

RK8EDSKL

IDENTIFICATION

PRODUCT CODE: MAINDEC-080HRKA-B-D
PRODUCT NAME: RK8E DISKLESS CONTROL TEST
DATE CREATED: APRIL 19, 1973
MAINTAINER: DIAGNOSTIC GROUP
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DISK DRIVE(S) TO LOAD POWER ON
LSW=0000 RSW=0001
8-MODE 1/0 PRESST START LS

TIME 3:430

STOP w X RSW 4



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1, ABSTRACT

THE RK8E DISKLESS CONTROL TEST IS DESIGNED FOR THE PURPOSE OF CHECKOUT OF THE RK8E DISK CONTROL LOGIC NOT REQUIRING THE USE OF THE DISK DRIVE. THIS TEST SHOULD BE RUN WITH ALL EXISTING DRIVES SET TO THE LOAD POSITION.

2, REQUIREMENTS

2,1 HARDWARE

POP-8/E, 8/M, OR 8/E COMPUTER OR OTHER FAMILY OF 8 COMPATIBLE COMPUTER WITH NECESSARY DB8E BUS ADAPTER.

AT LEAST 4K OF READ/WRITE MEMORY
ASR-33 TELETYPE OR EQUIVALENT
RK8E DISK CONTROL
RK05 DISK DRIVE

2,2 SPECIAL

THE DISKLESS TEST CAN BE RUN WITH ALL DRIVES AVAILABLE CABLED TO THE RK8E CONTROL, HOWEVER, THE POWER MUST BE SUPPLIED TO THE DRIVES, AND ALL THE DRIVES MUST BE SET TO THE LOAD POSITION.

THE DISKLESS TEST CAN ALSO BE RUN WITH THE CABLES TO THE DRIVES DISCONNECTED FROM THE RK8E CONTROL.

2,3 STORAGE

THE PROGRAM UTILIZES OR OCCUPIES LOCATIONS 0000 TO 7577 OF THE CURRENT FIELD, IF THE CURRENT FIELD IS AN EXTENDED MEMORY FIELD, LOCATIONS 0000 TO 0003 OF FIELD 0 WILL ALSO BE USED FOR INTERRUPT SERVICE.

THE PROGRAM WILL ALSO TEST DATA BREAK TRANSFER TO ALL EXISTING EXTENDED FIELDS AS INDICATED BY SWR9=11.

3, PRELIMINARY PROGRAMS

ALL BASIC AND EXTENDED-MEMORY DIAGNOSTICS SHOULD BE RUN PRIOR TO THIS TEST.

4, SWITCH REGISTER SETTINGS

SWR0=1
 ENTER SCOPE LOOP, AFTER AN ERROR HALT AT LOCATION "ERHLT9" RAISING THIS SWITCH AND PRESSING KEY CONTINUE WILL CAUSE A SCOPE LOOP ON THE CURRENT TEST, IF SWR2=0 AND THE TEST IS STILL FAILING, THE ERROR BELL SHOULD RING INDICATING AN ERROR;

SWR1=1
 INHIBIT END OF TEST HALT, AT THE COMPLETION OF THE TEST THE PROGRAM SHOULD HALT AT LOCATION "ENDHLT", RAISING THIS SWITCH WILL INHIBIT THE END OF TEST HALT.

SWR2=1
 INHIBIT ERROR BELL ON SCOPE LOOP.

SWR3=1
 GET ALL REGISTERS AFTER "ERHLT9", AFTER AN ERROR HALT AT LOCATION "ERHLT9", RAISING THIS SWITCH AND PRESSING KEY CONTINUE WILL RESULT IN THE TYPEDOUT OF THE ABSOLUTE CONTENTS OF THE STATUS, COMMAND, CRC, LOWER DATA, AND SURFACE AND SECTOR REGISTERS.

SWR4=1
 STOP PROGRAM OR TEST HALT, RAISING THIS SWITCH WILL HALT THE PROGRAM AT THE COMPLETION OF THE CURRENT TEST, IF POSSIBLE THIS SWITCH SHOULD ALWAYS BE USED TO STOP THE PROGRAM.

SWR9=11
 AMOUNT OF EXTENDED BANKS OF MEMORY, AT INITIAL START OF THE PROGRAM, SWR9=11 INDICATES THE AMOUNT OF EXISTING EXTENDED MEMORY FIELDS AVAILABLE TO TEST.

5, OPERATOR AND/OR PROGRAM ACTION

5.1 STANDARD TEST PROCEDURE

- A, START AS SPECIFIED THROUGHOUT THIS DOCUMENTATION IS KEY CLEAR AND THEN KEY CONTINUE ON A PDP8/E, PDP8/F, OR PDP8/M COMPUTER;
- B, LOAD THE PROGRAM INTO ANY R/W MEMORY BANK USING THE STANDARD BINARY LOADER TECHNIQUE.

- C, IF IT IS DESIRED TO CHANGE THE IOT CODES WITHIN THE PROGRAM, FOLLOW THE PROCEDURE IN SECTION 5,4,
- D, RUN THE DISKLESS CONTROL TEST PORTION BY FOLLOWING THE PROCEDURE IN SECTION 5,2,
- E, RUN THE MANUAL SCOPE TEST BY FOLLOWING THE PROCEDURE IN SECTION 5,3,

5,2

DISKLESS CONTROL TEST

- A, SET THE SWITCH LABELED "RUN/LOAD" TO THE "LOAD" POSITION ON ALL DRIVES, OR DISCONNECT DRIVES FROM RK8E CONTROL,
- B, IF DRIVES ARE CABLED TO THE RK8E CONTROL, VERIFY AC POWER IN THE DRIVE(S) IS ON,
- C, SET THE SWITCH REGISTER TO 0200 AND PRESS LOAD ADDRESS,
- D, SET THE SWITCH REGISTER TO 0000,
- E, SET SWR9#11 TO THE AMOUNT OF AVAILABLE EXTENDED R/W MEMORY BANKS AND START THE COMPUTER RUNNING,
- F, SET SWR1#1 IF THE OPERATOR DESIRES TO INHIBIT THE END OF TEST HALT AT LOCATION "ENDHLT",
- G, SWR4#1 SHOULD ALWAYS BE USED TO STOP THE PROGRAM,
- H, THE PROGRAM SHOULD PRINT THE FOLLOWING MESSAGE AT THE COMPLETION OF EACH SUCCESSFUL PASS APPROX. EVERY 3,5 MINUTES,

"RK8E DISKLESS PASS COMPLETE"

- I, ANY HALTS OR TYPEDITS OTHER THAN THE PASS COMPLETE TYPEOUT AND THE END OF TEST HALT MENTIONED ABOVE WILL BE CONSIDERED AN ERROR CONDITION, IN ALL CASES ACCESS "ERRORS" SECTION 6 IN THIS DOCUMENTATION,
- J, FOR ABSOLUTE LOCATIONS OF ALL KNOWN HALTS ACCESS PAGE 1 OF THE PROGRAM LISTING,

5,3

MANUAL SCOPE TEST FOR 16 BIT COUNTER

- THIS TEST ENABLES THE OPERATOR TO TEST THE 16 BIT COUNTER WHICH CANNOT BE TESTED UNDER PROGRAM CONTROL IN THE REGULAR DISKLESS TEST, TO RUN THIS TEST, SIMPLY FOLLOW THE FOLLOWING INSTRUCTIONS,
- A, RUN THE DISKLESS CONTROL TEST PORTION PRIOR TO THIS MANUAL TEST,
 - B, SET THE SWITCH REGISTER TO 0201 AND PRESS LOAD ADDRESS,

- C. SET THE SWITCH REGISTER TO 0000 AND PRESS START.
 - D. SCOPE THE 16TH CARRY OUTPUT, TEST POINT 1 (T1), ON THE M7106 MODULE IN THE RKE CONTROL LOGIC, FOR A POSITIVE GOING SIGNAL.
 - E. THE APROX. SIGNAL SHOULD BE A GROUND TO + 3 VOLT PULSE, 9 MICRO-SECONDS WIDE, OCCURRING AT A 140 MICRO-SECOND RATE.
 - F. ALL THAT THE PROGRAM DOES IN THIS SCOPE TEST IS TO COUNT INSTANTLY ISSUE HI MAIN SHIFT PULSES TO THE 16 BIT COUNTER ON THE M7106 MODULE.
- 5.4 CHANGE PROGRAM DEVICE IOT CODES

THE PROGRAM NORMALLY RECOGNIZES PROGRAM DEVICE IOT CODE X74X, TO CHANGE THE PROGRAM DEVICE IOT CODE!
- A. SET THE SWITCH REGISTER TO 0202 AND PRESS LOAD ADDRESS.
 - B. SET THE SWITCH REGISTER TO 0000, SET SWITCH REGISTER BITS 3-8 TO THE DESIRED DEVICE IOT CODE, AND PRESS START.
 - C. THE PROGRAM WILL CHANGE THE DEVICE IOT CODES WITHIN THE PROGRAM AND THEN HALT.
 - D. THE OTHER TESTS CAN THEN BE RUN (SEE SECTIONS 5.2 + 5.3).

6. ERRORS

6.1 USEFUL ERROR INFORMATION

THE LOCATION OF ALL KNOWN HALTS CAN BE FOUND BY ACCESSING PAGE 1 OF THE PROGRAM LISTING.

ALL ERRORS FOUND WHEN RUNNING THIS TEST SHOULD BE CORRECTED BEFORE PROCEEDING ON IN THE TEST.

WHEN AN OPERATOR ENCOUNTERS AN ERROR WHEN RUNNING THIS TEST HE SHOULD, IN ALL CASES, READ THE ERROR TYPEOUT INFORMATION, NOTE THE LOCATION OF THE FAILURE, READ ALL THE INFORMATION UNDER ERRORS IN THIS DOCUMENTATION, AND THEN ACCESS THE PROGRAM LISTING FOR FURTHER INFORMATION.

6.2 NON-RECOVERABLE ERROR HALTS

NON-RECOVERABLE ERROR HALTS FOR WHICH THERE ARE NO
TYPEOUTS OR SCOPE LOOPS ARE LISTED AND DEFINED AS FOLLOWS:

- ERHLT1 UNDEFINED INTERRUPT
- ERHLT2 SKIP TRAP FOR IOT "DCLR"
- ERHLT3 SKIP TRAP FOR IOT "DLAG"
- ERHLT4 SKIP TRAP FOR IOT "DLCA"
- ERHLT5 SKIP TRAP FOR IOT "DRST"
- ERHLT6 SKIP TRAP FOR IOT "DLDC"
- ERHLT7 SKIP TRAP FOR IOT "DMAN"

6.3 RECOVERABLE ERROR HALT

ALL RECOVERABLE ERRORS, FOR WHICH THERE ARE SCOPE LOOPS
AND ERROR TYPEOUTS, SHOULD RESULT IN AN ERROR HALT AT
"ERHLT9".

ERHLT9 RECOVERABLE ERROR HALT; READ INFORMATION
TYPEOUT ON ITY AND ACCESS LISTING.

6.4 ERROR TYPEOUTS

WHEN A RECOVERABLE ERROR OCCURS THE PROGRAM WILL
PRINT AN "ERROR HEADER" WHICH WILL SPECIFY THE
PARTICULAR REGISTER IN ERROR OR TYPE OF ERROR FOUND
AT THE TIME OF THE FAILURE.

POSSIBLE "ERROR HEADERS" ARE AS FOLLOWS.

- AC REGISTER ERROR
- STATUS REGISTER ERROR
- COMMAND REGISTER ERROR
- DISK ADDRESS REGISTER ERROR
- DATA BREAK ERROR
- CRC REGISTER ERROR
- DATA REGISTER ERROR
- DISK SKIP ERROR
- DISK INTERRUPT ERROR

AFTER THE "ERROR HEADER" MENTIONED ABOVE IS TYPED, THE PROGRAM WILL PRINT THE FOLLOWING ERROR INFORMATION FOUND AT THE TIME OF THE FAILURE, PERTAINING TO THE FAILURE, POSSIBLE TYPEDOUTS ARE AS FOLLOWS.

- PGI PROGRAM LOCATION OF THE ACTUAL FAILURE,
- GDI REFERS TO THE DATA EXPECTED IN THE REGISTER OR TYPE OF TEST SPECIFIED IN THE "ERROR HEADER",
- CRI CONTENTS OF THE CRC REGISTER,
- STI CONTENTS OF THE STATUS REGISTER,
- DBI CONTENTS OF THE LOWER DATA REGISTER,
- CMi CONTENTS OF THE COMMAND REGISTER,
- DAI CONTENTS OF THE DISK ADDRESS REGISTER OR THE CYLINDER, SURFACE, AND SECTOR BITS,
- ADI BREAK ADDRESS OF DATA BREAK,
- DTI DATA FOUND DURING DATA BREAK,
- ACI CONTENTS OF THE AC REGISTER,

THE "GDI" INFORMATION TYPED OUT POINTS TO THE DATA EXPECTED IN THE REGISTER IN ERROR OR TYPE OF ERROR TYPED OUT IN THE "ERROR HEADER".

THE ERROR INFORMATION INDICATOR SUGGESTED BY THE "ERROR HEADER" (I.E. DAI FOR DISK ADDRESS ERROR, CMi FOR COMMAND REGISTER ERROR, CRI FOR CRC REGISTER ERROR, ETC.) IS THE ACTUAL CONTENTS OF THAT PARTICULAR REGISTER, ERROR INFORMATION OTHER THAN THAT SUGGESTED BY THE "ERROR HEADER" IS THE SOFTWARE INFORMATION LOADED INTO THAT REGISTER PRIOR TO THE FAILURE. (NOTE: "STI" STATUS ALWAYS INDICATES THE ACTUAL CONTENTS.)

TO TYPEOUT THE ACTUAL CONTENTS OF THE CRC, STATUS, LOWER DATA, COMMAND, AND SURFACE AND SECTOR REGISTERS, AFTER AN ERROR HALT AT LOCATION "ERHLT9", SET SWR3#1 AND PRESS KEY CONTINUE.

SCOPE LOOPS

THERE ARE SCOPE LOOPS AVAILABLE FOR ALL ERRORS RESULTING IN AN ERROR HALT AT "ERHLT9".

TO ENTER SCOPE LOOP, INHIBIT ERROR TYPEOUT, AND INHIBIT ERROR HALT; AFTER AN ERROR HALT AT "ERHLT9", SET SWR21 AND PRESS KEY CONTINUE.

IF THE SCOPE LOOP IS WORKING CORRECTLY AND IF THE TEST IS STILL FAILING THE TTY BELL SHOULD RING, SET SWR21 TO INHIBIT THE TTY BELL.

TYPICAL ERROR TYPEOUTS

THE FOLLOWING IS A TYPICAL EXAMPLE OF AN "ERROR HEADER" AND TYPEOUT THAT COULD HAVE OCCURRED IF A DISK IOT FAILED TO CLEAR THE AC REGISTER.

AC REGISTER ERROR
PC1541 0010000 AC10100

THE FOLLOWING IS AN EXAMPLE OF AN "ERROR HEADER" AND TYPEOUT THAT COULD HAVE OCCURRED WHEN READING THE COMMAND REGISTER.

COMMAND REGISTER ERROR
PC12100 0010222 CM10200

THE FOLLOWING IS AN EXAMPLE OF AN "ERROR HEADER" AND TYPEOUT THAT COULD HAVE OCCURRED IF THE DISK SKIP IOT FAILED TO SKIP.

DISK SKIP ERROR
PC13332

THE FOLLOWING IS AN EXAMPLE OF AN "ERROR HEADER" AND TYPEOUT THAT COULD HAVE OCCURRED ON A WRITE DATA BREAK.

DATA BREAK ERROR
PC14453 0015252 CM14000 AD1777 DT15250

RESTRICTIONS

IF THE DRIVES ARE CABLED TO THE RK0E CONTROL LOGIC, THE AC POWER TO THE DRIVES MUST BE ON AND THE DRIVES MUST BE SET TO THE LOAD POSITION.

8, TROUBLE SHOOTING INFORMATION

 FUNCTION

6741 DSKP "SKIP" SKIP IF TRANSFER DONE FLAG OR ERROR FLAG IS SET,

6742 DCLR "CLEAR" FUNCTION IS REGULATED BY AC BITS 10 AND 11. THE AC IS THEN CLEARED.

AC10 AC11

2 CLEAR THE AC AND STATUS REGISTER,

3 CLEAR THE AC, CONTROL, AND MAJOR REGISTERS. THIS INSTRUCTION WILL STOP THE CONTROL EVEN IF IT IS WRITING A HEADER. THIS IS THE ONLY INSTRUCTION THAT WILL CLEAR MAINTENANCE MODE.

1 CLEAR AC, RECALIBRATE DISK DRIVE, AND CLEAR STATUS REGISTER.

6743 DLAC "LOAD DISK ADDRESS AND GO" LOAD THE DISK CYLINDER, SURFACE, AND SECTOR FROM THE AC. CLEAR THE AC, AND DO THE COMMAND IN THE COMMAND REGISTER.

AC
 --
 0-6 CYLINDER
 7 SURFACE (1= UPPER) (0= LOWER)
 8-11 SECTOR

6744 DLCA "LOAD CURRENT ADDRESS" LOAD THE CURRENT ADDRESS FROM AC. THE AC IS THEN CLEARED.

AC
 --
 0-11 CURRENT ADDRESS
 6745 DRST "READ STATUS" CLEAR THE AC AND READ THE CONTENTS OF THE STATUS REGISTER INTO THE AC.

AC
--

- 0 TRANSFER DONE
- 1 READY TO SEEK, READ, OR WRITE,
- 2 NOT USED
- 3 SEEK FAIL
- 4 DISK FILE READY
- 5 CONTROL BUSY ERROR
- 6 TIME OUT ERROR
- 7 WRITE LOCK ERROR
- 8 CRC ERROR
- 9 DATA RATE ERROR
- 10 DRIVE STATUS ERROR
- 11 CYLINDER ADDRESS ERROR

6746 DL0C

"LOAD COMMAND" LOAD THE COMMAND REGISTER FROM AC, CLEAR THE AC, AND CLEAR THE STATUS REGISTER.

AC
--

- 0=2=0 READ DATA
- 0=2=1 READ ALL
- 0=2=2 WRITE LOCK
- 0=2=3 SEEK ONLY
- 0=2=4 WRITE DATA
- 0=2=5 WRITE ALL
- 0=2=6 NOT USED
- 0=2=7 NOT USED
- 3 ENABLE INTERRUPT
- 4 ENABLE SET TRANSFER DONE ON SEEK DONE
- 5 HALF BLOCK 128 WORDS
- 6 EXTENDED MEMORY ADDRESS
- 7 EXTENDED MEMORY ADDRESS
- 8 EXTENDED MEMORY ADDRESS
- 9 UNIT SELECT
- 10 UNIT SELECT
- 11 EXTENDED CYLINDER ADDRESS

6747 DMAN

"MAINTENANCE IOT" LOAD THE MAINTENANCE REGISTER FROM THE AC, THE FUNCTION IS REGULATED BY THE AC BITS, MAINTENANCE MODE CAN ONLY BE CLEARED BY DCLR "CLEAR CONTROL".

AC
--

0 ENTER MAINTENANCE MODE
1 ENABLE SHIFT TO LOWER BUFFER
2 AC BIT 10, CRC REGISTER, AND THE
3 LOWER DATA BUFFER ARE CONNECTED AS
4 A SHIFT REGISTER, AC BIT 10 DATA
5 SHIFTS TO THE CRC, THE CRC SHIFTS
6 TO THE LOWER DATA BUFFER,
7 SHIFT COMMAND REGISTER TO THE LOWER
8 DATA BUFFER,
9 SHIFT THE SURFACE AND SECTOR REGISTER
10 TO THE LOWER DATA BUFFER,
11 SHIFT AC 10 DATA TO THE UPPER
DATA BUFFER, THE UPPER BUFFER
SHOULD SINK IN THE SILO WHEN
FULL,
ONE SINGLE CYCLE BREAK REQUEST,
DIRECTION IS REGULATED BY FUNCTION
IN THE COMMAND REGISTER,
CLEAR AC THEN READ THE LOWER
DATA BUFFER TO THE AC,
NOT USED,
NOT USED,
USED AS DATA WITH OTHER BITS IN
THE MAINTENANCE MODE,
NOT USED,

9: PROGRAM DESCRIPTION

THE RK8E DISKLESS CONTROL TEST IS BASICALLY A STATIC REGISTER AND IOT TEST ON THE RK8E DISK CONTROL LOGIC NOT REQUIRING THE USE OF THE DISK DRIVE. SINGLE CYCLE BREAKS ARE ALSO EXECUTED TO AND FROM THE CONTROL LOGIC.

THE PROGRAM IS DIVIDED INTO MANY SEPARATE INDIVIDUAL SUBTESTS, WHICH ALL TEST DIFFERENT PARTS OF THE CONTROL LOGIC, THE SUBTESTS ARE ARRANGED IN SUCH A MANNER TO TEST THE EASIEST FUNCTIONS FIRST, PRECEDING EACH SUBTEST, IN THE LISTING, IS A SHORT EXPLANATION OF THE TEST AND LOGIC TESTED.

A BRIEF EXPLANATION OF SUBJECTS AND PROGRAM FLOW IS AS FOLLOWS!

A: SETUP

SETUP POINTERS AND RETURNS FOR CURRENT FIELD, AMOUNT OF EXTENDED FIELDS, AND INTERRUPT SERVICE.

B: TST0-TST3

VERIFY REGISTERS AND CONTROL FLIP-FLOPS WERE CLEARED BY "CLR ALL" AT START OF TEST. (NOTE! "CLR ALL" GENERATED BY KEY START ON MOST PDP-8/S OR KEYS CLEAR AND THEN CONTINUE ON A PDP-8/E, 9/F OR 8/M.)

C: TST4

VERIFY ALL DRIVES ARE SET TO "LOAD" OR WERE DISCONNECTED FROM CONTROL AT START OF TEST.

D: TST5

VERIFY "DSKP" DISK SKIP NOT DOESN'T AFFECT AC REGISTER.

E: TST6-TST9

VERIFY THAT JOTS "DLCA LOAD CURRENT ADDRESS", "DLDC LOAD COMMAND", "DLAG LOAD DISK ADDRESS", AND "DCLR CLEAR CONTROL FUNCTION" DO CLEAR THE AC REGISTER AFTER THEIR EXECUTION.

F: TST10-TST14

VERIFY LOADING, CLEARING, AND READING THE COMMAND REGISTER USING VARIOUS DATA PATTERNS

G: TST15-TST20

VERIFY LOADING, CLEARING, AND READING THE DISK ADDRESS REGISTER USING VARIOUS DATA PATTERNS.

H: TST21-TST30

VERIFY LOADING, CLEARING, AND READING THE COMMAND REGISTER USING VARIOUS DATA PATTERNS

I, TST31

VERIFY LOADING, CLEARING, AND READING THE DISK ADDRESS REGISTER,
J, TST32-TST33

VERIFY "DMAN MAINTENANCE 101" DOES NOT EFFECT AC REGISTER,
K, TST34-TST35

VERIFY MAINTENANCE MODE CAN BE SET AND CLEARED CORRECTLY,
L, TST36-TST40

VERIFY LOADING, READING, AND CLEARING THE CRC REGISTER USING VARIOUS DATA PATTERNS;
M, TST41-TST48

VERIFY LOADING, READING, AND CLEARING THE BUFFER REGISTERS USING VARIOUS DATA PATTERNS
N, TST49-TST76

VERIFY SETTING AND CLEARING VARIOUS STATUS REGISTER BITS, ERROR FLAGS, SKIP FUNCTIONS, AND INTERRUPT FUNCTIONS,
O, TST77-TST100

VERIFY READ AND WRITE MAINTENANCE DATA BREAKS TO AND FROM CONTROL USING VARIOUS DATA PATTERNS IN CURRENT FIELD;
P, TST101-TST125

VERIFY READ AND WRITE MAINTENANCE DATA BREAKS TO AND FROM CONTROL USING VARIOUS DATA PATTERNS IN ALL EXISTING EXTENDED R/W MEMORY FIELDS,
Q, TYPE PASS COMPLETE AND LOOP TO TST4;
PROGRAM LISTING

```

/
/RK0E DISKLESS CONTROL TEST
/ALL KNOWN HLTS
/
0200 6413 ERHLT1 /UNDEFINED INTERRUPT
0201 6504 ERHLT2 /SKIP TRAP FOR DCLR
0202 6465 ERHLT3 /SKIP TRAP FOR DLCA
0203 6457 ERHLT4 /SKIP TRAP FOR DLCA
0204 6446 ERHLT5 /SKIP TRAP FOR DRSY
0205 6473 ERHLT6 /SKIP TRAP FOR DLDC
0206 6510 ERHLT7 /SKIP TRAP FOR DMAN
0207 6323 ERHLT9 /RECOVERABLE ERROR HALT
0210 5760 ENDHLT /END OF TEST HALT
0211 7016 STPHLT /HALT FROM SWR4=1
0212 7121 CHNHLT /IOT CHANGE HALT
/
6741 DSKP=6741 /SKIP ON TRANSFER DONE OR ERROR
6742 DCLR=6742 /CLEAN DISK CONTROL LOGIC
6743 DLCA=6743 /LOAD ADDRESS AND GO
6744 DLCA=6744 /LOAD CURRENT ADDRESS
6745 DRSY=6745 /READ STATUS REGISTER
6746 DLDC=6746 /LOAD COMMAND REGISTER
6747 DMAN=6747 /LOAD MAINTENANCE
/
5420 IOTCHN=JMP I XCHANG
5422 MANUAL=JMP I MANTST
4436 ENMAN1=JMS I XMAIN1
4437 ENMAN2=JMS I XMAIN2
4427 NERROR=JMS I XNERRO
4430 ERROR=JMS I XERRO
4431 IONWAT=JMS I XIONWT
4432 ACCMP1=JMS I XCOMP1
4433 ACCMP2=JMS I XCOMP2
4434 RDSTAT=JMS I XRST
4435 RDCMD=JMS I XRDCM
4440 RDAAD=JMS I XRDAAD
4421 LDBUF=JMS I XUPPER
4444 LDADD=JMS I XLBAD
4441 DSKSKP=JMS I XSKKP
4442 LDCHD=JMS I XLDCM
4443 LDCLR=JMS I XLDCA
4445 CLRALL=JMS I XCLDR
4446 RDCRC=JMS I XRDCR
4447 LDMAN=JMS I XLDMN
4450 RDBUF=JMS I XRDBF
4451 PRNTER=JMS I XPRN
4452 OCTEL=JMS I XFROCT
4453 TROCT=JMS I XTOST
4426 TYPE=JMS I XPRINT
4454 CRLF=JMS I XCRLF
/
0000 *0
/

```

```

0000 0000 0
0001 5001 5001
0002 0002 0002
0003 7003 0003
/
0010 *10
/
0010 0000 AUTOL0, 0
/
0020 *20
/
0020 7101 XCHANG: CHANG
0021 7055 XUPPER: UPPER
0022 6000 MANTST: MANUL
0023 6411 INTRQ: INTADD
0024 5747 XEND: ENDTST
0025 7210 THSFLO: PRSFLO
0026 6737 XPRINT: PRINT
0027 7007 XNERRO: NERRO
0030 6200 XERRO: ERRO
0031 6400 XIONWT: IONWT
0032 6415 XCOMP1: COMP1
0033 6425 XCOMP2: COMP2
0034 6443 XRST: RDST
0035 6511 XRDCM: RDCM
0036 6567 XMAIN1: MAIN1
0037 7000 XMAIN2: MAIN2
0040 6511 XRDAAD: RDAAD
0041 6474 XSKKP: SKKP
0042 6466 XLDCM: LDCHD
0043 6452 XLDCA: LDCLR
0044 6460 XLBAD: LDADD
0045 6501 XCLDR: CLRALL
0046 6600 XRDCR: RDCRC
0047 6505 XLDMN: LDMAN
0050 6537 XRDBF: RDBUF
0051 6721 XPRN: PRNTER
0052 6656 XFROCT: OCTEL
0053 6631 XTOST: TROCT
0054 6646 XCRLF: CRLF
0055 0240 K0240, 0240
0056 0260 K0260, 0260
0057 0000 K0000, 0000
0060 0001 K0001, 0001
0061 0002 K0002, 0002
0062 0003 K0003, 0003
0063 0004 K0004, 0004
0064 0006 K0006, 0006
0065 0007 K0007, 0007
0066 0010 K0010, 0010
0067 0020 K0020, 0020
0070 0037 K0037, 0037
0071 0040 K0040, 0040
0072 0100 K0100, 0100
0073 0200 K0200, 0200

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0074 0207 K0207, 0207
0075 0400 K0400, 0400
0076 1000 K1000, 1000
0077 2000 K2000, 2000
0100 3777 K3777, 3777
0101 4000 K4000, 4000
0102 7000 K7000, 7000
0103 7776 K7776, 7776
0104 7775 K7775, 7775
0105 7700 K7700, 7700
0106 7740 K7740, 7740
0107 0070 K0070, 0070
0110 0077 K0077, 0077
0111 0377 K0377, 0377
0112 0177 K0177, 0177
0113 2925 K2925, 2925
0114 5252 K5252, 5252
0115 3740 K3740, 3740
0116 3737 K3737, 3737
0117 7717 K7717, 7717
0120 4100 K4100, 4100
0121 7600 K7600, 7600
0122 5000 K5000, 5000
0123 5777 K5777, 5777
0124 7774 K7774, 7774
0125 7771 K7771, 7771
0126 7777 K7777, 7777

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DECIMAL

```

/
0127 7774 M4, =4
0130 7773 M5, =5
0131 7771 M7, =7
0132 7764 M12, =12
0133 7760 M16, =16
0134 7720 M48, =48
0135 7600 M128, =128
0136 7501 M191, =191
0137 7401 M259, =259
0140 7324 M300, =300

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OCTAL

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/
0141 0017 K0017, 0017
0142 0215 K0215, 0215
0143 0212 K0212, 0212
0144 6201 K06F, 06F
0145 6244 KRMF, RMF
0146 5403 K5403, 5403
0147 3776 MTSB, =TSB5 =1
0150 0000 REG1, 0
0151 0000 REG2, 0
0152 0000 SBCNT1, 0
0153 0000 TCNTM1, 0
0154 0000 TCNTM2, 0

```

```

0155 0000 TCNTM3, 0
0156 0000 TCNTM4, 0
/
0157 0000 GDREG1, 0
0160 0000 GDREG2, 0
0161 0000 CRREG1, 0
0162 0000 CRREG2, 0
0163 0000 STREG, 0
0164 0000 DBRLO, 0
0165 0000 CHREG, 0
0166 0000 DAREG, 0
0167 0000 ADREG, 0
0170 0000 DTREG, 0
0171 0000 ACREG, 0
0172 0000 HOMEHA, 0
0173 0000 FLDMAX, 0
0174 2200 STCON, 2200
0175 0000 SAVEND, 0
0176 7041 XSET, SETUP

```

0200

```

/
/SETUP POINTERS FOR AMOUNT OF EXTENDED
/BANKS OF MEMORY, INTERRUPT SERVICE, AND CURRENT
/FIELD,
/

```

```

0200 5203 BGN, JMP ,+3 /TO REGULAR DIAGNOSTIC
0201 5422 MANUAL /TO MANUAL SCOPE TEST
0202 5420 IOTCHN /TO IOT CHANGE ROUTINE
/
0203 6224 RIF
0204 3172 DCA HOMEHA
0205 1172 TAD HOMEHA
0206 1144 TAD KCDF /MAKE HOMEHF
0207 3210 DCA PRSFLD
0210 7402 PRSFLD, HLT /MAKE DF=IF
0211 4576 JMS I XSET /SETUP FIELD 0
0212 1173 TAD FLDMAX /GET FIRST PASS POINTER
0213 7640 SEA CLA /IS IT FIRST PASS
0214 5217 JMP ,+3 /NO, MUST BE A RESTART
0215 1526 TAD I K7777 /GET LAST LOCATION
0216 3175 DCA SAVEND /SAVE IT FOR A RESTORE
0217 7604 LAS
0220 0065 AND K0007 /MASK 9=11
0221 7040 CMA
0222 3173 DCA FLDMAX /SAVE AMOUNT OF EXTENDED MEMORY
/

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```

/VERIFY THAT THE DISK MOTOR IS OFF, THE
/STATUS REGISTER SHOULD ONLY CONTAIN NOT READY TO
/SEEK, READ, OR WRITE AND NOT DISK FILE READY,
/INITIALIZE SHOULD HAVE CLEARED ALL OTHER BITS
/

```

```

0223 3190 DCA REG1 /GET EXPECTED STATUS
0224 1174 TAD STCON /SETUP TEST HANDLER
0225 3160 DCA GDREG2

```

```

0226 1150 /
0227 4434 TST0: TAD REG1 /GET AC VALUE
0230 4432 RDSTAT /READ STATUS REGISTER
0231 4427 ACCMP1 /CHECK RESULTS
0232 4430 NERROR /AC O,K, 4896 LOOPS
0233 2226 TST0 /ERROR, "INITIALIZE" CLEAR STATUS
0234 5000 5000 /REGISTER FAILED,
/SCOPE LOOP POINTER
/TEXT POINTER

/VERIFY THAT SKIP CONDITIONS WERE CLEARED
/ BY "INITIALIZE" ON START OF TEST,
/
0235 4441 TST1: DSKSKP /ISSUE "DSKSP" IOT
0236 4427 NERROR /DSKSP O,K, 4896 LOOPS
0237 4430 ERROR /ERROR, "INITIALIZE" CLEAR
/SKIP CONDITIONS
/SCOPE LOOP POINTER
/TEXT POINTER

0240 0235 TST1
0241 0006 0006 /TEXT POINTER

/VERIFY THAT INTERRUPT REQUESTS WERE
/ CLEARED BY "INITIALIZE" AT START OF TEST
/
0242 4431 TST2: IONWAT /GO WAIT FOR INT.
0243 4427 NERROR /INT, O,K, 4896 LOOPS
0244 4430 ERROR /ERROR, "INITIALIZE" CLEAR
/INT. CONDITION
/SCOPE LOOP POINTER
/TEXT POINTER

0245 2242 TST2
0246 0007 0007 /TEXT POINTER

/VERIFY THAT COMMAND REGISTER WAS CLEARED
/ BY "INITIALIZE" AT START OF TEST, READ COMMAND
/ REGISTER WITH "DHAN" (MAINTENANCE IOT)
/
0247 3160 TST3: DCA GDREG2 /SETUP COMPARE REGISTER
0250 4435 RD CMD /READ COMMAND REGISTER
0251 7650 SNA CLA /AC SHOULD BE #
0252 4427 NERROR /AC O,K, 4896 LOOPS
0253 4430 ERROR /ERROR, "INITIALIZE" CLEAR
/COMMAND REGISTER
/SCOPE LOOP POINTER
/TEXT POINTER

0254 0250 TST3
0255 4201 4201 /TEXT POINTER

/VERIFY THAT ALL DRIVES ON CONTROL ARE OFF,
/ THE STATUS SHOULD BE 2200 WHEN DRIVES ARE SELECTED,
/
0256 1174 TST4: TAD STCON /EXPECTED STATUS
0257 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0260 7301 CLA CLL IAC /ENABLE CLEAR CONTROL
0261 4445 TAD REG1 /DCLR "CLR ALL"
0262 1150 TAD /GET AC VALUE
0263 4442 LD CMD /LOAD COMMAND
0264 4434 RD STAT /READ STATUS
0265 4432 ACCMP1 /CHECK RESULTS
0266 4427 NERROR /O,K, 4896 LOOPS

```

```

0267 4430 ERROR /ERROR, STATUS
0270 0256 TST4 /SCOPE LOOP POINTER
0271 5000 5000 /TEXT POINTER

/VERIFY THAT IOT "DSKSP" DOES NOT AFFECT
/ AC REGISTER, TRY ALL COMBINATIONS IN AC,
/
0272 1150 TST5: TAD REG1 /GET AC VALUE
0273 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0274 1150 TAD REG1
/
0275 4441 DSKSKP /ISSUE "DSKSP" IOT
0276 7000 NOP
0277 4432 ACCMP1 /CHECK AC, COMPARE TO GDREG2
0300 4427 NERROR /AC O,K, 4896 LOOPS
0301 4430 ERROR /ERROR, "DSKSP" CHANGED AC,
/SCOPE LOOP POINTER
/TEXT POINTER

0302 2272 TST5
0303 4010 4010 /TEXT POINTER

/VERIFY THAT "DLCA" LOAD CURRENT ADDRESS
/ REGISTER CLEARS THE AC, TRY ALL COMBINATIONS IN AC
/
0304 3160 TST6: DCA GDREG2 /SETUP COMPARE REGISTER
0305 1150 TAD REG1 /GET AC VALUE
0306 4443 LD CUR /LOAD CURRENT ADDRESS "DLCA"
0307 4432 ACCMP1 /CHECK AC, COMPARE TO GDREG2
0310 4427 NERROR /AC O,K, 4896 LOOPS
0311 4430 ERROR /ERROR, DLCA CLEAR AC
/SCOPE LOOP POINTER
/TEXT POINTER

0312 0305 TST6
0313 4010 4010 /TEXT POINTER

/VERIFY THAT "DLCC" LOAD COMMAND REGISTER
/ CLEARS THE AC, TRY ALL COMBINATIONS IN AC,
/
0314 1150 TST7: TAD REG1 /GET AC VALUE
0315 4442 LD CMD /"DLCC" LOAD COMMAND REGISTER
0316 4432 ACCMP1 /CHECK AC, COMPARE TO GDREG2
0317 4427 NERROR /AC O,K, 4896 LOOPS
0320 4430 ERROR /ERROR, DLCC CLEAR AC
/SCOPE LOOP POINTER
/TEXT POINTER

0321 0314 TST7
0322 4010 4010 /TEXT POINTER

/VERIFY THAT "DLAC" CLEARS THE AC REGISTER,
/ TRY ALL COMBINATIONS IN AC,
/
0323 7301 TST8: CLA CLL IAC /CLEAR CONTROL
0324 4445 CLR ALL /GET DATA
0325 1151 TAD REG2 /LOAD DISK ADDRESS
0326 4444 LDA DD /CHECK RESULTS
0327 4432 ACCMP1 /O,K, 4896 LOOPS
0330 4427 NERROR /ERROR, DLAC, CLEAR AC
/SCOPE LOOP POINTER
/TEXT POINTER

0331 4430 TST8
0332 0323 0323 /TEXT POINTER
0333 4010 4010 /TEXT POINTER

/VERIFY THAT IOT "DCLR" CLEARS THE AC,

```

```

/TRY ALL COMBINATIONS IN AC
/
0334 1150 TST9: TAD REG1 /DCLR "CLR ALL"
0335 4445 CLRALL /CHECK AC, COMPARE TO GDREG2
0336 4432 ACCMP1 /AC O.K, 4096 LOOPS
0337 4427 NERROR /ERROR, DCLR CLEAR AC
0340 4430 ERROR /SCOPE LOOP POINTER
0341 0334 TST9 /TEXT POINTER
0342 4010 4010

/VERIFY THAT THE COMMAND REGISTER CAN BE LOADED
/AND SHIFTED INTO THE LOWER DATA BUFFER WITH
/THE MAINTENANCE IOT, USE DATA PATTERN 0000 + 7777;
/
0343 7301 TST10: CLA CLL IAC /DCLR "CLR ALL"
0344 4445 CLRALL
0345 1150 TAD REG1
0346 7110 CLL RAR /DATA 7777 IF LINK IS SET
0347 7630 SEL CLA
0350 7240 CLA CMA /SETUP COMPARE REGISTER
0351 3160 DCA GDREG2
0352 1160 TAD GDREG2
0353 7040 CMA /SET COMMAND TO OPOSITE
0354 4442 LDCMD
0355 1160 TAD GDREG2 /SET COMMAND TO VALUE EXPECTED
0356 4442 LDCMD /READ COMMAND REGISTER
0357 4435 RDCMD /CHECK RESULTS
0360 4432 ACCMP1 /O.K, 4096 LOOPS
0361 4427 NERROR /ERROR, COMMAND REGISTER
0362 4430 ERROR /SCOPE LOOP POINTER
0363 0343 TST10 /TEXT POINTER
0364 4201 4201

/VERIFY THAT THE COMMAND REGISTER CAN BE LOADED
/AND SHIFTED INTO THE LOWER DATA BUFFER WITH
/THE MAINTENANCE IOT, USE DATA PATTERN 2525 + 5252
/
0365 7301 TST11: CLA CLL IAC /DCLR "CLR ALL"
0366 4445 CLRALL
0367 1150 TAD REG1
0370 7110 CLL RAR /DATA 5252 IF LINK IS SET
0371 7630 SEL CLA
0372 1113 TAD K2525
0373 1113 TAD K2525 /SETUP COMPARE REGISTER
0374 3160 DCA GDREG2
0375 1160 TAD GDREG2
0376 7040 CMA /SET COMMAND TO OPOSITE
0377 4442 LDCMD
0400 1160 TAD GDREG2 /SET COMMAND TO VALUE EXPECTED
0401 4442 LDCMD /READ COMMAND REGISTER
0402 4435 RDCMD /CHECK RESULTS
0403 4432 ACCMP1 /O.K, 4096 LOOPS
0404 4427 NERROR /ERROR, COMMAND REGISTER
0405 4430 ERROR /SCOPE LOOP POINTER
0406 0365 TST11

```

```

0407 4201 4201 /TEXT POINTER

/VERIFY THAT THE COMMAND REGISTER
/BE LOADED AND THEN SHIFTED INTO THE LOWER
/DATA BUFFER, TRY ALL COMBINATIONS,
/
0410 1151 TST12: TAD REG2 /GET AC VALUE
0411 4442 LDCMD /LOAD COMMAND REGISTER
0412 1150 TAD REG1
0413 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0414 1150 TAD REG1
0415 4442 LDCMD /LOAD COMMAND REGISTER
0416 4435 RDCMD /READ COMMAND REGISTER
0417 4432 ACCMP1 /CHECK AC, COMPARE TO GDREG2
0420 4427 NERROR /AC O.K, 4096 LOOPS
0421 4430 ERROR /ERROR, LOAD OR HEAD
/COMMAND REGISTER
/SCOPE LOOP POINTER
/TEXT POINTER

0422 0410 TST12
0423 4201 4201

/VERIFY THAT DCLR DOES NOT CLEAR COMMAND
/REGISTER WHEN AC10=0 AND AC11=0
/
0424 1150 TST13: TAD REG1 /LOAD COMMAND REGISTER
0425 4442 LDCMD
0426 1151 TAD REG2 /SETUP COMPARE REGISTER
0427 3160 DCA GDREG2
0430 1151 TAD REG2
0431 4442 LDCMD /LOAD COMMAND REGISTER
0432 4445 CLRALL /DCLR "CLR ALL"
0433 4435 RDCMD /READ COMMAND REGISTER
0434 4432 ACCMP1 /CHECK AC, COMPARE TO GDREG2
0435 4427 NERROR /AC O.K, 4096 LOOPS
0436 4430 ERROR /ERROR, DCLR CLEAR COMMAND
/REGISTER WHEN AC10=0 + AC11=0
/SCOPE LOOP POINTER

0437 0424 TST13
0440 4201 4201

/VERIFY THAT DCLR DOES CLEAR COMMAND
/REGISTER WHEN AC10=0 AND AC11=1
/
0441 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0442 1150 TAD REG1
0443 4442 LDCMD /LOAD COMMAND REGISTER
0444 7301 CLA CLL IAC /ENABLE CLEAR CONTROL
0445 4445 CLRALL /DCLR "CLR ALL"
0446 4435 RDCMD /READ COMMAND REGISTER
0447 7650 SNA CLA /CHECK AC, SHOULD EQUAL 0
0450 4427 NERROR /AC O.K, LOOP 4096
0451 4430 ERROR /ERROR, DCLR CLEAR COMMAND
/REGISTER WHEN AC10=0+AC11=1
/SCOPE LOOP POINTER
/TEXT POINTER

0452 0442 TST14
0453 4201 4201

/VERIFY THAT DLG DOES LOAD THE SURFACE AND SECTOR

```

/REGISTER, USE DATA PATTERN 00 + 37,

```

0454 7301 TST15, CLA CLL IAC /ENABLE CLEAR CONTROL
0455 4445 CLRALL /CLEAR CONTROL
0456 1132 TAD M12
0457 3153 DCA TCNTR1 /SETUP 12 BIT SHIFT COUNTER
0460 1150 TAD REG1
0461 7110 CLL RAR /DATA 00 + 37??
0462 7630 SEL CLA /37?
0463 7340 CLA CLL CMA /LOAD DISK ADDRESS "DLAG"
0464 4444 LDADD
0465 1166 TAD DAREG
0466 0070 AND K0037 /MASK EXPECTED VALUE
0467 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0470 4437 ENMAN2 /ENTER MAINTENANCE
0471 1073 TAD K0200 /ENABLE SHIFT LOWER BUFFER
0472 4447 LDMAN /LOAD MAINTENANCE
0473 2153 ISZ TCNTR1 /COUNT 12 SHIFTS
0474 5272 JMP ,=2
0475 7300 CLA CLL /ENABLE READ LOWER BUFFER
0476 1067 TAD K0020 /LOAD MAINTENANCE
0477 4447 LDMAN /LOAD MAINTENANCE
0500 3166 DCA DAREG /SAVE VALUE FOUND
0501 1166 TAD DAREG
0502 4432 ACCMP1 /CHECK RESULTS
0503 4427 NERROR /O.K, 4096 LOOPS
0504 4430 ERROR /ERROR, SURFACE AND SECTOR SHIFT
0505 7454 TST15 /SCOPE LOOP POINTER
0506 4102 4102 /TEXT POINTER

```

/VERIFY THAT DLG LOADS THE SURFACE AND
/SECTOR REGISTER, USE DATA PATTERN ALL
/COMBINATIONS,

```

0507 7301 TST16, CLA CLL IAC /ENABLE CLEAR CONTROL
0510 4445 CLRALL /CLEAR CONTROL
0511 1132 TAD M12
0512 3153 TAD TCNTR1 /SETUP 12 BIT SHIFT COUNTER
0513 1150 DCA REG1
0514 0070 AND K0037 /MASK EXPECTED VALUE
0515 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0516 1150 TAD REG1
0517 4444 LDADD /LOAD DISK ADDRESS "DLAG"
0520 4437 ENMAN2 /ENTER MAINTENANCE
0521 1073 TAD K0200 /ENABLE SHIFT LOWER BUFFER
0522 4447 LDMAN /LOAD MAINTENANCE
0523 2153 ISZ TCNTR1 /COUNT 12 SHIFTS
0524 5322 JMP ,=2
0525 7300 CLA CLL /ENABLE READ LOWER BUFFER
0526 1067 TAD K0020 /LOAD MAINTENANCE
0527 4447 LDMAN /LOAD MAINTENANCE
0530 3166 DCA DAREG /SAVE VALUE FOUND
0531 1166 TAD DAREG
0532 4432 ACCMP1 /CHECK RESULTS
0533 4427 NERROR /O.K, 4096 LOOPS

```

```

0534 4430 ERROR /ERROR, SURFACE AND SECTOR SHIFT
0535 0507 TST16 /SCOPE LOOP POINTER
0536 4102 4102 /TEXT POINTER

```

/VERIFY THAT THE DISK ADDRESS REGISTER CAN BE LOADED
/AND SHIFTED TO LOWER DATA BUFFER WITH THE MAINTENANCE
/IOT, USE DATA PATTERN 0000 + 7777
/SHIFT THE SURFACE AND SECTOR FROM THE SURFACE AND SECTOR
/REGISTER, SHIFT THE LOWER CYLINDER BITS FROM THE CRC REGISTER;

```

0537 7301 TST17, CLA CLL IAC /CLR "CLR ALL"
0540 4445 CLRALL
0541 1150 TAD REG1
0542 7110 CLL RAR /USE DATA 7777 IF LINK IS SET
0543 7630 SEL CLA /SETUP COMPARE REGISTER
0544 7240 DCA GDREG2
0545 3160 TAD GDREG2
0546 1160 CMA /SET DISK ADDRESS TO OPOSITE
0547 7040 LDADD
0550 4444 TAD GDREG2 /SET DISK ADDRESS TO EXPECTED
0551 1160 LDADD /READ DISK ADDRESS
0552 4444 RDADD /CHECK RESULTS
0553 4440 ACCMP1 /CHECK RESULTS
0554 4432 NERROR /O.K, 4096 LOOPS
0555 4427 ERROR /ERROR, DISK ADDRESS REGISTER
0556 4430 TST17 /SCOPE LOOP POINTER
0557 0537 4102 /TEXT POINTER
0560 4102 4102

```

/VERIFY THAT THE DISK ADDRESS REGISTER CAN BE LOADED
/AND SHIFTED TO LOWER DATA BUFFER WITH THE MAINTENANCE
/IOT, USE DATA PATTERN 2525 + 5252,
/SHIFT THE SURFACE AND SECTOR FROM THE SURFACE AND SECTOR
/REGISTER, SHIFT THE LOWER CYLINDER BITS FROM THE CRC REGISTER;

```

0561 7301 TST18, CLA CLL IAC /CLR "CLR ALL"
0562 4445 CLRALL
0563 1150 TAD REG1
0564 7110 CLL RAR /USE DATA 5252 IF LINK IS SET
0565 7630 SEL CLA
0566 1113 TAD K2525
0567 1113 TAD K2525 /SETUP COMPARE REGISTER
0570 3160 DCA GDREG2
0571 1160 TAD GDREG2
0572 7040 CMA /SET DISK ADDRESS TO OPOSITE
0573 4444 LDADD
0574 1160 TAD GDREG2 /SET DISK ADDRESS TO EXPECTED
0575 4444 LDADD /READ DISK ADDRESS
0576 4440 RDADD /CHECK RESULTS
0577 4432 ACCMP1 /CHECK RESULTS
0580 4427 NERROR /O.K, 4096 LOOPS
0581 4430 ERROR /ERROR, DISK ADDRESS REGISTER
0582 7561 TST18 /SCOPE LOOP POINTER
0583 4102 4102 /TEXT POINTER

```

```

/VERIFY THAT THE DISK ADDRESS REGISTER
/CAN BE LOADED AND SHIFTED INTO THE LOWER
/ DATA BUFFER, TRY ALL COMBINATIONS IN AC
/SHIFT THE SURFACE AND SECTOR FROM THE SURFACE AND SECTOR
/REGISTER, SHIFT THE LOWER CYLINDER BITS FROM THE CRC REGISTER,
/
0604 1150 TST19, TAD REG1 /GET AC VALUE
0605 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0606 1150 TAD REG1
0607 4444 LDADD /LOAD DISK ADDRESS REGISTER
0610 4440 RDADD /READ DISK ADDRESS REGISTER
0611 4432 ACCMP1 /CHECK AC, COMPARE TO GDREG2
0612 4427 NERROR /AC O.K., LOOP 4096 TIMES
0613 4430 ERROR /ERROR, LOAD OR READ DISK
/ADDRESS REGISTER
/SCOPE LOOP POINTER
0614 0604 TST19 /TEXT POINTER
0615 4102 4102

/VERIFY THAT DCLR DOES NOT AFFECT THE SURFACE
/AND SECTOR WHEN AC10=0 + AC11=0
/
0616 1150 TST20, TAD REG1 /GET AC VALUE
0617 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0620 1151 TAD REG2 /AC VALUE, COMPLIMENT OF REG1
0621 4444 LDADD /LOAD DISK ADDRESS
0622 1150 TAD REG1
0623 4444 LDADD /LOAD DISK ADDRESS
0624 4445 CLRALL /DCLR "CLR ALL"
0625 4440 RDADD /READ DISK ADDRESS
0626 4432 ACCMP1 /CHECK AC, COMPARE TO GDREG2
0627 4427 NERROR /AC O.K., LOOP 4096 TIMES
0630 4430 ERROR /ERROR, LOAD OR READ DISK
/ADDRESS OR DCLR CLEAR
/SCOPE LOOP POINTER
0631 0616 TST20 /TEXT POINTER
0632 4102 4102

/VERIFY THAT "DCLR" DOESN'T CLEAR SURFACE AND SECTOR
/REGISTER WHEN A10=0 + A11=1
/
0633 1150 TST21, TAD REG1 /GET AC VALUE
0634 3160 DCA GDREG2 /SETUP COMPARE REGISTER
0635 1150 TAD REG1
0636 4444 LDADD /LOAD DISK ADDRESS
0637 7301 CLA CLL IAC /ENABLE "CLR ALL" BIT
0640 4445 CLRALL /DCLR "CLR ALL"
0641 4440 RDADD /READ DISK ADDRESS
0642 4432 ACCMP1 /CHECK RESULTS
0643 4427 NERROR /AC O.K., LOOP 4096
0644 4430 ERROR /ERROR, LOAD, READ, OR CLEAR
/DISK ADDRESS
/SCOPE LOOP POINTER
0645 0633 TST21 /TEXT POINTER
0646 4102 4102

/VERIFY THAT THE CRC CAN BE LOADED BY "DLAG"
/AND "DLOC", USE DATA PATTERN 0000 + 7777,

```

```

/THIS WILL VERIFY THAT THE CRC CAN BE LOADED
/ BY THE EXTENDED CYLINDER BIT IN THE COMMAND REGISTER
/ BY THE "DLAG" IOY,
/
0647 7301 TST22, CLA CLL IAC /DCLR
0650 4445 CLRALL
0651 1150 TAD REG1
0652 7110 CLL RAR /USE DATA 7777 IF LINK IS SET
0653 7630 SEL CLA
0654 7240 CLA CMA
0655 0106 AND K7740
0656 3160 DCA GDREG2 /SETUP COMPARE # 1
0657 7004 RAL /LINK FOR EXTENDED BIT
0660 3157 DCA GDREG1 /SETUP COMPARE REGISTER
0661 1157 TAD GDREG1 /GET DATA
0662 4442 LD CMD /LOAD CRC
0663 1160 TAD GDREG2
0664 4444 LDADD /LOAD CRC
0665 4446 RDCRC /READ CRC
0666 4433 ACCMP2 /CHECK RESULTS
0667 4427 NERROR /O.K., 4096 LOOPS
0670 4430 ERROR /ERROR, CRC REGISTER
0671 0647 TST22 /SCOPE LOOP POINTER
0672 0004 0004 /TEXT POINTER

/VERIFY THAT THE CRC CAN BE LOADED BY "DLAG"
/AND "DLOC", USE DATA PATTERN 2525 + 5252,
/THIS WILL VERIFY THAT THE CRC CAN BE LOADED
/ BY THE EXTENDED CYLINDER BIT IN THE COMMAND REGISTER
/ BY THE "DLAG" IOY,
/
0673 7301 TST23, CLA CLL IAC /DCLR
0674 4445 CLRALL
0675 1150 TAD REG1
0676 7110 CLL RAR /USE DATA 5252 IF LINK IS SET
0677 7630 SEL CLA
0680 1113 TAD K2525
0681 1113 TAD K5252
0682 0106 AND K7740
0683 3160 DCA GDREG2 /SETUP COMPARE # 1
0684 7004 RAL /LINK FOR EXTENDED BIT
0685 3157 DCA GDREG1 /SETUP COMPARE REGISTER
0686 1157 TAD GDREG1 /GET DATA
0687 4442 LD CMD /LOAD CRC
0690 1160 TAD GDREG2
0691 4444 LDADD /LOAD CRC
0692 4446 RDCRC /READ CRC
0693 4433 ACCMP2 /CHECK RESULTS
0694 4427 NERROR /O.K., 4096 LOOPS
0695 4430 ERROR /ERROR, CRC REGISTER
0696 0673 TST23 /SCOPE LOOP POINTER
0697 0004 0004 /TEXT POINTER

/VERIFY THAT THE CRC CAN BE LOADED BY "DLAG"
/AND "DLOC", USE DATA PATTERN ALL COMBINATIONS,

```

```

/THIS WILL VERIFY THAT THE CRC CAN BE LOADED
/BY THE EXTENDED CYLINDER BIT IN THE COMMAND REGISTER
/BY THE "DLAG" IOT,
/
0720 1150 TST24, TAD REG1 /GET AC VALUE
0721 7106 CLR RTL
0722 7006 RTL
0723 7004 RAL
0724 0106 AND K7740
0725 3106 DCA GDREG2 /SETUP COMPARE REGISTER
0726 7004 RAL /LINK FOR EXTENDED BIT
0727 3157 DCA GDREG1 /SETUP COMPARE REGISTER
0730 1157 TAD GDREG1 /GET DATA
0731 4442 LDCMD /LOAD COMMAND REGISTER
0732 1106 TAD GDREG2
0733 4444 LDADD /LOAD DISK ADDRESS
0734 4446 RDCRC /READ CRC REGISTER
0735 4433 ACCMP2 /CHECK AC, COMPARE TO GDREG1 + GDREG2
0736 4427 NERROR /O.K, 4096
0737 4430 ERROR /ERROR, CRC REGISTER LOAD BY
/FLAG OR DLOC,
0740 0720 TST24 /SCOPE LOOP POINTER
0741 0004 0004 /TEXT POINTER
/
/
/VERIFY THAT DCLR DOES NOT AFFECT CRC REGISTER,
/LOAD CRC WITH DLAG + DLOC,
/
0742 1151 TST25, TAD REG2
0743 7106 CLR RTL
0744 7006 RTL
0745 7004 RAL
0746 0106 AND K7740
0747 3106 DCA GDREG2 /SETUP COMPARE REGISTER
0750 7004 RAL /LINK FOR EXTENDED BIT
0751 3157 DCA GDREG1 /SETUP COMPARE REGISTER
0752 1157 TAD GDREG1
0753 4442 LDCMD /LOAD COMMAND REGISTER
0754 1106 TAD GDREG2
0755 4444 LDADD /LOAD DISK ADDRESS
0756 1151 TAD REG2
0757 0104 AND K7775 /DON'T DD RECAL,
0760 4445 CLRALL /DCLR "CLR ALL"
0761 4446 RDCRC /READ CRC REGISTER
0762 4433 ACCMP2 /CHECK RESULTS, COMPARE TO GDREG1
/AND GDREG2
0763 4427 NERROR /O.K, 4096 LOOPS
0764 4430 ERROR /ERROR, LOAD, READ, CLEAR CRC
/REGISTER
0765 7742 TST25 /SCOPE LOOP POINTER
0766 0004 0004 /TEXT POINTER
/
/VERIFY THAT THE CRC REGISTER IS NOT AFFECTED BY
/"DLOC", "DSKIP", "DRST", "RDBUF", OR "DLCAN",
/USE DATA PATTERN 2525 + 5252,

```

```

/
/
/VERIFY THAT DCLR DOES NOT AFFECT CRC REGISTER,
/LOAD CRC WITH DLAG + DLOC,
/
0767 7301 TST26, CLA CLL IAC /DCLR
0770 4445 CLRALL
0771 1150 TAD REG1
0772 7110 CLR RAR /USE DATA 9252 IF LINK IS SET
0773 7030 SEL CLA
0774 1113 TAD K2525
0775 1113 TAD K2525
0776 0106 AND K7740
0777 3106 DCA GDREG2 /SETUP COMPARE REGISTER
1000 7004 RAL /LINK FOR EXTENDED BIT
1001 3157 DCA GDREG1 /SETUP COMPARE REGISTER
1002 1157 TAD GDREG1 /GET UPPER DATA
1003 4442 LDCMD /LOAD COMMAND
1004 1106 TAD GDREG2
1005 4444 LDADD /LOAD DISK ADDRESS
1006 1151 TAD REG2 /HEAD STATUS
1007 4434 ROSTAT
1010 1151 TAD REG2 /"DSKIP"
1011 4441 DSKSKP
1012 7000 NOP /READ BUFFER
1013 4450 RDBUF
1014 1151 TAD REG2 /LOAD CURRENT ADDRESS
1015 4443 LDCUR
1016 1151 TAD REG2 /LOAD COMMAND
1017 4442 LDCMD
1020 1150 TAD REG1 /LOAD UPPER BUFFER
1021 4421 LDBUF /READ CRC REGISTER
1022 4446 RDCRC /CHECK RESULTS
1023 4433 ACCMP2 /O.K, 4096 LOOPS
1024 4427 NERROR /ERROR, CRC REGISTER
1025 4430 ERROR /SCOPE LOOP POINTER
1026 0767 TST26 /TEXT POINTER
1027 0004 0004
/
/VERIFY THAT WRITE LOCK INHIBITS LOAD ADDRESS
/WHEN IT IS SET,
/
1030 7301 TST27, CLA CLL IAC /CLEAR CONTROL
1031 4445 CLRALL /SETUP COMPARE REGISTER
1032 3106 DCA GDREG2 /GET AC VALUE
1033 1150 TAD REG1 /LOAD DISK ADDRESS
1034 4444 LDADD
1035 1077 TAD K2000 /SET WRITE LOCK
1036 4442 LDCMD /GET AC VALUE
1037 1151 TAD REG2 /TRY TO LOAD DISK ADDRESS
1040 4444 LDADD /READ DISK ADDRESS
1041 4440 RDCRC /CHECK RESULTS
1042 4432 ACCMP1 /O.K, 4096 LOOPS
1043 4427 NERROR /ERROR LOAD DISK ADDRESS
1044 4430 ERROR /SCOPE LOOP POINTER
1045 1030 TST27
1046 4102 4102
/
/VERIFY THAT THE DISK ADDRESS REGISTER IS NOT

```

/AFFECTED BY "DCLR", "DLCA", "DRST", "DLOC", "DSKP"
/OR "RDBUF", USE DATA PATTERN ALL COMBINATIONS;

```

1047 1150 TST28: TAD REG1 /GET AC VALUE
1050 3160 DCA GDREG2 /SETUP COMPARE REGISTER
1051 1150 TAD REG1
1052 4444 LADD /LOAD DISK ADDRESS
1053 1151 TAD REG2
1054 0123 AND K5777 /MASK OUT WRITE LOCK
1055 4442 LDCMD /LOAD COMMAN REGISTER
1056 1151 TAD REG2 /LOAD CURRENT ADDRESS
1057 4443 LDCUR
1060 1151 TAD REG2 /DSKP
1061 4441 DSKSKP
1062 7000 NOP /HEAD STATUS
1063 4434 RDSTAT
1064 1151 TAD REG2 /LOAD BUFFERS
1065 4421 LDBUF /READ LOWER BUFFER
1066 4450 RDBUF
1067 7300 CLA CLL /CLEAR STATUS
1070 4445 CLRALL /READ DISK ADDRESS
1071 4440 RDADD /CHECK AC, COMPARE TO GDREG2
1072 4432 ACCMP1 /AC O.K, 4096 LOOPS
1073 4427 NERROR /ERROR, DISK ADDRESS AFFECTED
1074 4430 ERROR /SCOPE LOOP POINTED
1075 1047 TST28 /TEXT POINTER
1076 4102 4102
    
```

/VERIFY THAT THE COMMAND REGISTER IS NOT AFFECTED BY
/ "DCLR", "DLCA", "DRST", "DLAG", "DSKP", OR "RDBUF",
/ USE DATA PATTERN ALL COMBINATIONS;

```

1077 7301 TST29: CLA CLL IAC /CLEAR CONTROL
1100 4445 CLRALL /GET AC VALUE
1101 1150 TAD REG1 /SETUP COMPARE REGISTER
1102 3160 DCA GDREG2
1103 1150 TAD REG1
1104 4442 LDCMD /LOAD COMMAND REGISTER
1105 1151 TAD REG2 /LOAD DISK ADDRESS
1106 4444 LADD
1107 1151 TAD REG2 /LOAD CURRENT ADDRESS
1110 4443 LDCUR
1111 1151 TAD REG2 /DSKP
1112 4441 DSKSKP
1113 7000 NOP /HEAD STATUS
1114 4434 RDSTAT
1115 1151 TAD REG2 /LOAD UPPER BUFFER
1116 4421 LDBUF /READ LOWER BUFFER
1117 4450 RDBUF
1120 7300 CLA CLL /CLEAR STATUS
1121 4445 CLRALL
1122 7326 CLA CLL CML RTL /RECALIBRATE
1123 4445 CLHALL /READ COMMAND REGISTER
1124 4435 RDCMD /CHECK AC, COMPARE TO GDREG2
1125 4432 ACCMP1
    
```

```

1126 4427 NERROR /AC O.K, 4096 LOOPS
1127 4430 ERHOR /ERROR, COMMAND REGISTER
1130 1077 TST29 /SCOPE LOOP POINTER
1131 4201 4201 /TEXT POINTER
    
```

/VERIFY THAT RECALIBRATE INHIBITS LOAD COMMAND

```

1132 7301 TST30: CLA CLL IAC /ENABLE CLEAR CONTROL
1133 4445 CLRALL /CLEAR CONTROL
1134 4436 ENMAN1 /ENTER MAINTENANCE
1135 7326 CLA CLL CML RTL /ENABLE RECALIBRATE
1136 4445 CLRALL /RECALIBRATE
1137 7326 CLA CLL CML RTL /ENABLE RECALIBRATE
1140 4445 CLRALL /RECALIBRATE
1141 3160 DCA GDREG2 /SETUP COMPARE REGISTER
1142 1150 TAD REG1
1143 4442 LDCMD /TRY TO LOAD COMMAND
1144 4435 RDCMD /READ COMMAND
1145 4432 ACCMP1 /CHECK RESULTS
1146 4427 NERROR /O.K, 4096 LOOPS
1147 4430 ERROR /ERROR, IDLE (1)
1150 1132 TST30 /SCOPE LOOP POINTER
1151 4201 4201 /TEXT POINTER
    
```

/VERIFY THAT RECALIBRATE INHIBITS
/LOAD DISK ADDRESS DLAG

```

1132 7301 TST31: CLA CLL IAC /ENABLE CLEAR CONTROL
1133 4445 CLRALL /CLEAR CONTROL
1134 4436 ENMAN1 /ENTER MAINTENANCE
1135 1150 TAD REG1 /GET AC VALUE
1136 3160 DCA GDREG2 /SETUP COMPARE
1137 1160 TAD GDREG2
1140 4444 LADD /LOAD DISK ADDRESS (DLAG)
1141 7326 CLA CLL CML RTL /ENABLE RECAL;
1142 4445 CLRALL /RECALIBRATE
1143 1151 TAD REG2
1144 4444 LADD /LOAD DISK ADDRESS (DLAG)
1145 4440 RDADD /READ DISK ADDRESS
1146 4432 ACCMP1 /CHECK RESULTS
1147 4427 NERROR /O.K, 4096 LOOPS
1170 4430 ERROR /ERROR ON INHIBIT
1171 1152 TST31 /SCOPE POINTER
1172 4102 4102 /TEXT POINTER
    
```

/VERIFY THAT "OMAN" (MAINTENANCE) DOES NOT
/AFFECT AC WHEN AC0=0 AND AC7=1 OR 0.

```

1173 7301 TST32: CLA CLL IAC /CLEAR ENABLE BIT
1174 4445 CLRALL /DCLR "CLR ALL"
1175 1150 TAD REG1
1176 0116 AND K3737 /MASK OUT 0
1177 3160 DCA GDREG2 /SETUP COMPARE REGISTER
1200 1160 TAD GDREG2
1201 4447 LDMAN /LOAD MAINTENANCE "OMAN"
    
```

```

1202 4432          ACCMP1          /CHECK AC, COMPARE TO GDREG2
1203 4427          NERROR          /AC O,K, 4*96 LOOPS
1204 4430          ERROR           /ERROR, "DMAN" AFFECTED AC
1205 1173          TST32          /SCOPE LOOP POINTER
1206 4010          4010           /TEXT POINTER

/
/VERIFY THAT "DMAN" DOES NOT AFFECT AC WHEN
/AC7=0 AND AC0=1 OR 0,
/
1207 7301          TST33, CLA CLL IAC          /CLEAR ENABLE BIT
1210 4445          CLRALL          /DCLR "CLR ALL"
1211 1150          TAO REG1          /GET AC VALUE
1212 0117          AND K7717        /MASK OUT BIT ?
1213 3160          DCA GDREG2       /SETUP COMPARE REGISTER
1214 1160          TAO GDREG2
1215 4447          LDMAN           /LOAD MAINTENANCE
1216 4432          ACCMP1          /CHECK AC, COMPARE TO GDREG2
1217 4427          NERROR          /AC O,K, 4*96 LOOPS
1220 4430          ERROR           /ERROR, DMAN AFFECT AC
1221 1207          TST33          /SCOPE LOOP POINTER
1222 4010          4010           /TEXT POINTER

/
/VERIFY THAT "DMAN" ONLY GETS CLEARED BY
/DCLR NOT BY ANOTHER DMAN,
/
1223 7301          TST34, CLA CLL IAC          /CLEAR ENABLE BIT
1224 4445          CLRALL          /DCLR "CLR ALL"
1225 1150          TAO REG1          /SETUP COMPARE REGISTER
1226 3160          DCA GDREG2
1227 1150          TAO REG1
1230 4442          LDCMD           /LOAD COMMAND REGISTER
1231 1132          TAO M12          /NO. OF SHIFTS
1232 3153          DCA TCNTR1       /STORE IN COUNTER
1233 4457          ENMAN2          /ENTER MAINTENANCE MODE + DB4=1
1234 1075          TAO K0400        /GET ENABLE COMMAND REG,
1235 4447          LDMAN           /LOAD MAINTENANCE
1236 2153          ISE TCNTR1       /COUNT + SHIFT 12
1237 5235          JMP             /
1240 7300          CLA CLL IAC
1241 4447          LDMAN           /"DMAN" TRY TO CLEAR MAIN FLOP
1242 1067          TAO K0020        /ENABLE BIT FOR READ BUFFER
1243 4447          LDMAN           /READ BUFFER
1244 3164          DCA DBREG        /SAVE FOR PRINTER
1245 1164          TAO DBREG
1246 4432          ACCMP1          /CHECK AC
1247 4427          NERROR          /AC O,K, 4*96 LOOPS
1250 4430          ERROR           /ERROR, MAIN FLIP FLOP
1251 1223          TST34          /SCOPE LOOP POINTER
1252 4405          4405

```

```

/
/VERIFY THAT "DMAN" GETS CLEARED BY DCLR
/"CLR ALL"
/
1253 7301          TST35, CLA CLL IAC

```

```

1254 4445          CLRALL          /DCLR "CLR ALL"
1255 1067          TAO K0020        /SETUP COMPARE REGISTER
1256 3160          DCA GDREG2
1257 1150          TAO REG1
1260 4442          LDCMD           /LOAD COMMAND REGISTER
1261 1132          TAO M12          /SHIFT 12 COUNTER
1262 3153          DCA TCNTR1       /ENTER MAINTENANCE MODE + DB4=1
1263 4437          ENMAN2
1264 1075          TAO K0400        /LOAD MAINTENANCE "DMAN"
1265 4447          LDMAN
1266 2153          ISE TCNTR1       /12 COUNT
1267 5265          JMP             /
1270 7301          CLA CLL IAC
1271 4445          CLRALL          /CLEAR ALL "DCLR"
1272 1067          TAO K0020
1273 4447          LDMAN           /LOAD MAINTENANCE
1274 4432          ACCMP1          /CHECK AC, COMPARE TO GDREG2
1275 4427          NERROR          /AC O,K, 4*96 LOOPS
1276 4430          ERROR           /ERROR, DMAN AFFECTED AC
1277 1253          TST35          /SCOPE LOOP POINTER
1300 4010          4010           /TEXT POINTER

/
/VERIFY THAT "AC10 DATA" CAN BE SHIFTED TO
/CRC REGISTER, THEN READ CRC REGISTER,
/TRY ALL 1'S AND ALL 0'S,
/
1301 7301          TST36, CLA CLL IAC          /DCLR "CLR ALL"
1302 4445          CLRALL
1303 1150          TAO REG1
1304 7110          CLR RAR
1305 7030          SEL CLA          /SKIP IF ALL 0'S DATA
1306 7340          CLA CLL CM1       /ALL ONE'S DATA
1307 3160          DCA GDREG2       /SETUP COMPARE REGISTER
1310 1160          TAO GDREG2
1311 0141          AND K0017
1312 3157          DCA GDREG1       /SETUP COMPARE REGISTER
1313 1133          TAO M16
1314 3153          DCA TCNTR1       /SHIFTER FOR CRC
1315 4436          ENMAN1          /ENTER MAINTENANCE MODE
1316 1150          TAO REG1
1317 7104          CLL RAL
1320 0061          AND K0002
1321 1076          TAO K1000        /ENABLE BITS
1322 4447          LDMAN           /LOAD MAINTENANCE
1323 2153          ISE TCNTR1
1324 5322          JMP             /16 COUNT
1325 4446          RDCRC           /READ CRC REGISTER
1326 4433          ACCMP2          /COMPARE RESULTS
1327 4427          NERROR          /AC O,K, 4*96 LOOPS
1330 4430          ERROR           /ERROR, CRC REGISTER
1331 1301          TST36          /SCOPE LOOP POINTER
1332 0004          0004           /TEXT POINTER

/
/VERIFY THAT "AC 10 DATA" CAN BE SHIFTED TO

```

/CRC REGISTER, THEN READ CRC REGISTER,
/TRY PATTERN "125252"

```

1333 7301 /TSTJ7, CLA CLL IAC
1334 4445 CLRALL /DCLR "CLR ALL"
1335 1114 TAD K5052
1336 3160 DCA GDREG2 /SETUP COMPARE REGISTER
1337 1160 TAD GDREG2
1340 0141 AND K0017
1341 3157 DCA GDREG1 /SETUP COMPARE REGISTER
1342 1133 TAD M16
1343 3153 DCA TCNTR1 /SETUP 16 COUNT
1344 4436 ENMAN1 /ENTER MAINTENANCE MODE
1345 7300 T37R, CLA CLL
1346 1153 TAD TCNTR1
1347 7004 RAL
1350 0061 AND K0002 /SETUP DATA BIT
1351 1076 TAD K1000 /ENABLE BITS
1352 4447 LDMAN /LOAD MAINTENANCE
1353 2153 ISZ TCNTR1
1354 5345 JMP T37R /16 COUNT
1355 4446 RDCRC /READ CRC REGISTER
1356 4433 ACCMP2 /CHECK RESULTS

1357 4427 NERROR /AC 0,K, 4096 LOOPS
1360 4430 ERROR /ERROR, CRC REGISTER
1361 1333 TSTJ7 /SCOPE LOOP POINTER
1362 6004 6004 /TEXT POINTER

/
1363 5764 JMP I ,+I /TO NEXT TEST
1364 1400 TSTJ8
/
1400 /PAGE
/

```

/VERIFY THAT "AC10 DATA" CAN BE SHIFTED
/TO CRC REGISTER, THEN READ CRC REGISTER,

/TRY PATTERN "052525"

```

1400 7301 /TSTJ8, CLA CLL IAC
1401 4445 CLRALL /CLEAR ALL "DCRL"
1402 1113 TAD K2525
/

```

```

1403 3160 DCA GDREG2 /SETUP COMPARE REGISTER
1404 1160 TAD GDREG2
1405 0141 AND K0017
1406 3157 DCA GDREG1 /SETUP COMPARE REGISTER
1407 1133 TAD M16
1410 3153 DCA TCNTR1 /16 COUNTER SHIFTER
1411 4436 ENMAN1 /ENTER MAINTENANCE MODE
1412 7300 T38R, CLA CLL
1413 1153 TAD TCNTR1
1414 7044 CMA RAL
1415 0061 AND K0002 /SETUP "AC 10" DATA
1416 1076 TAD K1000 /ENABLE BITS
1417 4447 LDMAN /LOAD MAINTENANCE
1420 2153 ISZ TCNTR1
1421 5212 JMP T38R /16 COUNT
1422 4446 RDCRC /READ CRC REGISTER
1423 4433 ACCMP2 /CHECK RESULTS
1424 4427 NERROR /0,K, 4096 LOOPS
1425 4430 ERHOR /ERROR, CRC REGISTER
1426 1400 TSTJ8 /SCOPE LOOP POINTER
1427 6004 6004 /TEXT POINTER

/
/
/VERIFY THAT "AC10 DATA" CAN BE SHIFTED TO CRC
/REGISTER, TRY ALL COMBINATIONS,
/

```

```

1430 7301 /TSTJ9, CLA CLL IAC
1431 4445 CLRALL /DCLR "CLR ALL"
1432 1150 TAD REG1
1433 3160 DCA GDREG2 /SETUP COMPARE REGISTER
1434 1150 TAD REG1
1435 0141 AND K0017
1436 3157 DCA GDREG1 /SETUP COMPARE REGISTER
1437 7301 CLA CLL IAC
1440 3153 DCA TCNTR1 /SETUP BIT MASKER
1441 1133 TAD M16
1442 3154 DCA TCNTR2 /SETUP FIRST SHIFT COUNTER
1443 4436 ENMAN1 /ENTER MAINTENANCE MODE
1444 1150 T39R, TAD REG1
1445 2153 AND TCNTR1
1446 7640 SEA CLA /SKIP IF 0
1447 1061 TAD K0002 /WAS A 1
1450 1076 TAD K1000 /ENABLE BITS
1451 4447 LDMAN /LOAD MAINTENANCE
1452 7300 CLA CLL
1453 1153 TAD TCNTR1
1454 7004 RAL /ROTATE BIT MASKER
1455 3153 DCA TCNTR1
1456 7630 SZL CLA /WAIT FOR FIRST LINK THEN
1457 5254 JMP ,=3 /RESET BIT 11 IN MASKER
1460 2154 ISZ TCNTR2 /LOOP BACK
1461 5244 JMP T39R /READ CRC REGISTER
1462 4446 RDCRC
/

```

```

1463 4433          ACCMP2          /CHECK RESULTS
1464 4427          NERROR          /O,K, 4096 LOOPS
1465 4430          ERROR          /ERROR, CRC REGISTER
1466 1430          TST39          /ERROR, CRC REGISTER
1467 6004          6004          /TEXT POINTER
/
/VERIFY THAT "OLAG" CLEARS ALL OF THE
/CRC REGISTER, TRY ALL COMBINATIONS IN CRC;
/
1470 7301      TST40:  CLA CLL IAC          /DCLR "CLR ALL"
1471 4445          CLRALL
1472 3160          DCA      GDREG2          /SETUP COMPARE REGISTERS
1473 3157          DCA      GDREG1
1474 7301          CLA CLL IAC          /SETUP BIT MASKER
1475 3153          DCA      TCNTR1
1476 1133          TAD      M16          /SETUP FIRST SHIFT COUNTER
1477 3154          DCA      TCNTR2          /ENTER MAINTENANCE MODE
1478 4436          ENMAN1
1479 1151      T40K,  TAD      REG2
1480 0153          AND      TCNTR1
1481 7640          SZA CLA          /SKIP IF 0
1482 1061          TAD      K0002          /WAS A 1
1483 1076          TAD      K1000          /ENABLE BITS
1484 4447          LDMAN          /LOAD MAINTENANCE
1485 7300          CLA CLL
1486 1153          TAD      TCNTR1
1487 7004          RAL          /ROTATE BIT MASKER
1488 3193          DCA      TCNTR1
1489 7030          SZA CLA          /WAIT FOR FIRST LINK THEN
1490 5311          JMP      1=3          /RESET BIT 11 IN MASKER
1491 2154          ISZ      TCNTR2
1492 5301          JMP      T40R          /LOOP BACK
1493 4444          LDADD          /LOAD DISK ADDRESS AND CLEAR CRC
1494 4446          RDGRC          /READ CRC REGISTER
1495 4433          ACCMP2          /CHECK RESULTS
1496 4427          NERROR          /O,K, 4096 LOOPS
1497 4430          ERROR          /ERROR, CRC REGISTER
1498 1470          TST40          /ERROR, CRC REGISTER
1499 6004          6004          /TEXT POINTER
/
/VERIFY THAT "AC10 DATA" CAN BE SHIFTED TO
/UPPER DATA BUFFER THEN SINK TO LOWER DATA
/BUFFER, TRY ALL 1'S AND 0'S,
/
1526 7301      TST41:  CLA CLL IAC          /"DCLR" "CLR ALL"
1527 4445          CLRALL
1528 1150          TAD      REG1
1529 7110          CLL RAR
1530 7030          SZA CLA
1531 7240          CLA CMA
1532 3160          DCA      GDREG2
1533 1160          TAD      GDREG2          /GET VALUE TO LOAD
1534 4421          LDBUF          /LOAD UPPER BUFFER
1535 4450          RDBUF          /READ LOWER BUFFER

```

```

1540 4432          ACCMP1          /CHECK AC, COMPARE TO GDREG2
1541 4427          NERROR          /AC O,K, 4096 LOOPS
1542 4430          ERROR          /ERROR, DATA REGISTERS
1543 1526          TST41          /SCOPE LOOP POINTER
1544 4405          4405          /TEXT POINTER
/
/VERIFY THAT "AC10 DATA" CAN BE SHIFTED TO
/UPPER DATA BUFFER THEN SINK TO LOWER DATA
/BUFFER, TRY PATTERN 2525 + 5252
/
1545 7301      TST42:  CLA CLL IAC          /"DCKR" "CLR ALL"
1546 4445          CLRALL
1547 1150          TAD      REG1
1548 7110          CLL RAR
1549 7030          SZA CLA          /WHAT DATA????
1550 1113          TAD      K2525          /DATA 5252
1551 1113          TAD      K2525
1552 3160          DCA      GDREG2          /SETUP COMPARE REGISTER
1553 1160          TAD      GDREG2          /GET VALUE TO LOAD
1554 4421          LDBUF          /LOAD UPPER BUFFER
1555 4450          RDBUF          /READ LOWER DATA BUFFER
1556 4432          ACCMP1          /CHECK AC, COMPARE TO GDREG2
1557 4427          NERROR          /AC O,K, 4096 LOOPS
1558 4430          ERROR          /ERROR, DATA REGISTERS
1559 1545          TST42          /SCOPE LOOP POINTER
1560 4405          4405          /TEXT POINTER
/
/VERIFY THAT "AC10 DATA" CAN BE SHIFTED TO
/UPPER DATA BUFFER THEN SINK TO LOWER
/DATA BUFFER, TRY PATTERN ALL COMBINATIONS,
/
1565 7301      TST43:  CLA CLL IAC          /"DCLR" "CLR ALL"
1566 4445          CLRALL
1567 1151          TAD      REG2          /GET VALUE TO LOAD
1568 3160          DCA      GDREG2          /SETUP COMPARE REGISTER
1569 1160          TAD      GDREG2          /GET IT
1570 4421          LDBUF          /LOAD UPPER BUFFER
1571 4450          RDBUF          /READ LOWER DATA BUFFER
1572 4432          ACCMP1          /CHECK AC
1573 4427          NERROR          /AC O,K, 4096 LOOPS
1574 4430          ERROR          /ERROR, DATA REGISTERS
1575 1565          TST43          /SCOPE LOOP POINTER
1576 4405          4405          /TEXT POINTER
/
/VERIFY THAT "AC10 DATA" CAN BE SHIFTED
/TO UPPER DATA BUFFER THEN SINK TO LOWER
/DATA BUFFER, TRY ALL COMBINATIONS,
/
1601 7301      TST44:  CLA CLL IAC
1602 4445          CLRALL
1603 1150          TAD      REG1
1604 3160          DCA      GDREG2          /SETUP COMPARE REGISTER
1605 1150          TAD      REG1          /GET VALUE TO LOAD
1606 4421          LDBUF          /LOAD UPPER BUFFER

```

```

1607 4450      RDBUF          /READ DATA BUFFER
1610 4432      ACQMP1         /CHECK AC, COMPARE TO GDREG2
1611 4427      NERROR        /AC O.K, 4096 LOOPS
1612 4430      ERROR         /ERROR, DATA REGISTERS
1613 1601      TST44        /SCOPE LOOP POINTER
1614 4405      4405          /TEXT POINTER

/
/VERIFY THAT ALL DATA BUFFERS CAN BE FULL
/AT ONCE, TRY ALL COMBINATIONS
/
1615 7301      TST45:  CLA CLL IAC
1616 4445      CLRALL         /DCLR "CLR ALL"
1617 1150      TAD          REG1
1620 3156      DCA          TCNTR4
1621 1127      TAD          M4
1622 3155      DCA          TCNTR3
1623 1156      T45R1:  TAD          TCNTR4
1624 4421      LDBUF         /LOAD UPPER BUFFER
1625 7301      CLA CLL IAC
1626 1156      TAD          TCNTR4
1627 3156      DCA          TCNTR4
1630 2155      ISZ          TCNTR3
1631 9223      JMP          T45R1
1632 1150      TAD          REG1
1633 3160      DCA          GDREG2
1634 1127      TAD          M4
1635 3155      DCA          TCNTR3
1636 4450      T45R3:  RDBUF         /READ BUFFER
1637 4432      ACQMP1         /CHECK
1640 7610      SKP CLA        /O.K, CHECK NEXT
1641 5247      JMP          T45E
1642 2160      ISZ          GDREG2
1643 7000      NOP
1644 2155      ISZ          TCNTR3
1645 5236      JMP          T45R3
1646 4427      NERROR        /O.K, 4096 LOOPS
1647 4430      ERROR         /ERROR, DATA BUFFERS
1650 1615      TST45        /SCOPE LOOP POINTER
1651 4405      4405          /TEXT POINTER

/
/VERIFY THAT THE SILO BUFFERS ARE NOT AFFECTED BY
/"DCLR", "OLAC", "OLDC", "OLCA", "DSKP", OR "DRST" IOTS,
/USE DATA PATTERN ALL COMBINATIONS
/
1652 7301      TST46:  CLA CLL IAC
1653 4445      CLRALL         /DCLR
1654 1151      TAD          REG2
1655 3160      DCA          GDREG2
1656 1127      TAD          M4
1657 3153      DCA          TCNTR1
1658 1160      TAD          GDREG2
1661 4421      LDBUF         /LOAD UPPER BUFFER
1662 2153      ISZ          TCNTR1
1663 5260      JMP          T46A1
1664 1150      TAD          REG1

```

```

1665 4444      LDADD         /LOAD DISK ADDRESS
1666 1150      TAD          REG1
1667 4443      LDCUR         /LOAD CURRENT ADDRESS
1670 1150      TAD          REG1
1671 0100      AND          K3977
1672 4442      LDQMD        /MASK OFF WHITE
1673 1150      TAD          REG1
1674 4441      DSKSKP       /LOAD COMMAND REGISTER
1675 7000      NOP
1676 4434      RDSTAT        /DSKP
1677 7300      CLA CLL
1678 4445      CLRALL         /READ STATUS
1679 1127      TAD          M4
1680 3153      DCA          TCNTR1
1681 1127      TAD          M4
1682 3153      DCA          TCNTR1
1683 7300      T46A2:  CLA CLL
1684 1067      TAD          K0020
1685 4447      LDMAN         /ENABLE READ BUFFER
1686 3164      DCA          DBREG
1687 1164      TAD          DBREG
1688 4432      ACQMP1         /GMAN
1689 7610      SKP CLA        /SAVE RESULTS
1690 5316      JMP          T46E
1691 2153      ISZ          TCNTR1
1692 5303      JMP          T46A2
1693 4427      NERROR        /CHECK RESULTS
1694 4430      ERROR         /DATA O.K,
1695 1652      TST46        /ERROR
1696 4405      4405          /READ ALL FOUR
1697 4405      4405          /LOOP
1698 4405      4405          /O.K, 4096 LOOPS
1699 4405      4405          /ERROR, BUFFER AFFECTED
1700 4405      4405          /SCOPE LOOP POINTER
1701 4405      4405          /TEXT POINTER

/
/VERIFY THAT THE UPPER BUFFER CAN BE LOADED
/THEN SINK TO LOWER BUFFER, USE A FLOATING
/1'S PATTERN,
/
1721 3153      DCA          TCNTR1
1722 7301      TST47:  CLA CLL IAC
1723 4445      CLRALL         /START AT 0
1724 1153      TAD          TCNTR1
1725 3160      DCA          GDREG2
1726 1153      TAD          TCNTR1
1727 4421      LDBUF         /ENABLE CLEAR CONTROL
1728 4450      RDBUF         /CLEAR CONTROL
1729 4432      ACQMP1         /GET VALUE TO LOAD
1730 7610      SKP CLA        /SETUP COMPARE REGISTER
1731 5342      JMP          T49E
1732 7610      TAD          TCNTR1
1733 5342      CLL RAL
1734 1153      TAD          TCNTR1
1735 7104      CLA CLL
1736 7450      SNA
1737 7001      IAC
1738 3153      DCA          TCNTR1
1739 7001      IAC
1740 3153      DCA          TCNTR1
1741 4427      NERROR        /SET ONE TO LEFT
1742 4430      ERROR         /LOOP 4096 TIMES
1743 1722      TST47        /ERROR SILO BUFFERS
1744 4405      4405          /SCOPE LOOP POINTER
1745 4405      4405          /TEXT POINTER

/
/VERIFY THAT THE UPPER BUFFER CAN BE LOADED

```



```

2106 5314      JMP      T51E      /ERROR, "DSKPN"
2107 4441      DSKSKP           /"DSKPN"
2110 5314      JMP      T51E      /ERROR, "DSKPN"
2111 4445      CLRALL           /CLEAR STATUS "DCL"
2112 4441      DSKSKP           /"DSKPN" SKIP
2113 4427      NEKRROR        /SKIP D,K, 4096 LOOPS
2114 4430      T51E,  ERROR      /ERROR, "DSKPN" SKIP ON "DRL"
2115 2077      T51E,  T51E      /SCOPE LOOP POINTER
2116 0006      0006           /TEXT POINTER

/
/VERIFY THAT "DRL" DOES CAUSE DISK "INTERRUPT" IF
/ENABLED BY "ENABLE INTERRUPT" BIT IN COMMAND REGISTER,
/
2117 7301      T51D2, CLA CLL IAC      /"DCL" "CLR ALL"
2120 4445      CLRALL           /"DCL" "CLR ALL"
2121 1075      TAD      K0400      /SET INT, ENABLE "LOAD COMMAND REG;"
2122 4442      LDCMD           /ENTER MAINTENANCE MODE
2123 4436      ENMAN1           /
2124 1076      TAD      K1000      /
2125 4447      LDMAN           /"SET DRL" "DMAN"
2126 4431      IONWAT          /WAIT FOR INTERRUPT
2127 7610      SKP CLA          /ERROR, NO INT, RG;
2130 4427      NERROR          /D,K, INT, OCCURRED
2131 4430      ERROR           /ERROR, INT, REQUEST
2132 2117      T51D2          /SCOPE LOOP POINTER
2133 0007      0007           /TEXT POINTER

/
/VERIFY THAT "DRL" SHOULD CAUSE INT, RG, ONLY
/WHEN "INT, ENABLE BIT IS SET, DOES LDCMD CLEAR INT,
/
2134 7301      T51D3, CLA CLL IAC      /"DCL" "CLR ALL"
2135 4445      CLRALL           /ENTER MAINTENANCE MODE
2136 4436      ENMAN1           /
2137 1076      TAD      K1000      /
2140 4447      LDMAN           /SET "DRL" "DMAN"
2141 4431      IONWAT          /WAIT FOR INT,
2142 7610      SKP CLA          /D,K, NO INT,
2143 5356      JMP      T53E      /ERROR, INT, OCCURRED
2144 1075      TAD      K0400      /
2145 4442      LDCMD           /SET INT, ENABLE AND CLEAR INT;
2146 4431      IONWAT          /WAIT FOR INT,
2147 7610      SKP CLA          /D,K, NO INT, RG,
2150 5356      JMP      T53E      /ERROR, INT, OCCURED
2151 1076      TAD      K1000      /
2152 4447      LDMAN           /SET "DRL" "DMAN"
2153 4431      IONWAT          /WAIT INT, SHOULD INT,
2154 7610      SKP CLA          /ERROR, NO INT,
2155 4427      NERROR          /D,K, INT, OCCURRED
2156 4430      T53E,  ERROR      /ERROR, INT, RG
2157 2134      T51D3          /SCOPE LOOP POINTER
2160 0007      0007           /TEXT POINTER

/
2161 5762      JMP I      ,+I      /TO NEXT TEST

```

```

2162 2200      T5154
/
PAGE
/VERIFY THAT "LDCMD" CLEARS STATUS REGISTER
/
2200 7301      T51D4, CLA CLL IAC      /"DCL" "CLR ALL"
2201 4445      CLRALL           /
2202 1174      TAD      STCON      /SETUP COMPARE REGISTER
2203 1063      DCA      GDREG2      /ENTER MAINTENANCE MODE
2204 3160      ENMAN1           /ENABLE
2205 4436      TAD      K1000      /SET "DRL" "DMAN"
2206 1076      LDMAN           /
2207 4447      CLA CLL           /
2210 7300      TAD      REG2      /READ STATUS REGISTER
2211 1151      RDSTAT          /CHECK RESULTS
2212 4434      ACCMP1          /D,K, CHECK CLEAR
2213 4432      SKP CLA          /STATUS REGISTER ERROR
2214 7610      JMP      T54E      /CLEAR STATUS, "LOAD COMMAND"
2215 5225      LDCMD           /
2216 4442      TAD      STCON      /SETUP COMPARE REGISTER
2217 1174      DCA      GDREG2      /
2220 3160      TAD      REG1      /READ STATUS REGISTER
2221 1150      RDSTAT          /CHECK RESULTS
2222 4434      ACCMP1          /STATUS D,K, 4096 LOOPS
2223 4432      NERROR          /ERROR, STATUS REGISTER
2224 4427      T54E,  ERROR      /SCOPE LOOP POINTER
2225 4430      T5154          /TEXT POINTER
2226 2200      5000
2227 5000

/
/VERIFY THAT RECALIBRATE DOES SET DRIVE STATUS
/ERROR IN THE STATUS REGISTER,
/
2230 7301      T51D5, CLA CLL IAC      /ENABLE CLEAR CONTROL
2231 4445      CLRALL           /CLEAR CONTROL
2232 7301      CLA CLL IAC      /ENABLE CLEAR CONTROL
2233 4445      CLRALL           /ENABLE CLEAR CONTROL
2234 1174      TAD      STCON      /SETUP EXPECTED COMPARE
2235 3160      DCA      GDREG2      /READ STATUS REGISTER
2236 4434      RDSTAT          /CHECK RESULTS
2237 4432      ACCMP1          /STATUS D,K,
2240 7610      SKP CLA          /ERROR, STATUS
2241 5252      JMP      T55E      /
2242 7326      CLA CLL CML RTL      /SETUP EXPECTED COMPARE
2243 1174      TAD      STCON      /ENABLE RECALIBRATE
2244 3160      DCA      GDREG2      /RECALIBRATE
2245 7326      CLA CLL CML RTL      /READ STATUS
2246 4445      CLRALL           /CHECK RESULTS
2247 4434      RDSTAT          /D,K, 4096 LOOPS
2250 4432      ACCMP1          /ERROR, STATUS
2251 4427      NERROR          /SCOPE LOOP POINTER
2252 4430      T55E,  ERROR      /TEXT POINTER
2253 2230      T5155          /
2254 5000      5000

```

```

/VERIFY THAT "LOAD DISK ADDRESS CAUSES" "DRIVE STATUS ERROR"
/
TST56: CLA CLL IAC /ENABLE CLEAR CONTROL
        CLMALL
        LDADD
        TAD STCON
        TAD K0002
        DCA GDREG2
        TAD REB1

2255 7301
2256 4445
2257 4444
2260 1174
2261 1061
2262 3160
2263 1150

2264 4434 ROSTAT /READ STATUS REGISTER
2265 4432 ACCMP1 /CHECK RESULTS
2266 4427 NERROR /STATUS 0,K, 4096 LOOPS
2267 4430 ERROR /ERROR, STATUS REGISTER
2270 2255 TST56 /SCOPE LOOP POINTER
2271 5000 5000 /TEXT POINTER

/
/VERIFY THAT "DRIVE STATUS ERROR" CAUSES INT, RQ;
/ "DDDS LOCMD CLEAR INT,"
/
TST57: CLA CLL IAC /OCLR "CLR ALL"
        CLRALL
        TAD K0400
        LOCMD /SET INT; ENABLE "LOAD COMMAND"
        LDADD /SET "SELECT", LOAD DISK ADDRESS
        IONWAT /WAIT FOR EXPECTED INT;
        JMP T57E /ERROR, NO INT;
2300 1075 TAD K0400
2301 4442 LOCMD /CLEAR INT; "LOAD COMMAND"
2302 4431 IONWAT
2303 4427 NERROR /O,K, INT, WORKED
2304 4430 ERROR /ERROR, SELECT ERROR INT,
2305 2272 TST57 /SCOPE LOOP POINTER
2306 0007 0007 /TEXT POINTER

/
/VERIFY THAT "LOAD DISK ADDRESS" CAUSES
/"DRIVE STATUS ERROR", TEST WITH DISK SKIP
/
TST58: CLA CLL IAC /OCLR "CLR ALL"
        CLMALL /LOAD DISK AND GO
        LDADD /DSKP DISK SKIP IOI
        DSKSKP /ERROR, NO SKIP
        JMP T58E /DSKP DISK SKIP IOI
2310 5320 TAD T58E /ERROR, NO SKIP
2311 4441 DSKSKP /STATUS 0,K;
2312 4441 JMP T58E /ERROR, STATUS REGISTER
2313 4427 NERROR /ERROR, STATUS REGISTER
2314 4430 ERROR /SCOPE LOOP POINTER
2315 2310 TST58 /TEXT POINTER
2316 0006 0006

/
/VERIFY THAT SELECT ERROR CAUSES "DSKP" TO SKIP ON ERROR
/
2323 7301 TST59: CLA CLL IAC

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2324 4445 CLRALL /OCLR "CLR ALL"
2325 4444 LDADD /LOAD DISK ADDRESS AND GO
2326 4441 DSKSKP /DSKP "SKIP ON ERROR"
2327 5333 JMP T59E /ERROR, NO SKIP
2330 4445 CLRALL /CLEAR SKIP
2331 4441 DSKSKP /DSKP
2332 4427 NERROR /O,K, 4096 LOOPS
2333 4430 ERROR /ERROR, "DSKP SKIP"
2334 2323 TST59 /SCOPE LOOP POINTER
2335 0006 0006 /TEXT POINTER

/
2336 5737 JMP I .+1 /TO NEXT TEST
2337 2400 TST60

/
PAGE
/
/VERIFY THAT SELECT ERROR CAUSES "DSKP" TO SKIP ON ERROR
/THEN INTERRUPT
/
2400 7301 TST60: CLA CLL IAC /OCLR "CLR ALL"
2401 4445 CLRALL
2402 1064 TAD K0006
2403 3220 DCA T60E+2 /SETUP TEXT POINTER
2404 1075 TAD K0400
2405 4442 LOCMD /SET INT; ENABLE
2406 4444 LDADD /LOAD DISK AND GO
2407 4441 DSKSKP /DSKP DISK SKIP
2410 5216 JMP T60E /ERROR, NO SKIP
2411 1065 TAD K0007
2412 3220 DCA T60E+2 /SETUP TEXT POINTER
2413 4431 IONWAT /WAIT FOR INT;
2414 7610 SKP CLA /ERROR, NO INT; OCCURRED
2415 4427 NERROR /SKIP AND INT, 0,K;
2416 4430 ERROR /ERROR, DSKP OR INT;
2417 2400 TST60 /SCOPE LOOP POINTER
2420 0006 0006 /MODIFIED TEXT POINTER

/
/VERIFY THAT "DRL" CAUSES AN INT, THEN SKIP
/
TST61: CLA CLL IAC /OCLR "CLR ALL"
        CLRALL
        TAD K0007 /SETUP TEXT POINTER
        DCA T61E+2
        TAD K0400
        LOCMD /SETUP INT; ENABLE
        ENMAN1 /ENTER MAINTENANCE MODE
        TAD K1000
        LDHAN
        IONWAT
        JMP T61E /SET "DRL" DMAN
        TAD K0006 /WAIT FOR INT;
        DCA T61E+2 /ERROR, NO INT;
        DSKSKP /SKIP SHOULD SKIP
        SKP CLA /ERROR, NO SKIP

```

```

2440 4427          NERROR          /O,K, 4096 LOOPS
2441 4430 T61E,  ERROR          /ERROR, SKIP OR INT,
2442 2421          TST61          /SCOPE LOOP POINTER
2443 0007          0007          /MODIFIED TEXT POINTER

/
/VERIFY THAT MAINTENANCE DOES INHIBIT
/DRIVE STATUS ERROR SKIP
/
2444 7301 TST62, CLA CLL IAC          /CLEAR CONTROL
2445 4445 CLRALL          /DISK SKIP
2446 4441 DSKSKP          /ERROR, NO SKIP
2447 7610 SKP CLA          /O,K, NO SKIP
2450 5265 JMP T62E          /ERROR, SKIP
2451 7326 CLA CLL CML RTL
2452 4445 CLRALL          /RECALIBRATE
2453 4441 DSKSKP          /DISK SKIP
2454 5265 JMP T62E          /ERROR, NO SKIP
2455 4436 ENMAN1          /SET MAIN
2456 4441 DSKSKP          /DISK SKIP
2457 7610 SKP CLA          /O,K, NO SKIP
2460 5265 JMP T62E          /ERROR, SKIP
2461 7326 CLA CLL CML RTL
2462 4445 CLRALL          /RECALIBRATE
2463 4441 DSKSKP          /DISK SKIP
2464 4427 NERROR          /O,K, 4096 LOOPS
2465 4430 T62E,  ERROR          /ERROR, DISK SKIP
2466 2444          TST62          /SCOPE LOOP POINTER
2467 0006          0006          /TEXT POINTER

/
/VERIFY THAT "RECALIBRATE" THEN DCLR DOES SET BUSY
/AND DRIVE STATUS ERROR
/
2470 7301 TST63, CLA CLL IAC          /CLEAR CONTROL
2471 4445 CLRALL          /EXPECTED STATUS
2472 1174 TAD STCON          /SETUP COMPARE REGISTER
2473 3160 DCA GDREG2          /READ STATUS
2474 4434 RDSTAT          /CHECK RESULT5
2475 4432 ACCMP1          /STATUS O,K
2476 7610 SKP CLA          /ERROR, STATUS
2477 5325 JMP T63E          /ENTER MAINTENANCE
2500 4436 ENMAN1
2501 7326 CLA CLL CML RTL
2502 1174 TAD STCON          /EXPECTED STATUS
2503 3160 DCA GDREG2          /SETUP COMPARE REGISTER
2504 7326 CLA CLL CML RTL
2505 4445 CLRALL          /RECALIBRATE DCLR
2506 4434 RDSTAT          /READ STATUS
2507 4432 ACCMP1          /CHECK RESULT5
2510 7610 SKP CLA          /STATUS O,K
2511 5325 JMP T63E          /ERROR, STATUS
2512 1190 TAD REG1
2513 0103 AND K7776          /MASK OUT CLEAR CONTROL
2514 4445 CLRALL          /DCLR
2515 7326 CLA CLL CML RTL
2516 1174 TAD STCON

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```

2517 1072 TAD K0100          /BUSY BIT
2520 3160 DCA GDREG2          /SETUP COMPARE REGISTER
2521 1151 TAD REG2
2522 4434 RDSTAT          /READ STATUS REGISTER
2523 4432 ACCMP1          /CHECK RESULT5
2524 4427 NERROR          /STATUS, O,K, 4096 LOOPS
2525 4430 T63E,  ERROR          /ERROR, RECALIBRATE
2526 2470          TST63          /SCOPE LOOP POINTER
2527 5000          5000          /TEXT POINTER

/
/VERIFY THAT "RECALIBRATE" THEN "DRL" RESULTS IN DRL,
/DRIVE STATUS, AND TRANSFER DONE
/
2530 7301 TST64, CLA CLL IAC          /CLEAR CONTROL
2531 4445 CLRALL          /CLEAR CONTROL
2532 1174 TAD STCON          /EXPECTED STATUS
2533 3160 DCA GDREG2          /SETUP COMPARE REGISTER
2534 4434 RDSTAT          /READ STATUS
2535 4432 ACCMP1          /CHECK RESULT5
2536 7610 SKP CLA          /STATUS O,K
2537 5365 JMP T64E          /ERROR, STATUS
2540 4436 ENMAN1          /ENTER MAINTENANCE
2541 7326 CLA CLL CML RTL
2542 1174 TAD STCON          /EXPECTED STATUS
2543 3160 DCA GDREG2          /SETUP COMPARE REGISTER
2544 7326 CLA CLL CML RTL
2545 4445 CLRALL          /DCLR
2546 4434 RDSTAT          /READ STATUS
2547 4432 ACCMP1          /CHECK RESULT5
2550 7610 SKP CLA          /STATUS O,K
2551 5365 JMP T64E          /ERROR, STATUS
2552 7326 CLA CLL CML RTL
2553 1174 TAD STCON          /EXPECTED STATUS
2554 1101 TAD K4000
2555 1063 TAD K0004          /ENABLE SHIFT
2556 3160 DCA GDREG2          /LOAD MAINTENANCE SET DRL
2557 1076 TAD K1000
2560 4447 LDMAN
2561 1190 TAD REG1          /READ STATUS REGISTER
2562 4434 RDSTAT          /CHECK RESULTS
2563 4432 ACCMP1          /O,K, 4096 LOOPS
2564 4427 NERROR          /ERROR, STATUS REGISTER
2565 4430 T64E,  ERROR          /SCOPE LOOP POINTER
2566 2530          TST64          /TEXT POINTER
2567 5000          5000

/
2570 5771 JMP I ,+I          /TO NEXT TEST
2571 2600 TST65

/
PAGE
/
/VERIFY THAT "RECALIBRATE" THEN "DLCAN" SETS
/DRIVE STATUS AND BUSY ERROR IN STATUS REGISTER
/
2600 7301 TST65, CLA CLL IAC

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2601 4445 CLRALL /CLEAR CONTROL
2602 1174 TAD STCON /EXPECTED STATUS
2603 3160 DCA GDREG2 /SETUP COMPARE REGISTER
2604 4434 RDSTAT /READ STATUS
2605 4432 ACCMP1 /CHECK RESULTS
2606 7610 SKP CLA /STATUS O.K.
2607 5233 JMP T69E /ERROR, STATUS
2610 4436 ENMAN1 /ENTER MAINTENANCE
2611 7326 CLA CLL CML RTL
2612 1174 TAD STCON /EXPECTED STATUS
2613 3160 DCA GDREG2 /SETUP COMPARE REGISTER
2614 7326 CLA CLL CML RTL
2615 4445 CLRALL
2616 4434 RDSTAT /READ STATUS
2617 4432 ACCMP1 /CHECK RESULTS
2620 7610 SKP CLA /STATUS O.K.
2621 5233 JMP T69E /ERROR, STATUS
2622 7326 CLA CLL CML RTL
2623 1072 TAD K0100
2624 1174 TAD STCON /EXPECTED STATUS
2625 3160 DCA GDREG2
2626 4443 LDCCR /LOAD CURRENT ADDRESS
2627 1151 TAD REG2
2630 4434 RDSTAT /READ STATUS REGISTER
2631 4432 ACCMP1 /CHECK RESULTS
2632 4427 NERROR /O.K, 4096 LOOPS
2633 4430 ERROR /ERROR, STATUS REGISTER
2634 2600 TST65 /SCOPE LOOP POINTER
2635 5000 /TEXT POINTER

```

/VERIFY THAT "RECALIBRATE" THEN "DLDC"
/DOES SET BUSY ERROR IN STATUS

```

2636 7301 TST66, CLA CLL IAC /CLEAR CONTROL
2637 4445 CLRALL /ENTER MAINTENANCE
2640 4436 ENMAN1
2641 7326 CLA CLL CML RTL
2642 4445 CLRALL
2643 7326 CLA CLL CML RTL
2644 1072 TAD K0100 /EXPECTED STATUS
2645 1174 TAD STCON
2646 3160 DCA GDREG2
2647 4442 LDCHD /LOAD COMMAND REGISTER
2650 1151 TAD REG2
2651 4434 RDSTAT /READ STATUS REGISTER
2652 4432 ACCMP1 /CHECK RESULTS
2653 4427 NERROR /O.K, 4096 LOOPS
2654 4430 ERROR /ERROR, STATUS REGISTER
2655 2636 TST66 /SCOPE LOOP POINTER
2656 5000 /TEXT POINTER

```

/VERIFY THAT RECALIBRATE THEN DLDC RESULTS IN
/BUSY AND DRIVE STATUS ERROR,

2657 7301 TST67, CLA CLL IAC

```

2660 4445 CLRALL /CLEAR CONTROL
2661 4436 ENMAN1 /ENTER MAINTENANCE
2662 7326 CLA CLL CML RTL
2663 1072 TAD K0100 /EXPECTED STATUS
2664 1174 TAD STCON /SETUP EXPECTED COMPARE
2665 3160 DCA GDREG2 /ENABLE RECALIBRATE
2666 7326 CLA CLL CML RTL
2667 4445 CLRALL
2670 4444 LDADR /LOAD DISK ADDRESS
2671 4434 RDSTAT /READ STATUS
2672 4432 ACCMP1 /CHECK RESULTS
2673 4427 NERROR /O.K, 4096 LOOPS
2674 4430 ERROR /ERROR, BUSY OR DRIVE STATUS
2675 2657 TST67 /SCOPE LOOP POINTER
2676 5000 /TEXT POINTER

```

/VERIFY THAT SKIP OCCURRES ON BUSY ERROR

```

2677 7321 TST68, CLA CLL IAC /CLEAR CONTROL
2700 4445 CLRALL /ENTER MAINTENANCE
2701 4441 DSKSKP /DSKP
2702 7610 SKP CLA /SKIP O.K.
2703 5315 JMP T68E /ERROR, DISK SKIP
2704 4436 ENMAN1 /ENTER MAINTENANCE
2705 7326 CLA CLL CML RTL
2706 4445 CLRALL /DCLR
2707 4443 LDCCR /LOAD CURRENT ADDRESS
2710 4441 DSKSKP /DSKP DISK SKIP
2711 5315 JMP T68E /ERROR, NO SKIP
2712 4441 DSKSKP /DSKP DISK SKIP
2713 5315 JMP T68E /ERROR
2714 4427 NERROR /O.K, 4096 LOOPS
2715 4430 ERROR /ERROR, DSKP
2716 2677 TST68 /SCOPE LOOP POINTER
2717 0006 /TEXT POINTER

```

/VERIFY THAT DCLR CLEARS ALL OF STATUS REGISTER

```

2720 7301 TST69, CLA CLL IAC /CLEAR CONTROL
2721 4445 CLRALL /ENTER MAINTENANCE
2722 4436 ENMAN1
2723 7326 CLA CLL CML RTL /DCLR
2724 4445 CLRALL
2725 7326 CLA CLL CML RTL
2726 1174 TAD STCON
2727 1101 TAD K4000 /EXPECTED STATUS
2730 1063 DCA GDREG2
2731 3160 TAD K1000 /ENABLE SHIFT
2732 1076 LDMAN /LOAD MAINTENANCE SET DRL
2733 4447 TAD REG1
2734 1150 RDSTAT /READ STATUS REGISTER
2735 4434 ACCMP1 /CHECK RESULTS
2736 4432 SKP CLA /O.K
2737 7610 JMP T69E /ERROR
2740 5350

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```

2741 4445 CLRALL /CLR
2742 1174 TAD STCON
2743 3160 DCA GDREG2 /SETUP COMPARE REGISTER
2744 1151 TAD REG2
2745 4434 RDSTAT /READ STATUS
2746 4432 ACCMP1 /CHECK RESULTS
2747 4427 NERROR /OK, 4096 LOOPS
2750 4430 T69E, ERROR /ERROR, STATUS REGISTER
2751 2720 TST69 /SCOPE LOOP POINTER
2752 5000 5000 /TEXT POINTER

/
/VERIFY THAT INTERRUPT OCCURES ON BUSY ERROR
/
TST70: CLA CLL IAC
CLRALL /CLEAR CONTROL
TAD K0400 /ENABLE INT, BIT
LDLMD /LOAD COMMAND
ENMAN1 /ENTER MAINTENANCE
CLA CLL CML RTL
CLRALL /CLR
IONWAT /WAIT FOR INT,
SKP CLA /INT, O.K.
JMP T70E /ERROR, DISK INT,
CLRALL /CLEAR STATUS
IONWAT /WAIT FOR INTERRUPT
JMP T70E /ERROR, NO INT,
CLRALL /CLR
IONWAT /WAIT FOR INT,
SKP CLA /INT, O.K.
NERROR /OK, 4096 LOOPS
T70E, ERROR /ERROR, INT,
TST70 /SCOPE LOOP POINTER
0007 /TEXT POINTER

/
/VERIFY THAT "RDBUF", "DLCA", "DRST", "DLAG"
/OR "DSKP" DOES NOT AFFECT STATUS REGISTER,
/
TST71: CLA CLL IAC
CLRALL /CLEAR CONTROL
ENMAN1 /ENTER MAINTENANCE
CLA CLL CML RTL
CLRALL /CLR
TAD K1000 /ENABLE SHIFT
LDMAN /LOAD MAINTENANCE
CLA CLL CML RTL
TAD STCON
TAD K0004
TAD K4000 /EXPECTED STATUS
DCA GDREG2 /SETUP COMPARE REGISTER
RDBUF /READ BUFFER
TAD REG1 /READ STATUS
RDSTAT /READ STATUS
TAD REG2
LDLMD /LOAD CURRENT ADDRESS
TAD REG1

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```

3021 4441 DSKSkp /DSKp
3022 7000 NOP
3023 4444 LDADD /LOAD DISK ADDRESS
3024 1150 TAD REG1
3025 4421 LDHUF /LOAD BUFFER REGISTER
3026 1151 TAD REG2
3027 4434 RDSTAT /READ STATUS
3030 4432 ACCMP1 /CHECK RESULTS
3031 7010 SKP CLA /STATUS O.K.
3032 5241 JMP T71E /ERROR, STATUS
3033 4445 CLRALL /CLEAR STATUS
3034 1174 TAD STCON /EXPECTED STATUS
3035 3160 DCA GDREG2 /SETUP COMPARE REGISTER
3036 4434 RDSTAT /READ STATUS
3037 4432 ACCMP1 /CHECK RESULTS
3040 4427 NERROR /OK, 4096 LOOPS
3041 4430 T71E, ERROR /ERROR, STATUS REGISTER
3042 2777 TST71 /SCOPE LOOP POINTER
3043 5000 5000 /TEXT POINTER

/
/VERIFY THAT "WORD COUNT" OVERFLOWS AND SETS
/TRANSFER DONE ONLY AFTER 256 (12 BIT COUNTS),
/TRANSFER DONE SHOULD SET ON THE 11 TH, SHIFT
/OF THE 256 TH, WORD,
/
TST72: CLA CMA
DCA REG1 /SET FOR 1 PASS PER TEST
CLA CLL IAC
CLRALL /CLR "CLR ALL"
TAD STCON
DCA GDREG2 /SETUP COMPARE REGISTER
CLA CLL CML RTL /TWO
TAD M12
DCA TCNTR1 /FOR FINAL WORD
TAQ M255
DCA TCNTR2 /FOR ONE LESS THAN "LAST WORD"
ENMAN1 /ENTER MAINTENANCE MODE
T72H, TAQ M12
DCA TCNTR3 /FOR EACH 12 BIT WORD
TAD K0100 /ENABLE BITS TO SHIFT SILO
LDMAN /LOAD MAINTENANCE
ISE TCNTR3 /SKIP ON EVERY "12 BIT WORD"
JMP I=2
RDBUF /THIS SHOULD PREVENT A "DRL"
RDSTAT /GET STATUS
ACCMP1 /CHECK RESULTS
SKP CLA
JMP T72E /STATUS ERROR
ISE TCNTR2
JMP T72R
TAD K0100 /COUNT 255 "12 BIT WORDS"
LDMAN /LOAD MAINTENANCE
ISE TCNTR1 /BIT COUNTER
JMP I=2 /COUNT 11 BITS
RDSTAT /READ STATUS

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```

3102 4432 ACCMP1 /CHECK RESULTS
3103 7610 SKP CLA /STATUS O.K.
3104 5315 JMP T72E /ERROR, STATUS
3105 7330 CLA CLL CML RAR
3106 1174 TAD STCON
3107 3160 DCA GDREG2 /SETUP COMPARE REGISTER
3110 1072 TAD K0100
3111 4447 LDHAN
3112 4434 RDSTAT /SHIFT IN LAST WORD
3113 4432 ACCMP1 /READ STATUS
3114 4427 NERROR /ONLY TRANSFER DONE
3115 4430 T72E, ERROR /STATUS OK
3116 3044 TST72 /ERROR, 12 BIT COUNTER
3117 5000 5000 /SCOP LOOP
/ /TEXT POINTER
/ /TO NEXT TEST
3120 5721 JMP 1 ,*1
3121 3200 TST73
/
/ PAGE
/ /VERIFY THAT DCLR DOES CLEAR 12 BIT COUNTER
/
3200 7240 TST73, CLA CMA /SET FOR 1 PASS PER TEST
3201 3150 DCA REG1
3202 1137 TAD M255
3203 3156 DCA TCNTR4 /SETUP COUNTER
3204 7301 T73H1, CLA CLL IAC
3205 4445 CLRALL /DCLR "CLR ALL"
3206 1156 TAD TCNTR4
3207 3153 DCA TCNTR1
3210 1132 T73H2, TAD M12
3211 3154 DCA TCNTR2 /12 BIT WORD COUNTER
3212 4436 ENMAN1 /ENTER MAINTENANCE MODE
3213 1072 TAD K0100 /ENABLE SHIFT
3214 4447 LDHAN /LOAD MAINTENANCE
3215 2154 ISE TCNTR2 /COUNT SHIFTS
3216 5214 JMP ,*2 /MORE TO GO
3217 4450 RDBUF /PREVENT DRL
3220 2153 ISE TCNTR1 /DO IT 12 TIMES
3221 5210 JMP T73R2 /MORE 12 BIT COUNTS
3222 7301 CLA CLL IAC /ENABLE CLEAR CONTROL
3223 4445 CLRALL /AND CLEAR THE COUNTER
3224 1174 TAD STCON
3225 3160 DCA GDREG2 /SETUP COMPARE REGISTER
3226 1132 TAD M12
3227 3153 DCA TCNTR1 /FOR FINAL WORD1
3230 1137 TAD M255
3231 3154 DCA TCNTR2 /FOR ONE LESS THAN "LAST WORD"
3232 4436 ENMAN1 /ENTER MAINTENANCE MODE
3233 1132 T73R3, TAD M12
3234 3155 DCA TCNTR3 /FOR EACH 12 BIT WORD
3235 1072 TAD K0100 /ENABLE BITS TOSHIFT SILO
3236 4447 LDHAN /LOAD MAINTENANCE
3237 2155 ISE TCNTR3 /SKIP ON EVERY "12 BIT WORD"
3240 5236 JMP ,*2

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3241 4450 RDBUF /THIS SHOULD PREVENT A "DRL"
3242 4434 RDSTAT /GET STATUS
3243 4432 ACCMP1 /CHECK RESULTS
/
/
3244 7610 SKP CLA
3245 5206 JMP T73E /STATUS ERROR
3246 2154 ISE TCNTR2
3247 5233 JMP T73R3 /COUNT 255 "12 BIT WORDS"
3250 7330 CLA CLL CML RAR
3251 1174 TAD STCON
3252 3160 DCA GDREG2 /SETUP COMPARE REGISTER
3253 1072 TAD K0100
3254 4447 LDHAN /SHIFT IN LAST WORD
3255 2153 ISE TCNTR1
3256 5254 JMP ,*2
3257 4434 RDSTAT /READ STATUS
3260 4432 ACCMP1 /ONLY TRANSFER DONE
3261 7610 SKP CLA /STATUS O.K.
3262 5206 JMP T73E /ERROR, STATUS
3263 2156 ISE TCNTR4 /UPDATE SPECIAL COUNTER
3264 5254 JMP T73R1 /MORE TO TEST
3265 4427 NERROR /STATUS OK
3266 4430 T73E, ERROR /ERROR, 12 BIT COUNTER
3267 3200 TST73 /SCOP LOOP
3270 5000 5000 /TEXT POINTER
/
/
/VERIFY THAT 12TH BIT O,K, H DOES INHIBIT
/SETTING DB CONT1=1, THIS IS WHAT STOPS
/HALF BLOCK DATA BREAKS ON A READ BREAK,
/
3271 7301 TST74, CLA CLL IAC /CLEAR CONTROL
3272 4445 CLRALL /HALF BLOCK TRANSFERS
3273 1072 TAD K0100 /LOAD COMMAND
3274 4442 LD CMD
3275 7340 CLA CLL CMA /SETUP FOR 1 PASS
3276 3150 DCA REG1
3277 1135 TAD M128
3300 3153 DCA TCNTR1 /COUNTER FOR 128 WORDS
3301 4436 ENMAN1 /ENTER MAINTENANCE MODE

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3302 3160 T74R1, DCA GOREG2 /SETUP COMPARE REGISTER
3303 1132 TAD M12
3304 3154 DCA TCNTR2 /12 BIT WORD COUNTER
3305 7300 T74R2, CLA CLL
3306 1072 TAD K0100 /ENABLE SHIFT
3307 4447 LDMAN /LOAD MAINTENANCE
3310 2154 IS# TCNTR2
3311 5307 JMP ,*2
3312 4450 RDBUF /READ LOWER BUFFER
3313 4432 ACCMP1 /CHECK RESULTS
3314 7610 SKP CLA /DATA 0,K,
3315 5340 JMP T74E /ERROR
3316 2153 IS# TCNTR1 /COUNT 128 WORDS
3317 5302 JMP T74R1 /MORE TO GO
3320 1135 TAD M120
3321 3153 DCA TCNTR1 /SETUP COUNTER
3322 1132 TAD M12
3323 3154 DCA TCNTR2 /SETUP BIT COUNTER
3324 7326 CLA CLL CML RTL
3325 1072 TAD K0100 /ENABLE SHIFT
3326 4447 LDMAN /LOAD MAINTENANCE
3327 2154 IS# TCNTR2 /COUNT BITS
3330 5326 JMP ,*2 /MORE TO GO
3331 4450 RDBUF /READ LOWER BUFFER
3332 4432 ACCMP1 /CHECK RESULTS
3333 7610 SKP CLA /DATA 0,K,
3334 5340 JMP T74E /ERROR
3335 2153 IS# TCNTR1 /UPDATE COUNTER
3336 5322 JMP T74R3 /TEST 128 TIMES
3337 4427 NERROR /TO NEXT TEST
3340 4430 T74E, ERROR /ERROR, 128 WORD
3341 3271 TST74 /SCOPE LOOP POINTER
3342 4405 4405 /TEXT POINTER

/
/VERIFY THAT TRANSFER DONE "ALONE" CAUSES
/DSKP TO SKIP,
/
3343 7340 TST75, CLA CLL CMA
3344 3150 DCA REG1 /SET FOR 1 PASS PER TEST
3345 7301 CLA CLL IAC
3346 4445 CLRALL /OCLR "CLR ALL"
3347 1137 TAD M255
3350 3153 DCA TCNTR1 /ONE LESS THAN "LAST WORD"
3351 1132 TAD M12
3352 3154 DCA TCNTR2
3353 4436 ENMAN1 /FINAL WORD
3354 1132 T75H, TAD M12 /ENTER MAINTENANCE MODE
3355 3155 DCA TCNTR3 /"12 BIT" WORD COUNTER
3356 1072 TAD K0100
3357 4447 LDMAN /LOAD MAINTENANCE
3360 2155 IS# TCNTR3
3361 5357 JMP ,*2 /COUNT 12 BIT WORDS
3362 4450 RDBUF /PREVENT "DRL"
3363 4441 DSKSKP /SHOULD NOT SKIP HERE
3364 7610 SKP CLA /0,K,

```

```

3365 5377 JMP T75E /ERROR, DSKP
3366 2153 IS# TCNTR1
3367 5354 JMP T75R /COUNT 255 WORDS
3370 1072 TAD K0100
3371 4447 LDMAN /LOAD MAINTENANCE
3372 2154 IS# TCNTR2
3373 5371 JMP ,*2 /DO ONE MORE WORD
3374 4441 DSKSKP /DSKP "SKIP"
3375 7610 SKP CLA /ERROR, DSKP DID NOT SKIP
3376 4427 NERROR /0,K, 4096 LOOPS
3377 4430 T75E, ERROR, DSKP
3400 3343 TST75 /SCOPE LOOP POINTER
3401 0006 0006 /TEXT POINTER

/
/VERIFY THAT TRANSFER DONE CAUSES "INT, R0,"
/
3402 7340 TST76, CLA CLL CMA
3403 3150 DCA REG1 /SETUP FOR 1 PASS PER TEST
3404 7301 CLA CLL IAC
3405 4445 CLRALL /OCLR "CLR ALL"
3406 1137 TAD M255
3407 3153 DCA TCNTR1 /ONE LESS THAN "LAST WORD"
3410 1132 TAD M12
3411 3154 DCA TCNTR2 /FINAL WORD
3412 1075 TAD K0400 /ENABLE INT, BIT
3413 4442 LDCMD /LOAD COMMAND REGISTER
3414 4436 ENMAN1 /ENTER MAINTENANCE MODE
3415 1132 T76H, TAD M12
3416 3155 DCA TCNTR3 /"12 BIT" WORD COUNTER
3417 1072 TAD K0100 /ENABLE SHIFT SILO
3420 4447 LDMAN /LOAD MAINTENANCE
3421 2155 IS# TCNTR3
3422 5220 JMP ,*2 /COUNT "12 BIT" WORDS
3423 4450 RDBUF /PREVENT "DRL"
3424 4431 IONWAT /WAIT FOR INT,
3425 7610 SKP CLA /0,K, NO INT,
3426 5240 JMP T76E /ERROR, INT, OCCURED
3427 2153 IS# TCNTR1
3430 5215 JMP T76R /COUNT 255 WORDS
3431 1072 TAD K0100
3432 4447 LDMAN /LOAD MAINTENANCE
3433 2154 IS# TCNTR2
3434 5232 JMP ,*2 /DO ONE MORE WORD
3435 4431 IONWAT /WAIT FOR EXPECTED INT,
3436 7610 SKP CLA /ERROR, INT, DIDNIT OCCUR
3437 4427 NERROR /0,K, 4096 LOOPS
3440 4430 T76E, ERROR, INT,
3441 3402 TST76 /SCOPE LOOP POINTER
3442 0007 0007 /TEXT POINTER

/
/
/
/VERIFY "DATA BREAK" FROM CURRENT FIELD LOCATION 0
/USE DATA PATTERN 0000 AND 7777, "DO A WRITE"

```

```

3443 7301 TST77, CLA CLL IAC
3444 4445 CLRALL /DCLR
3445 4436 ENMAN1 /ENTER MAINTENANCE MODE
3446 1172 TAD HONEMA /CURRENT FIELD BITS
3447 1101 TAD K4000 /ENABLE "WRITE"
3450 4442 LDCMD /LOAD COMMAND
3451 1150 TAD REG1
3452 7110 CLL RAR
3453 7630 SEL CLA
3454 7340 CLA CLL CMA /MAKE "DATA WORD"
3455 3160 DCA GOREG2 /SETUP COMPARE REGISTER
3456 1160 TAD GOREG2
3457 3000 DCA 0 /STORE OUT BOUND DATA
3458 7340 CLA CLL CMA
3459 4443 LDCUR /SET CURRENT ADDRESS TO 7777
3461 4443 LDCUR /LOAD CURRENT ADDRESS TO 0
3462 4443 TAD K0040 /ENABLE "BREAK"
3463 1071 TAD LDMAN /LOAD AND GO
3464 4447 RDBUF /READ DATA BUFFER
3465 4450 ACCMP1 /CHECK RESULTS
3466 4432 NERROR /OK, 4096 LOOPS
3467 4427

3470 4430 T77E, ERROR /ERROR, DATA BREAK
3471 3443 TST77 /SCOPE LOOP POINTER
3472 4263 4203 /TEXT POINTER

```

/VERIFY THAT "DATA BREAK" WORKS FROM LOCATION 0
 /OF CURRENT FIELD, DO "A WRITE" AND USE DATA
 /PATTERN "2929 AND 5252"

```

3473 7301 TST78, CLA CLL IAC
3474 4445 CLRALL /DCLR "CLR ALL"
3475 4436 ENMAN1 /ENTER MAINTENANCE MODE
3476 1150 TAD REG1
3477 7110 CLL RAR
3500 7630 SEL CLA
3501 1113 TAD K2925
3502 1113 TAD K2925 /TAKE DATA WORD
3503 3160 DCA GOREG2 /SETUP COMPARE REGISTER
3504 1160 TAD GOREG2
3505 3000 DCA 0 /STORE OUTBOUND DATA
3506 1172 TAD HONEMA /GET CURRENT FIELD BITS
3507 1122 TAD K5000 /GET "WRITE ENABLE BIT"
3510 4442 LDCMD /LOAD COMMAND REGISTER
3511 1151 TAD REG2
3512 4443 LDCUR /SET CURRENT ADDRESS TO 7777
3513 4443 LDCUR /LOAD CURRENT ADDRESS TO 0
3514 1071 TAD K0040 /DATA BREAK ENABLE BIT
3515 4447 LDMAN /LOAD AND GO
3516 4450 RDBUF /READ DATA BUFFER
3517 4432 ACCMP1 /CHECK RESULTS
3520 4427 NERROR /OK, 4096 LOOPS
3521 4430 T78E, ERROR /ERROR, DATA BREAK

```

```

3522 3473 TST78 /SCOPE LOOP POINTER
3523 4263 4203 /TEXT POINTER

```

/VERIFY THAT "DATA BREAK" WORK FROM LOCATION 7777
 /OF CURRENT FIELD, DO A WRITE AND USE DATA PATTERN
 /0000 AND 7777;

```

3524 7301 TST79, CLA CLL IAC
3525 4445 CLRALL /DCLR "CLR ALL"
3526 4436 ENMAN1 /ENTER MAINTENANCE MODE
3527 1150 TAD REG1
3530 7110 CLL RAR
3531 7630 SEL CLA
3532 7340 CLA CLL CMA /MAKE DATA WORD
3533 3160 DCA GOREG2 /SETUP COMPARE REGISTER
3534 1160 TAD GOREG2
3535 3526 DCA I K7777 /STORE OUTBOUND DATA
3536 1150 TAD REG1 /SET CURRENT ADDRESS
3537 4443 LDCUR
3540 7340 CLA CLL CMA /LOAD CURRENT ADDRESS TO 7777
3541 4443 LDCUR /CURRENT FIELD BITS
3542 1172 TAD HONEMA /WRITE ENABLE
3543 1101 TAD K4000 /LOAD COMMAND REGISTER
3544 4442 LDCMD /BREAK ENABLE BIT
3545 1071 TAD K0040 /LOAD AND GO
3546 4447 LDMAN /READ DATA BUFFER
3547 4450 RDBUF /CHECK RESULTS
3550 4432 ACCMP1 /OK, 4096 LOOPS
3551 4427 NERROR /ERROR, DATA BREAK
3552 4430 T79E, ERROR /SCOPE LOOP POINTER
3553 3524 TST79 /TEXT POINTER
3554 4263 4203

```

/VERIFY "DATA BREAK" FROM LOCATION 7777 OF
 /CURRENT FIELD; DO A "WRITE" AND USE DATA
 /PATTERN 2929 AND 5252;

```

3555 7301 TST80, CLA CLL IAC
3556 4445 CLRALL /DCLR "CLR ALL"
3557 4436 ENMAN1 /ENTER MAINTENANCE MODE
3560 1150 TAD REG1
3561 7110 CLL RAR
3562 7630 SEL CLA
3563 1113 TAD K2525
3564 1113 TAD K2525 /MAKE DATA WORD
3565 3160 DCA GOREG2 /SETUP COMPARE REGISTER
3566 1160 TAD GOREG2
3567 3526 DCA I K7777 /STORE OUTBOUND DATA
3570 1172 TAD HONEMA /CURRENT FIELD BITS
3571 1122 TAD K5000 /FUNCTION "WRITE"
3572 4442 LDCMD /LOAD COMMAND
3573 1151 TAD REG2 /SET CURRENT ADDRESS
3574 4443 LDCUR
3575 7340 CLA CLL CMA

```

```

3576 4443 LDCUR /LOAD CURRENT ADDRESS TO 7777
3577 1071 TAD K0040 /BREAK ENABLE BIT
3600 4447 LDMAN /LOAD MAINTENANCE AND GO
3601 4450 RDBUF /READ BUFFER
3602 4432 ACCMP1 /CHECK RESULTS
3603 4427 NERROR /O.K, 4096 LOOPS
3604 4430 T80E, ERROR /ERROR, DATA BREAK
3605 3595 TST80 /SCOPE LOOP POINTER
3606 4263 4203 /TEXT POINTER

```

```

/
/VERIFY THAT "DATA BREAK" WORKS FROM CURRENT FIELD
/LOCATION 0, DO A "WRITE" AND USE ALL COMBINATION PATTERN
/ALSO VERIFY THAT DATA IN LOCATION 0 DOESN'T CHANGE
/ON A WRITE BREAK, (NOTE! DATA FROM LOCATION 0 PUT
/IN INDICATOR "DTI")

```

```

3607 7301 /TST81, CLA CLL IAC
3610 4445 CLRALL /DCLR "CLR ALL"
3611 4436 ENMAN1 /ENTER MAINTENANCE MODE
3612 1191 TAD HEG2
3613 3100 DCA GDREG2 /SETUP COMPARE REGISTER
3614 1100 TAD GDREG2
3615 3000 DCA H /STORE OUTBOUND DATA
3616 4443 LDCUR /SET CURRENT ADDRESS TO 0
3617 1172 TAD HOMEHA /CURRENT FIELD BITS
3620 1101 TAD K4000 /WRITE FUNCTION
3621 4442 LDCMD /LOAD COMMAND
3622 1071 TAD K0040 /DATA BREAK ENABLE BIT
3623 4447 LDMAN /LOAD AND GO
3624 4450 RDBUF /READ BUFFER
3625 4432 ACCMP1 /CHECK RESULTS
3626 7610 SKP CLA
3627 5235 JMP T81E /ERROR
3630 1000 TAD 0
3631 3170 DCA DTREG /SAVE IN CASE OF ERROR
3632 1170 TAD DTREG
3633 4432 ACCMP1 /CHECK RESULTS
3634 4427 NERROR /O.K, 4096 LOOPS
3635 4430 T81E, ERROR /ERROR, DATA BREAK
3636 3607 TST81 /SCOPE LOOP POINTER
3637 4263 4203 /TEXT POINTER

```

```

/
/VERIFY "DATA BREAK" FROM LOCATION 7777 OF
/CURRENT FIELD, DO A "WRITE" AND USE ALL COMBINATIONS,
/ALSO VERIFY THAT OUTBOUND DATA IN LOCATION 7777
/DOESN'T CHANGE WHEN DOING A WRITE BREAK, (NOTE! DATA FROM
/LOCATION 7777 PUT IN INDICATOR "DTI")

```

```

3640 7301 /TST82, CLA CLL IAC
3641 4445 CLRALL /DCLR "CLR ALL"
3642 4436 ENMAN1 /ENTER MAINTENANCE MODE
3643 1190 TAD REG1
3644 3100 DCA GDREG2 /SETUP COMPARE REGISTER

```

```

3645 1100 TAD GDREG2
3646 3526 DCA I K7777 /STORE OUTBOUND DATA
3647 7340 CLA CLL CMA /SET CURRENT ADDRESS TO 7777
3650 4443 LDCUR /CURRENT FIELD BITS
3651 1172 TAD HOMEHA /WRITE FUNCTION
3652 1122 TAD K9000 /LOAD COMMAND
3653 4442 LDCMD /BREAK ENABLE BIT
3654 1071 TAD K0040 /LOAD AND GO
3655 4447 LDMAN /READ BUFFER
3656 4450 RDBUF /CHECK RESULTS
3657 4432 ACCMP1
3660 7610 SKP CLA
3661 5267 JMP T82E /ERROR
3662 1526 TAD I K7777
3663 3170 DCA DTREG /SAVE IN CASE OF ERROR
3664 1170 TAD DTREG
3665 4432 ACCMP1 /CHECK RESULTS
3666 4427 NERROR /O.K, 4096 LOOPS
3667 4430 T82E, ERROR /ERROR, DATA BREAK
3670 3640 TST82 /SCOPE LOOP POINTER
3671 4263 4203 /TEXT POINTER

```

```

/
/VERIFY THAT "DCLR" CLEARS CURRENT ADDRESS
/FIRST DO A DATA BREAK FROM LOCATION 7776
/THEN "DCLR" FROM LOCATION 0000, DO "A WRITE"
/AND USE DATA PATTERN ALL COMBINATIONS,
/

```

```

3672 7301 /TST83, CLA CLL IAC
3673 4445 CLRALL /DCLR "CLR ALL"
3674 4436 ENMAN1 /ENTER MAINTENANCE MODE
3675 1190 TAD REG1
3676 3100 DCA GDREG2 /SETUP COMPARE REGISTER
3677 1100 TAD GDREG2
3700 3503 DCA I K7776 /STORE OUTBOUND DATA BREAK 1
3701 1191 TAD REG2
3702 3000 DCA 0 /STORE OUTBOUND DATA BREAK 2
3703 1172 TAD HOMEHA /CURRENT FIELD BITS
3704 1101 TAD K4000 /WRITE FUNCTION
3705 4442 LDCMD /LOAD COMMAND
3706 7344 CLA CLL CMA RAL
3707 4443 LDCUR /LOAD CURRENT ADDRESS TO 7776
3710 1071 TAD K0040 /BREAK ENABLE BIT
3711 4447 LDMAN /LOAD AND GO
3712 4450 RDBUF /READ BUFFER
3713 4432 ACCMP1 /CHECK RESULTS
3714 7610 SKP CLA /O.K, TRY LOCATION 0
3715 5334 JMP T83E /ERROR, DATA BREAK
3716 7301 CLA CLL IAC
3717 4445 CLRALL /DCLR "CLEAR CURRENT ADDRESS"
3720 4436 ENMAN1 /ENTER MAINTENANCE MODE
3721 3167 DCA ADREG /SETUP FOR ERROR POINTER
3722 1172 TAD HOMEHA /CURRENT FIELD BITS
3723 1122 TAD K5000 /FUNCTION WRITE
3724 4442 LDCMD /LOAD COMMAND
3725 1191 TAD REG2

```

```

3726 3160          DCA  GDREG2          /SETUP COMPARE REGISTER
3727 1071          TAO  K0040          /BREAK ENABLE BIT
3730 4447          LOMAN          /LOAD AND GO
3731 4450          RDBUF          /READ BUFFER

3732 4432          ACCMP1          /CHECK RESULTS
3733 4427          NERROR          /ALL WORKED 4096 LOOPS
3734 4430          T83L, ERROR          /ERROR, DATA BREAK
3735 3672          TST03          /SCOPE LOOP POINTER
3736 4263          4203          /TEXT POINTER

/
/VERIFY THAT CURRENT ADDRESS DOES INCREMENT FROM 7777
/TO 0000, DO A WRITE DATA BREAK AND USE DATA PATTERN
/ALL COMBINATION,
/
TST04, CLA CLL IAC          /CLEAR CONTROL
3740 4445          CLRALL          /STORE OUTBOUND DATA
3741 1150          TAO  REG1          /STORE OUTBOUND DATA
3742 3000          DCA  0          /STORE OUTBOUND DATA
3743 1151          TAO  REG2          /STORE OUTBOUND DATA
3744 3926          DCA  I  K7777          /STORE OUTBOUND DATA
3745 7340          CLA CLL CMA          /LOAD CURRENT ADDRESS
3746 4443          LDCUR          /ENTER MAINTENANCE MODE
3747 4436          ENMAN1          /WRITE FUNCTION
3750 1122          TAD  K5000          /CURRENT FIELD
3751 1172          TAO  HOMEHA          /LOAD COMMAND
3752 4442          LDCMD          /2 BREAK COUNTER
3753 7344          CLA CLL CMA RAL          /ENABLE BREAK BIT
3754 3153          DCA  TCNTR1          /LOAD MAINTENANCE
3755 1071          TAO  K0040          /COUNT BREAKS
3756 4447          LOMAN          /00 2
3757 2153          ISB  TCNTR1
3758 5356          JMP  ,=2
3759 7300          CLA CLL          /SETUP COMPARE REGISTER
3762 1191          TAO  REG2          /GET FIRST WORD
3763 3160          DCA  GDREG2          /CHECK IF
3764 4450          RDBUF          /FIRST O.K.
3765 4432          ACCMP1          /ERROR, FIRST WORD
3766 7610          SKP CLA          /SETUP ERROR PRINTER
3767 5376          JMP  T84E
3770 3167          DCA  ADREG          /SETUP COMPARE REGISTER
3771 1150          TAO  REG1          /GET SECOND WORD
3772 3160          DCA  GDREG2          /CHECK IF
3773 4450          RDBUF          /0,K, 4096 LOOPS
3774 4432          ACCMP1          /DATA BREAK
3775 4427          NERROR          /SCOPE LOOP POINTER
3776 4430          T84E, ERROR          /TEXT POINTER
3777 3737          TST04
4000 4263          4203

```

/VERIFY THAT CURRENT ADDRESS DOES INCREMENT
/ADDRESS TEST FROM 0200 TO TST05 OF CURRENT
/FIELD, DO A WRITE DATA BREAK,
/

```

4001 7301          TST05, CLA CLL IAC          /OCLR "CLR ALL"
4002 4445          CLRALL          /SETUP FOR 1 PASS PER TEST
4003 7340          CLA CLL CMA          /SETUP FOR 1 PASS PER TEST
4004 3150          DCA  REG1          /START AT ADDRESS 0200
4005 1073          TAO  K0200          /START AT ADDRESS 0200
4006 3154          DCA  TCNTR2          /LOAD CURRENT ADDRESS
4007 1073          TAO  K0200          /ENTER MAINTENANCE MODE
4010 4443          LDCUR          /KEEP WRITE INHIBIT CLEAR
4011 4436          ENMAN1          /GET INSTRUCTION
4012 4444          LDADD          /SAVE INSTRUCTION
4013 1554          TAD  I  TCNTR2
4014 3153          DCA  TCNTR1
4015 1194          TAD  TCNTR2
4016 7110          CLL  RAR          /USE DATA 7777
4017 7630          SZL  CLA          /SETUP COMPARE REGISTER
4020 7240          CLA  CMA          /SETUP COMPARE REGISTER
4021 3160          DCA  GDREG2          /STORE OUTBOUND DATA
4022 1160          TAD  GDREG2          /CURRENT FIELD BITS
4023 3594          DCA  I  TCNTR2          /WRITE FUNCTION
4024 1172          TAD  HOMEHA          /LOAD COMMAND REGISTER
4025 1101          TAO  K4000          /BREAK ENABLE BIT
4026 4442          LDCMD          /LOAD AND GO
4027 1071          TAD  K0040          /LOAD AND GO
4030 4447          LOMAN          /LOAD AND GO
4031 7300          CLA CLL          /GET INSTRUCTION
4032 1153          TAD  TCNTR1          /REPLACE INSTRUCTION
4033 3594          DCA  I  TCNTR2
4034 1154          TAD  TCNTR2
4035 3167          DCA  ADREG          /ADDRESS OF BREAK
4036 4450          RDBUF          /GET DATA
4037 4432          ACCMP1          /CHECK RESULTS
4040 7610          SKP CLA          /ERROR, DATA BREAK
4041 5251          JMP  T89E
4042 1194          TAD  TCNTR2
4043 1147          TAD  MYS05          /SPECIAL POINTER FOR START OF
4044 7690          SNA  CLA          /THIS TEST;
4045 5250          JMP  T890K          /TEST O.K.
4046 2194          ISB  TCNTR2          /LOOP DO 0200 TO TST06
4047 5211          JMP  T89R1          /THIS ADDRESS WORKED TRY NEXT
4053 4427          T850K, NERROR          /ERROR, DATA BREAK
4054 4430          T85E, ERROR          /ERROR, DATA BREAK
4055 4001          TST05          /SCOPE LOOP POINTER
4056 4263          4203          /TEXT POINTER

/
/VERIFY THAT B LAST BREAK SETS AFTER 256 WRITE DATA BREAKS
/AND VERIFY THAT OCLR CLEARS WRITE INHIBIT COUNTER;
/
TST06, CLA CLL CMA          /SETUP FOR 1 PASS PER TEST
4054 7340          DCA  REG1          /SETUP FOR 1 PASS PER TEST
4055 3150          TAO  M255          /SPECIAL COUNTER
4056 1137          DCA  TCNTR1          /SPECIAL COUNTER
4057 3153          DCA  TCNTR1          /SPECIAL COUNTER
4060 7301          T86K1, CLA CLL IAC          /CLEAR CONTROL
4061 4445          CLRALL          /CLEAR CONTROL
4062 1153          TAD  TCNTR1          /AMOUNT OF BREAKS TO DO
4063 3154          DCA  TCNTR2

```

```

4064 4436 ENMAN1 /ENTER MAINTENANCE MODE
4065 1172 TAD HOMEMA /CURRENT FIELD BITS
4066 1101 TAD K4000 /WRITE FUNCTION
4067 4442 LDCMD /LOAD COMMAND
4070 4443 T86R2, LDCUR /LOAD CURRENT ADDRESS
4071 7340 CLA CLL CMA /STORE OUTBOUND DATA
4072 3000 DCA B
4073 7340 CLA CLL CMA /SETUP COMPARE REGISTER
4074 3160 DCA GDREG2 /BREAK ENABLE BIT
4075 1071 TAD K0040 /LOAD AND GO
4076 4447 LDMAN /GET WORD
4077 4450 RDBUF /CHECK RESULTS
4100 4432 ACCMP1
4101 7610 SKP CLA /DATA ERROR
4102 5352 JMP T86E
4103 2154 ISZ TCNTR2 /DO 255 BREAKS
4104 5270 JMP T86R2
4105 7301 CLA CLL IAC /CLEAR CONTROL AND COUNTER
4106 4445 CLRALL
4107 7340 CLA CLL CMA
4110 1137 TAD M255 /256 BREAK COUNTER
4111 3154 DCA TCNTR2
4112 7300 T86R3, CLA CLL /MAKE DATA PATTERN
4113 3000 DCA B /STORE OUTBOUND DATA
4114 3160 DCA GDREG2 /SETUP COMPARE REGISTER
4115 4436 ENMAN1 /ENTER MAINTENANCE MODE
4116 4443 LDCUR /LOAD CURRENT ADDRESS
4117 1122 TAD K5000 /WRITE FUNCTION
4120 1172 TAD HOMEMA /CURRENT FIELD
4121 4442 LDCMD /LOAD COMMAND
4122 1071 TAD K0040 /ENABLE BREAK BIT
4123 4447 LDMAN /LOAD MAINTENANCE
4124 4450 RDBUF /GET WORD
4125 4432 ACCMP1 /CHECK RESULTS
4126 7610 SKP CLA /WORD 0,K
4127 5352 JMP T86E /DATA ERROR
4130 2154 ISZ TCNTR2 /DO 256 WRITE BREAKS
4131 5312 JMP T86R3
4132 1102 TAD K7000 /CLEAR COUNTER
4133 3155 DCA TCNTR3
4134 7340 T86R4, CLA CLL CMA /STORE NOT OUTBOUND DATA
4135 3000 DCA B /LOAD CURRENT ADDRESS
4136 4443 LDCUR /ENABLE BREAK BIT
4137 1071 TAD K0040 /LOAD "SHOULD NOT BREAK"
4140 4447 LDMAN /GET DATA
4141 4450 RDBUF /CHECK IT
4142 4432 ACCMP1 /DATA 0,K
4143 7610 SKP CLA /ERROR, DATA BREAK INHIBIT
4144 5352 JMP T86E /DO "1070 FAKEN" BREAKS
4145 2155 ISZ TCNTR3
4146 5334 JMP T86R4
4147 2153 ISZ TCNTR1 /START ALL OVER WITH ONE LESS
4150 5260 JMP T86R1 /TO NEXT TEST
4151 4427 NERROR

```

```

4152 4430 T86E, ERROR /ERROR, DATA BREAK
4153 4054 TST86 /SCOPE LOOP POINTER
4154 4263 4263 /TEXT POINTER
/
4155 5756 JMP I ,+I /TO NEXT TEST
4156 4200 TST87
/
4200 PAGE
/
/VERIFY THAT B LAST BREAK SETS AFTER 128 BREAKS IF
/HALF BIT IS SET, ALSO MAKE SURE LOAD DISK ADDRESS LOADS
/THE INHIBIT COUNTER CORRECTLY,
/
4200 7340 TST87, CLA CLL CMA /SETUP FOR 1 PASS PER TEST
4201 3150 DCA REG1
4202 1137 TAD M255 /SPECIAL COUNTER
4203 3153 DCA TCNTR1
4204 7301 T87R1, CLA CLL IAC /CLEAR CONTROL
4205 4445 CLRALL
4206 1153 TAD TCNTR1 /AMOUNT OF BREAKS TO DO
4207 3154 DCA TCNTR2 /ENTER MAINTENANCE MODE
4210 4436 ENMAN1 /HALF BIT
4211 1072 TAD K0100 /CURRENT FIELD BITS
4212 1172 TAD HOMEMA /WRITE FUNCTION
4213 1101 TAD K4000 /LOAD COMMAND
4214 4442 LDCMD /LOAD CURRENT ADDRESS
4215 4443 T87R2, LDCUR /LOAD CURRENT ADDRESS
4216 7340 CLA CLL CMA /STORE OUTBOUND DATA
4217 3000 DCA B
4220 7340 CLA CLL CMA /SETUP COMPARE REGISTER
4221 3160 DCA GDREG2 /BREAK ENABLE BIT
4222 1071 TAD K0040 /LOAD AND GO
4223 4447 LDMAN /GET WORD
4224 4450 RDBUF /CHECK RESULTS
4225 4432 ACCMP1
4226 7610 SKP CLA /DATA ERROR
4227 5271 JMP T89E
4230 2154 ISZ TCNTR2 /DO SO MANY BREAKS
4231 5215 JMP T89R2 /LOAD ADDRESS AND INHIBIT COUNT
4232 4444 LDADD
4233 1135 TAD M128 /128 BREAK COUNTER
4234 3154 DCA TCNTR2
4235 7300 T87R3, CLA CLL /MAKE DATA WORD
4236 3000 DCA B /STORE OUTBOUND DATA
4237 3160 DCA GDREG2 /SETUP COMPARE REGISTER
4240 4443 LDCUR /LOAD CURRENT ADDRESS
4241 1071 TAD K0040 /ENABLE BREAK BIT
4242 4447 LDMAN /LOAD MAINTENANCE
4243 4450 RDBUF /GET WORD
4244 4432 ACCMP1 /CHECK RESULTS
4245 7610 SKP CLA /WORD 0,K
4246 5271 JMP T89E /DATA ERROR
4247 2154 ISZ TCNTR2 /DO 128 WRITE BREAKS
4250 5235 JMP T89R3

```

```

4251 1102 TAD K0000 /CLEAR COUNTER
4252 3155 DCA TCNTR3
4253 7340 T87H4: CLA CLL CMA /STORE NOT OUTBOUND DATA
4254 3000 DCA 0 /LOAD CURRENT ADDRESS
4255 4443 LDCUR /ENABLE BREAK BIT
4256 1071 TAD K0040 /LOAD "SHOULD NOT BREAK"
4257 4447 LDMAN /GET DATA
4260 4450 RDBUF /CHECK IT
4261 4432 ACCMP1 /DATA O.K.
4262 7610 SKP CLA /ERROR, DATA BREAK INHIBIT
4263 5271 JMP T87E
4264 2155 ISE TCNTR3
4265 5253 JMP T87R4 /DO "1000 FAKEN" BREAKS
4266 2153 ISE TCNTR1
4267 5204 JMP T87R1 /SWART ALL OVER WITH ONE LESS
4270 4427 NEORROR /TO NEXT TEST
4271 4430 T87E: ERROR /ERROR, DATA BREAK
4272 4200 TST87 /SCOPE LOOP POINTER
4273 4263 4203 /TEXT POINTER

```

/VERIFY THAT "DATA BREAK" WORDS WITH A "READ"
/TO LOCATION 0 OF CURRENT FIELD, USE DATA
/PATTERN 0000 AND 7777;

```

4274 7301 T878: CLA CLL IAC /DCLR "CLR ALL"
4275 4445 CLRALL /CURRENT FIELD
4276 1172 TAD HOMEHA /LOAD COMMAND TO 0
4277 4442 LDCMD
4300 1150 TAD REG1
4301 7110 CLL RAR
4302 7630 SEL CLA /SETUP COMPARE REGISTER
4303 7240 CLA CMA /GET VALUE TO LOAD
4304 3160 DCA GDREG2 /LOAD UPPER BUFFER
4305 1160 TAD GDREG2
4306 4421 LDBUF
4307 1071 TAD K0040
4310 4447 LDMAN /LOAD AND GO
4311 7300 CLA CLL
4312 3167 DCA ADREG /ADDRESS FOR PRINTER
4313 1000 TAD 0 /GET INBOUND WORD
4314 3170 DCA DTREG /SAVE IT
4315 1170 TAD DTREG
4316 4432 ACCMP1 /CHECK
4317 4427 NEORROR /O.K., 4096 LOOPS
4320 4430 ERROR /ERROR, DATA BREAK
4321 4274 TST88 /SCOPE LOOP POINTER
4322 4263 4203 /TEXT POINTER

```

/VERIFY WITH A "READ" THAT "DATA BREAK" WORKS
/FROM LOCATION "7777" OF CURRENT FIELD USE
/DATA PATTERN 0000 AND 7777;

4323 7301 T8789: CLA CLL IAC

```

4324 4445 CLRALL
4325 1076 TAD K1000 /CURRENT FIELD
4326 1172 TAD HOMEHA /LOAD COMMAND FOR READ
4327 4442 LDCMD
4330 1150 TAD REG1
4331 7110 CLL RAR
4332 7630 SEL CLA /SETUP COMPARE REGISTER
4333 7240 CLA CMA /GET VALUE TO LOAD
4334 3160 DCA GDREG2 /LOAD UPPER BUFFER
4335 7240 CLA CMA /ENABLE BREAK BIT
4336 4443 LDCUR /LOAD AND GO
4337 1160 TAD GDREG2
4340 4421 LDBUF
4341 1071 TAD K0040
4342 4447 LDMAN
4343 7300 CLA CLL
4344 1526 TAD I K7777 /GET "WORD"
4345 3170 DCA DTREG /SAVE INBOUND WORD
4346 1170 TAD DTREG
4347 4432 ACCMP1 /CHECK IT
4348 4427 NEORROR /O.K., 4096 LOOPS
4350 4427 ERROR /ERROR, DATA BREAK
4351 4430 TST89 /SCOPE LOOP POINTER
4352 4323 4203 /TEXT POINTER
4353 4263

```

/VERIFY THAT "DATA BREAK" WITH A "READ" TO
/CURRENT FIELD LOCATION 0 USE DATA PATTERN
/5252 * 2525

```

4354 7301 T8790: CLA CLL IAC /DCLR
4355 4445 CLRALL /CURRENT FIELD
4356 1172 TAD HOMEHA /LOAD COMMAND TO READ
4357 4442 LDCMD
4360 1150 TAD REG1
4361 7110 CLL RAR
4362 7630 SEL CLA /WHAT DDATA
4363 1113 TAD K2525 /DATA 5252
4364 1113 TAD K2525
4365 3160 DCA GDREG2 /SETUP COMPARE REGISTER
4366 3160 TAD GDREG2 /GET VALUE TO LOAD
4367 4421 LDBUF /LOAD UPPER BUFFER
4370 4443 LDCUR /LOAD CURRENT ADDRESS TO 0
4371 1071 TAD K0040 /ENABLE BREAK
4372 4447 LDMAN /LOAD AND GO
4373 7300 CLA CLL
4374 1000 TAD 0
4375 3170 DCA DTREG /SAVE DATA
4376 1000 TAD 0
4377 4432 ACCMP1 /CHECK
4400 4427 NEORROR /O.K., 4096 LOOPS
4401 4430 ERROR /ERROR, DATA BREAK
4402 4394 TST90 /SCOPE LOOP POINTER
4403 4263 4203 /TEXT POINTER

```

/VERIFY THAT "DATA BREAK" WORD WITH A "READ"

/TO CURRENT FIELD LOCATION LOCATION 7777.
/USE DATA PATTERN 9292 + 2929

```

4404 7301 TST91: CLA CLL IAC
4405 4445 CLRALL
4406 1172 TAD HOMEHA /CURRENT FIELD
4407 4442 LDCMD /LOAD COMMAND
4410 7240 CLA CMA /LOAD CURRENT ADDRESS
4411 4443 LDCUR
4412 1190 TAD REG1
4413 7110 CLL RAR
4414 7030 SEL CLA /WHAT DATA TO USE
4415 1113 TAD K2925 /DATA 9292
4416 1113 TAD K2925
4417 3160 DCA GDREG2 /SETUP COMPARE REGISTER
4420 1160 TAD GDREG2 /GET VALUE TO LOAD
4421 4421 LDBUF /LOAD UPPER BUFFER
4422 1071 TAD K0040 /ENABLE BREAK BIT
4423 4447 LDMAN /LOAD MAINTENANCE
4424 7300 CLA CLL
4425 1526 TAD I K7777 /GET BREAK WORD
4426 3170 DCA DTREG /SAVE FOR ERROR PRINTER
4427 1170 TAD DTREG
4430 4432 ACCMP1 /CHECK
4431 4427 NERROR /O,K, 4096 LOOPS
4432 4430 ERROR /ERROR, DATA BREAK
4433 4404 TST91 /SCOPE LOOP POINTER
4434 4263 4263 /TEXT POINTER
    
```

/VERIFY THAT "DATA BUFFERS" CAN BE FILLED
/ON A WRITE DATA BREAK FROM LOCATION
/0 OF CURRENT FIELD, USE ALL COMBINATIONS,

```

4435 7301 TST92: CLA CLL IAC
4436 4445 CLRALL /OCLR "CLR ALL"
4437 4436 ENMAN1 /ENTER MAINTENANCE MODE
4440 1127 TAD M4
4441 3193 DCA TCNTR1 /FOR FOUR WORDS
4442 1190 TAD REG1
4443 3194 DCA TCNTR2 /DATA START
4444 1172 TAD HOMEHA /CURRENT FIELD
4445 1101 TAD K4000 /WRITE FUNCTION
4446 4442 LDCMD /LOAD COMMAND
4447 4443 LDCUR /LOAD CURRENT ADDRESS TO 0
4450 1154 TAD TCNTR2
4451 3000 DCA 0 /STORE OUT BOUND DATA
4452 1071 TAD K0040 /ENABLE BREAK BIT
4453 4447 LDMAN /LOAD AND GO
4454 7300 CLA CLL
4455 2194 ISE TCNTR2 /UPDATE DATA WORD
4456 7000 NOP
4457 2193 ISE TCNTR1
4460 5247 JMP T92R1 /FILL BUFFER
4461 1127 TAD M4
    
```

```

4462 3153 DCA TCNTR1
4463 1190 TAD REG1
4464 3160 DCA GDREG2
4465 4490 T92H2: RDBUF
4466 4432 ACCMP1
4467 7010 SKP CLA
4470 5276 JMP T92E
4471 2160 ISE GDREG2
4472 7000 NOP
4473 2193 ISE TCNTR1
4474 5245 JMP T92R2
4475 4427 NERROR /O,K, 4096 LOOPS
4476 4430 ERROR /ERROR, DATA BREAK
4477 4435 TST92 /SCOPE LOOP POINTER
4500 4263 4263 /TEXT POINTER

4501 5702 JMP I ,*1 /TO NEXT TEST
4502 4600 TST93
    
```

/PAGE

/VERIFY THAT "DATA BREAK" WORKS WITH
/A "READ" TO CURRENT FIELD LOCATION 0
/TRY ALL COMBINATIONS

```

4600 7301 TST93: CLA CLL IAC
4601 4445 CLRALL /OCLR "CLR ALL"
4602 1172 TAD HOMEHA /CURRENT FIELD
4603 4442 LDCMD /LOAD COMMAND FOR READ
4604 3167 DCA ADREG /SAVE ADDRESS
4605 1191 TAD REG2
4606 3160 DCA GDREG2 /SETUP COMPARE REGISTER
4607 1160 TAD GDREG2 /GET VALUE TO LOAD
4610 4421 LDBUF /LOAD UPPER BUFFER
4611 1071 TAD K0040 /BREAK ENABLE BIT
4612 4447 LDMAN /LOAD AND GO
4613 7300 CLA CLL
4614 1000 TAD 0 /GET DATA WORD
4615 3170 DCA DTREG /SAVE FOR ERROR PRINTER
4616 1170 TAD DTREG
4617 4432 ACCMP1 /CHECK
4620 4427 NERROR /O,K, 4096 LOOPS
4621 4430 ERROR /ERROR, DATA BREAK
4622 4600 TST93 /SCOPE LOOP POINTER
4623 4263 4263 /TEXT POINTER
    
```

/VERIFY THAT A READ DATA BREAK DOES OCCUR
/WHEN FUNCTION = 2

```

4624 7301 TST94: CLA CLL IAC
4625 4445 CLRALL /OCLR
4626 1190 TAD REG1 /GET VALUE TO LOAD
4627 3160 DCA GDREG2 /SETUP COMPARE REGISTER
4630 1160 TAD GDREG2
4631 4421 LDBUF /LOAD UPPER BUFFER
    
```

```

4632 1100 TAD GDREG2
4633 7040 CMA
4634 3000 DCA 0
4635 4443 LDCUR /SET CURRENT ADDRESS TO 0
4636 1172 TAD HOMEHA /CURRENT FIELD
4637 1077 TAD K2000
4640 4442 LDCMD /LOAD COMMAND REGISTER
4641 1071 TAD K0040 /ENABLE BREAK
4642 4447 LDMAN /GO
4643 7300 CLA CLL 0
4644 1000 TAD 0
4645 3170 DCA DTREG /SAVE FOR ERROR PRINTER
4646 1170 TAD DTREG
4647 4432 ACCMP1 /DID 0 CHANGE
4650 4427 NERROR /ALL O.K.
4651 4430 T94E, ERROR /ERROR, DATA BREAK
4652 4624 TST94 /SCOPE LOOP POINTER
4653 4263 4203 /TEXT POINTER

/
/VERIFY THAT A READ DATA BREAK DOES OCCUR
/WHEN FUNCTION = 3
/
4654 7301 TST95, CLA CLL IAC
4655 4445 CLRALL /DCLR
4656 1151 TAD REG2
4657 3160 DCA GDREG2 /SETUP COMPARE REGISTER
4660 1160 TAD GDREG2
4661 4421 LDBUF /LOAD UPPER BUFFER
4662 1160 TAD GDREG2
4663 7040 CMA
4664 3000 DCA 0
4665 4443 LDCUR /SET CURRENT ADDRESS TO 0
4666 1172 TAD HOMEHA /CURRENT FIELD
4667 1076 TAD K1000
4670 1077 TAD K2000
4671 4442 LDCMD /LOAD COMMAND REGISTER
4672 1071 TAD K0040 /ENABLE BREAK
4673 4447 LDMAN /GO
4674 7300 CLA CLL 0
4675 1000 TAD 0
4676 3170 DCA DTREG /SAVE FOR ERROR PRINTER
4677 1170 TAD DTREG
4700 4432 ACCMP1 /DID 0 CHANGE
4701 4427 NERROR /ALL O.K.
4702 4430 T95E, ERROR /ERROR, DATA BREAK
4703 4694 TST95 /SCOPE LOOP POINTER
4704 4263 4203 /TEXT POINTER

/
4705 5706 JMP 1, 01 /TO NEXT TEST
4706 5000 TST97

/
PAGE
/
/VERIFY THAT A READ DATA BREAK DOES OCCUR
/WHEN FUNCTION = 6

```

```

5000 7301 TST97, CLA CLL IAC
5001 4445 CLRALL /DCLR
5002 1150 TAD REG1
5003 3160 DCA GDREG2 /SETUP COMPARE REGISTER
5004 1160 TAD GDREG2
5005 4421 LDBUF /LOAD UPPER BUFFER
5006 1160 TAD GDREG2
5007 7040 CMA
5010 3000 DCA 0
5011 4443 LDCUR /SET CURRENT ADDRESS TO 0
5012 1172 TAD HOMEHA /CURRENT FIELD
5013 1101 TAD K4000
5014 1077 TAD K2000
5015 4442 LDCMD /LOAD COMMAND REGISTER
5016 1071 TAD K0040 /ENABLE BREAK
5017 4447 LDMAN /GO
5020 7300 CLA CLL 0
5021 1000 TAD 0
5022 3170 DCA DTREG /SAVE FOR ERROR PRINTER
5023 1170 TAD DTREG
5024 4432 ACCMP1 /DID 0 CHANGE
5025 4427 NERROR /ALL O.K.
5026 4430 T97E, ERROR /ERROR, DATA BREAK
5027 5000 TST97 /SCOPE LOOP POINTER
5030 4263 4203 /TEXT POINTER

/
/VERIFY THAT A READ DATA BREAK DOES OCCUR
/WHEN FUNCTION = 7
/
5031 7301 TST98, CLA CLL IAC
5032 4445 CLRALL /DCLR
5033 1151 TAD REG2
5034 3160 DCA GDREG2 /SETUP COMPARE REGISTER
5035 1160 TAD GDREG2
5036 4421 LDBUF /LOAD UPPER BUFFER
5037 1160 TAD GDREG2
5040 7040 CMA
5041 3000 DCA 0
5042 4443 LDCUR /SET CURRENT ADDRESS TO 0
5043 1172 TAD HOMEHA /CURRENT FIELD
5044 1101 TAD K4000
5045 1076 TAD K1000
5046 1077 TAD K2000
5047 4442 LDCMD /LOAD COMMAND REGISTER
5050 1071 TAD K0040 /ENABLE BREAK
5051 4447 LDMAN /GO
5052 7300 CLA CLL 0
5053 1000 TAD 0
5054 3170 DCA DTREG /SAVE FOR ERROR PRINTER
5055 1170 TAD DTREG
5056 4432 ACCMP1 /DID 0 CHANGE
5057 4427 NERROR /ALL O.K.
5060 4430 T98E, ERROR /ERROR, DATA BREAK
5061 5031 TST98 /SCOPE LOOP POINTER

```

```

5062 4263          4263          /TEXT POINTER
/
/VERIFY THAT ALL DATA BUFFERS CAN BE FULL
/AT ONCE, USE A READ BREAK AND PATTERN
/ALL COMBINATIONS;
/
5063 7301 TST99, CLA CLL IAC
5064 4445          CLHALL          /DCLR "CLR ALL"
5065 1191          TAD REG2
5066 3196          DCA TCNTR4
5067 1127          TAD M4
5070 3155          DCA TCNTR3          /COUNTER FOR # OF BUFFERS
5071 1156          T99K1, TAD TCNTR4
5072 4421          LDBUF          /LOAD UPPER BUFFER
5073 7340          CLA CLL CMA
5074 1196          TAD TCNTR4
5075 3196          DCA TCNTR4
5076 2155          IS# TCNTR3
5077 5271          JMP T99R1          /4 COUNT, SKIP WHEN BUFFERS FULL
5100 1191          TAD REG2
5101 3160          DCA GDREG2          /SETUP FOR FIRST CMPARE
5102 1127          TAD M4
5103 3155          DCA TCNTR3
5104 1192          TAD HOMEMA          /CURRENT FIELD
5105 4442          LDCMD          /LOAD COMMAND
5106 4443          T99K2, LDCUR          /LOAD CURRENT ADDRESS
5107 1071          TAD K0040          /GET ENABLE BREAK
5108 4447          LDHAN          /LOAD MAINTENANCE
5111 7300          CLA CLL
5112 1000          TAD 0          /GET DATA
5113 3170          DCA DTREG          /SAVE FOR PRINTER
5114 1170          TAD DTREG
5115 4432          ACCMP1          /CHECK
5116 7010          SKP CLA          /O.K, CHECK NEXT
5117 5326          JMP T99E          /ERROR DATA BUFFERS
5120 7340          CLA CLL CMA
5121 1160          TAD GDREG2
5122 3160          DCA GDREG2          /SETUP FOR NEXT
5123 2155          IS# TCNTR3
5124 5306          JMP T99R2
5125 4427          NERROR          /O.K, 4096 LOOPS
5126 4430          T99E, ERROR          /ERROR, DATA BUFFERS
5127 5063          TST99          /SCOPE LOOP POINTER
5130 4263          4263          /TEXT POINTER
/
/
/VERIFY A WRITE THEN READ BREAK FROM
/LOCATIONS 7777 THEN 0000 OF THE
/CURRENT FIELD; USE PATTERNS 0=7777,
/
5131 7301 TST100, CLA CLL IAC
5132 4445          CLHALL          /CLEAR CONTROL
5133 4436          ENMAN1          /ENTER MAINTENANCE
5134 7340          CLA CLL CMA          /LOAD CURRENT ADDRESS
5135 4443          LDCUR

```

```

5136 1151          TAD REG2
5137 3526          DCA I K7777          /STORE OUT BOUND DATA
5140 1172          TAD HOMEMA          /CURRENT FIELD
/
5141 1101          TAD K4000          /WRITE FUNCTION
5142 4442          LDCMD          /LOAD COMMAND REGISTER
5143 1071          TAD K0040          /ENABLE BREAK
5144 4447          LDHAN          /ISSUE MAINTENANCE IOT
5145 7300          CLA CLL
5146 1172          TAD HOMEMA          /CURRENT FIELD
5147 4442          LDCMD          /LOAD COMMAND REGISTER
5150 1071          TAD K0040          /ENABLE BREAK
5151 4447          LDHAN          /ISSUE MAINTENANCE IOT
5152 7300          CLA CLL
5153 2167          IS# ADREG
5154 7000          NOP
5155 1191          TAD REG2
5156 3160          DCA GDREG2          /SETUP COMPARE
5157 1000          TAD 0
5160 3170          DCA DTREG          /STORE DATA READ FOR PRINTER
5161 1000          TAD 0
5162 4432          ACCMP1          /CHECK RESULTS
5163 4427          NERROR          /O.K, 4096 LOOPS
5164 4430          ERROR          /ERROR, WRITE OR READ
5165 5131          TST100          /SCOPE POINTER
5166 4263          4263
5167 7301          CLA CLL IAC
5170 1173          TAD FLOMAX
5171 7050          SNA CLA          /IS IT TEST EXTENDED MEM,
5172 5424          JMP I XEND          /NO, END OF TEST
/
5173 5774          JMP I ,+I          /TO NEXT TEST
5174 5200          TST101
/
PAGE
/
/VERIFY THAT DATA BREAK WORKS WITH A WRITE FROM
/LOCATION 0000 IN ALL EXISTING EXTENDED FIELDS;
/USE DATA PATTERN 0000 + 7777,
/
5200 7301 TST101, CLA CLL IAC

```

```

5201 4445          CLHALL          /DCLR
5202 4436          ENMAN1          /ENTER MAINTENANCE MODE
5203 1144          TAD KCOF
5204 3225          DCA TOPLO2          /START FIELD 0
5205 1173          TAD FLOMAX
5206 3153          DCA TCNTR1          /FIELDS TO TEST -1
5207 1425          TAD I THSFLD

```

```

5210 3227          DCA  RTPLD2          /RETURN FIELD CDF
5211 3227          TAD  REG1
5212 7110          CLL  RAR
5213 7630          SEL  CLA          /USE DATA 7777 IF LINK IS SET
5214 7240          CLA  CMA
5215 3560          DCA  GDREG2          /SETUP COMPARE REGISTER
5216 4443          T101H, LDCUR          /SET CURRENT ADDRESS TO 0000
5217 1225          TAD  TOPLD2
5218 7041          CIA
5219 1227          TAD  RTPLD2
5220 7650          SNA  CLA          /CURRENT FIELD
5221 5242          JMP  NEXFL2          /YES, NOT THIS ONE
5222 1160          TAD  GDREG2          /OUTBOUND DATA
5223 7402          TOPLD2, HLT          /MODIFIED CDF
5224 3457          DCA  I  K0000          /STORE DATA
5225 7402          RTPLD2, HLT          /HOME CDF
5226 1225          TAD  TOPLD2
5227 0107          AND  K0070
5228 1101          TAD  K4000
5229 4442          LDCMD          /WRITE
5230 1071          TAD  K0040          /LOAD COMMAND REGISTER
5231 4447          LDMAN          /ENABLE WRITE BREAK
5232 4450          RDBUF          /GO
5233 4432          ACCMP1          /GET RESULTS
5234 7610          SKP  CLA          /CHECK RESULTS
5235 5252          JMP  T101E          /O.K., TRY NEXT
5236 2193          NEXFL2, ISZ  TCNTR1          /ERROR
5237 7610          SKP  CLA
5238 5251          JMP  T101D          /DONE WITH ALL
5239 1225          TAD  TOPLD2
5240 1066          TAD  K0010
5241 3225          DCA  TOPLD2          /SET TO NEXT FIELD
5242 5216          JMP  T101R          /TRY IT
5243 4427          T101D, NERROR          /O.K. 4096 LOOPS
5244 4430          T101E, ERROR          /ERROR, DATA BREAK
5245 5200          TST101          /SCOPE LOOP POINTER
5246 4263          4203          /TEXT POINTER
/
5255 5096          JMP  I  ,+I          /TO NEXT TEST
5256 5400          TST102
/
          PAGE
/
/VERIFY THAT DATA BREAK WORKS WITH A WRITE FROM
/LOCATION 0000 IN ALL EXISTING EXTENDED FIELDS;
/USE DATA PATTERN 2525 + 5252,
/
5400 7301          TST102, CLA  CLL  IAC
5401 4445          CLRALL
5402 4436          ENMAN1
5403 1144          TAD  KCDF
5404 3226          DCA  TOPLD3          /START FIELD 0
5405 1173          TAD  FLDMAX
5406 3153          DCA  TCNTR1          /FIELDS TO TEST =1
5407 1425          TAD  I  THSFLO

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5410 3230          DCA  RTPLD3          /RETURN FIELD CDF
5411 3230          TAD  REG1
5412 7110          CLL  RAR
5413 7630          SEL  CLA          /USE DATA 5252 IF LINK IS SET
5414 1113          TAD  K2525
5415 1113          TAD  K2525
5416 3160          DCA  GDREG2          /SETUP COMPARE REGISTER
5417 4443          T102R, LDCUR          /SET CURRENT ADDRESS TO 0000
5418 1225          TAD  TOPLD3
5419 7041          CIA
5420 1230          TAD  RTPLD3
5421 7650          SNA  CLA          /CURRENT FIELD
5422 9243          JMP  NEXFL3          /YES, NOT THIS ONE
5423 1160          TAD  GDREG2          /OUTBOUND DATA
5424 7402          TOPLD3, HLT          /MODIFIED CDF
5425 3457          DCA  I  K0000          /STORE DATA
5426 7402          RTPLD3, HLT          /HOME CDF
5427 1225          TAD  TOPLD3
5428 0107          AND  K0070
5429 1101          TAD  K4000
5430 4442          LDCMD          /WRITE
5431 1071          TAD  K0040          /LOAD COMMAND REGISTER
5432 4447          LDMAN          /ENABLE WRITE BREAK
5433 4450          RDBUF          /GO
5434 4432          ACCMP1          /GET RESULTS
5435 7610          SKP  CLA          /CHECK RESULTS
5436 5252          JMP  T102E          /O.K., TRY NEXT
5437 2193          NEXFL3, ISZ  TCNTR1          /ERROR
5438 7610          SKP  CLA
5439 1226          JMP  T102D          /DONE WITH ALL
5440 1226          TAD  TOPLD3
5441 1066          TAD  K0010
5442 3226          DCA  TOPLD3          /SET TO NEXT FIELD
5443 5217          JMP  T102R          /TRY IT
5444 4427          T102D, NERROR          /O.K. 4096 LOOPS
5445 4430          T102E, ERROR          /ERROR, DATA BREAK
5446 5400          TST102          /SCOPE LOOP POINTER
5447 4263          4203          /TEXT POINTER
/
/VERIFY THAT DATA BREAK WORKS WITH A WRITE FROM
/LOCATION 7777 IN ALL EXISTING EXTENDED FIELDS;
/USE DATA PATTERN 0000 + 7777,
/
5450 7301          TST103, CLA  CLL  IAC
5451 4445          CLRALL
5452 4436          ENMAN1
5453 1144          TAD  KCDF
5454 3304          DCA  TOPLD4          /START FIELD 0
5455 1173          TAD  FLDMAX
5456 3153          DCA  TCNTR1          /FIELDS TO TEST =1
5457 1425          TAD  I  THSFLO
5458 3306          DCA  RTPLD4          /RETURN FIELD CDF
5459 1150          TAD  REG1
5460 7110          CLL  RAR
5461 7630          SEL  CLA          /USE DATA 7777 IF LINK IS SET

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5472 7240          CLA CMA
5473 3160          DCA GDREG2          /SETUP COMPARE REGISTER
5474 7240          T103R, CLA CMA
5475 4443          LDCUR          /SET CURRENT ADDRESS TO 7777
5476 1304          TAD          TOPLD4
5477 7041          CIA
5500 1306          TAD          RTPLD4
5501 7690          SNA CLA
5502 9321          JMP          NEXFL4
5503 1160          TAD          GDREG2
5504 7402          TOPLD4, HLT
5505 3526          DCA I   K7777
5506 7402          RTFLD4, HLT
5507 1304          TAD          TOPLD4
5510 7107          AND          K007R
5511 1101          TAD          K4000
5512 4442          LDCMD
5513 1071          TAD          K0040
5514 4447          LDMAN
5515 4432          RDHUF
5516 4432          ACCMP1
5517 7610          SKP CLA
5520 9331          JMP          T103E
5521 2153          NEXFL4, ISE TCNTR1
5522 7610          SKP CLA
5523 9330          JMP          T103D
5524 1304          TAD          TOPLD4
5525 1066          TAD          K0010
5526 3304          DCA          TOPLD4
5527 5274          JMP          T103R
5530 4427          T103D, NERROR
5531 4430          T103E, ERROR
5532 5496          TST103
5533 4263          4203
/
5534 5735          JMP I   ,+I
5535 5600          TST104
/
PAGE
/
/VERIFY THAT DATA BREAK WORKS WITH A WRITE FROM
/LOCATION 7777 IN ALL EXISTING EXTENDED FIELDS;
/USE DATA PATTERN 2925 + 5252,
/
5600 7301          TST104, CLA CLL IAC
5601 4445          CLRALL
5602 4436          ENMAN1
5603 1144          TAD          KCOF
5604 3227          DCA          TOPLD5
5605 1173          TAD          FLOMAX
5606 3153          DCA          TCNTR1
5607 1425          TAD I   THSFLD
5610 3231          DCA          RTFLD5
5611 1190          TAD          REG1
5612 7110          CLL RAR

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5613 7630          SEL CLA
5614 1113          TAD          K2925
5615 1113          TAD          K2925
5616 3160          DCA GDREG2          /SETUP COMPARE REGISTER
5617 7240          T104R, CLA CMA
5620 4443          LDCUR          /SET CURRENT ADDRESS TO 7777
5621 1227          TAD          TOPLD5
5622 7041          CIA
5623 1231          TAD          RTPLD5
5624 7690          SNA CLA
5625 5244          JMP          NEXFL5
5626 1160          TAD          GDREG2
5627 7402          TOPLD5, HLT
5630 3526          DCA I   K7777
5631 7402          RTFLD5, HLT
5632 1227          TAD          TOPLD5
5633 0107          AND          K007R
5634 1101          TAD          K4000
5635 4442          LDCMD
5636 1071          TAD          K0040
5637 4447          LDMAN
5640 4490          RDHUF
5641 4432          ACCMP1
5642 7610          SKP CLA
5643 5294          JMP          T104E
5644 2153          NEXFL5, ISE TCNTR1
5645 7610          SKP CLA
5646 5293          JMP          T104D
5647 1227          TAD          TOPLD5
5650 1066          TAD          K0010
5651 3227          DCA          TOPLD5
5652 5217          JMP          T104R
5653 4427          T104D, NERROR
5654 4430          T104E, ERROR
5655 5600          TST104
5656 4263          4203
/
/VERIFY THAT DATA BREAK WORKS FROM ALL LOCATIONS
/IN ALL EXISTING EXTENDED FIELDS;
/USE DATA PATTERN ALL COMBINATIONS
/
5657 1144          TST105, TAD          KCOF
5660 3300          DCA          TOPLD1
5661 1173          TAD          FLOMAX
5662 3153          DCA          TCNTR1
5663 1425          TAD I   THSFLD
5664 3324          DCA          RTPLD1
5665 1190          TAD          REG1
5666 3160          DCA GDREG2          /SETUP COMPARE REGISTER
5667 7301          T105R, CLA CLL IAC
5670 4445          CLRALL
5671 4436          ENMAN1
5672 1300          TAD          TOPLD1
5673 7041          CIA
5674 1324          TAD          RTFLD1

```



```

6236 4452          OCTEL          /PRINT PC STORED
6237 1000          TAD I          /GET TEXT POINTER
6240 7104          CLL RAL
6241 7420          SNL
6242 5256          JMP          NTGD          /NOT GDI REGISTER

6243 3200          DCA          ERRO
6244 4451          PNTRER          /PRINT GDI
6245 7140          TEXGO
6246 1200          TAD          ERRO
6247 7700          SMA CLA          /WAS IT A 6 BIT OCTAL BYTE
6250 5253          JMP          /NO
6251 1197          TAD          /GET DATA
6252 4453          THOCT          /PRINT TWO OCTAL
6253 1100          TAD          /PRINT FOUR OCTAL
6254 4452          OCTEL
6255 7610          SKP CLA
6256 3200          NTGD, DCA          ERRO
6257 1200          TAD          ERRO          /GET TEXT POINTER
6260 7104          CLL RAL
6261 7420          SNL
6262 5273          JMP          NTCRC
6263 3200          DCA          ERRO
6264 4451          PRNTER          /PRINT CRI
6265 7142          TEXCR
6266 1101          TAD          CRREG1
6267 4453          THOCT          /PRINT
6270 1142          TAD          CRREG2
6271 4452          OCTEL          /PRINT FOUR OCTAL
6272 7610          SKP CLA
6273 3200          NTCRC, DCA          ERRO
6274 1337          TAD          XTEXT
6275 3342          DCA          PCNTR2
6276 1340          TAD          XREG
6277 3010          DCA          AU010
6300 1125          TAD          K7971
6301 3341          DCA          PCNTR1
6302 1200          STRAUT, TAD          ERRO          /COUNTER FOR # OF HEADS
6303 7500          SMA          /GET TEXT POINTER
6304 5327          JMP          NOPEX          /NOT THIS ONE
6305 7104          CLL RAL
6306 3200          DCA          ERRO
6307 1342          TAD          PCNTR2
6310 2342          IS#          PCNTR2
6311 2342          IS#          PCNTR2
6312 3314          DCA          /STORE FOR PRNTER
6313 4451          PRNTER          /PRINT XXI
6314 7402          HLT          /MODIFIED TEXT POINTER
6315 1410          TAD I          AU010
6316 4452          OCTEL          /PRINT FOUR OCTAL
6317 2341          BAKPNT, IS#          PCNTR1
6320 5302          JMP          STRAUT
6321 1175          TAD          SAVEND
6322 3526          DCA I          K7977          /REPLACE LAST LOCATION
    
```

```

6323 7402          ERHLT9, HLT
6324 4736          JMS I          XDUMP
6325 5735          JMP I          SERRO
6326 5256          JMP          NTGD
6327 7104          NOTEX, CLL RAL
6330 3200          DCA          ERRO
6331 2342          IS#          PCNTR2
6332 2342          IS#          PCNTR2
6333 2010          IS#          AU010
6334 5317          JMP          BAKPNT

6335 3000          /SERRO, 0
6336 6746          XDUMP, DUMP
6337 7144          XTEXT, TEXT
6340 0162          XREG, CRREG2
6341 0000          PCNTR1, 0
6342 0000          PCNTR2, 0
6343 1344          HEDTAD, TAD          HEDLST
6344 7162          HEDLST, ERTX1
6345 7175          ERTX2
6346 7211          ERTX3
6347 7227          ERTX4
6350 7240          ERTX5
6351 7252          ERTX6
6352 7264          ERTX7
6353 7274          ERTX8
6354 7307          ERTX9

6400          /PAGE
6401          /
6402          /SUBROUTINE TO WAIT FOR INTERRUPTS
6403          /IF INTERRUPT OCCURES GO BACK *1
6404          /
6405          IONWT, 0
6406          CLA CLL
6407          TAD          K7900
6408          DCA          COMP1
6409          ION          /TURN IT ON
6410          IS#          COMP1
6411          JMP          /=1
6412          IOF          /TURN IT OFF
6413          JMP I          IONWT          /NO INT OCCURED
6414          INTADD, IS#          IONWT
6415          DSKSKP
6416          ERHLT1, HLT
6417          JMP I          IONWT          /DISK SKIP INT
6418          /ERROR, ILLEGAL INTERRUPT
6419          /EXIT

6415 0000          /ROUTINE TO COMPARE AC TO GDREG2
6416 3171          COMP1, 0
6417 1171          DCA          ACREG
6418          TAD          ACREG          /SAVE AC
    
```

```

6420 7041      CIA
6421 1100      TAD      GDREG2
6422 7640      SEA CLA      /SKIP IF O/K;
6423 2215      ISE      COMPI      /ERROR, DON'T COMPARE
6424 5615      JMP I      COMPI

/ROUTINE TO COMPARE CRREG1 AND CRREG2 TO
/GDREG1 AND GDREG2;
/
6425 2000      COMP2; 0
6426 7300      CLA CLL
6427 1157      TAD      GDREG1
6430 0141      AND      K0017
6431 7041      CIA
6432 1161      TAD      CRREG1
6433 7640      SEA CLA
6434 5241      JMP      CRERR      /NOT THE SAME
6435 1162      TAD      CRREG2
6436 7041      CIA
6437 1160      TAD      GDREG2
6440 7640      SEA CLA
6441 2225      CRERR; ISE      COMP2      /ERROR, NOT THE SAME
6442 5625      JMP I      COMP2

/SUBROUTINE TO READ STATUS REGISTER
/
6443 2000      RST1; 0
6444 6745      IOT5; DRST      /READ STATUS IOT
6445 7410      SKP
6446 7402      ERHLT; HLI      /SKIP TRAP
6447 3163      DCA      STREG      /SAVE RESULTS
6448 1163      TAD      STREG
6449 5643      JMP I      RST1      /EXIT

/SUBROUTINE TO LOAD CURRENT ADDRESS REGISTER
/
6452 2000      LDCA; 0
6453 3167      DCA      ADREG      /SAVE IN ADDRESS
6454 1167      TAD      ADREG
6455 6744      IOT4; DLCA      /LOAD CURRENT ADDRESS IOT
6456 5652      JMP I      LDCA      /EXIT
6457 7402      ERHLT4; HLI      /SKIP TRAP

/
/SUBROUTINE TO LOAD DISK ADDRESS REGISTER
/
6460 2000      LOAD; 0
6461 3166      DCA      DAREG      /SAVE OUTBOUND DATA
6462 1166      TAD      DAREG
6463 6743      IOT5; DLAG      /LOAD DISK ADDRESS REGISTER
6464 5660      JMP I      LOAD      /EXIT
6465 7402      ERHLT3; HLI      /SKIP TRAP

/
/SUBROUTINE TO LOAD COMMAND REGISTER
/

```

```

6466 2000      LDCH; 0
6467 3165      DCA      CHREG      /SAVE OUTBOUND DATA
6470 1165      TAD      CHREG
6471 6746      IOT6; DLCC      /LOAD COMMAND REGISTER
6472 5666      JMP I      LDCH      /EXIT
6473 7402      ERHLT6; HLI      /SKIP TRAP

/
/SUBROUTINE TO ISSUE "DSKP" DISK SKIP IOT
/
6474 2000      SSKP; 0
6475 6741      IOT1; DSKP      /DISK SKIP IOT
6476 7410      SKP      /DID NOT SKIP
6477 2274      ISE      SSKP
6500 5674      JMP I      SSKP      /EXIT

/
/SUBROUTINE TO ISSUE "DCLR" CLEAR IOT
/
6501 2000      CLDR; 0
6502 6742      IOT2; DCLR      /DCLR "CLEAR IOT"
6503 5701      JMP I      CLDR      /EXIT
6504 7402      ERHLT2; HLI      /SKIP TRAP

/
/SUBROUTINE TO ISSUE "DMAN" MAINTENANCE IOT
/
6505 2000      LDHN; 0
6506 6747      IOT7; DMAN      /"DMAN" MAINTENANCE IOT
6507 5705      JMP I      LDHN      /EXIT
6510 7402      ERHLT7; HLI      /SKIP TRAP

/
/SUBROUTINE TO SHIFT, THEN READ DISK
/ADDRESS INTO DATA BUFFER, 12 SHIFTS
/
6511 2000      RDAD; 0
6512 4437      ENMAN2      /ENTER MAINTENANCE MODE + DB4=1
6513 1130      TAD      M5
6514 3152      DCA      SBENT1      /SETUP COUNTER
6515 1076      TAD      K1000      /ENABLE SHIFT CRC
6516 1073      TAD      K0200      /ENABLE SHIFT SURFACE AND SECTOR
6517 4447      LDHAN
6520 2152      ISE      SBENT1      /LOAD MAINTENANCE
6521 5317      JMP      ,=2      /FOUR SHIFTS
6522 7300      CLA CLL      /MORE TO GO
6523 1131      TAD      M7
6524 3152      DCA      SBENT1
6525 1076      TAD      K1000
6526 4447      LDHAN
6527 2152      ISE      SBENT1      /SHIFT CRC
6530 5326      JMP      ,=2      /LOAD MAINTENANCE IOT
6531 7300      CLA CLL
6532 1067      TAD      K0020      /SHIFT 12 BITS
6533 4447      LDHAN
6534 3166      DCA      DAREG      /READ DATA BUFFER
/SAVE RESULTS

```

```

6535 1166 TAD DAREG
6536 5711 JMP I RDAD /EXIT
/
/SUBROUTINE TO READ DATA BUFFER TO AC
/
RDBF: 0
6537 0000 CLA CLL CML RAR
6540 7330 LDMAN /ENTER MAINTENANCE MODE
6541 4447 TAD K0020
6542 1067 /LOAD MAINTENANCE
6543 4447 LDMAN
6544 3164 DCA DBREG
6545 1164 TAD DBREG
6546 3170 DCA DTREG
6547 1170 TAD DTREG
6550 5737 JMP I RDBF /EXIT
/
/SUBROUTINE TO SHIFT COMMAND REGISTER TO
/
/ DATA BUFFER THEN READ DATA BUFFER
/
RDCM: 0
6551 0000 ENMAN2 /ENTER MAINTENANCE MODE + DB4=1
6552 4437 TAD M12
6553 1132 DCA SBCNT1 /12 BIT SHIFT
6554 3152 TAD K0400 /ENABLE BIT FOR SHIFT COMMAND
6555 1075 LDMAN /LOAD AND GO
6556 4447 ISE SBCNT1
6557 2152 JMP ,=2 /SHIFT 12
6560 5356 CLA CLL
6561 7300 TAD K0020 /ENABLE READ BUFFER
6562 1067 LDMAN /LOAD AND GO
6563 4447 DCA CHREG /SAVE IT
6564 3165 TAD CHREG
6565 1165 JMP I RDCM /EXIT
/
/ROUTINE TO ENTER MAINTENANCE MODE
/
MAIN1: 0
6567 0000 CLA CLL CML RAR /ENABLE MAINTENANCE BIT
6570 7330 LDMAN /ENTER MAINTENANCE MODE
6571 4447 CLA CLL
6572 7300 JMP I MAIN1
/
PAGE
/
/
/
/SUBROUTINE TO SHIFT CRC REGISTER TO DATA
/
/ BUFFER THEN READ IT,
/
RDCR: 0
6600 0000 ENMAN2 /ENTER MAINTENANCE MODE + DB4=1
6601 4437 TAD M12
6602 1132 DCA SBCNT1 /12 SHIFTER
6603 3152 TAD K1000 /ENABLE SHIFT CRC
6604 1076 LDMAN /LOAD AND GO
6605 4447

```

```

6606 2152 ISE SBCNT1
6607 5205 JMP ,=2 /12 BIT SHIFT
6610 7300 CLA CLL
6611 1067 TAD K0020 /ENABLE READ BUFFER
6612 4447 LDMAN
6613 3162 DCA CRREG2 /SAVE IT
6614 4437 ENMAN2 /ENTER MAINTENANCE MODE + DB4=1
6615 1132 TAD M12
6616 3152 DCA SBCNT1 /12 BIT SHIFTER
6617 1076 TAD K1000 /ENABLE SHIFT CRC
6620 4447 LDMAN /LOAD AND GO
6621 2152 ISE SBCNT1
6622 5220 JMP ,=2 /12 BIT SHIF
6623 7300 CLA CLL
6624 1067 TAD K0020 /ENABLE READ BUFFER
6625 4447 LDMAN
6626 1141 AND K0017
6627 3161 DCA CRREG1 /SAVE OTHER HALF
6630 5600 JMP I RDCR /EXIT
/
/SUBROUTINE TO PRINT TWO OCTAL
/
TOCT: 0
6631 0000 DCA SBCNT1 /SAVE AC
6632 3152 TAD SBCNT1
6633 1152 RAR
6634 7010 RTR
6635 7012 AND K0007
6636 0065 AND K0260
6637 1056 TAD /PRINT FIRST BYTE
6640 4426 TYPE
6641 1152 TAD SBCNT1
6642 0065 AND K0007
6643 1056 TAD K0260
6644 4426 TYPE /PRINT SECOND BIT
6645 5631 JMP I TOCT /EXIT
/
/
/
/ROUTINE TO DO CRLF
/
UPONE: 0
6646 0000 CLA CLL
6647 7300 TAD K0215
6650 1142 TYPE
6651 4426 TAD K0212
6652 1143 TYPE
6653 4426 TYPE /TYPE ONE NULL
6654 4426 TYPE
6655 5646 JMP I UPONE
/
/ROUTINE TO PRINT FOUR OCTAL
/
PROCT: 0
6656 0000 RTR
6657 7006 RTR
6660 7006

```

```

6661 3246 DCA UPONE
6662 1124 TAD K7774
6663 3231 DCA TOCT
6664 1246 TAD UPONE
6665 0065 AND K0007
6666 1056 TAD K0260
6667 4426 TYPE
6670 1246 TAD UPONE
6671 7006 RTL
6672 7004 RAL
6673 3246 DCA UPONE
6674 2231 ISR TOCT
6675 5264 JMP ,=1
6676 1055 TAD K0240
6677 4426 TYPE
6700 5656 JMP I FROCT

```

/SUBROUTINE TO PRINT TEXT

```

6701 0000 PRN: 0
6702 7300 CLA CLL
6703 1701 TAD I PRN /GET POINTER

6704 2301 ISR PRN
6705 3256 DCA FROCT
6706 1656 TAD I FROCT
6707 0105 AND K7900
6710 7490 SNA
6711 5335 JMP EXIT
6712 7500 SMA
6713 7020 CHL
6714 7001 IAC
6715 7012 RTR
6716 7012 RTK
6717 7012 RTK
6720 4426 TYPE
6721 1656 TAD I FROCT
6722 0110 AND K0077
6723 7490 SNA
6724 5335 JMP EXIT
6725 1115 TAD K3940
6726 7500 SMA
6727 1120 TAD K4100
6730 1055 TAD K0240
6731 4426 TYPE
6732 2256 ISR FROCT
6733 7300 CLA CLL
6734 5306 JMP PRN=5
6735 7300 EXIT, CLA CLL
6736 5701 JMP I PRN

```

/ROUTINE TO TYPE

```

6737 0000 PRINT: 0
6740 6046 TLR

```

```

6741 6041 TSP
6742 5341 JMP ,=1
6743 6042 TCF
6744 7200 CLA
6745 5737 JMP I PRINT

```

/ROUTINE TO GET ALL REGISTERS AFTER "ERHLI9"

```

6746 2000 DUMP: 0
6747 7604 LAS
6750 0075 AND K0400 /MASK SWITCH 3
6751 7650 SNA CLA /HAS IT GET ALL
6752 5746 JMP I DUMP /NO
6753 4434 RDSTAY /GET STATUS
6754 4450 RDBUF /READ BUFFER
6755 7300 CLA CLL
6756 1132 TAD M12
6757 3337 DCA PRINT /12 BIT COUNTER
6758 1073 TAD K0200 /ENABLE SHIFT SECTOR AND SURFACE
6761 4447 LDMAN /LOAD MAINTENANCE
6762 2337 ISR PRINT /12 BIT SHIFT
6763 5361 JMP ,=2
6764 7300 CLA CLL
6765 1067 TAD K0020 /ENABLE READ BUFFER
6766 4447 LDMAN /LOAD MAINTENANCE
6767 3166 DCA DAREG /SAVE SURFACE AND SECTOR
6770 4446 RDCRC /READ CRC
6771 4435 RDCMD /READ COMMAND
6772 4454 CRLF
6773 1121 TAD K7600
6774 2346 ISR DUMP
6775 5746 JMP I DUMP /REPORT

```

/PAGE

```

/ROUTINE TO ENTER MAINTENANCE MODE AND
/SET DB4=1 TO ENABLE SWIFT TO LOWER SILO

```

DB4 is set by DMAN w/AC1 = 1 ?

```

7000 0000 MAIN2: 0
7001 7330 CLA CLL CHL RAR /ENABLE SET MAINTENANCE MODE
7002 4447 LDMAN /LOAD MAINTENANCE
7003 7010 RAR /ENABLE SET DB4=1
7004 4447 LDMAN /LOAD MAINTENANCE
7005 7300 CLA CLL
7006 5600 JMP I MAIN2

```

```

/SUBROUTINE FOR "NO ERRORS" AND SCOPE
/LOOPS; UPDATE UP COUNTER "REG1" AND
/DOWN COUNT "REG2" ON EVERY ENTRY;

```

```

7007 0000 NERR0: 0
7010 7604 LAS /GET SWITCH 4
7011 0073 AND K0200 /MASK
7012 7650 SNA CLA /HAS IT SET
7013 5217 JMP ,=4 /NO DON'T HALT

```

```

7014 1175      TAO  SAVEND      /GET BINARY END
7015 3526      DCA I  K7977  /REPLACE IT
7016 7402      STPHLT; HLT      /STOP PROGRAM HALT
7017 2207      ISZ   NERRO  /UPDATE PC STORE
7020 1607      TAO I  NERRO  /GET SCOPE LOOP POINTER
7021 3240      DCA   SNERRO /STORE FOR RETURN
7022 7604      LAS   /GET SWITCH 0
7023 7710      SPA  CLA  /ENTER SCOPE LOOP
7024 9640      JMP I  SNERRO /YES
7025 2190      ISZ   REG01  /UPDATE URCOUNTER
7026 7610      SKP  CLA  /END OF PARTICULAR TEST
7027 9234      JMP  NEXTST
7030 1190      TAO  REG1
7031 7140      CLL  CMA
7032 3191      DCA  REG2      /SETUP DOWN COUNTER
7033 9640      JMP I  SNERRO  /BACK TO SAME TEST
7034 2207      NEXTST; ISZ   NERRO  /UPDATE PC STORE
7035 2207      ISZ   NERRO  /UPDATE PC STORE
7036 5607      JMP I  NERRO  /TO NEXT SEQUENTIAL TEST

7037 0000      /TOTST; 0
7040 0000      /SNERRO; 0
/
/SUBROUTINE TO SETUP FIELD 0
/
7041 0000      SETUP; 0
7042 1425      TAO I  THSFLO  /GET HOME DF
7043 3293      DCA  BAKFLD
7044 1145      TAO  KRHF      /GET RMF FOR INT, RETURN
7045 6201      CDF   /SWITCH FIELD 0
7046 3460      DCA I  K0001  /JMP I 3 FOR LOC, 2
7047 1146      TAO  K0403
7050 3461      DCA I  K0002  /GET ADDRESS RETURN
7051 1023      TAO  INTRQ
7052 3462      DCA I  K0003  /HOME DF
7053 7402      BAKFLD; HLT
7054 5641      JMP I  SETUP

/ROUTINE TO LOAD UPPER BUFFER
/
7055 0000      UPPER; 0
7056 3237      DCA  TOFST      /SAVE DATA
7057 7301      CLA  CLL  IAC  /SETUP SWIFTER MASKER
7060 3240      DCA  SNERRO
7061 1132      TAO  H12
7062 3207      DCA  NERRO
7063 4436      ENMAN1
7064 1237      UPPR1; TAO  TOFST /SETUP COUNTER
7065 0240      AND  SNERRO  /ENTER MAINTFINANCE MODE
7066 7640      SZA  CLA  /GET DATA
7067 1061      TAO  K0002  /MASK
7070 1072      TAO  K0100 /A ONE OR ZERO???
7071 4447      LDMA /A ONE!!!
7072 7300      CLA  CLL  /ENABLE SHIFT
7073 1240      TAO  SNERRO  /LOAD MAINTNANCE

```

```

7074 7104      CLL  RAL
7075 3240      DCA  SNERRO
7076 2207      ISZ   NERRO  /COUNT BITS
7077 5264      JMP  UPPR1  /MORE TO GO
7100 5655      JMP I  UPPER /UPPER BUFFER LOADED

/ROUTINE TO CHANGE PROGRAM DEVICE CODES
/
7101 7004      CHANG; LAS
7102 0324      AND  A0970
7103 3237      DCA  TOFST      /SAVE DESIRED
7104 1326      TAO  CHNPOT
7105 3255      DCA  UPPR1
7106 1325      TAO  CCNTR1
7107 3240      DCA  SNERRO
7110 1695      CHANG; TAO I  UPPR1 /A FEW POINTERS
7111 3241      DCA  SETUP      /GET ADDRESS POINTER
7112 1641      TAO I  SETUP      /SAVE IT
7113 0323      AND  A7007      /GET OLD IOT CODE
7114 1237      TAO  TOFST
7115 3641      DCA I  SETUP      /ADD IN DESIRED
7116 2255      ISZ   UPPR1  /CHANGE CODE
7117 2240      ISZ   SNERRO /UPDATE POINTER
7120 5310      JMP  CHANGR /UPDATE CHANGE COUNTER
7121 7402      CHNHLT; HLT
7122 5321      JMP  I=I      /DEVICE CODES CHANGED

/
7123 7007      A7007; 7007
7124 0770      A0770; 0770
7125 7771      CCNTR1; 7771
7126 7127      CHNPOT; CHNPOT +1
7127 6475      IOT1
7130 6502      IOT2
7131 6463      IOT3
7132 6495      IOT4
7133 6444      IOT5
7134 6471      IOT6
7135 6506      IOT7

/
7136 2003      TEXPC; TEXT "P01"
7137 7200      TEXGD; TEXT "GD1"
7140 0704      TEXCH; TEXT "CR1"
7141 7200
7142 0322      TEXST; TEXT "S01"
7143 7200
7144 2324      TEXDB; TEXT "DB1"
7145 7200
7146 0402      TEXCH; TEXT "CH1"
7147 7200
7150 0315      TEXCH; TEXT "CH1"
7151 7200
7152 0401      TEXDA; TEXT "DA1"
7153 7200
7154 0104      TEXAD; TEXT "AD1"
7155 7200

```

PAL10	V142	20=APR=73	1117	PAGE 1=72
7156	0424	TEXT	TEXT	"DFI"
7157	7200			
7160	0103	TEXT	TEXT	"ACI"
7161	7200			
7162	2324	ERTX1	TEXT	"STATUS REGISTER ERROR"
7163	0124			
7164	2523			
7165	4022			
7166	0507			
7167	1123			
7170	2405			
7171	2240			
7172	0522			
7173	2217			
7174	2200			
7175	0317	ERTX2	TEXT	"COMMAND REGISTER ERROR"
7176	1515			
7177	0116			
7200	0440			
7201	2205			
7202	0711			
7203	2324			
7204	0522			
7205	4005			
7206	2222			
7207	1722			
7210	0000			
7211	0411	ERTX3	TEXT	"DISK ADDRESS REGISTER ERROR"
7212	2313			
7213	4001			
7214	0404			
7215	2205			
7216	2323			
7217	4022			
7220	0507			
7221	1123			
7222	2405			
7223	2240			
7224	0522			
7225	2217			
7226	2200			
7227	0401	ERTX4	TEXT	"DATA BREAK ERROR"
7230	2401			
7231	4002			
7232	2205			
7233	0113			
7234	4005			
7235	2222			
7236	1722			
7237	0000			
7240	1322	ERTX5	TEXT	"CRC REGISTER ERROR"
7241	2340			
7242	2205			
7243	0711			

PAL10	V142	20=APR=73	1117	PAGE 1=73
7244	2324			
7245	0522			
7246	4005			
7247	2222			
7250	1722			
7251	0000			
7252	0401	ERTX6	TEXT	"DATA REGISTER ERROR"
7253	2401			
7254	4022			
7255	0507			
7256	1123			
7257	2405			
7260	2240			
7261	0522			
7262	2217			
7263	2200			
7264	0411	ERTX7	TEXT	"DISK SKIP ERROR"
7265	2313			
7266	4023			
7267	1311			
7270	2040			
7271	0522			
7272	2217			
7273	2200			
7274	0411	ERTX8	TEXT	"DISK INTERRUPT ERROR"
7275	2313			
7276	4011			
7277	1624			
7300	0522			
7301	2225			
7302	2024			
7303	4005			
7304	2222			
7305	1722			
7306	0000			
7307	0103	ERTX9	TEXT	"AC REGISTER ERROR"
7310	4022			
7311	0507			
7312	1123			
7313	2405			
7314	2240			
7315	0522			
7316	2217			
7317	2200			
7318	2213			
7319	7005	TEXTEND	TEXT	"RK0E DISKLESS PASS COMPLETE"
7322	4004			
7323	1123			
7324	1314			
7325	0523			
7326	2340			
7327	2001			
7330	2323			
7331	4003			


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4000 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111
4100 11111111 11111111 11111111 11111111 11111111 11111111 00000000 00000000
4200 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111
4300 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111
4400 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111
4500 11100000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
4600 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111
4700 11111110 00000000 00000000 00000000 00000000 00000000 00000000 00000000

5000 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111
5100 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111000
5200 11111111 11111111 11111111 11111111 11111111 11111110 00000000 00000000
5300 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
5400 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111
5500 11111111 11111111 11111111 11111111 11111111 00000000 00000000 00000000
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47007 7123 ERTX4 7252 K2525 0113 NEXFL4 5521
ACCHP1 4432 ERTX5 7248 K3737 0116 NEXFL5 5644
ACCHP2 4433 ERTX6 7252 K3740 0115 NEXFL6 7034
ACREG 0171 ERTX7 7264 K3777 0100 NOTEX 6327
ADREG 0167 ERTX8 7274 K4000 0101 NYCRC 6273
AUTO10 0010 ERTX9 7307 K4100 0120 NYGD 6256
BAKFLD 7093 EXIT 6735 K5000 0122 OCTEL 4492
BAKPNT 6317 FLOMAX 6193 K5252 0114 PCNTR1 6341
BGN 0200 FROCY 6096 K5403 0146 PCNTR2 6342
CONTR1 7125 GDREG1 0197 K5777 0123 PRINT 6737
CHANG 7101 GDREG2 0160 K7000 0102 PRN 6781
CHANGR 7110 WEDLST 6344 K7600 0121 PRNTER 4491
CHNHLT 7121 WEDTAD 6343 K7700 0105 PRSFLO 0210
CHNPOT 7126 WOHEMA 6172 K7717 0117 ROAD 6511
CLDR 6501 INTADD 6411 K7740 0106 ROAD0 4440
CLRALL 4449 INTRD 0023 K7771 0125 RDBF 6537
CMREG 0105 IONWAT 4431 K7774 0124 RDBUF 4450
COMP1 6419 IONWT 6400 K7775 0104 ROCH 6551
COMP2 6423 IOT1 6475 K7776 0103 ROCHO 4435
CRERR 6441 IOT2 6502 K7777 0126 RDCR 6600
CRLF 4454 IOT3 6463 KCDF 0144 RDCRC 4446
CRREG1 0161 IOT4 6495 KRMP 0145 RDS1 6443
CRREG2 0162 IOT5 6444 LOAD 6460 RDS1AT 4434
DAREG 0166 IOT6 6491 LQADD 4444 REG1 0190
DBREG 0164 IOT7 6506 LDBUF 4421 REG2 0151
DCLR 6742 IOTCHN 5420 LDCA 6492 RTFLD1 5724
DLAG 6743 K0000 0057 LDCM 6466 RTFLD2 5227
DLCA 6744 K0001 0060 LDCMD 4442 RTFLD3 5430
DLDC 6746 K0002 0061 LDCUR 4443 RTFLD4 5506
DMAN 6747 K0003 0062 LDMAN 4447 RTFLD5 5631
DMSY 6745 K0004 0063 LDMN 6505 SAVEND 0175
DSKP 6741 K0006 0064 M12 0132 SBCNT1 0152
DSKSKP 4441 K0007 0065 M120 0135 SDKP 6474
DTREG 0170 K0010 0066 M16 0133 SERR0 6335
DUMP 6746 K0017 0141 M191 0136 SETUP 7041
ENDHLT 5760 K0020 0067 M295 0137 SNERR0 7040
ENDTST 5747 K0037 0090 M300 0140 STCON 0174
ENMAN1 4436 K0040 0091 M4 0127 STPHLT 7016
ENMAN2 4437 K0070 0107 M40 0134 STRAUT 6302
ERHL1 6413 K0077 0110 M5 0130 STREG 0163
ERHL2 6504 K0000 0072 M7 0131 T1010 5251
ERHL3 6469 K0177 0112 MAIN1 6567 T101E 5252
ERHL4 6497 K0200 0073 MAIN2 7000 T101R 5216
ERHL5 6446 K0207 0074 MANTST 0022 T1020 5452
ERHL6 6473 K0212 0143 MANUAL 5422 T102E 5453
ERHL7 6510 K0219 0142 MANUL 6000 T102R 5417
ERHL9 6323 K0240 0095 MTS05 0147 T1030 5530
ERR0 6200 K0260 0096 NERR0 7007 T103E 5531
ERRR 4430 K0377 0111 NERRR 4427 T103R 5474
ERTX1 7162 K0400 0075 NEXFL1 5734 T1040 5653
ERTX2 7175 K1000 0076 NEXFL2 5242 T104E 5654

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PAL10	V142	20=APR=73	1117	PAGE 1078		
T104R	5617		T80E	3604	TST1	0239
T105D	5743		T81E	3635	TST10	0343
T105E	5744		T82E	3667	TST100	5131
T105R	5667		T83E	3734	TST101	5200
T37R	1345		T84E	3796	TST102	5200
T38R	1412		T85E	4091	TST103	5456
T39R	1444		T85OK	4090	TST104	5600
T40R	1501		T85R1	4011	TST105	5697
T45E	1647		T86E	4192	TST11	0365
T45R1	1623		T86R1	4060	TST12	0410
T45R3	1636		T86R2	4070	TST13	0424
T46A1	1660		T86R3	4112	TST14	0442
T46A2	1703		T86R4	4134	TST15	0454
T46E	1716		T87E	4291	TST16	0507
T47E	1742		T87R1	4204	TST17	0537
T48E	1767		T87R2	4215	TST18	0541
T49E	2032		T87R3	4235	TST19	0604
T50E	2074		T87R4	4293	TST2	0242
T51E	2114		T92E	4496	TST20	0616
T53E	2156		T92R1	4447	TST21	0633
T54E	2225		T92R2	4465	TST22	0647
T55E	2252		T94E	4691	TST23	0673
T57E	2305		T95E	4702	TST24	0720
T58E	2320		T97E	5026	TST25	0742
T59E	2333		T98E	5060	TST26	0747
T60E	2416		T99E	5126	TST27	1030
T61E	2441		T99R1	5091	TST28	1047
T62E	2465		T99R2	5106	TST29	1077
T63E	2525		TCNTR1	0193	TST3	0250
T64E	2565		TCNTR2	0194	TST30	1132
T65E	2633		TCNTR3	0185	TST31	1132
T68E	2715		TCNTR4	0186	TST32	1175
T69E	2750		TEXAC	7160	TST33	1207
T70E	2774		TEXAD	7194	TST34	1223
T71E	3041		TEXCM	7190	TST35	1293
T72E	3115		TEXCR	7142	TST36	1301
T72R	3060		TEXDA	7192	TST37	1333
T73E	3266		TEXDB	7146	TST38	1400
T73R1	3204		TEXDY	7196	TST39	1430
T73R2	3210		TEXEND	7300	TST4	0256
T73R3	3233		TEXGD	7140	TST40	1490
T74E	3340		TEXPC	7136	TST41	1526
T74R1	3302		TEXST	7144	TST42	1545
T74R2	3305		THSFLD	0025	TST43	1565
T74R3	3322		TOGT	6631	TST44	1601
T75E	3377		TOFLD1	9700	TST45	1615
T75R	3394		TOFLD2	9225	TST46	1692
T76E	3440		TOFLD3	9426	TST47	1702
T76R	3415		TOFLD4	9504	TST48	1746
T77E	3470		TOFLD5	9627	TST49	2000
T78E	3521		TUIST	7037	TST5	0272
T79E	3552		TST0	0226	TST50	2055
					TST51	2077
					TST52	2117
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					TST68	2677
					TST69	2720
					TST7	0314
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					TST71	2777
					TST72	3044
					TST73	3200
					TST74	3271
					TST75	3343
					TST76	3402
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					TST83	3672
					TST84	3737
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					TST87	4200
					TST88	4274
					TST89	4323
					TST9	0334
					TST90	4394
					TST91	4404
					TST92	4435
					TST93	4600
					TST94	4624
					TST95	4654
					TST97	5000
					TST98	5031
					TST99	5063

PAL10	V142	20=APR=73	1117	PAGE 1079
TWOCT	4493			
TYPE	4426			
UPONE	6646			
UPPER	7095			
UPPR1	7064			
XCHANG	0020			
XCLDR	0045			
XCOMP1	0032			
XCOMP2	0033			
XCRLF	0094			
XDUMP	6336			
XEND	0024			
XERRO	0030			
XFRQCT	0092			
XIDNWT	0031			
XLDAD	0044			
XLDCA	0043			
XLOCM	0042			
XLDHN	0047			
XMAIN1	0036			
XMAIN2	0037			
XNERRO	0027			
XPRINT	0026			
XPRN	0051			
XROAD	0040			
XROBF	0050			
XRDCA	0035			
XROCR	0046			
XROST	0034			
XREG	6340			
XSDKP	0041			
XSET	0196			
XTEXT	6337			
XTOCT	0093			
XUPPER	0021			

ERRORS DETECTED: 0
 LINKS GENERATED: 0
 RUN-TIME: 37 SECONDS
 3K CORE USED

