROR  EXIT:             (IDENTIFY SUBTEST)
 9557                          *
 9558                          * REGISTERS DISTURBED: NONE (R1 = 1, R2 = 2, R3 = 3)
 9559                          *
 9560                          * VARIABLES REQUIRED: STATUS IN SAVE TABLE
 9561                          *                     STARTING COMMAND ADR
 9562                          *
 9563                          * OTHER SUBROUTINES: CLEAR STATUS SAVE TABLE (:SAVECLR)
 9564                          *                    STORE STATUS IN SAVE TABLE (:SAVETIO,:SAVEHIO,
 9565                          *                    :SAVETDV,:SAVESIO,:SAVEAIO,:SAVESSA,SAVESSB,:TIO,
 9566                          *                    :TDV,:HIO)
 9567                          *
 9568                          *
 9569                          * THE FOLLOWING EQUATE STATEMENTS ASSIGN LABELS TO BYTE VALUES
 9570                          *
 9571                          TIOF0,TIOF1,TIOF2,TIOF3,TIOF4,TIOF5,TIOF6,TIOF7  :TSEQEQU  X'10'
 9572                          TIOT0,TIOT1,TIOT2,TIOT3,TIOT4,TIOT5,TIOT6,TIOT7  :TSEQEQU  X'18'
 9573                          OSBF0,OSBF1,OSBF2,OSBF3,OSBF4,OSBF5,OSBF6,OSBF7  :TSEQEQU  X'20'
 9574                          OSBT0,OSBT1,OSBT2,OSBT3,OSBT4,OSBT5,OSBT6,OSBT7  :TSEQEQU  X'28'
 9575                          HIOF0,HIOF1,HIOF2,HIOF3,HIOF4,HIOF5,HIOF6,HIOF7  :TSEQEQU  X'30'
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            148
  9576                          HIOT0,HIOT1,HIOT2,HIOT3,HIOT4,HIOT5,HIOT6,HIOT7  :TSEQEQU  X'38'
  9577                          TDVF0,TDVF1,TDVF2,TDVF3,TDVF4,TDVF5,TDVF6,TDVF7  :TSEQEQU  X'40'
  9578                          TDVT0,TDVT1,TDVT2,TDVT3,TDVT4,TDVT5,TDVT6,TDVT7  :TSEQEQU  X'48'
  9579                          SIOF0,SIOF1,SIOF2,SIOF3,SIOF4,SIOF5,SIOF6,SIOF7  :TSEQEQU  X'50'
  9580                          SIOT0,SIOT1,SIOT2,SIOT3,SIOT4,SIOT5,SIOT6,SIOT7  :TSEQEQU  X'58'
  9581                          AIOF0,AIOF1,AIOF2,AIOF3,AIOF4,AIOF5,AIOF6,AIOF7  :TSEQEQU  X'60'
  9582                          AIOT0,AIOT1,AIOT2,AIOT3,AIOT4,AIOT5,AIOT6,AIOT7  :TSEQEQU  X'68'
  9583                          ISBF0,ISBF1,ISBF2,ISBF3,ISBF4,ISBF5,ISBF6,ISBF7  :TSEQEQU  X'70'
  9584                          ISBT0,ISBT1,ISBT2,ISBT3,ISBT4,ISBT5,ISBT6,ISBT7  :TSEQEQU  X'78'
  9585                          BYTN0,BYT00,BYT01,BYT02,BYT03,BYT04,BYT05,BYT06  :TSEQEQU  X'E0'
  9586                          COMNG,COM00,COM01,COM02,COM03,COM04,COM05,COM06  :TSEQEQU  X'F0'
  9587                          *
  9588   02 01EC4   02200000 A  :ERRORT  LCI     0
  9589   02 01EC5   2B001F7B            STM,0    :ERRTMP1          SAVE ALL REGISTERS
  9590   02 01EC6   B250000F A          LW,5     *15               FETCH BYTE ADDR
  9591   02 01EC7   22000000 A          LI,0     0
  9592   02 01EC8   35001F8F            STW,0    :ERRTFLG          RESET ERROR FLAG
  9593   02 01EC9   726A0000 A  :ERRT0   LB,6     0,5               FETCH BYTE
  9594   02 01ECA   68301F50            BCR,3    :ERRT13           BRANCH: BYTE = 0
  9595   02 01ECB   22700000 A          LI,7     0
  9596   02 01ECC   2560037C A          SCD,6    -4                BITS 0 - 3 RIGHT JUSTIFIED
  9597   02 01ECD   35601F8C            STW,6    :ERRTMP3          SAVE INDEX
  9598   02 01ECE   21600008 A          CI,6     8
  9599   02 01ECF   69101ED4            BCS,1    :ERRT1            B: RANGE OF INDEX  1 - 7
  9600   02 01ED0   2160000D A          CI,6     13
  9601   02 01ED1   69201F1E            BCS,2    :ERRT11           BRANCH: RANGE OF INDEX 14 - 15
  9602   02 01ED2   2E000000 A          WAIT                       /// HALT ///
  9603   02 01ED3   68001ED2            B        $-1               PROGRAM ERRORS
  9604                          *
  9605   02 01ED4   328C2068    :ERRT1   LW,8     :SAVETAB,6        FETCH STATUS
  9606   02 01ED5   69101EF4            BCS,1    :ERRT6            BRANCH: STATUS IN TABLE
  9607   02 01ED6   21600005 A          CI,6     5
  9608   02 01ED7   69101EDA            BCS,1    :ERRT2            BRANCH: RANGE OF INDEX 1 - 4
  9609   02 01ED8   2E000000 A          WAIT                       /// HALT ///
  9610   02 01ED9   68001ED8            B        $-1               PROGRAM ERROR
  9611   02 01EDA   21600003 A  :ERRT2   CI,6     3
  9612   02 01EDB   69301EE2            BCS,3    :ERRT3            BRANCH: NOT HIO TEST
  9613   02 01EDC   32E020C1            LW,14    =X'00008000'
  9614   02 01EDD   6AF01BA9            BAL,15   :HIO               ISSUE HIO AND TEST CC1
  9615   02 01EDE   68001EE0            B        $+2
  9616   02 01EDF   68001F1C            B        :ERRT10           BRANCH: NO ADDR RECOG OR BUSY SIOP
  9617   02 01EE0   6AF0203E            BAL,15   :SAVEHIO          STORE HIO STATUS IN TABLE
  9618   02 01EE1   68001ED4            B        :ERRT1            FETCH STATUS
  9619                          *
  9620   02 01EE2   21600004 A  :ERRT3   CI,6     4
  9621   02 01EE3   69301EEA            BCS,3    :ERRT4            BRANCH: NOT TDV TEST
  9622   02 01EE4   32E020C1            LW,14    =X'00008000'
  9623   02 01EE5   6AF01BB4            BAL,15   :TDV               ISSUE TDV AND TEST CC1
  9624   02 01EE6   68001EE8            B        $+2
  9625   02 01EE7   68001F1C            B        :ERRT10           BRANCH: NO ADDR RECOG OR BUSY SIOP
  9626   02 01EE8   6AF02043            BAL,15   :SAVETDV          STORE TDV STATUS
  9627   02 01EE9   68001ED4            B        :ERRT1            FETCH STATUS
  9628                          *
  9629   02 01EEA   6AF01EEC    :ERRT4   BAL,15   :ERRT5            ISSUE TIO AND STORE STATUS
  9630   02 01EEB   68001ED4            B        :ERRT1
  9631                          *
  9632   02 01EEC   35F01EF3    :ERRT5   STW,15   :ERRT5X           SAVE EXIT ADDR
  9633   02 01EED   32E020C1            LW,14    =X'00008000'
  9634   02 01EEE   6AF01B9E            BAL,15   :TIO               ISSUE TIO AND TEST CC1
  9635   02 01EEF   68001EF1            B        $+2
  9636   02 01EF0   68001F1C            B        :ERRT10           BRANCH: NO ADDR RECOG OR BUSY SIOP
  9637   02 01EF1   6AF02030            BAL,15   :SAVETIO          STORE TIO STATUS, OSB, BYT, COM
  9638   02 01EF2   E8001EF3            B        *:ERRT5X          EXIT                    IN TABLE
  9639   02 01EF3   00000000 A  :ERRT5X  DATA     0                 EXIT ADDR
  9640                          *
  9641   02 01EF4   22600000 A  :ERRT6   LI,6     0
  9642   02 01EF5   25600301 A          SCD,6    1                 FETCH BIT 4
  9643   02 01EF6   35601F8B            STW,6    :ERRTMP2          SAVE TRUE/FALSE TEST FLAG
  9644   02 01EF7   22600000 A          LI,6     0
  9645   02 01EF8   25600303 A          SCD,6    3                 FETCH BITS 5 - 7
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 9646    02 01EF9    35602019              STW,6    :ERRBITS
 9647    02 01EFA    729C1F8D              LB,9     :ERRTMSK,6        FETCH MASK
 9648    02 01EFB    49800009 A            OR,8     9                 UPDATE CURRENT MASK
 9649    02 01EFC    71920008 A            CB,9     8,1               COMPARE MASK TO STATUS
 9650    02 01EFD    69401F01              BCS,4    :ERRT7            BRANCH: MATCH BETWEEN STATUS & MASK
 9651    02 01EFE    33001F8B              MTW,0    :ERRTMP2          TEST TRUE/FALSE FLAG
 9652    02 01EFF    68301F04              BCR,3    :ERRT8            BRANCH: FALSE TEST SUCCESSFUL
 9653    02 01F00    68001F08              B        :ERRT9            BRANCH: TRUE  TEST UNSUCCESSFUL
 9654                          *
 9655    02 01F01    33001F8B    :ERRT7    MTW,0    :ERRTMP2          TEST TRUE/FALSE FLAG
 9656    02 01F02    68301F08              BCR,3    :ERRT9            BRANCH: FALSE TEST UNSUCCESSFUL
 9657    02 01F03    68001F04              B        :ERRT8            BRANCH: TRUE  TEST SUCCESSFUL
 9658                          *
 9659    02 01F04    32601F8C    :ERRT8    LW,6     :ERRTMP3          FETCH INDEX
 9660    02 01F05    358C2068              STW,8    :SAVETAB,6        SAVE STATUS IN TABLE
 9661    02 01F06    33100005 A  :ERRT8A   MTW,1     5                 INCREMENT BYTE ADDR
 9662    02 01F07    68001EC9              B        :ERRT0            TEST NEXT BYTE
 9663                          *
 9664    02 01F08    32601F8C    :ERRT9    LW,6     :ERRTMP3          FETCH INDEX
 9665    02 01F09    358C2068              STW,8    :SAVETAB,6        SAVE STATUS IN TABLE
 9666    02 01F0A    32601F8C    :ERRT9A   LW,6     :ERRTMP3          FETCH INDEX
 9667    02 01F0B    327C1F90              LW,7     :ERRTYPE,6        FETCH WORD CORRESP. TO INDEX
 9668    02 01F0C    35702007              STW,7    :ERRTMG1+1        STORE IN OUTPUT FORMAT
 9669    02 01F0D    327C2010              LW,7     :ERRTTB,6         FETCH INDEX FROM INDEX TABLE
 9670    02 01F0E    32602019              LW,6     :ERRBITS          FETCH BIT SELECTED
 9671    02 01F0F    928C0007 A            LD,8     *7,6              FETCH DOUBLEWORD ERROR MESSAGE
 9672    02 01F10    1580200A              STD,8    :ERRTMG1+4        STORE DOUBLEWORD TO OUTPUT FORMAT
 9673    02 01F11    206000F0 A            AI,6     X'F0'             CHANGE HEX TO EBCDIC
 9674    02 01F12    75622009              STB,6    :ERRTMG1+3,1      STORE BIT NUMBER IN OUTPUT FORMAT
 9675    02 01F13    32601F8B              LW,6     :ERRTMP2          FETCH TRUE OR FALSE BIT
 9676    02 01F14    206000F0 A            AI,6     X'F0'             CHANGE TO EBCDIC
 9677    02 01F15    7564200D              STB,6    :ERRTMG1+7,2      STORE T/F BIT IN OUTPUT FORMAT
 9678    02 01F16    32601F8B              LW,6     :ERRTMP2
 9679    02 01F17    48600001 A            EOR,6    1                 COMPLEMENT T/F BIT
 9680    02 01F18    206000F0 A            AI,6     X'F0'             CHANGE TO EBCDIC
 9681    02 01F19    7560200F              STB,6    :ERRTMG1+9,0      STORE COMPLEMENTED T/F BIT
 9682    02 01F1A    EAF0021C A            BAL,15   *:PRINT
 9683    02 01F1B    00002006              DATA     :ERRTMG1
 9684                          *
 9685    02 01F1C    33101F8F    :ERRT10   MTW,1    :ERRTFLG          INCR. ERROR TALLY
 9686    02 01F1D    68001F06              B        :ERRT8A
 9687                          *
 9688    02 01F1E    328C2068    :ERRT11   LW,8     :SAVETAB,6        FETCH STATUS
 9689    02 01F1F    69101F21              BCS,1    $+2               BRANCH: STATUS IN TABLE
 9690    02 01F20    6AF01EEC              BAL,15   :ERRT5            ISSUE TIO AND STORE STATUS
 9691    02 01F21    4B8020C2              AND,8    =X'FFFF'          BITS 16 - 31
 9692    02 01F22    52820008 A            LH,8     8,1
 9693    02 01F23    2160000E A            CI,6     14
 9694    02 01F24    69301F4D              BCS,3    :ERRT12           BRANCH: COMMAND ADDR TEST
 9695    02 01F25    25600304 A  :ERRT11A  SCD,6    4                 FETCH BITS 4 - 7
 9696    02 01F26    4B6020C3              AND,6    =X'7'
 9697    02 01F27    69301F2B              BCS,3    :ERRT11B          BRANCH: NOT EQUAL TO ZERO
 9698    02 01F28    33000008 A            MTW,0    8                 TEST BYTE COUNT OR COMMAND DIFF
 9699    02 01F29    69101F06              BCS,1    :ERRT8A           BRANCH: NEGATIVE TEST SUCCESSFUL
 9700    02 01F2A    68001F38              B        :ERRT91A          B: NEGATIVE TEST NOT SUCCESSFUL
 9701    02 01F2B    33F00006 A  :ERRT11B  MTW,-1   6                 SUBTRACT 1 FROM BITS 5 - 7
 9702    02 01F2C    31600008 A            CW,6     8                 COMPARE R8 TO TEST VALUE
 9703    02 01F2D    68301F06              BCR,3    :ERRT8A           BRANCH:       TEST SUCCESSFUL
 9704                          *                                      TEST NOT SUCCESSFUL
 9705    02 01F2E    32701F8C    :ERPT92A  LW,7     :ERRTMP3          FETCH INDEX
 9706    02 01F2F    2170000E A            CI,7     14                BYTE COUNT  OR COMMAND ADDRESS
 9707    02 01F30    68301F35              BCR,3    :ERRT92C          BRANCH IF EQUAL TO
 9708    02 01F31    3290207C              LW,9     :SAVCOM1          FETCH ORIG COMMAND ADDRESS
 9709    02 01F32    30900006 A            AW,9     6                 SAVCOM1 + 1
 9710    02 01F33    3590000C A            STW,9    12                STORE IN R12
 9711    02 01F34    68001F3E              B        :ERRT92B          BRANCH
 9712    02 01F35    306020C4    :ERRT92C  AW,6     =X'F0F0F0F0'      CONVERT INDEX TO EBCDIC
 9713    02 01F36    3560000F A            STW,6    15                STORE  IN R15
 9714    02 01F37    68001F42              B        :ERRT91C          BRANCH
 9715    02 01F38    32701F8C    :ERRT91A  LW,7     :ERRTMP3          FETCH INDEX
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          150
 9716    02 01F39   2170000E A            CI,7     14              BYTE COUNT  OR  COMMAND ADDRESS
 9717    02 01F3A   68301F41              BCR,3    :ERRT91B        BRANCH IF EQUAL TO
 9718    02 01F3B   3290207C              LW,9     :SAVCOM1        FETCH ORIG COMMAND ADRS.
 9719    02 01F3C   38900001 A            SW,9     1               SUBTRACT 1 FROM SAVCOM1
 9720    02 01F3D   3590000C A            STW,9    12              STORE IN R12
 9721    02 01F3E   EAF00218 A  :ERRT92B  BAL,15   *:HEXC           CONVERT TO EBCDIC
 9722    02 01F3F   12A02026              LD,10    :ERRTCAM        FETCH COMMAND ADDRESS ID
 9723    02 01F40   68001F43              B        $+3             BRANCH
 9724    02 01F41   32F02023   :ERRT91B LW,15    :ERRTNEG        FETCH EXPECTED NEGATIVE WORD
 9725    02 01F42   12A02024   :ERRT91C LD,10    :ERRTBCM        FETCH BYTE COUNT ID
 9726    02 01F43   35A0201B              STW,10   :ERRTMG2+1      STORE  ID
 9727    02 01F44   35B0201C              STW,11   :ERRTMG2+2            IN MESSAGE
 9728    02 01F45   35F0201F              STW,15   :ERRTMG2+5      STORE R15 IN MESSAGE
 9729    02 01F46   32601F8C              LW,6     :ERRTMP3        FETCH INDEX
 9730    02 01F47   32CC2068              LW,12    :SAVETAB,6      LOAD BYTE COUNT OR COMMAND ADR
 9731    02 01F48   EAF00218 A            BAL,15   *:HEXC          CONVERT INTO EBCDIC
 9732    02 01F49   35F02022              STW,15   :ERRTMG2+8      STORE R15 IN MESSAGE
 9733    02 01F4A   EAF0021C A            BAL,15   *:PRINT         BRANCH TO PRINT ROUTINE
 9734    02 01F4B   0000201A              DATA     :ERRTMG2
 9735    02 01F4C   68001F1C              B        :ERRT10         B: TEST NEXT BIT
 9736                        *
 9737    02 01F4D   3290207C   :ERRT12  LW,9     :SAVCOM1        FETCH ORIGINAL COMMAND ADDR
 9738    02 01F4E   38800009 A            SW,8     9               FIND DIFFERENCE OF COMMAND ADDRESSES
 9739    02 01F4F   68001F25              B        :ERRT11A
 9740                        *
 9741    02 01F50   224FFFF7 A  :ERRT13  LI,4      -9              SET INDEX
 9742    02 01F51   32882072              LW,8     :SAVETAB+10,4   FETCH STATUS
 9743    02 01F52   68101F61              BCR,1    :ERRT14         BRANCH: NO STATUS
 9744    02 01F53   72960008 A            LB,9     8,3             FETCH CURRENT MASK
 9745    02 01F54   68301F61              BCR,3    :ERRT14         BRANCH: STATUS NOT PREVIOUSLY TESTED
 9746    02 01F55   22A00000 A            LI,10    0
 9747    02 01F56   75A00008 A            STB,10   8               RESET STATUS FLAG
 9748    02 01F57   35882072              STW,8    :SAVETAB+10,4   RESTORE WORD IN TABLE
 9749    02 01F58   22A000FF A            LI,10    X'FF'
 9750    02 01F59   4890000A A            EOR,9    10              COMPLEMENT CURRENT MASK
 9751    02 01F5A   72A40008 A            LB,10    8,2             FETCH STANDARD MASK
 9752    02 01F5B   4B90000A A            AND,9    10              STATUS COMPARE MASK FOR REMAINING
 9753    02 01F5C   72A20008 A            LB,10    8,1             FETCH STATUS BYTE                BITS
 9754    02 01F5D   4BA00009 A            AND,10   9               TEST STATUS
 9755    02 01F5E   69301F67              BCS,3    :ERRT15         BRANCH: STATUS IN ERROR
 9756    02 01F5F   33001F8F              MTW,0    :ERRTFLG         TEST ERROR FLAG
 9757    02 01F60   69301F67              BNEZ     :ERRT15         BRANCH: PRINT STATUS
 9758    02 01F61   65401F51   :ERRT14  BIR,4    :ERRT13+1       BRANCH: TEST NEXT STATUS
 9759    02 01F62   02200000 A            LCI      0
 9760    02 01F63   2A001F7B              LM,0     :ERRTMP1        RESTORE REGISTERS
 9761    02 01F64   33001F8F              MTW,0    :ERRTFLG        TEST ERROR FLAG
 9762    02 01F65   E832000F A            BCR,3    *15,1           NORMAL EXIT
 9763    02 01F66   E804000F A            B        *15,2           ERROR EXIT
 9764                        *
 9765    02 01F67   32C81F9A   :ERRT15  LW,12    :ERRTYPE+10,4     FETCH STATUS TYPE
 9766    02 01F68   35C01F9A              STW,12   :ERRTM1+1       STORE SATUS ID
 9767    02 01F69   EAF0021C A            BAL,15   *:PRINT         PRINT LINE 1
 9768    02 01F6A   00001F99              DATA     :ERRTM1         MSG = '   TIO 01234567'
 9769    02 01F6B   72C20008 A            LB,12    8,1             FETCH STATUS BYTE
 9770    02 01F6C   EAF00216 A            BAL,15   *:BINC          CONVERT FOUR BYTES
 9771    02 01F6D   35F01FA0              STW,15   :ERRTM2+3       STORE IN MSG AREA
 9772    02 01F6E   EAF00216 A            BAL,15   *:BINC          CONVERT FOUR BYTES
 9773    02 01F6F   35F01F9F              STW,15   :ERRTM2+2       STORE IN MSG AREA
 9774    02 01F70   EAF0021C A            BAL,15   *:PRINT         PRINT LINE 2
 9775    02 01F71   00001F9D              DATA     :ERRTM2         MSG = 'STATUS BBBBBBBB'
 9776    02 01F72   72C60009 A            LB,12    9,3             FETCH MASK
 9777    02 01F73   EAF00216 A            BAL,15   *:BINC          CONVERT FOUR BYTES
 9778    02 01F74   35F01FA4              STW,15   :ERRTM3+3       STORE IN MSG AREA
 9779    02 01F75   EAF00216 A            BAL,15   *:BINC          CONVERT FOUR BYTES
 9780    02 01F76   35F01FA3              STW,15   :ERRTM3+2       STORE IN MSG AREA
 9781    02 01F77   EAF0021C A            BAL,15   *:PRINT         PRINT LINE 3
 9782    02 01F78   00001FA1              DATA     :ERRTM3         MSG = '  MASK MMMMMMMM'
 9783    02 01F79   33101F8F              MTW,1    :ERRTFLG        INCR ERROR TALLY
 9784    02 01F7A   68001F61              B        :ERRT14
 9785                        *
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            151
  9786    02 01F7B                 :ERRTMP1 RES      16                 REGISTER SAVE AREA
  9787    02 01F8B  00000000 A     :ERRTMP2 DATA     0                  TRUE/FALSE TEST FLAG
  9788    02 01F8C  00000000 A     :ERRTMP3 DATA     0                  INDEX
  9789    02 01F8D  80402010 A     :ERRTMSK GEN,8,8,8,8  X'80',X'40',X'20',X'10'   TEST
  9790    02 01F8E  08040201 A              GEN,8,8,8,8  X'08',X'04',X'02',X'01'     MASKS
  9791    02 01F8F  00000000 A     :ERRTFLG DATA     0
  9792    02 01F90  00000000 A     :ERRTYPE DATA  0,'TIO ','OSB ','HIO ','TDV ','SIO ','AIO ','ISB ','SB8 '
          02 01F91  E3C9D640 A
          02 01F92  D6E2C240 A
          02 01F93  C8C9D640 A
          02 01F94  E3C4E540 A
          02 01F95  E2C9D640 A
          02 01F96  C1C9D640 A
          02 01F97  C9E2C240 A
          02 01F98  E2C2F840 A
  9793    02 01F99  0F404040 A     :ERRTM1  TEXTC    '   XXX 01234567' STATUS
          02 01F9A  E7E7E740 A
          02 01F9B  F0F1F2F3 A
          02 01F9C  F4F5F6F7 A
  9794    02 01F9D  0FE2E3C1 A     :ERRTM2  TEXTC    'STATUS BBBBBBBB'
          02 01F9E  E3E4E240 A
          02 01F9F  C2C2C2C2 A
          02 01FA0  C2C2C2C2 A
  9795    02 01FA1  0F4040D4 A     :ERRTM3  TEXTC    '  MASK MMMMMMMM'   MSGS
          02 01FA2  C1E2D240 A
          02 01FA3  D4D4D4D4 A
          02 01FA4  D4D4D4D4 A
  9796                             BOUND    8
  9797    02 01FA6  C9D5E340 A     :ERRTTBA TEXT     'INT PEND'         BIT 0
          02 01FA7  D7C5D5C4 A
  9798    02 01FA8  D5D6E340 A              TEXT     'NOT OP ?'         BIT 1   TIO
          02 01FA9  D6D7406F A
  9799    02 01FAA  E4D5C1E5 A              TEXT     'UNAVAIL?'         BIT 2
          02 01FAB  C1C9D36F A
  9800    02 01FAC  4040C1E4 A              TEXT     '  AUTO  '         BIT 3     SIO                (1)
          02 01FAD  E3D64040 A
  9801    02 01FAE  404040E4 A              TEXT     '   UE   '         BIT 4                        (3)
          02 01FAF  C5404040 A
  9802    02 01FB0  D5D6E340 A              TEXT     'NOT OP ?'         BIT 5       HIO              (5)
          02 01FB1  D6D7406F A
  9803    02 01FB2  E4D5C1E5 A              TEXT     'UNAVAIL?'         BIT 6
          02 01FB3  C1C9D36F A
  9804    02 01FB4  D5D6E340 A              TEXT     'NOT USED'         BIT 7         STATUS
          02 01FB5  E4E2C5C4 A
  9805    02 01FB6  C9D5C340 A     :ERRTTBB TEXT     'INC LEN '         BIT 0
          02 01FB7  D3C5D540 A
  9806    02 01FB8  E3D9C1D5 A              TEXT     'TRANSM  '         BIT 1
          02 01FB9  E2D44040 A
  9807    02 01FBA  E3D9C1D5 A              TEXT     'TRANSMEM'         BIT 2   OPERATIONAL
          02 01FBB  E2D4C5D4 A
  9808    02 01FBC  D4C5D440 A              TEXT     'MEM ADR '         BIT 3
          02 01FBD  C1C4D940 A
  9809    02 01FBE  C9D6D740 A              TEXT     'IOP MEM '         BIT 4     STATUS BYTE (OSB)
          02 01FBF  D4C5D440 A
  9810    02 01FC0  C9D6D740 A              TEXT     'IOP CONT'         BIT 5                        (2)
          02 01FC1  C3D6D5E3 A
  9811    02 01FC2  C9D6D740 A              TEXT     'IOP HALT'         BIT 6
          02 01FC3  C8C1D3E3 A
  9812    02 01FC4  E2C9D6D7 A              TEXT     'SIOPBUSY'         BIT 7
          02 01FC5  C2E4E2E8 A
  9813    02 01FC6  D9C1E3C5 A     :ERRTTBC TEXT     'RATE ERR'         BIT 0
          02 01FC7  40C5D9D9 A
  9814    02 01FC8  E6D940D7 A              TEXT     'WR PERMT'         BIT 1
          02 01FC9  C5D9D4E3 A
  9815    02 01FCA  E6D940D7 A              TEXT     'WR PROT '         BIT 2     TDV
          02 01FCB  D9D6E340 A
  9816    02 01FCC  C54BD64B A              TEXT     'E.O.F.  '         BIT 3
          02 01FCD  C64B4040 A
  9817    02 01FCE  D5D6E340 A              TEXT     'NOT USED'         BIT 4     STATUS (4)
          02 01FCF  E4E2C5C4 A
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            152

LINE NO.  MEM PROT KEY  MEMORY ADDRESS  MEMORY CONTENTS  ORIG  LABEL      OPERATION  OPERAND          COMMENTS

  9818    02  01FD0    D3D6C1C4  A                       TEXT       'LOAD PT '       BIT 5
          02  01FD1    40D7E340  A
  9819    02  01FD2    C54BD64B  A                       TEXT       'E.O.T.  '       BIT 6
          02  01FD3    E34B4040  A
  9820    02  01FD4    D9E660D6  A                       TEXT       'RW-ONLNE'       BIT 7
          02  01FD5    D5D3D5C5  A
  9821    02  01FD6    D9C1E3C5  A   :ERRTTBD  TEXT      'RATE ERR'       BIT 0
          02  01FD7    40C5D9D9  A
  9822    02  01FD8    C4C5E540  A                       TEXT       'DEV END '       BIT 1
          02  01FD9    C5D5C440  A
  9823    02  01FDA    E6D940D7  A                       TEXT       'WR PROT '       BIT 2     AIO
          02  01FDB    D9D6E340  A
  9824    02  01FDC    C54BD64B  A                       TEXT       'E.O.F.  '       BIT 3              STATUS   (6)
          02  01FDD    C64B4040  A
  9825    02  01FDE    D5D6E340  A                       TEXT       'NOT USED'       BIT 4
          02  01FDF    E4E2C5C4  A
  9826    02  01FE0    D5D6E340  A                       TEXT       'NOT USED'       BIT 5
          02  01FE1    E4E2C5C4  A
  9827    02  01FE2    D5D6E340  A                       TEXT       'NOT USED'       BIT 6
          02  01FE3    E4E2C5C4  A
  9828    02  01FE4    D5D6E340  A                       TEXT       'NOT USED'       BIT 7
          02  01FE5    E4E2C5C4  A
  9829    02  01FE6    C9D5C340  A   :ERRTTBE  TEXT      'INC LEN '       BIT 0
          02  01FE7    D3C5D540  A
  9830    02  01FE8    E3D9C1D5  A                       TEXT       'TRANSM  '       BIT 1
          02  01FE9    E2D44040  A
  9831    02  01FEA    E9C2C340  A                       TEXT       'ZBC INT '       BIT 2     INTERRUPT
          02  01FEB    C9D5E340  A
  9832    02  01FEC    40C3C540  A                       TEXT       ' CE INT '       BIT 3
          02  01FED    C9D5E340  A
  9833    02  01FEE    40E4C540  A                       TEXT       ' UE INT '       BIT 4      STATUS BYTE (ISB)  (7)
          02  01FEF    C9D5E340  A
  9834    02  01FF0    D5D6E340  A                       TEXT       'NOT USED'       BIT 5
          02  01FF1    E4E2C5C4  A
  9835    02  01FF2    D5D6E340  A                       TEXT       'NOT USED'       BIT 6
          02  01FF3    E4E2C5C4  A
  9836    02  01FF4    D5D6E340  A                       TEXT       'NOT USED'       BIT 7
          02  01FF5    E4E2C5C4  A
  9837    02  01FF6    C440D7C1  A   :ERRTTBF  TEXT      'D PAR E '       BIT 0
          02  01FF7    D940C540  A
  9838    02  01FF8    C3C8D2E6  A                       TEXT       'CHKWRT E'       BIT 1
          02  01FF9    D9E340C5  A
  9839    02  01FFA    E2C5C3E3  A                       TEXT       'SECT COM'       BIT 2     SENSE
          02  01FFB    40C3D6D4  A
  9840    02  01FFC    C8C5C1C4  A                       TEXT       'HEAD COM'       BIT 3
          02  01FFD    40C3D6D4  A
  9841    02  01FFE    C3E8D340  A                       TEXT       'CYL COM '       BIT 4      BYTE  8            (8)
          02  01FFF    C3D6D440  A
  9842    02  02000    C8C440C1  A                       TEXT       'HD ADR E'       BIT 5
          02  02001    C4D940C5  A
  9843    02  02002    D5D6E340  A                       TEXT       'NOT USED'       BIT 6
          02  02003    E4E2C5C4  A
  9844    02  02004    D5D6E340  A                       TEXT       'NOT USED'       BIT 7
          02  02005    E4E2C5C4  A
  9845    02  02006    24404040  A   :ERRTMG1 TEXTC     '   XXX BIT  X (XXXXXXXX) EXP X OBS X'
          02  02007    E7E7E740  A
          02  02008    C2C9E340  A
          02  02009    40E7404D  A
          02  0200A    E7E7E7E7  A
          02  0200B    E7E7E7E7  A
          02  0200C    5D40C5E7  A
          02  0200D    D740E740  A
          02  0200E    D6C2E240  A
          02  0200F    E7404040  A
  9846    02  02010    00000000  A   :ERRTTB  DATA      0,:ERRTTBA,:ERRTTBB,:ERRTTBA,:ERRTTBC,:ERRTTBA
          02  02011    00001FA6
          02  02012    00001FB6
          02  02013    00001FA6
          02  02014    00001FC6
          02  02015    00001FA6
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0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70          153
  9847    02 02016    00001FD6              DATA     :ERRTTBD,:ERRTTBE,:ERRTTBF
          02 02017    00001FE6
          02 02018    00001FF6
  9848    02 02019    00000000 A  :ERRBITS DATA     0
  9849    02 0201A    23404040 A  :ERRTMG2 TEXTC    '   XXXXXXX - EXP.  XXXX  OBS.  XXXX'
          02 0201B    E7E7E7E7 A
          02 0201C    E7E7E740 A
          02 0201D    6040C5E7 A
          02 0201E    D74B4040 A
          02 0201F    E7E7E7E7 A
          02 02020    4040D6C2 A
          02 02021    E24B4040 A
          02 02022    E7E7E7E7 A
  9850    02 02023    40D5C5C7 A  :ERRTNEG TEXT     ' NEG'
  9851                            BOUND    8
  9852    02 02024    C2E8E340 A  :ERRTBCM TEXT     'BYT CNT '        BYTE COUNT MESSAGE
          02 02025    C3D5E340 A
  9853    02 02026    C3D6D440 A  :ERRTCAM TEXT     'COM ADR '        COMMAND ADDRESS MESSAGE
          02 02027    C1C4D940 A
  9854                            *
  9855                            *                 *** SAVECLR                                  ***
  9856                            *                 *** SAVETIO, -HIO,-TDV,-SIO,-AIO,-SSA,-SSB ***
  9857                            *                     ROUTINES
  9858                            *
  9859                            * THE SUBROUTINES CLEAR THE STATUS SAVE TABLE ('SAVETAB') AND STORE
  9860                            * THE SELECTED STATUS IN THE CELL.
  9861                            *
  9862                            * CALLING SEQUENCE: BAL,15  :SAVE---
  9863                            * NORMAL EXIT:       ---     ---
  9864                            *
  9865                            * REGISTERS DISTURBED: NONE (R1 = 1, R2 = 2, R3 = 3)
  9866                            *
  9867                            * VARIABLES REQUIRED: R13 - IOSTATUS AND BYTE COUNT
  9868                            *                     R12 - CURRENT COMMAND ADDR
  9869                            *
  9870                            * OTHER SUBROUTINES: NONE
  9871                            *
  9872                            *
  9873    02 02028    15402078    :SAVECLR STD,4    :SAVETMP          SAVE R4 AND R5
  9874    02 02029    224FFFE0 A          LI,4      -32               INDEX
  9875    02 0202A    22500000 A          LI,5      0                 0
  9876    02 0202B    55582078            STH,5     :SAVETAB+16,4     CLEAR FLAG AND CURRENT STATUS
  9877    02 0202C    6540202D            BIR,4     $+1               INCR R4
  9878    02 0202D    6540202B            BIR,4     $-2               LOOP
  9879    02 0202E    12402078            LD,4      :SAVETMP          RESTORE R4 AND R5
  9880    02 0202F    E800000F A          B         *15               EXIT
  9881                            *
  9882    02 02030    15402078    :SAVETIO STD,4    :SAVETMP          SAVE R4 AND R5
  9883    02 02031    35D0207A            STW,13    :SAVETMP+2        SAVE STATUS
  9884    02 02032    22402069            LI,4      WA(:SAVETAB+1)    INDEX - TIO STATUS
  9885    02 02033    6A502060            BAL,5     :SAVEALL          STORE STATUS
  9886    02 02034    2240206A            LI,4      WA(:SAVETAB+2)    INDEX - OSB
  9887    02 02035    6A502060            BAL,5     :SAVEALL          STORE STATUS
  9888    02 02036    32D0207A            LW,13     :SAVETMP+2        FETCH STATUS
  9889    02 02037    55D22076            STH,13    :SAVETAB+14,1     STORE BYTE COUNT
  9890    02 02038    225FFFFF A          LI,5      -1
  9891    02 02039    75502076            STB,5     :SAVETAB+14,0     SET FLAG
  9892    02 0203A    55C22077            STH,12    :SAVETAB+15,1     STORE CURRENT COMMAND ADDR
  9893    02 0203B    75502077            STB,5     :SAVETAB+15,0     SET FLAG
  9894    02 0203C    12402078            LD,4      :SAVETMP          RESTORE R4 AND R5
  9895    02 0203D    E800000F A          B         *15               EXIT
  9896                            *
  9897    02 0203E    15402078    :SAVEHIO STD,4    :SAVETMP          SAVE R4 AND R5
  9898    02 0203F    2240206B            LI,4      WA(:SAVETAB+3)    INDEX - HIO STATUS
  9899    02 02040    6A502060            BAL,5     :SAVEALL          STORE STATUS
  9900    02 02041    12402078            LD,4      :SAVETMP          RESTORE R4 AND R5
  9901    02 02042    E800000F A          B         *15               EXIT
  9902    02 02043    15402078    :SAVETDV STD,4    :SAVETMP          SAVE R4 AND R5
  9903    02 02044    2240206C            LI,4      WA(:SAVETAB+4)    INDEX - TDV STATUS
  9904    02 02045    6A502060            BAL,5     :SAVEALL          STORE STATUS
```

```
0   16:42  AUG 03, '70          SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00  7/30/70            154
  9905    02 02046    12402078              LD,4      :SAVETMP          RESTORE R4 AND R5
  9906    02 02047    E800000F A            B         *15               EXIT
  9907                                  *
  9908    02 02048    15402078      :SAVESIO STD,4     :SAVETMP          SAVE R4 AND R5
  9909    02 02049    2240206D              LI,4      WA(:SAVETAB+5)    INDEX - SIO
  9910    02 0204A    6A502060              BAL,5     :SAVEALL          STORE STATUS
  9911    02 0204B    12402078              LD,4      :SAVETMP          RESTORE R4 AND R5
  9912    02 0204C    E800000F A            B         *15               EXIT
  9913                                  *
  9914    02 0204D    15402078      :SAVEAIO STD,4     :SAVETMP          SAVE R4 AND R5
  9915    02 0204E    35D0207A              STW,13    :SAVETMP+2        SAVE STATUS
  9916    02 0204F    2240206E              LI,4       WA(:SAVETAB+6)   INDEX - AIO
  9917    02 02050    6A502060              BAL,5     :SAVEALL          STORE STATUS
  9918    02 02051    2240206F              LI,4       WA(:SAVETAB+7)   INDEX - ISB
  9919    02 02052    6A502060              BAL,5     :SAVEALL          STORE STATUS
  9920    02 02053    32D0207A              LW,13     :SAVETMP+2        FETCH STATUS
  9921    02 02054    12402078              LD,4      :SAVETMP          RESTORE REGISTERS R4 AND R5
  9922    02 02055    E800000F A            B         *15               EXIT
  9923                                  *
  9924    02 02056    15402078      :SAVESSA STD,4     :SAVETMP          SAVE R4 AND R5
  9925    02 02057    22402070              LI,4      WA(:SAVETAB+8)    SAVE STATUS
  9926    02 02058    6A502060              BAL,5     :SAVEALL          RESTORE R4 AND R5
  9927    02 02059    12402078              LD,4      :SAVETMP          RESTORE R4 AND R5
  9928    02 0205A    E800000F A            B         *15               EXIT
  9929                                  *
  9930    02 0205B    15402078      :SAVESSB STD,4     :SAVETMP          SAVE R4 AND R5
  9931    02 0205C    22402071              LI,4      WA(:SAVETAB+9)    SAVE STATUS
  9932    02 0205D    6A502060              BAL,5     :SAVEALL          RESTORE R4 AND R5
  9933    02 0205E    12402078              LD,4      :SAVETMP          RESTORE R4 AND R5
  9934    02 0205F    E800000F A            B         *15               EXIT
  9935                                  *
  9936    02 02060    35502078      :SAVEALL STW,5     :SAVETMP+3        SAVE EXIT ADDR
  9937    02 02061    22500000 A            LI,5      0
  9938    02 02062    F5560004 A            STB,5     *4,3              CLEAR CURRENT STATUS MASK
  9939    02 02063    25D00208 A            SCS,13    +8
  9940    02 02064    F5D20004 A            STB,13    *4,1              STORE CURRENT STATUS
  9941    02 02065    225FFFFF A            LI,5      -1
  9942    02 02066    F5500004 A            STB,5     *4,0              STORE FLAG
  9943    02 02067    E800207B              B         *:SAVETMP+3        EXIT
  9944                                  *
  9945                                      BOUND     8
  9946        02 02068              :SAVETAB EQU      $
  9947    02 02068    00000000 A            DATA      0                 UNDEFINED                    0
  9948    02 02069    0000EE00 A            DATA      X'0000EE00'       TIO STATUS                   1
  9949    02 0206A    0000FF00 A            DATA      X'0000FF00'       OSB STATUS                   2
  9950    02 0206B    0000EE00 A            DATA      X'0000EE00'       HIO STATUS                   3
  9951    02 0206C    0000BB00 A            DATA      X'0000BB00'       TDV STATUS                   4
  9952    02 0206D    0000EE00 A            DATA      X'0000EE00'       SIO STATUS                   5
  9953    02 0206E    0000FF00 A            DATA      X'0000FF00'       AIO STATUS                   6
  9954    02 0206F    0000FF00 A            DATA      X'0000FF00'       ISB STATUS                   7
  9955    02 02070    0000FF00 A            DATA      X'0000FF00'       SBA STATUS                   8
  9956    02 02071    0000FF00 A            DATA      X'0000FF00'       SBB STATUS                   9
  9957    02 02072    00000000 A            DATA      0,0,0,0           NOT ASSIGNED                 10 - 13
          02 02073    00000000 A
          02 02074    00000000 A
          02 02075    00000000 A
  9958    02 02076    00000000 A            DATA      0,0               BYTE COUNT, COMMAND ADR      14 - 15
          02 02077    00000000 A
  9959    02 02078    00000000 A  :SAVETMP   DATA      0,0,0,0           4 TEMP LOC
          02 02079    00000000 A
          02 0207A    00000000 A
          02 0207B    00000000 A
  9960    02 0207C    00000000 A  :SAVCOMI   DATA      0                 ORIGINAL COMMAND ADDR
  9961                                  *
  9962    02 0207D    00000000 A  BUFF2      DATA      0                 BUFF1 +BUFF2/2 WORDS
  9963                                      BOUND     8
  9964                            BUFF1     END
          02 0207E    0000FF00 A
          02 0207F    0000BB00 A
          02 02080    0000FFF8 A
```

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ORIG	LABEL	OPERATION	OPERAND	COMMENTS

0 16:42 AUG 03, '70 SIGMA 5/7 7-CHANNEL MAG TAPE TEST 705735-11/51A00 7/30/70 155

	02	02081	FFFFFFFE	A				
	02	02082	00001FFF	A				
	02	02083	00000080	A				
	02	02084	00000008	A				
	02	02085	06000000	A				
	02	02086	05000000	A				
	02	02087	08FF0000	A				
	02	02088	08BF0000	A				
	02	02089	02000000	A				
	02	0208A	01000000	A				
	02	0208B	087F0000	A				
	02	0208C	083F0000	A				
	02	0208D	FF000000	A				
	02	0208E	00FFFFFF	A				
	02	0208F	E700C000	A				
	02	02090	EF00C000	A				
	02	0209i	BB00C000	A				
	02	02092	08000000	A				
	02	02093	0000C000	A				
	02	02094	88000000	A				
	02	02095	80000000	A				
	02	02096	98000002	A				
	02	02097	66000000	A				
	02	02098	04000000	A				
	02	02099	40000000	A				
	02	0209A	E6000000	A				
	02	0209B	0000B300	A				
	02	0209C	0000BF00	A				
	02	0209D	3F3F3F3F	A				
	02	0209E	00400000	A				
	02	0209F	12131415	A				
	02	020A0	32333435	A				
	02	020A1	FFFFFFFF	A				
	02	020A2	000FFFFF	A				
	02	020A3	00010203	A				
	02	020A4	04040404	A				
	02	020A5	AAAAAAAA	A				
	02	020A6	51F99F15	A				
	02	020A7	60000000	A				
	02	020A8	0F0F0F0F	A				
	02	020A9	00000014	A				
	02	020AA	30303030	A				
	02	020AB	0000FFF0	A				
	02	020AC	0000000F	A				
	02	020AD	12B9B0A1	A				
	02	020AE	1033C4D7	A				
	02	020AF	544B2FBA	A				
	02	020B0	000003FF	A				
	02	020B1	0000001F	A				
	02	020B2	FFFF0000	A				
	02	020B3	FFFFFF00	A				
	02	020B4	00000003	A				
	02	020B5	0D000000	A				
	02	020B6	01FFFFFF	A				
	02	020B7	02FFFFFF	A				
	02	020B8	91000000	A				
	02	020B9	50000000	A				
	02	020BA	00FF0000	A				
	02	020BB	7FFFFFFF	A				
	02	020BC	00004E20	A				
	02	020BD	FFFFC000	A				
	02	020BE	E600C000	A				
	02	020BF	10000000	A				
	02	020C0	80004000	A				
	02	020C1	00008000	A				
	02	020C2	0000FFFF	A				
	02	020C3	00000007	A				
	02	020C4	F0F0F0F0	A				

CONTROL SECTION SUMMARY: 01 0030C PT 0 02 020C5 PT 0

TAPE DRIVE DIAGNOSTIC

4/10/80

← TYPE IN!

```
!!SYST 9/T 7 CHANNEL MAGNETIC TAPE TEST PROGRAM  [illegible]
!!TO INHIBIT THE PRINTING OF THIS MESSAGE, SET D1 = 0.
!!
!! THE ** SYST ** DIRECTIVE DESCRIBES THE SYSTEM ENVIRONMENT.
!!INTERMIXING OF TAPE STATIONS OF 37.5IPS AND 75IPS DURING THE
!!EXECUTION OF THE FUNCTIONAL TESTS IS NOT ALLOWED.
!!
!!FORMAT: SYST,D1,D2,D3,D4,D5,D6,D7,D8,D9,D10
!!
!!PARAMETERS:
!!    D1 DEVICE STATION (7362,7365/37.5IPS 7372,7374/75IPS)
!!    D2 0
!!    D3 DEVICE ADDRESS (1ST)
!!    D4 DEVICE ADDRESS (2ND)
!!    D5 DEVICE ADDRESS (3RD)
!!    D6 DEVICE ADDRESS (4TH)
!!    D7 DEVICE ADDRESS (5TH)
!!    D8 DEVICE ADDRESS (6TH)
!!    D9 DEVICE ADDRESS (7TH)
!!   D10 DEVICE ADDRESS (8TH)
!!
!!EXAMPLE 1.  SYST,7372,0,01,03,07
!!    TAPE DEVICES 01, 03, AND 07 ARE 75IPS UNITS.
!!
!!EXAMPLE 2.  SYST,7365,0,0C
!!    TAPE DEVICE 0C IS A 37.5IPS UNIT.
!!
!!REVISION *A01* (10/20/70)
!! 1. ADD TST1,36 TO TEST ERASE FUNCTION.
!! 2. ADD TST3,2,5 TO TEST CAPSTAN SLIP.
!! 3. REMOVE EOF INDICATION FROM TST1,4C.
!! 4. ADD RETRY AFTER FAILURE TO TST1,37.
!! 5. ADD TIMEOUT TEST TO TST1,2C.  IF TIMEOUT OCCURS, ERROR
!!     MESSAGE 2003 WILL BE PRINTED.
!!
!!REVISION *A02* (03/03/71)
!!NO FUNCTIONAL CHANGES HAVE BEEN MADE.
!!
!SYST,7372,0,0E0          ← TYPE IN, PUT FRESH TAPE ON
!TST2,100,1               ← TYPE IN SELECTED TESTS
```

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