

IDENTIFICATION  
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PRODUCT CODE: MAINDEC-08-DHTMD-A-D

PRODUCT NAME: TM8-E DATA RELIABILITY 9 TRACK

DATE CREATED: DECEMBER 4, 1972

MAINTAINER: DIAGNOSTIC GROUP

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TMREL9

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NOTE  
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THERE ARE SIX DIAGNOSTIC PROGRAMS ASSOCIATED WITH THE TM8-E DECMAGTAPE CONTROL AND ITS TRANSPORT SYSTEM, ALTHOUGH PHYSICALLY SEPARATE, THESE PROGRAMS MUST BE TREATED AS A LARGE INTEGRATED TEST, AND TO ENSURE PROPER SYSTEM OPERATION, THESE TESTS MUST BE EXECUTED IN THE ORDER DELINEATED BELOW:

IF A GIVEN TEST SHOULD FAIL AND IT APPEARS THAT A FIX HAS BEEN FOUND, ALL PROGRAMS MUST ONCE AGAIN BE RUN, ONLY WHEN ALL TESTS HAVE RUN WITHOUT ANY UNACCEPTABLE ERRORS CAN THE TM8-E SYSTEM BE CONSIDERED UP.

TM8-E DIAGNOSTIC PROGRAMS' ORDER OF EXECUTION  
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1. TM8-E CONTROL TEST PART 1 (MAINDEC-08-DHTMA)
2. TM8-E CONTROL TEST PART 2 (MAINDEC-08-DHTMB)
3. TM8-E DRIVE FUNCTION TIMER (MAINDEC-08-DHTMC)
4. TM8-E DATA RELIABILITY 9 TRACK (MAINDEC-08-DHTMD)
5. TM8-E DATA RELIABILITY 7 TRACK (MAINDEC-08-DHTME)
6. TM8-E RANDOM EXERCISER (MAINDEC-08-DHTMF)

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WARNING: ANY PROGRAM INTERRUPT THAT OCCURS FROM A DEVICE OTHER THAN  
THE TM8-E IS A FATAL ERROR AND WILL RESULT IN A PROGRAM HALT.

1. ABSTRACT  
=====

THE TM8-E DATA RELIABILITY TEST (9 TRACK) IS PRIMARILY DESIGNED FOR THE COLLECTION OF STATISTICAL INFORMATION PERTAINING TO THE DATA RELIABILITY OF THE 9 TRACK TAPE DRIVES ASSOCIATED WITH THE TM8-E DECMAGTAPE CONTROL. THE PROGRAM IS ALSO DESIGNED TO BE USEABLE AS AN AID IN THE CHECKOUT AND MAINTENANCE OF THE TM8-E AND ASSOCIATED 9 TRACK DRIVES.

THIS PROGRAM MAY ALSO BE USED AS AN EXTENDED DATA RELIABILITY ACCEPTANCE TEST FOR 9 TRACK DRIVES.

ALL TAPE OPERATIONS ARE DONE IN 9 TRACK COMPATIBLE MODE.  
CORE DUMP MODE IS NOT UTILIZED.

2. REQUIREMENTS  
=====

2.1 HARDWARE  
=====

PDP-8/E, 8/M, 8/F  
TELETYPE OR COMPATIBLE DEVICE (TTY)  
TM8-E DECMAGTAPE CONTROL  
TU10 MASTER/SLAVE TRANSPORT SYSTEM WITH FROM ONE TO EIGHT  
9 TRACK DRIVES.

2.2 MEMORY  
=====

THIS PROGRAM REQUIRES 4K OF MEMORY AND MAY RESIDE IN ANY MEMORY FIELD.

2.3 PRELIMINARY PROGRAMS  
=====

ALL PROCESSOR/MEMORY DIAGNOSTICS  
TM8-E CONTROL TEST PART 1  
TM8-E CONTROL TEST PART 2  
TM8-E DRIVE FUNCTION TIMER

3, PROGRAM LOADING PROCEDURE  
-----

LOAD THE PROGRAM INTO ANY DESIRED MEMORY FIELD USING THE  
STANDARD BINARY LOADER TECHNIQUE.

4, PROGRAM STARTING PROCEDURE  
-----

A. LOAD ADDRESS 0200.

B. LOAD THE EXTENDED ADDRESS WITH THE PROGRAM FIELD.

C. CLEAR ALL SWITCHES.

E. THE PROGRAM WILL PRINT ITS TITLE AND MAINDEC NUMBER, THEN  
ASK FOR DRIVE SELECTION, PRIOR TO MAKING DRIVE SELECTION  
GO TO THE STANDARD TEST PROCEDURE IN PARAGRAPH 5.

NOTE: THE PROGRAM MAY BE RESTARTED AT ANY TIME AT ADDRESS  
0201. IN THIS CASE THE PROGRAM ASKS IMMEDIATELY FOR  
DRIVE SELECTION.

5, STANDARD TEST PROCEDURE  
-----

USE OF THE STANDARD TEST PROCEDURE RESULTS IN EACH SELECTED  
TEST SEQUENCE RUNNING FROM BOT TO EOT. NO REPORTS WILL OCCUR  
WHEN NON-FATAL ERRORS ARE DETECTED. HOWEVER, THESE ERRORS  
WILL BE ACCUMULATED AND REPORTED AT THE END OF EACH PASS OF  
TAPE. ANY VARIATIONS FROM THIS SCHEME ARE CONTROLLED THROUGH  
THE SWITCH REGISTER OPTIONS AS LISTED IN PARAGRAPH 6. ERROR  
REPORT DESCRIPTIONS AND RELATED INFORMATION ARE GIVEN IN PAR-  
AGRAPH 7.

5.1 DRIVE SELECTION  
-----

ACCOMPLISH THE FOLLOWING STEPS TO SETUP AND SELECT THOSE 9  
TRACK DRIVES TO BE TESTED.

A. PLACE A SPARE REEL OF INDUSTRY COMPATIBLE MAGNETIC TAPE  
WITH THE FILE PROTECT RING IN PLACE (WRITE ENABLED) ON  
EACH DRIVE TO BE TESTED.

B. LOAD THE TAPE, POSITION TO BOT AND SWITCH THE DRIVE ON  
LINE.

C. START THE PROGRAM AS DESCRIBED IN PARAGRAPH 4.

D. THE PROGRAM WILL EVENTUALLY PRINT "SELECT DRIVES".

E. TYPE THE DRIVE NUMBERS OF THOSE 9 TRACK DRIVES TO BE  
TESTED. TYPING THE SAME DRIVE NUMBER TWICE WILL DELETE  
THAT DRIVE FROM THE SELECTION.

F. WHEN ALL DRIVE NUMBERS HAVE BEEN TYPED IN, TYPE CARRIAGE RETURN.

## 5.2 TEST SELECTION

ACCOMPLISH THE FOLLOWING STEPS TO SELECT THE DESIRED TEST SEQUENCES.

A. AFTER DRIVE SELECTION IS COMPLETE, THE PROGRAM WILL PRINT:

"TST PAT PAR DEN RLS WMO RMO"

B. RESPOND BY TYPING THE DESIRED CODE FOR EACH OF THE PARAMETERS USING THE TABLE BELOW AND REFERENCING THE INDICATED PARAGRAPH.

PARAMETER	DEFINITION	REFERENCE PARA.
TST	TEST SEQUENCE	5.2.1
PAT	DATA PATTERN	5.2.2
PAR	PARITY	5.2.3
DEN	DENSITY	5.2.4
RLS	RECORD LENGTH	5.2.5
WMO	SEQUENCE	
	WRITE STOP MODE	5.2.6
RMO	READ STOP MODE	5.2.7

C. AFTER ALL PARAMETERS FOR A SPECIFIED TEST SEQUENCE HAVE BEEN ENTERED, TYPE A SPACE, IF THE SELECTION IS VALID, THE PROGRAM WILL PRINT "O.K."

D. REPEAT STEPS B AND C FOR ALL DESIRED TEST SEQUENCES.

E. WHEN ALL DESIRED TEST SEQUENCES HAVE BEEN SPECIFIED AND "O.K." HAS BEEN PRINTED BY THE PROGRAM FOR EACH SET OF TEST SEQUENCE PARAMETERS, TYPE CARRIAGE RETURN.

F. THE PROGRAM WILL NOW START EXECUTING THE SELECTED TEST SEQUENCES ON THE DRIVES UNDER TEST.

G. AS EACH TEST SEQUENCE IS COMPLETED ON EACH DRIVE, THE ACCUMULATED ERRORS DETECTED WILL BE REPORTED, REFERENCE PARAGRAPH 7 FOR DETAILS.

THE FIRST SELECTION MADE IS "TST",  
TYPE IN THE NUMBER OF THE TEST DESIRED.

TEST  
NUMBER

DESCRIPTION

-----

- 0 WRITE TO EOT ON ONE DRIVE, TYPE ACCUMULATED WRITE ERRORS, CHANGE DRIVES.
- 1 WRITE ONE RECORD LENGTH SEQUENCE OR 256 RECORDS, CHANGE DRIVES, AS EACH DRIVE REACHES EOT TYPE ACCUMULATED WRITE ERRORS.
- 2 WRITE ONE RECORD, CHANGE DRIVES, AS EACH DRIVE REACHES EOT TYPE ACCUMULATED WRITE ERRORS.
- 3 WRITE TO EOT, TYPE ACCUMULATED WRITE ERRORS, REWIND, CHANGE DRIVES, READ TO EOT, TYPE ACCUMULATED READ ERRORS, CHANGE DRIVES.
- 4 WRITE ONE RECORD LENGTH SEQUENCE, BACKSPACE, READ, CHANGE DRIVES AS EACH DRIVE REACHES EOT TYPE ACCUMULATED WRITE AND READ ERROR INFORMATION.
- 5 WRITE ONE RECORD, BACKSPACE, READ, CHANGE DRIVES, AS EACH DRIVE REACHES EOT TYPE OUT ACCUMULATED ERROR INFORMATION.
- 6 WRITE ONE RECORD LENGTH SEQUENCE OR 256 RECORDS, CHANGE DRIVES, BACKSPACE, CHANGE DRIVES, READ, CHANGE DRIVES, AS EACH DRIVE REACHES EOT TYPE ACCUMULATED ERROR INFORMATION.
- 7 WRITE ONE RECORD, CHANGE DRIVES, BACKSPACE, CHANGE DRIVES, READ, CHANGE DRIVES, AS EACH DRIVE REACHES EOT TYPE ACCUMULATED ERROR INFORMATION.
- 8 TEST 8 RUNS DIFFERENTLY DEPENDING ON THE WMO AND RMO SELECTION, IF BOTH ARE SELECTED 0 (NONSTOP), EACH WRITE AND READ PASS WILL BE MADE TO THE END OF A RECORD LENGTH SEQUENCE BEFORE CHANGING DRIVES, IF EITHER SELECTION IS START/STOP (1) OR RANDOM (2) THAT PASS WILL BE MADE WITH DRIVE CHANGE BETWEEN EACH RECORD. (I.E., WMO=0 AND RMO=1, THE WRITE PASS IS MADE NONSTOP ON EACH DRIVE TO END OF RLS, THE READ PASS IS MADE START STOP WITH A DRIVE CHANGE BETWEEN EACH RECORD).

361 000 3 Good test to  
check heads

TEST 9 IS A READ ONLY TEST THAT MAY BE USED TO TEST DRIVE COMPATIBILITY OR MULTIPLE READ PASSES OVER DATA PREVIOUSLY WRITTEN. EITHER PATTERN 7 (RANDOM DATA) IS NOT A VALID SELECTION FOR TEST 9 EXCEPT WITH CERTAIN RESTRICTIONS.

- A. TEST 9 SELECTION FOLLOWS TEST 3.
- B. TEST 9 SELECTION FOLLOWS TEST 6 WITH SR0=1
- C. TEST 9 SELECTION FOLLOWS TEST 8 WITH SR0=1
- D. TEST 9 SELECTION FOLLOWS TEST 5 WITH SR0=1 AND ONLY A SINGLE DRIVE WAS SELECTED.

#### 5.2.2 DATA PATTERN SELECTION TABLE (PAT)

THE SECOND SELECTION IS "PAT".  
TYPE IN THE NUMBER OF THE DATA PATTERN DESIRED. USE TABLE "A" IF PARITY SELECTION WILL BE EVEN, TABLE "B" IF PARITY WILL BE ODD.

#### A. EVEN PARITY DATA PATTERNS

PAT	DATA	DESCRIPTION
0	0014	HIGH FREQUENCY OUTSIDE SKEW
1	0377 0177 0277 0337 0357 0367 0373 0375 0376	SLIDING NO BIT (0) CHARACTER PATTERN
2	0103	HIGH FREQUENCY EVERY OTHER TRACK
3	0273	HALF FREQUENCY OUTSIDE TRACKS HIGH FREQUENCY ALL INSIDE TRACKS
4	0001 0002 0003 0004	INCREMENTING CHARACTER PATTERN NO 00 CODES

THREE 0 BITS EACH TRACK  
EVERY 7TH WORD

0377  
0177  
0277  
0337  
0357  
0367  
0373  
0375  
0376

ALL 1'S ALL TRACKS

0377

RANDOM DATA PATTERN WITH NO 00  
CODES

RANDOM

8. 000 PARITY DATA PATTERNS  
-----

DESCRIPTION  
-----

HALF FREQUENCY OUTSIDE  
SKEW

0004

SLIDING 1 BIT CHAR-  
ACTER PATTERN (ISO-  
LATED BIT)

0000  
0200  
0100  
0040  
0020  
0010  
0004  
0002  
0001

HIGH FREQUENCY EVERY OTHER TRACK

0274

THREE 0'S, THREE 1'S, THREE 0'S,  
THREE 2'S, SIX 0'S EVERY TRACK

0037  
0076  
0201  
0174  
0003  
0370  
0007  
0360

INCREMENTING CHARACTER PATTERN  
00 CODES INCLUDED

0001  
0002  
0003  
0004

EACH TRACK 3 BITS EVERY  
SEVENTH WORD

0000  
0200  
0100  
0040  
0020  
0010  
0004  
0002  
0001

ALL ONES HIGH FREQUENCY ALL TRACKS  
RANDOM DATA WORD PATTERN 03 CODES  
INCLUDED

0377  
RANDOM

5.2.3 PARITY SELECTION (PAR)  
-----

THE THIRD SELECTION IS "PAR".  
SPECIFY PARITY BY TYPING THE DESIRED CODE AS DESCRIBED BELOW.

CODE PARITY  
----

0 EVEN  
1 ODD

5.2.4 DENSITY SELECTION (DEN)  
-----

AFTER PARITY HAS BEEN SELECTED, 800 BPI WILL AUTOMATICALLY  
BE SELECTED AND PRINTED BY THE PROGRAM.

# 5.2.5 RECORD LENGTH SEQUENCE SELECTION (RLS)

AFTER THE DENSITY SELECTION SPECIFY THE DESIRED RECORD LENGTH SEQUENCE SELECTION (RLS) BY TYPING THE DESIRED CODE AS DEFINED BELOW.

## CODE RECORD LENGTH SEQUENCE

- 0 ALL RECORDS ARE 24 WORDS (24 CHARACTERS)
- 1 ALL RECORDS ARE 4008 WORDS (4008 CHARACTERS)
- 2 RECORDS PROGRESS FROM 24 WORDS TO 4008 WORDS (MIN TO MAX)
- 3 RECORDS PROGRESS FROM 4008 WORDS TO 24 WORDS (MAX TO MIN)

# 5.2.6 WRITE STOP MODE SELECTION (WMO)

AFTER THE RECORD LENGTH SEQUENCE SELECTION, SPECIFY THE APPROPRIATE CODE FOR THE DESIRED WRITE STOP MODE (WMO).

## CODE WRITE STOP MODE

- 0 NONSTOP, THE NEXT WRITE OPERATION IS INITIATED WITHOUT WAITING FOR TAPE UNIT READY.
- 1 START/STOP. ALL WRITE OPERATIONS ARE INITIATED AFTER TAPE UNIT READY.
- 2 RANDOM. COMBINED NONSTOP, START/STOP AND RANDOM STALL OPERATIONS.

# 5.2.7 READ STOP MODE SELECTION (RMO)

AFTER WRITE STOP MODE SELECTION, SPECIFY THE APPROPRIATE CODE FOR THE DESIRED READ STOP MODE (RMO).

## CODE READ STOP MODE

- 0 NONSTOP. THE NEXT READ-COMPARE OPERATION IS INITIATED WITHOUT WAITING FOR TAPE UNIT READY.
- 1 START/STOP. ALL READ-COMPARE OPERATIONS ARE INITIATED AFTER TAPE UNIT READY.
- 2 RANDOM. COMBINED NONSTOP, START/STOP AND RANDOM STALL READ-COMPARE OPERATIONS.



# SWITCH REGISTER CONTROLS

THE FOLLOWING TABLE INDICATES THE CONTROL THE SWITCH REGISTER HAS OVER PROGRAM OPERATION WHEN A PARTICULAR SR BIT IS SET TO THE "1" STATE.

SR BIT	FUNCTION
0	DUMP ERROR COUNTERS AND PROCEED TO NEXT TEST SEQUENCE AT THE END OF ONE RECORD LENGTH SEQUENCE. (256 RECORDS FOR RLS=0 OR 1, ONE MIN TO MAX SEQUENCE FOR RLS=2, OR ONE MAX TO MIN SEQUENCE FOR RLS=3.)
1	DELETE WRITE WITH EXTENDED INTERRECORD GAP. USE OF THIS SWITCH WILL CAUSE RECORDS WITH WRITE ERRORS TO BE LEFT ON TAPE.
2	REPORT ALL WRITE ERRORS AS THEY OCCUR.
3	SELECT WRITE STATISTICAL RECOVERY. USE OF THIS SWITCH WILL SELECT THE BACKSPACE 2 RECORDS, SPACE FORWARD 1 RECORD, REWRITE SEQUENCE. THIS SEQUENCE CAUSES THE SAME RECORD TO BE REWRITTEN ON APPROXIMATELY THE SAME AREA OF TAPE IF A WRITE ERROR OCCURS.
4	REPORT ALL READ-COMPARE STATUS AND DATA ERRORS AS THEY OCCUR.
5	DELETE READ RETRIES. THIS SWITCH IS AN AID TO SCOPING READ CIRCUITS BY DELETING THE BACKSPACE, REREAD THICE SEQUENCE.
6	INCREMENT PATTERN SELECTION AND REPEAT LAST TEST SEQUENCE. PATTERN SELECTION IS RESET TO ITS ORIGINAL SELECTION AFTER PATTERN 7 HAS BEEN EXERCISED.
7	COMPLEMENT PARITY SELECTION AND REPEAT TEST SEQUENCE IF NEW PARITY SELECTION IS DIFFERENT THAN THE ORIGINAL TEST SEQUENCE.

8 NO FUNCTION

9 INCREMENT RLS SELECTION TO THE NEXT SEQUENCE. AFTER  
MAX. TO MIN. HAS BEEN EXERCISED RESET RLS SELECTION  
TO ITS ORIGINAL TEST SEQUENCE SELECTION.

10 INCREMENT WMO TO THE NEXT STOP MODE. AFTER RANDOM  
START/STOP HAS BEEN EXERCISED, RESET WMO TO ITS OR-  
IGINAL TEST SELECTION.

11 INCREMENT RMO TO THE NEXT READ STOP MODE. AFTER READ  
RANDOM START/STOP HAS BEEN EXERCISED, RESET RMO TO ITS  
ORIGINAL TEST SELECTION.

7. ERROR REPORTS  
-----

THE NORMAL MODE (SR=0000) OF OPERATION FOR THIS TEST IS TO SIMPLY  
ACCUMULATE THE ERRORS THAT OCCUR AND TO DUMP THE CONTENTS OF THE  
COUNTERS ON THE TTY AS EACH DRIVE REACHES EOT. THE ONLY  
ERROR REPORT THAT CAN OCCUR IN THIS MODE IS IF THE SYSTEM  
FAILS TO WRITE THE SAME RECORD FOUR TIMES IN A ROW  
WITH EXTENDED INTERRECORD GAP.

SWITCH REGISTER BITS 2 AND 4 ALTER THIS MODE OF ERROR REPORTING  
BY FORCING REPORTS FOR ALL WRITE AND READ=COMPARE ERRORS, RE-  
SPECTIVELY, AS THEY OCCUR.

7.1 ACCUMULATED WRITE ERRORS REPORT  
-----

WHEN A WRITE OPERATION ENCOUNTERS EOT, THE FOLLOWING REPORT  
IS PRINTED.

END OF TAPE  
DRV PAT PAR DEN MODE RECORDS LENGTH  
1 7 1 000 SSTP 02954 2016 MAX TO MIN  
WRITE ERRORS=0009  
RECOVERED AT 1 0002  
RECOVERED AT 2 0003  
RECOVERED AT 3 0001  
PERMANENT BAD\$PT 0003

WITH THE FOLLOWING DEFINITIONS:

SYMBOL	DEFINITION
-----	-----
DRV	DRIVE NUMBER
PAT	SELECTED DATA PATTERN

14

SELECTED PARITY  
 SELECTED DENSITY  
 WRITE STOP MODE  
 NUMBER OF RECORDS WRITTEN  
 SELECTED RECORD LENGTH SEQUENCE  
 (2016 SHOWN IS AVERAGE LENGTH)  
 TOTAL WRITE ERRORS  
 NUMBER OF WRITE ERRORS RECOVERED ON THE NTH  
 REWRITE  
 NUMBER OF WRITE ERRORS NOT  
 RECOVERED AFTER 7 REWRITES  
 PERMANENT BADSPT  
 RECOVERED AT N  
 WRITE ERRORS  
 RECOVERED AT N  
 WRITE ERRORS  
 RECOVERED ON THE NTH  
 REWRITE  
 NUMBER OF WRITE ERRORS NOT  
 RECOVERED AFTER 7 REWRITES

A SIMILAR REPORT WILL OCCUR WHEN THE END OF A RECORD LENGTH SEQUENCE IS REACHED AND SR0=1. HOWEVER "END OF TAPE" IS REPLACED BY "WRITE DUMP".

## 7.2 WRITE STATUS ERROR REPORT

IF SR2=1 WHEN A WRITE ERROR IS DETECTED, THE FOLLOWING ERROR REPORT WILL BE PRINTED.

WRITE STATUS ERROR  
 COMD FUNCTN STATUS WRDCNT CURADR RECORDS LENGTH  
 NNNN NNNN NNNN NNNN NNNN NNNN NNNN NNNN

WITH THE FOLLOWING DEFINITIONS.

SYMBOL	DEFINITION
--------	------------

COMD	COMMAND REGISTER
FUNCTN	FUNCTION/STATUS REGISTER
STATUS	MAIN STATUS REGISTER
WRDCNT	WORD COUNT REGISTER
CURADR	CURRENT ADDRESS REGISTER
RECORDS	RECORD NUMBER
LENGTH	RECORD LENGTH

THE ABOVE REPORT WILL ALSO BE FORCED, REGARDLESS OF SM SETTINGS, IF A WRITE ERROR PERSISTS AFTER FOUR REWRITES WITH EXTENDED INTERRECORD GAP. THE REPORT IS AMENDED WITH:

"XRG WRITTEN 4 TIMES".

### 7.3 ACCUMULATED READ ERRORS REPORT

WHEN A READ-COMPARE OPERATION ENCOUNTERS END, THE FOLLOWING REPORT IS PRINTED.

```

READ PASS
END OF TAPE
DRD  PAT PAR DEN MODE RECORDS LENGTH
1      7      1  800 NSTP  02954  2016 MAX TO MIN
READ ERRORS=0010
NON RECOVERABLE=0002
DATA ERRORS=0003
DATA NO STATUS=0001

```

WITH THE FOLLOWING DEFINITIONS (REFER TO 7.1):

SYMBOL	DEFINITION
-----	-----

READ ERRORS	TOTAL NUMBER OF READ ERRORS INCLUDING ERRORS ON REREAD.
NON RECOVERABLE	TOTAL NUMBER OF NON RECOVERABLE READ ERRORS (AFTER TWO REREADS)
DATA ERRORS	TOTAL NUMBER OF DATA (READ-COMPARE) ERRORS NOT INCLUDING REREADS.
DATA NO STATUS	TOTAL NUMBER OF DATA ERRORS NOT INCLUDING REREADS, WITHOUT ACCOMPANYING PARITY ERRORS OR OTHER STATUS ERRORS. THIS TYPE OF ERROR SHOULD ALWAYS BE CONSIDERED NON RECOVERABLE IN NATURE.

A SIMILAR REPORT WILL OCCUR WHEN THE END OF A RECORD LENGTH SEQUENCE IS REACHED AND SR0=1. HOWEVER "END OF TAPE" IS REPLACED BY "READ OUMP".

### 7.4 READ STATUS ERROR REPORT

IF SR4=1 WHEN A READ-COMPARE STATUS ERROR IS DETECTED, THE FOLLOWING ERROR REPORT WILL BE PRINTED.

```

READ STATUS ERROR
COMD FUNCTN STATUS WRDCNT CURADR RECORDS LENGTH
NNNN  NNNN  NNNN  NNNN  NNNN  NNNN  NNNN

```

REFER TO 7.2 FOR SYMBOL DEFINITIONS.

### 8. RESTRICTIONS

IF ANY DEVICE OTHER THAN THE TM0-E CAUSES A PROGRAM INTERRUPT, THE PROGRAM WILL HALT. THE REASON FOR THIS RESTRICTION IS THAT EXTREMELY TIME CRITICAL OPERATIONS ARE BEING EXECUTED IN THE BACKGROUND WHILE RECORDS ARE BEING WRITTEN AND READ-COMPARED. THE PROGRAM MUST CONSTANTLY MONITOR THE TM0-E CURRENT ADDRESS REGISTER AS DATA TRANSFERS ARE TAKING PLACE.

# PROGRAM DESCRIPTION

THIS PROGRAM IS DESIGNED AROUND TWO MAIN SUBROUTINES AND A SERIES OF SHORTER SUBROUTINES FOR MANIPULATING DRIVE SELECTION AND ERROR AND RECORD POSITION TABLES.

THE TWO MAIN SUBROUTINES ARE THE WRITE AND READ-COMPARE ROUTINES. THE WRITE ROUTINE EXITS AFTER EVERY RECORD, EVERY RECORD LENGTH SEQUENCE, OR AT END OF TAPE. THE READ ROUTINE EXITS WHEN THE LAST RECORD WRITTEN ON TAPE HAS BEEN READ. SOME TESTS MANIPULATE THE LAST RECORD COUNTER SO THE READ ROUTINE EXITS AFTER EVERY RECORD.

OTHER SUBROUTINES USED SET UP DRIVE SELECTION TO THE LOWEST DRIVE NUMBER, CHANGE DRIVE SELECTION TO THE NEXT HIGHEST DRIVE, AND GET AND SAVE ERROR AND POSITION TABLES FOR THE DRIVE CURRENTLY SELECTED.

ALL THESE SUBROUTINES ARE TIED TOGETHER IN VARIOUS SEQUENCES FOR TEST SELECTIONS 0 THROUGH 9.

ALL DATA IS CHECKED USING THE READ-COMPARE FUNCTION. THE READ FUNCTION IS NEVER USED. BY USING THIS METHOD, RECORDS ARE USED WHICH ARE MUCH LONGER THAN COULD EVER BE POSSIBLE IN A 4K SYSTEM THAT ALSO CONTAINS THIS PROGRAM. THE OVERALL CONCEPT USED TO ALLOW UTILIZING LONG RECORDS IN THIS PROGRAM IS TO USE A RELATIVELY SHORT DATA BUFFER, THEN MONITORING THE CURRENT ADDRESS REGISTER, RESET THE CURRENT ADDRESS TO THE START OF THE BUFFER WHEN IT REACHES THE END OF THE BUFFER. THIS TECHNIQUE INVOLVES TIME CRITICAL PROGRAM EXECUTION, HENCE NO PROGRAM INTERRUPTS ARE ALLOWED OTHER THAN THOSE CAUSED BY THE TMB-E.

LISTING (ATTACHED)

/IMBE DATA RELIABILITY TEST (9 TRACK) MAINDEC-08-DH7MD-A-L  
 /THIS PROGRAM WILL RUN IN ANY EXISTING MEMORY FIELD,  
 /  
 / COPYRIGHT 1971-1972, DIGITAL EQUIPMENT CORP.,  
 / MAYNARD, MASS,  
 /

6244 RMF=6244  
 6201 CDF=6201  
 6224 RIF=6224

/MAGNETIC TAPE IOT EQUALITIES

6701 LWCR=6701  
 6702 CWCR=6702  
 6703 LCAR=6703  
 6704 CCAR=6704  
 6705 LCMR=6705  
 6706 LFGR=6706  
 6707 LOBR=6707

6711 RWCR=6711  
 6713 RCAR=6713  
 6714 RMSR=6714  
 6715 RCMR=6715  
 6716 RFSR=6716  
 6717 ROBR=6717

6721 SKEF=6721  
 6722 SKCB=6722  
 6723 SKTD=6723  
 6724 SKTR=6724  
 6725 CLF=6725  
 6712 CLT=6712  
 6726 SOLE=6726  
 6727 SBRM=6727

0000	0000	*0	/FIELD	/PROGRAM FIELD	/SET UP FOR HIGH SPEED DUMP.
0001	0001	0	/	/	/CHANGED AS SHOWN FOR INTERRUPT
0002	0001	JMP 1	/RMF	/JMP 1 2	/HANDLING.
0003	0002	2	/JMP 1	/3/POINTER	/SUCH A SYSTEM ENABLES THIS PROGRAM
	0003	3	/1	/	/TO RUN IN ANY EXISTING MEMORY FIELD.

0130 3400 /PERMANENT VALUES  
 0131 7650 WRBUF, 3400 /READ=WRITE BUFFER STARTING ADDRESS  
 0132 0030 MAXLEN, 7650 /MAXIMUM RECORD LENGTH  
 MINLEN, 30 /MINIMUM RECORD LENGTH

2133 5675 /PAGE POINTERS  
 2134 5345 XCRANUM, RANGEN  
 2135 5066 XCRWIND, REWIND  
 0136 5127 XCLRIB, CLRTBL  
 2137 4200 XGOKW, GOKWD  
 2140 2444 XRDIT, READIT  
 2141 3102 XWRIT, WRITSEQ  
 2142 5400 XTSINC, TESINC  
 2143 4462 XGENPT, GENPAT  
 2144 1000 XRDINC, RDINCR  
 2145 1007 XSVCTR, SVCIRS  
 2146 1142 XWVCTR, MVTIRS  
 0147 1071 XWATKY, WAITKY  
 0150 1236 XCHGCV, CHGDRV  
 0151 1051 XALEOT, ALLEOT  
 0152 1035 XRSFDR, RSFDRV  
 0153 6051 XCLRAL, CLRALL  
 0154 5101 XDCPRT, DECPRT  
 0155 6000 XTYPDT, TYPDAT  
 0156 6155 XTXT, TEXTX  
 0157 6033 XOTY, OTY  
 0160 6040 XQCT1, OCT1  
 0161 6164 XTSP3, TSP3  
 0162 6122 XTIN, TIN  
 0163 1300 XTSR, TSR  
 0164 1314 XLEOT1, LBEOT1  
 0165 1327 XLEOT2, LBEOT2  
 0166 1335 XLBSAV, LBSAV  
 0167 1344 XLBINT, LBINT  
 0170 1712 XLBWAT, LBWAT  
 LBSET, LBSET

PAUSE

```

0200 0200 /TMBE DATA RELIABILITY TEST - TAPE 2 (9 TRACK)
0201 7410 /PARAMETER AND TEST SELECT DMS VIA KEYBOARD
0202 4570 *200
0203 4555 RELIAB, SKP
0204 6701 STL
0205 3022 JMS I XLBSET
0206 4546 JMS I XTEXT
0207 7041 TEXT30
0210 1360 DCA MSBITS
0211 7650 JMS I XWATKY
0212 5225 CIA
0213 1054 TAD K0215
0214 0365 SNA CLA
0215 1366 JMP REL1
0216 7630 TAD CHARIN
0217 5231 TAD K0370
0220 1363 TAD K7520
0221 4556 SNA CLA
0222 1361 JMP VLDDRV
0223 4556 TAD K0277
0224 5206 JMS I XOTY
0225 1022 TAD K025
0226 7450 JMS I XOTY
0227 5203 JMP RELIAB+3
0230 5256 JMP SLTSTS

REL1,
/
/ HAVE VALID DRIVE SELECTED
VLDORV, TAD K0254 /TYPE ","
JMS I XOTY /GET CHARACTER
TAD CHARIN /MASK TO FIND DRIVE NUMBER
AND K0007
DCA CDRIVE
TAD CDRIVE
CMA
DCA DELAY /TEMP STORAGE FOR - DRIVE NUMBER
STL
RAR /MOVE SELECT BIT RIGHT ONE PLACE
IS2 DELAY /IS THIS DRIVE SELECTED
JMP 1-2 /NO
DCA DELAY
TAD DELAY
AND MSBITS
CIA
CLL RAL
TAD DELAY
DCA MSBITS
JMP RELIAB+6

0231 1361 /
0232 4556 /HAVE VALID DRIVE SELECTED
0233 1054 VLDORV, TAD K0254 /TYPE ","
0234 0106 JMS I XOTY /GET CHARACTER
0235 3023 TAD CHARIN /MASK TO FIND DRIVE NUMBER
0236 1023 AND K0007
0237 7040 DCA CDRIVE
0240 3047 TAD CDRIVE
0241 7120 CMA
0242 7010 DCA DELAY
0243 2047 STL
0244 5242 RAR
0245 3047 IS2 DELAY
0246 1047 JMP 1-2
0247 0022 DCA DELAY
0250 7041 AND MSBITS
0251 7104 CIA
0252 1047 CLL RAL
0253 1022 TAD DELAY
0254 3022 DCA MSBITS
0255 5206 JMP RELIAB+6
  
```



0020	0000	*20	PASSWS, 0	/PARAMETER STORAGE
0021	0000			/PARAMETER STORAGE
0022	0000		MSBITS, 0	/MASTER DRIVE SELECT BITS
0023	0000		CDRIVE, 0	/CURRENT DRIVE
0024	0000		PATNUM, 0	/PATTERN NUMBER SELECTED
0025	0000		PARBT1, 0	/PARITY SELECTION
0026	0000		DRVDEN, 0	/DRIVE AND DENSITY SELECTED
0027	0000		RLTROL, 0	/RECORD LENGTH CONTROL
0030	0000		MCDBIT, 0	/WRITE STOP MODE
0031	0000		READMO, 0	/READ STOP MODE
0032	0000		RECSYS, 0	/READ PASS IS SELECTED
0033	0000		EXITMO, 0	/EXIT MODE
0034	0000		STRTLEN, 0	/STARTING BLOCK LENGTH
0035	0000		COMAND, 0	/COMMAND, DRIVE, PAR, DEN
0036	0000		BLKING, 0	/BLOCK LENGTH INCREMENTER
0037	0000		WRPASS, 0	/WRITE RECOVERY COUNT
0040	0000		NUMTST, 0	/NUMBER OF TESTS SELECTED
0041	0000		TBLCNT, 0	/NUMBER OF TESTS EXECUTED
0042	0000		EXETST, 0	/TESTS BEING EXECUTED
0043	0000		SWTEST, 0	/CLEARED IF PARAMETER INPUT IS THRU SWITCHES
0044	0000		EOSFLG, 0	/CLEARED AT END OF RLS
0045	0000		SVRECR, 0	/TEMP STORAGE
0046	0000			
0047	0000		DELAY, 0	/DELAY COUNTER
0050	0000		DELAY1, 0	/DELAY COUNTER
0051	0000		ROPASS, 0	/COUNT READ PASSES
0052	0000		STATRD, 0	/SAVE MAGIAPE STATUS WORD
0053	0000		STATRE, 0	
0054	0000		CHARIN, 0	/CHARACTER INPUT FROM KEYBOARD

0055	0000	/WRITE ERROR AND RECORD CONTROL REGISTERS
0056	0000	WRCHK, 0
0057	0000	RECV1, 0
0058	0000	RECV2, 0
0059	0000	RECV3, 0
0060	0000	RECV4, 0
0061	0000	RECV5, 0
0062	0000	RECV6, 0
0063	0000	RECV7, 0
0064	0000	PERMBS, 0
0065	0000	RECORD, 0
0066	0000	RECORD, 0
0067	0000	RECORD, 0
0068	0000	RECORD, 0
0069	0000	RECORD, 0
0070	0000	RECORD, 0
0071	0000	RECORD, 0
0072	0000	RECORD, 0
0073	0000	RECORD, 0
0074	0000	RECORD, 0
0075	0000	RECORD, 0
0076	0000	RECORD, 0
0077	0000	RECORD, 0
0100	0000	RECORD, 0
0101	0000	RECORD, 0
0102	0000	RECORD, 0
0103	0000	RECORD, 0
0104	0003	RECORD, 3
0105	0004	RECORD, 4
0106	0007	RECORD, 7
0107	0010	RECORD, 10
0110	0017	RECORD, 17
0111	0020	RECORD, 20
0112	0030	RECORD, 30
0113	0040	RECORD, 40
0114	0060	RECORD, 60
0115	0100	RECORD, 100
0116	0177	RECORD, 177
0117	0200	RECORD, 200
0120	0240	RECORD, 240
0121	0300	RECORD, 300
0122	0400	RECORD, 400
0123	7443	RECORD, 7443
0124	7751	RECORD, 7751
0125	7770	RECORD, 7770
0126	7771	RECORD, 7771
0127	7775	RECORD, 7775

/PERMANENT BAD SPOT ON TAPE  
/RECORD COUNT  
/RECORD COUNT OVERFLOW  
/LAST RECORD

/WRITE BLOCK LENGTH  
/SAVE STARTING RECORD

/READ ERROR AND RECORD CONTROL REGISTERS  
/READ BLOCK LENGTH

/ADJ REC READ  
/COUNT READ ERRORS

```

0256 4355
0257 6715
0260 3040
0261 7610
0262 7477
0263 1262
0264 3016
0265 4561
0266 4346
0267 7041
0270 1360
0271 7650
0272 5313
0273 1054
0274 0365
0275 1366
0276 7650

0277 5321
0300 1054
0301 7041
0302 1362
0303 7450
0304 5321
0305 7001
0306 7650
0307 5321
0310 1363
0311 4556
0312 5265
0313 7200
0314 1040
0315 7450
0316 5310
0317 5720
0320 0601

/SELECT
SLTSTS,
TESTS
JMS I XTEXT
TEXT31
DCA NUMTST
SKP CLA
TSTTBL-1
TAD 1-1
DCA 16
JMS I XTIN
JMS I XWATKY
CIA
TAD K0215
SNA CLA
JMP TSTYOS+3
TAD CHARIN
AND K0370
TAD K7520
SNA CLA

JMP VLOTST /YES
TAD CHARIN /NO
CIA
TAD K0270
SNA
JMP VLOTST /YES
IAG
SNA CLA /IS CHAR A 9?
JMP VLOTST /YES
TAD K0277 /CHARACTER WAS NOT 0-9
JMS I XOTY /TYPE "?"
JMP SLTSTS+7 /TRY AGAIN

CLA NUMTST /ANY TESTS SELECTED?
SNA /NO
JMP TSTYOS /YES, EXECUTE SELECTED
JMP I 1-1
EXECUT
    
```

/IS CHARACTER A CAR RET  
 /YES, SEE IF TESTS SELECTED  
 /NO

/IS CHAR A VALID NUMBER 0-9?

```

/ HAVE VALID TEST NUMBER SELECTED
VLOIST, CLA CLL
TAD CHARIN
AND K0017
RAR
RTR
RTR
DCA PASSWS+1
JMS I XTSP3
JMS I XWATKY
AND K0370
TAD K7520
SEA CLA
JMP TSTYQS
TAD CHARIN
AND K0007
DCA PASSWS
JMS I XTSP3
JMS I XWATKY
AND K0376
TAD K7520
SEA CLA
JMP TSTYQS
TAD CHARIN
RAL
RTL
AND K0010
TAD PASSWS
DCA PASSWS
JMS I XTSP3
JMP I +1
JMP 400
K0215, 215
K0254, 254
K0270, 270
K0277, 277
K0376, 376
K0370, 370
K7520, 7520

0321 7300
0322 1054
0323 0110
0324 7010
0325 7012
0326 7012
0327 3021
0330 4560
0331 4546
0332 0365
0333 1366
0334 7640
0335 5310
0336 1054
0337 0106
0340 3020
0341 4560
0342 4546
0343 0364
0344 1366
0345 7640
0346 5310
0347 1054
0350 7004
0351 7006
0352 0107
0353 1020
0354 3020
0355 4560
0356 5757
0357 0400
0360 0215
0361 0254
0362 0270
0363 0277
0364 0376
0365 0370
0366 7520

```

/SAVE IT

/TYPE 3 SPACES

/WAIT FOR PATTERN KEY

/MOVE INTO POSITION

/IS KEY VALID FOR PATTERN?

/NO

/YES

/MASK OCTAL

/SAVE IT

/WAIT FOR PATTERN KEY

/IS KEY VALID FOR PARITY? (0 OR 1)

/NO

/YES

/ROTATE INTO POSITION

/MASK PARITY BIT

/COMBINE PARITY WITH PATTERN

/SAVE IT

\*400

```

0400      TAD K0003
0401      TAD PASSWS+1
0402      DCA PASSWS+1
0403      TAD K270
0404      JMS I XOTY
0405      TAD K0260
0406      JMS I XOTY
0407      TAD K0260
0410      JMS I XOTY
0411      TAD K0240
0412      JMS I XOTY
0413      JMS I XWATKY
0414      AND K0374
0415      TAD KX7520
0416      SZA CLA
0417      JMP I XTSYQS
0420      TAD CHARIN
0421      RTL
0422      RTL
0423      AND K0060
0424      TAD PASSWS
0425      DCA PASSWS

0426      JMS I XTSP3
0427      JMS I XWATKY
0430      AND K0374
0431      TAD KX7520
0432      SZA CLA
0433      JMP I XTSYQS
0434      TAD CHARIN
0435      AND K0003
0436      TAD K7775
0437      SNA CLA
0440      JMP I XTSYQS
0441      TAD CHARIN
0442      RTL
0443      RTL
0444      RTL
0445      AND K0300
0446      TAD PASSWS
0447      DCA PASSWS
0450      JMS I XTSP3
0451      JMS I XWATKY
0452      AND K0374
0453      TAD KX7520
0454      SZA CLA
0455      JMP I XTSYQS

/DENSITY IS 800 BPI 9 TRACK
/COMBINE DENSITY OF 800 WITH TEST
/SAVE

/ECHO 2 ZEROS (00)

/WAIT FOR RECORD LENGTH KEY

/IS KEY FOR RECORD LENGTH 0-1-2-3
/NO, PRINT "?"
/YES
/MOVE RECORD LENGTH INTO POSITION

/COMBINE RECORD LENGTH WITH PAR AND PAI
/SAVE IT

/WAIT FOR WRITE STOP MODE KEY

/IS KEY FOR WRITE STOP MODE 0-1-1-3
/NO, PRINT "?"

/IS KEY AN INVALID 3?
/YES, PRINT "?"
/NO
/MOVE INTO POSITION

/COMBINE WRITE STOP MODE WITH RECORD LENGTH, PAR, PAI
/SAVE IT

/WAIT FOR READ MODE KEY

/IS KEY FOR READ STOP MODE 0-1-2-3
/NO, PRINT "?"

```

0456	1054	TAD CHARIN	/YES
0457	0104	AND K0003	
0460	1127	TAD K7775	
0461	7650	SNA CLA	/IS KEY AN INVALID 3?
0462	5707	JMP I XTSYQS	/YES, PRINT "?"
0463	1054	TAD CHARIN	/MOVE INTO POSITION
0464	7004	RAI	
0465	7006	RTL	
0466	0112	AND K0030	
0467	1021	TAD PASSWS+1	/COMBINE READ STOP MODE WITH TEST AND DENSITY
0470	3021	DCA PASSWS+1	/SAVE IT
0471	4546	JMS I XWATKY	
0472	7041	CIA	
0473	1120	TAD K0240	
0474	7440	SZA	
0475	5305	JMP +10	/SAVE TEST PARAMETERS
0476	1020	TAD PASSWS	
0477	3416	DCA I 16	/SAVE TEST PARAMETERS
0500	1021	TAD PASSWS+1	/+1 TO TESTS COUNTED
0501	3416	DCA I 16	
0502	2040	ISZ NUMIST	
0503	4555	JMS I XTEXT	
0504	6750	TEXT32	
0505	5706	JMP I +1	/NO,K,"
0506	0265	SLISTS+7	
0507	0310	XTSYQS, TSTYQS	
0510	0260	K0260, 260	
0511	0270	K270, 270	
0512	7520	KW7520, 7520	
0513	0374	K0374, 374	
		/TABLE OF TEST POINTERS	
		TESTX, 0	
0514	0000	CLA	/TEST NUMBER
0515	7200	TAD EXEIST	/+ TEST POINTER
0516	1042	TAD TBLIST	
0517	1323	DCA +1	
0520	3321	JMS I TBLIST+1	/MODIFIED, JMS TO TEST X
0521	4724	JMP I TESTX	
0522	5714		
0523	4724	TBLIST, JMS I +1	
0524	1400	TEST0	
0525	1414	TEST1	
0526	1437	TEST2	
0527	1462	TEST3	
0530	1506	TEST4	
0531	1535	TEST5	
0532	1600	TEST6	
0533	1645	TEST7	
0534	2000	TEST10	
0535	2200	TEST11	
0536	0000	L0TEXT, 0	
0537	4562	JMS I	XTSR
0540	1501	TEXT	"MAINDEC-08-DHTMD-A"
0541	1116		

0542 0405  
0543 0355  
0544 0070  
0545 5504  
0546 1024  
0547 1504  
0550 5501  
0551 0000  
0552 4561  
0553 5736

JMS I XTIN  
JMP I LBTEXT

0600	*600		
0600	/		
0600	0514	XTESTX, TESTX	
0601	7610	/EXECUTE TESTS SELECTED BY KEYBOARD	
0602	7500	EXECUT, CLA SKP	
0603	1202	TSITBL	
0604	3375	TAD -1	
0605	3041	DCA TSTDEX	
0606	1775	DCA TBLCNT	
0607	3020	TAD I TSTDEX	
0610	2375	DCA PASSWS	
0611	1775	ISZ TSTDEX	
0612	3021	TAD I TSTDEX	
0613	1021	DCA PASSWS+1	
0614	7006	TAD PASSWS+1	
0615	7006	RTL	
0616	7004	RTL	
0617	0110	AND K0017	
0620	3042	DCA EXETST	/SAVE TEST NUMBER
0621	7410	SKP	
0622	1200	PARAMS	
0623	4622	JMS I .1	
0624	3374	DCA EXECNT	
0625	4555	JMS I XTEXT	/TEST
0626	6756	TEXT33	
0627	1042	TAD EXETST	
0630	1120	TAD K0240	
0631	1111	TAD K0020	
0632	4556	JMS I XOTY	/PRINT TEST NUMBER
0633	4560	JMS I XTSP3	
0634	1041	TAD TBLCNT	
0635	4553	JMS I XDCPRT	/PRINT TABLE POSITION
0636	4560	JMS I XTSP3	
0637	1374	TAD EXECNT	
0640	4553	JMS I XDCPRT	/PRINT TEST EXECUTE COUNT
0641	7240	CLA CMA	
0642	3043	DCA SWTEST	
0643	4600	JMS I XTESTX	
0644	2374	ISZ EXECNT	
		GOTST,	
		TSRUNL,	



```

/SEE IF READ MODE IS TO CHANGE
0645 7604 LAS
0646 7010 RAR
0647 7620 SNL CLA
0650 5270 JMP INCHMO /CHANGE READ MODE IF AC SW11=1
0651 1127 TAD K7775 /NO
0652 1042 TAD EXETST
0653 7710 SPA CLA
0654 5270 JMP INCHMO
0655 1107 TAD K0010
0656 1031 TAD READMO
0657 3031 DCA READMO
0660 1031 TAD READMO
0661 7041 CIA
0662 1112 TAD K0030
0663 7640 SZA CLA
0664 5225 JMP TSRUNL /DONE ALL READ MODES?
0665 1021 TAD PASSWS+1 /NO, EXECUTE THIS NEW MODE
0666 0112 AND K0030 /YES, RE-INITIALIZE READ MODE
0667 3031 DCA READMO
/SEE IF WRITE MODE IS TO CHANGE
0670 7604 INCHMO, LAS
0671 7012 RTR
0672 7620 SNL CLA
0673 5307 JMP INCRCL /CHANGE WRITE MODE IF AC SW 10=1
0674 1030 TAD MODBIT /NO
0675 1115 TAD K0100 /+1 TO WRITE MODE
0676 3030 DCA MODBIT
0677 1030 TAD MODBIT
0678 7041 CIA
0679 1121 TAD K0300
0680 7640 SZA CLA
0681 5225 JMP TSRUNL /DONE ALL WRITE MODES?
0682 1020 TAD PASSWS /NO, EXECUTE THIS NEW MODE
0683 0121 AND K0300 /YES, REINITIALIZE WRITE MODE
0684 3030 DCA MODBIT
/SEE IF RECORD LENGTH IS TO CHANGE
0707 7604 INCRCL, LAS
0710 7012 RTR
0711 7010 RAR
0712 7620 SNL CLA
0713 5327 JMP CHGPAT /CHANGE RECORD LENGTH IF AC SW9=1
0714 1027 TAD RLTR0L /NO
0715 1111 TAD K0020 /+1 TO RECORD LENGTH
0716 3027 DCA RLTR0L
0717 1027 TAD RLTR0L
0720 7041 CIA
0721 1115 TAD K0100
0722 7640 SZA CLA
0723 5225 JMP TSRUNL /DONE ALL RECORD LENGTHS?
0724 1020 TAD PASSWS /NO, EXECUTE THIS NEW RECORD LENGTH
0725 0114 AND K0060 /YES, REINITIALIZE RECORD LENGTH
0726 3027 DCA RLTR0L

```

```

0727 7604 /SEE IF PATTERN IS TO CHANGE
CHGPAT, LAS
AND K0040 /CHANGE PATTERN IF AC SW 7=1
SNA CLA /NO
JMP CHRPAR /+1 TO PATTERN
ISZ PATNUM
TAD PATNUM
AND K0010
SNA CLA /DONE ALL PATTERNS?
JMP TSRUNL /NO, EXECUTE THIS PATTERN
TAD PASSWS /YES, REINITIALIZE PATTERN
AND K0007
DCA PATNUM
/SEE IF PARITY IS \O CHANGE
CHRPAT, LAS
AND K0020 /CHANGE PARITY IF AC SW 6=1
SNA CLA /NO
JMP RPTIST /CHANGE PARITY
TAD PARBT1
CMA
AND K0010
DCA PARBT1
TAD PASSWS
AND K0010
CIA
TAD PARBT1
SZA
JMP TSRUNL /BACK TO ORIGINAL PARITY
TEST NUMBER /NO, EXECUTE THIS PARITY
RPTIST, ISZ TSTDEX /+1 TO TEST NUMBER
ISZ TBLCNT /+1 TO TABLE COUNT
TAD TBLCNT
CIA
TAD NUMTST
SZA CLA
JMP I ,+4
HLT
JMP I ,+1
EXECUT
EXECUT+5 /NUMBER OF TIMES TO BE EXECUTED,
EXECNT, 0 /POINTER TO GET TEST,
TSTDEX, 0
0730 0113
0731 7650
0732 5343
0733 2024
0734 1024
0735 0107
0736 7650
0737 5225
0740 1020
0741 0106
0742 3024
0743 7604
0744 0111
0745 7650
0746 5361
0747 1025
0750 7040
0751 0107
0752 3025
0753 1020
0754 0107
0755 7041
0756 1025
0757 7440
0760 5225
0761 2375
0762 2041
0763 1041
0764 7041
0765 1040
0766 7640
0767 5773
0770 7402
0771 5772
0772 0601
0773 0606
0774 0000
0775 0000

```

```

1000      *1000
          /SAVE DRIVE RECORD AND ERROR COUNTERS
          SVCTRS, 0
1001      JMS CTRDEX
1002      TAD I 10
1003      DCA I 11
1004      ISZ 12
1005      JMP I 13
1006      JMP I SVCTRS
          /SAVE DRIVE COUNTERS

1007      /RESET DRIVE COUNTERS BACK INTO PROGRAM
          MVCTRS, 0
1008      JMS CTRDEX
1009      TAD I 11
1010      DCA I 10
1011      ISZ 12
1012      JMP I 13
1013      JMP I MVCTRS
          /RESTORE DRIVE COUNTERS

1014      /SET UP INDEX REGISTERS FOR MOVE AND SAVE COUNTERS
          CTRDEX, 0
1015      CLA SKP
1016      WRCHEK-1
1017      TAD I 11
1018      DCA I 10
1019      TAD K7751
1020      DCA 12
1021      CLA SKP
1022      DRVADR-1
1023      TAD I 11
1024      TAD CDRIVE
1025      DCA 17
1026      TAD I 17
1027      DCA 11
1028      JMP I CTRDEX
          /CLEAR ALL DRIVES
          CLRALL, 0
1029      JMS I XRSFOV
1030      JMS I XRWIND
1031      JMS I XCLRTB
1032      JMS SVCTRS
1033      JMS I XCHGOV
1034      JMP I 14
1035      CLA CMA
1036      DCA EOSFLG
1037      DCA I 12
1038      JMP I CLRALL
1039      TIFLG
          /RESET TO FIRST DRIVE
          /REWIND
          /CLEAR READ AND WRITE TABLES
          /SAVE COUNTERS
          /DONE ALL DRIVES?
          /NO

```

Address	Instruction	Comment
1051	0000	
1052	7200	
1053	3023	
1054	1313	
1055	3270	
1056	1270	
1057	0022	
1060	7640	
1061	5266	
1062	2023	
1063	1270	
1064	7110	
1065	5255	
1066	4315	
1067	5651	
1070	0000	
1071	0000	
1072	7200	
1073	1270	
1074	7110	
1075	2023	
1076	0314	
1077	7440	
1100	5304	
1101	4251	
1102	2271	
1103	5671	
1104	3270	
1105	1270	
1106	0022	
1107	7450	
1110	5272	
1111	4315	
1112	5671	
1113	4000	
1114	7760	

/SET UP FUNDAMENTAL COMMAND

```

1115 0000 /SETFUN, 0
1116 7200 CLA
1117 1026 TAD DRVDEN
1120 0104 AND K0003
1121 3026 DCA DRVDEN
1122 6224 RIF
1123 1026 TAD DRVDEN
1124 3026 DCA DRVDEN
1125 1023 TAD CDRIVE
1126 7100 CLL
1127 7012 RTR
1130 7012 TAD DRVDEN
1131 1026 TAD K0300
1132 1121 DCA DRVDEN
1133 3026 TAD PAR0T1
1134 1025 SZA CLA
1135 7040 TAD K0400
1136 1122 TAD DRVDEN
1137 1026 DCA COMAND
1140 3035 JMP I SETFUN
1141 5715 /WAIT FOR KBD FLAG AND READ CHARACTER
WAITKY, 0
1142 0000 KSF
1143 6031 JMP -1
1144 5343 KRB
1145 6036 TLS
1146 6046 TSF
1147 6041 JMP -1
1150 5347 DCA CHARIN
1151 3054 TAD CHARIN
1152 1054 JMP I WAITKY
1153 5742
1200 1200

```

/ECHO CHARACTER

\*1200 /INITIALIZE TEST PARAMETERS  
/PATNUM=PAR0T1-DRVDEN=PLTROL=MODBIT=READMO  
PARAMS, 0

```

1200 0000 CLA
1201 7200 TAD PASSWS
1202 1020 AND K0007
1203 0106 DCA PATNUM
1204 3024 TAD PASSWS
1205 1020 AND K0010
1206 0107 DCA PAR0T1
1207 3025 TAD PASSWS
1210 1020 AND K7000
1211 0235 DCA DRVDEN
1212 3026 TAD PASSWS+1
1213 1021 AND K0003
1214 0104 TAD DRVDEN
1215 1026 TAD K0300
1216 1121 DCA DRVDEN
1217 3026 RIF
1220 6224 TAD DRVDEN
1221 1026

```

/DRIVE NUMBERS AND DENSITY

1222 3026 DCA DRVDEN  
1223 1020 TAD PASSWS  
1224 0114 AND K0060  
1225 3027 DCA RLTR0L  
1226 1020 TAD PASSWS  
1227 0121 AND K0300  
1230 3030 DCA MODBIT

/RECORD LENGTH

/WRITE STOP MODE

1231	1021	TAD PASSWS+1	
1232	0112	AND K0030	
1233	3031	DCA READMO	/READ STOP MOQE
1234	5000	JMP I PARAMS	
1235	7000	K7000, 7000	
		/	
		/TEST FOR ALL DRIVES TO HAVE REACHED EOT	
1236	0000	ALLEOT, 0	
1237	7200	CLA	
1240	1032	TAD RECSYS	
1241	7440	SZA	/READ PASS SELECTED?
1242	5254	JMP TRDEOT	/YES
1243	4531	JMS I XRSFOV	
1244	4545	JMS I XMVCTR	
1245	1072	TAD WRTEOT	
1246	7450	SNA	/TEST EXIT EOS SELECTED
1247	5265	JMP ALLEOS	
1250	4547	JMS I XCHGDV	
1251	5244	JMP ALLEOT+6	
1252	2236	ISZ ALLEOT	
1253	5036	JMP I ALLEOT	
1254	4551	JMS I XRSFOV	/GET FIRST DRIVE
1255	4545	JMS I XMVCTR	/GET COUNTERS
1256	1103	TAD RDEOT	/GET READ TO EOT
1257	7450	SNA	/THIS DRIVE AT EOT?
1260	5265	JMP ALLEOS	/NO
1261	4547	JMS I XCHGDV	/ALL AT EOT?
1262	5253	JMP TRDEOT+1	/NO
1263	2236	ISZ ALLEOT	/YES
1264	5036	JMP I ALLEOT	
1265	7004	LAS	/TEST AC SW 001
1266	7004	RAL	/EXIT AT END OF SEQUENCE
1267	7620	SNL	/NO, GO TO EOT
1270	5036	JMP I ALLEOT	
1271	1044	TAD EOSFLG	
1272	7440	SZA	/WRITTEN TO EOS?
1273	5036	JMP I ALLEOT	/NO
1274	2236	ISZ ALLEOT	/SKIP TO END OF TEST
1275	4677	JMS I +2	/PRINT ERROR COUNTERS
1276	5036	JMP I ALLEOT	
1277	2344	CTRDMP	
		PAUSE	

/ROUTINE TO SEE IF EOT IS ERROR CAUSE,  
 /IF EOT IS ONLY C SE, TAKE NEXT INSTRUCTION,  
 /IF OTHER CAUSE, SKIP NEXT INSTRUCTION,

1300	0000	LBEOT1, 0
1301	6716	RFSR
1302	0312	AND K0037
1303	7640	SZA CLA
1304	5310	JMP .+4
1305	6714	RMSR
1306	0313	AND K3767
1307	7640	SZA CLA
1310	2300	ISZ LBEOT1
1311	5700	JMP I LBEOT1
1312	0037	K0037, 37
1313	3767	K3767, 3767

/ROUTINE TO SEE IF EOT ERROR CAUSE (USE STATUS SAVED IN MEM.),  
 /TAKE NEXT INSTR IF EOT, OTHERWISE SKIP NEXT INSTRUCTION,

1314	0000	LBEOT2, 0
1315	7200	CLA
1316	1053	TAD STATRE
1317	0312	AND K0037
1320	7640	SZA CLA
1321	5325	JMP .+4
1322	1052	TAD STATRD
1323	0313	AND K3767
1324	7640	SZA CLA
1325	2314	ISZ LBEOT2
1326	5714	JMP I LBEOT2

/ROUTINE TO SAVE STATUS REGISTERS,

1327	0000	LBSAV, 0
1330	6714	RMSR
1331	3052	DCA STATRD
1332	6716	RFSR
1333	3053	DCA STATRE
1334	5727	JMP I LBSAV

/ROUTINE TO SEE IF INTERRUPT CAUSED BY DEVICE,  
 /ERROR HALT IF DEVICE DID NOT CAUSE INTERRUPT,

1335	0000	LBINT, 0
1336	6721	SKEF
1337	7410	SKP
1340	5735	JMP I LBINT
1341	6723	SKTD
1342	7402	HLT
1343	5735	JMP I LBINT

/ILLEGAL INTERRUPT,

/ROUTINE TO WAIT FOR EF OR MTF,



1344	0000	LBWAT, 0
1345	6721	SKEF
1346	7410	SKP
1347	5744	JMP I LBWAT
1350	6723	SKTD
1351	5345	JMP -4
1352	5744	JMP I LBWAT

/TMBE DATA RELIABILITY TEST - TAPE 3 (9 TRACK)

1400

\*1400

/WRITE TO EOT  
 /REWIND GO TO NEXT DRIVE  
 TEST0, 0

1400 0000  
 1401 7200  
 1402 3033  
 1403 3032  
 1404 4552  
 1405 4535  
 1406 4542  
 1407 4540  
 1408 4534  
 1409 4547  
 1410 5205  
 1411 5205  
 1412 5205  
 1413 5600

CLA  
 DCA EXITMO  
 DCA RECSYS  
 JMS I XCLRAL  
 JMS I XCLRTB  
 JMS I XGENPT  
 JMS I XWRIT  
 JMS I XWRIND  
 JMS I XCHGDV  
 JMP TEST0+5  
 JMP I TEST0  
 /SET EXIT EOT  
 /NO READ PASS  
 /CLEAR ERROR COUNTERS  
 /CLEAR READ AND WRITE TABLE  
 /GENERATE PATTERN  
 /WRITE  
 /REWIND  
 /ANY MORE DRIVES?  
 /YES  
 /NO, EXIT

/WRITE 1 RECORD LENGTH SEQUENCE OR 256 RECORDS  
 /CHANGE DRIVES, GO TO EOT  
 TEST1, 0

1414 0000  
 1415 7200  
 1416 1115  
 1417 3033  
 1420 3032  
 1421 4552  
 1422 4551  
 1423 4545  
 1424 1072  
 1425 7440  
 1426 5232  
 1427 4542  
 1430 4540  
 1431 4544  
 1432 4547  
 1433 5223  
 1434 4550  
 1435 5222  
 1436 5614

CLA  
 TAD K2100  
 DCA EXITMO  
 DCA RECSYS  
 JMS I XCLRAL  
 JMS I XRSFOV  
 JMS I XMVCTR  
 TAD WRTEOT  
 SZA  
 JMP .+4  
 JMS I XGENPT  
 JMS I XWRIT  
 JMS I XSVCTR  
 JMS I XCHGDV  
 JMP TEST1+7  
 JMS I XALEOT  
 JMP TEST1+6  
 JMP I TEST1  
 /EXIT WRITE ROUTINE AT END OF RLS  
 /NO READ PASS  
 /CLEAR ERROR COUNTERS  
 /GET DRIVE COUNTERS  
 /IS THIS ONE AT EOT?  
 /YES  
 /GENERATE PATTERN  
 /WRITE  
 /SAVE COUNTERS THIS DONE  
 /DONE 1 RLS ALL DRIVES?  
 /NO, DO NEXT DRIVE  
 /ALL DRIVES AT EOT?  
 /NO  
 /YES, EXIT

/WRITE ONE RECORD  
/CHANGE DRIVES, GO TO EOT  
TEST2, 0

1437 0000  
1440 7200  
1441 1117  
1442 3033  
1443 3032  
1444 4532  
1445 4531  
1446 4545  
1447 1072  
1450 7440  
1451 5255  
1452 4542  
1453 4540  
1454 4544  
1455 4547  
1456 5246  
1457 4550  
1460 5245  
1461 5637

/EXIT WRITE ROUTINE AT EOT  
/NO READ PASS

/IS THIS ONE AT EOT  
/YES

/GENERATE PATTERN  
/WRITE  
/SAVE COUNTERS THIS DRIVE  
/DONE ALL DRIVES  
/NO, DO NEXT DRIVE  
/ALL DRIVES AT EOT  
/NO  
/YES, EXIT

/WRITE TO EOT, REWIND  
/CHANGE DRIVES, READ  
TEST3, 0

1462 0000  
1463 7200  
1464 3033  
1465 1122  
1466 3032  
1467 4532  
1470 4542  
1471 4545  
1472 4540  
1473 4534  
1474 4547  
1475 5271  
1476 4545  
1477 7200  
1500 3066  
1501 3067  
1502 4537  
1503 4547  
1504 5276  
1505 5662

/GENERATE PATTERN  
/GET COUNTERS THIS DRIVE  
/WRITE  
/REWIND  
/DONE ALL DRIVES  
/NO  
/GET COUNTERS THIS DRIVE

/READ  
/DONE ALL DRIVES?  
/NO  
/YES, EXIT

1506 0000  
1507 7200  
1510 1115  
1511 3033  
1512 1122  
1513 3032  
1514 4552  
1515 4551  
1516 4545  
1517 4542  
1520 7200  
1521 1072  
1522 7440  
1523 5330  
1524 4540  
1525 4536  
1526 4537  
1527 4544  
1530 4547  
1531 5316  
1532 4550  
1533 5315  
1534 5706

```

/WRITE 1 RLS
/BACKSPACE, READ, CHANGE IIVES
TEST4, 0
CLA K0100
TAD K0100
DCA EXITMO
TAD K0400
DCA RECSYS
JMS I XCLRAL
JMS I XRSFOV
JMS I XSVCTR
JMS I XCHGOV
JMS I XGENPT
CLA WRTEOT
TAD WRTEOT
SZA
JMP I+5
JMS I XWRIT
JMS I XGOBKW
JMS I XRDIT
JMS I XSVCTR
JMS I XCHGOV
JMS I XGENPT
JMP TEST4+10
JMS I XALEOT
JMP TEST4+7
JMP I TEST4

/IS THIS DRIVE AT EOT?
/YES
/WRITE
/BACK UP
/READ
/SAVE COUNTERS
/ANY MORE DRIVES?
/YES
/TEST FOR ALL DRIVES AT EOT
/NO
/YES, EXIT

```

1535 0000  
1536 7200  
1537 1117  
1540 3033  
1541 1122  
1542 3032  
1543 4552  
1544 4551  
1545 4542  
1546 4545  
1547 7200  
1550 1072  
1551 7440  
1552 5337  
1553 4540  
1554 4536  
1555 4537  
1556 4544  
1557 4547  
1560 5345  
1561 4550  
1562 5344  
1563 5735

```

/WRITE 1 RECORD, BACKSPACE, READ
/THEN CHANGE DRIVES
TEST5, 0
CLA K0200
TAD K0200
DCA EXITMO
TAD K0400
DCA RECSYS
JMS I XCLRAL
JMS I XRSFOV
JMS I XSVCTR
JMS I XCHGOV
JMS I XGENPT
JMS I XALEOT
JMP TEST5+10
JMS I XALEOT
JMP TEST5+7
JMP I TEST5

/IS THIS DRIVE AT EOT?
/YES
/WRITE
/BACK UP
/READ
/SAVE COUNTERS
/DONE ALL DRIVES?
/NO
/ALL DRIVES AT EOT?
/NO
/YES, EXIT

```

1600	0000	*1600	
1601	7200	/	/WRITE 1 RLS, CHANGE DRIVES, REPEAT
1602	1115	/BACKSPACE, CHANGE DRIVES, REPEAT	/BACKSPACE, CHANGE DRIVES, REPEAT
1603	3033	TEST6, 2	TEST6, 2
1604	1122	CLA K0100	/EXIT AT END OF RLS
1605	3032	TAD EXITMO	/WRITE PASS READ RECOVER
1606	4552	TAD K2400	/CLEAR ALL COUNTERS
1607	4531	DCA REC SYS	/GENERATE PATTERN
1610	4542	JMS I XCLRAL	/GET COUNTERS
1611	1611	JMS I XRSFDV	
1612	4545	JMS I XGENPT	
1613	7200	CLA XMVCTR	
1614	1072	TAD WTEOT	/AT EOT?
1615	7440	SZA	/YES
1616	5220	JMP +3	/WRITE
1617	4540	JMS I XSVCTR	/SAVE COUNTERS
1618	4544	JMS I XCHGDV	/DONE ALL DRIVES
1619	4547	JMS -10	/NO
1620	5211	JMS I XMVCTR	/GET COUNTERS AGAIN (FOR BKSP)
1621	1622	CLA	
1622	4545	TAD RDEOT	
1623	7200	SNA	/READ TO EOT IS SKP
1624	1103	JMS I XGOBKW	/BACK UP
1625	7450	JMS I XSVCTR	/SAVE POSITION
1626	4536	JMS I XCHGDV	/DONE ALL DRIVES
1627	4544	JMP -7	/NO
1628	4547	JMS I XMVCTR	/GET COUNTERS AGAIN (FOR READ)
1629	5222	CLA	
1630	4545	TAD RDEOT	
1631	7200	SNA	/READ TO EOT
1632	1103	JMS I XROIT	/NO, READ
1633	7450	JMS I XSVCTR	/SAVE COUNTERS
1634	4537	JMS I XCHGDV	/DONE ALL DRIVES
1635	4544	JMP -7	/NO
1636	4547	JMS I XALEOT	/ALL DRIVES AT EOT?
1637	5232	JMP TEST6+7	/NO
1638	1641	JMP I TEST6	/YES, EXIT
1639	1642		
1640	4550		
1641	5207		
1642	1643		
1643	5600		
1644			

```
1645 0000 /WRITE 1 RECORD, CHANGE DRIVES, REPEAT
1646 7200 /BACKSPACE, CHANDRIVES, REPEAT
1647 1117 /READ, CHANGE DRIVES, REPEAT
1650 3033 TEST7, 0
1651 1122 CLA K0200
1652 3032 DCA EXITMO /EXIT AT EVERY RECORD
1653 4552 TAD K0400 /WRITE PASS READ RECOVER
1654 4551 DCA RECSYS /CLEAR ALL COUNTERS
1655 4542 JMS I XCLRAL /GENERATE PATTERN
1656 4545 JMS I XRSFDV /GET COUNTERS
1657 7200 JMS I XGENPT
1660 1072 CLA JMS I XMVCTR
1661 7440 TAD WRTEOT /AT EOT? /YES
1662 5265 JMP +3 /WRITE COUNTERS
1663 4540 JMS I XWRIT /SAVE COUNTERS
1664 4544 JMS I XSVCTR /DONE ALL DRIVES
1665 4547 JMS I XCHGDV /NO
1666 5256 JMP -10 /GET COUNTERS AGAIN (FOR BKSP)
1667 4545 JMS I XMVCTR
1670 7200 CLA
1671 1103 TAD RDEOT
1672 7450 SNA /READ TO EOT IS SKP
1673 4536 JMS I XG08KW /BACK UP
1674 4544 JMS I XSVCTR /SAVE POSITION
1675 4547 JMS I XCHGDV /DONE ALL DRIVES
1676 5267 JMP -7 /NO
1677 4545 JMS I XMVCTR /GET COUNTERS AGAIN (FOR READ)
1700 7200 CLA
1701 1103 TAD RDEOT
1702 7450 SNA /READ TO EOT
1703 4537 JMS I XRDIT /NO, READ
1704 4544 JMS I XSVCTR /SAVE COUNTERS
1705 4547 JMS I XCHGDV /DONE ALL DRIVES
1706 5277 JMP -7 /NO
1707 4550 JMS I XALEOT /ALL DRIVES AT EOT?
1710 5254 JMP TEST7+7 /NO
1711 5645 JMP I TEST7 /YES, EXIT
```

1712	0000	LBSET, 0	/SET UP INTERRUPT LINKS.
1713	6201	COF 00	/DF=0.
1714	1340	TAD Z1	/RMF IO LOC1, FLD 0.
1715	3735	DCA I P1	
1716	1341	TAD Z2	/JMP I 3 TO LOC 2, FLD 0.
1717	3736	DCA I P2	
1720	7001	IAC	/1 TO LOC 3, FLD 0.
1721	3737	DCA I P3	
1722	6224	RIF	
1723	1313	TAD LBSET+1	/CHANGE TO PROG FLD.
1724	3325	DCA +1	
1725	6201	COF/PROG FLD.	
1726	1342	TAD Z3	
1727	3001	DCA 1	/JMP I 2 TO LOC 1, PF.
1730	7430	SZL	
1731	5712	JMP I LBSET	
1732	4555	JMS I XTEXT	/TITLE TEXT.
1733	1743	TEXTLB	/EXIT.
1734	5712	JMP I LBSET	
1735	0001	1	
1736	0002	2	
1737	0003	3	
1740	6244	Z1,	
1741	5403	Z2,	
1742	5402	Z3,	
1743	0000	TEXTLB, 0	/TN8E DATA RELIABILITY 9 TRK
1744	4561	JMS I XTIN	
1745	4562	JMS I XTSR	
1746	2415	2415	
1747	7005	7005	
1750	4004	4004	
1751	0124	0124	
1752	0140	0140	
1753	2205	2205	
1754	1411	1411	
1755	0102	0102	
1756	1114	1114	
1757	1124	1124	
1760	3140	3140	
1761	7140	7140	
1762	2422	2422	
1763	1300	1300	
1764	4561	JMS I XTIN	
1765	4561	JMS I XTIN	
1766	4777	JMS I (LBTEXT	
1767	5743	JMP I TEXTLB	

1777 0536  
2000

\*2000  
/

/WRITE 1 RECORD, CHANGE DRIVES  
/REPEAT UNTIL END OF RLS  
/BACKSPACE, CHANGE DRIVES  
/READ 1 RECORD, CHANGE DRIVES  
/REPEAT UNTIL END OF RLS  
TEST10, 0

2000 0000  
2001 7200  
2002 1030  
2003 7640  
2004 5207  
2005 1115  
2006 7410  
2007 1117  
2008 3033  
2009 1122  
2010 3032  
2011 4552  
2012 4542  
2013 4551  
2014 4545  
2015 4545  
2016 1066  
2017 3074  
2018 1067  
2019 3075  
2020 4544  
2021 4547  
2022 5216  
2023 7240

CLA TAD MODBIT /GET WRITE MODE  
SZA CLA /IS MODE NONSTOP OR START STOP  
JMP .+3 /NON STOP  
TAD K0100 /START STOP  
SKP K0200  
TAD EXITMO  
DCA EXITMO  
TAD K0400  
DCA REC9YS  
JMS I XCLRAL  
JMS I XGENPT  
JMS I XSF0V  
JMS I XSVCTR  
TAD RECORD  
DCA WRECR  
TAD RECORD+1  
DCA WRECR+1  
JMS I XSVCTR  
JMS I XCHGDV  
JMP .-7  
CLA CMA

/WRITE PASS, READ RECOVER  
/CLEAR COUNTERS  
/GENERATE PATTERN

TS10L2,

/RESET ALL DRIVES?  
/NO, SAVE LAS RCR NEXT DRIVE

2027 3044  
2030 4551  
2031 4545  
2032 7200  
2033 1072  
2034 7640  
2035 5251  
2036 1074  
2037 3045  
2040 1075  
2041 3046  
2042 4540  
2043 7200  
2044 1045  
2045 3074  
2046 1046  
2047 3075  
2050 4544

DCA EOSFLG  
JMS I XRSF0V  
JMS I XSVCTR  
CLA  
TAD WRT0T  
SZA CLA  
JMP TS10LS  
TAD WRECR  
DCA SVRECR  
TAD WRECR+1  
DCA SVRECR+1  
JMS I XWRIT  
CLA  
TAD SVRECR  
DCA WRECR  
TAD SVRECR+1  
DCA WRECR+1  
JMS I XSVCTR

/SET TO 0 AT END OF RLS

/HAS DRIVE WRITTEN TO EOT  
/YES, DONT WRITE ANYMORE

/SAVE START OF RLS

/WRITE

/SAVE COUNTERS FOR THIS DRIVE



```

2051 4547 TS10LS, JMS I XCHGOV /ANY DRIVES LEFT?
2052 5231 JMP TS10L1+1 /YES, WRITE ON IT
2053 7200 CLA /DRIVES AT END OF RLS
2054 1044 TAD EOSFLG /YES, BACK UP
2055 7450 SNA /MOVE COUNTERS
2056 5265 JMP .+7
2057 4545 JMS I XMVCTR

2060 1072 TAD WRTEOT /GET WRITTEN EOT FLAG
2061 7450 SNA /DRIVE AT EOT
2062 5230 JMP TS10L1 /NO, AT LEAST ONE ISN'T
2063 4547 JMS I XCHGOV /ALL DRIVES AT EOT
2064 5257 JMP .-5 /NO
2065 4551 JMS I XRSFDV /START 1ST DRIVE AGAIN
2066 4545 JMS I XMVCTR /GET COUNTERS
2067 1103 TAD RDEOT
2070 7450 SNA /DRIVE READ TO EOT
2071 4536 JMS I XGOBKW /NO, BACK UP
2072 4544 JMS I XSVCTR
2073 4547 JMS I XCHGOV /ALL DRIVES BACKED UP?
2074 5265 JMP .-7 /NO
2075 4551 JMS I XRSFDV /START 1ST DRIVE AGAIN
2076 4545 JMS I XMVCTR /GET DRIVE COUNTERS
2077 1103 TAD RDEOT /READ TO EOT YET?
2100 7640 SZA CLA /YES, BYPASS READ
2101 5341 JMP T10RND
2102 1070 TAD LASRCR
2103 7041 CIA
2104 1066 TAD RECORD
2105 7640 SZA CLA
2106 5314 JMP .+6
2107 1071 TAD LASRCR+1
2110 7041 CIA
2111 1067 TAD RECORD+1
2112 7650 SNA CLA
2113 5341 JMP T10RND
2114 1070 TAD LASRCR
2115 3045 DCA SVRECR
2116 1071 TAD LASRCR+1
2117 3046 DCA SVRECR+1
2120 1031 TAD READMO
2121 7650 SNA CLA
2122 5332 JMP .+10
2123 1066 TAD RECORD
2124 3070 DCA LASRCR
2125 1067 TAD RECORD+1
2126 3071 DCA LASRCR+1
2127 2070 ISZ LASRCR
2130 7410 SKP
2131 2071 ISZ LASRCR+1

T10RDP,
/HEAD TO LAST RECORD WRITTEN?
/YES
/SAVE LAST RECORD
/GET READ MODE
/NON STOP OR START STOP?
/NON-STOP
/START STOP
/SET EOS TO LAST RECORD READ+1

```

2132	4537	JMS I XRDIT	/READ
2133	7200	CLA	
2134	1045	TAD SVRECR	
2135	3070	DCA LASRCR	/RESTORE LAST WRITTEN
2136	1046	TAD SVRECR+1	
2137	3071	DCA LASRCR+1	
2140	4544	JMS I XSVCTR	/SAVE COUNTERS
2141	4547	JMS I XCHGDV	/DONE ALL DRIVES
2142	5276	JMP T10RDP	/NO
2143	4545	JMS I XMVCTR	/GET CURRENT COUNTERS
2144	7200	CLA	
2145	1070	TAD LASRCR	
2146	7041	CIA	
2147	1066	TAD RECORD	/AT
2150	7440	SEA	
2151	5357	JMP .+6	
2152	1071	TAD LASRCR+1	
2153	7041	CIA	
2154	1067	TAD RECORD+1	
2155	7650	SNA CLA	
2156	5275	JMP T10RDP-1	/NOT AT EOS, READ AGAIN
2157	4547	JMS I XCHGDV	/TEST FOR ALL READ TO EOT
2160	5343	JMP T10RND+2	/NO
2161	4550	JMS I XALEOT	/ALL AT EOT?
2162	5214	JMP TS10L2	/NO
2163	5600	JMP I TEST10	/YES, EXIT

```

2200      *2200
2201      /READ PASS ONLY
2202      /RANDOM PATTERN SELECTION IS INVALID
2203      TEST11, 0
2204      JMS I XCLRAL      /CLEAR COUNTERS
2205      TAD K0400
2206      DCA RECSYS
2207      TAD K0200
2208      DCA EXITMO
2209      CLA CMA
2210      DCA T11FLG
2211      JMS I XWRIT
2212      CLA
2213      TAD EOSFLG
2214      SEA
2215      JMS I XTSINC
2216      CLA
2217      TAD RECORD
2218      DCA T11INC
2219      TAD RECORD+1
2220      DCA T11INC+1
2221      DCA RECORD
2222      TAD PATNUM
2223      CIA
2224      TAD K0007
2225      SEA
2226      JMS I XGENPT
2227      CLA CMA
2228      DCA EOSFLG
2229      JMS I XRSFDV
2230      JMS I XMVCTR
2231      TAD RDEOT
2232      SEA
2233      JMP .+10
2234      TAD RECORD
2235      TAD T11INC
2236      DCA LASRCR
2237      TAD RECORD+1
2238      DCA LASRCR+1
2239      JMS I XSVCTR
2240      JMS I XCHGOV
2241      JMP T11LP1+3
2242      JMS I XRSFDV
2243      JMS I XMVCTR
2244      TAD RDEOT
2245      SEA
2246      JMP T11END
2247      TAD LASRCR
2248      DCA SVRECR
2249      TAD LASRCR+1
2250      DCA SVRECR+1
2251
2252      *2200
2253      /READ PASS ONLY
2254      /RANDOM PATTERN SELECTION IS INVALID
2255      TEST11, 0
2256      JMS I XCLRAL      /CLEAR COUNTERS
2257      TAD K0400
2258      DCA RECSYS
2259      TAD K0200
2260      DCA EXITMO
2261      CLA CMA
2262      DCA T11FLG
2263      JMS I XWRIT
2264      CLA
2265      TAD EOSFLG
2266      SEA
2267      JMS I XTSINC
2268      CLA
2269      TAD RECORD
2270      DCA T11INC
2271      TAD RECORD+1
2272      DCA T11INC+1
2273      DCA RECORD
2274      TAD PATNUM
2275      CIA
2276      TAD K0007
2277      SEA
2278      JMS I XGENPT
2279      CLA CMA
2280      DCA EOSFLG
2281      JMS I XRSFDV
2282      JMS I XMVCTR
2283      TAD RDEOT
2284      SEA
2285      JMP .+10
2286      TAD RECORD
2287      TAD T11INC
2288      DCA LASRCR
2289      TAD RECORD+1
2290      DCA LASRCR+1
2291      JMS I XSVCTR
2292      JMS I XCHGOV
2293      JMP T11LP1+3
2294      JMS I XRSFDV
2295      JMS I XMVCTR
2296      TAD RDEOT
2297      SEA
2298      JMP T11END
2299      TAD LASRCR
2300      DCA SVRECR
2301      TAD LASRCR+1
2302      DCA SVRECR+1
2303
2304      *2200
2305      /READ PASS ONLY
2306      /RANDOM PATTERN SELECTION IS INVALID
2307      TEST11, 0
2308      JMS I XCLRAL      /CLEAR COUNTERS
2309      TAD K0400
2310      DCA RECSYS
2311      TAD K0200
2312      DCA EXITMO
2313      CLA CMA
2314      DCA T11FLG
2315      JMS I XWRIT
2316      CLA
2317      TAD EOSFLG
2318      SEA
2319      JMS I XTSINC
2320      CLA
2321      TAD RECORD
2322      DCA T11INC
2323      TAD RECORD+1
2324      DCA T11INC+1
2325      DCA RECORD
2326      TAD PATNUM
2327      CIA
2328      TAD K0007
2329      SEA
2330      JMS I XGENPT
2331      CLA CMA
2332      DCA EOSFLG
2333      JMS I XRSFDV
2334      JMS I XMVCTR
2335      TAD RDEOT
2336      SEA
2337      JMP .+10
2338      TAD RECORD
2339      TAD T11INC
2340      DCA LASRCR
2341      TAD RECORD+1
2342      DCA LASRCR+1
2343      JMS I XSVCTR
2344      JMS I XCHGOV
2345      JMP T11LP1+3
2346      JMS I XRSFDV
2347      JMS I XMVCTR
2348      TAD RDEOT
2349      SEA
2350      JMP T11END
2351      TAD LASRCR
2352      DCA SVRECR
2353      TAD LASRCR+1
2354      DCA SVRECR+1
2355
2356      *2200
2357      /READ PASS ONLY
2358      /RANDOM PATTERN SELECTION IS INVALID
2359      TEST11, 0
2360      JMS I XCLRAL      /CLEAR COUNTERS
2361      TAD K0400
2362      DCA RECSYS
2363      TAD K0200
2364      DCA EXITMO
2365      CLA CMA
2366      DCA T11FLG
2367      JMS I XWRIT
2368      CLA
2369      TAD EOSFLG
2370      SEA
2371      JMS I XTSINC
2372      CLA
2373      TAD RECORD
2374      DCA T11INC
2375      TAD RECORD+1
2376      DCA T11INC+1
2377      DCA RECORD
2378      TAD PATNUM
2379      CIA
2380      TAD K0007
2381      SEA
2382      JMS I XGENPT
2383      CLA CMA
2384      DCA EOSFLG
2385      JMS I XRSFDV
2386      JMS I XMVCTR
2387      TAD RDEOT
2388      SEA
2389      JMP .+10
2390      TAD RECORD
2391      TAD T11INC
2392      DCA LASRCR
2393      TAD RECORD+1
2394      DCA LASRCR+1
2395      JMS I XSVCTR
2396      JMS I XCHGOV
2397      JMP T11LP1+3
2398      JMS I XRSFDV
2399      JMS I XMVCTR
2400      TAD RDEOT
2401      SEA
2402      JMP T11END
2403      TAD LASRCR
2404      DCA SVRECR
2405      TAD LASRCR+1
2406      DCA SVRECR+1
2407
2408      *2200
2409      /READ PASS ONLY
2410      /RANDOM PATTERN SELECTION IS INVALID
2411      TEST11, 0
2412      JMS I XCLRAL      /CLEAR COUNTERS
2413      TAD K0400
2414      DCA RECSYS
2415      TAD K0200
2416      DCA EXITMO
2417      CLA CMA
2418      DCA T11FLG
2419      JMS I XWRIT
2420      CLA
2421      TAD EOSFLG
2422      SEA
2423      JMS I XTSINC
2424      CLA
2425      TAD RECORD
2426      DCA T11INC
2427      TAD RECORD+1
2428      DCA T11INC+1
2429      DCA RECORD
2430      TAD PATNUM
2431      CIA
2432      TAD K0007
2433      SEA
2434      JMS I XGENPT
2435      CLA CMA
2436      DCA EOSFLG
2437      JMS I XRSFDV
2438      JMS I XMVCTR
2439      TAD RDEOT
2440      SEA
2441      JMP .+10
2442      TAD RECORD
2443      TAD T11INC
2444      DCA LASRCR
2445      TAD RECORD+1
2446      DCA LASRCR+1
2447      JMS I XSVCTR
2448      JMS I XCHGOV
2449      JMP T11LP1+3
2450      JMS I XRSFDV
2451      JMS I XMVCTR
2452      TAD RDEOT
2453      SEA
2454      JMP T11END
2455      TAD LASRCR
2456      DCA SVRECR
2457      TAD LASRCR+1
2458      DCA SVRECR+1
2459
2460      *2200
2461      /READ PASS ONLY
2462      /RANDOM PATTERN SELECTION IS INVALID
2463      TEST11, 0
2464      JMS I XCLRAL      /CLEAR COUNTERS
2465      TAD K0400
2466      DCA RECSYS
2467      TAD K0200
2468      DCA EXITMO
2469      CLA CMA
2470      DCA T11FLG
2471      JMS I XWRIT
2472      CLA
2473      TAD EOSFLG
2474      SEA
2475      JMS I XTSINC
2476      CLA
2477      TAD RECORD
2478      DCA T11INC
2479      TAD RECORD+1
2480      DCA T11INC+1
2481      DCA RECORD
2482      TAD PATNUM
2483      CIA
2484      TAD K0007
2485      SEA
2486      JMS I XGENPT
2487      CLA CMA
2488      DCA EOSFLG
2489      JMS I XRSFDV
2490      JMS I XMVCTR
2491      TAD RDEOT
2492      SEA
2493      JMP .+10
2494      TAD RECORD
2495      TAD T11INC
2496      DCA LASRCR
2497      TAD RECORD+1
2498      DCA LASRCR+1
2499      JMS I XSVCTR
2500      JMS I XCHGOV
2501      JMP T11LP1+3
2502      JMS I XRSFDV
2503      JMS I XMVCTR
2504      TAD RDEOT
2505      SEA
2506      JMP T11END
2507      TAD LASRCR
2508      DCA SVRECR
2509      TAD LASRCR+1
2510      DCA SVRECR+1
2511
2512      *2200
2513      /READ PASS ONLY
2514      /RANDOM PATTERN SELECTION IS INVALID
2515      TEST11, 0
2516      JMS I XCLRAL      /CLEAR COUNTERS
2517      TAD K0400
2518      DCA RECSYS
2519      TAD K0200
2520      DCA EXITMO
2521      CLA CMA
2522      DCA T11FLG
2523      JMS I XWRIT
2524      CLA
2525      TAD EOSFLG
2526      SEA
2527      JMS I XTSINC
2528      CLA
2529      TAD RECORD
2530      DCA T11INC
2531      TAD RECORD+1
2532      DCA T11INC+1
2533      DCA RECORD
2534      TAD PATNUM
2535      CIA
2536      TAD K0007
2537      SEA
2538      JMS I XGENPT
2539      CLA CMA
2540      DCA EOSFLG
2541      JMS I XRSFDV
2542      JMS I XMVCTR
2543      TAD RDEOT
2544      SEA
2545      JMP .+10
2546      TAD RECORD
2547      TAD T11INC
2548      DCA LASRCR
2549      TAD RECORD+1
2550      DCA LASRCR+1
2551      JMS I XSVCTR
2552      JMS I XCHGOV
2553      JMP T11LP1+3
2554      JMS I XRSFDV
2555      JMS I XMVCTR
2556      TAD RDEOT
2557      SEA
2558      JMP T11END
2559      TAD LASRCR
2560      DCA SVRECR
2561      TAD LASRCR+1
2562      DCA SVRECR+1
2563
2564      *2200
2565      /READ PASS ONLY
2566      /RANDOM PATTERN SELECTION IS INVALID
2567      TEST11, 0
2568      JMS I XCLRAL      /CLEAR COUNTERS
2569      TAD K0400
2570      DCA RECSYS
2571      TAD K0200
2572      DCA EXITMO
2573      CLA CMA
2574      DCA T11FLG
2575      JMS I XWRIT
2576      CLA
2577      TAD EOSFLG
2578      SEA
2579      JMS I XTSINC
2580      CLA
2581      TAD RECORD
2582      DCA T11INC
2583      TAD RECORD+1
2584      DCA T11INC+1
2585      DCA RECORD
2586      TAD PATNUM
2587      CIA
2588      TAD K0007
2589      SEA
2590      JMS I XGENPT
2591      CLA CMA
2592      DCA EOSFLG
2593      JMS I XRSFDV
2594      JMS I XMVCTR
2595      TAD RDEOT
2596      SEA
2597      JMP .+10
2598      TAD RECORD
2599      TAD T11INC
2600      DCA LASRCR
2601      TAD RECORD+1
2602      DCA LASRCR+1
2603      JMS I XSVCTR
2604      JMS I XCHGOV
2605      JMP T11LP1+3
2606      JMS I XRSFDV
2607      JMS I XMVCTR
2608      TAD RDEOT
2609      SEA
2610      JMP T11END
2611      TAD LASRCR
2612      DCA SVRECR
2613      TAD LASRCR+1
2614      DCA SVRECR+1
2615
2616      *2200
2617      /READ PASS ONLY
2618      /RANDOM PATTERN SELECTION IS INVALID
2619      TEST11, 0
2620      JMS I XCLRAL      /CLEAR COUNTERS
2621      TAD K0400
2622      DCA RECSYS
2623      TAD K0200
2624      DCA EXITMO
2625      CLA CMA
2626      DCA T11FLG
2627      JMS I XWRIT
2628      CLA
2629      TAD EOSFLG
2630      SEA
2631      JMS I XTSINC
2632      CLA
2633      TAD RECORD
2634      DCA T11INC
2635      TAD RECORD+1
2636      DCA T11INC+1
2637      DCA RECORD
2638      TAD PATNUM
2639      CIA
2640      TAD K0007
2641      SEA
2642      JMS I XGENPT
2643      CLA CMA
2644      DCA EOSFLG
2645      JMS I XRSFDV
2646      JMS I XMVCTR
2647      TAD RDEOT
2648      SEA
2649      JMP .+10
2650      TAD RECORD
2651      TAD T11INC
2652      DCA LASRCR
2653      TAD RECORD+1
2654      DCA LASRCR+1
2655      JMS I XSVCTR
2656      JMS I XCHGOV
2657      JMP T11LP1+3
2658      JMS I XRSFDV
2659      JMS I XMVCTR
2660      TAD RDEOT
2661      SEA
2662      JMP T11END
2663      TAD LASRCR
2664      DCA SVRECR
2665      TAD LASRCR+1
2666      DCA SVRECR+1
2667
2668      *2200
2669      /READ PASS ONLY
2670      /RANDOM PATTERN SELECTION IS INVALID
2671      TEST11, 0
2672      JMS I XCLRAL      /CLEAR COUNTERS
2673      TAD K0400
2674      DCA RECSYS
2675      TAD K0200
2676      DCA EXITMO
2677      CLA CMA
2678      DCA T11FLG
2679      JMS I XWRIT
2680      CLA
2681      TAD EOSFLG
2682      SEA
2683      JMS I XTSINC
2684      CLA
2685      TAD RECORD
2686      DCA T11INC
2687      TAD RECORD+1
2688      DCA T11INC+1
2689      DCA RECORD
2690      TAD PATNUM
2691      CIA
2692      TAD K0007
2693      SEA
2694      JMS I XGENPT
2695      CLA CMA
2696      DCA EOSFLG
2697      JMS I XRSFDV
2698      JMS I XMVCTR
2699      TAD RDEOT
2700      SEA
2701      JMP .+10
2702      TAD RECORD
2703      TAD T11INC
2704      DCA LASRCR
2705      TAD RECORD+1
2706      DCA LASRCR+1
2707      JMS I XSVCTR
2708      JMS I XCHGOV
2709      JMP T11LP1+3
2710      JMS I XRSFDV
2711      JMS I XMVCTR
2712      TAD RDEOT
2713      SEA
2714      JMP T11END
2715      TAD LASRCR
2716      DCA SVRECR
2717      TAD LASRCR+1
2718      DCA SVRECR+1
2719
2720      *2200
2721      /READ PASS ONLY
2722      /RANDOM PATTERN SELECTION IS INVALID
2723      TEST11, 0
2724      JMS I XCLRAL      /CLEAR COUNTERS
2725      TAD K0400
2726      DCA RECSYS
2727      TAD K0200
2728      DCA EXITMO
2729      CLA CMA
2730      DCA T11FLG
2731      JMS I XWRIT
2732      CLA
2733      TAD EOSFLG
2734      SEA
2735      JMS I XTSINC
2736      CLA
2737      TAD RECORD
2738      DCA T11INC
2739      TAD RECORD+1
2740      DCA T11INC+1
2741      DCA RECORD
2742      TAD PATNUM
2743      CIA
2744      TAD K0007
2745      SEA
2746      JMS I XGENPT
2747      CLA CMA
2748      DCA EOSFLG
2749      JMS I XRSFDV
2750      JMS I XMVCTR
2751      TAD RDEOT
2752      SEA
2753      JMP .+10
2754      TAD RECORD
2755      TAD T11INC
2756      DCA LASRCR
2757      TAD RECORD+1
2758      DCA LASRCR+1
2759      JMS I XSVCTR
2760      JMS I XCHGOV
2761      JMP T11LP1+3
2762      JMS I XRSFDV
2763      JMS I XMVCTR
2764      TAD RDEOT
2765      SEA
2766      JMP T11END
2767      TAD LASRCR
2768      DCA SVRECR
2769      TAD LASRCR+1
2770      DCA SVRECR+1
2771
2772      *2200
2773      /READ PASS ONLY
2774      /RANDOM PATTERN SELECTION IS INVALID
2775      TEST11, 0
2776      JMS I XCLRAL      /CLEAR COUNTERS
2777      TAD K0400
2778      DCA RECSYS
2779      TAD K0200
2780      DCA EXITMO
2781      CLA CMA
2782      DCA T11FLG
2783      JMS I XWRIT
2784      CLA
2785      TAD EOSFLG
2786      SEA
2787      JMS I XTSINC
2788      CLA
2789      TAD RECORD
2790      DCA T11INC
2791      TAD RECORD+1
2792      DCA T11INC+1
2793      DCA RECORD
2794      TAD PATNUM
2795      CIA
2796      TAD K0007
2797      SEA
2798      JMS I XGENPT
2799      CLA CMA
2800      DCA EOSFLG
2801      JMS I XRSFDV
2802      JMS I XMVCTR
2803      TAD RDEOT
2804      SEA
2805      JMP .+10
2806      TAD RECORD
2807      TAD T11INC
2808      DCA LASRCR
2809      TAD RECORD+1
2810      DCA LASRCR+1
2811      JMS I XSVCTR
2812      JMS I XCHGOV
2813      JMP T11LP1+3
2814      JMS I XRSFDV
2815      JMS I XMVCTR
2816      TAD RDEOT
2817      SEA
2818      JMP T11END
2819      TAD LASRCR
2820      DCA SVRECR
2821      TAD LASRCR+1
2822      DCA SVRECR+1
2823
2824      *2200
2825      /READ PASS ONLY
2826      /RANDOM PATTERN SELECTION IS INVALID
2827      TEST11, 0
2828      JMS I XCLRAL      /CLEAR COUNTERS
2829      TAD K0400
2830      DCA RECSYS
2831      TAD K0200
2832      DCA EXITMO
2833      CLA CMA
2834      DCA T11FLG
2835      JMS I XWRIT
2836      CLA
2837      TAD EOSFLG
2838      SEA
2839      JMS I XTSINC
2840      CLA
2841      TAD RECORD
2842      DCA T11INC
2843      TAD RECORD+1
2844      DCA T11INC+1
2845      DCA RECORD
2846      TAD PATNUM
2847      CIA
2848      TAD K0007
2849      SEA
2850      JMS I XGENPT
2851      CLA CMA
2852      DCA EOSFLG
2853      JMS I XRSFDV
2854      JMS I XMVCTR
2855      TAD RDEOT
2856      SEA
2857      JMP .+10
2858      TAD RECORD
2859      TAD T11INC
2860      DCA LASRCR
2861      TAD RECORD+1
2862      DCA LASRCR+1
2863      JMS I XSVCTR
2864      JMS I XCHGOV
2865      JMP T11LP1+3
2866      JMS I XRSFDV
2867      JMS I XMVCTR
2868      TAD RDEOT
2869      SEA
2870      JMP T11END
2871      TAD LASRCR
2872      DCA SVRECR
2873      TAD LASRCR+1
2874      DCA SVRECR+1
2875
2876      *2200
2877      /READ PASS ONLY
2878      /RANDOM PATTERN SELECTION IS INVALID
2879      TEST11, 0
2880      JMS I XCLRAL      /CLEAR COUNTERS
2881      TAD K0400
2882      DCA RECSYS
2883      TAD K0200
2884      DCA EXITMO
2885      CLA CMA
2886      DCA T11FLG
2887      JMS I XWRIT
2888      CLA
2889      TAD EOSFLG
2890      SEA
2891      JMS I XTSINC
2892      CLA
2893      TAD RECORD
2894      DCA T11INC
2895      TAD RECORD+1
2896      DCA T11INC+1
2897      DCA RECORD
2898      TAD PATNUM
2899      CIA
2900      TAD K0007
2901      SEA
2902      JMS I XGENPT
2903      CLA CMA
2904      DCA EOSFLG
2905      JMS I XRSFDV
2906      JMS I XMVCTR
2907      TAD RDEOT
2908      SEA
2909      JMP .+10
2910      TAD RECORD
2911      TAD T11INC
2912      DCA LASRCR
2913      TAD RECORD+1
2914      DCA LASRCR+1
2915      JMS I XSVCTR
2916      JMS I XCHGOV
2917      JMP T11LP1+3
2918      JMS I XRSFDV
2919      JMS I XMVCTR
2920      TAD RDEOT
2921      SEA
2922      JMP T11END
2923      TAD LASRCR
2924      DCA SVRECR
2925      TAD LASRCR+1
2926      DCA SVRECR+1
2927
2928      *2200
2929      /READ PASS ONLY
2930      /RANDOM PATTERN SELECTION IS INVALID
2931      TEST11, 0
2932      JMS I XCLRAL      /CLEAR COUNTERS
2933      TAD K0400
2934      DCA RECSYS
2935      TAD K0200
2936      DCA EXITMO
2937      CLA CMA
2938      DCA T11FLG
2939      JMS I XWRIT
2940      CLA
2941      TAD EOSFLG
2942      SEA
2943      JMS I XTSINC
2944      CLA
2945      TAD RECORD
2946      DCA T11INC
2947      TAD RECORD+1
2948      DCA T11INC+1
2949      DCA RECORD
2950      TAD PATNUM
2951      CIA
2952      TAD K0007
2953      SEA
2954      JMS I XGENPT
2955      CLA CMA
2956      DCA EOSFLG
2957      JMS I XRSFDV
2958      JMS I XMVCTR
2959      TAD RDEOT
2960      SEA
2961      JMP .+10
2962      TAD RECORD
2963      TAD T11INC
2964      DCA LASRCR
2965      TAD RECORD+1
2966      DCA LASRCR+1
2967      JMS I XSVCTR
2968      JMS I XCHGOV
2969      JMP T11LP1+3
2970      JMS I XRSFDV
2971      JMS I XMVCTR
2972      TAD RDEOT
2973      SEA
2974      JMP T11END
2975      TAD LASRCR
2976      DCA SVRECR
2977      TAD LASRCR+1
2978      DCA SVRECR+1
2979
2980      *2200
2981      /READ PASS ONLY
2982      /RANDOM PATTERN SELECTION IS INVALID
2983      TEST11, 0
2984      JMS I XCLRAL      /CLEAR COUNTERS
2985      TAD K0400
2986      DCA RECSYS
2987      TAD K0200
2988      DCA EXITMO
2989      CLA CMA
2990      DCA T11FLG
2991      JMS I XWRIT
2992      CLA
2993      TAD EOSFLG
2994      SEA
2995      JMS I XTSINC
2996      CLA
2997      TAD RECORD
2998      DCA T11INC
2999      TAD RECORD+1
3000      DCA T11INC+1
3001      DCA RECORD
3002      TAD PATNUM
3003      CIA
3004      TAD K0007
3005      SEA
3006      JMS I XGENPT
3007      CLA CMA
3008      DCA EOSFLG
3009      JMS I XRSFDV
3010      JMS I XMVCTR
3011      TAD RDEOT
3012      SEA
3013      JMP .+10
3014      TAD RECORD
3015      TAD T11INC
3016      DCA LASRCR
3017      TAD RECORD+1
3018      DCA LASRCR+1
3019      JMS I XSVCTR
3020      JMS I XCHGOV
3021      JMP T11LP1+3
3022      JMS I XRSFDV
3023      JMS I XMVCTR
3024      TAD RDEOT
3025      SEA
3026      JMP T11END
3027      TAD LASRCR
3028      DCA SVRECR
3029      TAD LASRCR+1
3030      DCA SVRECR+1
3031
3032      *2200
3033      /READ PASS ONLY
3034      /RANDOM PATTERN SELECTION IS INVALID
3035      TEST11, 0
3036      JMS I XCLRAL      /CLEAR COUNTERS
3037      TAD K0400
3038      DCA RECSYS
3039      TAD K0200
3040      DCA EXITMO
3041      CLA CMA
3042      DCA T11FLG
3043      JMS I XWRIT
3044      CLA
3045      TAD EOSFLG
3046      SEA
3047      JMS I XTSINC
3048      CLA
3049      TAD RECORD
3050      DCA T11INC
3051      TAD RECORD+1
3052      DCA T11INC+1
3053      DCA RECORD
3054      TAD PATNUM
3055      CIA
3056      TAD K0007
3057      SEA
3058      JMS I XGENPT
3059      CLA CMA
3060      DCA EOSFLG
3061      JMS I XRSFDV
3062      JMS I XMVCTR
3063      TAD RDEOT
3064      SEA
3065      JMP .+10
3066      TAD RECORD
3067      TAD T11INC
3068      DCA LASRCR
3069      TAD RECORD+1
3070      DCA LASRCR+1
3071      JMS I XSVCTR
3072      JMS I XCHGOV
3073      JMP T11LP1+3
3074      JMS I XRSFDV
3075      JMS I XMVCTR
3076      TAD RDEOT
3077      SEA
3078      JMP T11END
3079      TAD LASRCR
3080      DCA SVRECR
3081      TAD LASRCR+1
3082      DCA SVRECR+1
3083
3084      *2200
3085      /READ PASS ONLY
3086      /RANDOM PATTERN SELECTION IS INVALID
3087      TEST11, 0
3088      JMS I XCLRAL      /CLEAR COUNTERS
3089      TAD K0400
3090      DCA RECSYS
3091      TAD K0200
3092      DCA EXITMO
3093      CLA CMA
3094      DCA T11FLG
3095      JMS I XWRIT
3096      CLA
3097      TAD EOSFLG
3098      SEA
3099      JMS I XTSINC
3100      CLA
3101      TAD RECORD
3102      DCA T11INC
3103      TAD RECORD+1
3104      DCA T11INC+1
3105      DCA RECORD
3106      TAD PATNUM
3107      CIA
3108      TAD K0007
3109      SEA
3110      JMS I XGENPT
3111      CLA CMA
3112      DCA EOSFLG
3113      JMS I XRSFDV
3114      JMS I XMVCTR
3115      TAD RDEOT
3116      SEA
3117      JMP .+10
3118      TAD RECORD
3119      TAD T11INC
3120      DCA LASRCR
3121      TAD RECORD+1
3122      DCA LASRCR+1
3123      JMS I XSVCTR
3124      JMS I XCHGOV
3125      JMP T11LP1+3
3126      JMS I XRSFDV
3127      JMS I XMVCTR
3128      TAD RDEOT
3129      SEA
3130      JMP T11END
3131      TAD LASRCR
3132      DCA SVRECR
3133      TAD LASRCR+1
3134      DCA SVRECR+1
3135
3136      *2200
3137      /READ PASS ONLY
3138      /RANDOM PATTERN SELECTION IS INVALID
3139      TEST11, 0
3140      JMS I XCLRAL      /CLEAR COUNTERS
3141      TAD K0400
3142      DCA RECSYS
3143      TAD K0200
3144      DCA EXITMO
3145      CLA CMA
3146      DCA T11FLG
3147      JMS I XWRIT
3148      CLA
3149      TAD EOSFLG
3150      SEA
3151      JMS I XTSINC
3152      CLA
3153      TAD RECORD
3154      DCA T11INC
3155      TAD RECORD+1
3156      DCA T11INC+1
3157      DCA RECORD
3158      TAD PATNUM
3159      CIA
3160      TAD K0007
3161      SEA
3162      JMS I XGENPT
3163      CLA CMA
3164      DCA EOSFLG
3165      JMS I XRSFDV
3166      JMS I XMVCTR
3167      TAD RDEOT
3168      SEA
3169      JMP .+10
3170      TAD RECORD
3171      TAD T11INC
3172      DCA LASRCR
3173      TAD RECORD+1
3174      DCA LASRCR+1
3175      JMS I XSVCTR
3176      JMS I XCHGOV
3177      JMP T11LP1+3
3178      JMS I XRSFDV
3179      JMS I XMVCTR
3180      TAD RDEOT
3181      SEA
3182      JMP T11END
3183      TAD LASRCR
3184      DCA SVRECR
3185      TAD LASRCR+1
3186      DCA SVRECR+1
3187
3188      *2200
3189      /READ PASS ONLY
3190      /RANDOM PATTERN SELECTION IS INVALID
3191      TEST11, 0
3192      JMS I XCLRAL      /CLEAR COUNTERS
3193      TAD K0400
3194      DCA RECSYS
3195      TAD K0200
3196      DCA EXITMO
3197      CLA CMA
3198      DCA T11FLG
3199      JMS I XWRIT
3200      CLA
3201      TAD EOSFLG
3202      SEA
3203      JMS I XTSINC
3204      CLA
3205      TAD RECORD
3206      DCA T11INC
3207      TAD RECORD+1
3208      DCA T11INC+1
3209      DCA RECORD
3210      TAD PATNUM
3211      CIA
3212      TAD K0007
3213      SEA
3214      JMS I XGENPT
3215      CLA CMA
3216      DCA EOSFLG
3217      JMS I XRSFDV
3218      JMS I XMVCTR
3219      TAD RDEOT
3220      SEA
3221      JMP .+10
3222      TAD RECORD
3223      TAD T11INC
3224      DCA LASRCR
3225      TAD RECORD+1
3226      DCA LASRCR+1
3227      JMS I XSVCTR
3228      JMS I XCHGOV
3229      JMP T11LP1+3
3230      JMS I XRSFDV
3231      JMS I XMVCTR
3232      TAD RDEOT
3233      SEA
3234      JMP T11END
3235      TAD LASRCR
3236      DCA SVRECR
3237      TAD LASRCR+1
3238      DCA SVRECR+1
3239
3240      *2200
3241      /READ PASS ONLY
3242      /RANDOM PATTERN SELECTION IS INVALID
3243      TEST11, 0
3244      JMS I XCLRAL      /CLEAR COUNTERS
3245      TAD K0400
3246      DCA RECSYS
3247      TAD K0200
3248      DCA EXITMO
3249      CLA CMA
3250      DCA T11FLG
3251      JMS I XWRIT
3252      CLA
3253      TAD EOSFLG
3254      SEA
3255      JMS I XTSINC
3256      CLA
3257      TAD RECORD
3258      DCA T11INC
3259      TAD RECORD+1
3260      DCA T11INC+1
3261      DCA RECORD
3262      TAD PATNUM
3263      CIA
3264      TAD K0007
3265      SEA
3266      JMS I XGENPT
3267      CLA CMA
3268      DCA EOSFLG
3269      JMS I XRSFDV
3270      JMS I XMVCTR
3271      TAD RDEOT
3272      SEA
3273      JMP .+10
3274      TAD RECORD
3275      TAD T11INC
3276      DCA LASRCR
3277      TAD RECORD+1
3278      DCA LASRCR+1
3279      JMS I XSVCTR
3280      JMS I XCHGOV
3281      JMP T11LP1+3
3282      JMS I XRSFDV
3283      JMS I XMVCTR
3284      TAD RDEOT
3285      SEA
3286      JMP T11END
3287      TAD LASRCR
3288      DCA SVRECR
3289      TAD LASRCR+1
3290      DCA SVRECR+1
3291
3292      *2200
3293      /READ PASS ONLY
3294      /RANDOM PATTERN SELECTION IS INVALID
3295      TEST11, 0
3296      JMS I XCLRAL      /CLEAR COUNTERS
3297      TAD K0400
3298      DCA RECSYS
3299      TAD K0200
3300      DCA EXITMO
3301      CLA CMA
3302      DCA T11FLG
3303      JMS I XWRIT
3304      CLA
3305      TAD EOSFLG
3306      SEA
3307      JMS I XTSINC
3308      CLA
3309      TAD RECORD
3310      DCA T11INC
3311      TAD RECORD+1
3312      DCA T11INC+1
3313      DCA RECORD
3314      TAD PATNUM
3315      CIA
3316      TAD K0007
3317      SEA
3318      JMS I XGENPT
3319      CLA C
```

2261	1031	TAD READMO	
2262	7650	SNA CLA	
2263	5273	JMP .+10	/NONSTOP OR START STOP?
2264	1066	TAD RECORD	/NON STOP
2265	3070	DCA LASRCR	
2266	1067	TAD RECORD+1	
2267	3071	DCA LASRCR+1	
2270	2070	ISZ LASRCR	
2271	7410	SKP	/+1 TO EXIT READ AFTER 1 RECORD
2272	2071	ISZ LASRCR+1	
2273	4537	JMS I XRDIT	/READ 1 RECORD OT TO END RLS
2274	7200	CLA	
2275	1045	TAD SVRECR	/RESTORE END RECORD
2276	3070	DCA LASRCR	
2277	1046	TAD SVRECR+1	
2300	3071	DCA LASRCR+1	
2301	4544	JMS I XSVCTR	
2302	4547	JMS I XCHGDV	/DONE ALL DRIVES?
2303	5251	JMP T11RDL	/NO
2304	4550	JMS I XALEOT	/ALL DRIVES AT EOT
2305	7410	SKP	
2306	5600	JMP I TEST11	
T11END,			
2307	4551	JMS I XRSFOV	
2310	4545	JMS I XMVCTR	/GET COUNTERS AGAIN
2311	7200	CLA	
2312	1066	TAD RECORD	
2313	7041	CIA	
2314	1070	TAD LASRCR	
2315	7640	SZA CLA	
2316	5324	JMP .+6	
2317	1067	TAD RECORD+1	
2320	7041	CIA	
2321	1071	TAD LASRCR+1	
2322	7650	SNA CLA	/AT END OF RLS?
2323	3044	DCA EOSFLG	/YES
2324	4547	JMS I XCHGDV	/CHECKED ALL DRIVES?
2325	5310	JMP T11LP2	
2326	7200	CLA	
2327	1044	TAD EOSFLG	
2330	7440	SZA	/AT END OF RLS?
2331	5251	JMP T11ROL	/NO
2332	4550	JMS I XALEOT	/TEST EOS DUMP SWITCH
2333	5230	JMP T11LP1	
2334	5600	JMP I TEST11	/EXIT
2335	2000	T11INC, 0	
2336	2000	0	
2337	2000	T11FLG, 0	

/DUMP ERROR COUNTERS ON ALL DRIVES

ERRDMP, JMS I XSVCTR  
JMS CTROMP

HLT  
JMP , -1

CTROMP, 0 JMS I XRSFDV  
JMS I XMVCTRS  
TAD T11FLG  
SNA

JMP COMEND-5  
JMS I XTEXT  
TEXT34

JMS I XTEXT  
TEXT36  
CLA SKP

WRDMP  
JMS I , -1  
TAD RECSYS

SNA  
JMP COMEND  
JMS I XTEXT

TEXT35  
JMS I XTEXT  
TEXT36

CLA SKP  
READMP  
JMS I , -1

JMS I XCHGOV  
JMP CTROMP+2  
JMP I CTROMP

COMEND,  
JMS I XCHGOV  
JMP CTROMP+2  
JMP I CTROMP

PAUSE

2340 4544  
2341 4344  
2342 7402  
2343 5342  
2344 0000  
2345 4551  
2346 4545  
2347 1337  
2348 7450  
2349 5366  
2350 4555  
2351 6765  
2352 4555  
2353 7011  
2354 7610  
2355 4612  
2356 4757  
2357 1032  
2358 7450  
2359 5373  
2360 4555  
2361 7000  
2362 4555  
2363 7011  
2364 7610  
2365 4674  
2366 4771  
2367 4547  
2368 5346  
2369 5744

```

2400          *2400
/IMSE DATA RELIABILITY TEST TAPE 4 (9 TRACK)
/GET SWS AND START TEST ROUTINE
/1 DRV OPERATION ONLY

STRTES, STL
7120 JMS I XLBSET
4570 LAS
7604 AND KX7000
2403 0243
2404 1356
2405 3026
2406 6224
2407 1026
2410 3026
2411 4534
2412 7604
2413 3020
2414 7604
2415 0110
2416 3024
2417 3025
2420 7402
2421 7604
2422 3021
2423 4535
2424 3043
2425 7402
2426 4542
2427 4540
2430 1032
2431 7650
2432 5235
2433 4536
2434 4537
2435 6714
2436 0107
2437 7650
2440 5226
2441 7402
2442 5201
2443 7000

STR1,
7120 JMS I XLBSET
4570 LAS
7604 AND KX7000
2403 0243
2404 1356
2405 3026
2406 6224
2407 1026
2410 3026
2411 4534
2412 7604
2413 3020
2414 7604
2415 0110
2416 3024
2417 3025
2420 7402
2421 7604
2422 3021
2423 4535
2424 3043
2425 7402
2426 4542
2427 4540
2430 1032
2431 7650
2432 5235
2433 4536
2434 4537
2435 6714
2436 0107
2437 7650
2440 5226
2441 7402
2442 5201
2443 7000

/SET UP INTERRUPT SERVICE,
/GET FIRST WD SWS,
/MASK DRV NUMBER

/REWIND
/GET SWS AGAIN
/FOR FIRST CONTROL WRD

/PATTERN NUMBER TO
/GENERATE FIRST PATTERN
/PAR BIT IS IN PATTERN
/WAIT FOR 2ND SW WORD
/GET IT
/SAVE FOR EXECUTE
/CLR ERROR TABLES
/INDICATE SWITCH TEST
/WAIT CLEAR SWS
/GENERATE PATTERN
/DO WRITE OPERATION

/READ PASS SELECTED
/NO
/MOVE BKWD TO FRST WRT
/MAKE READ PASS
/GET STATUS

/AT EOT
/NO MAKE NEXT WRT PASS
/HLT END OF TEST
/RESTART FIRST WORD

```

```

5244 /SET UP WRITE SEQUENCE
2445 /GET INFO FROM JMS+1 AND JMS+2
2446 WRTSEQ, JMP .
2447 CLA RECORD
2448 SZA CLA /DOING RECORD 0
2449 JMP NOINCR /NO
2450 TAD RECORD+1
2451 SZA CLA /AK FLAG = 0
2452 SZA CLA /YES NOT BLK 0
2453 JMP NOINCR /TEST SWS
2454 TAD SWTEST
2455 SZA CLA /NO
2456 JMP NOTSWS /ENTER HERE IF PARAMETERS WERE SUPPLIED THRU THE AC SWITCHES
2457 SKP
2458 PARAMS
2459 JMS I, -1
2460 TAD PASSWS
2461 AND K0400
2462 DCA RECSYS
2463 TAD PASSWS+1
2464 AND K0300
2465 DCA EXITMO
2466 /ENTER HERE IF PARAMETERS WERE SUPPLIED THRU THE KEYBOARD
2467 NOTSWS, TAD RLTR0L
2468 AND K0020
2469 SZA CLA /MIN LENGTH STRIP IS SKP
2470 TAD MAXLEN /MAX LENGTH SELECTED
2471 SNA /MIN LENGTH SELECTED
2472 TAD MINLEN
2473 CMA IAC
2474 DCA STRLEN
2475 DCA BLKING
2476 TAD RLTR0L
2477 AND K0040
2478 SNA CLA /CHNGING LENGTH
2479 JMP NOINCR-2 /NO
2480 TAD DRV0EN /DENSITY
2481 AND K0003
2482 TAD TADINC
2483 DCA +1 /TO GET INCREMENTER
2484 TAD INCTBL /GET DENSITY INC +
2485 DCA BLKING

```

2513	1034	TAD STRLEN	/GET STARTING LENGTH
2514	1131	TAD MAXLEN	
2515	7650	SNA CLA	/START LEN = MAX
2516	5322	JMP NOINCR-2	/YES LV BLKING +
2517	1036	TAD BLKING	
2520	7041	CMA IAC	/MAKE INCR -
2521	3036	DCA BLKING	/SO LENGTH GETS LNGR
2522	1034	TAD STRLEN	
2523	3073	DCA WRTLEN	/SET UP FIRST LENGTH
2524	1025	DCA WRTLEN	/MOVE PARITY BIT INTO POSITION
2525	7106	NOINCR, TAD PARBT1	
2526	7006	CLL RTL	
2527	7004	RTL	
2530	1026	RAL	/PAR + DRV + DENSITY
2531	3035	TAD DRVDEN	
2532	1066	DCA COMAND	
2533	3074	TAD RECORD	/SAVE STARTING RECORD
2534	1067	DCA WRECR	
2535	3075	TAD RECORD+1	
2536	2755	DCA WRECR+1	
2537	7410	ISZ I X11FLG	
2540	5644	SKP I WRTSEQ	
2541	7001	JMP I WRTSEQ	
2542	3755	IAC	
2543	1125	DCA I X11FLG	
2544	3037	TAD K770	/SET 8 PASS COUNTER
2545	5746	DCA WRPASS	/WRT SEQUENCE
2546	2600	JMP I +1	
2547	1350	STRTOP	
2550	0010	TAD INC, TAD INCTBL	
2551	0004	INCTBL, 10	/24 CHARACTER 200 BPI
2552	0002	4	/12 CHARACTER 556 BPI
2553	0002	2	/6 CHARACTER 800 BPI
2554	5644	2	/IN CASE OF SWITCH GOOF
2555	2337	WSEQXT, JMP I WRTSEQ	
2556	0303	X11FLG, T11FLG	
		K0303, 303	



```

2600      *2600
2600      /PERFORM WRITE SEQUENCE OPERATION
2600      STRTOP, TAD COMAND      /LOAD CM WHEN CONTROL READY,
2600      SKCB
2600      JMP .-1
2600      CLF
2600      LCMR      /CLEAR STATUS.
2600      SKTR      /LOAD CM.
2600      JMP .-1      /WAIT FOR TRANSPORT,
2600      NONSTP, CLF
2600      TAD COMAND
2600      LCMR      /LOAD WC.
2600      TAD WRTLEN
2600      LCMR      /LOAD CA.
2600      TAD WRBUF
2600      LCMR      /SET UP INTERRUPT LINK;
2600      TAD XTSTST
2600      DCA 2      /LOAD FR (WRITE) AND GO.
2600      TAD K4100
2600      LFGR
2600      TAD PATNUM
2600      TAD K7771
2600      SNA CLA
2600      JMS STRPAT      /PATTERN 7 RANDOM
2600      /YES SEE IF REGEN VALID
2600      /PROGRAM STAYS IN THIS LOOP UNTIL INTERRUPT
2600      ION
2600      CLA
2600      JMP I ,+1
2600      CAMON
2600      XTSTST, TSTSTP      /CA MONITOR
2600      /AT PROG INT COMES TO TSTSTP
2600      TSTSTP, JMS I XLBINT
2600      RMSR
2600      SPA CLA
2600      JMP WRTERR      /READ STATUS
2600      TAD WRPASS      /EF = 1
2600      TAD K0010      /YES SEE IF EOT
2600      SNA CLA
2600      JMP NSTSEL-3      /ERR REC PASS
2600      TAD WRPASS
2600      SKP
2600      ISZ PERMB5
2600      TAD .-1
2600      DCA .+1
2600      ISZ RECV1
2600      TAD K7770
2600      DCA WRPASS
2600      TAD MODBIT
2600      SZA
2600      JMP STOPCP
2600      /CONSTANT
2600      /ISZ PERMB5 = WRITE PASS
2600      /TO +1 RECV1 TO RECV7
2600      /RESET 8 PASS COUNTER
2600      /AC = 0 IS NONSTOP
2600      /START STOP SELECTED

```

```

2656 1037 NSTSEL, TAD WRPASS
2657 1107 TAD K0010
2660 7650 SNA CLA
2661 4541 JMS I XTSINC
2662 5207 JMP NONSTP
/NO INCR BLOCK NUMBER
/GO AGAIN

2663 0117 STOPOP, AND K0200
2664 7640 SZA CLA
2665 4273 JMS RANSTP
2666 1037 TAD WRPASS
2667 1107 TAD K0010
2670 7650 SNA CLA
2671 4541 JMS I XTSINC
2672 5200 JMP STRTOP
/NO INCR BLOCK NUMBER
/GO AGAIN
/ERROR RECVR PASS

/SELECTION IS RANDOM START STOP STALL
RANSTP, JMP
/GET RANDOM NUMBER
/MASK 0 TO 127
/MAKE -1 TO -128
/SAVE IT
/4
/4 - RAN COUNT
/1 TO 4
/IS GO NONSTOP

2673 5273 JMS I XTRANUM
2674 4533 AND K0177
2675 0116 CMA
2676 7040 DCA DELAY1
2677 3050 TAD K0004
2678 1105 TAD DELAY1
2679 1050 SNA CLA
2680 7700 JMP NSTSEL
2683 5256 TAD K7443
2684 1123 DCA DELAY
2685 3047 ISZ DELAY
2686 2047 JMP -1
2687 5306 ISZ DELAY1
2688 2050 JMP -5
2689 5304 JMP I RANSTP
2690 5673 /SEE IF APPROPRIATE TO REGENERATE RANDOM DATA
STRPAT, JMP
/READ PASS SELECTED
/YES DON'T REGEN

2713 5313 JMS I XGENPT
2714 1032 TAD WRPASS
2715 7640 SNA CLA
2716 5713 JMS I STRPAT
2717 1037 TAD WRPASS
2720 1107 TAD K0010
2721 7650 SNA CLA
2722 4542 JMS I XGENPT
2723 5713 JMP I STRPAT
/NO REGENERATE PATTERN
/FINISH WRITE OPERATION

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2724 4563 /EF=1 DURING WRITE TEST EOT AND RECVR OPTION
2725 5763 WRITEH, JMS I XLEOT1
2726 1037 JMP I XENDTP /TYPE EOT INFO
2727 1107 TAD WRPASS
2730 7650 TAD K0010
2731 2055 SNA CLA /FIRST ERROR PASS
2732 7604 ISZ WRCHEK /YES +1 WRT CHECH ERRS
2733 7006 LAS /TEST AC SW 2#1
2734 7700 RTL /TYPE ALL WRITE ERRORS
2735 5345 SNA CLA
2736 4555 JMP TESREC /NO
2737 6200 JMS I XTEXT /PRINT TEXT
2740 4554 TEXT1 /TYPE STANDARD DATA INFORMATION
2741 4560 JMS I XTYPDT
2742 1073 JMS I XTSP3
2743 7041 TAD WRTLEN
2744 4553 CIA I XOCPR1
2745 7604 JMS LAS
2746 0122 TESREC, LAS
2747 7640 AND K0400
2750 5765 SZA CLA /TEST AC SW 3#1
2751 1032 JMP I XSTREC /STATISTICAL RECOVERY
2752 7440 TAD RECSYS /YES TRY 7 MORE TIMES
2753 4766 SZA /READ PASS SELECTED
2754 1125 JMS I XRCXRG /YES WRITE XING
2755 3037 TAD K7770 /RESET WRITE COUNT
2756 6714 DCA WRPASS
2757 0107 RMR
2760 7640 AND K0010
2761 5763 SZA CLA /EOT = 1
2762 5253 JMP I XENDTP /YES TYPE EOT INFO
2763 4600 JMP NSTSEL-3 /TEST STOP MODE
2764 4100 XENDTP, ENDTAP
2765 5275 K4100, 4100
2766 3000 XSTREC, STAREC
XRCXRG, XRGREC

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3000      *3000
          /WRITE RECOVERY UTILIZIN EXTENDED INTER RECORD GAP (XIRG)
          /USED AFTER 7 REWRITES AFTER EACH WRITE ERROR
          /IF STATICAL RECOVERY NOT SELECTED.
          /USED ONLY IF READ PASS IS SELECTED
          XRGREG, 0

3000      CLA
3001      TAD K7774
3002      DCA WRPASS /COUNT 4 REWRITES
3003      LAS
3004      RAL /TEST AC SW1=1
3005      SPA CLA
3006      JMP XRGRCO
3007      JMS I XBACK1
3008      CLA
3009      TAD COMAND /LOAD CM WHEN CONTROL READY,
3010      SKCB
3011      JMP .-1
3012      CLF
3013      LCMR
3014      SKTR
3015      JMP .-1
3016      CLF
3017      TAD COMAND
3018      LCMR
3019      TAD WRTLEN /LOAD WC.
3020      LCMR /LOAD CA.
3021      TAD WRBUF
3022      LCMR
3023      TAD XRG1 /SET UP INTERRUPT,
3024      DCA 2 /WRITE WITH XIRG.
3025      TAD K4500
3026      LFGR
3027      ION
3028      CLA
3029      JMP I .+1
3030      CAMON
3031      XRG1, XRG1
3032      /RETURN HERE AFTER PROGRAM INTERRUPT
3033      XRG1, XRG1
3034      JMS I XLBINT /SAVE STATUS,
3035      JMS I XLBSAV
3036      TAD STATRD
3037      CLA
3038      CLA
3039      CLA
3040      CLA
3041      CLA
3042      CLA
3043      CLA
3044      CLA
3045      CLA
3046      CLA
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3094      CLA
3095      CLA
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3097      CLA
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3100      CLA
3101      CLA
3102      CLA
3103      CLA
3104      CLA
3105      CLA
3106      CLA
3107      CLA
3108      CLA
3109      CLA
3110      CLA
3111      CLA
3112      CLA
3113      CLA
3114      CLA
3115      CLA
3116      CLA
3117      CLA
3118      CLA
3119      CLA
3120      CLA
3121      CLA
3122      CLA
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3130      CLA
3131      CLA
3132      CLA
3133      CLA
3134      CLA
3135      CLA
3136      CLA
3137      CLA
3138      CLA
3139      CLA
3140      CLA
3141      CLA
3142      CLA
3143      CLA
3144      CLA
3145      CLA
3146      CLA
3147      CLA
3148      CLA
3149      CLA
3150      CLA
3151      CLA
3152      CLA
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3044 7710 SPA CLA /HAVE EF?
3045 5251 JMP .+4 /YES
3046 1125 XRGRCO, TAD K7770 /RESET 7 COUNTER
3047 3037 DCA WRPASS /EOT ONLY?
3050 5600 JMP I XRGREC /YES,
3051 4564 JMS I XLEOT2 /DONE 4 XIRG?
3052 5246 JMP XRGRCO /NO
3053 2037 ISZ WRPASS /TYPEOUT STATUS EVERY 4 XIRG
3054 5204 JMP XRGREC+4
3055 4555 JMS I XTEXT /WRITE STATUS ERROR
3056 6200 TEXT1 /TYPE STANDARD DATA INFORMATION
3057 4554 JMS I XTYPDT /4TH EXTENDED RECORD GAP
3060 4555 JMS I XTEXT
3061 6442 TEXT14
3062 1052 TAD STATRD

3063 0107 AND K0010 /EOT=1
3064 7650 SNA CLA /NO
3065 5201 JMP XRGREC+1
3066 1026 TAD DRVDEN
3067 6725 CLF
3070 6705 LCMR
3071 1276 TAD K5100
3072 6706 LFGR
3073 4567 JMS I XLBWAT /WRITE EOF,
3074 4565 JMS I XLBSAV /WAIT DONE,
3075 5600 JMP I XRGREC /SAVE STATUS,

K5100, 5100
K4500, 4500
XBACK1, BACK1
K7774, 7774
3101 7774

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4255 1031 RTSSTP, TAD READMC /GET READ MODE BITS
4256 7440 SZA /NON STOP?
4257 5275 JMP RDSSTP NO
4260 4543 JMS I XRDINC INCR FOR NEXT BLOCK
4261 7200 CLA
4262 1066 TAD RECORD
4263 7041 CMA IAC
4264 1070 TAD LASRCR
4265 7440 SZA
4266 5273 JMP .+5
4267 1067 TAD RECORD+1
4270 7041 CIA
4271 1071 TAD LASRCR+1
4272 7440 SZA
4273 5224 JMP READGO /GO AGAIN COMPARE TO ONE
4274 5600 JMP I READIT
/
4275 0111 RDSSTP, AND K0220 /MASK READ RANDOM STOP
4276 7440 SZA /TEST FOR START STOP OR RANDOM
4277 4315 JMS RNDROS /RANDOM
4300 4543 JMS I XRDINC /NORMAL START STOP
4301 7200 CLA
4302 1066 TAD RECORD
4303 7041 CMA IAC
4304 1070 TAD LASRCR
4305 7440 SZA
4306 5313 JMP .+5
4307 1067 TAD RECORD+1
4310 7041 CIA
4311 1071 TAD LASRCR+1
4312 7440 SZA
4313 5214 JMP RDSSTP /GO AGAIN
4314 5600 JMP I READIT
/RANDOM READ START STOP
RNDROS, 0
4315 0000 JMS I XRANDOM /GET RANDOM NUMBER
4316 4533 AND K0177 /MASK 0 TO 127
4317 0116 CMA /MAKE -1 TO -128
4320 7040 DCA DELAY1 /TO COUNT MILLISEC
4321 3050 TAD DELAY1
4322 1050 TAD K0004
4323 1105 SMA CLA
4324 7700 JMP RTSSTP+3
4325 5260 TAD K7443
4326 1123 DCA DELAY
4327 3047 ISZ DELAY
4330 2047 JMP .-1
4331 5330 ISZ DELAY1
4332 2050 JMP .-5
4333 5326 JMP I RNDROS
4334 5715
/
4335 3100 K3100, 3100

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/MAGTAP STATUS INDICATES SOME ERROR

RDERR0, JMS I XLEOT2 /EOT?
JMP I XRNQTP /YES
LAS AND K0200 /PRINT IMMEDIATE?
SNA CLA JMP I (RDOERR /NO
TAD RTR STATRD /YES.
CLL CLA SNL CLA .+4
JMP JMS I XTEXT /R/C ERROR, PRINT DATA ERROR
TEXT16 JMP .+3
JMS I XTEXT /NO R/C ERROR, PRINT STATUS ERROR
TEXT15 JMS I XTYPDT /STANDARD STUFF
JMS I XTSP3 /THEN RECORD LENGTH
TAD READLN
CIA JMS I XDCPRT
JMP I (RDOERR
XRNDTP, RNDIAP
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4377 4400
4400 4400
4400 1104
4401 1051
4402 7640
4403 5217
4404 1052
4405 7112
4406 7420
4407 5216
4410 0113
4411 7650
4412 5215
4413 2100
4414 7410
4415 2077
4416 2102
4417 7200
4420 4543
4421 7604
4422 0115
4423 7450
4424 5251
4425 7200
4426 1127
4427 3051
4430 1052
4431 0107
4432 7440
4433 5660
4434 1066
4435 7041
4436 1070
4437 7640
4440 5246
4441 1067
4442 7041
4443 1071
4444 7450
4445 5647
4446 5650
4447 4274
4450 4214

RDEERR, TAD K0003
TAD RDPASS
SZA CLA
JMP +14
TAD STATRD
CLA RTR
SNL
JMP +7
AND K0040
SNA CLA
JMP +3
ISZ CMPERR
SKP
ISZ RNSTA
ISZ RDERRS
CLA
JMS I XRDING
LAS
AND K0100
SNA
JMP RPNAS3
RPNAS3, CLA
TAD K7775
DCA RDPASS
TAD STATRD
AND K0010
SZA
JMP I XRDTP2
TAD RECORD
CMA IAC
TAD LASRCR
SZA CLA
JMP +6
TAD RECORD+1
CIA
TAD LASRCR+1
SNA
JMP I +2
JMP I +2
RDEXIT
RDSTPD
/SEE IF ALL RE-READS HAVE BEEN MADE
RPNAS3, ISZ RDPASS /DONE ALL RE-HEADS?
JMP +3 /NO
ISZ NRREAD /+1 NON REC READ
JMP RPNAS3 /DO NEXT RECORD
JMS I XSTBAK /PUT POINTERS BACK THIS ONE
JMS BACK1 /BACK UP
JMP I RPNAS3-1 /GO AGAIN
XRDTP2, RNDTAP+1
XSTBAK, SETBAK

```

/1ST PASS?

/NO, DO NOT UPDATE ERROR COUNTERS,  
/YES, R/C?

/NO, NOT A DATA ERROR,  
/YES, PARITY ERROR?

/YES, UPDATE ATA ERROR,

/NO, UPDATE DATA NO STATUS,  
/ALWAYS UPDATE READ ERROR ON 1ST PASS

/TEST AC SW 5 = 1  
/DELETE ERROR RECOVERY?  
/NO

/RESET PASS COUNTER

/IS EOT=1  
/YES, PRINT EOT

/SEE IF ALL RE-READS HAVE BEEN MADE  
RPNAS3, ISZ RDPASS /DONE ALL RE-HEADS?

JMP +3 /NO  
ISZ NRREAD /+1 NON REC READ  
JMP RPNAS3 /DO NEXT RECORD  
JMS I XSTBAK /PUT POINTERS BACK THIS ONE  
JMS BACK1 /BACK UP  
JMP I RPNAS3-1 /GO AGAIN  
XRDTP2, RNDTAP+1  
XSTBAK, SETBAK

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4462 0000 /SET UP POINTERS FOR NEXT RECORD
4463 7200 RDINCR, 0
4464 1076 CLA
4465 3332 TAD READLN
4466 2066 DCA SETBAK+2
4467 7410 ISZ RECORD
4470 2067 SKP RECORD+1
4471 1036 TAD BLKING
4472 7450 SNA
4473 5662 JMP I RDINCR
/RECORD LENGTH IS CHANGING, COUNT IT
TAD READLN
DCA READLN
TAD READLN
SMA
JMP +5
TAD MINLEN
SMA CLA
JMP RESTRL
JMP I RDINCR
TAD MAXLEN
IAC
SMA CLA
JMP I RDINCR
RESTRL, TAD STRLEN
DCA READLN
JMP I RDINCR
/BACKSPACE 1 RECORD
/OR GET BACK IN SYNC FOR NONSTOP RE-READ
BACK1, 0
SKTR
JMP -1
CLF
CLA CMA
LWCR
TAD DRVDEN
LCMR
TAD K7100
LFGR
JMS I XLBWAT
JMP I BACK1
5714

4474 1076 /SET UP POINTERS FOR NEXT RECORD
4475 3076 RDINCR, 0
4476 1076 CLA
4477 7500 TAD READLN
4500 5305 DCA SETBAK+2
4501 1132 ISZ RECORD
4502 7700 SKP RECORD+1
4503 5311 TAD BLKING
4504 5662 SNA
4505 1131 JMP I RDINCR
4506 7001 /RECORD LENGTH IS CHANGING, COUNT IT
4507 7700 TAD READLN
4510 5662 DCA READLN
4511 1034 TAD READLN
4512 3076 SMA
4513 5662 JMP +5
TAD MINLEN
SMA CLA
JMP RESTRL
JMP I RDINCR
TAD MAXLEN
IAC
SMA CLA
JMP I RDINCR
RESTRL, TAD STRLEN
DCA READLN
JMP I RDINCR
/BACKSPACE 1 RECORD
/OR GET BACK IN SYNC FOR NONSTOP RE-READ
BACK1, 0
SKTR
JMP -1
CLF
CLA CMA
LWCR
TAD DRVDEN
LCMR
TAD K7100
LFGR
JMS I XLBWAT
JMP I BACK1
5714

4514 0000 /SET UP POINTERS FOR NEXT RECORD
4515 6724 RDINCR, 0
4516 5315 CLA
4517 6725 TAD READLN
4520 7240 DCA SETBAK+2
4521 6701 ISZ RECORD
4522 1026 SKP RECORD+1
4523 6705 TAD BLKING
4524 1354 SNA
4525 6706 JMP I RDINCR
4526 4567 /RECORD LENGTH IS CHANGING, COUNT IT
4527 5714 TAD READLN
DCA READLN
TAD READLN
SMA
JMP +5
TAD MINLEN
SMA CLA
JMP RESTRL
JMP I RDINCR
TAD MAXLEN
IAC
SMA CLA
JMP I RDINCR
RESTRL, TAD STRLEN
DCA READLN
JMP I RDINCR
/BACKSPACE 1 RECORD
/OR GET BACK IN SYNC FOR NONSTOP RE-READ
BACK1, 0
SKTR
JMP -1
CLF
CLA CMA
LWCR
TAD DRVDEN
LCMR
TAD K7100
LFGR
JMS I XLBWAT
JMP I BACK1
5714

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4530 0000
4531 7610
4532 0000
4533 1332
4534 3076
4535 7240
4536 1066
4537 3066
4540 1066
4541 7001
4542 7640
4543 5730
4544 1067
4545 7440
4546 5351
4547 3066
4550 5730
4551 1355
4552 3067
4553 5730
4554 7100
4555 7777

/SET RECORD POINTERS BACK
SETBAK, 0 CLA SKP
0
TAD -1
DCA READLN
CLA CMA
TAD RECORD
DCA RECORD
TAD RECORD
IAC
SZA CLA
JMP I SETBAK
TAD RECORD+1
SZA
JMP +3
DCA RECORD
JMP I SETBAK
TAD K7777
DCA RECORD+1
JMP I SETBAK
K7100, 7100
K7777, 7777

/GET LAST RECORD LENGTH
/=1 TO RECORD COUNT

```

```
4600      *4600
4601      ENDIAP,      ISZ RECORD      /WRITE PASS IS AT EOT
4602      7410      SKP
4603      2067      ISZ RECORD+1
4604      4555      JMS I XTEXT
4605      6221      TEXT2
4606      4212      JMS WRTDMP
4607      7240      CLA CMA
4608      3072      DCA WRTEOT
4609      5611      JMP I,+1
4610      2554      WSEQXT
4611      0000      WRTDMP, 0
4612      7300      CLA CLL
4613      1030      TAD MODBIT
4614      7012      RTR
4615      7012      RTR
4616      4723      JMS I XCMDMP
4617      4555      JMS I XTEXT
4618      6400      TEXT10
4619      1055      TAD WRCHK
4620      4553      JMS I XDCPRT
4621      1126      TAD K7771
4622      3010      DCA 10
4623      7410      SKP
4624      1227      RECV1-1
4625      3011      TAD 1-1
4626      3012      DCA 11
4627      2012      DCA 12
4628      1411      ISZ 12
4629      3013      TAD I 11
4630      1013      DCA 13
4631      7450      TAD 13
4632      5251      SNA TYRALL
4633      4561      JMS I XTIN
4634      4555      JMS I XTEXT
4635      6413      TEXT12
4636      1012      TAD 12
4637      4557      JMS I XOC71
4638      4560      JMS I XTSP3
4639      1013      TAD 13
4640      4553      JMS I XDCPRT
4641      2012      ISZ 12
4642      2010      ISZ 10
4643      5234      JMP TYRECV
4644      1065      TAD PERMBS
4645      7450      SNA
4646      5263      JMP,+5
4647      4555      JMS I XTEXT
4648      6425      TEXT13
4649      1065      TAD PERMBS
4650      4553      JMS I XDCPRT
4651      5612      JMP I WRTDMP
```

```

/READ PASS IS AT END OF TAPE
RNDIAP, JMS I XRDINC
JMS I XTEXT
TEXT20
JMS I XTEXT
TEXT2
JMS READMP
JMP I ,+1
RDEXIT
/READ DUMP
READMP, 3
TAD READMO
CLL RAR
JMS I XCMDMP,
/COMMON DUMP FOR READ AND WRITE

JMS I XTEXT
TEXT21
TAD RDERRS
JMS I XDCPRT
JMS I XTEXT
TEXT22
TAD NRHEAD
JMS I XDCPRT
JMS I XTEXT
TEXT23
TAD CMPERR
JMS I XDCPRT
JMS I XTEXT
TEXT24
TAD RNOSTA
JMS I XDCPRT
CLL CMA
DCA RDEOT
JMP I READMP
XCMDMP, COMDMP

/READ ERROR =
/ANDN RECOVERED =
/DATA ERRORS =
/DATA NO STAT =

```

```

4664 4543
4665 4553
4666 6517
4667 4555
4670 6221
4671 4274
4672 5673
4673 4274
4674 0000
4675 1031
4676 7110
4677 4723
4700 4555
4701 6530
4702 1102
4703 4553
4704 4555
4705 6000
4706 1101
4707 4553
4710 4555
4711 6615
4712 1100
4713 4553
4714 4555
4715 6630
4716 1077
4717 4553
4720 7240
4721 3103
4722 5674
4723 5000

```

```
5000      *5000
5000      /COMMON DUMP FOR READ AND WRITE
5000      COMDMP, 0
5000      CLL RTR
5001      DCA DELAY
5002      TAD DRVDEN
5003      RTR
5004      RTL
5005      RTR
5006      JMS I XOCT1
5007      JMS I XTSP3
5008      TAD PATNUM
5009      JMS I XOCT1
5010      JMS I XTSP3
5011      TAD PARBT1
5012      RTR
5013      RAR
5014      JMS I XOCT1
5015      TAD DRVDEN
5016      AND K0003
5017      TAD COMDMP1
5018      JMS COMDMP4
5019      TAD DELAY
5020      TAD COMDMP2
5021      JMS COMDMP4
5022      TAD RECORD
5023      JMS I XUDPRT
5024      RECORD+1
5025      TAD RLTR0L
5026      RTR
5027      RTR
5028      AND K0003
5029      TAD COMDMP3
5030      JMS COMDMP4
5031      JMP I COMDMP
5032      TAD DENTYP
5033      TAD MODTYP
5034      TAD LTHBL
5035      0
5036      DCA .+1
5037      0
5038      DCA .+2
5039      JMS I XTEXT
5040      0
5041      JMP I COMDMP4
5042      COMDMP1,
5043      COMDMP2,
5044      COMDMP3,
5045      COMDMP4,
5046      0
5047      DCA .+1
5048      0
5049      DCA .+2
5050      JMS I XTEXT
5051      0
5052      JMP I COMDMP4
5053      COMDMP1,
5054      COMDMP2,
5055      COMDMP3,
5056      COMDMP4,
5057      0
5058      DCA .+1
5059      0
5060      DCA .+2
5061      JMS I XTEXT
5062      0
5063      JMP I COMDMP4
```

/MODIFIED - TAD I (DENTYP, OR MODTYP, OR LTHBL)

/MODIFIED - APPROPRIATE TEXT - SEE BELOW

5052	6263	/	MODTYP,	TEXT7	/NON-STOP
5053	6272			TEXT8	'START=STOP
5054	6301			TEXT9	RANDOM
5055	6301			TEXT9	/RANDOM
5056	6236		DENIYP,	TEXT4	/TYPE 200 BPI
5057	6245			TEXT5	/TYPE 556 BPI
5060	6254			TEXT6	/TYPE 800 BPI
5061	6254			TEXT6	/TYPE 800 BPI
5062	6310		LTHIBL,	TYPMIN	/TYPE MINIMUM LENGTH
5063	6320			TYPMAX	/TYPE MAXIMUM LENGTH
5064	6331			TYPAV1	/TYPE AVE 1 LENGTH
5065	6346			TYPAV2	/TYPE AVE 2 LENGTH
				PAUSE	



/TM8E DATA RELIABILITY TEST - TAPE 6 (9 TRACK)

/

/

/CLEAR READ AND WRITE TABLES

5066 0000

5067 7610

5070 0054

5071 1270

5072 3010

5073 1124

5074 3011

5075 3410

5076 2011

5077 5275

5100 5666

CLRTBL, 0

CLA SKP

WRCHK=1

TAD -1

DCA 10

TAD K7751

DCA 11

DCA 1 10

ISZ 11

JMP -2

JMP 1 CLRTBL

/

/TYPE COMMAND, STATUS, RECORD NUMBER

TYPOAT, 0

5101 0000

5102 6715

5103 4725

5104 4560

5105 6716

5106 4725

5107 4560

5110 6714

5111 4725

5112 4560

5113 6711

5114 4725

5115 4560

5116 6713

5117 4725

5120 4560

5121 1066

5122 4726

5123 0067

5124 5701

RCMR

JMS I XOCprt

JMS I XTSP3

RFSR

JMS I XOCprt

JMS I XTSP3

RMSR

JMS I XOCprt

JMS I XTSP3

RWCR

JMS I XOCprt

JMS I XTSP3

RCAR

JMS I XOCprt

JMS I XTSP3

TAD RECORD

JMS I XUDprt

RECORD+1

JMP 1 TYPOAT

XOCprt, OCIPRT

XUDprt, UDPRNT

5125 6011

5126 5200

```

5127 0000 /GO BACKWARD
5130 7200 GOBKWD, 0
5131 1066 CLA
5132 3070 TAD RECORD
5133 1067 DCA LASHCR
5134 3071 TAD RECORD+1
5135 1074 DCA LASHCR+1
5136 3066 TAD WRRECR
5137 1075 DCA RECORD
5140 3067 TAD WRRECR+1
5141 1066 DCA RECORD+1
5142 7640 TAD RECORD
5143 5346 SZA CLA
5144 1067 JMP .+3
5145 7640 TAD RECORD+1
5146 5351 SZA CLA
5147 4534 JMP .+3
5150 5727 JMS I XRWIND
5151 6722 JMP I GOBKWD
5152 5351 SKGB
5153 6725 JMP .-1
5154 1070 CLF
5155 7041 TAD LASHCR
5156 1066 CIA
5157 6701 TAD RECORD
5160 1035 LACR
5161 6705 TAD COMAND
5162 6724 LCMR
5163 5362 SKTR
5164 1370 JMP .-1
5165 6706 TAD P7100
5166 4567 LFGR
5167 5727 JMS I XLBWAT
5170 7100 JMP I GOBKWD
5170 7100 P7100, 7100

/GET LAST RECORD
/SAVE LAST RECORD

/RESTORE TO FIRST

/BLOCK 0 FIRST
/NO, BACKSPACE
/YES, REWIND
/EXIT

/LOAD WC (USE DIFFERENCE FOR BACK SPACE,);
/LOAD CM WHEN CONTROL READY,
/WAIT FOR TRANSPORT,
/SPC REV,
/WAIT DONE,
/EXIT

```

/UNSIGN DECIMAL PRINT, DOUBLE PRECISION  
 /CALLING SEQUENCE: JMS UDPRNT /SUBROUTINE CALLED WITH AC=LOW ORDER WORD  
 / HI ADDR /ADDRESS OF HIGH ORDER WORD  
 / RETURN /RETURN WITH AC AND L CLEAR

5200	*5200		
0000	UDPRNT, 0		
3254	DCA UDLOW	/PICK UP ADDRESS OF HIGH-ORDER WORD	
1600	TAD I UDPRNT		
3261	DCA UDGET	/PICK UP BOTH WORDS FOR USE IN SUBROUTINE	
1661	TAD I UDGET		
3253	DCA UDHIGH	/INITIALIZE DIGIT COUNTER FOR "5"	
1247	TAD UDLOOP		
3252	DCA UDCNT	/INITIALIZE TO TABLE OF POWERS OF TEN	
1250	TAD UDADDR		
3262	DCA UDPTR	/INDEX LINKAGE FOR CORRECT RETURN	
2200	ISZ UDPRNT	/PICK UP CURRENT POWER OF TEN FOR	
1662	TAD I UDPTR	/USE IN SUBTRACTION	
2262	ISZ UDPTR		
3255	DCA UDHSUB		
1662	TAD I UDPTR		
2262	ISZ UDPTR		
3256	DCA UDLSUB	/DOUBLE PRECISION SUBTRACTION	
7100	CLL		
1256	TAD UDLSUB		
1254	TAD UDLOW		
3260	DCA UDTEML		
7004	RAL		
1255	TAD UDHSUB	/DID IT UNDERFLOW?	
1253	TAD UDHIGH	/NO, COUNT IS DONE	
7420	SNL	/YES, COUNT NOT DONE YET, INDEX DIGIT	
5237	JMP UDOUT	/DEPOSIT REMAINING PORTIONS OF WORD	
2257	ISZ UDBOX		
3253	DCA UDHIGH	/GO BACK AND SUBTRACT AGAIN	
1260	TAD UDTEML		
3254	DCA UDLOW		
5221	JMP UDDO		
7200	CLA		
1257	TAD UDBOX	/PICK UP RESULTING DIGIT	
1251	TAD UD TWO	/ADD "260" TO IT	
4556	JMS I XOTY		
3257	DCA UDBOX	/INITIALIZE DIGIT TO "0"	
2252	ISZ UDCNT	/HAVE WE TYPED "5" DIGITS	
5213	JMP UDARND	/NO, DETERMINE NEXT DIGIT	
5600	JMP I UDPRNT	/YES, SUBROUTINE DONE, RETURN	
7773	-5	/COUNT OF "5" DIGITS	
5263	UDADDR, UDCON1	/INITIAL ADDRESS OF POWERS OF TEN	
0260	UD TWO, 260	/CODE FOR DIGITS	
0000	UDCNT, 0	/STORAGE LOCATIONS	
0000	UDHIGH, 0		
0000	UDLOW, 0		
0000	UDHSUB, 0		
0000	UDLSUB, 0		
0000	UDBOX, 0		
0000	UDTEML, 0		

5261	0000	UDGET,	0	
5262	0000	UDPTR,	0	
5263	7775	UDCON1,	7775	-10,000
5264	4360		4360	
5265	7777		7777	/-1,200
5266	6030		6030	
5267	7777		7777	/-100
5270	7634		7634	
5271	7777		7777	/-10
5272	7766		7766	
5273	7777		7777	/-1
5274	7777		7777	

```

5275 2037 /SMS SAY STATISTICAL RECOVERY
5276 5301 STAREC, IS2 WRPASS /DONE 7 REWRITES
5277 2065 JMP .+3 /NO
5300 5711 IS2 PERMBS /+1 PERM BAD SPOTS
5301 4312 JMP I BACK2-1 /RESTART
5302 6714 JMS BACK2 /BACKSPACE 2
5303 0342 RMSR
5304 7650 AND K1000
5305 4332 SNA CLA /AT BOT
5306 7200 JMS SPAFW1 /NO SPACE FWD
5307 5710 CLA /GO AGAIN
5310 2653 JMP I .+1
5311 2751 NSTSEL=3
TESREC+4
/BACKSPACE 2 RECORDS
BACK2, JMP
SKCB
JMP .-1
CLF
TAD K7776
LWCR
TAD COMAND
LCMR
SKTR
JMP .-1
TAD 07100
LFGR
JMS I XLBWAT
CLA
JMP I BACK2 /EXIT BACKSPACE 2
07100, 7100
/SPACE FORWARD 1 RECORD
SPAFW1, JMP
CLF
CLA CMA
LWCR
TAD K6100
LFGR
JMS I XLBWAT /EXIT SPACE FWD
JMP I SPAFW1
K1000, 1000
K7776, 7776
K6100, 6100
/REWIND DRIVE TO LOAD POINT
/CALL WITH DRIVE SELECT IN AC
REWIND, 0
SKCB
JMP .-1
CLA
TAD DRVDEN
CLF
LCMR
SKTR
5312 5312 /WAIT FOR CONTROL,
5313 6722 /LOAD WC # -2
5314 5313 /LOAD CM,
5315 6725 /WAIT TRANSPORT,
5316 1343 /SPC REV 2,
5317 6701 /WAIT DONE,
5320 1035 /EXIT BACKSPACE 2
5321 6705
5322 6724
5323 5322
5324 1331
5325 6706
5326 4567
5327 7200
5330 5712
5331 7100

5332 5332 /CLEAR STATUS,
5333 6725 /LOAD WC # -1,
5334 7240 /SPC FWD 1,
5335 6701 /WAIT DONE,
5336 1344 /EXIT SPACE FWD
5337 6706
5340 4567
5341 5732
5342 1000
5343 7776
5344 6100

5345 0000 /WAIT FOR CONTROL,
5346 6722 /LOAD CM,
5347 5346 /WAIT FOR TRANSPORT,
5350 7200
5351 1026
5352 6725
5353 6705
5354 6724

```

5355	5354	JMP .-1	
5356	6714	RMSR	/BOT?
5357	7006	RTL	
5360	7710	SPA CLA	
5361	5745	JMP I	REWIND
5362	1370	TAD K1100	/YES
5363	6706	LFGR	/REWIND - 60
5364	6723	SKTD	
5365	5364	JMP .-1	
5366	6725	CLF	
5367	5745	JMP I	REWIND
5370	1100	K1100.	1100

```

5400      *5400
5401      GENPAT, JMP I XSTSTR
5402      TAD PATNUM
5403      TAD PARBT1
5404      TAD JMTBL
5405      DCA +1
5406      JMP I JMTBL+1
5407      JMP I +1
5408      JMTBL, JMP I +1
5409      GNEVN0
5410      GNEVN1
5411      GNEVN2
5412      GNEVN3
5413      GNEVN4
5414      GNEVN5
5415      GNEVN6
5416      GNEVN7
5417      GNODD0
5418      GNODD1
5419      GNODD2
5420      GNODD3
5421      GNODD4
5422      GNODD5
5423      GNODD6
5424      GNODD7
5425      /EVEN PATTERN 0 HIGH FREQ SKEW
5426      GNEVN0, TAD +2
5427      JMP GNODD6+1
5428      0014
5429      /EVEN PATTERN 2 HIGH FREQ EVRY OTHER TRK
5430      GNEVN2, TAD +2
5431      JMP GNODD6+1
5432      0103
5433      /ODD PATTERN 2 COMPLEMENT OFF EVEN 2
5434      GNODD2, TAD +2
5435      JMP GNODD6+1
5436      0274
5437      /ODD AND EVEN PATTERN 6 ALL TRACKS
5438      GNEVN6, NOP
5439      GNODD6, CMA
5440      AND K0377
5441      DCA 12
5442      TAD 12
5443      DCA I 10
5444      ISZ 11
5445      JMP I-3
5446      JMP I GENPAT
5447      /EVEN PARITY PATTERN 3 HIGH REQ, INSIDE HALF OUTSIDE
5448      GNEVN3, TAD +2
5449      JMP GNODD6+1
5450      0273
5451
5452
5453
5454

```

5455 1257 /ODD PARITY PAT 0 HALF FREQ OUTSIDE TRACKS  
 5456 5243 GNO000, TAD .+2  
 5457 0004 JMP GNO000+1  
 0004

5460 1262 /EVEN PATTERN 4 INCREMENTING CHARACTER NO 00  
 5461 5265 GNEVN4, TAD .+2 /GET SNA TO THROW 00  
 5462 7450 JMP GNO004+1 /GENERATE PATTERN  
 5463 7410 SNA  
 SKP

/ODD PATTERN 4 SAVE 00 CODES /GET SKP TO SAVE 00  
 GNO004, TAD :-1 /DEPOSIT SKP OR SNA  
 DCA INC0CH /00 TO 14 START  
 DCA 14 /GET NEXT CHAR  
 JMS GENING /STORE IT  
 DCA I 10 /DONE ALL WORDS  
 ISZ 11 /NO GET NEXT  
 JMP GNO004+3 /EXIT  
 JMP I GENPAT

/EVEN RANDOM PATTERN 7  
 GNEVN7, JMS I XTRANUM  
 AND K0377

5474 4533 SNA  
 5475 0366 JMP GNEVN7  
 5476 7450 DCA I 10  
 5477 5274 ISZ 11  
 5500 3410 JMP GNEVN7  
 5501 2011 JMP I GENPAT  
 5502 5274  
 5503 5600

/ODD RANDOM PATTERN 7  
 GNO007, JMS I XTRANUM  
 AND K0377

5504 4533 SNA  
 5505 0366 JMP GNEVN7  
 5506 3410 DCA I 10  
 5507 2011 ISZ 11  
 5510 5304 JMP GNO007  
 5511 5600 JMP I GENPAT



```

5512 5312 /INCREMENT 14 FOR NEXT CHARACTER
5513 1014 GENINC, JMP
5514 7001 TAD 14 /GET LAST
5515 0366 IAC /+1
        AND K0377 /MASK LMR 6

5516 7450 INC00CH, SNA SKP /SNA IF EVEN PAR
5517 7001 IAC /NEVER EXECUTED IF ODD
5520 3014 DCA 14 /SAVE CHAR
5521 1014 TAD 14 /PUT IN AC
5522 5712 JMP I GENINC /EXIT
5523 4347 GNEVN1, JMS ST9WRD /EVEN PATTERN 1
5524 0377 /SLIDING 0 RET
5525 0177 /BY CHARACTER
5526 0277
5527 0337
5530 0357
5531 0367
5532 0373
5533 0375
5534 0376

5535 4347 GNOOD1, JMS ST9WRD /ODD PATTERN 1
5536 0000 /SLIDING 1 BIT
5537 0200 /BY CHARACTER
5540 0100
5541 0040
5542 0020
5543 0010
5544 0004
5545 0002
5546 0001

5547 5347 /STORE 9 WORD SUBROUTINE EVN AND ODD 1
5550 7240 ST9WRD, JMP
5551 1347 CLA CMA
5552 3012 TAD ST9WRD
5553 1367 DCA 12
5554 3013 TAD K7767
5555 1412 DCA 13
5556 3410 TAD I 12
5557 2011 DCA I 10
5560 7410 ISZ 11
5561 5600 SKP
5562 2013 JMP I GENPAT
5563 5355 ISZ 13
5564 5350 JMP ST9A
        JMP ST9WRD+1 /NOT 9 YET GET NEXT
        /START OVER FROM FIRST OF 9

5565 5624 /
5566 0377 XSTSTR, SEISTR
5567 7767 K0377, 377
        K7767, 7767
    
```

5600 \*5600

/ODD PATTERN 5 EACH TRAIL 3 FRAMES EVERY 27  
GN0005, JMS STHALF

5600 4234  
5601 0000  
5602 0200  
5603 0100  
5604 0040  
5605 0020  
5606 0010  
5607 0004  
5610 0002  
5611 0001

/ODD PATTERN 3 3 ONES 3 ZEROS THREE ONES  
GN0003, JMS STHALF

5612 4234  
5613 0037  
5614 0300  
5615 0076  
5616 0201  
5617 0174  
5620 0003  
5621 0370  
5622 0007  
5623 0360

/INITIALIZE AUTO INDEX 10-11 FOR PATTERN STORAGE  
SETSTR, 0

5624 0000  
5625 7200  
5626 1233  
5627 3011  
5630 1130  
5631 3010  
5632 5624

CLA  
TAD BLENTH  
DCA 11 /WORD COUNT IN 11  
TAD WRBUF  
DCA 10 /WRITE BUFFER -1 IN 10  
JMP I SETSTR

BLENTH, -400 /READ-WRITE BUFFER LENGTH,

5633 7400

```

5634 5234 /GENERATE A THREE WORD PATTERN
5635 7240 STHALF, JMP .
5636 1234 CLA CMA
5637 3012 TAD STHALF
5640 1274 DCA 12
5641 3013 TAD KX7767
5642 1127 DCA 13
5643 3015 TAD K7775
5644 1412 DCA 15
5645 3261 TAD I 12
5646 1261 DCA STHF1
5647 3410 TAD STHF1
5650 2011 DCA I 10
5651 7410 ISZ 11
5652 5660 SKP 1
5653 2015 JMP I EXITGN
5654 5246 ISZ 15
5655 2013 JMP 6
5656 5242 ISZ 13
5657 5235 JMP STHF
                    JMP STHALF+1

5660 5561 EXITGN, ST9B
5661 0000 STHF1, 0

```

```

5662 4234 /EVEN PATTERN 5 EACH TRACK ON A 0 FOR 3 FRAMES
5663 0377 GNEVN5, JMS STHALF
5664 0177 0377
5665 0277 2177
5666 0337 2277
5667 0357 2337
5670 0367 2357
5671 0373 2367
5672 0375 2373
5673 0376 2375
5674 7767 KX7767, 7767

```

```

5675 5275 /RANDOM NUMBER GENERATOR
5676 7200 /RANGEN, JMP .
5677 1337 CLA
5700 1324 TAD RANTND
5701 7640 TAD RANDEX
5702 5312 SZA CLA
5703 1326 JMP RANTAD
5704 3324 TAD RANTBL
5705 1325 DCA RANDEX
5706 7104 TAD RANCON
5707 7430 CLL RAL
5710 7001 SZL
5711 3325 IAC
5712 1325 DCA RANCON
5713 1724 TAD RANCON
5714 3724 TAD I RANDEX
5715 1340 DCA I RANDEX
5716 7010 TAD RANSV
5717 1724 RAR
5720 2324 TAD I RANDEX
5721 3340 ISZ RANDEX
5722 1340 DCA RANSV
5723 5675 TAD RANSV
                    JMP I RANGEN
                    /EXIT AC=RANDOM

                    /TABLE TO GENERATE RANDOM NUMBERS
5724 5737 RANDEX, RANTND
5725 6543 /TO GET INDIRECT
5726 5727 RANCON, 6543 /CYCLIC
5727 6543 RANTBL, +1 /TO RESET RANDEX TO START
5730 3210 /TABLE
5731 0765 /OF 8
5732 5432 /NUMBERS
5733 2107
5734 7654
5735 4321
5736 1076
5737 2041
5740 0000 RANTND, -1
                    RANSV, 0
                    /TO DETERMINE END
                    /TO SAVE LAST RANDOM

                    PAUSE

```



```

6051 0000
6052 3310
6053 3311
6054 1321
6055 3312
6056 1303
6057 3264
6060 7410
6061 3310
6062 7100
6063 1310
6064 1304
6065 7430
6066 2311
6067 7430
6070 5261
6071 7200
6072 1311
6073 1316
6074 4556
6075 7200
6076 3311
6077 2264
6100 2312
6101 5263
6102 5651
6103 1304
6104 6030
6105 7634
6106 7766
6107 7777
6110 0000
6111 0000
6112 0000
6113 0077
6114 0212
6115 0215
6116 0260
6117 0340
6120 7740
6121 7774

/CONVERT NUMBER IN AC TO DECIMAL AND PRINT
DECPRT, 0 DCA VALUE /SAVE INPUT
DCA DIGIT /CLEAR
TAD KX7774
DCA CNTRZB /SET COUNTER TO 4
TAD ADDRZA /SET TABLE PCINTER
DCA ARROW
SKP 7410 /SAVE
DCA VALUE
CLL
TAD VALUE
TAD TENPWR /SUBTRACT POWER OF TEN
SEL
ISZ DIGIT /DEVELOP BCD DIGIT
SEL
JMP ARROW=3 /LOOP
CLA /HAVE DIGIT
TAD DIGIT
TAD K260
JMS I XOTY /PRINT
CLA
DCA DIGIT /CLEAR DIGIT
ISZ ARROW /UPDATE POINTER
ISZ CNTRZB /DONE?
JMP ARROW=1 /NO
JMP I DECPRT
ADDRZA, TAD TENPWR /ONE THOUSAND
TENPWR, -1750 /ONE HUNDRED
-144 /TEN
-12 /ONE
-1
VALUE, 0
DIGIT, 0
CNTRZB, 0
K77, 77
K0212, 212
K215, 215
K260, 260
K0340, 340
K7740, 7740
KX7774, 7774

```

```

6122 0000
6123 7240
6124 1322
6125 3017
6126 1417
6127 3340
6130 1340
6131 7012
6132 7012
6133 7012
6134 4341
6135 1340
6136 4341
6137 5326
6140 0000
6141 0000
6142 0313
6143 7450
6144 5417
6145 1320
6146 7500
6147 5352
6150 1317
6151 7410
6152 1120
6153 4556
6154 5741

/TYPE A STRING OF CHARACTERS
/CHARACTERS MUST BE STORED IN INTERNAL STRIPPED ASCII, 2 CHARACTERS PER WORD,
TSR,
0
CLA CMA
TAD TSR
DCA 17
TAD I 17
DCA TSR1
TAD TSR1
RTR
RTR
RTR
JMS TSR2
TAD TSR1
JMS TSR2
JMP TSR+4
0
TSR1,
TSR2,
0
AND K77 /MASK CHARACTER
SNA /IS IT END OF MESSAGE
JMP I 17 /YES, EXIT
TAD K7742 /RE-COMBINE ASCII CODE WITH STRIPPED CODE
SMA /
JMP +3
TAD K0342
SKP
TAD K0240
JMS I X0TY
JMP I TSR2

/TYPE THE ASCII CHARACTER IN AC
QTY,
0
TLS
CLA CLL
TSF
JMP -1
TCF
JMP I QTY

/TYPE CARRIAGE RETURN, LINE FEED
TIN,
0
CLA
TAD K215
JMS I X0TY
TAD K0212
JMS I X0TY
JMP I TIN

```

*6240	/WRITE STATUS ERROR
/CMD FUNCIN STATUS REC D LENGTH	
TEXT1, 0	JMS I XTIN
	JMS I XTSR
	2722
	1124
	0540
	2324
	0124
	2523
	4005
	2222
	1722
	0000
	SKP
	TEXT25
	JMS I .-1
	JMP I TEXT1
/	
/END OF TAPE	
/DRV PAT PAR D,N MODE RECORDS LENGTH	
TEXT2, 0	JMS I XTIN
	JMS I XTSR
	0516
	0440
	1706
	4024
	0120
	0500
	SKP
	TEXT36
	JMS I .-1
	JMP I TEXT2
6200	
6200	6221 0000
6201 4561	6222 4561
6202 4562	6223 4562
6203 2722	6224 0516
6204 1124	6225 0440
6205 0540	6226 1706
6206 2324	6227 4024
6207 0124	6230 0120
6210 2523	6231 0500
6211 4005	6232 7410
6212 2222	6233 7011
6213 1722	6234 4633
6214 0000	6235 5621
6215 7410	
6216 6644	
6217 4616	
6220 5600	



```

6236 0000
6237 4562
6240 4040
6241 4062
6242 6060
6243 0000
6244 5636

/200 FOR 200 BPI
TEXT4, 0
JMS I XT5R
4040
4062
6060
0000
JMP I TEXT4
    
```

```

6245 0000
6246 4562
6247 4040
6250 4065
6251 6566
6252 0000
6253 5645

/556 FOR 556 BPI
TEXT5, 0
JMS I XT5R
4040
4065
6566
0000
JMP I TEXT5
    
```

```

6254 0000
6255 4562
6256 4040
6257 4070
6260 6060
6261 0000
6262 5654

/800 FOR 800 BPI
TEXT6, 0
JMS I XT5R
4040
4070
6060
0000
JMP I TEXT6
    
```

```

6263 0000
6264 4562
6265 4016
6266 2324
6267 2040
6270 0000
6271 5663

/NSIP FOR NONSTOP MODE
TEXT7, 0
JMS I XT5R
4016
2324
2040
0000
JMP I TEXT7
    
```

```

6272 0000
6273 4562
6274 4023
6275 2324
6276 2040
6277 0000
6300 5672

/SSIP FOR START STOP MODE
TEXT8, 0
JMS I XT5R
4023
2324
2040
0000
JMP I TEXT8
    
```

```

6301 0000
6302 4562
6303 4022
6304 1604
6305 1540
6306 0000
6307 5701

/RRNDM FOR RANDOM START STOP MODE
TEXT9, 0
JMS I XT5R
4022
1604
1540
0000
JMP I TEXT9
    
```

6310 0000  
6311 4562  
6312 4040  
6313 4062  
6314 6440  
6315 1511  
6316 1600  
6317 5710  
/24 MIN  
TYPMIN, 0 JMS I XTZR  
4040  
4062  
6440  
1511  
1600  
JMP I TYPMIN

6320 0000  
6321 4562  
6322 4040  
6323 4064  
6324 6060  
6325 7040  
6326 1501  
6327 3000  
6330 5720  
/4008 MAX  
TYPMAX, 0 JMS I XTZR  
4040  
4064  
6060  
7040  
1501  
3000  
JMP I TYPMAX

6331 0000  
6332 4562  
6333 4040  
6334 4062  
6335 6061  
6336 6640  
6337 1511  
6340 1640  
6341 2417  
6342 4015  
6343 0130  
6344 0000  
6345 5731  
/2016 MIN TO MAX  
TYPAV1, 0 JMS I XTZR  
4040  
4062  
6061  
6640  
1511  
1640  
2417  
4015  
0130  
0000  
JMP I TYPAV1

6346 0000  
6347 4562  
6350 4040  
6351 4062  
6352 6061  
6353 6640  
6354 1501  
6355 3040  
6356 2417  
6357 4015  
6360 1116  
6361 0000  
6362 5746  
/2216 MAX TO MIN  
TYPAV2, 0 JMS I XTZR  
4040  
4062  
6061  
6640  
1501  
3040  
2417  
4015  
1116  
0000  
JMP I TYPAV2

```

6400      *6400
/
/WRITE ERRORS =
TEXT10, 0
JMS I XTIN
JMS I XTSR
2722
1124
0540
0522
2217
2223
7500
JMP I TEXT10

/RECOVERED AT
TEXT12, 0
JMS I XTSR
2205
0317
2605
2205
0440
0124
4000
JMP I TEXT12

/PERMANENT BADSPT
TEXT13, 0
JMS I XTIN
JMS I XTSR
2005
2215
0116
0516
2440
0201
0423
2024
4000
JMP I TEXT13

```

```

6400      0000
6401      4561
6402      4562
6403      2722
6404      1124
6405      0540
6406      0522
6407      2217
6410      2223
6411      7500
6412      5600

6413      0000
6414      4562
6415      2205
6416      0317
6417      2605
6420      2205
6421      0440
6422      0124
6423      4000
6424      5613

6425      0000
6426      4561
6427      4562
6430      2005
6431      2215
6432      0116
6433      0516
6434      2440
6435      0201
6436      0423
6437      2024
6440      4000
6441      5625

```

```

/ XIRC WRITTEN 4 TIMES
TEXT14, 2
JMS I XTIR
4030
1122
3740
2722
1124
2405
1640
6440
2411
1505
2300
JMP I TEXT14
5642
    
```

```

/ READ STATUS ERROR
/ COMD FUNCIN STATUS RECORD LENGTH
TEXT15, 2
JMS I XTIR
2205
2104
4023
2401
2425
2340
2522
2217
2200
SKP
TEXT25
JMS I XTIR
JMP I TEXT15
5660
    
```

```

6500 0000
6501 4561
6502 4562
6503 2205
6504 0104
6505 4004
6506 0124
6507 0140
6510 0522
6511 2217
6512 2200
6513 7410
6514 6044
6515 4714
6516 5700

/READ DATA ERROR
/COMD FUNCIN STATUS RECORD LENGTH
TEXT16, 0
JMS I XTIN
JMS I XTSR
2205
0104
4004
0124
0140
0522
2217
2200
SKP
TEXT25
JMS I .01
JMP I TEXT16

/READ PASS
TEXT20, 0
JMS I XTIN
JMS I XTSR
2205
0104
4020
0123
2300
JMP I TEXT20

/READ ERRORS =
TEXT21, 0
JMS I XTIN
JMS I XTSR
2205
0104
4005
2222
1722
2375
0000
JMP I TEXT21
6530 0000
6531 4561
6532 4562
6533 2205
6534 0104
6535 4005
6536 2222
6537 1722
6540 2375
6541 0000
6542 5730

```

```

6600      *6600
/      /NON RECOVERABLE *
TEXT22, 0
JMS I XTIN
JMS I XTISR
1617
1640
2205
2317
2605
2201
2214
2575
0000
JMP I TEXT22

```

```

/      /DATA ERRORS =
TEXT23, 0
JMS I XTIN
JMS I XTISR
2401
2401
4005
2222
1722
2375
0000
JMP I TEXT23

```

```

/      /DATA ERROR WITH NO STATUS ERROR
TEXT24, 0
JMS I XTIN
JMS I XTISR
2401
2401
4016
1740
2324
0124
2523
7500
JMP I TEXT24

```

```

6600      0000
6601      4561
6602      4562
6603      1617
6604      1640
6605      2205
6606      2317
6607      2605
6610      2201
6611      2214
6612      2575
6613      0000
6614      5600

```

```

6615      0000
6616      4561
6617      4562
6620      2401
6621      2401
6622      4005
6623      2222
6624      1722
6625      2375
6626      0000
6627      5615

```

```

6630      0000
6631      4561
6632      4562
6633      2401
6634      2401
6635      4016
6636      1740
6637      2324
6640      0124
6641      2523
6642      7500
6643      5630

```

/COMD FUNCIN STATUS WRDCNT CURADR RECORD LENGTH  
TEXT25, 0

6644 0000  
6645 4561  
6646 4562  
6647 0317  
6650 1504  
6651 4006  
6652 2516  
6653 0324  
6654 1640  
6655 2324  
6656 0124  
6657 2523  
6660 4027  
6661 2204  
6662 2316  
6663 2440  
6664 0325  
6665 2201  
6666 0422  
6667 4022  
6670 0503  
6671 1722  
6672 0423  
6673 4014  
6674 0516  
6675 0724  
6676 1000  
6677 4561  
6700 5644

JMS I XTIN  
JMS I XTIR  
0317  
1504  
4006  
2516  
0324  
1640  
2324  
0124  
2523  
4027  
2204  
2316  
2440  
0325  
2201  
0422  
4022  
0503  
1722  
0423  
4014  
0516  
0724  
1000  
JMS I XTIN  
JMP I TEXT25

```

/SELECT DRIVES
TEXT30, 0
JMS I XTIN
JMS I XTSR
2305
1405
0324
4004
2211
2605
2340
0000
JMP I TEXT30

/SELECT TESTS
/TST PAT PAR DEN RLS WMO RMO
TEXT31, 0
JMS I XTIN
JMS I XTSR
2305
1405
0324
4024
0523
2423
0000
JMS I XTIN
JMS I XTSR
2423
2440
2201
2442
2201
2240
0405
1640
2214
2340
2715
1740
2215
1700
JMP I TEXT31

/O.K.
TEXT32, 0
JMS I XTSR
1756
1356
0000
JMP I TEXT32
    
```

6701 0000  
 6702 4561  
 6703 4562  
 6704 2305  
 6705 1405  
 6706 0324  
 6707 4004  
 6710 2211  
 6711 2605  
 6712 2340  
 6713 0000  
 6714 5701

6715 0000  
 6716 4561  
 6717 4562  
 6720 2305  
 6721 1405  
 6722 0324  
 6723 4024  
 6724 0523  
 6725 2423  
 6726 0000  
 6727 4561  
 6730 4562  
 6731 2423  
 6732 2440  
 6733 2001  
 6734 2440  
 6735 2001  
 6736 2240  
 6737 0405  
 6740 1640  
 6741 2214  
 6742 2340  
 6743 2715  
 6744 1740  
 6745 2215  
 6746 1700  
 6747 5715

6750 0000  
 6751 4562  
 6752 1756  
 6753 1356  
 6754 0000  
 6755 5750



```

6756 0000
6757 4561
6760 4562
6761 2405
6762 2324
6763 4000
6764 5756

/TEST
TEXT33, 0
JMS I XTIN
JMS I XTJR
2405
2324
4000
JMP I TEXT33

/
/WRITE DUMP
TEXT34, 0
JMS I XTIN
JMS I XTJR
2722
1124
0540
0425
1520
0000
JMP I TEXT34
*7000

/READ DUMP
TEXT35, 0
JMS I XTIN
JMS I XTJR
2205
0104
4004
2515
2000
JMP I TEXT35
7000 0000
7001 4561
7002 4562
7003 2205
7004 0104
7005 4004
7006 2515
7007 2000
7010 5600
    
```

/DRV PAT PAR DEN MODE RECORDS LENGTH

TEXT36, 0

JMS I XTIN  
JMS I XISR

7011 0000  
7012 4561  
7013 4562  
7014 0422  
7015 2640  
7016 2001  
7017 2440  
7020 2001  
7021 2240  
7022 0405  
7023 1640  
7024 1517  
7025 3405  
7026 4022  
7027 0503  
7030 1722  
7031 0423  
7032 4014  
7033 0516  
7034 0724  
7035 1000  
7036 4561  
7037 5611

JMS I XTIN  
JMP I EXT36

DR0TAB=7100  
DRINCR=40  
DR1TAB=DR0TAB+DRINCR  
DR2TAB=DR1TAB+DRINCR  
DR3TAB=DR2TAB+DRINCR  
DR4TAB=DR3TAB+DRINCR  
DR5TAB=DR4TAB+DRINCR  
DR6TAB=DR5TAB+DRINCR  
DR7TAB=DR6TAB+DRINCR  
TSTIBL=DR7TAB+DRINCR

DRVADR, DR0TAB  
DR1TAB  
DR2TAB  
DR3TAB  
DR4TAB  
DR5TAB  
DR6TAB  
DR7TAB

7040 7100  
7041 7140  
7042 7200  
7043 7240  
7044 7300  
7045 7340  
7046 7400  
7047 7440

7050	6713	CAMON,	RCAR
7051	7700		SMA CLA
7052	5250		JMP .-2
7053	1130		TAD WRBUF
7054	6703		LCAR
7055	5250		JMP .-5

\$



4000 4100

[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]

7222  
7437

7227  
7227

7422

ADDRZA	6103	ERRDMP	2340	K0303	2556	LWCR	6701
ALLEOS	1265	EXECNT	2774	K0340	6117	MAXLEN	0131
ALLEOT	1236	EXECUT	2601	K0370	0365	MINLEN	0132
ARROW	6064	EXETST	2042	K0374	0513	MODBIT	0030
BACK1	4514	EXITGN	5660	K0376	0364	MODTYP	5052
BACK2	5312	EXITMO	2033	K0377	5566	*SBITS	0022
BLENTH	5033	GENINC	5512	K0400	0122	MVCTRS	1007
B-KINC	0036	GENPAT	5422	K1000	5342	NOINCR	2524
CAVON	7050	GENVNO	5430	K1100	5970	NONSTP	2607
CCAR	6704	GENVN1	5523	K215	6115	NOTSWS	2470
CCF	6201	GENVN2	5433	K260	0211	NRREAD	0101
COMP1	5040	GENVN3	5452	K270	4335	NSTSEL	2656
COMP2	5041	GENVN4	5460	K3100	1313	NUMTST	0040
COMP3	5042	GENVN5	5662	K3767	1313	OCT1	6033
COMP4	5043	GENVN6	5441	K377	3150	OCTPRT	6011
CORIVE	0023	GENVN7	5474	K4000	1113	OTV	6155
CORVST	1070	GNODD2	5455	K4100	2764	P1	1735
CHARIN	0054	GNODD1	5535	K4500	3077	P2	1736
CHGDRV	1071	GNODD2	5436	K5100	3076	P3	1737
CHGPAT	0727	GNODD3	5612	K6100	5344	P7100	5170
CHRPAR	0743	GNODD4	5464	K7000	1235	PARAMS	1200
CLF	6725	GNODD5	5602	K7100	4554	PARBT1	0025
CLRALL	1035	GNODD6	5442	K7443	0123	PASSWS	0020
CLRTBL	5066	GNODD7	5524	K7520	2366	PATNUM	0024
CLT	6712	GOBKNO	5127	K77	6113	PERMBS	0065
CMPERR	0100	GOIST	2643	K7740	6120	Q7100	5331
CMTRZB	6112	INC0CH	5516	K7751	0124	RANCON	5725
COMAND	0035	INCRLC	0707	K7760	1114	RANDEX	5724
COMDHP	5000	INCTBL	2550	K7767	5567	RANGEN	5675
COMEND	2373	INCWMO	2670	K7770	0125	RANSV	5740
CTRDGX	1016	JMPTBL	5407	K7771	0126	RANSTP	2673
CTRDMP	2344	K0003	2104	K7774	3101	RANTAD	5712
CWCK	3127	K0004	0105	K7775	0127	RANTBL	5726
CWCR	6702	K0007	0106	K7776	5343	RANTND	5737
DECPRT	6051	K0012	2107	K7777	4555	RCAR	6713
DELAY	0047	K0017	0110	KX7000	2443	RCMR	6715
DELAY1	0050	K0020	0111	KX7520	0512	RDBR	6717
DENTYP	5056	K0030	0112	KX7767	5674	RDEOT	0103
DIGIT	6111	K0037	1312	KX7774	6121	RDERR0	4336
DR0TAB	7100	K0040	0113	LASRCH	0070	RDERRS	0102
DR1TAB	7140	K2062	2114	LBEOT1	1300	RDEXIT	4274
DR2TAB	7200	K0100	0115	LBEOT2	1314	RDINCR	4462
DR3TAB	7240	K0177	0116	LBINT	1335	RDERR	4400
DR4TAB	7300	K0200	2117	LBSAV	1327	ROPASS	0051
DR5TAB	7340	K0212	6114	LBSET	1712	RDRET	4245
DR6TAB	7400	K2215	0360	LBTEX1	0536	RDSTPC	4275
DR7TAB	7440	K0240	2120	LBWAT	1344	RDSTPD	4214
DR1NCR	0040	K2254	0361	LCAR	6703	READGO	4224
DRVADR	7040	K0262	0510	LCMR	6705	READIT	4200
DRVDEN	0026	K2272	2362	LOBR	6707	READLN	0076
ENDIAP	4600	K0277	2363	LFGR	6706	READMO	0031
EOSFLG	2044	K0300	0121	LTHIBL	5042	READMP	4674

RECORD	0066	STARTS	2422	TEXT4	6236	WRPASS	0037
RECSYS	0032	STARTOP	2620	TEXT5	6245	WRRECR	0074
RECV1	0056	SVCIRS	1222	TEXT6	6254	WRTDMP	4612
RECV2	0057	SVRECR	2045	TEXT7	6263	WRTTEOT	0072
RECV3	0060	SWTEST	2243	TEXT8	6272	WRTERR	2724
RECV4	0061	T10RDP	2276	TEXT9	6301	WRTLEN	0073
RECV5	0062	T10RND	2141	TEXT10	1743	WRTSEQ	2444
RECV6	0063	T11END	2322	TEXT11	6000	WSEQXT	2554
RECV7	0064	T11FLG	2337	TEXT12	6164	X11FLG	2555
RELI1	0225	T11INC	2335	TEXT13	1254	XALEOT	0150
RELIAB	0220	T11LP1	2330	TEXT14	2030	XBACK1	3100
RESETL	3135	T11LP2	2310	TEXT15	2014	XCHGDV	0147
RESTRL	4511	T11RDL	2251	TEXT16	2051	XCLRAL	0152
REXIND	5345	TADINC	2547	TEXT17	6040	XCLRTB	0135
RFSR	6716	TBLCNT	0041	TEXT18	6122	XCMOMP	4723
RIF	6224	TBLTST	2523	TEXT19	6140	XDCPRT	0153
RLTRQL	0027	TENPAR	6104	TEXT20	6141	XENDTP	2763
RMF	6244	TES2K	3142	TEXT21	0025	XGENPT	0142
RMSR	6714	TESINC	3122	TEXT22	0775	XGOKW	0136
RNDROD	4315	TESREC	2745	TEXT23	2633	XLBINT	0166
RNDTAP	4664	TEST0	1400	TEXT24	7502	XLBSAV	0165
RNOSTA	0077	TEST1	1414	TEXT25	0312	XLBSET	0170
RPASN3	4451	TEST10	2202	TEXT26	6331	XLBWAT	0167
RPASS3	4425	TEST11	2222	TEXT27	6346	XLEOT1	0163
RPTIST	0761	TEST12	1437	TEXT28	5101	XLEOT2	0164
RSFDRV	1051	TEST13	1462	TEXT29	6320	XMVCTR	0145
RTSSIP	4255	TEST14	1506	TEXT30	6310	XOCPRT	5125
RWCR	6711	TEST15	1535	TEXT31	4651	XOCT1	0157
SBRM	6727	TEST16	1600	TEXT32	4634	XOTY	0156
SDLE	6726	TEST17	1645	TEXT33	5250	XRANUM	0133
SET3AK	4530	TEST18	2514	TEXT34	5213	XRCXRG	2766
SETFUN	1115	TEXT19	6220	TEXT35	5257	XRDINC	0143
SETSTR	5624	TEXT20	6420	TEXT36	5252	XRDIT	0137
SKCB	6722	TEXT21	6413	TEXT37	5263	XRDRET	4244
SKEF	6721	TEXT22	6425	TEXT38	5221	XRDTP2	4460
SKTD	6723	TEXT23	6442	TEXT39	5261	XRG1	3041
SKTR	6724	TEXT24	6460	TEXT40	5253	XRGRCO	3046
SLTSTS	0256	TEXT25	6520	TEXT41	5255	XRGREC	3000
SPAFW1	5332	TEXT26	6221	TEXT42	5247	XRNDTP	4363
ST9A	5555	TEXT27	6517	TEXT43	5254	XRSFOV	0151
ST9B	5561	TEXT28	6530	TEXT44	5256	XRWIND	0134
ST9ARD	5547	TEXT29	6600	TEXT45	5237	XSTBAK	4461
STAREC	5275	TEXT30	6615	TEXT46	5202	XSTREC	2765
STAIRO	0052	TEXT31	6632	TEXT47	5262	XSTSTR	5565
STAIRE	0053	TEXT32	6644	TEXT48	5260	XSVCTR	0144
STHALF	5634	TEXT33	6701	TEXT49	5251	XTESTX	0620
STHF	5642	TEXT34	6715	TEXT50	6110	XTEXT	0155
STHF1	5661	TEXT35	6750	TEXT51	0231	XTIN	0161
STOPOP	2663	TEXT36	6756	TEXT52	7321	XTSINC	0141
STR1	2426	TEXT37	6765	TEXT53	1142	XTSP3	0160
STRLEN	2034	TEXT38	7020	TEXT54	0132	XTSR	0162
STRPAT	2713	TEXT39	7011	TEXT55	0055	XTSTST	2632

XTSYQS 0507  
XTYPOI 0154  
XUDPRI 5126  
XWATKY 0146  
XWRIT 0140  
XXRG1 3040  
Z1 1740  
Z2 1741  
Z3 1742

ERRORS DETECTED: 0

LINKS GENERATED: 0

RUN-TIME: 23 SECONDS

3K CORE USED