IDENTIFICATION

PRODUCT CODE:	MAINDEC-08-DHRKA-B-D
PRODUCT NAME:	RK8E DISKLESS CONTROL TEST
DATE CREATED:	APRIL 19, 1973
MAINTAINER:	DIAGNOSTIC GROUP
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TABLE OF CONTENTS

ABSTRACT

REQUIREMENTS

HARDWARE

SPECIAL

STORAGE

PRELIMINARY PROGRAMS

SWITCH REGISTER SETTINGS

OPERATOR AND/OR PROGRAM ACTION

STANDARD TEST PROCEDURE

DISKLESS CONTROL TEST

MANUAL SCOPE TEST FOR 16 BIT COUNTER

CHANGE PROGRAM IOT CODES

ERRORS

USEFUL ERROR INFORMATION

NON-RECOVERABLE ERROR HALTS

RECOVERABLE ERROR HALT

ERROR TYPEOUTS

SCOPE LOOPS

TYPICAL ERROR TYPEOUTS

RESTRICTIONS

TROUBLE SHOOTING INFORMATION

PROGRAM DESCRIPTION

PROGRAM LISTING

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

PDP-8/E, 8/M, OR 8/F COMPUTER OR OTHER
FAMILY OF 8 COMPATIBLE COMPUTER WITH
NECESSARY OM8E 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 TYPEOUT 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 APROX, EVERY 3,5 MINUTES,

"RK8E DISKLESS PASS COMPLETE"

I, ANY HALTS OR TYPEOUTS OTHER THAN THE PASS COMPLETE TYPEOUT AND THE END OF TEST HALT MENTIONED ABOVE WILL BE CONCIDERED 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 0002 AND PRESS START,

D, SCOPE THE 16TH CARRY OUTPUT, TEST POINT 1 (T1), OF THE M7106 MODULE IN THE RK8E 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 CONSISTANTLY 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 + 5,4),

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,

0,2 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 "DLAD"
ERHLT4	SKIP TRAP FOR IOT "DLCA"
ERHLT5	SKIP TRAP FOR IOT "DRST"
ERHLT6	SKIP TRAP FOR IOT "DLDE"
ERHLT7	SKIP TRAP FOR IOT "DMAN"

0,3 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 TTY AND ACCESS LISTNG,

0,4 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 TYPEOUTS ARE AS FOLLOWS,

PC; PROGRAM LOCATION OF THE ACTUAL FAILURE,

GD; REFERS TO THE DATA EXPECTED IN THE REGISTER OR TYPE OF TEST SPECIFIED IN THE "ERROR HEADER",

CR; CONTENTS OF THE CRC REGISTER,

ST; CONTENTS OF THE STATUS REGISTER,

DB; CONTENTS OF THE LOWER DATA REGISTER,

CM; CONTENTS OF THE COMMAND REGISTER,

DA; CONTENTS OF THE DISK ADDRESS REGISTER OR THE CYLINDER, SURFACE, AND SECTOR BITS,

AD; BREAK ADDRESS OF DATA BREAK,

DT; DATA FOUND DURING DATA BREAK,

AC; CONTENTS OF THE AC REGISTER,

THE "GD;" 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, DA; FOR DISK ADDRESS ERROR, CM; FOR COMMAND REGISTER ERROR, CR; 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: "ST;" 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,

6.5 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 SWR0=1 AND PRESS KEY CONTINUE,

IF THE SCOPE LOOP IS WORKING CORRECTLY AND IF THE TEST IS STILL FAILING THE TTY BELL SHOULD RING, SET SWR2=1 TO INHIBIT THE TTY BELL,

6.6 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
PC;1541 GD;0000 AC;0100
```

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

```
COMMAND REGISTER ERROR
PC;2100 GD;0222 CM;0200
```

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
PC;3332
```

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

```
DATA BREAK ERROR
PC;4453 GD;5252 CM;4000 AD;7777 DT;5250
```

7. RESTRICTIONS

IF THE DRIVES ARE CABLED TO THE RK8E 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

IOT	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	
0	0	CLEAR THE AC AND STATUS REGISTER,
0	1	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	0	CLEAR AC, RECALIBRATE DISK DRIVE, AND CLEAR STATUS REGISTER,

6743 DLAG "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
-1

3                       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 DLDC               "LOAD COMMAND" LOAD THE COMMAND
                        REGISTER FROM AC, CLEAR THE AC,
                        AND CLEAR THE STATUS REGISTER,

AC
-0

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

9. PROGRAM DESCRIPTION

THE RKBE DISKLESS CONTROL TEST IS BASICALLY A STATIC REGISTER AND IOT TEST ON THE RKBE 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, PRECEEDING EACH SUBTEST, IN THE LISTING, IS A SHORT EXPLANATION OF THE TEST AND LOGIC TESTED,

A BRIEF EXPLANATION OF SUBTESTS 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, 8/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 IOT DOESN'T AFFECT AC REGISTER.

E, TST6-TST9

VERIFY THAT IOTS "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-TST28

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

H, TST29-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 IOT" 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,

10, PROGRAM LISTING

```
                        /
                        /RK8E DISKLESS CONTROL TEST
                        /
                        /ALL KNOWN HLTS
                        /
0200  6413              ERHLT1                          /UNDEFINED INTERRUPT
0201  6504              ERHLT2                          /SKIP TRAP FOR DCLR
0202  6465              ERHLT3                          /SKIP TRAP FOR DLAG
0203  6457              ERHLT4                          /SKIP TRAP FOR DLCA
0204  6446              ERHLT5                          /SKIP TRAP FOR DRST
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 SAR=1
0212  7121              CHNHLT                          /IOT CHANGE HALT
                        /
                6741    DSKP=6741                       /SKIP ON TRANSFER DONE OR ERROR
                6742    DCLR=6742                       /CLEAR DISK CONTROL LOGIC
                6743    DLAG=6743                       /LOAD ADDRESS AND GO
                6744    DLCA=6744                       /LOAD CURRENT ADDRESS
                6745    DRST=6745                       /READ STATUS REGISTER
                6746    DLDC=6746                       /LOAD COMMAND REGISTER
                6747    DMAN=6747                       /LOAD MAINTENANCE
                        /
                5420    IOTCHA=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    ACOMP1=JMS I    XCOMP1
                4433    ACOMP2=JMS I    XCOMP2
                4434    RDSTAT=JMS I    XRDST
                4435    RDCMD=JMS I     XRDCM
                4440    RDADD=JMS I     XRDAD
                4421    UPBUF=JMS I     XUPPER
                4444    LDADD=JMS I     XLDAD
                4441    DSKSKP=JMS I    XSDKP
                4442    LDCMD=JMS I     XLDCM
                4443    LDCUR=JMS I     XLDCA
                4445    CLRALL=JMS I    XCLDR
                4446    RDCMD=JMS I     XRDCR
                4447    LDMAN=JMS I     XLDMN
                4450    RDBUF=JMS I     XRDBF
                4451    PRINTER=JMS I   XPRN
                4452    OCTEL=JMS I     XFRDCT
                4453    TADCT=JMS I     XTDCT
                4426    TYPE=JMS I      XPRINT
                4454    CRLF=JMS I      XCRLF
                        /
                0200    *0
                        /
```



```
0000  0000              0
0001  0001              #001
0002  0002              #002
0003  0003              #003
                        /
                0010    *10
                        /
0010  0000              AUTO10, 7
                        /
                0020    *20
                        /
0020  7121              XCHANG, CHANG
0021  7055              XUPPER, UPPER
0022  6800              XMANTS, MANUL
0023  6411              INTRQ,  INTADD
0024  5747              XENDT,  ENDTST
0025  0218              TABFLD, PRBFLD
0026  6737              XPRINT, PRINT
0027  7007              XNERRO, NERRO
0030  6200              XERRO,  ERRO
0031  6402              XIONWT, IONWT
0032  6415              XCOMP1, COMP1
0033  6425              XCOMP2, COMP2
0034  6443              XRDST,  RDST
0035  6551              XRDCM,  RDCM
0036  6567              XMAIN1, MAIN1
0037  7000              XMAIN2, MAIN2
0040  6511              XRDAD,  RDAD
0041  6474              XSDKP,  SDKP
0042  6466              XLDCM,  LDCM
0043  6452              XLDCA,  LDCA
0044  6460              XLDAD,  LDAD
0045  6501              XCLDR,  CLDR
0046  6600              XRDCR,  RDCR
0047  6535              XLDMN,  LDMN
0050  6537              XRDBF,  RDBF
0051  6701              XPRN,   PRN
0052  6656              XFRDCT, FRDCT
0053  6631              XTDCT,  TDCT
0054  6646              XCRLF,  UPONE
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
```

```
0074  0207   K0207,  0207
0075  0420   K0420,  0420
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,  7742
0107  0070   K0070,  0070
0110  0077   K0077,  0077
0111  0377   K0377,  0377
0112  0177   K0177,  0177
0113  2525   K2525,  2525
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  5002   K5002,  5002
0123  5777   K5777,  5777
0124  7774   K7774,  7774
0125  7771   K7771,  7771
0126  7777   K7777,  7777
              /
              DECIMAL
              /
0127  7774   M4,     -4
0130  7773   -5,     -5
0131  7771   -7,     -7
0132  7764   M12,    -12
0133  7760   M16,    -16
0134  7720   -48,    -48
0135  7600   -128,   -128
0136  7521   -191,   -191
0137  7421   -255,   -255
0140  7324   M320,   -320
              /
              OCTAL
              /
0141  0017   K0017,  0017
0142  0215   K0215,  0215
0143  0212   K0212,  0212
0144  6201   KCDF,   CDF
0145  6244   KRMF,   RMF
0146  5403   K5403,  5403
0147  5776   MISB3,  -TSTB5 -1
0150  0000   REG1,   0
0151  0002   REG2,   2
0152  0000   SWCNT1, 0
0153  0002   TCNT41, 2
0154  0000   TCNT42, 0
```



```
0155  0000   TCNT43, 0
0156  0002   TCNT44, 2
              /
0157  0002   GDREG1, 2
0160  0020   GDREG2, 20
0161  0000   CRREG1, 0
0162  0000   CRREG2, 0
0163  0000   STREG,  0
0164  0000   DBREG,  0
0165  0000   CMREG,  0
0166  0000   DAREG,  0
0167  0002   ADREG,  2
0170  0000   DTREG,  0
0171  0000   ACREG,  0
0172  0002   HOMEMA, 2
0173  0000   FLOMAX, 0
0174  2200   STCON,  2200
0175  0000   SAVEND, 0
0176  7041   XSET,   SETUP
              /
       0200   *200
              /
              /SETUP POINTERS FOR AMOUNT OF EXTENDED
              /BANKS OF MEMORY, INTERRUPT SERVICE, AND CURRENT
              /FIELD .
              /
0200  5223   BGN,    JMP     .+3             /TO REGULAR DIAGNOSTIC
0201  5422           MANUAL                  /TO MANUAL SCOPE TEST
0202  5428           IOTCHN                  /TO IOT CHANGE ROUTINE
0203  6224           RIF
0204  3172           DCA     HOMEMA
0205  1172           TAD     HOMEMA
0206  1144           TAD     KCDF                    /MAKE HOME=DF
0207  3210           DCA     PRSFLD
0210  7402   PRSFLD, HLT                             /MAKE DF=IF
0211  4576           JMS I   XSET                    /SETUP FIELD 0
0212  1173           TAD     FLOMAX                  /GET FIRST PASS POINTER
0213  7640           SZA 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     FLOMAX                  /SAVE AMOUNT OF EXTENDED MEMORY
              /
              /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  3150           DCA     REG1
0224  1174           TAD     STCON                   /GET EXPECTED STATUS
0225  3162           DCA     COREG2                  /SETUP TEST HANDLER
```

```
                        /
0226  1152  TST2,  TAD     REG1                    /GET AC VALUE
0227  4434        RDSTAT                          /READ STATUS REGISTER
0230  4432        ACCMP1                          /CHECK RESULTS
0231  4427        NERROR                          /AC O.K. 4096 LOOPS
0232  4432        ERROR                           /ERROR, "INITIALIZE" CLEAR STATUS
                                                  /REGISTER FAILED,
0233  0226        TST2                            /SCOPE LOOP POINTER
0234  5000        5000                            /TEXT POINTER
                  /
                  /VERIFY THAT SKIP CONDITIONS WERE CLEARED
                  /BY "INITIALIZE" ON START OF TEST,
                  /
0235  4441  TST1,  DSKSKP                         /ISSUE "DSKP" IOT
0236  4427        NERROR                          /DSKP O.K. 4096 LOOPS
0237  4430        ERROR                           /ERROR, "INITIALIZE" CLEAR
                                                  /SKIP CONDITIONS
0240  0235        TST1                            /SCOPE LOOP POINTER
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, 4096 LOOPS
0244  4430        ERROR                           /ERROR, "INITIALIZE" CLEAR
                                                  /INT, CONDITION
0245  0242        TST2                            /SCOPE LOOP POINTER
0246  0007        0007                            /TEXT POINTER
                  /
                  /VERIFY THAT COMMAND REGISTER WAS CLEARED
                  /BY "INITIALIZE" AT START OF TEST, READ COMMAND
                  /REGISTER WITH "DMAR" (MAINTENANCE IOT)
                  /
0247  3160        DCA     GDREG2                  /SETUP COMPARE REGISTER
0250  4435  TST3,  RDCMD                          /READ COMMAND REGISTER
0251  7650        SNA CLA                         /AC SHOULD BE 0
0252  4427        NERROR                          /AC O.K, 4096 LOOPS
0253  4430        ERROR                           /ERROR, "INITIALIZE" CLEAR
                                                  /COMMAND REGISTER
0254  0250        TST3                            /SCOPE LOOP POINTER
0255  4201        4201                            /TEXT POINTER
                  /
                  /VERIFY THAT ALL DRIVES ON CONTROL ARE OFF,
                  /THE STATUS SHOULD BE 2280 WHEN DRIVES ARE SELECTED,
                  /
0256  1174  TST4:  TAD     ST2ON                   /EXPECTED STATUS
0257  3160        DCA     GDREG2                  /SETUP COMPARE REGISTER
0260  7301        CLA CLL IAC                     /ENABLE CLEAR CONTROL
0261  4445        CLRALL                          /CLR "CLR ALL"
0262  1150        TAD     REG1                    /GET AC VALUE
0263  4442        LDCMD                           /LOAD COMMAND
0264  4434        RDSTAT                          /READ STATUS
0265  4432        ACCMP1                          /CHECK RESULTS
0266  4427        NERROR                          /O.K, 4096 LOOPS
```



```
0267  4430        ERROR                           /ERROR, STATUS
0270  0256        TST4                            /SCOPE LOOP POINTER
0271  5000        5000                            /TEXT POINTER
                  /
                  /VERIFY THAT IOT "DSKP" 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
                                                  /ISSUE "DSKP" IOT
0275  4441        DSKSKP
0276  7000        NOP                             /CHECK AC, COMPARE TO GDREG2
0277  4432        ACCMP1                          /AC O.K, 4096 LOOPS
0300  4427        NERROR                          /ERROR, "DSKP" CHANGED AC,
0301  4430        ERROR                           /SCOPE LOOP POINTER
0302  0272        TST5                            /TEXT POINTER
0303  4010        4010
                  /
                  /VERIFY THAT "DLCA" LOAD CURRENT ADDRESS
                  /REGISTER CLEARS THE AC, TRY ALL COMBINATIONS IN AC
                  /
0304  3160        DCA     GDREG2                  /SETUP COMPARE REGISTER
0305  1150  TST6,  TAD     REG1                    /GET AC VALUE
0306  4443        LDCUR                           /LOAD CURRENT ADDRESS "DLCA"
0307  4432        ACCMP1                          /CHECK AC, COMPARE TO GDREG2
0310  4427        NERROR                          /AC O.K, 4096 LOOPS
0311  4430        ERROR                           /ERROR, DLCA CLEAR AC
0312  0305        TST6                            /SCOPE LOOP POINTER
0313  4010        4010                            /TEXT POINTER
                  /
                  /VERIFY THAT "DLDC" LOAD COMMAND REGISTER
                  /CLEARS THE AC, TRY ALL COMBINATIONS IN AC,
                  /
0314  1150  TST7,  TAD     REG1                    /GET AC VALUE
0315  4442        LDCMD                           /"DLDC" LOAD COMMAND REGISTER
0316  4432        ACCMP1                          /CHECK AC, COMPARE TO GDREG2
0317  4427        NERROR                          /AC O.K, 4096 LOOPS
0320  4430        ERROR                           /ERROR, DLDC CLEAR AC
0321  0314        TST7                            /SCOPE LOOP POINTER
0322  4010        4010                            /TEXT POINTER
                  /
                  /VERIFY THAT "DLAG" CLEARS THE AC REGISTER,
                  /TRY ALL COMBINATIONS IN AC,
                  /
0323  7301  TST8,  CLA CLL IAC                     /CLEAR CONTROL
0324  4445        CLRALL                          /GET DATA
0325  1151        TAD     REG2                    /LOAD DISK ADDRESS
0326  4444        LDADD                           /CHECK RESULTS
0327  4432        ACCMP1                          /O.K, 4096 LOOPS
0330  4427        NERROR                          /ERROR, DLAG, CLEAR AC
0331  4430        ERROR                           /SCOPE LOOP POINTER
0332  0323        TST8                            /TEXT POINTER
0333  4010        4010
                  /
                  /VERIFY THAT IOT "DCLR" CLEARS THE AC,
```

```
                        /TRY ALL COMBINATIONS IN AC
                        /
0334  1152    TST9,   TAD     REG1
0335  4445            CLRALL                          /DCLR "CLR ALL"
0336  4432            ACOMP1                          /CHECK AC, COMPARE TO GDREG2
0337  4427            NERROR                          /AC O.K, 4096 LOOPS
0340  4430            ERROR                           /ERROR, DCLR CLEAR AC
0341  2334            TST9                            /SCOPE LOOP POINTER
0342  4010            4010                            /TEXT POINTER
                        /
                        /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
0344  4445            CLRALL                          /DCLR "CLR ALL"
0345  1150            TAD     REG1
0346  7112            CLL RAR
0347  7650            SZL CLA                         /DATA 7777 IF LINK IS SET
0350  7240            CLA CMA
0351  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
0352  1160            TAD GDREG2
0353  7040            CMA
0354  4442            LDCMD                           /SET COMMAND TO OPOSITE
0355  1162            TAD GDREG2
0356  4442            LDCMD                           /SET COMMAND TO VALUE EXPECTED
0357  4435            RDCMD                           /READ COMMAND REGISTER
0360  4432            ACOMP1                          /CHECK RESULTS
0361  4427            NERROR                          /O.K, 4096 LOOPS
0362  4430            ERROR                           /ERROR, COMMAND REGISTER
0363  0343            TST10                           /SCOPE LOOP POINTER
0364  4201            4201                            /TEXT POINTER
                        /
                        /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
0366  4445            CLRALL                          /DCLR "CLR ALL"
0367  1150            TAD     REG1
0370  7112            CLL RAR
0371  7630            SZL CLA                         /DATA 5252 IF LINK IS SET
0372  1163            TAD     K2525
0373  1163            TAD     K2525
0374  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
0375  1160            TAD     GDREG2
0376  7040            CMA
0377  4442            LDCMD                           /SET COMMAND TO OPOSITE
0400  1160            TAD     GDREG2
0401  4442            LDCMD                           /SET COMMAND TO VALUE EXPECTED
0402  4435            RDCMD                           /READ COMMAND REGISTER
0403  4432            ACOMP1                          /CHECK RESULTS
0404  4427            NERROR                          /O.K, 4096 LOOPS
0405  4430            ERROR                           /ERROR, COMMAND REGISTER
0406  0365            TST11                           /SCOPE LOOP POINTER
```



```
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            ACOMP1                          /CHECK AC, COMPARE TO GDREG2
0420  4427            NERROR                          /AC O.K, 4096 LOOPS
0421  4430            ERROR                           /ERROR, LOAD OR HEAD
                                                        /COMMAND REGISTER
0422  2412            TST12                           /SCOPE LOOP POINTER
0423  4201            4201                            /TEXT POINTER
                        /
                        /VERIFY THAT DCLR DOES NOT CLEAR COMMAND
                        /REGISTER WHEN AC10=0 AND AC11=0
                        /
0424  1152    TST13,  TAD     REG1
0425  4442            LDCMD                           /LOAD COMMAND REGISTER
0426  1151            TAD     REG2
0427  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
0430  1151            TAD     REG2
0431  4442            LDCMD                           /LOAD COMMAND REGISTER
0432  4445            CLRALL                          /DCLR "CLR ALL"
0433  4435            RDCMD                           /READ COMMAND REGISTER
0434  4432            ACOMP1                          /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
0437  0424            TST13                           /SCOPE LOOP POINTER
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    TST14,  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  7690            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
0452  0442            TST14                           /SCOPE LOOP POINTER
0453  4201            4201                            /TEXT POINTER
                        /
                        /VERIFY THAT DLAG 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  1152              TAD     M12
0457  3153              DCA     TCNTR1                  /SETUP 12 BIT SHIFT COUNTER
0460  1150              TAD     REG1
0461  7110              CLL RAR
0462  7630              SZL CLA                         /DATA 00 + 3777
0463  7340              CLA CLL CMA                     /377
0464  4444              LOADC                           /LOAD DISK ADDRESS REGISTER
0465  1166              TAD     DAREG
0466  0070              AND     K0037                   /MASK EXPECTED VALUE
0467  3166              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
0476  1067              TAD     K2020                   /ENABLE READ LOWER BUFFER
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  0454              TST15                           /SCOPE LOOP POINTER
0506  4102                                              /TEXT POINTER
                        /
                        /VERIFY THAT DLAG 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  1152              TAD     M12
0512  3153              DCA     TCNTR1                  /SETUP 12 BIT SHIFT COUNTER
0513  1150              TAD     REG1
0514  0070              AND     K0037                   /MASK EXPECTED VALUE
0515  3166              DCA     GDREG2                  /SETUP COMPARE REGISTER
0516  1150              TAD     REG1
0517  4444              LOADD                           /LOAD DISK ADDRESS REGISTER
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
0526  1067              TAD     K0020                   /ENABLE READ LOWER BUFFER
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                                              /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              SZL CLA
0544  7240              CLA CMA                         /SETUP COMPARE REGISTER
0545  3160              DCA GDREG2
0546  1160              TAD     GDREG2
0547  7040              CMA                             /SET DISK ADDRESS TO OPOSITE
0550  4444              LOADC
0551  1160              TAD GDREG2                      /SET DISK ADDRESS TO EXPECTED
0552  4444              LOADD                           /READ DISK ADDRESS
0553  4440              RDADD                           /CHECK RESULTS
0554  4432              ACCMP1                          /O.K. 4096 LOOPS
0555  4427              NERROR                          /ERROR, DISK ADDRESS REGISTER
0556  4430              ERROR                           /SCOPE LOOP POINTER
0557  0537              TST17                           /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              SZL 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              LOADD
0574  1160              TAD GDREG2                      /SET DISK ADDRESS TO EXPECTED
0575  4444              LOADD                           /READ DISK ADDRESS
0576  4440              RDADD                           /CHECK RESULTS
0577  4432              ACCMP1                          /O.K. 4096 LOOPS
0600  4427              NERROR                          /ERROR, DISK ADDRESS REGISTER
0601  4430              ERROR                           /SCOPE LOOP POINTER
0602  0561              TST18                           /TEXT POINTER
0603  4102              4102
                        /
```

```
                        /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     GOREG2                  /SETUP COMPARE REGISTER
0606  1150              TAD     REG1
0607  4444              LOADD                           /LOAD DISK ADDRESS REGISTER
0610  4440              RDADD                           /READ DISK ADDRESS REGISTER
0611  4432              ACCMP1                          /CHECK AC, COMPARE TO GOREG2
0612  4427              NERROR                          /AC O.K., LOOP 4096 TIMES
0613  4430              ERROR                           /ERROR, LOAD OR READ DISK
                                                        /ADDRESS REGISTER
0614  0604              TST19                           /SCOPE LOOP POINTER
0615  4102              4102                            /TEXT POINTER
                        /
                        /VERIFY THAT DCLR DOES NOT AFFECT THE SURFACE
                        /AND SECTOR WHEN A11=0 + AC11=0
                        /
0616  1150    TST20,    TAD     REG1                    /GET AC VALUE
0617  3162              DCA     GOREG2                  /SETUP COMPARE REGISTER
0620  1151              TAD     REG2                    /AC VALUE, COMPLIMENT OF REG1
0621  4444              LOADD                           /LOAD DISK ADDRESS
0622  1150              TAD     REG1
0623  4444              LOADD                           /LOAD DISK ADDRESS
0624  4449              CLRALL                          /DCLR "CLR ALL"
0625  4440              RDADD                           /READ DISK ADDRESS
0626  4432              ACCMP1                          /CHECK AC, COMPARE TO GOREG2
0627  4427              NERROR                          /AC O.K. LOOP 4096 TIMES
0630  4430              ERROR                           /ERROR, LOAD OR READ DISK
                                                        /ADDRESS OR DCLR CLEAR
0631  0616              TST20                           /SCOPE LOOP POINTER
0632  4102              4102                            /TEXT POINTER
                        /
                        /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     GOREG2                  /SETUP COMPARE REGISTER
0635  1152              TAD     REG1
0636  4444              LOADD                           /LOAD DISK ADDRESS
0637  7301              CLA CLL IAC                     /ENABLE "CLR ALL" BIT
0640  4445              CLRALL                          /DCLR "CLR ALL"
0641  4442              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
0645  0633              TST21                           /SCOPE LOOP POINTER
0646  4102              4102                            /TEXT POINTER
                        /
                        /VERIFY THAT THE CRC CAN BE LOADED BY "DLAG"
                        /AND "DLDCR", 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" IOT,
                        /
0647  7301    TST22,    CLA CLL IAC                     /DCLR
0650  4445              CLRALL
0651  1152              TAD     REG1
0652  7110              CLL RAR                         /USE DATA 7777 IF LINK IS SET
0653  7630              SZL CLA
0654  7240              CLA CMA
0655  0106              AND     K7740
0656  3160              DCA     GOREG2                  /SETUP COMPARE # 1
0657  7004              RAL                             /LINK FOR EXTENDED BIT
0660  3157              DCA     GOREG1                  /SETUP COMPARE REGISTER
0661  1157              TAD     GOREG1                  /GET DATA
0662  4442              LDCMD                           /LOAD CRC
0663  1160              TAD     GOREG2
0664  4444              LOADD                           /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  6004              6004                            /TEXT POINTER
                        /
                        /VERIFY THAT THE CRC CAN BE LOADED BY "DLAG"
                        /AND "DLDCR", 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" IOT,
                        /
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              SZL CLA
0700  1113              TAD     K2525
0701  1113              TAD     K2525
0702  0106              AND     K7740
0703  3160              DCA     GOREG2                  /SETUP COMPARE # 1
0704  7004              RAL                             /LINK FOR EXTENDED BIT
0705  3157              DCA     GOREG1                  /SETUP COMPARE REGISTER
0706  1157              TAD     GOREG1                  /GET DATA
0707  4442              LDCMD                           /LOAD CRC
0710  1160              TAD     GOREG2
0711  4444              LOADD                           /LOAD CRC
0712  4446              RDCRC                           /READ CRC
0713  4433              ACCMP2                          /CHECK RESULTS
0714  4427              NERROR                          /O.K, 4096 LOOPS
0715  4430              ERROR                           /ERROR, CRC REGISTER
0716  0673              TST23                           /SCOPE LOOP POINTER
0717  6004              6004                            /TEXT POINTER
                        /
                        /VERIFY THAT THE CRC CAN BE LOADED BY "DLAG"
                        /AND DLDCR, 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  1152    TST24,    TAD     REG1                    /GET AC VALUE
0721  7106              CLL RTL
0722  7006              RTL
0723  7004              RAL
0724  0176              AND     K7740
0725  3160              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              LOCMD                           /LOAD COMMAND REGISTER
0732  1160              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                          /AC O.K. LOOP 4096
0737  4432              ERROR                           /ERROR, CRC REGISTER LOAD BY
                                                        /DLAG OR DLDC,
0740  0720              TST24                           /SCOPE LOOP POINTER
0741  6004              6004                            /TEXT POINTER
                        /
                        /
                        /VERIFY THAT DCLR DOES NOT AFFECT CRC REGISTER,
                        /LOAD CRC WITH DLAG + DLDC,
                        /
0742  1151    TST25,    TAD     REG2
0743  7106              CLL RTL
0744  7006              RTL
0745  7004              RAL
0746  0176              AND     K7740
0747  3160              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              LOCMD                           /LOAD COMMAND REGISTER
0754  1160              TAD     GDREG2
0755  4444              LDADD                           /LOAD DISK ADDRESS
0756  1151              TAD     REG2
0757  0134              AND     K7775                   /DON'T DO 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  4432              ERROR                           /ERROR, LOAD, READ, CLEAR CRC
                                                        /REGISTER
0765  0742              TST25                           /SCOPE LOOP POINTER
0766  6004              6004                            /TEXT POINTER
                        /
                        /VERIFY THAT THE CRC REGISTER IS NOT AFFECTED BY
                        /"DOLOC", "DSKP", "DRSTR", "DBUF", OR "DLCAR".
                        /USE DATA PATTERN 2525 + 5252,
```



```
                        /
0767  7321    TST26,    CLA CLL IAC                     /DCLR
0770  4445              CLRALL
0771  1152              TAD     REG1
0772  7110              CLL RAR                         /USE DATA 5252 IF LINK IS SET
0773  7630              SKL CLA
0774  1113              TAD     K2525
0775  1113              TAD     K2525
0776  0106              AND     K7740
0777  3160              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              LOCMD                           /LOAD COMMAND
1004  1160              TAD     GDREG2
1005  4444              LDADD                           /LOAD DISK ADDRESS
1006  1151              TAD REG2
1007  4434              RDSTAT                          /READ STATUS
1010  1151              TAD     REG2
1011  6441              DSKSKP                          /DSKP#
1012  7000              NOP
1013  4450              RDBUF                           /READ BUFFER
1014  1151              TAD REG2
1015  4443              LDCUR                           /LOAD CURRENT ADDRESS
1016  1151              TAD     REG2
1017  4442              LOCMD                           /LOAD COMMAND
1020  1152              TAD     REG1
1021  4421              LDBUF                           /LOAD UPPER BUFFER
1022  4446              RDCRC                           /READ CRC REGISTER
1023  4433              ACCMP2                          /CHECK RESULTS
1024  4427              NERROR                          /O.K. 4096 LOOPS
1025  4432              ERROR                           /ERROR, CRC REGISTER
1026  0767              TST26                           /SCOPE LOOP POINTER
1027  6004              6004                            /TEXT POINTER
                        /
                        /VERIFY THAT WRITE LOCK INHIBITS LOAD ADDRESS
                        /WHEN IT IS SET,
                        /
1030  7321    TST27,    CLA CLL IAC                     /CLEAR CONTROL
1031  4445              CLRALL                          /SETUP COMPARE REGISTER
1032  3160              DCA     GDREG2                  /GET AC VALUE
1033  1152              TAD     REG1                    /LOAD DISK ADDRESS
1034  4444              LDADD
1035  1077              TAD     K2000                   /SET WRITE LOCK
1036  4442              LOCMD                           /GET AC VALUE
1037  1151              TAD     REG2                    /TRY TO LOAD DISK ADDRESS
1040  4444              LDADD                           /READ DISK ADDRESS
1041  4440              RDADD                           /CHECK RESULTS
1042  4432              ACCMP1                          /O.K. 4096 LOOPS
1043  4427              NERROR                          /ERROR LOAD DISK ADDRESS
1044  4430              ERROR                           /SCOPE LOOP POINTER
1045  1032              TST27
1046  4102              4102
                        /
                        /VERIFY THAT THE DISK ADDRESS REGISTER IS NOT
```

```
                        /AFFECTED BY "DCLR", "DLCA", "DRST", "DLAG", "DSKP"
                        /OR "RDBUF", USE DATA PATTERN ALL COMBINATIONS.
                        /
1047  1190  TST28,  TAD     REG1                    /GET AC VALUE
1050  3160        DCA     GDREG2                  /SETUP COMPARE REGISTER
1051  1190        TAD     REG1
1052  4444        LDADD                           /LOAD DISK ADDRESS
1053  1151        TAD     REG2
1054  0123        AND     K5777                   /MASK OUT WRITE LOCK
1055  4442        LDCMD                           /LOAD COMMAN REGISTER
1056  1191        TAD     REG2
1057  4443        LDCUR                           /LOAD CURRENT ADDRESS
1060  1151        TAD     REG2
1061  4441        DSKSKP                          /DSKP
1062  7000        NOP
1063  4434        RDSTAT                          /READ STATUS
1064  1191        TAD     REG2
1065  4421        LDBUF                           /LOAD BUFFERS
1066  4450        RDBUF                           /READ LOWER BUFFER
1067  7300        CLA CLL
1070  4445        CLRALL                          /CLEAR STATUS
1071  4440        RDADD                           /READ DISK ADDRESS
1072  4432        ACCMP1                          /CHECK AC, COMPARE TO GDREG2
1073  4427        NERROR                          /AC O.K. 4095 LOOPS
1074  4430        ERROR                           /ERROR, DISK ADDRESS AFFECTED
1075  1047        TST28                           /SCOPE LOOP POINTER
1076  4102        4102                            /TEXT POINTER
                        /
                        /VERIFY THAT THE COMMAND REGISTER IS NOT AFFECTED BY
                        /"DLCR", "DLCA", "DRST", "DLAG", "DSKP", OR "RDBUF",
                        /USE DATA PATTERN ALL COMBINATIONS.
                        /
1077  7321  TST29,  CLA CLL IAC                    /CLEAR CONTROL
1100  4445        CLRALL                          /GET AC VALUE
1101  1152        TAD     REG1                    /SETUP COMPARE REGISTER
1102  3160        DCA     GDREG2
1103  1150        TAD     REG1                    /LOAD COMMAND REGISTER
1104  4442        LDCMD
1105  1191        TAD     REG2                    /LOAD DISK ADDRESS
1106  4444        LDADD
1107  1151        TAD     REG2                    /LOAD CURRENT ADDRESS
1110  4443        LDCUR
1111  1191        TAD     REG2                    /DSKP
1112  4441        DSKSKP
1113  7000        NOP                             /READ STATUS
1114  4434        RDSTAT
1115  1191        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        CLRALL                          /READ COMMAND REGISTER
1124  4435        RDCMD                           /CHECK AC, COMPARE TO GDREG2
1125  4432        ACCMP1
```



```
1126  4427        NERROR                          /AC O.K. 4096 LOOPS
1127  4430        ERROR                           /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
                        /
1152  7301  TST31,  CLA CLL IAC                    /ENABLE CLEAR CONTROL
1153  4445        CLRALL                          /CLEAR CONTROL
1154  4436        ENMAN1                          /ENTER MAINTENANCE
1155  1150        TAD     REG1                    /GET AC VALUE
1156  3160        DCA     GDREG2                  /SETUP COMPARE
1157  1160        TAD     GDREG2
1160  4444        LDADD                           /LOAD DISK ADDRESS (DLAG)
1161  7326        CLA CLL CML RTL                 /ENABLE RECAL,
1162  4445        CLRALL                          /RECALIBRATE
1163  1151        TAD     REG2
1164  4444        LDADD                           /LOAD DISK ADDRESS (DLAG)
1165  4440        RDADD                           /READ DISK ADDRESS
1166  4432        ACCMP1                          /CHECK RESULTS
1167  4427        NERROR                          /O.K. 4096 LOOPS
1170  4430        ERROR                           /ERROR ON INHIBIT
1171  1152        TST31                           /SCOPE POINTER
1172  4102        4102                            /TEXT POINTER
                        /
                        /VERIFY THAT "DMAN" (MAINTENANCE) DOES NOT
                        /AFFECT AC WHEN AC8=0 AND AC7=1 OR 8.
                        /
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 7
1177  3160        DCA     GDREG2                  /SETUP COMPARE REGISTER
1200  1160        TAD     GDREG2
1201  4447        LDMAN                           /LOAD MAINTENANCE "DMAN"
```

```
1202  4432          ACOMP1                          /CHECK AC; COMPARE TO GDREG2
1203  4427          NERROR                          /AC O.K. 4096 LOOPS
1204  4436          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 AC8#1 OR 0;
                    /
1207  7301  TST33,  CLA CLL IAC                     /CLEAR ENABLE BIT
1210  4445          CLRALL                          /CLR "CLR ALL"
1211  1150          TAD     REG1                    /GET AC VALUE
1212  0117          AND     K7717                   /MASK OUT BIT 7
1213  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
1214  1160          TAD     GDREG2
1215  4447          LDMAN                           /LOAD MAINTENANCE
1216  4432          ACOMP1                          /CHECK AC, COMPARE TO GDREG2
1217  4427          NERROR                          /AC O.K., 4096 LOOPS
1220  4436          ERROR                           /ERROR, DMAN AFFECT AC
1221  1207          TST33                           /SLOPE 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                          /CLR "CLR ALL"
1225  1150          TAD     REG1
1226  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
1227  1150          TAD     REG1
1230  4442          LOCMD                           /LOAD COMMAND REGISTER
1231  1132          TAD     M12                     /NO. OF SHIFTS
1232  3153          DCA     TCNTR1                  /STORE IN COUNTER
1233  4437          ENMAN2                          /ENTER MAINTENANCE MODE + CB4=1
1234  1075          TAD     K3430                   /GET ENABLE COMMAND REG.
1235  4447          LDMAN                           /LOAD MAINTENANCE
1236  2153          ISZ     TCNTR1                  /COUNT + SHIFT 12
1237  5235          JMP     .-2
1240  7300          CLA CLL
1241  4447          LDMAN                           /DMAN TRY TO CLEAR MAIN FLOP
1242  1067          TAD     K0020                   /ENABLE BIT FOR READ BUFFER
1243  4447          LDMAN                           /READ BUFFER
1244  3164          DCA     DBREG                   /SAVE FOR PRINTER
1245  1164          TAD     DBREG
1246  4432          ACOMP1                          /CHECK AC
1247  4427          NERROR                          /AC O.K. 4096 LOOPS
1250  4432          ERROR                           /ERROR, MAIN FLIP FLOP
1251  1223          TST34                           /SCOPE LOOP POINTER
1252  4485          4485

                    /
                    /VERIFY THAT "DMAN" GETS CLEARED BY DCLR
                    /"CLR ALL"

1253  7301  TST35,  CLA CLL IAC
```



```
1254  4445          CLRALL                          /DCLR "CLR ALL"
1255  1067          TAD     K0020
1256  3162          DCA     GDREG2                  /SETUP COMPARE REGISTER
1257  1150          TAD     REG1
1260  4442          LOCMD                           /LOAD COMMAND REGISTER
1261  1132          TAD     M12                     /SHIFT 12 COUNTER
1262  3153          DCA     TCNTR1                  /ENTER MAINTENANCE MODE + CB4=1
1263  4437          ENMAN2
1264  1075          TAD     K0430                   /LOAD MAINTENANCE "DMAN"
1265  4447          LDMAN
1266  2153          ISZ     TCNTR1                  /12 COUNT
1267  5265          JMP     .-2
1270  7301          CLA CLL IAC                     /CLEAR ALL "DCLR"
1271  4445          CLRALL
1272  1067          TAD     K0020                   /LOAD MAINTENCE
1273  4447          LDMAN                           /CHECK AC; COMPARE TO GDREG2
1274  4432          ACOMP1                          /AC O.K, 4096 LOOPS
1275  4427          NERROR                          /ERROR, DMAN AFFECTED AC
1276  4436          ERROR                           /SCOPE LOOP POINTER
1277  1253          TST35                           /TEXT POINTER
1300  4010          4010
                    /
                    /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          TAD     REG1
1304  7110          CLL RAR                         /SKIP IF ALL 0'S DATA
1305  7630          SZL CLA                         /ALL ONE'S DATA
1306  7340          CLA CLL CMA                     /SETUP COMPARE REGISTER
1307  3160          DCA     GDREG2
1310  1160          TAD     GDREG2
1311  0141          AND     K0017
1312  3157          DCA     GDREG1                  /SETUP COMPARE REGISTER
1313  1133          TAD     M16                     /SHIFTER FOR CRC
1314  3153          DCA     TCNTR1                  /ENTER MAINTENANCE MODE
1315  4436          ENMAN1
1316  1150          TAD     REG1
1317  7104          CLL RAL
1320  2061          AND     K0002
1321  1076          TAD     K1002                   /ENABLE BITS
1322  4447          LDMAN                           /LOAD MAINTENANCE
1323  2153          ISZ     TCNTR1
1324  5322          JMP     .-2                     /16 COUNT
1325  4446          RDCRC                           /READ CRC REGISTER
1326  4433          ACOMP2                          /COMPARE RESULTS
1327  4427          NERROR                          /AC O.K, 4096 LOOPS
1330  4430          ERROR                           /ERROR, CRC REGISTER
1331  1301          TST36                           /SCOPE LOOP POINTER
1332  6004          6004                            /TEXT POINTER

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

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




                /
1333  7301      TST37,  CLA CLL IAC
1334  4445              CLRALL                  /DCLR "CLR ALL"
1335  1114              TAD     K5252
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              LOMAN                   /LOAD MAINTENANCE
1353  2153              ISZ     TCNTR1
1354  5343              JMP     .-37R           /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              TST37                   /SCOPE LOOP POINTER
1362  0004              0004                    /TEXT POINTER
                /
1363  5764              JMP I   .+1             /TO NEXT TEST
1364  1420              TST38
                /
      1400      PAGE
                /
                /VERIFY THAT "AC10 DATA" CAN BE SHIFTED
                /TO CRC REGISTER, THEN READ CRC REGISTER,



                /TRY PATTERN "052525"
                /
1470  7301      TST38,  CLA CLL IAC
1471  4445              CLRALL                  /CLEAR ALL "CRL"
1472  1113              TAD     K2525
```



```
1473  3160              DCA     GDREG2          /SETUP COMPARE REGISTER
1474  1160              TAD     GDREG2
1475  0141              AND     K0017
1476  3157              DCA     GDREG1          /SETUP COMPARE REGISTER
1477  1133              TAD     M16
1500  3153              DCA     TCNTR1          /16 COUNTER SHIFTER
1501  4436              ENMAN1                  /ENTER MAINTENANCE MODE
1502  7300      T38R,   CLA CLL
1503  1153              TAD     TCNTR1
1504  7044              CMA RAL
1505  0061              AND     K0002           /SETUP "AC 10 DATA"
1506  1076              TAD     K1000           /ENABLE BITS
1507  4447              LOMAN                   /LOAD MAINTENANCE
1510  2153              ISZ     TCNTR1
1511  5212              JMP     T38R            /16 COUNT
1512  4446              RDCRC                   /READ CRC REGISTER
1513  4433              ACCMP2                  /CHECK RESULTS
1514  4427              NERROR                  /O,K, 4096 LOOPS
1515  4430              ERROR                   /ERROR, CRC REGISTER
1516  1432              TST38                   /SCOPE LOOP POINTER
1517  0004              0004                    /TEXT POINTER
                /
                /
                /
                /VERIFY THAT "AC10 DATA" CAN BE SHIFTED TO CRC
                /REGISTER, TRY ALL COMBINATIONS,
                /
1520  7301      TST39,  CLA CLL IAC
1521  4445              CLRALL                  /DCLR "CLR ALL"
1522  1150              TAD     REG1
1523  3160              DCA     GDREG2          /SETUP COMPARE REGISTER
1524  1150              TAD     REG1
1525  0141              AND     K0017
1526  3157              DCA     GDREG1          /SETUP COMPARE REGISTER
1527  7301              CLA CLL IAC
1530  3153              DCA     TCNTR1          /SETUP BIT MASKER
1531  1133              TAD     M16
1532  3154              DCA     TCNTR2          /SETUP FIRST SHIFT COUNTER
1533  4436              ENMAN1                  /ENTER MAINTENANCE MODE
1534  1150      T39R,   TAD     REG1
1535  2153              ANO     TCNTR1
1536  7640              SZA CLA                 /SKIP IF 0
1537  1061              TAD     K0002           /HAS A 1
1540  1076              TAD     K1000           /ENABLE BITS
1541  4447              LOMAN                   /LOAD MAINTENANCE
1542  7300              CLA CLL
1543  1153              TAD     TCNTR1
1544  7004              RAL                     /ROTATE BIT MASKER
1545  3153              DCA     TCNTR1
1546  7630              SZL CLA                 /WAIT FOR FIRST LINK THEN
1547  5254              JMP     .+3             /RESET BIT 11 IN MASKER
1550  2154              ISZ     TCNTR2
1551  5244              JMP     T39R            /LOOP BACK
1552  4446              RDCRC                   /READ CRC REGISTER
```

```
1485  4433          ACCMP2                          /CHECK RESULTS
1464  4427          NERROR                          /O.K. 4096 LOOPS
1465  4432          ERROR                           /ERROR, CRC REGISTER
1466  1432          TST39                           /ERROR, CRC REGISTER
1467  6004          6004                            /TEXT POINTER
                    /
                    /VERIFY THAT "CLEAR" CLEARS ALL OF THE
                    /CRC REGISTER, TRY ALL COMBINATIONS IN CRC,
                    /
1470  7321  TST40,  CLA CLL IAC
1471  4445          CLRALL                          /DOLR "CLR ALL"
1472  3160          DCA     GDREG2
1473  3157          DCA     GDREG1                  /SETUP COMPARE REGISTERS
1474  7301          CLA CLL IAC
1475  3153          DCA     TCNTR1                  /SETUP BIT MASKER
1476  1133          TAD     M16
1477  3154          DCA     TCNTR2                  /SETUP FIRST SHIFT COUNTER
1500  4436          ENMAN1                          /ENTER MAINTENANCE MODE
1501  1151  T42R,   TAD     REG2
1502  0153          AND     TCNTR1
1503  7640          SZA CLA                         /SKIP IF Z
1504  1861          TAD     K0002                   /AS A 1
1505  1876          TAD     K1000                   /ENABLE RI'S
1506  4447          LDMAN                           /LOAD MAINTENANCE
1507  7300          CLA CLL
1510  1153          TAD     TCNTR1
1511  7804          RAL                             /ROTATE BIT MASKER
1512  3153          DCA     TCNTR1
1513  7630          SZL CLA                         /WAIT FOR FIRST LINK THEN
1514  5311          JMP     .+3                     /RESET BIT 11 IN MASKER
1515  2154          ISZ     TCNTR2
1516  5301          JMP     T40R                    /LOOP BACK
1517  4444          LOADD                           /LOAD DISK ADDRESS AND CLEAR CRC
1520  4446          RDCRC                           /READ CRC REGISTER
1521  4433          ACCMP2                          /CHECK RESULTS
1522  4427          NERROR                          /O.K. 4096 LOOPS
1523  4430          ERROR                           /ERROR, CRC REGISTER
1524  1470          TST40                           /LOOP, CRC REGISTER
1525  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  7321  TST41,  CLA CLL IAC                     /"DOLR" "CLR ALL"
1527  4445          CLRALL

1530  1162          TAD     REG1
1531  7110          CLL RAR
1532  7630          SZL CLA
1533  7242          CLA CMA
1534  3167          DCA     GDREG2
1535  1162          TAD     GDREG2                  /GET VALUE TO LOAD
1536  4421          LDBUF                           /LOAD UPPER BUFFER
1537  4450          RDBUF                           /READ LOWER BUFFER
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1540  4432          ACCMP1                          /CHECK AC, COMPARE TO GDREG2
1541  4427          NERROR                          /AC O.K. 4096 LOOPS
1542  4432          ERROR                           /ERROR, DATA REGISTERS
1543  1536          TST41                           /SCOPE LOOP POINTER
1544  4405          4405                            /TEXT POINTER
                    /
                    /VERIFY THAT "AC12 DATA" CAN BE SHIFTED TO
                    /UPPER DATA BUFFER THEN SINK TO LOWER DATA
                    /BUFFER, TRY PATTERN 2525 & 5252
                    /
1545  7321  TST42,  CLA CLL IAC
1546  4445          CLRALL                          /"DOLRM "CLR ALL"
1547  1162          TAD     REG1
1550  7110          CLL RAR
1551  7630          SZL CLA                         /WHAT DATA????
1552  1113          TAD     K2525                   /DATA 5252
1553  1113          TAD     K2525
1554  3162          DCA     GDREG2                  /SETUP COMPARE REGISTER
1555  1160          TAD     GDREG2                  /GET VALUE TO LOAD
1556  4421          LDBUF                           /LOAD UPPER BUFFER
1557  4450          RDBUF                           /READ LOWER DATA BUFFER
1560  4432          ACCMP1                          /CHECK AC, COMPARE TO GDREG2
1561  4427          NERROR                          /AC O.K. 4096 LOOPS
1562  4432          ERROR                           /ERROR, DATA BUFFERS
1563  1545          TST42                           /SCOPE LOOP POINTER
1564  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  7321  TST43,  CLA CLL IAC
1566  4445          CLRALL                          /"DOLR" "CLR ALL"
1567  1151          TAD     REG2                    /GET VALUE TO LOAD
1570  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
1571  1160          TAD     GDREG2                  /GET IT
1572  4421          LDBUF                           /LOAD UPPER BUFFER
1573  4450          RDBUF                           /READ LOWER DATA BUFFER
1574  4432          ACCMP1                          /CHECK AC
1575  4427          NERROR                          /AC O.K. 4096 LOOPS
1576  4432          ERROR                           /ERROR, DATA REGISTERS
1577  1563          TST43                           /SCOPE LOOP POINTER
1600  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  7321  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          ACCMP1                  /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  1130          TAD     REG1
1620  3136          DCA     TCNTR4
1621  1127          TAD     M4
1622  3135          DCA     TCNTR3          /COUNTER FOR # OF BUFFERS
1623  1136  T45R1,  TAD     TCNTR4
1624  4421          LOBUF                   /LOAD UPPER BUFFER
1625  7301          CLA CLL IAC
1626  1136          TAD     TCNTR4
1627  3136          DCA     TCNTR4
1630  2135          ISZ     TCNTR3
1631  5223          JMP     T49R1           /4 COUNT, SKIP WHEN BUFFERS FULL
1632  1130          TAD     REG1
1633  3160          DCA     GDREG2          /SETUP FOR FIRST COMPARE
1634  1127          TAD     M4
1635  3133          DCA     TCNTR3
1636  4450  T45R3,  RDBUF                   /READ BUFFER
1637  4432          ACCMP1                  /CHECK
1640  7610          SKP CLA                 /O.K, CHECK NEXT
1641  5247          JMP     T45E            /ERROR DATA BUFFERS
1642  2160          ISZ     GDREG2
1643  7000          NOP
1644  2133          ISZ     TCNTR3
1645  5236          JMP     T45R3
1646  4427          NERROR                  /O.K, 4096 LOOPS
1647  4430  T45E,   ERROR                   /ERROR, DATA BUFFERS
1650  1645          TST45                   /SCOPE LOOP POINTER
1651  4405          4405                    /TEXT POINTER
                    /
                    /VERIFY THAT THE SILO BUFFERS ARE NOT AFFECTED BY
                    /"DCLR", "DLAC", "DLOC", "DLCA", "DSKP", OR "DRST" IOTS,
                    /USE DATA PATTERN ALL COMBINATIONS
                    /
1652  7301  TST46,  CLA CLL IAC
1653  4445          CLRALL                  /DCLR
1654  1131          TAD     REG2
1655  3160          DCA     GDREG2          /SETUP COMPARE REGISTER
1656  1127          TAD     M4
1657  3133          DCA     TCNTR1          /COUNTER FOR AMOUNT OF BUFFERS
1660  1160  T46A1,  TAD     GDREG2          /GET VALUE TO LOAD
1661  4421          LOBUF                   /LOAD UPPER BUFFER
1662  2133          ISZ     TCNTR1          /COUNT AMOUNT
1663  5260          JMP     T46A1           /MORE TO LOAD
1664  1152          TAD     REG1
```



```
1665  4444          LDADD                   /LOAD DISK ADDRESS
1666  1150          TAD     REG1
1667  4443          LDCUR                   /LOAD CURRENT ADDRESS
1670  1152          TAD     REG1
1671  0102          AND     K3777           /MASK OFF WRITE
1672  4442          LDCMD                   /LOAD COMMAND REGISTER
1673  1152          TAD     REG1
1674  4441          DSKSKP                  /DSKP
1675  7000          NOP
1676  4434          RDSTAT                  /READ STATUS
1677  7320          CLA CLL
1700  4445          CLRALL                  /CLEAR STATUS
1701  1127          TAD     M4
1702  3153          DCA     TCNTR1          /SETUP COUNTER
1703  7300  T46A2,  CLA CLL
1704  1067          TAD     K0020           /ENABLE READ BUFFER
1705  4447          LDMAN                   /DMAN
1706  3164          DCA     DBREG           /SAVE RESULTS
1707  1164          TAD     DBREG
1710  4432          ACCMP1                  /CHECK RESULTS
1711  7610          SKP CLA                 /DATA O.K,
1712  5316          JMP     T46E            /ERROR
1713  2153          ISZ     TCNTR1          /READ ALL FOUR
1714  5303          JMP     T46A2           /LOOP
1715  4427          NERROR                  /O.K, 4096 LOOPS
1716  4430  T46E,   ERROR                   /ERROR, BUFFER AFFECTED
1717  1652          TST46                   /SCOPE LOOP POINTER
1720  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          /START AT 0
1722  7321  TST47,  CLA CLL IAC           /ENABLE CLEAR CONTROL
1723  4445          CLRALL                  /CLEAR CONTROL
1724  1153          TAD     TCNTR1          /GET VALUE TO LOAD
1725  3160          DCA     GDREG2          /SETUP COMPARE REGISTER
1726  1153          TAD     TCNTR1          /GET VALUE TO LOAD
1727  4421          LOBUF                   /LOAD UPPER BUFFER
1730  4450          RDBUF                   /READ LOWER BUFFER
1731  4432          ACCMP1                  /CHECK RESULTS
1732  7610          SKP CLA                 /DATA O.K,
1733  5342          JMP     T47E            /ERROR
1734  1153          TAD     TCNTR1
1735  7104          CLL RAL
1736  7450          SNA
1737  7001          IAC
1740  3153          DCA     TCNTR1          /SET ONE TO LEFT
1741  4427          NERROR                  /LOOP 4096 TIMES
1742  4430  T47E,   ERROR                   /ERROR SILO BUFFERS
1743  1722          TST47                   /SCOPE LOOP POINTER
1744  4405          4405                    /TEXT POINTER
                    /
                    /VERIFY THAT THE UPPER BUFFER CAN BE LOADED
```

```
                        /THEN SINK TO LOWER BUFFER, USE A FLOATING
                        /0'S PATTERN,
                        /
 1745  3153             DCA     TCNTR1                  /START AT 7777
 1746  7301   TST4B,    CLA CLL IAC                     /ENABLE CLEAR CONTROL
 1747  4445             CLRALL
 1750  1153             TAD     TCNTR1                  /GET VALUE TO LOAD
 1751  7040             CMA                             /INVERT FOR 0'S
 1752  3160             DCA     GOREG2                  /SETUP COMPARE REGISTER
 1753  1160             TAD     GOREG2                  /GET VALUE TO LOAD
 1754  4421             LDBUF                           /LOAD UPPER BUFFER
 1755  4450             RDBUF                           /READ LOWER BUFFER
 1756  4432             ACCMP1                          /CHECK RESULTS
 1757  7610             SKP CLA                         /DATA O.K.
 1760  5367             JMP     T48E                    /ERROR
 1761  1153             TAD     TCNTR1
 1762  7104             CLL RAL
 1763  7450             SNA
 1764  7001             IAC
 1765  3153             DCA     TCNTR1                  /SET ONE TO LEFT
 1766  4427             NERROR                          /LOOP 4096 TIMES
 1767  4430   T48L,     ERROR                           /ERROR SILO BUFFERS
 1770  1746             TST4B                           /SCOPE LOOP POINTER
 1771  4405             4405                            /TEXT POINTER
                        /
 1772  5773             JMP I   .+1                     /TO NEXT TEST
 1773  2000             TST49
                        /
       2000   PAGE
                        /
                        /VERIFY THAT "ORL" OCCURES WHEN BUFFER
                        /EMPTY,
                        /
 2000  7301   TST49,    CLA CLL IAC
 2001  4445             CLRALL                          /ROCLR" CLEAR ALL
 2002  1174             TAD     ST60N                   /SET EXPECTED BITS
 2003  3160             DCA     GOREG2                  /SETUP COMPARE REGISTER
 2004  1150             TAD     REG1
 2005  4434             RDSTAT                          /READ STATUS REGISTER
 2006  4432             ACCMP1                          /CHECK RESULTS
 2007  7610             SKP CLA                         /O'K,
 2010  5232             JMP     T49E                    /ERROR, STATUS REGISTER
 2011  1174             TAD     ST60N
 2012  1063             TAD     K0004                   /GET EXPECTED BITS
 2013  3160             DCA     GOREG2                  /SETUP COMPARE REGISTER
 2014  4436             ENMAN1                          /ENTER MAINTENANCE MODE
 2015  1076             TAD     K1002
 2016  4447             LDMAN                           /LOAD MAINTENANCE
 2017  7242             CLA CMA
 2020  4434             RDSTAT                          /READ STATUS REGISTER
 2021  4432             ACCMP1                          /CHECK RESULTS
 2022  7610             SKP CLA                         /O.K,
 2023  5232             JMP     T49E                    /ERROR, STATUS REGISTER
 2024  1174             TAD     ST60N
 2025  3160             DCA     GOREG2                  /SETUP COMPARE REGISTER
```



```
 2026  4445             CLRALL                          /OCLR "CLEAR STATUS"
 2027  4434             RDSTAT                          /READ STATUS REGISTER
 2030  4432             ACCMP1                          /CHECK RESULTS
 2031  4427             NERROR                          /STATUS O.K., 4096 LOOPS
 2032  4430   T49L,     ERROR                           /ERROR, STATUS REGISTER
 2033  2000             TST49                           /SCOPE LOOP POINTER
 2034  5000             5000                            /TEXT POINTER
                        /
                        /VERIFY THAT BUFFER FULL CAUSES "ORL",
                        /
 2035  7321   TST50,    CLA CLL IAC
 2036  4445             CLRALL                          /OCLR "CLR ALL"
 2037  1174             TAD     ST60N
 2040  3160             DCA     GOREG2                  /SETUP COMPARE REGISTER
 2041  1151             TAD     REG2
 2042  4434             RDSTAT                          /READ STATUS REGISTER
 2043  4432             ACCMP1                          /CHECK RESULTS
 2044  7610             SKP CLA                         /O'K,
 2045  5274             JMP     T50E                    /ERROR, STATUS REGISTER
 2046  1134             TAD     M48
 2047  3153             DCA     TCNTR1                  /48 COUNTER
 2050  4436             ENMAN1                          /ENTER MAINTENANCE MODE
 2051  1072             TAD     K0120                   /ENABLE BITS
 2052  4447             LDMAN                           /LOAD MAINTENANCE
 2053  2153             ISZ     TCNTR1
 2054  5252             JMP     .-2                     /SKIP WHEN BUFFERS ARE FULL
 2055  7300             CLA CLL
 2056  4434             RDSTAT                          /READ STATUS REGISTER
 2057  4432             ACCMP1                          /CHECK RESULTS
 2060  7610             SKP CLA
 2061  5274             JMP     T50E                    /ERROR, STATUS REGISTER
 2062  1072             TAD     K0120
 2063  4447             LDMAN                           /CAUSE "ORL" OMAN
 2064  7300             CLA CLL
 2065  1174             TAD     ST60N
 2066  1063             TAD     K0004                   /BIT EXPECTED
 2067  3160             DCA     GOREG2                  /SETUP COMPARE REGISTER

 2070  1150             TAD     REG1
 2071  4434             RDSTAT                          /READ STATUS REGISTER
 2072  4432             ACCMP1                          /CHECK RESULTS
 2073  4427             NERROR                          /STATUS O.K., 4096 LOOPS
 2074  4430   T50E,     ERROR                           /ERROR, STATUS REGISTER
 2075  2035             TST50                           /SCOPE LOOP POINTER
 2076  5000             5000                            /TEXT POINTER
                        /
                        /VERIFY THAT "DSKP" SKIPS ON "ORL" ERROR
                        /
 2077  7321   TST51,    CLA CLL IAC
 2100  4445             CLRALL                          /OCLR "CLR ALL"
 2101  4436             ENMAN1                          /ENTER MAINTENANCE MODE
 2102  1075             TAD     K1003
 2103  4447             LDMAN                           /SET "ORL" "OMAN"
 2104  7300             CLA CLL
 2105  4441             DSKSKP                          /"DSKP"
```

```
2126  5314          JMP     T5?E                    /ERROR, "DSKP"
2127  4441          DSKSKP                          /"DSKP"
2130  5314          JMP     T5?E                    /ERROR, "DSKP"
2131  4445          CLRALL                          /CLEAR STATUS "DCRLR"
2132  4441          DSKSKP                          /"DSKP" SKIP
2133  4427          NERROR                          /SKIP O.K, 4096 LOOPS
2134  4430  T51E,   ERROR                           /ERROR, "DSKP" SKIP ON "DRLR"
2135  2077          TST51                           /SCOPE LOOP POINTER
2136  0006          0006                            /TEXT POINTER
                    /
                    /VERIFY THAT "DRLR" DOES CAUSE DISK "INTERRUPT" IF
                    /ENABLED BY "ENABLE INTERRUPT" BIT IN COMMAND REGISTER;
                    /
2137  7301  TST52,  CLA CLL IAC
2140  4445          CLRALL                          /"DCRLR "CLR ALL"
2141  1075          TAD     K2000
2142  4442          LDCMD                           /SET INT, ENABLE "LOAD COMMAND REG;"
2143  4436          ENMAN1                          /ENTER MAINTENANCE MODE
2144  1076          TAD     K1000
2145  4447          LDMAN                           /"SET DRLR "DMAN"
2146  4431          IONWAT                          /WAIT FOR INTERRUPT
2147  7610          SKP CLA                         /ERROR, NO INT, RQ;
2150  4427          NERROR                          /O;K, INT, OCCURRED
2151  4430          ERROR                           /ERROR, INT, REQUEST
2152  2137          TST52                           /SCOPE LOOP POINTER
2153  0007          0007                            /TEXTPOINTER
                    /
                    /VERIFY "HAT "DRLR" SHOULD CAUSE INT, RQ, ONLY
                    /WHEN "INT, ENABLE BIT IS SET, DOES LDCMD CLEAR INT",
                    /
2154  7301  TST53,  CLA CLL IAC
2155  4445          CLRALL                          /DCLR "CLR ALL"
2156  4436          ENMAN1                          /ENTER MAINTENANCE MODE
2157  1076          TAD     K1000
2160  4447          LDMAN                           /SET "DRLR "DMAN
2161  4431          IONWAT                          /WAIT FOR INT",
2162  7610          SKP CLA                         /O;K, NO INT,
2163  5356          JMP     T53E                    /ERROR, INT, OCCURRED
2164  1075          TAD     K0400
2165  4442          LDCMD                           /SET INT, ENABLE AND CLEAR INT;
2166  4431          IONWAT                          /WAIT FOR INT,
2167  7610          SKP CLA                         /O;K, NO INT, RQ,
2170  5356          JMP     T53E                    /ERROR, INT, OCCURRED
2171  1075          TAD     K1000
2172  4447          LDMAN                           /SET "DRLR "DMAN"
2173  4431          IONWAT                          /WAIT INT",, SHOULD INT;
2174  7610          SKP CLA                         /ERROR, NO INT;
2175  4427          NERROR                          /O;K, INT OCCURRED
2176  4430  T53E,   ERROR                           /ERROR,, INT, RQ
2177  2154          TST53                           /SCOPE LOOP POINTER
2200  0007          0007                            /TEXT POINTER
                    /
2201  5762          JMP 1   .+1                     /TO NEXT TPS"
```



```
2202  2200          TST54
                    /
      2200          PAGE
                    /
                    /VERIFY THAT "LDCMD" CLEARS STATUS REGISTER
                    /
2200  7301  TST54,  CLA CLL IAC                     /DCLR "CLR ALL"
2201  4445          CLRALL
2202  1174          TAD     ST00N
2203  1063          TAD     K0004
2204  3162          DCA     GOREG2                  /SETUP COMPARE REGISTER
2205  4436          ENMAN1                          /ENTER MAINTENANCE MODE
2206  1076          TAD     K1000                   /ENABLE
2207  4447          LDMAN                           /SET "DRLR" DMAN
2210  7300          CLA CLL
2211  1151          TAD     RE32
2212  4434          RDSTAT                          /READ STATUS REGISTER
2213  4432          ACCMP1                          /CHECK RESULTS
2214  7610          SKP CLA                         /O;K, CHECK CLEAR
2215  5225          JMP     T54E                    /STATUS REGISTER ERROR
2216  4442          LDCMD                           /CLEAR STATUS, "LOAD COMMAND"
2217  1174          TAD     ST00N
2220  3160          DCA     GOREG2                  /SETUP COMPARE REGISTER
2221  1150          TAD     REG1
2222  4434          RDSTAT                          /READ STATUS REGISTER
2223  4432          ACCMP1                          /CHECK RESULTS
2224  4427          NERROR                          /STATUS O.K, 4096 LOOPS
2225  4430  T54E,   ERROR                           /ERROR, STATUS REGISTER
2226  2200          TST54                           /SCOPE LOOP POINTER
2227  5000          5000                            /TEXT POINTER
                    /
                    /VERIFY THAT RECALIBRATE DOES SET DRIVE STATUS
                    /ERROR IN THE STATUS REGISTER,
                    /
2230  7301  TST55,  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     ST00N
2235  3160          DCA     GOREG2                  /SETUP EXPECTED COMPARE
2236  4434          RDSTAT                          /READ STATUS REGISTER
2237  4432          ACCMP1                          /CHECK RESULTS
2240  7610          SKP CLA                         /STATUS O.K,
2241  5252          JMP     T55E                    /ERROR, STATUS
2242  7326          CLA CLL CML RTL
2243  1174          TAD     ST00N
2244  3160          DCA     GOREG2                  /SETUP EXPECTED COMPARE
2245  7326          CLA CLL CML RTL                 /ENABLE RECALIBRATE
2246  4445          CLRALL                          /RECALIBRATE
2247  4434          RDSTAT                          /READ STATUS
2250  4432          ACCMP1                          /CHECK RESULTS
2251  4427          NERROR                          /O;K, 4096 LOOPS
2252  4430  T55E,   ERROR                           /ERROR, STATUS
2253  2230          TST55                           /SCOPE LOOP POINTER
2254  5000          5000                            /TEXT POINTER
```

```
                        /
                        /VERIFY THAT "LOAD DISK ADDRESS CAUSES" "DRIVE STATUS ERROR"
                        /
2255  7301  TST56,  CLA CLL IAC                    /ENABLE CLEAR CONTROL
2256  4445        CLRALL
2257  4444        LDADD
2260  1174        TAD     NTCON
2261  1061        TAD     K0002
2262  3160        DCA     GDREG2
2263  1150        TAD     REG1

2264  4434        RDSTAT                          /READ STATUS REGISTER
2265  4432        ACCMP1                          /CHECK RESULTS
2266  4427        NERROR                          /STATUS O.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; BUT
                        / "DOES LOCMD CLEAR INT."
                        /
2272  7301  TST57,  CLA CLL IAC                    /DCLR "CLR ALL"
2273  4445        CLRALL
2274  1075        TAD     K0400                   /SET INT, ENABLE "LOAD COMMAND"
2275  4442        LDCMD                           /SET "SELECT", LOAD DISK ADDRESS
2276  4444        LDADD                           /WAIT FOR EXPECTED INT,
2277  4431        IONWAT                          /ERROR, NO INT;
2300  5305        JMP     T57E
2301  1075        TAD     K0400                   /CLEAR INT; "LOAD COMMAND"
2302  4442        LDCMD
2303  4431        IONWAT                          /O'K, INT, WORKED
2304  4427        NERROR                          /ERROR, SELECT ERROR INT,
2305  4430  T57E,  ERROR                          /SCOPE LOOP POINTER
2306  2272        TST57                           /TEXT POINTER
2307  7007        0007
                        /
                        /VERIFY THAT "LOAD DISK ADDRESS" CAUSES
                        /"DRIVE STATUS ERROR"; TEST WITH DISK SKIP
                        /
2310  7301  TST58,  CLA CLL IAC                    /DCLR "CLR ALL"
2311  4445        CLRALL                          /LOAD DISK AND GO
2312  4444        LDADD                           /DSKP DISK SKIP IOT
2313  4441        DSKSKP                          /ERROR, NO SKIP
2314  5320        JMP     T58E                    /DSKP DISK SKIP IOT
2315  4441        DSKSKP                          /ERROR, NO SKIP
2316  5322        JMP     T58E                    /STATUS O.K,
2317  4427        NERROR                          /ERROR, STATUS REGISTER
2320  4430  T58E,  ERROR                          /SCOPE LOOP POINTER
2321  2310        TST58                           /TEXT POINTER
2322  0006        0006

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



```
2324  4445        CLRALL                          /DCLR "CLR ALL"
2325  4444        LDADD                           /LOAD DISK ADDRESS AND GO
2326  4441        DSKSKP                          /SKP "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  T59E,  ERROR                          /ERROR, "DSKP SKIP"
2334  2323        TST59                           /SCOPE LOOP POINTER
2335  0006        0006                            /TEXT POINTER
                        /
2336  5237        JMP I   .+1                     /TO NEXT TEST
2337  2400        TST60
                        /
        2400    PAGE
                        /
                        /VERIFY THAT SELECT ERROR CAUSES "DSKP" TO SKIP ON ERROR
                        /THEN INTERRUPT
                        /
2400  7301  TST60,  CLA CLL IAC                    /DCLR "CLR ALL"
2401  4445        CLRALL
2402  1064        TAD     K0006
2403  3220        DCA     T60E+2                  /SETUP TEXT POINTER
2404  1075        TAD     K0400
2405  4442        LDCMD                           /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, O.K,
2416  4430  T60E,  ERROR                          /ERROR, NSKP OR INT,
2417  2400        TST60                           /SCOPE LOOP POINTER
2420  0006        0006                            /MODIFIED TEXT POINTER
                        /
                        /VERIFY THAT "DRL" CAUSES AN INT, THEN SKIP
                        /
2421  7301  TST61,  CLA CLL IAC                    /DCLR "CLR ALL"
2422  4445        CLRALL
2423  1065        TAD     K0007
2424  3243        DCA     T61E+2                  /SETUP TEXT POINTER
2425  1075        TAD     K0400
2426  4442        LDCMD                           /SETUP INT, ENABLE
2427  4436        ENMAN1                          /ENTER MAINTENANCE MODE
2430  1076        TAD     K1000
2431  4447        LDMAL                           /SET "DRLR" CHAN
2432  4431        IONWAT                          /WAIT FOR INT,
2433  5241        JMP     T61E                    /ERROR, NO INT;
2434  1064        TAD     K0006
2435  3243        DCA     T61E+2                  /SETUP TEXT POINTER
2436  4441        DSKSKP                          /"DSKP" SHOULD SKIP
2437  7610        SKP CLA                         /ERROR, NO SKIP
```

```
2443  4427            NEMROR                          /O'K, 4096 LOOPS
2441  4430  T61E,     ERROR                           /ERROR, SKIP OR INT.
2442  2421            TST61                           /SCOPE LOOP POINTER
2443  0207            0207                            /MODIFIED TEXT POINTER
                      /
                      /VERIFY THAT MAINTENANCE DOES INHIBIT
                      /DRIVE STATUS ERROR SKIP
                      /
2444  7301  TST62,    CLA CLL IAC
2445  4445            CLRALL                          /CLEAR CONTROL
2446  4441            DSKSKP                          /DISK 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  7613            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            NEMROR                          /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
2471  4445            CLRALL                          /CLEAR CONTROL
2472  1174            TAD     ST6ON                   /EXPECTED STATUS
2473  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
2474  4434            RDSTAT                          /READ STATUS
2475  4432            ACOMP1                          /CHECK RESULTS
2476  7610            SKP CLA                         /STATUS O.K.
2477  5325            JMP     T63E                    /ERROR, STATUS
2500  4436            ENMAN1                          /ENTER MAINTENANCE
2501  7326            CLA CLL CML RTL
2502  1174            TAD     ST6ON                   /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            ACOMP1                          /CHECK RESULTS
2510  7610            SKP CLA                         /STATUS O.K.
2511  5325            JMP     T63E                    /ERROR, STATUS
2512  1150            TAD     REG1
2513  7203            AND     K7776                   /MASK OUT CLEAR CONTROL
2514  4445            CLRALL                          /DCLR
2515  7326            CLA CLL CML RTL
2516  1174            TAD     ST6ON
```



```
2517  1872            TAD     K0100                   /BUSY BIT
2520  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
2521  1151            TAD     REG2
2522  4434            RDSTAT                          /READ STATUS REGISTER
2523  4432            ACOMP1                          /CHECK RESULTS
2524  4427            NEMROR                          /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
2531  4445            CLRALL                          /CLEAR CONTROL
2532  1174            TAD     ST6DA
2533  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
2534  4434            RDSTAT                          /READ STATUS
2535  4432            ACOMP1                          /CHECK RESULTS
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     ST6ON                   /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            ACOMP1                          /CHECK RESULTS
2550  7610            SKP CLA                         /STATUS O.K.
2551  5365            JMP     T64E                    /ERROR, STATUS
2552  7326            CLA CLL CML RTL
2553  1174            TAD     ST6ON
2554  1101            TAD     K4000
2555  1863            TAD     K0004                   /EXPECTED STATUS
2556  3160            DCA     GDREG2
2557  1876            TAD     K1000                   /ENABLE SHIFT
2560  4447            LDMAN                           /LOAD MAINTENANCE SET DRL
2561  1150            TAD     REG1
2562  4434            RDSTAT                          /READ STATUS REGISTER
2563  4432            ACOMP1                  /CHECK RESULTS
2564  4427            NEMROR                          /O'K, 4096 LOOPS
2565  4430  T64E,     ERROR                           /ERROR, STATUS REGISTER
2566  2530            TST64                   /SCOPE LOOP POINTER
2567  5002            5000                            /TEXT POINTER
                      /
2570  5771            JMP I   .+1                     /TO NEXT TEST
2571  2630            TST65
                      /
        2600  PAGE
                      /
                      /VERIFY THAT "RECALIBRATE" THEN "CLCAR" SETS
                      /DRIVE STATUS AND BUSY ERROR IN STATUS REGISTER
                      /
2600  7301  TST65,    CLA CLL IAC
```

```
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          LDCUR                           /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  T69E,   ERROR                           /ERROR, STATUS REGISTER
2634  2602          TST65                           /SCOPE LOOP POINTER
2635  5000          5000                            /TEXT POINTER
                    /
                    /VERIFY THAT "RECALIBRATE" THEN "CLOCK"
                    /DOES SET BUSY ERROR IN STATUS
                    /
2636  7301  TST66,  CLA CLL IAC
2637  4445          CLRALL                          /CLEAR CONTROL
2640  4436          ENMAN1                          /ENTER MAINTENANCE
2641  7326          CLA CLL CML RTL
2642  4445          CLRALL
2643  7326          CLA CLL CML RTL
2644  1072          TAD     K0120
2645  1174          TAD     STCON                   /EXPECTED STATUS
2646  3160          DCA     GDREG2
2647  4442          LDCMD                           /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          5000                            /TEXT POINTER
                    /
                    /VERIFY THAT RECALIBRATE THEN CLEAR 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     K0122
2664  1174          TAD     STCON                   /EXPECTED STATUS
2665  3160          DCA     GDREG2                  /SETUP EXPECTED COMPARE
2666  7326          CLA CLL CML RTL                 /ENABLE RECALIBRATE
2667  4445          CLRALL
2670  4444          LDADS                           /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          5000                                /TEXT POINTER
                    /
                    /VERIFY THAT SKIP OCCURRES ON BUSY ERROR
                    /
2677  7321  TST68,  CLA CLL IAC
2700  4445          CLRALL                          /CLEAR CONTROL
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          LDCUR                           /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  T68E,   ERROR                           /ERROR, DSKP
2716  2677          TST68                           /SCOPE LOOP POINTER
2717  0000          0000                            /TEXT POINTER
                    /
                    /VERIFY THAT DCLR CLEARS ALL OF STATUS REGISTER
                    /
2720  7301  TST69,  CLA CLL IAC
2721  4445          CLRALL                          /CLEAR CONTROL
2722  4436          ENMAN1                          /ENTER MAINTENANCE
2723  7326          CLA CLL CML RTL
2724  4445          CLRALL                          /DCLR
2725  7326          CLA CLL CML RTL
2726  1174          TAD     STCON
2727  1171          TAD     K4000
2730  1263          TAD     K0304                   /EXPECTED STATUS
2731  3162          DCA     GDREG2
2732  1076          TAD     K1000                   /ENABLE SHIFT
2733  4447          LDMAN                           /LOAD MAINTENANCE SET ONL
2734  1150          TAD     REG1
2735  4434          RDSTAT                          /READ STATUS REGISTER
2736  4432          ACCMP1                          /CHECK RESULTS
2737  7610          SKP CLA                         /O.K
2740  5350          JMP     T69E                    /ERROR
```

```
2741  4445          CLRALL                          /DCLR
2742  1174          TAD     ST00N
2743  3162          DCA     GDREG2                  /SETUP COMPARE REGISTER
2744  1151          TAD     REG2
2745  4434          RDSTAT                          /READ STATUS
2746  4432          ACCMP1                          /CHECK RESULTS
2747  4427          NERROR                          /O.K, 4096 LOOPS
2750  4430  T69E,   ERROR                           /ERROR, STATUS REGISTER
2751  2720          TST69                           /SCOPE LOOP POINTER
2752  0000          0000                            /TEXT POINTER
                    /
                    /VERIFY THAT INTERRUPT OCCURES ON BUSY ERROR
                    /
2753  7301  TST70,  CLA CLL IAC
2754  4445          CLRALL                          /CLEAR CONTROL
2755  1075          TAD     (0400                   /ENABLE INT, BIT
2756  4442          LDCMC                           /LOAD COMMAND
2757  4436          ENMAN1                          /ENTER MAINTENANCE
2760  7326          CLA CLL CML RTL
2761  4445          CLRALL                          /DCLR
2762  4431          IONWAT                          /WAIT FOR INT,
2763  7610          SKP CLA                         /INT, O.K,
2764  5374          JMP     T70E                    /ERROR, DISK INT,
2765  4445          CLRALL                          /CLEAR STATUS
2766  4431          IONWAT                          /WAIT FOR INTERRUPT
2767  5374          JMP     T70E                    /ERROR, NO INT,
2770  4445          CLRALL                          /DCLR
2771  4431          IONWAT                          /WAIT FOR INT,
2772  7610          SKP CLA                         /INT, O.K,
2773  4427          NERROR                          /O.K, 4096 LOOPS
2774  4430  T70E,   ERROR                           /ERROR, INT
2775  2753          TST70                           /SCOPE LOOP POINTER
2776  0007          0007                            /TEXT POINTER
                    /
                    /VERIFY THAT "DBUF", "DLCAR", "DRST", "DLAG"
                    /OR "DSKP" DOES NOT AFFECT STATUS REGISTER,
                    /
2777  7301  TST71,  CLA CLL IAC
3000  4445          CLRALL                          /CLEAR CONTROL
3001  4436          ENMAN1                          /ENTER MAINTENANCE
3002  7326          CLA CLL CML RTL
3003  4445          CLRALL                          /DCLR
3004  1076          TAD     (1000                   /ENABLE SHIFT
3005  4447          LDMAN                           /LOAD MAINTENANCE
3006  7326          CLA CLL CML RTL
3007  1174          TAD     ST00N
3010  1063          TAD     (0004
3011  1101          TAD     (4000                   /EXPECTED STATUS
3012  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
3013  4450          RDBUF                           /READ BUFFER
3014  1152          TAD     REG1
3015  4434          RDSTAT                          /READ STATUS
3016  1151          TAD     REG2
3017  4443          LDCUR                           /LOAD CURRENT ADDRESS
3020  1150          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          LDBUF                           /LOAD BUFFER REGISTER
3026  1151          TAD     REG2
3027  4434          RDSTAT                          /READ STATUS
3030  4432          ACCMP1                          /CHECK RESULTS
3031  7610          SKP CLA                         /STATUS O.K,
3032  5241          JMP     T71E                    /ERROR, STATUS
3033  4445          CLRALL                          /CLEAR STATUS
3034  1174          TAD     ST00N                   /EXPECTED STATUS
3035  3162          DCA     GDREG2                  /SETUP COMPARE REGISTER
3036  4434          RDSTAT                          /READ STATUS
3037  4432          ACCMP1                          /CHECK RESULTS
3040  4427          NERROR                          /O.K, 4096 LOOPS
3041  4430  T71E,   ERROR                           /ERROR, STATUS REGISTER
3042  2777          TST71                           /SCOPE LOOP POINTER
3043  5002          5002                            /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,
                    /
3044  7240  TST72,  CLA CMA
3045  3152          DCA     REG1                    /SET FOR 1 PASS PER TEST
3046  7301          CLA CLL IAC
3047  4445          CLRALL                          /DCLR "CLR ALL"
3050  1174          TAD     ST00N
3051  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
3052  7326          CLA CLL CML RTL                 /TWO
3053  1152          TAD     M12
3054  3153          DCA     TCNTR1                  /FOR FINAL WORD!
3055  1137          TAD     M255
3056  3154          DCA     TCNTR2                  /FOR ONE LESS THAN "LAST WORD"
3057  4436          ENMAN1                          /ENTER MAINTENANCE MODE
3060  1152  T72N,   TAD     M12
3061  3155          DCA     TCNTR3                  /FOR EACH 12 BIT WORD
3062  1072          TAD     (0100                   /ENABLE BITS TO SHIFT SILO
3063  4447          LDMAN                           /LOAD MAINTENANCE
3064  2155          ISZ     TCNTR3                  /SKIP ON EVERY "12 BIT WORD"
3065  5263          JMP     .+2
3066  4450          RDBUF                           /THIS SHOULD PREVENT A "ORLY"
3067  4434          RDSTAT                          /GET STATUS
3070  4432          ACCMP1                          /CHECK RESULTS
3071  7610          SKP CLA
3072  5315          JMP     T72E                    /STATUS ERROR
3073  2154          ISZ     TCNTR2
3074  5260          JMP     T72R                    /COUNT 255 "12 BIT WORDS"
3075  1072          TAD     (0100                   /ENABLE SHIFT SILO
3076  4447          LDMAN                           /LOAD MAINTENANCE
3077  2153          ISZ     TCNTR1                  /BIT COUNTER
3100  5276          JMP     .-2                     /COUNT 11 BITS
3101  4434          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     GOREG2                  /SETUP COMPARE REGISTER
3110  1072          TAD     K0100
3111  4447          LDMAN                           /SHIFT IN LAST WORD
3112  4454          RDSTAT                          /READ STATUS
3113  4432          ACCMP1                          /ONLY TRANSFER DONE
3114  4427          NERROR                          /STATUS OK
3115  4430  T72E,   ERROR                           /ERROR, 12 BIT COUNTER
3116  3044          TST72                           /SCOP LOOP
3117  5000          5000                            /TEXT POINTER
                    /
3120  5721          JMP I   .+1                     /TO NEXT TEST
3121  3200          TST73
                    /
      3200          PAGE
                    /
                    /VERIFY THAT DCLR DOES CLEAR 12  BIT COUNTER
                    /
3200  7240  TST73,  CLA CMA
3201  3150          DCA     REG1                    /SET FOR 1 PASS PER TEST
3202  1137          TAD     M255
3203  3156          DCA     TCNTR4                  /SETUP COUNTER
3204  7301  T73R1,  CLA CLL IAC
3205  4445          CLRALL                          /DCLR "CLR ALL"
3206  1156          TAD     TCNTR4
3207  3153          DCA     TCNTR1
3210  1132  T73R2,  TAD     M12                     /12 BIT WORD COUNTER
3211  3154          DCA     TCNTR2                  /ENTER MAINTENANCE MODE
3212  4436          ENMAN1                          /ENABLE SHIFT
3213  1072          TAD     K0100                   /LOAD MAINTENANCE
3214  4447          LDMAN                           /COUNT SHIFTS
3215  2154          ISZ     TCNTR2                  /MORE TO GO
3216  5214          JMP     .-2                     /PREVENT DBL
3217  4450          RDBUF                           /DO IT 12 TIMES
3220  2153          ISZ     TCNTR1                  /MORE 12 BIT COUNTS
3221  5210          JMP     T73R2                   /ENABLE CLEAR CONTROL
3222  7301          CLA CLL IAC                     /AND CLEAR THE COUNTER
3223  4445          CLRALL
3224  1174          TAD     STCON                   /SETUP COMPARE REGISTER
3225  3160          DCA     GOREG2
3226  1132          TAD     M12                     /FOR FINAL WORD!
3227  3153          DCA     TCNTR1
3230  1137          TAD     M255                    /FOR ONE LESS THAN "LAST WORD"
3231  3154          DCA     TCNTR2                  /ENTER MAINTENANCE MODE
3232  4436          ENMAN1
3233  1132  T73R3,   TAD     M12
3234  3155          DCA     TCNTR3                  /FOR EACH 12 BIT WORD
3235  1072          TAD     K0100                   /ENABLE BITS TOSHIFT SILO
3236  4447          LDMAN                           /LOAD MAINTENANCE
3237  2155          ISZ     TCNTR3                  /SKIP ON EVERY "12 BIT WORD"
3240  5236          JMP     .-2
```



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3241  4450          RDBUF                           /THIS SHOULD PREVENT A "ORL"
3242  4454          RDSTAT                          /GET STATUS
3243  4432          ACCMP1                          /CHECK RESULTS
3244  7610          SKP CLA
3245  5266          JMP     T73E                    /STATUS ERROR
3246  2154          ISZ     TCNTR2
3247  5233          JMP     T73R3                   /COUNT 255 "12 BIT WORDS"
3250  7330          CLA CLL CML RAR
3251  1174          TAD     STCON
3252  3160          DCA     GOREG2                  /SETUP COMPARE REGISTER
3253  1072          TAD     K0100
3254  4447          LDMAN                           /SHIFT IN LAST WORD
3255  2153          ISZ     TCNTR1
3256  5254          JMP     .-2
3257  4434          RDSTAT                          /READ STATUS
3260  4432          ACCMP1                          /ONLY TRANSFER DONE
3261  7610          SKP CLA                         /STATUS O.K.,
3262  5266          JMP     T73E                    /ERROR, STATUS
3263  2156          ISZ     TCNTR4                  /UPDATE SPECIAL COUNTER
3264  5204          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. W DOES INHIBIT
                    /SETTING DB CONTINUE, THIS IS WHAT STOPS
                    /HALF BLOCK DATA BREAKS ON A READ BREAK.
                    /
3271  7301  TST74,  CLA CLL IAC
3272  4445          CLRALL                          /CLEAR CONTROL
3273  1072          TAD     K0107                   /HALF BLOCK TRANSFERS
3274  4442          LDCMD                           /LOAD COMMAND
3275  7340          CLA CLL CMA
3276  3150          DCA     REG1                    /SETUP FOR 1 PASS
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           ISZ     TCNTR2
3311  5307           JMP     .-2
3312  4450           RDBUF                           /READ LOWER BUFFER
3313  4432           ACCMP1                          /CHECK RESULTS
3314  7610           SKP CLA                         /DATA O.K.
3315  5340           JMP     T74E                    /ERROR
3316  2153           ISZ     TCNTR1                  /COUNT 128 WORDS
3317  5302           JMP     T74R1                   /MORE TO GO
3320  1135           TAD     M128
3321  3153           DCA     TCNTR1                  /SETUP COUNTER
3322  1132  T74R3,   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           ISZ     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 O.K.
3334  5340           JMP     T74E                    /ERROR
3335  2153           ISZ     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
                     /OSKP 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                          /DCLR "CLR ALL"
3347  1137           TAD     M255
3350  3153           DCA     TCNTR1                  /ONE LESS THAN "LAST WORD"
3351  1132           TAD     M12
3352  3154           DCA     TCNTR2                  /FINAL WORD
3353  4436           ENMAN1                          /ENTER MAINTENANCE MODE
3354  1132  T75R,    TAD     M12
3355  3155           DCA     TCNTR3                  /"12 BIT" WORD COUNTER
3356  1072           TAD     K0100
3357  4447           LDMAN                           /LOAD MAINTENANCE
3360  2155           ISZ     TCNTR3
3361  5357           JMP     .-2                     /COUNT 12 BIT WORDS
3362  4452           RDBUF                           /PREVENT "ORLM"
3363  4441           OSKSKP                          /SHOULD NOT SKIP HERE
3364  7610           SKP CLA                         /O.K.
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3365  5377           JMP     T75E                    /ERROR, OSKP
3366  2153           ISZ     TCNTR1
3367  5354           JMP     T75R                    /COUNT 255 WORDS
3370  1072           TAD     K0100
3371  4447           LDMAN                           /LOAD MAINTENANCE
3372  2154           ISZ     TCNTR2
3373  5371           JMP     .-2                     /DO ONE MORE WORD
3374  4441           OSKSKP                          /OSKP "SKIP"
3375  7610           SKP CLA                         /ERROR, OSKP DID NOT SKIP
3376  4427           NERROR                          /O.K. 4096 LOOPS
3377  4430  T75E,    ERROR                           /ERROR, OSKP
3400  3343           TST75                           /SCOPE LOOP POINTER
3401  0026           0026                            /TEXT POINTER
                     /
                     /VERIFY THAT TRANSFER DONE CAUSES "INT. RQ."
                     /
3402  7340  TST76,   CLA CLL CMA
3403  3150           DCA     REG1                    /SETUP FOR 1 PASS PER TEST
3404  7301           CLA CLL IAC
3405  4445           CLRALL                          /DCLR "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  T76R,    TAD     M12
3416  3155           DCA     TCNTR3                  /"12 BIT" WORD COUNTER
3417  1072           TAD     K0100                   /ENABLE SHIFT SILO
3420  4447           LDMAN                           /LOAD MAINTENANCE
3421  2155           ISZ     TCNTR3
3422  5220           JMP     .-2                     /COUNT "12 BIT" WORDS
3423  4450           RDBUF                           /PREVENT "ORLM"
3424  4431           IONWAT                          /WAIT FOR INT.
3425  7610           SKP CLA                         /O.K. NO INT.
3426  5240           JMP     T76E                    /ERROR, INT. OCCURED
3427  2153           ISZ     TCNTR1
3430  5215           JMP     T76R                    /COUNT 255 WORDS
3431  1072           TAD     K0100
3432  4447           LDMAN                           /LOAD MAINTENANCE
3433  2154           ISZ     TCNTR2
3434  5232           JMP     .-2                     /DO ONE MORE WORD
3435  4431           IONWAT                          /WAIT FOR EXPECTED INT.
3436  7610           SKP CLA                         /ERROR, INT. DIDN'T OCCUR
3437  4427           NERROR                          /O.K. 4096 LOOPS
3440  4430  T76E,    ERROR                           /ERROR, INT.
3441  3432           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                  /CLR "CLR ALL"
3445  4436           ENMAN1                  /ENTER MAINTENANCE MODE
3446  1172           TAD     HOMEMA          /CURRENT FIELD BITS
3447  1101           TAD     K4000           /ENABLE "WRITE"
3450  4442           LDCMD                   /LOAD COMMAND
3451  1176           TAD     REG1
3452  7110           CLL RAR
3453  7630           SZL CLA
3454  7340           CLA CLL CMA             /MAKE "DATA WORD"
3455  3160           DCA     GDREG2          /SETUP COMPARE REGISTER
3456  1160           TAD     GDREG2
3457  3000           DCA     0               /STORE OUT BOUND DATA
3460  7340           CLA CLL CMA
3461  4443           LDCUR                   /SET CURRENT ADDRESS TO 7777
3462  4443           LDCUR                   /LOAD CURRENT ADDRESS TO 0
3463  1071           TAD     K0042           /ENABLE "BREAK"
3464  4447           LOMAN                   /LOAD AND GO
3465  4450           RDBUF                   /READ DATA BUFFER
3466  4432           ACCMP1                  /CHECK RESULTS
3467  4427           NERROR                  /O.K, 4096 LOOPS

3470  4438  T79E,   ERROR                   /ERROR, DATA BREAK
3471  3443           TST77                   /SCOPE LOOP POINTER
3472  4263           4263                    /TEXT POINTER

                        /
                        /VERIFY THAT "DATA BREAK" WORKS FROM LOCATION 0
                        /OF CURRENT FIELD, DO  "A WRITE" AND USE DATA
                        /PATTERN "2525 AND 5252"
                        /
3473  7301  TST78,  CLA CLL IAC
3474  4445           CLRALL                  /CLR "CLR ALL"
3475  4436           ENMAN1                  /ENTER MAINTENANCE MODE
3476  1176           TAD     REG1
3477  7110           CLL RAR
3500  7630           SZL CLA
3501  1113           TAD     K2525
3502  1113           TAD     K2525           /MAKE DATA WORD
3503  3162           DCA     GDREG2          /SETUP COMPARE REGISTER
3504  1162           TAD     GDREG2
3505  3000           DCA     0               /STORE OUTBOUND DATA
3506  1172           TAD     HOMEMA          /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     K0042           /DATA BREAK ENABLE BIT
3515  4447           LOMAN                   /LOAD AND GO
3516  4450           RDBUF                   /READ DATA BUFFER
3517  4432           ACCMP1                  /CHECK RESULTS
3520  4427           NERROR                  /O.K, 4096 LOOPS
3521  4438  T78E,   ERROR                   /ERROR, DATA BREAK
```



```
3522  3471           TST78                   /SCOPE LOOP POINTER
3523  4263           4263                    /TEXT POINTER
                        /
                        /VERIFY THAT "DATA BREAK" WORK FROM LOCATION 7777
                        /OF CURRENT FIELD, DO A WRITE AND              USE DATA PATTERN
                        /2002 AND 7777.
                        /
3524  7301  TST79,  CLA CLL IAC             /DCLR "CLR ALL"
3525  4445           CLRALL                  /ENTER MAINTENANCE MODE
3526  4436           ENMAN1
3527  1150           TAD     REG1
3530  7110           CLL RAR
3531  7630           SZL CLA
3532  7340           CLA CLL CMA             /MAKE DATA WORD
3533  3160           DCA     GDREG2          /SETUP COMPARE REGISTER
3534  1160           TAD     GDREG2
3535  3926           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     HOMEMA          /WRITE ENABLE
3543  1101           TAD     K4000           /LOAD COMMAND REGISTER
3544  4442           LDCMD                   /BREAK ENABLE BIT
3545  1071           TAD     K0042           /LOAD AND GO
3546  4447           LOMAN                   /READ DATA BUFFER
3547  4450           RDBUF                   /CHECK RESULTS
3550  4432           ACCMP1                  /O.K, 4096 LOOPS
3551  4427           NERROR                  /ERROR, DATA BREAK
3552  4438  T79E,   ERROR                   /SCOPE LOOP POINTER
3553  3524           TST79                   /TEXT POINTER
3554  4263           4263

                        /
                        /VERIFY "DATA BREAK" FROM LOCATION 7777 OF
                        /CURRENT FIELD, DO A "WRITE" AND USE DATA
                        /PATTERN 2525 AND 5252.
                        /
3555  7301  TST80,  CLA CLL IAC             /DCLR "CLR ALL"
3556  4445           CLRALL                  /ENTER MAINTENANCE MODE
3557  4436           ENMAN1
3560  1150           TAD     REG1
3561  7112           CLL RAR
3562  7630           SZL CLA
3563  1113           TAD     K2525           /MAKE DATA WORD
3564  1113           TAD     K2525           /SETUP COMPARE REGISTER
3565  3162           DCA     GDREG2
3566  1162           TAD     GDREG2          /STORE OUTBOUND DATA
3567  3926           DCA I   K7777           /CURRENT FIELD BITS
3570  1172           TAD     HOMEMA          /FUNCTION "WRITE"
3571  1122           TAD     K5000           /LOAD COMMAND
3572  4442           LDCMD
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  3555          TST82                           /SCOPE LOOP POINTER
3606  4263          4263                            /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 "OT1")
                    /
3607  7321  TST81,   CLA CLL IAC
3610  4445          CLMALL                          /DCLR "CLR ALL"
3611  4436          ENMAN1                          /ENTER MAINTENANCE MODE
3612  1151          TAD     REG2
3613  3100          DCA     GDREG2                  /SETUP COMPARE REGISTER
3614  1160          TAD     GDREG2
3615  3000          DCA     0                       /STORE OUTBOUND DATA
3616  4443          LDCUR                           /SET CURRENT ADDRESS TO 0
3617  1172          TAD     HOMEMA                  /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          4263                            /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 "OT1")
                    /
3640  7301  TST82,   CLA CLL IAC
3641  4445          CLMALL                          /DCLR "CLR ALL"
3642  4436          ENMAN1                          /ENTER MAINTENANCE MODE

3643  1150          TAD     REG1
3644  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
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3645  1160          TAD     GDREG2
3646  3526          DCA I   K7777                   /STORE OUTBOUND DATA
3647  7340          CLA CLL CMA
3650  4443          LDCUR                           /SET CURRENT ADDRESS TO          7777
3651  1172          TAD     HOMEMA                  /CURRENT FIELD BITS
3652  1122          TAD     K5000                   /WRITE FUNCTION
3653  4442          LDCMD                           /LOAD COMMAND
3654  1071          TAD     K0040                   /BREAK ENABLE BIT
3655  4447          LDMAN                           /LOAD AND GO
3656  4450          RDBUF                           /READ BUFFER
3657  4432          ACCMP1                          /CHECK RESULTS
3660  7610          SKP CLA
3661  5267          JMP     T82E                    /ERROR
3662  1526          TAD I   K7777
3663  3170          DCA     DTREG                   /SAVE INCASE 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          4263                            /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  7321  TST83,   CLA CLL IAC
3673  4445          CLMALL                          /DCLR "CLR ALL"
3674  4436          ENMAN1                          /ENTER MAINTENANCE MODE
3675  1150          TAD     REG1
3676  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
3677  1160          TAD     GDREG2
3700  3523          DCA I   K7776                   /STORE OUTBOUND DATA BREAK 1
3701  1151          TAD     REG2
3702  3000          DCA     0                       /STORE OUTBOUND DATA BREAK 2
3703  1172          TAD     HOMEMA                  /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     TB3E                    /ERROR, DATA BREAK
3716  7301          CLA CLL IAC
3717  4445          CLMALL                          /DCLR "CLEAR CURRENT ADDRESS"
3720  4436          ENMAN1                          /ENTER MAINTENANCE MODE
3721  3167          DCA     ADREG                   /SETUP FOR ERROR PRINTER
3722  1172          TAD     HOMEMA                  /CURRENT FIELD BITS
3723  1122          TAD     K5000                   /FUNCTION WRITE
3724  4442          LDCMD                           /LOAD COMMAND
3725  1151          TAD     REG2
```

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3726  3160          DCA     GDREG2          /SETUP COMPARE REGISTER
3727  1071          TAD     K0040           /BREAK ENABLE BIT
3730  4447          LDMAN                   /LOAD AND GO
3731  4480          RDBUF                   /READ BUFFER

3732  4432          ACCMP1                  /CHECK RESULTS
3733  4427          NERROR                  /ALL WORKED 4096 LOOPS
3734  4430  T83E,   ERROR                   /ERROR, DATA BREAK
3735  3672          TST83                   /SCOPE LOOP POINTER
3736  4263          4263                    /TEXT POINTER
                    /
                    /VERIFY THAT CURRENT ADDRESS DOES INCREMENT FROM 7777
                    /TO 2000, DO A WRITE DATA BREAK AND USE DATA PATTERN
                    /ALL COMBINATION;
                    /
3737  7301  TST84,  CLA CLL IAC
3740  4465          CLRALL                  /CLEAR CONTROL
3741  1150          TAD     REG1
3742  3020          DCA     .               /STORE OUTBOUND DATA
3743  1151          TAD     REG2
3744  3026          DCA     .-K7777         /STORE OUTBOUND DATA
3745  7340          CLA CLL CMA
3746  4443          LDCUR                   /LOAD CURRENT ADDRESS
3747  4436          ENMAN1                  /ENTER MAINTENANCE MODE
3750  1122          TAD     K5020           /WRITE FUNCTION
3751  1172          TAD     .+MEMA          /CURRENT FIELD
3752  4442          LDCMD                   /LOAD COMMAND
3753  7364          CLA CLL CMA RAL
3754  3153          DCA     TCNTR1          /2 BREAK COUNTER
3755  1071          TAD     K0040           /ENABLE BREAK BIT
3756  4447          LDMAN                   /LOAD MAINTENANCE
3757  2153          ISZ     TCNTR1          /COUNT BREAKS
3760  5356          JMP     .-2             /DO 2
3761  7300          CLA CLL
3762  1151          TAD     REG2
3763  3160          DCA     GDREG2          /SETUP COMPARE REGISTER
3764  4480          RDBUF                   /GET FIRST WORD
3765  4432          ACCMP1                  /CHECK IT
3766  7610          SKP CLA                 /FIRST O.K.
3767  5376          JMP     T84E            /ERROR, FIRST WORD
3770  3167          DCA     ADREG           /SETUP ERROR PRINTER
3771  1150          TAD     REG1
3772  3160          DCA     GDREG2          /SETUP COMPARE REGISTER
3773  4480          RDBUF                   /GET SECOND WORD
3774  4432          ACCMP1                  /CHECK IT
3775  4427          NERROR                  /O.K. 4096 LOOPS
3776  4430  T84E,   ERROR                   /DATA BREAK
3777  3737          TST84                   /SCOPE LOOP POINTER
4000  4263          4263                    /TEXT POINTER
                    /
                    /
                    /VERIFY THAT CURRENT ADDRESS DOES INCREMENT
                    /ADDRESS TEST FROM 0200 TO TST83 OF CURRENT
                    /FIELD, DO A WRITE DATA BREAK;
                    /
```



```
4001  7301  TST85,  CLA CLL IAC
4002  4445          CLRALL                  /DCLR "CLR ALL"
4003  7340          CLA CLL CMA
4004  3150          DCA     REG1            /SETUP FOR 1 PASS PER TEST
4005  1073          TAD     K0200
4006  3154          DCA     TCNTR2          /START AT ADDRESS 0200
4007  1873          TAD     K0200
4010  4443          LDCUR                   /LOAD CURRENT ADDRESS
4011  4436  T85R1,  ENMAN1                  /ENTER MAINTENANCE MODE
4012  4444          LDADD                   /KEEP WRITE INHIBIT CLEAR
4013  1554          TAD I   TCNTR2          /GET INSTRUCTION
4014  3153          DCA     TCNTR1          /SAVE INSTRUCTION
4015  1154          TAD     TCNTR2
4016  7112          CLL RAR
4017  7630          SZL CLA
4020  7240          CLA CMA                 /USE DATA 7777
4021  3160          DCA     GDREG2          /SETUP COMPARE REGISTER
4022  1160          TAD     GDREG2
4023  3554          DCA I   TCNTR2            /STORE OUTBOUND DATA
4024  1172          TAD     .+MEMA          /CURRENT FIELD BITS
4025  1101          TAD     K4000           /WRITE FUNCTION
4026  4442          LDCMD                   /LOAD COMMAND REGISTER
4027  1071          TAD     K0040           /BREAK ENABLE BIT
4030  4447          LDMAN                   /LOAD AND GO
4031  7300          CLA CLL
4032  1153          TAD     TCNTR1          /GET INSTRUCTION
4033  3554          DCA I   TCNTR2            /REPLACE INSTRUCTION
4034  1154          TAD     TCNTR2
4035  3167          DCA     ADREG           /ADDRESS OF BREAK
4036  4480          RDBUF                   /GET DATA
4037  4432          ACCMP1                  /CHECK RESULTS
4040  7610          SKP CLA
4041  5251          JMP     T85E            /ERROR, DATA BREAK
4042  1154          TAD     TCNTR2
4043  1147          TAD     KT585           /SPECIAL POINTER FOR START OF
4044  7650          SNA CLA                 /THIS TEST;
4045  5250          JMP     T85OK           /TEST O.K.
4046  2154          ISZ     TCNTR2
4047  5211          JMP     T85R1           /LOOP DO 0200 TO TST00
                                            /THIS ADDRESS WORKED TRY NEXT
4050  4427  T85OK,  NERROR                  /ERROR, DATA BREAK
4051  4430  T85E,   ERROR                   /SCOPE LOOP POINTER
4052  4001          *TST85                  /TEXT POINTER
4053  4263          4263
                    /
                    /VERIFY THAT 8 LAST BREAK SETS AFTER 256 WRITE DATA BREAKS
                    /AND VERIFY THAT DCLR CLEARS WRITE INHIBIT COUNTER;
                    /
4054  7340  TST86,  CLA CLL CMA
4055  3150          DCA     REG1            /SETUP FOR 1 PASS PER TEST
4056  1137          TAD     M255
4057  3153          DCA     TCNTR1          /SPECIAL COUNTER
4060  7301  T86R1,  CLA CLL IAC
4061  4445          CLRALL                  /CLEAR CONTROL
4062  1153          TAD     TCNTR1
4063  3154          DCA     TCNTR2          /AMOUNT OF BREAKS TO DO
```

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4064  4436            ENMAN1                  /ENTER MAINTENANCE MODE
4065  1172            TAD     HOMEMA          /CURRENT FIELD BITS
4066  1101            TAD     K4000           /WRITE FUNCTION
4067  4442            LOCMD                   /LOAD COMMAND
4070  4443  T86R2,    LOCUR                   /LOAD CURRENT ADDRESS
4071  7340            CLA CLL CMA
4072  3000            DCA     0               /STORE OUTBOUND DATA
4073  7340            CLA CLL CMA
4074  3160            DCA     GDREG2          /SETUP COMPARE REGISTER
4075  1071            TAD     K0040           /BREAK ENABLE BIT
4076  4447            LDMAN                   /LOAD AND GO
4077  4450            RDBUF                   /GET WORD
4100  4432            ACCMP1                  /CHECK RESULTS
4101  7610            SKP CLA
4102  5352            JMP     T86E            /DATA ERROR
4103  2154            ISZ     TCNTR2
4104  5270            JMP     T86R2           /DO 0-255 BREAKS
4105  7301            CLA CLL IAC
4106  4445            CLRALL                  /CLEAR CONTROL AND COUNTER
4107  7340            CLA CLL CMA
4110  1137            TAD     K255
4111  3154            DCA     TCNTR2          /256 BREAK COUNTER
4112  7300  T86R3,    CLA CLL
                                              /MAKE DATA PATTERN
4113  3000            DCA     0               /STORE OUTBOUND DATA
4114  3160            DCA     GDREG2          /SETUP COMPARE REGISTER
4115  4436            ENMAN1                  /ENTER MAINTENANCE MODE
4116  4443            LOCUR                   /LOAD CURRENT ADDRESS
4117  1122            TAD     K5000           /WRITE FUNCTION
4120  1172            TAD     HOMEMA          /CURRENT FIELD
4121  4442            LOCMD                   /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 O.K.
4127  5352            JMP     T86E            /DATA ERROR
4130  2154            ISZ     TCNTR2
4131  5312            JMP     T86R3           /DO 256 WRITE BREAKS
4132  1102            TAD     K7000
4133  3154            DCA     TCNTR2          /CLEAR COUNTER
4134  7340  T86R4,    CLA CLL CMA
4135  3000            DCA     0               /STORE NOT OUTBOUND DATA
4136  4443            LOCUR                   /LOAD CURRENT ADDRESS
4137  1071            TAD     K0040           /ENABLE BREAK BIT
4140  4447            LDMAN                   /LOAD "SHOULD NOT BREAK"
4141  4450            RDBUF                   /GET DATA
4142  4432            ACCMP1                  /CHECK IT
4143  7610            SKP CLA                 /DATA O.K.
4144  5352            JMP     T86E            /ERROR, DATA BREAK INHIBIT
4145  2155            ISZ     TCNTR3
4146  5334            JMP     T86R4           /DO 7000 FAKEN BREAKS
4147  2153            ISZ     TCNTR1
4150  5260            JMP     T86R1           /START ALL OVER WITH ONE LESS
4151  4427            NEWNOR                  /TO NEXT TEST
```



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4152  4430  T86E1,    ERROR                   /ERROR, DATA BREAK
4153  4094            TST86                   /SCOPE LOOP POINTER
4154  4263            4263                    /TEXT POINTER
                      /
4155  5756            JMP I   .+1             /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
4201  3150            DCA     REG1            /SETUP FOR 1 PASS PER TEST
4202  1137            TAD     M255
4203  3153            DCA     TCNTR1          /SPECIAL COUNTER
4204  7301  T87R1,    CLA CLL IAC
4205  4445            CLRALL                  /CLEAR CONTROL
4206  1153            TAD     TCNTR1
4207  3154            DCA     TCNTR2          /AMOUNT OF BREAKS TO DO
4210  4436            ENMAN1                  /ENTER MAINTENANCE MODE
4211  1072            TAD     K0200           /HALF BIT
4212  1172            TAD     HOMEMA          /CURRENT FIELD BITS
4213  1101            TAD     K4000           /WRITE FUNCTION
4214  4442            LOCMD                   /LOAD COMMAND
4215  4443  T87R2,    LOCUR                   /LOAD CURRENT ADDRESS
4216  7340            CLA CLL CMA
4217  3000            DCA     0               /STORE OUTBOUND DATA
4220  7340            CLA CLL CMA
4221  3160            DCA     GDREG2          /SETUP COMPARE REGISTER
4222  1071            TAD     K0040           /BREAK ENABLE BIT
4223  4447            LDMAN                   /LOAD AND GO
4224  4450            RDBUF                   /GET WORD
4225  4432            ACCMP1                  /CHECK RESULTS
4226  7610            SKP CLA
4227  5271            JMP     T87E            /DATA ERROR
4230  2154            ISZ     TCNTR2
4231  5215            JMP     T87R2           /DO SO MANY BREAKS
4232  4444            LOAD                    /LOAD ADDRESS AND INHIBIT COUNT
4233  1135            TAD     M128
4234  3154            DCA     TCNTR2          /128 BREAK COUNTER
4235  7300  T87R3,    CLA CLL
                                              /MAKE DATA WORD
4236  3000            DCA     0               /STORE OUTBOUND DATA
4237  3160            DCA     GDREG2          /SETUP COMPARE REGISTER
4240  4443            LOCUR                   /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 O.K.
4246  5271            JMP     T87E            /DATA ERROR
4247  2154            ISZ     TCNTR2
4250  5235            JMP     T87R3           /DO 128 WRITE BREAKS
```

```
4251  1302            TAD     K7000
4252  3155            DCA     TCNTR3                  /CLEAR COUNTER
4253  7340    TB7N4,  CLA CLL CMA
4254  3800            DCA     Z                       /STORE NOT OUTBOUND DATA
4255  4443            LDCUR                           /LOAD CURRENT ADDRESS
4256  1071            TAD     K0040                   /ENABLE BREAK BIT
4257  4447            LDMAN                           /LOAD "B-0:" NOT BREAK"
4260  4450            RDBUF                           /GET DATA
4261  4452            ACCMP1                          /CHECK IT
4262  7610            SKP CLA                         /DATA O.K.
4263  5271            JMP     .+6                     /ERROR, DATA BREAK INHIBIT
4264  2155            ISZ     TCNTR3
4265  5253            JMP     .-22                     /DO 1302 FAKER BREAKS
4266  2153            ISZ     TCNTR1                  /START ALL OVER WITH ONE LESS
4267  5204            JMP     .+4                     /TO NEXT TST
4270  4427            NERROR                          /ERROR, DATA BREAK
4271  4432    TB7E.   ERROR                           /SCOPE LOOP POINTER
4272  4238            TST87                           /TEXT POINTER
4273  4263            4263

                /
                /VERIFY THAT "DATA BREAK" WORDS WITH A "READ"
                /TO LOCATION 0 OF CURRENT FIELD, USE DATA
                /PATTERN 0000 AND 7777,
                /
4274  7301    TST8 ,  CLA CLL IAC                     /CLR "CLA ALL"
4275  4445            CLHALL                          /CURRENT FIELD
4276  1172            TAD     HOMEMA                  /LOAD COMMAND TO 0
4277  4442            LDCMD
4300  1152            TAD     REG1
4301  7110            CLL RAR
4302  7630            SZL CLA
4303  7242            CLA CMA
4304  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
4305  1160            TAD     GDREG2                  /GET VALUE TO LOAD
4306  4421            LDBUF                           /LOAD UPPER BUFFER
4307  1071            TAD     K0040
4310  4447            LDMAN                           /LOAD AND GO
4311  7300            CLA CLL
4312  3167            DCA     ADREG                   /ADDRESS FOR PRINTER
4313  1800            TAD     @                       /GET INBOUND WORD
4314  3170            DCA     DTREG                   /SAVE IT
4315  1170            TAD     DTREG
4316  4432            ACCMP1                          /CHECK
4317  4427            NERROR                          /O.K. 4096 LOOPS
4320  4432            ERROR                           /ERROR, DATA BREAK
4321  4274            TST88                           /SCOPE LOOP POINTER
4322  4263            4263                            /TEXT POINTER


                /
                /VERIFY WITH A "READ" THAT "DATA BREAK" WORKS
                /FROM LOCATION 77777 OF CURRENT FIELD USE
                /DATA PATTERN 0000 AND 7777,
                /
4323  301     TST89,  CLA CLL IAC
```



```
4324  4445            CLHALL
4325  1076            TAD     <1300
4326  1172            TAD     HOMEMA                  /CURRENT FIELD
4327  4442            LDCMD                           /LOAD COMMAND FOR READ
4330  1152            TAD     REG1
4331  7110            CLL RAR
4332  7630            SZL CLA
4333  7242            CLA CMA
4334  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
4335  7240            CLA CMA
4336  4443            LDCUR                           /LOAD CURRENT ADDRESS
4337  1160            TAD     GDREG2                  /GET VALUE TO LOAD
4340  4421            LDBUF                           /LOAD UPPER BUFFER
4341  1071            TAD     K0040                   /ENABLE BREAK BIT
4342  4447            LDMAN                           /LOAD AND GO
4343  7302            CLA CLL
4344  1526            TAD I   K7777                   /GET INWORD
4345  3170            DCA     DTREG                   /SAVE INBOUND WORD
4346  1170            TAD     DTREG
4347  4432            ACCMP1                          /CHECK IT
4350  4427            NERROR                          /O.K. 4096 LOOPS
4351  4432            ERROR                           /ERROR, DATA BREAK
4352  4323            TST89                           /SCOPE LOOP POINTER
4353  4263            4263                            /TEXT POINTER

                /
                /VERIFY THAT "DATA BREAK" WITH A "READ" TO
                /CURRENT FIELD LOCATION 0 USE DATA PATTERN
                /5252 + 2525
                /
4354  7301    TST90,  CLA CLL IAC
4355  4445            CLHALL                          /CLR
4356  1172            TAD     HOMEMA                  /CURRENT FIELD
4357  4442            LDCMD                           /LOAD COMMAND TO READ
4360  1150            TAD     REG1
4361  7110            CLL RAR
4362  7630            SZL CLA                         /WHAT DDATA
4363  1113            TAD     K2525                   /DATA 5252
4364  1113            TAD     K2525
4365  3160            DCA     GDREG2                  /SETUP COMPARE REGISTER
4366  1160            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     @
4375  3170            DCA     DTREG                   /SAVE DATA
4376  1000            TAD     2
4377  4432            ACCMP1                          /CHECK
4400  4427            NERROR                          /O.K. 4096 LOOPS
4401  4430            ERROR                           /ERROR, DATA BREAK
4402  4394            TST90                           /SCOPE LOOP POINTER
4403  4263            4263                            /TEXT POINTER

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

```
                /TO CURRENT FIELD LOCATION LOCATION 7777,
                /USE DATA PATTERN 5252 + 2525
                /
4404  7301      TST91,  CLA CLL IAC
4405  4445              CLKALL
4406  1172              TAD     MDMEMA                  /CURRENT FIELD
4407  4442              LDCMD                           /LOAD COMMAND
4410  7240              CLA CMA
4411  4443              LDCUR                           /LOAD CURRENT ADDRESS
4412  1150              TAD     REG1
4413  7110              CLL RAR
4414  7638              SZL CLA                 /WHAT DATA TO USE
4415  1113              TAD     K2525                   /DATA 5252
4416  1113              TAD     K2525
4417  3167              DCA     GDREG2                  /SETUP COMPARE REGISTER
4420  1167              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  3176              DCA     DTREG                   /SAVE FOR ERROR PRINTER
4427  1176              TAD     DTREG
4430  4452              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              CLKALL                          /CLR "CLR ALL"
4437  4456              ENMAN1                          /ENTER MAINTENANCE MODE
4440  1127              TAD     M4
4441  3153              DCA     TCNTR1                  /FOR FOUR WORDS
4442  1150              TAD     REG1
4443  3154              DCA     TCNTR2                  /DATA START
4444  1172              TAD     MDMEMA                  /CURRENT FIELD
4445  1101              TAD     K4000                   /WRITE FUNCTION
4446  4442              LDCMD                           /LOAD COMMAND
4447  4443      T92R1,  LDCUR                           /LOAD CURRENT ADDRESS TO 0
4450  1154              TAD     TCNTR2
4451  3800              DCA     0                       /STORE OUT BOUND DATA
4452  1071              TAD     K0040                   /ENABLE BREAK BIT
4453  4447              LDMAN                           /LOAD AND GO
4454  7300              CLA CLL
4455  2154              ISZ     TCNTR2                  /UPDATE DATA WORD
4456  7000              NOP
4457  2153              ISZ     TCNTR1
4460  5247              JMP     T92R1                   /FILL BUFFER
4461  1127              TAD     M4
```



```
4462  3153              DCA     TCNTR1
4463  1150              TAD     REG1
4464  3160              DCA     GDREG2
4465  4450      T92R2,  RDBUF
4466  4432              ACCMP1
4467  7610              SKP     CLA
4470  5276              JMP     T92E
4471  2160              ISZ     GDREG2
4472  7000              NOP
4473  2153              ISZ     TCNTR1
4474  5265              JMP     T92R2
4475  4427              NERROR                          /O'K, 4096 LOOPS
4476  4430      T92E,   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
                /
      4600      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              CLKALL                          /CLR "CLR ALL"
4602  1172              TAD     MDMEMA                  /CURRENT FIELD
4603  4442              LDCMD                           /LOAD COMMAND FOR READ
4604  3167              DCA     ADREG                   /SAVE ADDRESS
4605  1151              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  4432              ERROR                           /ERROR, DATA BREAK
4622  4600              TST93                           /SCOPE LOOP POINTER
4623  4263              4263                            /TEXT POINTER
                /
                /VERIFY THAT A HEAD DATA BREAK DOES OCCUR
                /WHEN FUNCTION = 2
                /
4624  7301      TST94,  CLA CLL IAC
4625  4445              CLKALL                          /CLR
4626  1150              TAD     REG1                    /GET VALUE TO LOAD
4627  3160              DCA     GDREG2                  /SETUP COMPARE REGISTER
4630  1160              TAD     GDREG2
4631  4421              LDBUF                           /LOAD UPPER BUFFER
```

```
4632  1160          TAD     GDREG2
4633  7040          CMA
4634  3020          DCA     0
4635  4443          LDCUR                           /SET CURRENT ADDRESS TO 0
4636  1172          TAD     HOMEMA                  /CURRENT FIELD
4637  1077          TAD     K2022
4640  4442          LDCMD                           /LOAD COMMAND REGISTER
4641  1071          TAD     K0040                   /ENABLE BREAK
4642  4447          LOMAN                           /GO
4643  7300          CLA CLL
4644  1000          TAD     0
4645  3172          DCA     DTREG                   /SAVE FOR ERROR PRINTER
4646  1170          TAD     DTREG
4647  4432          ACOMP1                          /DID 0 CHANGE
4650  4427          NERROR                          /ALL O'K,
4651  4430  T94E,   ERROR                           /ERROR, DATA BREAK
4652  4624          TST94                           /SCOPE LOOP POINTER
4653  4263          4263                            /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  3020          DCA     0
4665  4443          LDCUR                           /SET CURRENT ADDRESS TO 0
4666  1172          TAD     HOMEMA                  /CURRENT FIELD
4667  1076          TAD     K1000
4670  1077          TAD     K2000
4671  4442          LDCMD                           /LOAD COMMAND REGISTER
4672  1071          TAD     K0040                   /ENABLE BREAK
4673  4447          LOMAN                           /GO
4674  7300          CLA CLL
4675  1000          TAD     0
4676  3170          DCA     DTREG                   /SAVE FOR ERROR PRINTER
4677  1170          TAD     DTREG
4700  4432          ACOMP1                          /DID 0 CHANGE
4701  4427          NERROR                          /ALL O'K,
4702  4430  T95L,   ERROR                           /ERROR, DATA BREAK
4703  4654          TST95                           /SCOPE LOOP POINTER
4704  4263          4263                            /TEXT POINTER
                    /
4705  5706          JMP I   .+1                     /TO NEXT TEST
4706  5000          TST97
                    /
      5042          PAGE
                    /
                    /VERIFY THAT A READ DATA BREAK DOES OCCUR
                    /WHEN FUNCTION = 6
```



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                    /
5200  7301  TST97,  CLA CLL IAC
5201  4445          CLRALL                          /DCLR
5202  1150          TAD     REG1
5203  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
5204  1160          TAD     GDREG2
5205  4421          LDBUF                           /LOAD UPPER BUFFER
5206  1160          TAD     GDREG2
5207  7040          CMA
5210  3020          DCA     2
5211  4443          LDCUR                           /SET CURRENT ADDRESS TO 0
5212  1172          TAD     HOMEMA                  /CURRENT FIELD
5213  1101          TAD     K4000
5214  1077          TAD     K2000
5215  4442          LDCMD                           /LOAD COMMAND REGISTER
5216  1071          TAD     K0040                   /ENABLE BREAK
5217  4447          LOMAN                           /GO
5220  7300          CLA CLL
5221  1000          TAD     0
5222  3170          DCA     DTREG                   /SAVE FOR ERROR PRINTER
5223  1170          TAD     DTREG
5224  4432          ACOMP1                          /DID 0 CHANGE
5225  4427          NERROR                          /ALL O'K,
5226  4430  T97L,   ERROR                           /ERROR, DATA BREAK
5227  5000          TST97                           /SCOPE LOOP POINTER
5230  4263          4263                            /TEXT POINTER
                    /
                    /VERIFY THAT A READ DATA BREAK DOES OCCUR
                    /WHEN FUNCTION = 7
                    /
5231  7301  TST98,  CLA CLL IAC
5232  4445          CLRALL                          /DCLR
5233  1151          TAD     REG2
5234  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
5235  1160          TAD     GDREG2
5236  4421          LDBUF                           /LOAD UPPER BUFFER
5237  1160          TAD     GDREG2
5240  7040          CMA
5241  3020          DCA     0
5242  4443          LDCUR                           /SET CURRENT ADDRESS TO 0
5243  1172          TAD     HOMEMA                  /CURRENT FIELD
5244  1101          TAD     K4000
5245  1076          TAD     K1000
5246  1077          TAD     K2000
5247  4442          LDCMD                           /LOAD COMMAND REGISTER
5250  1071          TAD     K0040                   /ENABLE BREAK
5251  4447          LOMAN                           /GO
5252  7300          CLA CLL
5253  1000          TAD     0
5254  3170          DCA     DTREG                   /SAVE FOR ERROR PRINTER
5255  1170          TAD     DTREG
5256  4432          ACOMP1                          /DID 0 CHANGE
5257  4427          NERROR                          /ALL O'K,
5260  4430  T98L,   ERROR                           /ERROR, DATA BREAK
5261  5231          TST98                           /SCOPE LOOP POINTER
```

```
5202  4263          4263                            /TEXT POINTER
                    /
                    /VERIFY THAT ALL DATA BUFFERS CAN BE FULL
                    /AT ONCE, USE A READ BREAK AND PATTERN
                    /ALL COMBINATIONS.
                    /
5203  7301    TST99,  CLA CLL IAC
5204  4445          CLRALL                          /DCLR "CLR ALL"
5205  1151          TAD     REG2
5206  3145          DCA     TCNTR4
5207  1127          TAD     M4
5210  3155          DCA     TCNTR3                  /COUNTER FOR # OF BUFFERS
5211  1156    T99R1,  TAD     TCNTR4
5212  4421          LOBUF                           /LOAD UPPER BUFFER
5213  7340          CLA CLL CMA
5214  1156          TAD     TCNTR4
5215  3156          DCA     TCNTR4
5216  2155          ISZ     TCNTR3
5217  5271          JMP     T99R1                   /# COUNT, SKIP WHEN BUFFERS FULL
5220  1151          TAD     REG2
5221  3160          DCA     GDREG2                  /SETUP FOR FIRST COMPARE
5222  1127          TAD     M4
5223  3155          DCA     TCNTR3
5224  1172          TAD     MDMEMA                  /CURRENT FIELD
5225  4442          LDCMD                           /LOAD COMMAND
5226  4443    T99R2,  LDCUR                           /LOAD CURRENT ADDRESS
5227  1071          TAD     K0040                   /SET ENABLE BREAK
5230  4447          LDMAN                           /LOAD MAINTENANCE
5231  7300          CLA CLL,
5232  1000          TAD     @                       /GET DATA
5233  3170          DCA     DTREG                   /SAVE FOR PRINTER
5234  1170          TAD     DTREG
5235  4432          ACCMP1                          /CHECK
5236  7610          SKP CLA                         /O.K, CHECK NEXT
5237  5326          JMP     T99E                    /ERROR DATA BUFFERS
5240  7340          CLA CLL CMA
5241  1160          TAD     GDREG2
5242  3160          DCA     GDREG2                  /SETUP FOR NEXT
5243  2155          ISZ     TCNTR3
5244  5306          JMP     T99R2
5245  4427          NERROR                          /O.K, 4096 LOOPS
5246  4430    T99E,   ERROR                           /ERROR, DATA BUFFERS
5247  5063          TST99                           /SCOPE LOOP POINTER
5250  4263          4263                            /TEXT POINTER
                    /
                    /
                    /VERIFY A WRITE THEN READ BREAK FROM
                    /LOCATIONS 7777 THEN 0000 OF THE
                    /CURRENT FIELD,  USE PATTERN 0-7777.
                    /
5251  7301    TST100, CLA CLL IAC
5252  4445          CLRALL                          /CLEAR CONTROL
5253  4436          ENMANI                          /ENTER MAINTENANCE
5254  7340          CLA CLL CMA
5255  4443          LDCUR                           /LOAD CURRENT ADDRESS
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```
5256  1151          TAD     REG2
5257  3526          DCA I   K7777                   /STORE OUT BOUND DATA
5260  1172          TAD     MDMEMA                  /CURRENT FIELD

5261  1101          TAD     K4000                   /WRITE FUNCTION
5262  4442          LDCMD                           /LOAD COMMAND REGISTER
5263  1071          TAD     K0040                   /ENABLE BREAK
5264  4447          LDMAN                           /ISSUE MAINTENANCE IOT
5265  7300          CLA CLL                         /READ FUNCTION
5266  1172          TAD     MDMEMA                  /CURRENT FIELD
5267  4442          LDCMD                           /LOAD COMMAND REGISTER
5270  1071          TAD     K0040                   /ENABLE BREAK
5271  4447          LDMAN                           /ISSUE MAINTENANCE IOT
5272  7300          CLA CLL
5273  2167          ISZ     ADREG
5274  7000          NOP
5275  1151          TAD     REG2
5276  3160          DCA     GDREG2                  /SETUP COMPARE
5277  1000          TAD     @
5300  3170          DCA     DTREG                   /STORE DATA READ FOR PRINTER
5301  1000          TAD     @
5302  4432          ACCMP1                          /CHECK RESULTS
5303  4427          NERROR                          /O.K, 4096 LOOPS
5304  4430          ERROR                           /ERROR, WRITE OR READ
5305  5131          TST100                          /SCOPE POINTER
5306  4263          4263
5307  7301          CLA CLL IAC
5310  1173          TAD     FLDMAX
5311  7650          SNA CLA                         /IS IT TEST EXTENDED MEM,
5312  5424          JMP I   XEND                    /NO, END OF TEST
                    /
5313  5774          JMP I   .+1                     /TO NEXT TEST
5314  5200          TST101
                    /
        5200    PASE
                    /
                    /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          CLRALL                          /DCLR
5202  4436          ENMANI                          /ENTER MAINTENANCE MODE
5203  1144          TAD     KCDF
5204  3225          DCA     TOPLD2                  /START FIELD 0
5205  1173          TAD     FLDMAX
5206  3153          DCA     TCNTR1                  /FIELDS TO TEST -1
5207  1425          TAD I   THSFLD
```

```
5210  3227          DCA     RTFLD2                  /RETURN FIELD CDF
5211  1150          TAD     REG1
5212  7110          CLL RAR
5213  7632          SZL CLA                         /USE DATA 7777 IF LINK IS SET
5214  7242          CLA CMA
5215  3160          DCA     GDREG2                  /SETUP COMPARE REGISTER
5216  4443  T101M, LOCUR                           /SET CURRENT ADDRESS TO 0000
5217  1225          TAD     TOFLD2
5220  7041          CIA
5221  1227          TAD     RTFLD2
5222  7650          SNA CLA                         /CURRENT FIELD
5223  5242          JMP     NEXFL2                  /YES, NOT THIS ONE
5224  1160          TAD     GDREG2                  /OUTBOUND DATA
5225  7422  TOFLD2, HLT                             /MODIFIED CDF
5226  3497          DCA I   K0000                   /STORE DATA
5227  7402  RTFLD2, HLT                             /HOME CDF
5230  1225          TAD     TOFLD2
5231  0107          AND     K0070
5232  1101          TAD     K4000                   /WRITE
5233  4442          LDCMD                           /LOAD COMMAND REGISTER
5234  1071          TAD     K0042                   /ENABLE WRITE BREAK
5235  4447          LDMAN                           /GO
5236  4452          RDBUF                           /GET RESULTS
5237  4432          #COMP1                          /CHECK RESULTS
5240  7610          SKP CLA                         /O.K, TRY NEXT
5241  5292          JMP     T101E                   /ERROR
5242  2193  NEXFL2, ISZ     TCNTR1
5243  7610          SKP CLA
5244  5251          JMP     T101D                   /DONE WITH ALL
5245  1225          TAD     TOFLD2
5246  1066          TAD     K0010
5247  3225          DCA     TOFLD2                  /SET TO NEXT FIELD
5250  5216          JMP     T101M                   /TRY IT
5251  4427  T101D, NERROR                          /O.K 4096 LOOPS
5252  4433  T101E, ERROR                           /ERROR, DATA BREAK
5253  5200          TST1P1                          /SCOPE LOOP POINTER
5254  4263          4263                            /TEXT POINTER
                    /
5255  5656          JMP I   .+1                     /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                          /CLR
5402  4436          ENMAN1                          /ENTER MAINTENANCE MODE
5403  1144          TAD     KCDF
5404  3226          DCA     TOFLD3                  /START FIELD 0
5405  1173          TAD     FLDMAX
5406  3153          DCA     TCNTR1                  /FIELDS TO TEST +1
5407  1425          TAD I   THSFLD
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5410  3230          DCA     RTFLD3                  /RETURN FIELD CDF
5411  1150          TAD     REG1
5412  7110          CLL RAR
5413  7632          SZL CLA                         /USE DATA 5252 IF LINK IS SET
5414  1213          TAD     K2525
5415  1213          TAD     K2525
5416  3162          DCA     GDREG2                  /SETUP COMPARE REGISTER
5417  4443  T102M, LOCUR                           /SET CURRENT ADDRESS TO 0000
5420  1226          TAD     TOFLD3
5421  7041          CIA
5422  1230          TAD     RTFLD3
5423  7650          SNA CLA                         /CURRENT FIELD
5424  5243          JMP     NEXFL3                  /YES, NOT THIS ONE
5425  1160          TAD     GDREG2                  /OUTBOUND DATA
5426  7402  TOFLD3, HLT                             /MODIFIED CDF
5427  3497          DCA I   K0000                   /STORE DATA
5430  7402  RTFLD3, HLT                             /HOME CDF
5431  1226          TAD     TOFLD3
5432  0107          AND     K0070
5433  1101          TAD     K4000                   /WRITE
5434  4442          LDCMD                           /LOAD COMMAND REGISTER
5435  1071          TAD     K0042                   /ENABLE WRITE BREAK
5436  4447          LDMAN                           /GO
5437  4452          RDBUF                           /GET RESULTS
5440  4432          #COMP1                          /CHECK RESULTS
5441  7610          SKP CLA                         /O.K, TRY NEXT
5442  5253          JMP     T102E                   /ERROR
5443  2193  NEXFL3, ISZ     TCNTR1
5444  7610          SKP CLA
5445  5252          JMP     T102D                   /DONE WITH ALL
5446  1226          TAD     TOFLD3
5447  1066          TAD     K0010
5450  3226          DCA     TOFLD3                  /SET TO NEXT FIELD
5451  5217          JMP     T102M                   /TRY IT
5452  4427  T102D, NERROR                          /O.K 4096 LOOPS
5453  4433  T102E, ERROR                           /ERROR, DATA BREAK
5454  5400          TST102                          /SCOPE LOOP POINTER
5455  4263          4263                            /TEXT POINTER
                    /
                    /VERIFY THAT DATA BREAK WORKS WITH A WRITE FROM
                    /LOCATION 7777 IN ALL EXISTING EXTENDED FIELDS,
                    /USE DATA PATTERN 0000 + 7777,
                    /
5456  7301  TST103, CLA CLL IAC
5457  4445          CLRALL                          /CLR
5460  4436          ENMAN1                          /ENTER MAINTENANCE MODE
5461  1144          TAD     KCDF
5462  3224          DCA     TOFLD4                  /START FIELD 0
5463  1173          TAD     FLDMAX
5464  3153          DCA     TCNTR1                  /FIELDS TO TEST +1
5465  1425          TAD I   THSFLD
5466  3226          DCA     RTFLD4                  /RETURN FIELD CDF
5467  1150          TAD     REG1
5470  7110          CLL RAR
5471  7630          SZL CLA                         /USE DATA 7777 IF LINK IS SET
```

```
5472  7240            CLA CMA
5473  3160            DCA     GOREG2                  /SETUP COMPARE REGISTER
5474  7240  T173R,    CLA CMA
                      LOCUR                           /SET CURRENT ADDRESS TO 7777
5475  4443
5476  1324            TAD     TOFLD4
5477  7041            CIA
5500  1306            TAD     RTFLD4
5501  7650            SNA CLA                         /CURRENT FIELD
5502  5321            JMP     NEXFL4                  /YES, NOT THIS ONE
5503  1160            TAD     GOREG2                  /OUTBOUND DATA
5504  7402  TOFLD4,   HLT                             /MODIFIER OOF
5505  3526            DCA I   K7777                   /STORE DATA
5506  7402  RTFLD4,   HLT                             /HOME OOF
5507  1324            TAD     TOFLD4
5510  7127            AND     K007M
5511  1101            TAD     K4000                   /WRITE
5512  4442            LOCMD                           /LOAD COMMAND REGISTER
5513  1071            TAD     K0040                   /ENABLE WRITE BREAK
5514  4447            LDMAN                           /GO
5515  4450            RDBUF                           /GET RESULTS
5516  4432            ACCMP1                          /CHECK RESULTS
5517  7610            SKP CLA                         /O'K, TRY NEXT
5520  5331            JMP     T103E                   /ERROR
5521  2153  NEXFL4,   ISZ     TCNTR1
5522  7610            SKP CLA
5523  5330            JMP     T103D                   /DONE WITH ALL
5524  1324            TAD     TOFLD4
5525  1066            TAD     K0010
5526  3324            DCA     TOFLD4                  /SET TO NEXT FIELD
5527  5274            JMP     T103R                   /TRY IT
5530  4427  T103D,    NERROR                          /O'K 4096 LOOPS
5531  4430  T103E,    ERROR                           /ERROR, DATA BREAK
5532  5456            TST103                          /SCOPE LOOP POINTER
5533  4263            4263                            /TEXT POINTER
                      /
5534  5735            JMP I   .+1                     /TO NEXT TEST
5535  5600            TST104
                      /
      5600            PAGE
                      /
                      /VERIFY THAT DATA BREAK WORKS WITH A WRITE FROM
                      /LOCATION 7777 IN ALL EXISTING EXTENDED FIELDS;
                      /USE DATA PATTERN 2525 + 5252;
                      /
5600  7301  TST104,   CLA CLL IAC                     /DCLR
5601  4445            CLRALL                          /ENTER MAINTENANCE MODE
5602  4436            ENMAN1
5603  1144            TAD     KCOF                    /START FIELD 0
5604  3227            DCA     TOFLD5
5605  1173            TAD     FLDMAX                  /FIELDS TO TEST -1
5606  3153            DCA     TCNTR1
5607  1425            TAD I   THEFLD                  /RETURN FIELD OOF
5610  3231            DCA     RTFLD5
5611  1190            TAD     REG1
5612  7410            CLL RAR
```



```
                                                      /USE DATA 5252 IF LINK IS SET
5613  7630            SZL CLA
5614  1113            TAD     K2525
5615  1113            TAD     K2525
5616  3160            DCA     GOREG2                  /SETUP COMPARE REGISTER
5617  7240  T184R,    CLA CMA
                      LOCUR                           /SET CURRENT ADDRESS TO 7777
5620  4443
5621  1227            TAD     TOFLD5
5622  7041            CIA
5623  1231            TAD     RTFLD5
5624  7650            SNA CLA                         /CURRENT FIELD
5625  5244            JMP     NEXFL5                  /YES, NOT THIS ONE
5626  1160            TAD     GOREG2                  /OUTBOUND DATA
5627  7402  TOFLD5,   HLT                             /MODIFIER OOF
5630  3526            DCA I   K7777                   /STORE DATA
5631  7402  RTFLD5,   HLT                             /HOME OOF
5632  1227            TAD     TOFLD5
5633  7107            AND     K007M
5634  1101            TAD     K4000                   /WRITE
5635  4442            LOCMD                           /LOAD COMMAND REGISTER
5636  1071            TAD     K0040                   /ENABLE WRITE BREAK
5637  4447            LDMAN                           /GO
5640  4450            RDBUF                           /GET RESULTS
5641  4432            ACCMP1                          /CHECK RESULTS
5642  7610            SKP CLA                         /O'K, TRY NEXT
5643  5254            JMP     T184E                   /ERROR
5644  2173  NEXFL5,   ISZ     TCNTR1
5645  7610            SKP CLA
5646  5253            JMP     T184D                   /DONE WITH ALL
5647  1227            TAD     TOFLD5
5650  1066            TAD     K0010
5651  3227            DCA     TOFLD5                  /SET TO NEXT FIELD
5652  5217            JMP     T184R                   /TRY IT
5653  4427  T184D,    NERROR                          /O'K 4096 LOOPS
5654  4430  T184E,    ERROR                           /ERROR, DATA BREAK
5655  5620            TST184                          /SCOPE LOOP POINTER
5656  4263            4263                            /TEXT POINTER
                      /
                      /VERIFY THAT DATA BREAK WORKS FROM ALL LOCATIONS
                      /IN ALL EXISTING EXTENDED FIELDS,
                      /USE DATA PATTERN ALL COMBINATIONS
                      /
5657  1144  TST185,   TAD     KCOF
5660  3300            DCA     TOFLD1
5661  1173            TAD     FLDMAX
5662  3153            DCA     TCNTR1
5663  1425            TAD I   THEFLD
5664  3324            DCA     RTFLD1
5665  1150            TAD     REG1
5666  7100            DCA     GOREG2                  /SETUP COMPARE REGISTER
5667  7301  T185M,    CLA CLL IAC                     /DCLR
5670  4445            CLRALL                          /ENTER MAINTENANCE MODE
5671  4436            ENMAN1
5672  1302            TAD     TOFLD1
5673  7041            CIA
5674  1324            TAD     RTFLD1
```

```
5675  7650            SNA CLA                         /IS IT CURRENT FIELD
5676  9334            JMP     NEXFL1                  /YES, BYPASS
5677  1160            TAD     GDREG2
5700  7000    TOFLD1, 0                               /MODIFIED DCF
5701  3351            DCA I   REG2                    /STORE DATA WORD
5702  1320            TAD     TOFLD1
5703  0107            AND     K0070                   /MASK OF BITS
5704  1101            TAD     K4000
5705  4442            LDCMD                           /LOAD COMMAND REGISTER
5706  1151            TAD     REG2
5707  4443            LDCUR                           /LOAD CURRENT ADDRESS
5710  1071            TAD     K0042                   /ENABLE BREAK
5711  4447            LDMAN                           /GO
5712  7341            CLA CLL IAC
5713  1151            TAD     REG2
5714  3147            DCA     ADREG                   /SETUP BREAK TO ADDRESS
5715  1300            TAD     TOFLD1
5716  0107            AND     K0070                   /MASK FIELD BITS
5717  4442            LDCMD                           /LOAD COMMAND
5720  1071            TAD     K0040
5721  4447            LDMAN                           /LOAD MAINTENANCE
5722  7300            CLA CLL
5723  1547            TAD I   ADREG                   /GET DATA READ
5724  0000    RTFLD1, 0                               /CURRENT FIELD DCF
5725  3170            DCA     D*REG                   /STORE FOR PRINTER
5726  1170            TAD     D*REG
5727  4432            ADCMP1                          /CHECK RESULTS
5730  7410            SKP CLA                         /THIS FIELD O.K.
5731  5344            JMP     T135E                   /ERROR
5732  2160            ISZ     GDREG2                  /UPDATE WORD
5733  7000            NOP
5734  2153    NEXFL1, ISZ     TCNTR1
5735  7010            SKP CLA
5736  5343            JMP     .+3                     /ALL DONE
5737  1300            TAD     TOFLD1
5740  1066            TAD     K0010
5741  3300            DCA     TOFLD1
5742  5267            JMP     T105R                   /TRY NEXT FIELD
5743  4427    T105D,  NERROR                          /O.K, NEXT ADDRESS
5744  4430    T105E,  ERROR                           /ERROR, DATA BREAK
5745  5657            TSTLPS                          /SCOPE LOOP POINTER
5746  4263            4263                            /TEXT POINTER
                /
5747  4576    ENDTST, JMS I   KSET                    /SETUP FIELD 0
5750  1175            TAD     SAVEND
5751  3526            DCA I   K7777                   /REPLACE BINARY
5752  4454            CRLF
5753  4451            PRNTER                          /PRINT END OF TEST MESSAGE
5754  7320            TEXEND                          /POINTER
5755  7604            LAS
5756  7004            RAL
5757  7700            SMA CLA
5760  7402    ENDHLT, HLT                             /END OF TEST
5761  7301            CLA CLL IAC
5762  4445            CLRALL                          /CLR
```



```
5763  5764            JMP I   .+1                     /LOOP ON PROGRAM
5764  0256            TSTA
                /
        6000    PAGE
                /
                /MANUAL TEST FOR 16 BIT COUNTER,
                /SET SWITCH REGISTER TO 0201 AND PRESS
                /LOAD ADDRESS, SET THE SWITCH REGISTER TO 0000,
                /THEN PRESS CLEAR AND CONTINUE,
                /SCOPE THE 16TH CARRY OUTPUT TEST POINT
                /FOR A GROUND TO +3 VOLT SIGNAL,
                /
6000  7321    MANUAL, CLA CLL IAC                     /FIRST, CLEAR CONTROL
6001  4445            CLRALL                          /ENTER MAINTENANCE MODE
6002  4436            ENMAN1                          /ENABLE SHIFT PULSES
6003  1272            TAD     K0200                   /ISSUE MAINTENANCE IOT AND
6004  4447            LDMAN                           /CAUSE 16 MAIN SHIFTS TO THE
6005  5204            JMP     .+1                     /INPUT OF THE 16 BIT COUNTER,
6006  5204            JMP     .+2
                /
        6200    PAGE
                /
                /SUBROUTINE FOR "ERRORS," SCOPE LOOPS, AND
                /ERROR TYPEOUTS,
                /
6200  2000    ERRO,   0
6201  7300            CLA CLL
6202  1600            TAD I   ERRO                    /GET SCOPE LOOP POINTER
6203  3335            DCA     BERRO                   /SAVE FOR RETURN
6204  7624            LAS                             /GET SWR#
6205  7720            SMA CLA                         /IS IT SCOPE LOOP
6206  5216            JMP     .+10                    /NO SCOPE
6207  7634            LAS                             /GET SWITCH ?
6210  7006            RTL
6211  7710            SPA CLA                         /INHIBIT ERROR BELL
6212  5735            JMP I   SERRO                   /YES
6213  1074            TAD     K0207
6214  4426            TYPE
6215  5735            JMP I   SERRO                   /NO
6216  2200            ISZ     ERRO
6217  4454            CRLF
6220  4454            CRLF
6221  1600            TAD I   ERRO                    /GET TEXT POINTER
6222  0141            AND     K0017                   /MASK 8-11
6223  1343            TAD     MEDTAD                  /MAKE ERROR HEADER TAD
6224  3225            DCA     .+1                     /MODIFIED HEADER TAD
6225  7402            HLT
6226  1230            DCA     .+2                     /MODIFIED HEADER POINTER
6227  4451            PRNTER
6230  7402            HLT
6231  4454            CRLF                            /PRINT PC!
6232  4451            PRNTER
6233  7136            TEXPC
6234  7340            CLA CLL CMA
6235  1200            TAD     ERRO                    /GET PC POINTER
```

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6236  4452            OCTEL                   /PRINT PC STORED
6237  1620            TAD I   ERR0           /GET TEXT POINTER
6240  7104            CLL RAL
6241  7420            SNL
6242  5256            JMP     NTGD            /NOT GOI REGISTER

6243  3200            DCA     ERR0            /PRINT GOI
6244  4451            PRNTER
6245  7140            TEXGO
6246  1220            TAD     ERR0            /WAS IT A 6 BIT OCTAL BYTE
6247  7700            SMA CLA                 /NO
6250  5253            JMP     .+3             /GET DATA
6251  1157            TAD     GOREG1          /PRINT TWO OCTAL
6252  4453            TWOCT
6253  1160            TAD     GOREG2          /PRINT FOUR OCTAL
6254  4452            OCTEL
6255  7610            SKP CLA
6256  3200  NTGD,     DCA     ERR0            /GET TEXT POINTER
6257  1200            TAD     ERR0
6260  7104            CLL RAL
6261  7420            SNL
6262  5273            JMP     NTCRC
6263  3200            DCA     ERR0            /PRINT CRI
6264  4451            PRNTER
6265  7142            TEXCR
6266  1161            TAD     CRREG1          /PRINT
6267  4453            TWOCT
6270  1162            TAD     CRREG2          /PRINT FOUR OCTAL
6271  4452            OCTEL
6272  7610            SKP CLA
6273  3200  NTCRC,    DCA     ERR0
6274  1357            TAD     XTEXT
6275  3342            DCA     PCNTR2
6276  1340            TAD     XREG
6277  3010            DCA     AUTO10
6300  1125            TAD     K7771           /COUNTER FOR    # OF HEADS
6301  3341            DCA     PCNTR1          /GET TEXT POINTER
6302  1200  STRAGT,   TAD     ERR0
6303  7500            SMA                     /NOT THIS ONE
6304  5327            JMP     NOTEX
6305  7104            CLL RAL
6306  3200            DCA     ERR0            /GET TEXT MESSAGE POINTER
6307  1342            TAD     PCNTR2
6310  2342            ISZ     PCNTR2          /STORE FOR PRNTER
6311  2342            ISZ     PCNTR2          /PRINT XXI
6312  3314            DCA     .+2             /MODIFIED TEXT POINTER
6313  4451            PRNTER
6314  7402            HLT
6315  1410            TAD I   AUTO10          /PRINT FOUR OCTAL
6316  4452            OCTEL
6317  2341  BAKPNT,   ISZ     PCNTR1          /CHECK FOR NEXT XXI
6320  5302            JMP     STRAGT          /GET CONSTANT SAVED
6321  1175            TAD     SAVEND          /REPLACE LAST LOCATION
6322  3526            DCA I   K7777
```



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6323  7402  ERHLT9,   HLT                     /ALL RECOVERABLE ERROR HALTS
6324  4736            JMS I   XDUMP           /CHECK FOR GET ALL REGISTERS
6325  5735            JMP I   SERR0           /TRY SAME TEST AGAIN
6326  5256            JMP     NTGD            /GET ALL REGISTERS
6327  7104  NOTEX,    CLL RAL
6330  3200            DCA     ERR0
6331  2342            ISZ     PCNTR2
6332  2342            ISZ     PCNTR2
6333  2010            ISZ     AUTO10
6334  5317            JMP     BAKPNT
                      /
6335  0000  SERR0,    0
6336  6746  XDUMP,    DUMP
6337  7144  XTEXT,    TEXST
6340  0162  XREG,     CRREG2
6341  0000  PCNTR1,   0
6342  0000  PCNTR2,   0
6343  1344  HEDTAB,   TAD     HEDLST
6344  7162  HED_ST,   ERTX1
6345  7175            ERTX2
6346  7211            ERTX3
6347  7227            ERTX4
6350  7240            ERTX5
6351  7252            ERTX6
6352  7264            ERTX7
6353  7274            ERTX8
6354  7327            ERTX9
                      /
      6400  PAGE
                      /

                      /
                      /SUBROUTINE TO WAIT FOR INTERRUPTS
                      /IF INTERRUPT OCCURES GO BACK 41
                      /
6400  0000  IONWT,    0
6401  7300            CLA CLL
6402  1125            TAD     K7700
6403  3215            DCA     COMP1
6404  6001            ION                     /TURN IT ON
6405  2215            ISZ     COMP1
6406  5205            JMP     .+1             /TURN IT OFF
6407  6002            IOF                         /NO INT OCCURED
6410  5600            JMP I   IONWT
6411  2288  INTADD,   ISZ     IONWT           /DISK SKIP INT
6412  4441            DSKSKP                  /ERROR, ILLEGAL INTERRUPT
6413  7402  ERHLT1,   HLT                     /EXIT
6414  5600            JMP I   IONWT
                      /
                      /ROUTINE TO COMPARE AC TO GOREG2
                      /
6415  0000  COMP1,    0
6416  7171            DCA     ACREG           /SAVE AC
6417  1171            TAD     ACREG
```

```
6420  7041          CIA
6421  1160          TAD     GDREG2
6422  7640          SZA CLA                         /SKIP IF O.K.
6423  2215          ISZ     COMP1                   /ERROR, DON'T COMPARE
6424  5615          JMP I   COMP1
                    /
                    /ROUTINE TO COMPARE CRREG1 AND CRREG2 TO
                    /GDREG1 AND GDREG2.
                    /
6425  7000  COMP2,  0
6426  7300          CLA CLL
6427  1157          TAD     GDREG1
6430  0141          AND     K0017
6431  7041          CIA
6432  1161          TAD     CRREG1
6433  7640          SZA CLA
6434  5241          JMP     CRERR                   /NOT THE SAME
6435  1162          TAD     CRREG2
6436  7041          CIA
6437  1160          TAD     GDREG2
6440  7640          SZA CLA
6441  2225  CRERR,  ISZ     COMP2                   /ERROR, NOT THE SAME
6442  5625          JMP I   COMP2
                    /
                    /SUBROUTINE TO READ STATUS REGISTER
                    /
6443  7000  RDST,   0
6444  6745  IOT5,   DRST                           /READ STATUS IOT
6445  7417          SKP                             /SKIP TRAP
6446  7402  ERRLT5, HLT                             /SAVE RESULTS
6447  3163          DCA     STREG
6450  1163          TAD     STREG                   /EXIT
6451  5643          JMP I   RDST
                    /
                    /SUBROUTINE TO LOAD CURRENT ADDRESS REGISTER
                    /
6452  0000  LOCA,   0
6453  3167          DCA     ADREG                   /SAVE IN ADDRESS
6454  1167          TAD     ADREG
6455  6744  IOT4,   DLCA                           /LOAD CURRENT ADDRESS IOT
6456  5652          JMP I   LOCA                    /EXIT
6457  7402  ERRLT4, HLT                     /SKIP TRAP
                    /
                    /
                    /SUBROUTINE TO LOAD DISK ADDRESS REGISTER
                    /
6460  0002  LOAD,   0
6461  3166          DCA     DAREG                   /SAVE OUTBOUND DATA
6462  1166          TAD     DAREG
6463  6743  IOT3,   DLAG                           /LOAD DISK ADDRESS REGISTER
6464  5663          JMP I   LOAD                    /EXIT
6465  7402  ERRLT3, HLT                     /SKIP TRAP
                    /
                    /SUBROUTINE TO LOAD COMMAND REGISTER
                    /
```



```
6466  0000  LOCM,   0
6467  3165          DCA     CMREG                   /SAVE OUTBOUND DATA
6470  1165          TAD     CMREG
6471  6746  IOT6,   DLDC                           /LOAD COMMAND REGISTER
6472  5666          JMP I   LOCM                    /EXIT
6473  7402  ERRLT6, HLT                             /SKIP TRAP
                    /
                    /SUBROUTINE TO ISSUE "DSKP" DISK SKIP IOT
                    /
6474  0000  SDKP,   0
6475  6741  IOT1,   DSKP                           /DISK SKIP IOT
6476  7410          SKP                             /DID NOT SKIP
6477  2274          ISZ     SDKP
6500  5674          JMP I   SDKP                    /EXIT
                    /
                    /SUBROUTINE TO ISSUE "DCLR" CLEAR IOT
                    /
6501  0000  CLDR,   0
6502  6742  IOT2,   DCLR                           /DCLR "CLEAR IOT"
6503  5701          JMP I   CLDR                    /EXIT
6504  7402  ERRLT2, HLT                     /SKIP TRAP

                    /
                    /SUBROUTINE TO ISSUE "DMAN" MAINTENANCE IOT
                    /
6505  0000  LDMN,   0
6506  6747  IOT7,   DMAN                           /"DMAN" MAINTENANCE IOT
6507  5705          JMP I   LDMN                    /EXIT
6510  7402  ERRLT7, HLT                             /SKIP TRAP
                    /
                    /SUBROUTINE TO SHIFT, THEN READ DISK
                    /ADDRESS INTO DATA BUFFER, 12 SHIFTS
                    /
6511  0000  RDAD,   0
6512  4437          ENMAN2                          /ENTER MAINTENANCE MODE & DB4=1
6513  1130          TAD     M5
6514  3152          DCA     SBCNT1                  /SETUP COUNTER
6515  1076          TAD     K1000                   /ENABLE SHIFT CRC
6516  1073          TAD     K0020                   /ENABLE SHIFT SURFACE AND SECTOR
6517  4447          LDMAN                           /LOAD MAINTENANCE
6520  2152          ISZ     SBCNT1                  /FOUR SHIFTS
6521  5317          JMP     .-2                     /MORE TO DO
6522  7300          CLA CLL
6523  1131          TAD     M7
6524  3152          DCA     SBCNT1
6525  1076          TAD     K1000                   /SHIFT CRC
6526  4447          LDMAN                           /LOAD MAINTENANCE IOT
6527  2152          ISZ     SBCNT1
6530  5326          JMP     .-2                     /SHIFT 12 BITS
6531  7320          CLA CLL
6532  1067          TAD     K0020
6533  4447          LDMAN                           /READ DATA BUFFER
6534  3166          DCA     DAREG                   /SAVE RESULTS
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6535 1166          TAD     DAREG
6536 5711          JMP I   RDAD                    /EXIT
                   /
                   /SUBROUTINE TO READ DATA BUFFER TO AC
                   /
6537 0000  RDBF,   0
6540 7330          CLA CLL CML RAR
6541 4447          LDMAN                           /ENTER MAINTENANCE MODE
6542 1067          TAD     K0020
6543 4447          LDMAN                           /LOAD MAINTENANCE
6544 3164          DCA     DBREG
6545 1164          TAD     DBREG
6546 3173          DCA     DTREG
6547 1170          TAD     DTREG
6550 5737          JMP I   RDBF                    /EXIT
                   /
                   /SUBROUTINE TO SHIFT COMMAND    REGISTER TO
                   /DATA BUFFER THEN READ DATA BUFFER
                   /
6551 0000  RDCM,   0
6552 4437          ENMAN2                          /ENTER MAINTENANCE MODE + DB4=1
6553 1132          TAD     M12
6554 3152          DCA     SBCNT1                  /12 BIT SHIFT
6555 1075          TAD     K0400                   /ENABLE BIT FOR SHIFT COMMAND
6556 4447          LDMAN                           /LOAD AND GO
6557 2152          ISZ     SBCNT1
6560 5356          JMP     .-2                     /SHIFT 12
6561 7300          CLA CLL
6562 1067          TAD     K0020                   /ENABLE READ BUFFER
6563 4447          LDMAN                           /LOAD AND GO
6564 3165          DCA     CMREG                   /SAVE IT
6565 1165          TAD     CMREG
6566 5751          JMP I   RDCM                    /EXIT
                   /
                   /ROUTINE TO ENTER MAINTENANCE MODE
                   /
6567 0000  MAIN1,  0
6570 7330          CLA CLL CML RAR                 /ENABLE MAINTENANCE BIT
6571 4447          LDMAN                           /ENTER MAINTENANCE MODE
6572 7300          CLA CLL
6573 5767          JMP I   MAIN1
                   /
       6600        PAGE
                   /
                   /
                   /
                   /SUBROUTINE TO SHIFT CRC REGISTER TO DATA
                   /BUFFER THEN READ IT.
                   /
6600 0000  RDCR,   0
6601 4437          ENMAN2                          /ENTER MAINTENANCE MODE + DB4=1
6602 1132          TAD     M12
6603 3152          DCA     SBCNT1                  /12 SHIFTER
6604 1076          TAD     K1000                   /ENABLE SHIFT CRC
6605 4447          LDMAN                           /LOAD AND GO
```



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6606 2152          ISZ     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          ISZ     SBCNT1
6622 5220          JMP     .-2                     /12 BIT SHIFT

6623 7300          CLA CLL
6624 1067          TAD     K0020                   /ENABLE READ BUFFER
6625 4447          LDMAN
6626 2141          AND     K0017
6627 3161          DCA     CRREG1                  /SAVE OTHER HALF
6630 5600          JMP I   RDCR                    /EXIT
                   /
                   /SUBROUTINE TO PRINT TWO OCTAL
                   /
6631 0000  TOCT,   0
6632 3152          DCA     SBCNT1                  /SAVE AC
6633 1152          TAD     SBCNT1
6634 7010          RAR
6635 7012          RTR
6636 0065          AND     K0007
6637 1056          TAD     K0260
6640 4426          TYPE                            /PRINT FIRST BYTE
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
                   /
6646 0000  UPONE,  0
6647 7300          CLA CLL
6650 1142          TAD     K0215
6651 4426          TYPE
6652 1143          TAD     K0212
6653 4426          TYPE
6654 4426          TYPE                            /TYPE ONE NULL
6655 5646          JMP I   UPONE
                   /
                   /ROUTINE TO PRINT FOUR OCTAL
                   /
6656 0000  FROCT,  0
6657 7006          RTL
6660 7006          RTL
```

```
6661  3246          DCA     UPONE
6662  1124          TAD     K7774
6663  3231          DCA     TOCT
6664  1246          TAD     UPONE
6665  7069          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          ISZ     TOCT
6675  5264          JMP     .+11
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          ISZ     PRN
6705  3296          DCA     FROCT
6706  1696          TAD I   FROCT
6707  7105          AND     K7700
6710  7450          SNA
6711  5335          JMP     EXIT
6712  7500          SMA
6713  7020          CML
6714  7001          IAC
6715  7012          RTR
6716  7012          RTR
6717  7012          RTR
6720  4426          TYPE
6721  1696          TAD I   FROCT
6722  7110          AND     K0077
6723  7452          SNA
6724  5335          JMP     EXIT
6725  1115          TAD     K3940
6726  7500          SMA
6727  1122          TAD     K4100
6730  1055          TAD     K0240
6731  4426          TYPE
6732  2296          ISZ     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          TLS
```



```
6741  6041          TSF
6742  5341          JMP     .-1
6743  6042          TCF
6744  7200          CLA
6745  5737          JMP I   PRINT
                    /
                    /ROUTINE TO GET ALL REGISTERS AFTER "ERRLIM"
                    /
6746  7000    DUMP, 0
6747  7604          LAS
6750  7075          AND     K0400           /MASK SWITCH 3
6751  7650          SNA CLA                 /WAS IT SET ALL
6752  5746          JMP I   DUMP            /NO
6753  4434          RDSTAT                  /GET STATUS
6754  4458          RDBUF                   /READ BUFFER
6755  7300          CLA CLL
6756  1132          TAD     M12
6757  3337          DCA     PRINT           /12 BIT COUNTER
6760  1073          TAD     K0200           /ENABLE SHIFT SECTOR AND SURFACE
6761  4447          LDMAN                   /LOAD MAINTENANCE
6762  2337          ISZ     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          ISZ     DUMP
6775  5746          JMP I   DUMP            /REPORT
                    /
      7000    PAGE
                    /
                    /ROUTINE TO ENTER MAINTENANCE MODE AND
                    /SET CB4=1 TO ENABLE SHIFT TO LOWER SIDE
                    /
7000  0000    MAIN2, 0
7001  7338          CLA CLL CML RAR         /ENABLE SET MAINTENANCE MODE
7002  4447          LDMAN                   /LOAD MAINTENANCE
7003  7010          RAR                     /ENABLE SET CB4=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    NERRO, 0
7010  7604          LAS                     /GET SWITCH 4
7011  7073          AND     K0230           /MASK
7012  7650          SNA CLA                 /WAS IT SET
7013  5217          JMP     .+4             /NO CONT WALT
```

```
7014  1175          TAD     SAVEND                  /GET BINARY END
7015  3526          DCA I   K7777                   /REPLACE IT
7016  7402  STPHLT, HLT                             /STOP PROGRAM HALT
7017  7207          ISZ     NERRO                   /UPDATE PC STORE
7020  1687          TAD I   NERRO                   /GET SCOPE LOOP POINTER
7021  3240          DCA     SNERRO                  /STORE FOR RETURN
7022  7004          LAS                             /GET SWITCH #
7023  7710          SPA CLA                         /ENTER SCOPE LOOP
7024  5640          JMP I   SNERRO                  /YES
7025  2152          ISZ     REG1                    /UPDATE UPCOUNTER
7026  7610          SKP CLA
7027  5234          JMP     NEXTST                  /END OF PARTICULAR TEST
7030  1150          TAD     REG1
7031  7140          CLL CMA
7032  3151          DCA     REG2                    /SETUP DOWN COUNTER
7033  5640          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,  .
7042  1425          TAD I   THSFLD                  /GET HOME OF
7043  3253          DCA     BAKFLD
7044  1145          TAD     KRMF                    /GET RMF FOR INT, RETURN
7045  6201          CDF     0                       /SWITCH FIELD 0
7046  3460          DCA I   K0001
7047  1146          TAD     K5403                   /JMP I 3 FOR CDF, 2
7050  3461          DCA I   K0002
7051  1023          TAD     INTRQ                   /GET ADDRESS RETURN
7052  3462          DCA I   K0003
7053  7402  BAKFLD, HLT                             /HOME OF
7054  5641          JMP I   SETUP
                    /
                    /ROUTINE TO LOAD UPPER BUFFER
                    /
7055  0000  UPPER,  0
7056  3237          DCA     TOTST                   /SAVE DATA
7057  7301          CLA CLL IAC
7060  3240          DCA     SNERRO                  /SETUP SWITCH MASKER
7061  1132          TAD     M12
7062  3207          DCA     NERRO                   /SETUP COUNTER
                    ENMAN1                          /ENTER MAINTENANCE MODE
7064  1237  UPPR1,  TAD     TOTST                   /GET DATA
7065  0240          AND     SNERRO                  /MASK
7066  7640          SZA CLA                         /A ONE OR REPEAT??
7067  1061          TAD     K0022                   /A ONE!!!!
7070  1372          TAD     K0[3                    /ENABLE SHIFT
7071  4447          LOMAN                           /LOAD MAINTENANCE
7072  7302          DCA CLL
7073  1242          TAD     SNERRO
```



```
7074  7104          CLL RAL
7075  3240          DCA     SNERRO                  /COUNT BITS
7076  2207          ISZ     NERRO                   /MORE TO GO
7077  5264          JMP     UPPR1                   /UPPER BUFFER LOADED
7100  5655          JMP I   UPPER
                    /
                    /ROUTINE TO CHANGE PROGRAM DEVICE CODES
                    /
7101  7024  CHANG,  LAS
7102  0324          AND     A0770
7103  3237          DCA     TOTST                   /SAVE DESIRED
7104  1376          TAD     CHNPOT
7105  3255          DCA     UPPER
7106  1375          TAD     CONTR1
7107  3242          DCA     SNERRO                  /A FEW POINTERS
7110  1655  CHANGR, TAD I   UPPER                   /GET ADDRESS POINTER
7111  3241          DCA     SETUP                   /SAVE IT
7112  1641          TAD I   SETUP                   /GET OLD IOT CODE
7113  0323          AND     A7007
7114  1237          TAD     TOTST                   /ADD IN DESIRED
7115  3641          DCA I   SETUP                   /CHANGE CODE
7116  2255          ISZ     UPPER                   /UPDATE POINTER
7117  2242          ISZ     SNERRO                  /UPDATE CHANGE COUNTER
7120  5310          JMP     CHANGR
7121  7402  CHNHLT, HLT                             /DEVICE CODES CHANGED
7122  5321          JMP     .-1
                    /
7123  7007  A7007,  7007
7124  0770  A0770,  0770
7125  7771  CONTR1, 7771
7126  7127  CHNPOT, CHNPOT+1
7127  6473          IOT1
7130  6502          IOT2
7131  6463          IOT3
7132  6455          IOT4
7133  6444          IOT5
7134  6471          IOT6
7135  6506          IOT7
                    /
7136  2003  TEXPC,  TEXT    "PC"
7137  7200
7140  0724  TEXGD,  TEXT    "GD"
7141  7200
7142  0322  TEXCR,  TEXT    "CR"
7143  7200
7144  2324  TEXST,  TEXT    "ST"
7145  7200
7146  0402  TEXDR,  TEXT    "DR"
7147  7200
7150  0315  TEXCM,  TEXT    "CM"
7151  7200
7152  0421  TEXDA,  TEXT    "DA"
7153  7200
7154  0204  TEXAD,  TEXT    "AD"
7155  7200
```

```
7156  2424  TEXDT:  TEXT  "DT1"
7157  7200
7160  3103  TEXAC:  TEXT  "AC1"
7161  7200
                    /
7162  2324  ERTX1:  TEXT  "STATUS REGISTER ERROR"
7163  2124
7164  2523
7165  4022
7166  2527
7167  1123
7170  2405
7171  2240
7172  0522
7173  2217
7174  2200
7175  2317  ERTX2:  TEXT  "COMMAND REGISTER ERROR"
7176  1515
7177  3116
7200  344P
7201  2225
7202  0711
7203  2324
7204  0522
7205  4009
7206  2222
7207  1722
7210  0000
7211  0411  ERTX3:  TEXT  "DISK ADDRESS REGISTER ERROR"
7212  2313
7213  4001
7214  0404
7215  2205
7216  2523
7217  4022
7220  2527
7221  1123
7222  2405
7223  2240
7224  0522
7225  2217
7226  2200
7227  2401  ERTX4:  TEXT  "DATA BREAK ERROR"
7230  2401
7231  4002
7232  2205
7233  0113
7234  4005
7235  2222
7236  1722
7237  4000
7240  0322  ERTX5:  TEXT  "CRC REGISTER ERROR"
7241  2340
7242  2205
7243  0711
```



```
7244  2324
7245  0522
7246  4005
7247  2222
7250  1722
7251  0020
7252  0401  ERTX6:  TEXT  "DATA REGISTER ERROR"
7253  2401
7254  4022
7255  0527
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  2042
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  0133  ERTX9:  TEXT  "AD REGISTER ERROR"
7310  4022
7311  0507
7312  1123
7313  2405
7314  2240
7315  0522
7316  2217
7317  2200
                    /
7320  2213  TEXLND:  TEXT  "RK8E DISKLESS PASS COMPLETE"
7321  7005
7322  4004
7323  1123
7324  1314
7325  0523
7326  2340
7327  2001
7330  2323
7331  4023
```

```
7332  1715
7333  2014
7334  0524
7335  0520
/
                    555
```



```
0000  11111000  10000000  11111111  11111111  11111111  11111111  11111111  11111111
0100  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111110

0200  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
0300  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

0400  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
0500  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

0600  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
0700  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

1000  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1100  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

1200  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1300  11111111  11111111  11111111  11111111  11111111  11111111  11111111  00000000

1400  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1500  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

1600  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1700  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111000

2000  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2100  11111111  11111111  11111111  11111111  11111111  11111111  11100000  00000000

2200  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2300  11111111  11111111  11111111  11111111  00000000  00000000  00000000  00000000

2400  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2500  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11100000

2600  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2700  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

3000  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
3100  11111111  11111111  11000000  00000000  00000000  00000000  00000000  00000000

3200  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
3300  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

3400  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
3500  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

3600  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
3700  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
```

```
4000  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
4100  11111111  11111111  11111111  11111111  11111111  11111110  00000002  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  00000002  00000000  00000000  00000000  00000000  00000002  00000000

4600  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
4700  11111110  00000002  00000000  00000000  00000005  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  11111100  00000002  00000002  00000000  00000000

5600  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
5700  11111111  11111111  11111111  11111111  11111111  11111111  11111000  00000000

6000  11111110  00000000  00000000  00000000  00000000  00000000  00000000  00000000
6100  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000

6200  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
6300  11111111  11111111  11111111  11111111  11111111  11111000  00000000  00000000

6400  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
6500  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11110000

6600  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
6700  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111100

7000  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
7100  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

7200  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
7300  11111111  11111111  11111111  11111100  00000000  00000000  00000000  00000000

7400
7500

7600
7700
```



```
A0770   7124        ERTX3   7271        K2000   0077        NEXFL3  5443
A7707   7123        ERTX4   7287        K2525   0313        NEXFL4  5531
ACOMP1  4432        ERTX5   7242        K3737   0316        NEXFL5  5644
ACOMP2  4433        ERTX6   7292        K3740   0315        NEXTBT  7036
ACREG   0171        ERTX7   7244        K3777   0100        NOTEX   6327
ADREG   0167        ERTX8   7274        K4000   0101        NTCRC   6273
AUTOIB  2018        ERTX9   7307        K4100   0120        NTOD    6256
BAKFLD  7093        EXIT    6735        K5000   0122        OCTEL   4492
BAKPNT  6317        FLDMAX  2193        K5252   0114        PCNTR1  6341
BGN     0200        FRCCY   6696        K5423   0146        PCNTR2  6342
CONTR1  7125        GDREG1  0197        K5777   0123        PRINT   6737
CHANG   7101        GDREG2  0160        K7000   0152        PRN     6731
CHANGR  7118        HEDLST  6344        K7600   0151        PRNTER  4451
CHNHLT  7121        HEDTAD  6343        K7700   0105        PRSFLD  0212
CHNPOT  7126        HOMEMA  0172        K7717   0117        RDAD    6511
CLDR    6581        INTADD  6421        K7740   0106        RDADD   4442
CLRALL  4445        INTRD   0023        K7771   0125        RDBF    6537
CMREG   0165        IONMAT  4431        K7774   0124        RDBUF   4450
COMP1   6415        IONMT   6430        K7775   0104        RDCM    6551
COMP2   6425        IOT1    6475        K7776   0103        RDCMD   4435
CRERR   6441        IOT2    0502        K7777   0126        RDCR    6603
CRLF    4494        IOT3    6463        KCOF    0144        RDCRC   4446
CRREG1  0161        IOT4    6435        KRMF    0145        RDST    6443
CRREG2  0162        IOT5    6444        LOAD    6460        RDSTAT  4434
DAREG   0166        IOT6    6471        LOADD   4444        REG1    0150
DBREG   0164        IOT7    6506        LOBUF   4421        REG2    0151
DCLR    6742        IOTCHN  5623        LOCA    6452        RTFLG1  5724
DLAG    6743        K0000   0057        LOCM    6466        RTFLG2  5227
DLCA    6744        K0001   0063        LOCMC   4442        RTFLG3  5430
DLDC    6746        K0002   0061        LOCUR   4443        RTFLG4  5506
DMAN    6747        K0003   0062        LOMAN   4447        RTFLG5  5031
DRST    6745        K0004   0043        LOMM    6505        SAVEND  0175
DSKP    6741        K0006   0044        M12     0132        SBCNT1  0152
DSKSKP  4441        K0007   0060        M128    0135        SDKP    6474
DTREG   0170        K0010   0056        M16     0133        SENRD   6335
DUMP    6746        K0017   0141        M191    0136        SETUP   7041
ENDHLT  5760        K0020   0067        M255    0137        SNERRD  7040
ENDTST  5747        K0037   0070        M388    0140        STCON   0174
ENMAN1  4436        K0040   0071        M4      0127        STPHLT  7016
ENMAN2  4437        K0077   0107        M46     0134        STRAUT  6302
ERHLT1  6413        K0177   0110        M5      0130        STREG   0163
ERHLT2  6504        K0100   0072        M7      0131        T1010   5251
ERHLT3  6465        K0177   0112        MAIN1   6347        T101E   5252
ERHLT4  6497        K0200   0073        MAIN2   7000        T101N   5216
ERHLT5  6446        K0207   0074        MANTST  0022        T1020   5432
ERHLT6  6473        K0212   0143        MANUAL  5402        T102E   5433
ERHLT7  6510        K0215   0142        MANUL   6000        T102N   5417
ERHLT9  6323        K0240   0075        MTS65   0147        T1030   5530
ERRO    6200        K0260   0076        NERRO   7007        T103E   5531
ERROR   4430        K0377   0111        NERRON  4427        T103N   5474
ERTX1   7162        K0400   0077        NEXFL1  5734        T1040   5693
ERTX2   7175        K1000   0076        NEXFL2  5242        T104E   5694
```

```
T104R   5617
T105D   5743
T105E   5744
T105R   5667
T37R    1345
T38R    1412
T39R    1444
T40R    1501
T45E    1647
T45R1   1023
T45R3   1636
T46A1   1660
T46A2   1703
T46E    1716
T47E    1742
T48E    1767
T49E    2032
T50E    2074
T51E    2114
T53E    2156
T54E    2225
T55E    2252
T57E    2305
T58E    2328
T59E    2333
T60E    2416
T61E    2441
T62E    2465
T63E    2525
T64E    2565
T65E    2633
T68E    2715
T69E    2750
T70E    2774
T71E    3041
T72E    3115
T72R    3060
T73E    3266
T73R1   3204
T73R2   3210
T73R3   3233
T74E    3340
T74R1   3302
T74R2   3305
T74R3   3322
T75E    3377
T75R    3354
T76E    3448
T76R    3415
T77E    3470
T78E    3521
T79E    3552

T80E    3604
T81E    3633
T82E    3667
T83E    3734
T84E    3796
T85E    4091
T850K   4050
T85R1   4051
T86E    4152
T86R1   4060
T86R2   4073
T86R3   4112
T86R4   4134
T87E    4271
T87R1   4204
T87R2   4215
T87R3   4233
T87R4   4293
T92E    4496
T92R1   4447
T92R2   4465
T94E    4651
T95E    4702
T97E    5026
T98E    5060
T99E    5126
T99R1   5071
T99R2   5106
TCNTR1  0183
TCNTR2  0184
TCNTR3  0185
TCNTR4  0186
TEXAC   7160
TEXAD   7184
TEXCM   7150
TEXCR   7142
TEXDA   7152
TEXDB   7146
TEXDT   7196
TEXEND  7388
TEXGD   7140
TEXPC   7136
TEXST   7144
THSFLD  0035
TOCT    6631
TOFLD1  5700
TOFLD2  5225
TOFLD3  5426
TOFLD4  5504
TOFLD5  5627
TOTST   7037
TSTD    0226

T$T1    0239
T$T10   0343
T$T100  5151
T$T101  5272
T$T102  5400
T$T103  5456
T$T104  5602
T$T105  5657
T$T11   0365
T$T12   0410
T$T13   0434
T$T14   0442
T$T15   0454
T$T16   0527
T$T17   0537
T$T18   0561
T$T19   0604
T$T2    0242
T$T20   0616
T$T21   0633
T$T22   0647
T$T23   0673
T$T24   0720
T$T25   0742
T$T26   0767
T$T27   1030
T$T28   1047
T$T29   1077
T$T3    0250
T$T30   1132
T$T31   1152
T$T32   1173
T$T33   1207
T$T34   1223
T$T35   1253
T$T36   1301
T$T37   1333
T$T38   1400
T$T39   1438
T$T4    0256
T$T40   1478
T$T41   1526
T$T42   1549
T$T43   1565
T$T44   1601
T$T45   1613
T$T46   1652
T$T47   1702
T$T48   1746
T$T49   2000
T$T5    0272
T$T5E   2035

T$T51   2077
T$T52   2117
T$T53   2134
T$T54   2200
T$T55   2230
T$T56   2255
T$T57   2272
T$T58   2310
T$T59   2323
T$T6    0305
T$T60   2400
T$T61   2421
T$T62   2444
T$T63   2470
T$T64   2530
T$T65   2600
T$T66   2636
T$T67   2657
T$T68   2677
T$T69   2720
T$T7    0314
T$T70   2753
T$T71   2777
T$T72   3044
T$T73   3200
T$T74   3271
T$T75   3343
T$T76   3402
T$T77   3443
T$T78   3473
T$T79   3524
T$T8    0323
T$T80   3555
T$T81   3607
T$T82   3648
T$T83   3672
T$T84   3737
T$T89   4001
T$T86   4054
T$T87   4200
T$T88   4274
T$T89   4323
T$T9    0334
T$T90   4354
T$T91   4404
T$T92   4435
T$T93   4488
T$T94   4524
T$T95   4654
T$T97   5000
T$T98   5031
T$T99   5063
```



```
TWOCT   4453
TYPE    4426
UPONE   6646
UPPER   7055
UPPR1   7064
XCHANG  3020
XCLDR   0045
XCOMP1  7032
XCOMP2  3033
XCRLF   3054
XDUMP   6336
XEND    3024
XERRO   3030
XFROCT  3052
XIONWT  3031
XLOAD   0044
XLOCA   0043
XLOCM   0042
XLOMN   3047
XMAIN1  3036
XMAIN2  3037
XNERRO  3027
XPRINT  3026
XPRN    0051
XROAD   0040
XROBF   0050
XROCM   0035
XROCR   2046
XROST   2034
XREG    6340
XSDKP   7041
XSET    0176
XTEXT   6337
XTOCT   0053
XUPPER  0021
```

ERRORS DETECTED: 0

LINKS GENERATED: 0

RUN-TIME: 37 SECONDS

3K CORE USED