

# TC2/TC11

TEST 2  
MD-11-DZTCB-C

EP-DZTCB-C-DL-A  
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FICHE 1 OF 1

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MADE IN USA

This microfiche card contains a grid of frames. The frames on the left side contain text, likely test results or data logs, with some headers and lists of values. The frames on the right side contain vertical bar patterns, which are likely binary data or test indicators. The text is very small and difficult to read, but appears to be organized into columns and rows.

B01

IDENTIFICATION

PRODUCT CODE:       MAINDEC-11-DZTCB-C-D  
PRODUCT NAME:       TC2 - TC11 TEST 2  
DATE:                MAY 1, 1975  
MAINTAINER:         DIAGNOSTIC GROUP  
AUTHOR:             L. R. KOLLER  
MODIFIER:            J. E. COMEAU

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## 1.0 GENERAL PROGRAM INFORMATION

## 1.1 ABSTRACT

TC2 - TC11 TEST2 IS USED TO TEST THE TC11 DECTAPE CONTROL. TC2 USES THE MAINTENANCE BIT FEATURE OF THE TC11 CONTROL TO CHECK THE TC11 CONTROL WITHOUT DEPENDING ON DECTAPE TRANSPORT MOVEMENT. PRIOR TO ACTUAL USE OF THE MAINTENANCE BIT FEATURE, CORRECT OPERATION OF THE INTERRUPT CIRCUITS IS CHECKED, AND THE MAINTENANCE BIT ITSELF IS CHECKED.

## 2.1.2 SYSTEM REQUIREMENTS

## 1.21 HARDWARE REQUIREMENTS

- A) PDP-11 SYSTEM (8k CORE).
- B) ASR33/35 TELETYPE.
- C) TC11 DECTAPE CONTROL AND AT LEAST ONE TU56 DUAL TRANSPORT.

THE TELETYPE AND TC11 CONTROL MUST HAVE THEIR STANDARD PERIPHERAL ADDRESSES, INTERRUPT LEVELS, AND INTERRUPT VECTOR ADDRESSES. REFER TO SECTION 7.2 IF YOUR SYSTEM DOES NOT HAVE STANDARD PERIPHERAL ADDRESSES.

## 1.11 SOFTWARE REQUIREMENTS

THIS PROGRAM IS ABLE TO RUN "STAND ALONE" OR UNDER CONTROL OF THE ACT11 MONITOR

## 1.3 RELATED DOCUMENTS AND STANDARDS

SEE THE ACT11/XXDP PROGRAMERS GUIDE FOR INFORMATION ON RUNNING UNDER ACT 11

## 1.4 SUGGESTED PREREQUISITES

IT IS RECOMMENDED THAT ALL MAINDECS THAT CHECK OUT THE BASIC CPU BE RUN BEFORE TC2.

## 1.5 FAILURE ASSUMPTIONS

THROUGHOUT THIS PROGRAM IT IS ASSUMED THAT THE BASIC CPU IS IN GOOD RUNNING ORDER. IF IT IS NOT THE INFORMATION GAINED BY RUNNING THIS PROGRAM IS LIKELY TO BE FALSE (OR NONEXISTANT IF THE PROGRAM WILL NOT RUN).

## 2.0 OPERATING INSTRUCTIONS

## 2.10 LOADING PROCEDURES

THIS PROGRAM'S OBJECT TAPE IS PUNCHED IN ABSOLUTE FORMAT. THE ABS LOADER IS USED TO LOAD THE PROGRAM UNDER STAND ALONE MODE. FOR FOR INFORMATION ON PROGRAM LOADING UNDER CONTROL OF THE VARIOUS MONITOR SYSTEMS, REFER TO THE DOCUMENTS NAMES IN SECTION 1.3 ABOVE. UNDER STAND ALONE MODE, AFTER ACERTAINING THAT THE ABS LOADER PROGRAM IS IN THE PDP-11, FOLLOW THESE STEPS TO LOAD TC2:

- A) PUT THE TC2 BINARY TAPE INTO THE PAPER TAPE READER
- B) SET THE PDP-11 CONSOLE SWITCHES TO 37750
- C) DEPRESS LOAD ADDRESS
- D) DEPRES START (TAPE SHOULD READ IN)

## 4.0 STARTING PROCEDURE

- A) UNIT 0: REMOTE/WRITE LOCK/. ALL OTHER UNITS OFF.
- B) WALL SWITCH ON, WRTM SWITCH OFF.
- C) LOAD ADDRESS 000200.
- D) PRESS START.
- E) THE PROGRAM IDENTIFIES ITSELF, TYPES SETUP INSTRUCTIONS, SR OPTIONS MESSAGE, AND HALTS.
- F) MAKE SURE THAT THE SETUP (STEPS A AND B) HAS BEEN PROPERLY DONE AND SELECT DESIRED SR OPTIONS, IF ANY. NORMAL SR SETTING IS 000000.
- G) PRESS CONT. THE PROGRAM BEGINS EXECUTION.
- H) AT THE END OF EACH PASS THE PASS COUNT IS PRINTED
- I) REFER TO SECTION 6.2 IF ERROR PRINTOUTS OCCUR.

#### 2.4 EXECUTION TIME

EXECUTION TIME IS DEPENDENT ON WHICH MODEL OF PDP11 THE PROGRAM IS TO BE RUN ON. ANY TIMES GIVEN APPLY TO THE PDP-11 MODEL 40 UNLESS OTHERWISE STATED

- A) ONE NORMAL ERROR FREE PASS TAKES APPROXIMATELY 10 SECONDS
- B) ONE SINGLE ITERATION PASS (SR11=1) TAKES ABOUT 5 SECONDS.

#### \*\*\*\*\*NOTE\*\*\*\*\*

THE SINGLE ITERATION PASS IS A CONVENIENT WAY TO QUICKLY DETERMINE IF ANY SOLID PROBLEMS EXIST. FOR A THOROUGH TEST, THE NORMAL ITERATION PASS SHOULD BE RUN.

#### 6.0 ERROR INFORMATION

ERRORS ARE REPORTED IN THIS PROGRAM BY THE FOLLOWING METHODS:

- A) UNCONDITIONAL ERROR HALTS, OR
- B) ERROR PRINTOUT FOLLOWED BY OPTIONAL ERROR HALT.

#### 6.1 UNCONDITIONAL ERROR HALTS

AN UNCONDITIONAL ERROR HALT WILL OCCUR AT THE ADDRESSES LISTED BELOW IF THROUGH HARDWARE OR SOFTWARE FAILURE, PROGRAM CONTROL IS TRANSFERRED TO AN UNEXPECTED AREA BETWEEN 000000 AND 000176.

000002 RESERVED AREA

000016 DEBUG TRAP

000022 IOT TRAP

000040 THROUGH 000176 - SYSTEM SOFTWARE AND INTERRUPT VECTOR AREA  
TO FIND OUT WHERE THE PROGRAM WAS AT THE TIME THE FAILURE OCCURRED,

- A) EXAMINE CONTENTS OF REGISTER 6. (ADDRESS 177706).
- B) TRANSFER THE CONTENTS OF REG 6 TO THE SR, LOAD ADDRESS AND EXAMINE.
- C) THE DATA SHOWN IN THE DATA LIGHTS IS THE VALUE OF THE PC WHEN THE FAILURE OCCURRED.
- D) LOCATE IN PROGRAM LISTING THE DISPLAYED PC VALUE.
- E) THE INSTRUCTION THAT IMMEDIATELY PRECEDES THE ONE REFERENCED BY THE DISPLAYED PC VALUE IS THE INSTRUCTION THAT WAS/WAS BEING EXECUTED WHEN THE FAILURE OCCURRED.

AN UNCONDITIONAL ERROR HALT FAILURE IS AN ABNORMAL CONDITION INDICATING A HARDWARE FAILURE, OR MOST UNLIKELY, A PROGRAM FAILURE. THIS PROGRAM ASSUMES THAT THE PROCESSOR IS IN OPERATING CONDITION IN ORDER TO PERFORM ITS TESTS. ANY FURTHER STEPS REQUIRED TO DIAGNOSE AN AN UNCONDITIONAL ERROR HALT ARE NOT WITHIN THE SCOPE OF THIS PROGRAM.

## 6.2 ERROR PRINTOUTS

THERE ARE 2 TYPES OF ERROR PRINTOUTS, NORMAL ERROR PRINTOUTS AND FATAL ERROR PRINTOUTS. EACH TYPE IS GENERATED BY THE SYSMAC .\$ERROR SUBROUTINE. THE ".\$ERROR" SUBROUTINE IS CALLED BY AN "ERROR NN(TRAP+N)" STATEMENT IN THE PROGRAM LISTING. A NORMAL ERROR PRINTOUT LOOKS AS FOLLOWS:

```
PC      SP      PS      TEST      TCCM      TCST      ADDITIONAL INFO
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX
```

WHERE:

PC  
XXXXXX IS THE ADDRESS OF THE ERROR CALL

SP  
XXXXXX IS THE VALUE OF THE STACK POINTER

PS  
XXXXXX IS THE VALUE OF THE PROCESSOR STATUS WORD

TEST  
XXXXXX IS THE NUMBER OF THE FAILING ROUTINE

TCCM  
XXXXXX IS THE VALUE OF THE DECTAPE COMMAND REGISTER

TCST  
XXXXXX IS THE CONTENTS OF THE DECTAPE STATUS REGISTER

ADDITIONAL INFORMATION CAN VARY FROM TEST TO TEST AND FURTHER DESCRIBES THE ERROR. AFTER THE PRINTOUT IS COMPLETED, THE PROGRAM WILL HALT AT COMMON ERROR HALT IF SR15 IS SET. WHEN AN ERROR PRINTOUT OCCURS:

- A) LOOK UP THE ADDRESS REFERENCED BY PC OYYYYY IN THE LISTING.
- B) OPPOSITE THE PC VALUE AN "ERROR" STATEMENT WILL BE FOUND, AND IN THE COMMENTS SECTION, A DESCRIPTION OF THE ERROR.
- C) AT THE BEGINNING OF THE TEST ROUTINE A DESCRIPTION OF THE TEST WILL BE FOUND.

FATAL ERRORS ARE UNEXPECTED TRAPS TO EITHER LOCATION 4 OR TO LOCATION 10. WHEN THESE OCCUR A FATAL ERROR MESSAGE IS PRINTED OUT IN THE FOLLOWING FORMAT.

FATAL ERROR TRAP TO LOC XX FROM LOCATION XXXXXX

WHERE X IS THE TRAP VECTOR LOCATION(4 OR 10) AND XXXXXX IS THE PLACE THAT THE PROGRAM WAS EXECUTING AT WHEN THE FATAL ERROR TRAP OCCURRED. AFTER THE MESSAGE IS PRINTED THE PROGRAM ATTEMPTS TO RESTART ITSELF AT LOCATION 000200 THE STANDARD SR OPTIONS ARE DESCRIBED HERE.

SR15 HALT ON ERROR. WITH SR15 SET TO A 1, THE PROGRAM WILL HALT AFTER AN ERROR OCCURS. PRESSING 'CONT WILL CAUSE PROGRAM TO RESUME OPERATION.

SR14 SCOPE. THIS OPTION CAUSES THE PROGRAM TO REMAIN IN THE CURRENT TEST ROUTINE. WHEN THE OPTION IS REMOVED, THE PROGRAM WILL COMPLETE THE CURRENT ROUTINE, AND WILL THEN GO ON TO THE NEXT ROUTINE.

SR13 INHIBIT ERROR PRINTOUT. THIS OPTION IF SET, WILL REMOVE ALL ERROR PRINTOUTS.

SR11 PROGRAM TO EXECUTE EACH TEST ONLY ONCE, INSTEAD OF THE NORMAL NUMBER OF ITERATIONS SELECTED FOR EACH TEST. THIS ALLOWS FOR A "QUICK CHECK" OF THE TC11 HARDWARE.

SR10 BELL ON ERROR. SETTING THIS SWITCH TO A 1 WILL CAUSE THE PROGRAM TO SOUND THE BELL WHEN AN ERROR IS FOUND. THIS SWITCH DOES NOT INTERFERE WITH THE FUNCTIONS OF SW15 AND SW13

SR08 SELECT ROUTINE. WITH SR8 SET THE PROGRAM WILL RUN NORMALLY UNTIL THE ROUTINE SPECIFIED IN SR7 THROUGH SR0 IS ENCOUNTERED. THE PROGRAM WILL REMAIN LOOPING IN THE SPECIFIED ROUTINE, UNTIL EITHER SR8 IS CHANGED, OR UNTIL THE VALUE OF SWITCHES SR7 THROUGH SR0 CHANGES

SR7-SR0 TEST SELECT. THE NUMBER SET IN THESE SWITCHES IS THE NUMBER OF THE TEST THAT WILL BE LOCKED ONTO IF SR8 IS SET IF SR8 IS SET TO A 0 THEN SR7 THROUGH SR0 HAVE NO EFFECT ON THE OPERATION OF THE PROGRAM

7.2 TESTING TC11 AT NON-STANDARD ADDRESSES AND/OR VECTORS  
THIS PROGRAM CAN TEST THE TC11 AT NON-STANDARD ADDRESSES AND VECTORS PROVIDED THOSE ADDRESSES AND VECTORS ARE PROVIDED TO THE PROGRAM AS FOLLOWS:

A) AFTER LOADING PROGRAM REFER TO PROGRAM LISTING AND CHANGE LOCATIONS 001004 THROUGH 001020 TO REFLECT THE NEW TC11 ADDRESSES AND VECTORS.

B) PROCEED TO USE THE PROGRAM, OR

### 7.0 PROGRAM LISTING

MAINDEC-11-DZTCB-C TC11 TEST #2 MACY11 27(732) 14-SEP-76 10:51 PAGE 2  
DZTCBC.P11

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0

167400

.ABS  
.ENABL AMA  
.LIST MC,MD,BIN,LD,SEQ,ME  
.NLIST CND  
\$SWR=167400

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# GO1

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$TN=0
.ENABL ABS
.MCALL .HEADER,.$SCATCH,.$SEOP,.$EQUAT
.MCALL .SWRHI,.$SWRLO,.$SCOPE,.$SETUP
.MCALL .STYPOCT,.$STYPDEC,.$STRAP,.$POWER
.MCALL .$ERROR,.$STYPER,.$STARS,.$SERRTYP
.MCALL .$CMTAG
.SETUP <.$SCOPE,.$SEOP,.$POWER,.$STRAP,.$ERROR>
.LIST
.HEADER <MAINDEC-11-DZTCB-C           TC11 TEST #2>,<1972,1975>,<J. COMEAU>
.TITLE  MAINDEC-11-DZTCB-C           TC11 TEST #2
.*COPYRIGHT (C) 1972,1975
.*DIGITAL EQUIPMENT CORP.
.*MAYNARD, MASS. 01754
.*
.*PROGRAM BY J. COMEAU
.*
.*THIS PROGRAM WAS ASSEMBLED USING THE PDP-11 MAINDEC SYSMAC
.*PACKAGE (MAINDEC-11-DZGAC-A1).
.*
.SWRHI

.SBTTL OPERATIONAL SWITCH SETTINGS
.*
.* SWITCH USE
.* -----
.*      15 HALT ON ERROR
.*      14 LOOP ON TEST
.*      13 INHIBIT ERROR TYPEOUTS
.*      11 INHIBIT ITERATIONS
.*      10 BELL ON ERROR
.*       9 LOOP ON ERROR
.*       8 LOOP ON TEST IN SWR<7:0>
.MACRO .SWRLO  S07,S06,S05,S04,S03,S02,S01,S00
.IIF NB <S07>,;* 7 S07
.IIF NB <S06>,;* 6 S06
.IIF NB <S05>,;* 5 S05
.IIF NB <S04>,;* 4 S04
.IIF NB <S03>,;* 3 S03
.IIF NB <S02>,;* 2 S02
.IIF NB <S01>,;* 1 S01
.IIF NB <S00>,;* 0 S00
.ENDM .SWRLO
.*      7-0 # OF TEST TO LOOP ON IF SWR<8> IS SET
.EQUAT

.SBTTL BASIC DEFINITIONS
  
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57          .: *INITIAL ADDRESS OF THE STACK POINTER *** 1100 ***
58          001100  STACK= 1100
59          .EQUIV EMT,ERROR          ;BASIC DEFINITION OF ERROR CALL
60          .EQUIV IOT,SCOPE          ;BASIC DEFINITION OF SCOPE CALL
61          177776  PS= 177776        ;PROCESSOR STATUS WORD
62          .EQUIV PS,PSW
63          177774  STKLMT= 177774    ;STACK LIMIT REGISTER
64          177772  PIRQ= 177772     ;PROGRAM INTERRUPT REQUEST REGISTER
65          177570  SWR= 177570      ;SWITCH REGISTER
66          177570  DISPLAY=SWR
67
68          .: *GENERAL PURPOSE REGISTER DEFINITIONS
69          000000  R0= %0             ;GENERAL REGISTER
70          000001  R1= %1             ;GENERAL REGISTER
71          000002  R2= %2             ;GENERAL REGISTER
72          000003  R3= %3             ;GENERAL REGISTER
73          000004  R4= %4             ;GENERAL REGISTER
74          000005  R5= %5             ;GENERAL REGISTER
75          000006  R6= %6             ;GENERAL REGISTER
76          000007  R7= %7             ;GENERAL REGISTER
77          .EQUIV R6,SP                ;STACK POINTER
78          .EQUIV R7,PC                ;PROGRAM COUNTER
79
80          .: *"SWITCH REGISTER" SWITCH DEFINITIONS
81          100000  SW15= 100000
82          040000  SW14= 40000
83          020000  SW13= 20000
84          010000  SW12= 10000
85          004000  SW11= 4000
86          002000  SW10= 2000
87          001000  SW09= 1000
88          000400  SW08= 400
89          000200  SW07= 200
90          000100  SW06= 100
91          000040  SW05= 40
92          000020  SW04= 20
93          000010  SW03= 10
94          000004  SW02= 4
95          000002  SW01= 2
96          000001  SW00= 1
97          .EQUIV SW09,SW9
98          .EQUIV SW08,SW8
99          .EQUIV SW07,SW7
100         .EQUIV SW06,SW6
101         .EQUIV SW05,SW5
102         .EQUIV SW04,SW4
103         .EQUIV SW03,SW3
104         .EQUIV SW02,SW2
105         .EQUIV SW01,SW1
106         .EQUIV SW00,SW0
107
108         .: *DATA BIT DEFINITIONS (BIT00 TO BIT15)
109         100000  BIT15= 100000
110         040000  BIT14= 40000
111         020000  BIT13= 20000
112         010000  BIT12= 10000

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113 004000  
114 002000  
115 001000  
116 000400  
117 000200  
118 000100  
119 000040  
120 000020  
121 000010  
122 000004  
123 000002  
124 000001  
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137 000004  
138 000010  
139 000014  
140 000014  
141 000014  
142 000020  
143 000024  
144 000030  
145 000034  
146 000060  
147 000064  
148 000240  
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151 000000  
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155 000000  
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162 000200  
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164 000200 000137 002304  
165  
166 001000  
167 000240  
168 000000

BIT11= 4000  
BIT10= 2000  
BIT09= 1000  
BIT08= 400  
BIT07= 200  
BIT06= 100  
BIT05= 40  
BIT04= 20  
BIT03= 10  
BIT02= 4  
BIT01= 2  
BIT00= 1  
.EQUIV BIT09,BIT9  
.EQUIV BIT08,BIT8  
.EQUIV BIT07,BIT7  
.EQUIV BIT06,BIT6  
.EQUIV BIT05,BIT5  
.EQUIV BIT04,BIT4  
.EQUIV BIT03,BIT3  
.EQUIV BIT02,BIT2  
.EQUIV BIT01,BIT1  
.EQUIV BIT00,BIT0

.\*BASIC "CPU" TRAP VECTOR ADDRESSES  
ERRVEC= 4 ;TIME OUT AND OTHER ERRORS  
RESVEC= 10 ;RESERVED AND ILLEGAL INSTRUCTIONS  
TBITVEC=14 ;"T" BIT  
TRTVEC= 14 ;TRACE TRAP  
BPTVEC= 14 ;BREAKPOINT TRAP (BPT)  
IOTVEC= 20 ;INPUT/OUTPUT TRAP (IOT) \*\*SCOPE\*\*  
PWRVEC= 24 ;POWER FAIL  
EMTVEC= 30 ;EMULATOR TRAP (EMT) \*\*ERROR\*\*  
TRAPVEC=34 ;"TRAP" TRAP  
TKVEC= 60 ;TTY KEYBOARD VECTOR  
TPVEC= 64 ;TTY PRINTER VECTOR  
PIRQVEC=240 ;PROGRAM INTERRUPT REQUEST VECTOR

.LIST  
;MISCELANIOUS EQUATES  
.SCATCH START

.SBTTL TRAP CATCHER

.=0  
;\*ALL UNUSED LOCATIONS FROM 4 - 776 CONTAIN A ".+2,HALT"  
;\*SEQUENCE TO CATCH ILLEGAL TRAPS AND INTERRUPTS  
;\*LOCATION 0 CONTAINS 0 TO CATCH IMPROPERLY LOADED VECTORS  
.LIST

.SBTTL STARTING ADDRESS(ES)  
. =200

;EQUATES JMP @#START ;JUMP TO STARTING ADDRESS OF PROGRAM

SPBOT=1000  
NOP=240  
OPEN=0

169 100000  
 170 005746  
 171 024646  
 172 005726  
 173 022626  
 174 000007  
 175 177777  
 176 000003  
 177 000207  
 178 000040  
 179 177777  
 180 100000  
 181 040000  
 182 020000  
 183 000000  
 184 000004  
 185 000010  
 186 000014  
 187 000020  
 188 000024  
 189 000030  
 190 000034  
 191 020000  
 192 010000  
 193 004000  
 194 000000  
 195 000204 000240  
 196 000000  
 197 000400  
 198 001000  
 199 001400  
 200 002000  
 201 002400  
 202 003000  
 203 003400  
 204 000100  
 205 000000  
 206 000002  
 207 000004  
 208 000006  
 209 000010  
 210 000012  
 211 000014  
 212 000016  
 213 000001  
 214 000000  
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MANUAL=BIT15  
 PUSH=005746  
 PUSH2=024646  
 POPSP=005726  
 POPSP2=022626  
 BELL=007  
 TLAST=-1  
 TRC=3  
 RTSPC=207  
 I=40  
 X=-1  
 A=BIT15  
 B=BIT14  
 C=BIT13  
 V0=0  
 V1=4  
 V2=10  
 V3=14  
 V4=20  
 V5=24  
 V6=30  
 V7=34  
 MAINT=BIT13  
 DINH=BIT12  
 REV=BIT11  
 FWD=0  
 NOP  
 U0=0  
 U1=BIT8  
 U2=BIT9  
 U3=BIT9!BIT8  
 U4=BIT10  
 U5=BIT10!BIT8  
 U6=BIT10!BIT9  
 U7=BIT10!BIT9!BIT8  
 IE=BIT6  
 SAT=0  
 RNUM=BIT1  
 RDATA=BIT2  
 RALL=BIT2!BIT1  
 SST=BIT3  
 WRTM=BIT3!BIT1  
 WDATA=BIT3!BIT2  
 WALL=BIT3!BIT2!BIT1  
 DO=BIT0  
 EMTX=0  
 .MACRO ADITAG  
 TGST: 177340  
 ICCM: 177342  
 TCWC: 177344  
 TCBA: 177346  
 TCDT: 177350  
 TCVTR: 214  
 TCLVL: 300  
 TPS: 177564  
 TPB: 177566

:TC11 STATUS REGISTER.  
 :TC11 COMMAND REGISTER.  
 :TC11 WORD COUNT REGISTER.  
 :TC11 BUS ADDRESS REGISTER.  
 :TC11 DATA REGISTER.  
 :TC11 INTERRUPT VECTOR  
 :TC11 INTERRUPT PRIORITY LEVEL.  
 :LSP CSR  
 :LSP BUFFER

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CODCAL: OPEN
RTNNO: OPEN
NXTST: OPEN
CURTST: OPEN
CRBUF: OPEN
CRBUFA: OPEN
CTRA: OPEN
SBDAT1: 50505
          127272
SBDAT2: 72727
          105050
SBDAT3: 72727
          105056
POWPUS: .WORD 000000
POWPOP: .WORD 000000
TCMT: OPEN
TCSTT: OPEN
.ENDM ADITAG

;MACRO SETRAP
MOV #TRAP0,2#4 ;SETUP FATAL TRAP VECTOR JUST IN CASE
MOV #340,2#6 ;NO INTERRUPTS WHILE SERVICING FATAL ERRORS
.ENDM SETRAP

.MACR C55
.BYTE I,0,I,I,0,I ;MTK CODE 55. REV END ZONE MARK.
.ENDM

.MACR C25
.BYTE 0,I,0,I,0,I ;MTK CODE 25. EXTENSION MARK.
.ENDM

.MACR C26 80,81,82,83,84,85
.BYTE 0!80,I!81,0!82,I!83,I!84,0!85 ;FWD BLOCK MARK.
.ENDM

.MACR C32 80,81,82,83,84,85
.BYTE 0!80,I!81,I!82,0!83,I!84,0!85 ;REV GUARD.
.ENDM

.MACR C10 80,81,82,83,84,85
.BYTE 0!80,0!81,I!82,0!83,0!84,0!85 ;MTK CODE 10.
.ENDM

.MACR C70 80,81,82,83,84,85
.BYTE I!80,I!81,I!82,0!83,0!84,0!85 ;MTK CODE 70. DATA MARK.
.ENDM

.MACR C73 80,81,82,83,84,85
.BYTE I!80,I!81,I!82,0!83,I!84,I!85 ;MTK CODE 73. DATA MARK.
.ENDM

.MACR C51 80,81,82,83,84,85
.BYTE I!80,0!81,I!82,0!83,0!84,I!85 ;MTK CODE 51. FWD GUARD.
.ENDM

.MACR C45 80,81,82,83,84,85
.BYTE I!80,0!81,0!82,I!83,0!84,I!85 ;MTK CODE 45. REV BLOCK MARK.
.ENDM

.MACR C22
.BYTE 0,I,0,0,I,0 ;MTK CODE 22. FWD END ZONE.
.ENDM

.MACR CEND
.BYTE -1

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.ENDM
.MACR EMTE
.BYTE I,I,I,0,0,I
.ENDM
.MACR MTCOD MTADR,CNT
JSR RS,LMTCOD ;CALL LOAD MT CODES SUB.
MTADR ;ADDRESS OF MARK TRACK CODES.
CNT ;MARK TRACK CODE COUNT.
.ENDM
.MACR MTCOE CALADR,MTADR,CNT
JSR RS,LMTCOE ;CALL LOAD MT CODES SUBROUTINE.
CALADR ;ADDR TO GO AFTER EACH CODE PASSED.
MTADR ;ADDRESS OF MARK TRACK CODES.
CNT ;MARK TRACK CODE COUNT.
.ENDM
.MACR EMTDEF NAMEA,NAMEB
.WORD NAMEB ;POINTER FOR EMT CALL NAMEA
.NLIST
NAMEA=EMT+EMTX
EMTX=EMTX+1
.LIST
.ENDM
.MACRO SCOMAC
CLR @TCCM
CLR 2(SP) ;PS TO =0 AFTER WE EXIT THE SCOPE ROUTINE
JSR PC,SRSETT
JSR PC,RSTMTK
.ENDM SCOMAC
.=50
.WORD 0
.WORD 0
.SCMTAG 10,10,ADITAG,1100
.MACRO $$SCMREG A,B
$REG'A: .WORD 0 ;CONTAINS (($REGAD)+'B)
.NLIST
$CM1=$CM1+1
$CM2=$CM2+2
.LIST
.ENDM $$SCMREG
.MACRO $$SCMTMP A
$TMP'A: .WORD 0 ;USER DEFINED
.NLIST
$CM4=$CM4+1
.LIST
.ENDM $$SCMTMP
.PAGE

```

```

327 000054 STARS
328 ;*****
329
330 .SBTTL COMMON TAGS
331
332 ;*THIS TABLE CONTAINS VARIOUS COMMON STORAGE LOCATIONS
333 ;*USED IN THE PROGRAM.
334
335 000046 000046      .=46
336 000046 011464      $ENDAD      ;LOGICAL END OF PROGRAM
337
338 001100      .=1100
339
340 001100      SCMTAG:      ;START OF COMMON TAGS
341 001100 000000      $PASS: .WORD 0      ;CONTAINS PASS COUNT
342 001102 000      $TSTNM: .BYTE 0      ;CONTAINS THE TEST NUMBER
343 001103 000      $ERFLG: .BYTE 0      ;CONTAINS ERROR FLAG
344 001104 000000      $ICNT: .WORD 0      ;CONTAINS SUBTEST ITERATION COUNT
345 001106 000000      $LPADR: .WORD 0      ;CONTAINS SCOPE LOOP 1100
346 001110 000000      $LPERR: .WORD 0      ;CONTAINS SCOPE RETURN FOR ERRORS
347 001112 000000      $ERTTL: .WORD 0      ;CONTAINS TOTAL ERRORS DETECTED
348 001114 000      $ITEMB: .BYTE 0      ;CONTAINS ITEM CONTROL BYTE
349 001115 001      $ERMAX: .BYTE 1      ;CONTAINS MAX. ERRORS PER TEST
350 001116 000000      $ERRPC: .WORD 0      ;CONTAINS PC OF LAST ERROR INSTRUCTION
351 001120 000000      $GDADR: .WORD 0      ;CONTAINS 1100 OF 'GOOD' DATA
352 001122 000000      $BDADR: .WORD 0      ;CONTAINS 1100 OF 'BAD' DATA
353 001124 000000      $GDDAT: .WORD 0      ;CONTAINS 'GOOD' DATA
354 001126 000000      $BDDAT: .WORD 0      ;CONTAINS 'BAD' DATA
355 001130 000000 000000 000000      .WORD 0,0,0      ;RESERVED--NOT TO BE USED
356 001136 177560      $TKS: 177560      ;TTY KBD STATUS
357 001140 177562      $TKB: 177562      ;TTY KBD BUFFER
358 001142 177564      $TPS: 177564      ;TTY PRINTER STATUS REG. 1100
359 001144 177566      $TPB: 177566      ;TTY PRINTER BUFFER REG. 1100
360 001146 000      $NULL: .BYTE 0      ;CONTAINS NULL CHARACTER FOR FILLS
361 001147 002      $FILLS: .BYTE 2      ;CONTAINS # OF FILLER CHARACTERS REQUIRED
362 001150 012      $FILLC: .BYTE 12      ;INSERT FILL CHARS. AFTER A "LINE FEED"
363 001151 000      $TPFLG: .BYTE 0      ;"TERMINAL AVAILABLE" FLAG (BIT<07>=0=YES)
364 .LIST
365 001152 000000      $REGAD: .WORD 0      ;CONTAINS THE 1100 FROM
366 ;WHICH ($REGO) WAS OBTAINED
367 .LIST
368 .REPT $CM3
369 $$CMREG \SCM1,\SCM2
370 .ENDR
371 001154      $$CMREG \SCM1,\SCM2
372 001154 000000      $REGO: .WORD 0      ;CONTAINS (($REGAD)+0)
373 .LIST
374 001156      $$CMREG \SCM1,\SCM2
375 001156 000000      $REG1: .WORD 0      ;CONTAINS (($REGAD)+2)
376 .LIST
377 001160      $$CMREG \SCM1,\SCM2
378 001160 000000      $REG2: .WORD 0      ;CONTAINS (($REGAD)+4)
379 .LIST
380 001162      $$CMREG \SCM1,\SCM2
381 001162 000000      $REG3: .WORD 0      ;CONTAINS (($REGAD)+6)
382 .LIST

```

```

383 001164          $SCMREG \SCM1,\SCM2
384 001164 000000  $REG4:  .WORD 0           ;CONTAINS (($REGAD)+10)
385          .LIST
386 001166          $SCMREG \SCM1,\SCM2
387 001166 000000  $REG5:  .WORD 0           ;CONTAINS (($REGAD)+12)
388          .LIST
389 001170          $SCMREG \SCM1,\SCM2
390 001170 000000  $REG6:  .WORD 0           ;CONTAINS (($REGAD)+14)
391          .LIST
392 001172          $SCMREG \SCM1,\SCM2
393 001172 000000  $REG7:  .WORD 0           ;CONTAINS (($REGAD)+16)
394          .LIST
395          .LIST
396          .REPT 10
397          $SCMTMP \SCM4
398          .ENDR
399 001174          $SCMTMP \SCM4
400 001174 000000  STMP0:  .WORD 0           ;USER DEFINED
401          .LIST
402 001176          $SCMTMP \SCM4
403 001176 000000  STMP1:  .WORD 0           ;USER DEFINED
404          .LIST
405 001200          $SCMTMP \SCM4
406 001200 000000  STMP2:  .WORD 0           ;USER DEFINED
407          .LIST
408 001202          $SCMTMP \SCM4
409 001202 000000  STMP3:  .WORD 0           ;USER DEFINED
410          .LIST
411 001204          $SCMTMP \SCM4
412 001204 000000  STMP4:  .WORD 0           ;USER DEFINED
413          .LIST
414 001206          $SCMTMP \SCM4
415 001206 000000  STMP5:  .WORD 0           ;USER DEFINED
416          .LIST
417 001210          $SCMTMP \SCM4
418 001210 000000  STMP6:  .WORD 0           ;USER DEFINED
419          .LIST
420 001212          $SCMTMP \SCM4
421 001212 000000  STMP7:  .WORD 0           ;USER DEFINED
422          .LIST
423 001214 000000  $TIMES: 0           ;MAX. NUMBER OF ITERATIONS
424 001216 000000  $ESCAPE:0           ;ESCAPE ON ERROR 1100
425 001220 177607 000377  $BELL:  .ASCIZ <207><377><377> ;CODE FOR BELL
426 001224          $QUES:  .ASCII /?/ ;QUESTION MARK
427 001225          $CRLF:  .ASCII <15> ;CARRIAGE RETURN
428 001226 000012  $LF:    .ASCIZ <12> ;LINE FEED
429          .IRP A,<ADITAG>
430          A
431          .ENDM
432 001230          ADITAG
433 001230 177340  TCST:  177340           ;TC11 STATUS REGISTER.
434 001232 177342  TCCM:  177342           ;TC11 COMMAND REGISTER.
435 001234 177344  TCWC:  177344           ;TC11 WORD COUNT REGISTER.
436 001236 177346  TCBA:  177346           ;TC11 BUS ADDRESS REGISTER.
437 001240 177350  TCDT:  177350           ;TC11 DATA REGISTER.
438 001242 000214  TCVTR: 214           ;TC11 INTERRUPT VECTOR

```

9/14

|     |        |        |
|-----|--------|--------|
| 439 | 001244 | 000300 |
| 440 | 001246 | 177564 |
| 441 | 001250 | 177566 |
| 442 | 001252 | 000000 |
| 443 | 001254 | 000000 |
| 444 | 001256 | 000000 |
| 445 | 001260 | 000000 |
| 446 | 001262 | 000000 |
| 447 | 001264 | 000000 |
| 448 | 001266 | 000000 |
| 449 | 001270 | 050505 |
| 450 | 001272 | 127272 |
| 451 | 001274 | 072727 |
| 452 | 001276 | 105050 |
| 453 | 001300 | 072727 |
| 454 | 001302 | 105056 |
| 455 | 001304 | 000000 |
| 456 | 001306 | 000000 |
| 457 | 001310 | 000000 |
| 458 | 001312 | 000000 |
| 459 |        |        |

TCLVL: 300  
 TPS: 177564  
 TPB: 177566  
 CODCAL: OPEN  
 RTNNO: OPEN  
 NXTST: OPEN  
 CURTST: OPEN  
 CRBUF: OPEN  
 CRBUFA: OPEN  
 CTRA: OPEN  
 SBDAT1: 50505  
 SBDAT2: 127272  
 SBDAT3: 72727  
 105050  
 72727  
 105056  
 POWPUS: .WORD 000000  
 POWPOP: .WORD 000000  
 TCCMT: OPEN  
 TCSTT: OPEN  
 .PAGE

:TC11 INTERRUPT PRIORITY LEVEL.  
 :LSP CSR  
 :LSP BUFFER

460 001314

STARS  
;\*\*\*\*\*

461  
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476

.SBTTL ERROR POINTER TABLE  
; \*THIS TABLE CONTAINS THE INFORMATION FOR EACH ERROR THAT CAN OCCUR.  
; \*THE INFORMATION IS OBTAINED BY USING THE INDEX NUMBER FOUND IN  
; \*LOCATION \$ITEMB. THIS NUMBER INDICATES WHICH ITEM IN THE TABLE IS PERTINENT.  
; \*NOTE1: IF \$ITEMB IS 0 THE ONLY PERTINENT DATA IS (\$ERRPC).  
; \*NOTE2: EACH ITEM IN THE TABLE CONTAINS 4 POINTERS EXPLAINED AS FOLLOWS:  
  
; \* EM :POINTS TO THE ERROR MESSAGE  
; \* DH :POINTS TO THE DATA HEADER  
; \* DT :POINTS TO THE DATA  
; \* DF :POINTS TO THE DATA FORMAT

477 001314

SERRTB:  
  
EM1 : "SAT (STOP ALL TRANSPORTS) COMMAND DID NOT CLEAR READY"  
EH1 : " PC SP PS TEST# TCCM TCST"  
ET1 : \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000  
  
EM2 : "SST (STOP SELECTED TRANSPORT) DID NOT CLEAR READY"  
EH2 : " PC SP PS TEST# TCCM TCST"  
ET2 : \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000  
  
EM3 : "READY BIT DID NOT CAUSE AN INTERRUPT"  
EH3 : " PC SP PS TEST# TCCM TCST"  
ET3 : \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000  
  
EM4 : "READY BIT CAUSED AN INTERRUPT WITH PROCESSOR AND TC11 AT SAME PRIORITY"  
EH4 : " PC SP PS TEST# TCCM TCST"  
ET4 : \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000  
  
EM5 : "TC11 FAILED TO INTERRUPT"  
EH5 : " PC SP PS TEST# TCCM TCST"  
ET5 : \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000  
  
EM6 : "TC11 DID NOT DROP INTERRUPT REQUEST AFTER IT WAS ACKNOWLEDGED"  
EH6 : " PC SP PS TEST# TCCM TCST"  
ET6 : \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000  
  
EM7 : "DOING A RESET INSTRUCTION DID NOT CLEAR UPS"

478  
479 001314 015617  
480 001316 015705  
481 001320 015764  
482 001322 000000  
483  
484  
485 001324 016002  
486 001326 016064  
487 001330 016142  
488 001332 000000  
489  
490  
491 001334 016160  
492 001336 016225  
493 001340 016304  
494 001342 000000  
495  
496  
497 001344 016322  
498 001346 016431  
499 001350 016510  
500 001352 000000  
501  
502  
503 001354 016526  
504 001356 016557  
505 001360 016636  
506 001362 000000  
507  
508  
509 001364 016654  
510 001366 016751  
511 001370 017030  
512 001372 000000  
513  
514  
515 001374 017046

|     |        |        |        |   |
|-----|--------|--------|--------|---|
| 516 | 001376 | 017122 | EH7    | :" PC SP PS TEST# TCCM TCST"                                    |
| 517 | 001400 | 017200 | ET7    | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 518 | 001402 | 000000 | 000000 |   |
| 519 |        |        |        |   |
| 520 |        |        |        |   |
| 521 | 001404 | 017216 | EM10   | :"ENTERING MAINTANANCE MODE DID NOT SET UPS"                    |
| 522 | 001406 | 017270 | EH10   | :" PC SP PS TEST# TCCM TCST"                                    |
| 523 | 001410 | 017346 | ET10   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 524 | 001412 | 000000 | 000000 |   |
| 525 |        |        |        |   |
| 526 |        |        |        |   |
| 527 | 001414 | 017364 | EM11   | :"UPS DID NOT CLEAR WHEN LEAVING MAINTANANCE MODE"              |
| 528 | 001416 | 017444 | EH11   | :" PC SP PS TEST# TCCM TCST"                                    |
| 529 | 001420 | 017522 | ET11   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 530 | 001422 | 000000 | 000000 |   |
| 531 |        |        |        |   |
| 532 |        |        |        |   |
| 533 | 001424 | 017540 | EM12   | :"TCST BIT 0 CAN BE SET WHILE IN MAINTANANCE MODE"              |
| 534 | 001426 | 017620 | EH12   | :" PC SP PS TEST# TCCM TCST"                                    |
| 535 | 001430 | 017676 | ET12   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 536 | 001432 | 000000 | 000000 |   |
| 537 |        |        |        |   |
| 538 |        |        |        |   |
| 539 | 001434 | 017714 | EM13   | :"TCST BIT 1 CAN BE SET WHILE IN MAINTANANCE MODE"              |
| 540 | 001436 | 017774 | EH13   | :" PC SP PS TEST# TCCM TCST"                                    |
| 541 | 001440 | 020052 | ET13   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 542 | 001442 | 000000 | 000000 |   |
| 543 |        |        |        |   |
| 544 |        |        |        |   |
| 545 | 001444 | 020070 | EM14   | :"WRM COMMAND WITH WRM SWITCH DISABLED FAILED TO SET ILO ERROR" |
| 546 | 001446 | 020167 | EH14   | :" PC SP PS TEST# TCCM TCST"                                    |
| 547 | 001450 | 020246 | ET14   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 548 | 001452 | 000000 | 000000 |   |
| 549 |        |        |        |   |
| 550 |        |        |        |   |
| 551 | 001454 | 020264 | EM15   | :"ILO ERROR FAILED TO SET THE 'ERROR' BIT"                      |
| 552 | 001456 | 020334 | EH15   | :" PC SP PS TEST# TCCM TCST"                                    |
| 553 | 001460 | 020412 | ET15   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 554 | 001462 | 000000 | 000000 |   |
| 555 |        |        |        |   |
| 556 |        |        |        |   |
| 557 | 001464 | 020430 | EM16   | :"CLEARING ILLEGAL OP FAILED TO CLEAR ILO ERROR"                |
| 558 | 001466 | 020506 | EH16   | :" PC SP PS TEST# TCCM TCST"                                    |
| 559 | 001470 | 020564 | ET16   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 560 | 001472 | 000000 | 000000 |   |
| 561 |        |        |        |   |
| 562 |        |        |        |   |
| 563 | 001474 | 020602 | EM17   | :"CLEARING ILLEGAL OP FAILED TO CLEAR THE 'ERROR' BIT"          |
| 564 | 001476 | 020666 | EH17   | :" PC SP PS TEST# TCCM TCST"                                    |
| 565 | 001500 | 020744 | ET17   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |
| 566 | 001502 | 000000 | 000000 |   |
| 567 |        |        |        |   |
| 568 |        |        |        |   |
| 569 | 001504 | 020762 | EM20   | :"WRM WITH WRM SWITCH OFF DID NOT SET ILO ERROR BIT"            |
| 570 | 001506 | 021046 | EH20   | :" PC SP PS TEST# TCCM TCST"                                    |
| 571 | 001510 | 021124 | ET20   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                     |

## E02

MAINDEC-11-DZTCB-C  
DZTCBC.P11TC11 TEST #2  
ERROR POINTER TABLE

MACY11 27(732)

14-SEP-76 10:51 PAGE 13

|     |        |        |        |  |
|-----|--------|--------|--------|--|
| 572 | 001512 | 000000 | 000000 |  |
| 573 |        |        |        |  |
| 574 |        |        |        |  |
| 575 | 001514 | 021142 | EM21   | ;"ILO ERROR SETTING DID NOT CAUSE THE 'ERROR' BIT TO SET"                |
| 576 | 001516 | 021231 | EH21   | ;" PC SP PS TEST# TCCM TCST"   |
| 577 | 001520 | 021310 | ET21   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 578 | 001522 | 000000 | 000000 |  |
| 579 |        |        |        |  |
| 580 |        |        |        |  |
| 581 | 001524 | 021326 | EM22   | ;"CLEARING ERROR BIT ALSO CLEARED ILO ERROR"                             |
| 582 | 001526 | 021400 | EH22   | ;" PC SP PS TEST# TCCM TCST"   |
| 583 | 001530 | 021456 | ET22   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 584 | 001532 | 000000 | 000000 |  |
| 585 |        |        |        |  |
| 586 |        |        |        |  |
| 587 | 001534 | 021474 | EM23   | ;"THE 'ERROR' BIT DID NOT SET"   |
| 588 | 001536 | 021530 | EH23   | ;" PC SP PS TEST# TCCM TCST"   |
| 589 | 001540 | 021606 | ET23   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 590 | 001542 | 000000 | 000000 |  |
| 591 |        |        |        |  |
| 592 |        |        |        |  |
| 593 | 001544 | 021624 | EM24   | ;"THE 'ERROR' BIT SET DID NOT CAUSE AN INTERRUPT"                        |
| 594 | 001546 | 021703 | EH24   | ;" PC SP PS TEST# TCCM TCST"   |
| 595 | 001550 | 021762 | ET24   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 596 | 001552 | 000000 | 000000 |  |
| 597 |        |        |        |  |
| 598 |        |        |        |  |
| 599 | 001554 | 022000 | EM25   | ;"DOING A RESET INSTRUCTION DID NOT SET THE READY BIT"                   |
| 600 | 001556 | 022064 | EH25   | ;" PC SP PS TEST# TCCM TCST"   |
| 601 | 001560 | 022142 | ET25   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 602 | 001562 | 000000 | 000000 |  |
| 603 |        |        |        |  |
| 604 |        |        |        |  |
| 605 | 001564 | 022160 | EM26   | ;"TEST EXECUTION IS OUT OF ORDER"  |
| 606 | 001566 | 022217 | EH26   | ;" PC SP PS TEST# TEST# S/B"   |
| 607 | 001570 | 022272 | ET26   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,TEST# S/B                                  |
| 608 | 001572 | 000000 | 000000 |  |
| 609 |        |        |        |  |
| 610 |        |        |        |  |
| 611 | 001574 | 022306 | EM27   | ;"ERROR TRYING TO READ A BLOCK MARK"                                     |
| 612 | 001576 | 022350 | EH27   | ;" PC SP PS TEST# TCCM TCST"   |
| 613 | 001600 | 022426 | ET27   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 614 | 001602 | 000000 | 000000 |  |
| 615 |        |        |        |  |
| 616 |        |        |        |  |
| 617 | 001604 | 022444 | EM30   | ;"READY WAS NOT SET AFTER BLOCK MARK WAS SHIFTED INTO THE WINDOW REGISTE |
| 618 | 001606 | 022554 | EH30   | ;" PC SP PS TEST# TCCM TCST"   |
| 619 | 001610 | 022632 | ET30   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 620 | 001612 | 000000 | 000000 |  |
| 621 |        |        |        |  |
| 622 |        |        |        |  |
| 623 | 001614 | 022650 | EM31   | ;"INCORRECT BLOCK # IN DATA REG AFTER BLOCK MARK WAS DETECTED"           |
| 624 | 001616 | 022744 | EH31   | ;" PC SP PS TEST# TCCM TCST"   |
| 625 | 001620 | 023044 | ET31   | ;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                              |
| 626 | 001622 | 000000 | 000000 |  |
| 627 |        |        |        |  |

|     |        |        |        |   |  |  |  |  |  |  |
|-----|--------|--------|--------|---|--|--|--|--|--|--|
| 628 |        |        |        |   |  |  |  |  |  |  |
| 629 | 001624 | 023066 | EM32   | ; | "MTE WAS NOT SET BY AN ILLEGAL MARK TRACK CODE"                |  |  |  |  |  |
| 630 | 001626 | 023144 | EH32   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 631 | 001630 | 023222 | ET32   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 632 | 001632 | 000000 | 000000 |   |  |  |  |  |  |  |
| 633 |        |        |        |   |  |  |  |  |  |  |
| 634 |        |        |        |   |  |  |  |  |  |  |
| 635 | 001634 | 023240 | EM33   | ; | "MTE SETTING FAILED TO SET THE 'ERROR' BIT"                    |  |  |  |  |  |
| 636 | 001636 | 023312 | EH33   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 637 | 001640 | 023370 | ET33   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 638 | 001642 | 000000 | 000000 |   |  |  |  |  |  |  |
| 639 |        |        |        |   |  |  |  |  |  |  |
| 640 |        |        |        |   |  |  |  |  |  |  |
| 641 | 001644 | 023406 | EM34   | ; | "ENDZ BIT DID NOT SET WHEN ENDZ MARK DETECTED"                 |  |  |  |  |  |
| 642 | 001646 | 023463 | EH34   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 643 | 001650 | 023542 | ET34   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 644 | 001652 | 000000 | 000000 |   |  |  |  |  |  |  |
| 645 |        |        |        |   |  |  |  |  |  |  |
| 646 |        |        |        |   |  |  |  |  |  |  |
| 647 | 001654 | 023406 | EM34   |   |  |  |  |  |  |  |
| 648 | 001656 | 023463 | EH34   |   |  |  |  |  |  |  |
| 649 | 001660 | 023542 | ET34   |   |  |  |  |  |  |  |
| 650 | 001662 | 000000 | 0000   |   |  |  |  |  |  |  |
| 651 | 001664 | 023736 | EM36   | ; | "MARK TRACK CODE 55 WAS MISTAKEN FOR END ZONE"                 |  |  |  |  |  |
| 652 | 001666 | 024013 | EH36   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 653 | 001670 | 024072 | ET36   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 654 | 001672 | 000000 | 000000 |   |  |  |  |  |  |  |
| 655 |        |        |        |   |  |  |  |  |  |  |
| 656 |        |        |        |   |  |  |  |  |  |  |
| 657 | 001674 | 024110 | EM37   | ; | "ERROR"  |  |  |  |  |  |
| 658 | 001676 | 024116 | EH37   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 659 | 001700 | 024174 | ET37   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 660 | 001702 | 000000 | 000000 |   |  |  |  |  |  |  |
| 661 |        |        |        |   |  |  |  |  |  |  |
| 662 |        |        |        |   |  |  |  |  |  |  |
| 663 | 001704 | 024212 | EM40   | ; | "READY BIT DID NOT SET"  |  |  |  |  |  |
| 664 | 001706 | 024240 | EH40   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 665 | 001710 | 024316 | ET40   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 666 | 001712 | 000000 | 000000 |   |  |  |  |  |  |  |
| 667 |        |        |        |   |  |  |  |  |  |  |
| 668 |        |        |        |   |  |  |  |  |  |  |
| 669 | 001714 | 024334 | EM41   | ; | "THE 'ERROR' BIT SHOULD NOT HAVE SET"                          |  |  |  |  |  |
| 670 | 001716 | 024400 | EH41   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 671 | 001720 | 024456 | ET41   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 672 | 001722 | 000000 | 000000 |   |  |  |  |  |  |  |
| 673 |        |        |        |   |  |  |  |  |  |  |
| 674 |        |        |        |   |  |  |  |  |  |  |
| 675 | 001724 | 024474 | EM42   | ; | "READY BIT SHOULD NOT HAVE SET"                                |  |  |  |  |  |
| 676 | 001726 | 024532 | EH42   | ; | " PC SP PS TEST# TCCM TCST"                                    |  |  |  |  |  |
| 677 | 001730 | 024610 | ET42   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                |  |  |  |  |  |
| 678 | 001732 | 000000 | 000000 |   |  |  |  |  |  |  |
| 679 |        |        |        |   |  |  |  |  |  |  |
| 680 |        |        |        |   |  |  |  |  |  |  |
| 681 | 001734 | 024626 | EM43   | ; | "WORD TRANSFERED INCORRECTLY TO CORE"                          |  |  |  |  |  |
| 682 | 001736 | 024672 | EH43   | ; | " PC SP PS TEST# TCCM TCST RBUF RBUF S/B"                      |  |  |  |  |  |
| 683 | 001740 | 024774 | ET43   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, RBUF RBUF S/B |  |  |  |  |  |



|     |        |        |        |   |  |  |  |  |  |
|-----|--------|--------|--------|---|--|--|--|--|--|
| 740 |        |        |        |   |  |  |  |  |  |
| 741 | 002054 | 026674 | EM55   | ; | "BLOCK MISS SHOULD NOT HAVE SET"                                 |  |  |  |  |
| 742 | 002056 | 026733 | EH55   | ; | " PC SP PS TEST# TCCM TCST"                                      |  |  |  |  |
| 743 | 002060 | 027022 | ET55   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                  |  |  |  |  |
| 744 | 002062 | 000000 | 000000 |   |  |  |  |  |  |
| 745 |        |        |        |   |  |  |  |  |  |
| 746 |        |        |        |   |  |  |  |  |  |
| 747 | 002064 | 027042 | EM56   | ; | "RDATA WAS ISSUED BUT BLOCK MISS FAILED TO SET"                  |  |  |  |  |
| 748 | 002066 | 027120 | EH56   | ; | " PC SP PS TEST# TCCM TCST"                                      |  |  |  |  |
| 749 | 002070 | 027206 | ET56   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                  |  |  |  |  |
| 750 | 002072 | 000000 | 000000 |   |  |  |  |  |  |
| 751 |        |        |        |   |  |  |  |  |  |
| 752 |        |        |        |   |  |  |  |  |  |
| 753 | 002074 | 027226 | EM57   | ; | "BLOCK MISS SETTING DID NOT SET THE 'ERROR' BIT"                 |  |  |  |  |
| 754 | 002076 | 027305 | EH57   | ; | " PC SP PS TEST# TCCM TCST"                                      |  |  |  |  |
| 755 | 002100 | 027374 | ET57   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                  |  |  |  |  |
| 756 | 002102 | 000000 | 000000 |   |  |  |  |  |  |
| 757 |        |        |        |   |  |  |  |  |  |
| 758 |        |        |        |   |  |  |  |  |  |
| 759 | 002104 | 027414 | EM60   | ; | "CLEARING ERROR BIT FAILED TO CLEAR BLOCK MISS"                  |  |  |  |  |
| 760 | 002106 | 027472 | EH60   | ; | " PC SP PS TEST# TCCM TCST"                                      |  |  |  |  |
| 761 | 002110 | 027560 | ET60   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                  |  |  |  |  |
| 762 | 002112 | 000000 | 000000 |   |  |  |  |  |  |
| 763 |        |        |        |   |  |  |  |  |  |
| 764 |        |        |        |   |  |  |  |  |  |
| 765 | 002114 | 027600 | EM61   | ; | "FORWARD CHECKSUM WAS WRITTEN INCORRECTLY INTO CORE"             |  |  |  |  |
| 766 | 002116 | 027663 | EH61   | ; | " PC SP PS TEST# TCCM TCST RBUF+514"                             |  |  |  |  |
| 767 | 002120 | 027762 | ET61   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, RBUF+514        |  |  |  |  |
| 768 | 002122 | 000000 | 000000 |   |  |  |  |  |  |
| 769 |        |        |        |   |  |  |  |  |  |
| 770 |        |        |        |   |  |  |  |  |  |
| 771 | 002124 | 030004 | EM62   | ; | "TCWC WAS MODIFIED DURING RAL"                                   |  |  |  |  |
| 772 | 002126 | 030042 | EH62   | ; | " PC SP PS TEST# TCCM TCST TCWC"                                 |  |  |  |  |
| 773 | 002130 | 030130 | ET62   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, TCWC            |  |  |  |  |
| 774 | 002132 | 000000 | 000000 |   |  |  |  |  |  |
| 775 |        |        |        |   |  |  |  |  |  |
| 776 |        |        |        |   |  |  |  |  |  |
| 777 | 002134 | 030150 | EM63   | ; | "TCBA WAS MODIFIED DURING RAL"                                   |  |  |  |  |
| 778 | 002136 | 030206 | EH63   | ; | " PC SP PS TEST# TCCM TCST TCBA"                                 |  |  |  |  |
| 779 | 002140 | 030310 | ET63   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, TCBA            |  |  |  |  |
| 780 | 002142 | 000000 | 000000 |   |  |  |  |  |  |
| 781 |        |        |        |   |  |  |  |  |  |
| 782 |        |        |        |   |  |  |  |  |  |
| 783 | 002144 | 030330 | EM64   | ; | "DATA MISS DID NOT SET"  |  |  |  |  |
| 784 | 002146 | 030356 | EH64   | ; | " PC SP PS TEST# TCCM TCST"                                      |  |  |  |  |
| 785 | 002150 | 030444 | ET64   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                  |  |  |  |  |
| 786 | 002152 | 000000 | 000000 |   |  |  |  |  |  |
| 787 |        |        |        |   |  |  |  |  |  |
| 788 |        |        |        |   |  |  |  |  |  |
| 789 | 002154 | 030464 | EM65   | ; | "DATA MISS SETTING DID NOT CAUSE THE 'ERROR' BIT TO SET"         |  |  |  |  |
| 790 | 002156 | 030553 | EH65   | ; | " PC SP PS TEST# TCCM TCST"                                      |  |  |  |  |
| 791 | 002160 | 030632 | ET65   | ; | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                  |  |  |  |  |
| 792 | 002162 | 000000 | 000000 |   |  |  |  |  |  |
| 793 |        |        |        |   |  |  |  |  |  |
| 794 |        |        |        |   |  |  |  |  |  |
| 795 | 002164 | 030650 | EM66   | ; | "CLEARING THE 'ERROR' BIT DID NOT CAUSE DATA MISS TO BE CLEARED" |  |  |  |  |

|     |        |        |        |   |  |  |
|-----|--------|--------|--------|---|--|--|
| 796 | 002166 | 030747 | EH66   | ;" PC SP PS TEST# TCCM TCST"                                      |  |  |
| 797 | 002170 | 031026 | ET66   | ;"SERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                       |  |  |
| 798 | 002172 | 000000 | 000000 |   |  |  |
| 799 |        |        |        |   |  |  |
| 800 |        |        |        |   |  |  |
| 801 | 002174 | 031044 | EM67   | ;"READY BIT WAS NOT SET AFTER THE DATA WAS WRITTEN"               |  |  |
| 802 | 002176 | 031125 | EH67   | ;" PC SP PS TEST# TCCM TCST"                                      |  |  |
| 803 | 002200 | 031204 | ET67   | ;"SERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                       |  |  |
| 804 | 002202 | 000000 | 000000 |   |  |  |
| 805 |        |        |        |   |  |  |
| 806 |        |        |        |   |  |  |
| 807 | 002204 | 031222 | EM70   | ;"THE REVERSE CHECKSUM WAS WRITTEN INCORRECTLY"                   |  |  |
| 808 | 002206 | 031277 | EH70   | ;" PC SP PS TEST# TCCM TCST RBUF+512 RBUF+512 S/B                 |  |  |
| 809 | 002210 | 031406 | ET70   | ;"SERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,RBUF+512 RBUF+512 S/B |  |  |
| 810 | 002212 | 000000 | 000000 |   |  |  |
| 811 |        |        |        |   |  |  |
| 812 |        |        |        |   |  |  |
| 813 | 002214 | 031430 | EM71   | ;"WORD COUNT MODIFIED DURING WRITE ALL"                           |  |  |
| 814 | 002216 | 031476 | EH71   | ;" PC SP PS TEST# TCCM TCST TCWC"                                 |  |  |
| 815 | 002220 | 031564 | ET71   | ;"SERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCWC                  |  |  |
| 816 | 002222 | 000000 | 000000 |   |  |  |
| 817 |        |        |        |   |  |  |
| 818 |        |        |        |   |  |  |
| 819 | 002224 | 031604 | EM72   | ;"TCBA MODIFIED DURING WRITE ALL"                                 |  |  |
| 820 | 002226 | 031644 | EH72   | ;" PC SP PS TEST# TCCM TCST TCBA"                                 |  |  |
| 821 | 002230 | 031732 | ET72   | ;"SERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCBA                  |  |  |
| 822 | 002232 | 000000 | 000000 |   |  |  |
| 823 |        |        |        |   |  |  |
| 824 |        |        |        |   |  |  |
| 825 | 002234 | 031752 | EM73   | ;"SST DID NOT CAUSE A SELECT ERROR"                               |  |  |
| 826 | 002236 | 032013 | EH73   | ;" PC SP PS TEST# TCCM TCST"                                      |  |  |
| 827 | 002240 | 032072 | ET73   | ;"SERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1                       |  |  |
| 828 | 002242 | 000000 | 000000 |   |  |  |
| 829 | 002244 | 032110 | EM74   |   |  |  |
| 830 | 002246 | 032163 | EH74   |   |  |  |
| 831 | 002250 | 032222 | ET74   |   |  |  |
| 832 | 002252 | 000000 | 0000   |   |  |  |
| 833 |        |        |        |   |  |  |
| 834 | 002254 | 032234 | EM75   |   |  |  |
| 835 | 002256 | 032307 | EH75   |   |  |  |
| 836 | 002260 | 032346 | ET75   |   |  |  |
| 837 | 002262 | 000000 | 0000   |   |  |  |
| 838 |        |        |        |   |  |  |
| 839 | 002264 | 032360 | EM76   |   |  |  |
| 840 | 002266 | 032433 | EH76   |   |  |  |
| 841 | 002270 | 032472 | ET76   |   |  |  |
| 842 | 002272 | 000000 | 0000   |   |  |  |
| 843 |        |        |        |   |  |  |
| 844 | 002274 | 032504 | EM77   |   |  |  |
| 845 | 002276 | 032557 | EH77   |   |  |  |
| 846 | 002300 | 032616 | ET77   |   |  |  |
| 847 | 002302 | 000000 | 0000   |   |  |  |
| 848 | 002304 |        |        |   |  |  |
| 849 |        |        |        |   |  |  |
| 850 | 002304 | 000240 |        |   |  |  |
| 851 | 002306 | 000240 |        |   |  |  |

.SETUP (<.\$SEOP,.\$SCOPE,.\$STRAP,.\$ERROR,.\$POWER>  
.LIST  
START: NOP  
NOP

|     |        |        |        |        |   |                      |   |
|-----|--------|--------|--------|--------|---|----------------------|---|
| 852 | 002310 | 000240 |        |        | NOP   |                      |   |
| 853 | 002312 | 000240 |        |        | NOP   |                      |   |
| 854 | 002314 |        |        |        | SETUP   | 1000                 |   |
| 855 | 002314 | 012706 | 001100 |        | MOV   | #\$CMTAG,R6          | ;FIRST LOCATION TO BE CLEARED                   |
| 856 | 002320 | 005026 |        |        | CLR   | (R6)+                | ;CLEAR MEMORY LOCATION                          |
| 857 | 002322 | 022706 | 001136 |        | CMP   | #\$TKS,R6            | ;DONE?  |
| 858 | 002326 | 001374 |        |        | BNE   | .-6                  | ;LOOP BACK IF NO                                |
| 859 | 002330 | 012706 | 001000 |        | MOV   | #\$1000,SP           | ;SETUP THE STACK POINTER                        |
| 860 | 002334 | 012737 | 013210 | 000020 | MOV   | #\$SCOPE,2#\$IOTVEC  | ;IOT VECTOR FOR SCOPE ROUTINE                   |
| 861 | 002342 | 012737 | 000340 | 000022 | MOV   | #\$340,2#\$IOTVEC+2  | ;LEVEL 7  |
| 862 | 002350 | 012737 | 013476 | 000030 | MOV   | #\$ERROR,2#\$EMTVEC  | ;EMT VECTOR FOR ERROR ROUTINE                   |
| 863 | 002356 | 012737 | 000340 | 000032 | MOV   | #\$340,2#\$EMTVEC+2  | ;LEVEL 7  |
| 864 | 002364 | 012737 | 014776 | 000034 | MOV   | #\$TRAP,2#\$TRAPVEC  | ;TRAP VECTOR FOR TRAP CALLS                     |
| 865 | 002372 | 012737 | 000340 | 000036 | MOV   | #\$340,2#\$TRAPVEC+2 | ;LEVEL 7  |
| 866 | 002400 | 012737 | 013706 | 000024 | MOV   | #\$SPWRON,2#\$PWRVEC | ;POWER FAILURE VECTOR                           |
| 867 | 002406 | 012737 | 000340 | 000026 | MOV   | #\$340,2#\$PWRVEC+2  | ;LEVEL 7  |
| 868 | 002414 | 013737 | 011434 | 011426 | MOV   | SENDCT,SEOPCT        | ;SETUP END-OF-PROGRAM COUNTER                   |
| 869 | 002422 | 112737 | 000001 | 001115 | MOVB  | #\$1,SEMAX           | ;ALLOW ONE ERROR PER TEST                       |
| 870 | 002430 | 012737 | 002430 | 001106 | MOV   | #\$,SLPADR           | ;INITIALIZE THE LOOP ADDRESS FOR SCOPE          |
| 871 | 002436 | 012706 | 001000 |        | MOV   | #\$1000,SP           | ;SET BOTTOM OF SP STACK.                        |
| 872 | 002442 | 005037 | 001254 |        | CLR   | RTNNO                |   |
| 873 | 002446 | 104400 | 001225 |        | TYPE  | ,\$SCLF              |   |
| 874 | 002452 | 104400 | 015032 |        | TYPE  | ,\$STMES             | ;PRINTOUT STARTUP MESSAGE                       |
| 875 | 002456 | 000240 |        |        | NOP   |                      |   |
| 876 | 002460 | 000000 |        |        | HALT  |                      | ;HERE IS YOUR CHANCE TO SET THE SWITCH REGISTER |
| 877 | 002462 | 005737 | 000042 |        | STARTX: TST   | 42                   |   |
| 878 | 002466 | 001401 |        |        | BEQ   | GETRDY               |   |
| 879 | 002470 | 000005 |        |        | RESET   |                      |   |
| 880 | 002472 | 005037 | 177776 |        | GETRDY: CLR   | PSW                  |   |
| 881 | 002476 | 012706 | 001000 |        | MOV   | #\$1000,SP           | ;SET BOTTOM OF STACK.                           |
| 882 | 002502 | 004737 | 012046 |        | JSR   | PC,SRSETT            | ;ISSUE RESET.                                   |
| 883 | 002506 | 004737 | 012070 |        | JSR   | PC,RSTMTK            | ;RESTORE MARK TRACK.                            |
| 884 | 002512 | 000137 | 002516 |        | JMP   | T0001                |   |
| 885 |        |        |        |        | .SBTTL T0001  |                      |   |
| 886 |        |        |        |        | ;CHECK THAT THE TCCM REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING |                      |   |
| 887 |        |        |        |        | *****   |                      |   |
| 888 | 002516 | 000004 |        |        | T0001: SCOPE  |                      |   |
| 889 | 002520 | 012737 | 002564 | 000004 | MOV   | #\$A0001,2#\$4       | ;SETUP THE FATAL TRAP VECTOR                    |
| 890 | 002526 | 012737 | 000340 | 000006 | MOV   | #\$340,2#\$6         | ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP      |
| 891 | 002534 | 012706 | 001000 |        | MOV   | #\$1000,SP           | ;SETUP THE STACK POINTER                        |
| 892 | 002540 | 004737 | 011614 |        | JSR   | PC,TORDER            | ;MAKE SURE TESTS ARE IN PROPER SEQUENCE         |
| 893 | 002544 | 000001 |        |        | 00001   |                      | ;HERE LIES THE NUMBER OF THIS TEST              |
| 894 | 002546 | 012706 | 001000 |        | R0001: MOV  | #\$1000,SP           | ;INIT THE STACK POINTER                         |
| 895 | 002552 | 005777 | 176454 |        | TST   | 2TCCM                | ;TRY TO READ THE TCCM                           |
| 896 | 002556 | 005077 | 176450 |        | CLR   | 2TCCM                | ;TRY TO MODIFY THE TCCM                         |
| 897 | 002562 | 000401 |        |        | BR  | T0002                | ;NO ERRORS. GO ON TO THE NEXT TEXT              |
| 898 | 002564 | 104074 |        |        | A0001: ERROR  | 74                   | ;COULD NOT ACCESS TCCM                          |
| 899 |        |        |        |        | .SBTTL T0002  |                      |   |
| 900 |        |        |        |        | ;CHECK THAT THE TCST REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING |                      |   |
| 901 |        |        |        |        | *****   |                      |   |
| 902 | 002566 | 000004 |        |        | T0002: SCOPE  |                      |   |
| 903 | 002570 | 012737 | 002634 | 000004 | MOV   | #\$A0002,2#\$4       | ;SETUP THE FATAL TRAP VECTOR                    |
| 904 | 002576 | 012737 | 000340 | 000006 | MOV   | #\$340,2#\$6         | ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP      |
| 905 | 002604 | 012706 | 001000 |        | MOV   | #\$1000,SP           | ;SETUP THE STACK POINTER                        |
| 906 | 002610 | 004737 | 011614 |        | JSR   | PC,TORDER            | ;MAKE SURE TESTS ARE IN PROPER SEQUENCE         |
| 907 | 002614 | 000002 |        |        | 00002   |                      | ;HERE LIES THE NUMBER OF THIS TEST              |

```

908 002616 012706 001000
909 002622 005777 176402
910 002626 005077 176376
911 002632 000401
912 002634 104075
913
914
915
916 002636 000004
917 002640 012737 002704 000004
918 002646 012737 000340 000006
919 002654 012706 001000
920 002660 004737 011614
921 002664 000003
922 002666 012706 001000
923 002672 005777 176336
924 002676 005077 176332
925 002702 000401
926 002704 104076
927
928
929
930 002706 000004
931 002710 012737 002754 000004
932 002716 012737 000340 000006
933 002724 012706 001000
934 002730 004737 011614
935 002734 000004
936 002736 012706 001000
937 002742 005777 176270
938 002746 005077 176264
939 002752 000401
940 002754 104077
941
942
943
944
945
946 002756 000004
947 002760 012737 011530 000004
948 002766 012737 011520 000010
949 002774 012737 000340 000006
950 003002 012737 000340 000012
951 003010 012706 001000
952 003014 004737 011614
953 003020 000005
954 003022 013700 001232
955 003026 005010
956 003030 005210
957 003032 105710
958 003034 100001
959 003036 104001
960 003040
961 003040 012706 001000
962 003044 000400
963

```

```

R0002: MOV #1000,SP ;INIT THE STACK POINTER
TST @TCST ;TRY TO READ THE TCST
CLR @TCST ;TRY TO MODIFY THE TCST
BR T0003 ;NO ERRORS. GO ON TO THE NEXT TEXT
A0002: ERROR 75 ;COULD NOT ACCESS TCST
;CHECK THAT THE TCWC REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING
.SBTTL T0003
*****
T0003: SCOPE
MOV #A0003,@#4 ;SETUP THE FATAL TRAP VECTOR
MOV #340,@#6 ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP
MOV #1000,SP ;SETUP THE STACK POINTER
JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
00003 ;HERE LIES THE NUMBER OF THIS TEST
R0003: MOV #1000,SP ;INIT THE STACK POINTER
TST @TCWC ;TRY TO READ THE TCWC
CLR @TCWC ;TRY TO MODIFY THE TCWC
BR T0004 ;NO ERRORS. GO ON TO THE NEXT TEXT
A0003: ERROR 76 ;COULD NOT ACCESS TCWC
;CHECK THAT THE TCBA REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING
.SBTTL T0004
*****
T0004: SCOPE
MOV #A0004,@#4 ;SETUP THE FATAL TRAP VECTOR
MOV #340,@#6 ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP
MOV #1000,SP ;SETUP THE STACK POINTER
JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
00004 ;HERE LIES THE NUMBER OF THIS TEST
R0004: MOV #1000,SP ;INIT THE STACK POINTER
TST @TCBA ;TRY TO READ THE TCBA
CLR @TCBA ;TRY TO MODIFY THE TCBA
BR T0005 ;NO ERRORS. GO ON TO THE NEXT TEXT
A0004: ERROR 77 ;COULD NOT ACCESS TCBA
;CHECK THAT ISSUING A SAT COMMAND (STOP ALL TRANSPORTS) CAUSES READY BIT
;TO CLEAR IMMEDIATELY (TCCM BIT 7).
.SBTTL T0005
*****
T0005: SCOPE
MOV #TRAP4,4 ;SETUP FATAL TRAP VECTORS
MOV #TRAP10,10
MOV #340,6
MOV #340,12
MOV #1000,SP ;SETUP THE STACK POINTER
JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
00005 ;HERE LIES THE NUMBER OF THIS TEST
R0005: MOV TCCM,R0 ;TCCM ADDR TO R0.
CLR (0) ;SELECT UD, FUNCTION 0.(SAT COMMAND).
INC (0) ;DO.
TSTB (0) ;SEE IF READY IS SET.
BPL A0005 ;BR IF READY NOT SET. (OK).
ERROR 1 ;SAT COMMAND FAILED TO CLEAR READY.
A0005: MOV #1000,SP ;RESTORE THE STACK POINTER
BR T0006 ;GO ON TO THE NEXT TEST
;CHECK THAT ISSUING SST COMMAND (STOP SELECTED TRANSPORT) CAUSES READY

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```

964 ;BIT TO CLEAR IMMEDIATELY (TCCM BIT 7)
965 .SBTTL T0006
966 *****
967 003046 000004
968 003050 012706 001000
969 003054 004737 011614
970 003060 000006
971 003062 013700 001232
972 003066 012710 000010
973 003072 005210
974 003074 105710
975 003076 100001
976 003100 104002
977 003102
978 003102 012706 001000
979 003106 000400
980 ;TEST THAT READY BIT CAN CAUSE AN INTERRUPT. IF THE INTERRUPT IS SERVICED,
981 ;IT WILL HAVE OCCURRED AT THE CORRECT VECTOR.
982 .SBTTL T0007
983 *****
984 003110 000004
985 003112 012706 001000
986 003116 004737 011614
987 003122 000007
988 003124 004737 012022
989 003130 003154
990 003132 005077 176074
991 003136 005037 177776
992 003142 052777 000100 176062
993 003150 000240
994 003152 104003
995 003154
996 003154 012706 001000
997 003160 000400
998
999
1000
1001
1002 003162 000004
1003 003164 012706 001000
1004 003170 004737 011614
1005 003174 000010
1006 003176 004737 012022
1007 003202 003240
1008 003204 013737 001244 177776
1009 003212 005077 176014
1010 003216 052777 000100 176006
1011 003224 000240
1012 003226 005077 176000
1013
1014 003232 012706 001000
1015 003236 000402
1016 003240 104000
1017
1018 003242 000771
1019
;TEST THAT TC11 INTERRUPTS WHEN PROCESSOR IS AT PRIORITY ONE LEVEL LOWER

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M02

MAINDEC-11-DZTCB-C  
DZTCBC.P11 T0010

TC11 TEST #2

MACY11 27(732) 14-SEP-76 10:51 PAGE 21

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1020 ;THAN THE TC11 INTERRUPT PRIORITY.
1021 .SBTTL T0011
1022 ;*****
1023 003244 000004 T0011: SCOPE
1024 003246 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1025 003252 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1026 003256 000011 00011 ;HERE LIES THE NUMBER OF THIS TEST
1027 003260 004737 012022 R0011: JSR PC,STTCV ;SET INTERRUPT VECTOR TO EB.
1028 003264 003322 A0011
1029 003266 005077 175740 CLR @TCCM ;DISABLE TC11 INTERRUPTS.
1030 003272 013737 001244 177776 MOV TCLVL,PSW ;SET PROCESSOR TO PRTY ONE LEVEL LOWER
1031 003300 162737 000040 177776 SUB #40,PSW ;THAN TC11 INTERRUPT PRTY.
1032 003306 052777 000100 175716 BIS #BIT6,@TCCM ;ENABLE TC11 INTERRUPTS.
1033 003314 000240 NOP
1034 003316 104003 ERROR 3 ;TC11 FAILED TO INT. WITH PROCESSOR AT
1035 003320 000401 BR B0011 ;PRTY ONE LEVEL LOWER THAN TC11 INT. PRTY.
1036 003322 022626 A0011: POPSP2 ;HERE IF INT. OCCURS. POP STACK TWICE.
1037 003324 005077 175702 B0011: CLR @TCCM ;DISABLE TC11 INTERRUPTS.
1038
1039 003330 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1040 003334 000400 BR T0012 ;GO ON TO THE NEXT TEST
1041
1042 ;TEST TC11 DOES NOT REINTERRUPT AFTER INITIAL INTERRUPT HAS BEEN SERVICED.
1043 .SBTTL T0012
1044 ;*****
1045 003336 000004 T0012: SCOPE
1046 003340 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1047 003344 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1048 003350 000012 00012 ;HERE LIES THE NUMBER OF THIS TEST
1049 003352 004737 012022 R0012: JSR PC,STTCV ;SET INTERRUPT VECTOR TO FC.
1050 003356 003414 B0012
1051 003360 005077 175646 CLR @TCCM ;DISABLE TC11 INTERRUPTS.
1052 003364 005037 177776 CLR PSW ;SET PROCESSOR PRTY 0.
1053 003370 052777 000100 175634 BIS #BIT6,@TCCM ;ENABLE TC11 INTERRUPTS.
1054 003376 000240 NOP
1055 003400 104005 ERROR 5 ;TC11 FAILED TO INTERRUPT.
1056 003402 005077 175624 A0012: CLR @TCCM ;DISABLE TC11 INTERRUPTS.
1057
1058 003406 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1059 003412 000413 BR T0013 ;GO ON TO THE NEXT TEST
1060 003414 012777 003434 175620 B0012: MOV #D0012,@TCVTR ;CHANGE INT POINTER TO FE.
1061 003422 012716 003430 MOV #C0012,@JSP ;CHANGE INT EXIT POINTER TO FD.
1062 003426 000002 RTI ;EXIT INTERRUPT.
1063 003430 000240 C0012: NOP ;OK IF NO INT. REOCCURS.
1064 003432 000763 BR A0012
1065 003434 022626 D0012: POPSP2 ;HERE IF REINTERRUPT OCCURS.
1066 003436 104006 ERROR 6 ;TC11 REINTERRUPTED AFTER RTI.
1067 003440 000760 BR A0012
1068 ;TEST THAT SETTING MAINTENANCE BIT (TCCM BIT 13) SETS UPS BIT (TCST BIT 7)
1069 ;THAT CLEARING MAINTENANCE BIT CLEARS UPS, AND THAT RESET CLEARS UPS.
1070 .SBTTL T0013
1071 ;*****
1072 003442 000004 T0013: SCOPE
1073 003444 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1074 003450 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1075 003454 000013 00013 ;HERE LIES THE NUMBER OF THIS TEST

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T0013

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1076 003456 032777 000200 175544 R0013: BIT #BIT7,ATCST ;SEE IF UPS IS CLEAR.
1077 003464 001402 BEQ A0013 ;BR IF UPS IS CLEAR.
1078 003466 104007 ERROR 7 ;RESET FAILED TO CLEAR UPS.
1079 003470 000421 BR C0013
1080 003472 052777 020000 175532 A0013: BIS #BIT13,ATCCM ;SET MAINTENALCE BIT.
1081 003500 032777 000200 175522 BIT #BIT7,ATCST ;SEE IF UPS IS SET.
1082 003506 001002 BNE B0013 ;BR IF UPS IS SET.
1083 003510 104010 ERROR 10 ;MAINT BIT FAILED TO SET UPS.
1084 003512 000410 BR C0013
1085 003514 042777 020000 175510 B0013: BIC #BIT13,ATCCM ;CLEAR MAINT BIT.
1086 003522 032777 000200 175500 BIT #BIT7,ATCST ;SEE IF UPS IS CLEAR.
1087 003530 001401 BEQ C0013 ;BR IF UPS IS CLEAR.
1088 003532 104011 ERROR 11 ;CLEARING MAINT. BIT FAILED TO CLEAR UPS.
1089 003534 052777 020000 175470 C0013: BIS #BIT13,ATCCM ;SET MAINT BIT TO SET UPS.
1090 003542 004737 012046 JSR PC,SRSETT ;ISSUE RESET TO CLEAR MAINT AND UPS BITS.
1091
1092 003546 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1093 003552 000400 BR T0014 ;GO ON TO THE NEXT TEST
1094 ;TEST THAT SETTING MAINT. BIT DISABLES LOADING XD16 (TCST BIT 0).
1095 .SBTTL T0014
1096 *****
1097 003554 000004 T0014: SCOPE
1098 003556 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1099 003562 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1100 003566 000014 00014 ;HERE LIES THE NUMBER OF THIS TEST
1101 003570 052777 020000 175434 R0014: BIS #BIT13,ATCCM ;SET MAINTENANCE BIT.
1102 003576 052777 000001 175424 BIS #BIT0,ATCST ;TRY SETTLG XD16.
1103 003604 032777 000001 175416 BIT #BIT0,ATCST ;SEE IF XD16 IS SET.
1104 003612 001401 BEQ A0014 ;BR IF XD16 IS CLEAR.
1105 003614 104012 ERROR 12 ;MAINT BIT SET FAILS TO PREVENT LOADING
1106 003616 004737 012046 A0014: JSR PC,SRSETT ;OF XD16.
1107
1108 003622 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1109 003626 000400 BR T0015 ;GO ON TO THE NEXT TEST
1110 ;TEST THAT SETTING MAINT. BIT DISABLES LOADING XD17 (TCST BIT 1).
1111 .SBTTL T0015
1112 *****
1113 003630 000004 T0015: SCOPE
1114 003632 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1115 003636 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1116 003642 000015 00015 ;HERE LIES THE NUMBER OF THIS TEST
1117 003644 052777 020000 175360 R0015: BIS #BIT13,ATCCM ;SET MAINTENANCE BIT.
1118 003652 052777 000002 175350 BIS #BIT1,ATCST ;TRY SETTING XD17.
1119 003660 032777 000002 175342 BIT #BIT1,ATCST ;SEE ID XD17 IS SET.
1120 003666 001401 BEQ A0015 ;BR IF XD17 IS CLEAR.
1121 003670 104013 ERROR 13 ;MAINT BIT FAILED TO PREVENT SETTING
1122 003672 004737 012046 A0015: JSR PC,SRSETT ;OF XD17.
1123
1124 003676 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1125 003702 000400 BR T0016 ;GO ON TO THE NEXT TEST
1126
1127 ;CHECK THAT ISSUING WRTM COMMAND WITH WRTM SWITCH OFF CAUSES AN ILO ERROR.
1128 ;(ILLEGAL OP- TCST BIT 12), AND THAT ERROR BIT SETS. ;(TCCM BIT 15).
1129 ;TEST DONE WITH MAINTENANCE BIT SET.
1130 .SBTTL T0016
1131 *****

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1132 003704 000004          T0016: SCOPE
1133 003706 012706 001000      MOV      #1000,SP          ;SETUP THE STACK POINTER
1134 003712 004737 011614      JSR      PC,TORDER       ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1135 003716 000016          00016      ;HERE LIES THE NUMBER OF THIS TEST
1136 003720 012777 020012 175304 R0016: MOV      #MAINT!FWD!UO!WRTM,@TCCM
1137 003726 000240          NOP
1138 003730 032777 010000 175272      BIT      #BIT12,@TCST    ;SEE IF ILO ERROR IS SET.
1139 003736 001002          BNE      A0016           ;BR IF ILO ERR IS SET.
1140 003740 104014          ERROR 14      ;WRTM COMMAND WITH WRTM SWITCH DISABLED
1141 003742 000421          BR       D0016           ;FAILED TO SET ILO ERROR.
1142 003744 005777 175262          A0016: TST      @TCCM        ;SEE IF ERROR BIT IS SET.
1143 003750 100402          BMI      B0016           ;BR IF ERROR BIT IS SET.
1144 003752 104015          ERROR 15      ;ILO ERR FAILED TO SET ERROP BIT.
1145 003754 000414          BR       D0016
1146 003756 005077 175250          B0016: CLR      @TCCM        ;CLEAR ILLEGAL COMMAND.
1147 003762 032777 010000 175240      BIT      #BIT12,@TCST    ;SEE IF ILO ERROR IS SET.
1148 003770 001402          BEQ      C0016           ;BR IF ILO ERROR IS CLEAR.
1149 003772 104016          ERROR 16      ;CLEARING ILLEGAL OP FAILED TO CLEAR
1150 003774 000404          BR       D0016           ;ILO ERROR.
1151 003776 005777 175230          C0016: TST      @TCCM        ;SEE IF ERROR BIT IS CLEAR.
1152 004002 100001          BPL      D0016           ;BR IF ERROR IS CLEAR.
1153 004004 104017          ERROR 17      ;CLEARING ILLEGAL OP FAILED TO
1154 004006 004737 012046          D0016: JSR      PC,SRSETT   ;CLEAR ERROR BIT.
1155
1156 004012 012706 001000      MOV      #1000,SP          ;RESTORE THE STACK POINTER
1157 004016 000400          BR       T0017           ;GO ON TO THE NEXT TEST
1158 ;CHECK THAT ISSUING WRTM COMMAND (WRITE TIMING AND MARK) WITH WRTM SWITCH
1159 ;OFF CAUSES AN ILO ERROR(ILLEGAL OP- TCST BIT 12),ALD THAT ERROR BIT SETS.
1160 ;(TCCM BIT 15). TEST DONE WITH MAINTENANCE BIT SET.
1161 .SBTTL T0017
1162 *****
1163 004020 000004          T0017: SCOPE
1164 004022 012706 001000      MOV      #1000,SP          ;SETUP THE STACK POINTER
1165 004026 004737 011614      JSR      PC,TORDER       ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1166 004032 000017          00017      ;HERE LIES THE NUMBER OF THIS TEST
1167 004034 012777 020012 175170 R0017: MOV      #MAINT!FWD!UO!WRTM,@TCCM
1168 004042 000240          NOP
1169 004044 032777 010000 175156      BIT      #BIT12,@TCST    ;SEE IF ILO ERR IS SET.
1170 004052 001002          BNE      A0017           ;BR IF ILO SET.
1171 004054 104020          ERROR 20      ;WRTM WITH WRTM SW OFF FAILED TO SET
1172 004056 000421          BR       D0017           ;ILO ERROR.
1173 004060 005777 175146          A0017: TST      @TCCM        ;ERROR BIT SET?
1174 004064 100402          BMI      B0017           ;BR IF ERROR BIT SET.
1175 004066 104021          ERROR 21      ;ERROR BIT NOT SET WITH ILO ERR SET.
1176 004070 000414          BR       D0017
1177 004072 005077 175134          B0017: CLR      @TCCM        ;CLEAR ILLEGAL COMMAND.
1178 004076 032777 010000 175124      BIT      #BIT12,@TCST    ;SEE IF ILO ER IS CLEAR.
1179 004104 001402          BEQ      C0017           ;BR ID ILO ERR IS CLEAR.
1180 004106 104016          ERROR 16      ;CLEARING ILLEGAL OP FAILED TO
1181 004110 000404          BR       D0017           ;CLEAR ILO ERR.
1182 004112 005777 1 5114          C0017: TST      @TCCM        ;ERROR BIT SET?
1183 004116 100001          BPL      D0017           ;BR IF ERROR BIT IS CLEAR.
1184 004120 104017          ERROR 17      ;CLEARING ILLEGAL OP FAILED TO
1185 004122 004737 012046          D0017: JSR      PC,SRSETT   ;CLEAR ERROR BIT.
1186
1187 004126 012706 001000      MOV      #1000,SP          ;RESTORE THE STACK POINTER

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T0017

1188 004132 000400

BR T0020 ;GO ON TO THE NEXT TEST

1189

;TEST THAT CLEARING ERROR BIT DOES NOT CLEAR ILO ERROR.

1190

.SBTTL T0020

1191

\*\*\*\*\*

1192

T0020: SCOPE

1193 004134 000004

MOV #1000,SP ;SETUP THE STACK POINTER

1194 004136 012706 001000

JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE

1195 004142 004737 011614

00020 ;HERE LIES THE NUMBER OF THIS TEST

1196 004146 000020

1197 004150 012777 020012 175054

R0020: MOV #MAINT!FWD!UD!WRTM,@TCCM

1198 004156 000240

NOP

1199 004160 005777 175046

TST @TCCM ;ERROR SET?

1200 004164 100402

BMI R0020 ;BR IF ERROR BIT IS SET.

1201 004166 104023

ERROR 23 ;ERROR BIT FAILED TO SET.

1202 004170 000410

BR B0020

1203 004172 042777 100000 175032

A0020: BIC #BIT15,@TCCM ;TRY CLEARING ERROR BIT.

1204 004200 32777 010000 175022

BIT #BIT12,@TCST ;ILO SET?

1205 004206 001001

BNE B0020 ;BR IF ILO IS SET.

1206 004210 104022

ERROR 22 ;0 TO ERROR BIT CLEARED ILO ERROR.

1207 004212 004737 012046

B0020: JSR PC,SRSETT ;RESET.

1208

1209 004216 012706 001000

MOV #1000,SP ;RESTORE THE STACK POINTER

1210 004222 000400

BR T0021 ;GO ON TO THE NEXT TEST

1211

;TEST THAT ERROR BIT (TCCM BIT15) IS ABLE TO CAUSE AN INTERRUPT.

1212

.SBTTL T0021

1213

\*\*\*\*\*

1214 004224 000004

T0021: SCOPE

1215 004226 012706 001000

MOV #1000,SP ;SETUP THE STACK POINTER

1216 004232 004737 011614

JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE

1217 004236 000021

00021 ;HERE LIES THE NUMBER OF THIS TEST

1218 004240 004737 012022

R0021: JSR PC,STTCV ;SET TC11 INT. VECTOR TO MB.

1219 004244 004272

A0021

1220 004246 005077 174760

CLR @TCCM ;DISABLE TC11 INTERRUPTS.

1221 004252 005037 177776

CLR PSW ;SET PRY 0.

1222 004256 052777 000100 174746

BIS #BIT6,@TCCM ;ENABLE TC11 INTERRUPTS.

1223 004264 000240

NOP

1224 004266 104005

ERROR 5 ;TC11 FAILED TO INTERRUPT.

1225 004270 000415

BR D0021

1226 004272 012777 004322 174742

A0021: MOV #C0021,@TCVTR ;CHANGE INT VECTOR TO MD.

1227 004300 012716 004306

MOV #B0021,@SP ;CHANGE INT EXIT POINTER TO MC.

1228 004304 000002

RTI ;EXIT INTERRUPT.

1229 004306 052777 020012 174716

B0021: BIS #MAINT!FWD!UD!WRTM,@TCCM

1230 004314 000240

NOP

1231 004316 104024

ERROR 24 ;ERROR BIT FAILED TO INTERRUPT.

1232 004320 000401

BR D0021

1233 004322 022626

C0021: POPSP2 ;HERE IF ERROR INTERRUPTS.

1234 004324 005077 174702

D0021: CLR @TCCM ;DISABLE INT. CLEAR ILLEGAL OP.

1235

1236 004330 012706 001000

MOV #1000,SP ;RESTORE THE STACK POINTER

1237 004334 000400

BR T0022 ;GO ON TO THE NEXT TEST

1238

1239

;TEST THAT ISSUING RNUM COMMAND (READ BLOCK #) CLEARS READY BIT.  
;RESET INSTRUCTION SHOULD SET READY. TEST DONE WITH MAINT. BIT SET.

1240

.SBTTL T0022

1241

\*\*\*\*\*

1242

T0022: SCOPE

1243 004336 000004

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1244 004340 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1245 004344 004737 011614      JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1246 004350 000022                00022                ;HERE LIES THE NUMBER OF THIS TEST
1247 004352 105777 174654      R0022:  TSTB     @TCCM    ;READY SET?
1248 004356 100402                BMI      A0022        ;BR IF READY IS SET.
1249 004360 104025                ERROR 25              ;RESET DID NOT FORCE READY TO SET.
1250 004362 000407                BR       B0022
1251 004364 012777 020003 174640  A0022:  MOV      #MAINT!UO!FWD!RNUM!DO,@TCCM
1252 004372 105777 174634      TSTB     @TCCM        ;READY CLEAR?
1253 004376 100001                BPL     B0022        ;BR IF READY IS CLEAR.
1254 004400 104076                ERROR 76              ;RNUM DO, FAILED TO CLEAR READY.
1255 004402 004737 012046      B0022:  JSR      PC,SRSETT ;ISSUE RESET TO FORCE READY TO SET.
1256
1257 004406 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
1258 004412 000400                BR       T0023        ;GO ON TO THE NEXT TEST
1259
1260 ;TEST THAT TC11 CONTROL CAN RECOGNIZE A BLOCK MARK. WITH MAINT BIT SET,
1261 ;RNUM COMMAND IS ISSUED. A SUBROUTINE PROVIDES TIMING AND MARK DATA.
1262 ;WHEN THE BLOCK MARK HAS BEEN SHIFTED INTO THE WINDOW, THE READY BIT SHOULD SET.
1263 .SBTTL T0023
1264 *****
1264 004414 000004      T0023:  SCOPE
1265 004416 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1266 004422 004737 011614      JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1267 004426 000023                00023                ;HERE LIES THE NUMBER OF THIS TEST
1268 004430 005077 174576      R0023:  CLR      @TCCM
1269 004434 012777 020003 174570  MOV      #MAINT!UO!FWD!RNUM!DO,@TCCM
1270 004442                MTCOD   MTK7,6
1271 004442 004537 012522      JSR      R5,LMTCOD    ;CALL LOAD MT CODES SUB.
1272 004446 032666                MTK7
1273 004450 000006                6                    ;ADDRESS OF MARK TRACK CODES.
1274 004452 005777 174554      TST      @TCCM        ;MARK TRACK CODE COUNT.
1275 004456 100002                BPL     A0023        ;ERROR BIT SET?
1276 004460 104027                ERROR 27              ;BR IF NO ERROR.
1277 004462 000404                BR       B0023        ;ERROR BIT SET. EXAMINE TCST OR LIGHT PANEL.
1278 004464 105777 174542      A0023:  TSTB     @TCCM        ;READY BIT SET?
1279 004470 100401                BMI     B0023        ;BR IF READY IS SET.
1280 004472 104030                ERROR 30              ;READY NOT SET AFTER BLOCK MARK WAS
1281 ;SHIFTED INTO WINDOW REG WITH RNUM COMMAND
1282 ;IN EFFECT.EVERYTHING IS SUSPECT AT THIS
1283 ;POINT. ABILITY TO SHIFT TIMING AND MARK
1284 ;DATA WHILE IN MAINT MODE HAS NOT BEEN
1285
1285 004474                B0023:
1286 004474 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
1287 004500 000400                BR       T0024        ;GO ON TO THE NEXT TEST
1288
1289 ;TEST THAT TC11 CONTROL TRANSFERS THE BLOCK NUMBER TO THE DATA REGISTER
1290 ;WHEN BLOCK MARK IS DETECTED AND CONTROL IS DOING RNUM COMMAND. A SUBROUTINE
1291 ;PROVIDES TIMING, MARK, AND DATA. WHEN THE READY BIT SETS, THE BLOCK #
1292 ;EXPECTED IN THE DATA REGISTER IS 000525.
1293 .SBTTL T0024
1294 *****
1294 004502 000004      T0024:  SCOPE
1295 004504 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1296 004510 004737 011614      JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1297 004514 000024                00024                ;HERE LIES THE NUMBER OF THIS TEST
1298 004516 005077 174510      R0024:  CLR      @TCCM
1299 004522 012777 020003 174502  MOV      #MAINT!UO!FWD!RNUM!DO,@TCCM

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1300 004530          MTCOD  MTK7,6
1301 004530 004537 012522 JSR    R5,LMTCOD      ;CALL LOAD MT CODES SUB.
1302 004534 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
1303 004536 000006          6            ;MARK TRACK CODE COUNT.
1304 004540 022777 052525 174472 CMP    #52525,@TCDT   ;TCDT=52525?
1305 004546 001415          BEQ    A0024          ;BR IF TCDT CORRECT.
1306 004550 017737 174464 001164 MOV    @TCDT,$REG4    ;SETUP BLOK # FOR PRINTOUT
1307 004556 012737 052525 001154 MOV    #52525,$REG0   ;SETUP GOOD BLOK # TO PRINTOUT
1308 004564 017737 174450 00115- MOV    @TCDT,$REG4    ;SETUP BLOK # FOR PRINTOUT
1309 004572 012737 052525 001154 MOV    #52525,$REG0   ;SETUP GOOD BLOK # TO PRINTOUT
1310 004600 104031          ERROR 31 ;ERROR.BLOCK # IN TCDT NOT 52525. EXAMINE TCDT.
1311 004602          A0024:
1312 004602 012706 001000 MOV    #1000,SP      ;RESTORE THE STACK POINTER
1313 004606 000400          BR     T0025          ;GO ON TO THE NEXT TEST
1314          ;TEST THAT TC11 CONTROL IS ABLE TO DETECT AN INCORRECT MARK TRACK CODE.
1315          ;A SUBROUTINE PROVIDES TIMING AND MARK DATA WHILE CONTROL IS IN RNUM
1316          ;COMMAND. WHEN THE INCORRECT MARK IS SHIFTED, THE MTE AND ERR BITS SHOULD SET.
1317          .SBTTL T0025
1318          *****
1319 004610 000004          T0025: SCOPE
1320 004612 012706 001000 MOV    #1000,SP      ;SETUP THE STACK POINTER
1321 004616 004737 011614 JSR    PC,TORDER     ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1322 004622 000025          00025          ;HERE LIES THE NUMBER OF THIS TEST
1323 004624 004537 012474 R0025: JSR    R5,BMOVE     ;SET INVALID CODE IN MARK TRACK.
1324 004630 032636          MTKER
1325 004632 032740          MTKVAR
1326 004634 000006          6
1327 004636 012777 020003 174366 MOV    #MAINT!UO!FWD!RNUM!DO,@TCCM
1328 004644          MTCOD  MTK7,9.
1329 004644 004537 012522 JSR    R5,LMTCOD      ;CALL LOAD MT CODES SUB.
1330 004650 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
1331 004652 000011          9.            ;MARK TRACK CODE COUNT.
1332 004654 032777 020000 174346 BIT    #BIT13,@TCST   ;MTE BIT SET? (MARK TRACK ERROR).
1333 004662 001002          BNE    A0025          ;BR IF MTE BIT IS SET.
1334 004664 104032          ERROR 32          ;INVALID MARK TRACK CODE FAILED TO SET MTE.
1335 004666 000404          BR     B0025
1336 004670 005777 174336 A0025: TST    @TCCM      ;ERROR BIT SET?
1337 004674 100401          BMI    B0025          ;BR IF ERROR BIT IS SET.
1338 004676 104033          ERROR 33          ;MTE BIT FAILED TO SET ERROR BIT.
1339 004700          B0025:
1340 004700 012706 001000 MOV    #1000,SP      ;RESTORE THE STACK POINTER
1341 004704 000400          BR     T0026          ;GO ON TO THE NEXT TEST
1342          ;TEST THAT TC11 CONTROL DETECTS END ZONE MARK CODES. A SUBROUTINE PROVIDES
1343          ;TIMING AND MARK DATA WHILE CONTROL IS IN RNUM COMMAND. WHEN THE ENDZ
1344          ;MARK CODE IS SHIFTED INTO THE WINDOW, THE ENDZ AND ERROR BITS SHOULD SET.
1345          .SBTTL T0026
1346          *****
1347 004706 000004          T0026: SCOPE
1348 004710 012706 001000 MCV    #1000,SP      ;SETUP THE STACK POINTER
1349 004714 004737 011614 JSR    PC,TORDER     ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1350 004720 000026          00026          ;HERE LIES THE NUMBER OF THIS TEST
1351 004722 004537 012474 R0026: JSR    R5,BMOVE     ;SET END CODE IN MARK TRACK.
1352 004726 032644          MTKEND
1353 004730 032716          MTKS
1354 004732 000006          6
1355 004734 012777 020003 174270 MOV    #MAINT!UO!FWD!RNUM!DO,@TCCM

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1356 004742          MTCOD  MTK7,5
1357 004742 004537 012522 JSR    R5,LATCOD      ;CALL LOAD MT CODES SUB.
1358 004746 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
1359 004750 000005          S            ;MARK TRACK CODE COUNT.
1360 004752 005777 174252 TST    @TCST          ;ENDZ BIT SET?
1361 004756 100402          BMI    A0026         ;BR IF ENDZ BIT IS SET.
1362 004760 104034          ERROR 34           ;ENDZ MARK FAILED TO SET ENDZ BIT.
1363 004762 000404          BR     B0026
1364 004764 005777 174242 A0026: TST    @TCCM         ;ERROR BIT SET?
1365 004770 100401          BMI    B0026         ;BR IF ERROR BIT IS SET.
1366 004772 104035          ERROR 35           ;ENDZ BIT FAILED TO SET ERROR BIT.
1367 004774
1368 004774 012706 001000 B0026: MOV    #1000,SP    ;RESTORE THE STACK POINTER
1369 005000 000400          BR     T0027         ;GO ON TO THE NEXT TEST
1370          ;TEST THAT TC11 CONTROL DOES NOT RECOGNIZE MARK TRACK CODE 55 AS END ZONE
1371          ;BLOCK MARK. SUBROUTINE PROVIDES TIMING AND MARK DATA.
1372          .SBTTL T0027
1373          ;*****
1374 005002 000004          T0027: SCOPE
1375 005004 012706 001000 MOV    #1000,SP    ;SETUP THE STACK POINTER
1376 005010 004737 011614 JSR    PC,TORDER   ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1377 005014 000027          D0027           ;HERE LIES THE NUMBER OF THIS TEST
1378 005016 004537 012474 R0027: JSR    R5,BMOVE ;SET CODE 55 IN MARK TRACK.
1379 005022 032652          MTK55
1380 005024 032716          MTK5
1381 005026 000006          B
1382 005030 005077 174176 CLR    @TCCM
1383 005034 012777 020003 174170 MOV    @MAINT!UO!FWD!RNUM!DO,@TCCM
1384 005042          MTCOD  MTK7,5
1385 005042 004537 012522 JSR    R5,LATCOD      ;CALL LOAD MT CODES SUB.
1386 005046 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
1387 005050 000005          S            ;MARK TRACK CODE COUNT.
1388 005052 005777 174152 TST    @TCST          ;ENDZ BIT SET?
1389 005056 100002          BPL   A0027         ;BR IF NOT SET.
1390 005060 104036          ERROR 36           ;MARK CODE 55 INTERPRETED AS END ZONE.
1391 005062 000404          BR     B0027
1392 005064 005777 174142 A0027: TST    @TCCM         ;ERROR BIT SET?
1393 005070 100001          BPL   B0027         ;BR IF NO ERROR.
1394 005072 104037          ERROR 37           ;ERROR BIT SET. EXAMINE TCST.
1395 005074
1396 005074 012706 001000 B0027: MOV    #1000,SP    ;RESTORE THE STACK POINTER
1397 005100 000400          BR     T0030         ;GO ON TO THE NEXT TEST
1398          ;TEST THAT TC11 INTERRUPTS. RNUM COMMAND IS ISSUED. SUBROUTINE PROVIDES
1399          ;TIMING AND MARK. WHEN BLOCK IS FOUND INTERRUPT SHOULD OCCUR.
1400          .SBTTL T0030
1401          ;*****
1402 005102 000004          T0030: SCOPE
1403 005104 012706 001000 MOV    #1000,SP    ;SETUP THE STACK POINTER
1404 005110 004737 011614 JSR    PC,TORDER   ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1405 005114 000030          D0030           ;HERE LIES THE NUMBER OF THIS TEST
1406 005116 004737 012022 R0030: JSR    PC,STTCV  ;SET INTERRUPT VECTOR TO UE.
1407 005122 005162          D0030
1408 005124 005077 174102 CLR    @TCCM
1409 005130 012777 020103 174074 MOV    @MAINT!UO!FWD!IE!RNUM!DO,@TCCM
1410 005136          MTCOD  MTK7,4
1411 005136 004537 012522 JSR    R5,LATCOD      ;CALL LOAD MT CODES SUB.

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T0030

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1412 005142 032666 MTK7 ;ADDRESS OF MARK TRACK CODES.
1413 005144 000004 4 ;MARK TRACK CODE COUNT.
1414 005146 105777 174060 TSTB @TCCM ;READY SET?
1415 005152 100402 BMI A0030 ;BR IF READY SET.
1416 005154 104040 ERROR 40 ;READY DID NOT SET.
1417 005156 000401 BR D0030
1418 005160 104003 A0030: ERROR 3 ;READY FAILED TO INTERRUPT.
1419 005162 D0030:
1420 005162 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1421 005166 000400 BR T0031 ;GO ON TO THE NEXT TEST
1422 ;TEST THAT TC11 IS ABLE TO TRANSFER ONE WORD TO CORE STORAGE. SUBROUTINE
1423 ;PROVIDES TIMING AND MARK. AFTER BLOCK IS "FOUND" TEST SWITCHES TO
1424 ;RDATA COMMAND WITH WORD COUNT OF -1.
1425 .SBTTL T0031
1426 *****
1427 005170 000004 T0031: SCOPE
1428 005172 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1429 005176 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1430 005202 000031 00031 ;HERE LIES THE NUMBER OF THIS TEST
1431 005204 004737 012316 R0031: JSR PC,CLRBUF ;CLEAR READ BUFFER.
1432 005210 004737 012022 JSR PC,STTCV ;SET INTERRUPT VECTOR TO VG.
1433 005214 005360 G0031
1434 005216 005077 174010 CLR @TCCM
1435 005222 012777 020103 174002 MOV #MAINT!UO!FWD!IE!RNUM!DO,@TCCM
1436 005230 MTCOD MTK7,7
1437 005230 004537 012522 JSR R5,LATCOD ;CALL LOAD MT CODES SUB.
1438 005234 032666 MTK7 ;ADDRESS OF MARK TRACK CODES.
1439 005236 000007 7 ;MARK TRACK CODE COUNT.
1440 005240 005777 173766 TST @TCCM ;ERROR BIT SET?
1441 005244 100002 BPL A0031 ;BR IF NO ERROR.
1442 005246 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1443 005250 000440 BR F0031
1444 005252 105777 173754 A0031: TSTB @TCCM ;READY BIT SET?
1445 005256 100002 BPL B0031 ;BR IF READY NOT SET.
1446 005260 104042 ERROR 42 ;READY SHOULD NOT BE SET.
1447 005262 000433 BR F0031
1448 005264 022737 050505 036010 B0031: CMP #50505,RBUF ;SEE IF 1ST WORD IN RBUF IS 50505.
1449 005272 001405 BEQ C0031 ;BR IF WORD IS 50505.
1450 005274 012737 050505 001154 MOV #50505,$REG0 ;GOOD DATA FOR PRINTOUT
1451 005302 104043 ERROR 43 ;WORD IN RBUF IS NOT 50505. EXAMINE RBUF.
1452 005304 000422 BR F0031 ;TRANSFER MAY NOT HAVE OCCURRED.
1453 005306 005777 173722 C0031: TST @TCWC ;WORD COUNT 0?
1454 005312 001407 BEQ D0031 ;BR IF WORD COUNT IS 0.
1455 005314 017737 173714 001164 MOV @TCWC,$REG4 ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1456 005322 005077 173626 CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1457 005326 104044 ERROR 44 ;WORD COUNT NOT 0.
1458 005330 000410 BR F0031
1459 005332 022777 036012 173676 D0031: CMP #RBUF+2,@TCBA ;DID BUS ADDRESS INCREMENT CORRECTLY?
1460 005340 001404 BEQ F0031 ;BR IF TCBA IS CORRECT.
1461 005342 017737 173670 001164 MOV @TCBA,$REG4
1462 005350 104045 ERROR 45 ;TCBA DID NOT INCREMENT OR DID IT INCORRECTLY.
1463 005352 F0031:
1464 005352 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1465 005356 000421 BR T0032 ;GO ON TO THE NEXT TEST
1466 005360 005777 173646 G0031: TST @TCCM ;HERE WHEN RNUM INTERRUPTS. ERROR BIT SET?
1467 005364 100004 BPL I0031 ;BR IF NO ERROR.

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# H03

MAINDEC-11-DZTCB-C  
DZTCBC.P11

T0031

TC11 TEST #2

MACY11 27(732)

14-SEP-76

10:51

PAGE 29

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1468 005366 104041          ERROR 41          ;ERROR BIT SET. EXAMINE TCST.
1469
1470 005370 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
1471 005374 000412          BR      T0032          ;GO ON TO THE NEXT TEST
1472 005376 012777 177777 173630 I0031: MOV      #-1,@TCWC      ;SET WORD COUNT TO -1.
1473 005404 012777 036010 173624 MOV      #RBUF,@TCBA    ;SET BUS ADDR TO RBUF.
1474 005412 112777 000005 173612 MOV      #RDATA!DO,@TCCM ;READ DATA COMMAND.
1475 005420 000002          RTI          ;EXIT INTERRUPT.
1476
1477          ;TEST THAT RDATA COMMAND WITH WORD COUNT SET TO -1 TRANSFERS ONLY ONE WORD.
1478          ;THAT READY IS SET WHEN THE ENTIRE 256 WORD BLOCK HAS BEEN PROCESSED, AND
1479          ;THAT NO PARITY ERROR OCCURS. TEST DONE UNDER MAINTENANCE MODE.
1480          .SBTTL T0032
1481          *****
1481 005422 000004          T0032: SCOPE
1482 005424 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1483 005430 004737 011614      JSR      PC,TORDER     ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1484 005434 000032          00032          ;HERE LIES THE NUMBER OF THIS TEST
1485 005436 004737 012316      R0032: JSR      PC,CLRBUF     ;CLEAR READ BUFFER.
1486 005442 004737 012022      JSR      PC,STTCV      ;SET INTERRUPT VECTOR TO WI.
1487 005446 005632          I0032
1488 005450 005077 173556      CLR      @TCCM
1489 005454 012777 020103 173550 MOV      #MAINT!UD!FWD!IE!RNUM!DO,@TCCM
1490 005462          MTCOD      MTK7,267.
1491 005462 004537 012522      JSR      R5,LATCOD     ;CALL LOAD MT CODES SUB.
1492 005466 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
1493 005470 000413          267.          ;MARK TRACK CODE COUNT.
1494 005472 005777 173534      TST      @TCCM        ;ERROR BIT SET?
1495 005476 100010          BPL      B0032        ;BR IF NO ERROR.
1496 005500 032777 040000 173522 BIT      #BIT14,@TCST  ;WAS IT PARITY ERROR?
1497 005506 001402          BEQ      A0032        ;BR IF NOT PARITY ERROR.
1498 005510 104046          ERROR 46          ;PARITY ERROR.
1499 005512 000444          BR      H0032
1500 005514 104041          A0032: ERROR 41          ;ERROR BIT SET. NOT DUE TO PARITY ERROR.
1501 005516 000442          BR      H0032
1502 005520 105777 173506      B0032: TSTB      @TCCM    ;READY BIT SET?
1503 005524 100402          BMI      C0032        ;BR IF READY IS SET.
1504 005526 104047          ERROR 47          ;READY FAILED TO SET AFTER COMPLETION
1505 005530 000435          BR      H0032        ;OF RDATA COMMAND.
1506 005532 022737 050505 036010 C0032: CMP      #50505,RBUF   ;1ST WORD EQUAL 50505?
1507 005540 001405          BEQ      D0032        ;BR IF WORD IS 50505.
1508 005542 012737 050505 001154 MOV      #50505,$REG0  ;GOOD DATA FOR PRINTOUT
1509 005550 104043          ERROR 43          ;1ST WORD DID NOT TRANSFER TO RBUF CORRECTLY.
1510 005552 000424          BR      H0032
1511 005554 005737 036012      D0032: TST      RBUF+2      ;RBUF+2 EQUAL 0?
1512 005560 001402          BEQ      F0032        ;BR IF RBUF+2 EQUAL 0.
1513 005562 104050          ERROR 50          ;RBUF+2 NOT 0. NO DATA SHOULD HAVE
1514 005564 000417          BR      H0032        ;TRANSFERRED TO IT.
1515 005566 005777 173442      F0032: TST      @TCWC        ;WORD COUNT 0?
1516 005572 001407          BEQ      G0032        ;BR IF WORD COUNT IS 0.
1517 005574 017737 173434 001164 MOV      @TCWC,$REG4   ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1518 005602 005077 173346      CLR      @SREG0       ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1519 005606 104044          ERROR 44          ;WORD COUNT NOT 0.
1520 005610 000405          BR      H0032
1521 005612 022777 036012 173416 G0032: CMP      #RBUF+2,@TCBA ;IS BUS ADDR CORRECT?
1522 005620 001401          BEQ      H0032        ;BR IF TCBA OK.
1523 005622 104045          ERROR 45          ;TCBA ADDR INCORRECT. SHOULD CONTAIN RBUF+2.
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|      |        |        |        |        |        |                                    |  |
|------|--------|--------|--------|--------|--------|------------------------------------|--|
| 1524 | 005624 |        |        |        | H0032: | MOV #1000,SP                       | ;RESTORE THE STACK POINTER   |
| 1525 | 005624 | 012706 | 001000 |        |        | BR T0033                           | ;GO ON TO THE NEXT TEST  |
| 1526 | 005630 | 000421 |        |        | I0032: | TST @TCCM                          | ;HERE WHEN RNUM INTERRUPTS. ERROR?   |
| 1527 | 005632 | 005777 | 173374 |        |        | BPL K0032                          | ;BR IF NO ERROR.   |
| 1528 | 005636 | 100004 |        |        |        | ERROR 41                           | ;ERROR BIT SET. EXAMINE TCST.  |
| 1529 | 005640 | 104041 |        |        |        |                                    |  |
| 1530 |        |        |        |        |        |                                    |  |
| 1531 | 005642 | 012706 | 001000 |        |        | MOV #1000,SP                       | ;RESTORE THE STACK POINTER   |
| 1532 | 005646 | 000412 |        |        |        | BR T0033                           | ;GO ON TO THE NEXT TEST  |
| 1533 | 005650 | 012777 | 177777 | 173356 | K0032: | MOV #-1,@TCWC                      | ;SET WORD COUNT TO -1.   |
| 1534 | 005656 | 012777 | 036010 | 173352 |        | MOV @RBUF,@TCBA                    | ;SET BUS ADDR TO RBUF.   |
| 1535 | 005664 | 112777 | 000005 | 173340 |        | MOVB @RDATA!DO,@TCCM               | ;READ DATA COMMAND.  |
| 1536 | 005672 | 000002 |        |        |        | RTI                                | ;EXIT INTERRUPT.   |
| 1537 |        |        |        |        |        |                                    | ;TEST THAT TC11 IS ABLE TO DETECT INCORRECT PARITY. RDATA COMMAND IS ISSUED. |
| 1538 |        |        |        |        |        |                                    | ;TCWC=-1. BLOCK TO BE READ CONTAINS BAD CHECKSUM. TEST DONE IN MAINT. MODE.  |
| 1539 |        |        |        |        |        | .SBTTL T0033                       |  |
| 1540 |        |        |        |        |        | *****                              |  |
| 1541 | 005674 | 000004 |        |        | T0033: | SCOPE                              |  |
| 1542 | 005676 | 012706 | 001000 |        |        | MOV #1000,SP                       | ;SETUP THE STACK POINTER   |
| 1543 | 005702 | 004737 | 011614 |        |        | JSR PC,ORDER                       | ;MAKE SURE TESTS ARE IN PROPER SEQUENCE                                      |
| 1544 | 005706 | 000033 |        |        |        | D0033                              | ;HERE LIES THE NUMBER OF THIS TEST   |
| 1545 | 005710 | 004737 | 013000 |        | R0033: | JSR PC,MBCKSM                      | ;BAD CHECKSUM TO FCKSM.  |
| 1546 | 005714 | 004737 | 012316 |        |        | JSR PC,CLRBUF                      | ;CLEAR READ BUFFER.  |
| 1547 | 005720 | 004737 | 012022 |        |        | JSR PC,STTCV                       | ;SET INTERRUPT VECTOR TO XE.   |
| 1548 | 005724 | 006042 |        |        |        | D0033                              |  |
| 1549 | 005726 | 005077 | 173300 |        |        | CLR @TCCM                          |  |
| 1550 | 005732 | 012777 | 020103 | 173272 |        | MOV @MAINT!UO!FWD!IE!RNUM!DO,@TCCM |  |
| 1551 | 005740 |        |        |        |        | MTCOD MTK7,267.                    |  |
| 1552 | 005740 | 004537 | 012522 |        |        | JSR RS,LATCOD                      | ;CALL LOAD MT CODES SUB.   |
| 1553 | 005744 | 032666 |        |        |        | MTK7                               | ;ADDRESS OF MARK TRACK CODES.  |
| 1554 | 005746 | 000413 |        |        |        | 267.                               | ;MARK TRACK CODE COUNT.  |
| 1555 | 005750 | 032777 | 040000 | 173252 |        | BIT @BIT14,@TCST                   | ;PARITY ERROR SET?   |
| 1556 | 005756 | 001005 |        |        |        | BNE A0033                          | ;BR IF PARITY ERROR SET.   |
| 1557 | 005760 | 017737 | 173250 | 001154 |        | MOV @TCWC,\$REGO                   |  |
| 1558 | 005766 | 104052 |        |        |        | ERROR 52                           | ;PARITY ERROR NOT DETECTED.(BIT NOT SET).                                    |
| 1559 | 005770 | 000421 |        |        |        | BR C0033                           |  |
| 1560 | 005772 | 005777 | 173234 |        | A0033: | TST @TCCM                          | ;ERROR BIT SET?  |
| 1561 | 005776 | 100405 |        |        |        | BMI B0033                          | ;BR IF ERROR BIT SET.  |
| 1562 | 006000 | 017737 | 173230 | 001154 |        | MOV @TCWC,\$REGO                   |  |
| 1563 | 006006 | 104053 |        |        |        | ERROR 53                           | ;PARITY ERROR DID NOT SET ERROR BIT.   |
| 1564 | 006010 | 000411 |        |        |        | BR C0033                           |  |
| 1565 | 006012 | 005077 | 173214 |        | B0033: | CLR @TCCM                          | ;CLEAR COMMAND REGISTER.   |
| 1566 | 006016 | 005777 | 173210 |        |        | TST @TCCM                          | ;ERROR BIT CLEAR?  |
| 1567 | 006022 | 100004 |        |        |        | BPL C0033                          | ;BR IF ERROR BIT IS CLEAR.   |
| 1568 | 006024 | 017737 | 173204 | 001154 |        | MOV @TCWC,\$REGO                   |  |
| 1569 | 006032 | 104054 |        |        |        | ERROR 54                           | ;CLEARING TCCM FAILED TO CLEAR PARITY ERROR.                                 |
| 1570 | 006034 |        |        |        | C0033: |                                    |  |
| 1571 | 006034 | 012706 | 001000 |        |        | MOV #1000,SP                       | ;RESTORE THE STACK POINTER   |
| 1572 | 006040 | 000421 |        |        |        | BR T0034                           | ;GO ON TO THE NEXT TEST  |
| 1573 | 006042 | 005777 | 173164 |        | D0033: | TST @TCCM                          | ;HERE WHEN RNUM INTERRUPTS. ERROR?   |
| 1574 | 006046 | 100004 |        |        |        | BPL G0033                          | ;BR IF NO ERROR.   |
| 1575 | 006050 | 104041 |        |        |        | ERROR 41                           | ;ERROR BIT SET. EXAMINE TCST.  |
| 1576 |        |        |        |        |        |                                    |  |
| 1577 | 006052 | 012706 | 001000 |        |        | MOV #1000,SP                       | ;RESTORE THE STACK POINTER   |
| 1578 | 006056 | 000412 |        |        |        | BR T0034                           | ;GO ON TO THE NEXT TEST  |
| 1579 | 006060 | 012777 | 177777 | 173146 | G0033: | MOV #-1,@TCWC                      | ; -1 TO WORD COUNT.  |

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1580 006066 012777 036010 173142      MOV      #RBUF,@TCBA      ;SET BUS ADDR TO RBUF.
1581 006074 112777 000005 173130      MOVB     #RDATA!DO,@TCCM ;RDATA COMMAND.
1582 006102 000002                RTI                       ;EXIT INTERRUPT.
1583                                     ;READ 256 WORDS WITH RDATA COMMAND UNDER MAINTENANCE MODE. ALL DATA SHOULD
1584                                     ;TRANSFER CORRECTLY. NO CONTROL ERRORS SHOULD OCCUR.
1585                                     .SBTTL T0034
1586                                     ;*****
1587 006104 000004      T0034: SCOPE
1588 006106 012706 001000      MOV      #1000,SP        ;SETUP THE STACK POINTER
1589 006112 004737 011614      JSR     PC,TORDER       ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1590 006116 000034                D0034                    ;HERE LIES THE NUMBER OF THIS TEST
1591 006120 004737 012316      R0034: JSR     PC,CLRBUF     ;CLEAR READ BUFFER.
1592 006124 004737 012022      JSR     PC,STTCV        ;SET INTERRUPT VECTOR TO YF.
1593 006130 006246                F0034
1594 006132 005077 173074      CLR     @TCCM
1595 006136 012777 020103 173066      MOV     #MAINT!UD!FWD!IE!RNUM!DO,@TCCM
1596 006144                MTCOD   MTK7,267.
1597 006144 004537 012522      JSR     R5,LATCOD       ;CALL LOAD MT CODES SUB.
1598 006150 032666                MTK7
1599 006152 000413                267.                    ;ADDRESS OF MARK TRACK CODES.
1600 006154 005777 173052      TST     @TCCM           ;MARK TRACK CODE COUNT.
1601 006160 100002                BPL     A0034           ;ERROR BIT SET?
1602 006162 104041                ERROR 41                ;BR IF NO ERROR.
1603 006164 000425                BR      D0034           ;ERROR BIT SET. EXAMINE TCST.
1604 006166 005777 173042      A0034: TST     @TCWC       ;WORD COUNT 0?
1605 006172 001407                BEQ     B0034           ;BR IF WORD COUNT IS 0.
1606 006174 017737 173034 001164      MOV     @TCWC,$REG4     ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1607 006202 005077 172746      CLR     @SREG0         ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1608 006206 104044                ERROR 44                ;WORD COUNT NOT 0.
1609 006210 000413                BR      D0034
1610 006212 022777 037010 173016      B0034: CMP     #RBUF+512.,@TCBA ;BUS ADDR CORRECT?
1611 006220 001402                BEQ     C0034           ;BR IF TCBA OK.
1612 006222 104051                ERROR 51                ;TCBA INCORRECT. SHOULD BE EQUAL TO
1613 006224 000405                BR      D0034           ;RBUF+512.
1614 006226 004537 013014      C0034: JSR     R5,CKDAT    ;COMPARE 256 WORDS STARTING AT RBUF.
1615 006232 001270                SBDAT1                    ;REPORT ANY ERRORS.
1616 006234 036010      RBUF
1617 006236 000400      256.
1618                D0034:
1619 006240 012706 001000      MOV     #1000,SP        ;RESTORE THE STACK POINTER
1620 006244 000421                BR      T0035           ;GO ON TO THE NEXT TEST
1621 006246 005777 172760      F0034: TST     @TCCM       ;HERE WHEN RNUM INTERRUPTS. ERROR?
1622 006252 100004                BPL     H0034           ;BR IF NO ERROR.
1623 006254 104041                ERROR 41                ;ERROR BIT SET. EXAMINE TCST.
1624
1625 006256 012706 001000      MOV     #1000,SP        ;RESTORE THE STACK POINTER
1626 006262 000412                BR      T0035           ;GO ON TO THE NEXT TEST
1627 006264 012777 177400 172742      H0034: MOV     #-256.,@TCWC   ;-256 TO WORD COUNT.
1628 006272 012777 036010 172736      MOV     #RBUF,@TCBA    ;SET BUS ADDR TO RBUF.
1629 006300 112777 000005 172724      MOVB     #RDATA!DO,@TCCM ;READ DATA COMMAND.
1630 006306 000002                RTI                       ;EXIT INTERRUPT.
1631                                     ;READ 2 DATA BLOCKS (512 WORDS) WITH RDATA COMMAND UNDER MAINTENANCE MODE.
1632                                     ;ALL DATA SHOULD TRANSFER CORRECTLY. NO ERRORS SHOULD OCCUR.
1633                                     .SBTTL T0035
1634                                     ;*****
1635 006310 000004      T0035: SCOPE

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1636 006312 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1637 006316 004737 011614      JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1638 006322 000035                00035                ;HERE LIES THE NUMBER OF THIS TEST
1639 006324 004737 012316      R0035: JSR      PC,CLRBUF   ;CLEAR READ BUFFER.
1640 006330 004737 012022      JSR      PC,STTCV     ;SET INTERRUPT VECTOR TOZF.
1641 006334 006452                F0035                ;
1642 006336 005077 172670      CLR      @TCCM
1643 006342 012777 020103 172662  MOV      #MAINT!UO!FWD!IE!RNUM!DO,@TCCM
1644 006350                MTCOD
1645 006350 004537 012522      JSR      R5,LATCOD    ;CALL LOAD MT CODES SUB.
1646 006354 032666                MTK7                 ;ADDRESS OF MARK TRACK CODES.
1647 006356 001026                534.                 ;MARK TRACK CODE COUNT.
1648 006360 005777 172646      TST      @TCCM        ;ERROR BIT SET?
1649 006364 100002                BPL      A0035        ;BR IF NO ERROR.
1650 006366 104041                ERROR 41             ;ERROR BIT SET EXAMINE TCST.
1651 006370 000425                BR        D0035
1652 006372 005777 172636      A0035: TST      @TCWC    ;WORD COUNT 0?
1653 006376 001407                BEQ      B0035        ;BR IF WORD COUNT IS 0.
1654 006400 017737 172630 001164  MOV      @TCWC,$REG4  ;PREPERE ERONIOUS WORD COUNT FOR PRINTOUT
1655 006406 005077 172542      CLR      @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1656 006412 104044                ERROR 44             ;WORD COUNT NOT 0.
1657 006414 000413                BR        D0035
1658 006416 022777 040010 172612  B0035: CMP      #RBUF+1024.,@TCBA;TCBA CORRECT?
1659 006424 001402                BEQ      C0035        ;BR IF TCBA IS OK.
1660 006426 104045                ERROR 45             ;TCBA INCORRECT. SHOULD BE RBUF+1024.
1661 006430 000405                BR        D0035
1662 006432 004537 013014      C0035: JSR      R5,CKDAT ;COMPARE 512 WORDS STARTING AT RBUF.
1663 006436 001270                SBDAT1              ;REPORT ANY ERRORS.
1664 006440 036010                RBUF
1665 006442 001000                512.
1666 006444                D0035:
1667 006444 012706 001000      MOV      #1000,SP    ;RESTORE THE STACK POINTER
1668 006450 000421                BR        T0036      ;GO ON TO THE NEXT TEST
1669 006452 005777 172554      F0035: TST      @TCCM    ;HERE WHEN RNUM INTERRUPTS. ERROR?
1670 006456 100004                BPL      H0035        ;BR IF NO ERROR.
1671 006460 104041                ERROR 41             ;ERROR BIT SET. EXAMINE TCST.
1672
1673 006462 012706 001000      MOV      #1000,SP    ;RESTORE THE STACK POINTER
1674 006466 000412                BR        T0036      ;GO ON TO THE NEXT TEST
1675 006470 012777 177000 172536  H0035: MOV      #-512,@TCWC ;-512 TO WORD COUNT.
1676 006476 012777 036010 172532  MOV      #RBUF,@TCBA ;SET BUS ADDR TO RBUF.
1677 006504 112777 000005 172520  MOV      #RDATA!DO,@TCCM ;READ DATA COMMAND.
1678 006512 000002                RTI                  ;EXIT INTERRUPT.
1679 ;READ 1.5 BLOCKS (384 WORDS) WITH RDATA COMMAND UNDER MAINTENANCE MODE.
1680 ;ALL DATA SHOULD TRANSFER CORRECTLY. NO ERRORS SHOULD OCCUR.
1681 .SBTTL T0036
1682 *****
1683 006514 000004                T0036: SCOPE
1684 006516 012706 001000      MOV      #1000,SP    ;SETUP THE STACK POINTER
1685 006522 004737 011614      JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1686 006526 000036                00036                ;HERE LIES THE NUMBER OF THIS TEST
1687 006530 004737 012316      R0036: JSR      PC,CLRBUF ;CLEAR READ BUFFER.
1688 006534 004737 012022      JSR      PC,STTCV     ;SET INTERRUPT VECTOR TO AIF.
1689 006540 006654                F0036
1690 006542 005077 172464      CLR      @TCCM
1691 006546 012777 020103 172456  MOV      #MAINT!UO!FWD!IE!RNUM!DO,@TCCM

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1692 006554          MTCOD   MTK7,534.
1693 006554 004537 012522   JSR     RS,LMTCOD      ;CALL LOAD MT CODES SUB.
1694 006560 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
1695 006562 001026          534.          ;MARK TRACK CODE COUNT.
1696 006564 005777 172442   TST     @TCCM          ;ERROR BIT SET?
1697 006570 100002          BPL     A0036          ;BR IF NO ERROR.
1698 006572 104041          ERROR 41        ;ERROR BIT SET. EXAMINE TCST.
1699 006574 000424          BR      D0036
1700 006576 005777 172432   A0036: TST     @TCCM          ;WORD COUNT 0?
1701 006602 001407          BEQ     B0036          ;BR IF WORD COUNT 0.
1702 006604 017737 172424 001164   MOV     @TCCM,$REG4    ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1703 006612 005077 172336          CLR     @SREG0        ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1704 006616 104044          ERROR 44        ;WORD COUNT NOT 0.
1705 006620 000412          BR      D0036
1706 006622 022777 037410 172406  B0036: CMP     #RBUF+768.,@TCBA ;TCBA CORRECT?
1707 006630 001401          BEQ     C0036          ;BR IF TCBA OK.
1708 006632 104045          ERROR 45        ;TCBA INCORRECT. SHOULD BE RBUF+768.
1709 006634 004537 013014   C0036: JSR     RS,CKDAT      ;COMPARE 384 WORDS STARTING AT RBUF.
1710 006640 001270          SBDAT1          ;REPORT ANY ERRORS.
1711 006642 036010          RBUF
1712 006644 000600          384.
1713 006646          D0036:
1714 006646 012706 001000   MOV     #1000,SP      ;RESTORE THE STACK POINTER
1715 006652 000421          BR      T0037          ;GO ON TO THE NEXT TEST
1716 006654 005777 172352   F0036: TST     @TCCM          ;HERE WHEN RNUM INTERRUPTS. ERROR?
1717 006660 100004          BPL     H0036          ;BR IF NO ERROR.
1718 006662 104041          ERROR 41        ;ERROR BIT SET. EXAMINE TCST.
1719
1720 006664 012706 001000   MOV     #1000,SP      ;RESTORE THE STACK POINTER
1721 006670 000412          BR      T0037          ;GO ON TO THE NEXT TEST
1722 006672 012777 177200 172334  H0036: MOV     #-384.,@TCCM    ;-384 TO WORD COUNT.
1723 006700 012777 036010 172330   MOV     #RBUF,@TCBA   ;SET BUS ADDR TO RBUF.
1724 006706 112777 000005 172316   MOVB    #RDATA!DO,@TCCM ;READ DATA COMMAND.
1725 006714 000002          RTI              ;EXIT INTERRUPT.
1726          ;COMPLEMENT OBVERSE READ TEST. READ ONE BLOCK (256 WORDS) WITH RDATA IN REVERSE.
1727          ;ALL DATA SHOULD COMPLEMENT OBVERSE CORRECTLY. NO CONTROL ERRORS SHOULD OCCUR.
1728          .SBTTL T0037
1729          *****
1730 006716 000004          T0037: SCOPE
1731 006720 012706 001000   MOV     #1000,SP      ;SETUP THE STACK POINTER
1732 006724 004737 011614   JSR     PC,TORDER     ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1733 006730 000037          00037             ;HERE LIES THE NUMBER OF THIS TEST
1734 006732 004737 012316   R0037: JSR     PC,CLRBUF    ;CLEAR READ BUFFER
1735 006736 004737 012022   JSR     PC,STTCV      ;SET INTERRUPT VECTOR TO BID
1736 006742 007020          C0037
1737 006744 005077 172262   CLR     @TCCM
1738 006750 012777 024103 172254   MOV     #MAINT!UD!REV!IE!RNUM!DO,@TCCM
1739 006756          MTCOD   MTK7,267.
1740 006756 004537 012522   JSR     RS,LMTCOD      ;CALL LOAD MT CODES SUB.
1741 006762 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
1742 006764 000413          267.          ;MARK TRACK CODE COUNT.
1743 006766 005777 172240   TST     @TCCM          ;ERROR BIT SET?
1744 006772 100002          BPL     A0037          ;BR IF NO ERROR.
1745 006774 104041          ERROR 41        ;ERROR BIT SET. EXAMINE TCST.
1746 006776 000405          BR      B0037
1747 007000 004537 013014   A0037: JSR     RS,CKDAT      ;COMPARE 256 WORDS STARTING AT RBUF.

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1748 007004 001274          SBDAT2          ;REPORT ANY ERRORS.
1749 007006 036010          RBUF
1750 007010 000400          256.
1751 007012          B0037:
1752 007012 012706 001000          MOV #1000,SP      ;RESTORE THE STACK POINTER
1753 007016 000421          BR T0040          ;GO ON TO THE NEXT TEST
1754 007020 005777 172206          C0037: TST @TCCM    ;HERE WHEN RNUM INTERRUPTS. ERROR.
1755 007024 100004          BPL F0037        ;BR IF NO ERROR.
1756 007026 104041          ERROR 41       ;ERROR BIT SET. EXAMINE TCST.
1757
1758 007030 012706 001000          MOV #1000,SP      ;RESTORE THE STACK POINTER
1759 007034 000412          BR T0040          ;GO ON TO THE NEXT TEST
1760 007036 012777 177400 172170          F0037: MOV #-256,@TCWC ; -256 TO AND COUNT.
1761 007044 012777 036010 172164          MOV #RBUF,@TCBA  ;ADDR OF RBUF TO BUS ADDRESS.
1762 007052 112777 000005 172152          MOVB #RDATA!DO,@TCCM ;READ DATA COMMAND.
1763 007060 000002          RTI            ;EXIT INTERRUPT
1764          ;CHECK FOR CORRECT OPERATION OF BLOCK MISS ERROR.
1765          .SBTTL T0040
1766          ;*****
1767 007062 000004          T0040: SCOPE
1768 007064 012706 001000          MOV #1000,SP      ;SETUP THE STACK POINTER
1769 007070 004737 011614          JSR PC,TORDER    ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1770 007074 000040          00040          ;HERE LIES THE NUMBER OF THIS TEST
1771 007076 005077 172130          R0040: CLR @TCCM
1772 007102 012777 177776 172124          MOV #-2,@TCWC    ; -2 TO WORD COUNT.
1773 007110 012777 036010 172120          MOV #RBUF,@TCBA  ;RBUF ADDR TO TCBA.
1774 007116 012777 020003 172106          MOV #MAINT!UD!FWD!RNUM!DO,@TCCM
1775 007124          MTCOD MTK7,5
1776 007124 004537 012522          JSR RS,LATCOD    ;CALL LOAD MT CODES SUB.
1777 007130 032666          MTK7            ;ADDRESS OF MARK TRACK CODES.
1778 007132 000005          5              ;MARK TRACK CODE COUNT.
1779 007134 005777 172072          TST @TCCM        ;ERROR BIT SET?
1780 007140 100002          BPL A0040        ;BR IF NO ERROR.
1781 007142 104041          R0040A: ERROR 41 ;ERROR BIT SET EXAMINE TCST.
1782 007144 000506          BR F0040
1783 007146 112777 000005 172056          A0040: MOVB #RDATA!DO,@TCCM ;ISSUE RDATA COMMAND.
1784 007154          MTCOD MTK7A,2
1785 007154 004537 012522          JSR RS,LATCOD    ;CALL LOAD MT CODES SUB.
1786 007160 032724          MTK7A          ;ADDRESS OF MARK TRACK CODES.
1787 007162 000002          2              ;MARK TRACK CODE COUNT.
1788 007164 032777 002000 172036          BIT #BIT10,@TCST ;BLOCK MISS ERROR SET?
1789 007172 001405          BEQ B0040        ;BR IF NO BLOCK MISS. OK.
1790 007174 017737 172034 001154          MOV @TCWC,@REGO  ;MAKE WORD COUNT INFO PRINTABLE
1791 007202 104055          ERROR 55        ;BLOCK MISS SET WHEN RDATA ISSUED JUST
1792 007204 000466          BR F0040          ;BEFORE REV CHECK MARK. SHOULDN'T HAVE.
1793 007206 005077 172020          B0040: CLR @TCCM
1794 007212 012777 177776 172014          MOV #-2,@TCWC    ; -2 TO WORD COUNT.
1795 007220 012777 036010 172010          MOV #RBUF,@TCBA  ;RBUF ADDR TO TCBA.
1796 007226 012777 020003 171776          MOV #MAINT!UD!FWD!RNUM!DO,@TCCM
1797          MTCOD MTK7,6
1798 007234 004537 012522          JSR RS,LATCOD    ;CALL LOAD MT CODES SUB.
1799 007240 032666          MTK7            ;ADDRESS OF MARK TRACK CODES.
1800 007242 000006          6              ;MARK TRACK CODE COUNT.
1801 007244 005777 171762          TST @TCCM        ;ERROR BIT SET?
1802 007250 100734          BMI R0040A       ;BR IF ERROR BIT SET?
1803 007252 112777 000005 171752          MOVB #RDATA!DO,@TCCM ;ISSUE RDATA COMMAND.

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1804 007260 MTCOD MTK7B,2
1805 007260 004537 012522 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
1806 007264 032732 MTK7B ;ADDRESS OF MARK TRACK CODES.
1807 007266 000002 2 ;MARK TRACK CODE COUNT.
1808 007270 032777 002000 171732 BIT #BIT10,@TCST ;BLOCK MISS ERROR SET?
1809 007276 001005 BNE C0040 ;BR IF BLOCK MISS.
1810 007300 017737 171730 001154 MOV @TCWC,$REGO ;MAKE WORD COUNT INFO PRINTABLE
1811 007306 104056 ERROR 56 ;BLOCK MISS FAILED TO SET WHEN RDATA ISSUED
1812 007310 000424 BR F0040 ;RIGHT AFTER REV CHECK MARK. IT SHOULD HAVE.
1813 007312 005777 171714 C0040: TST @TCCM ;ERROR BIT SET?
1814 007316 100405 BMI D0040 ;BR IF ERROR BIT SET.
1815 007320 017737 171710 001154 MOV @TCWC,$REGO ;MAKE WORD COUNT INFO PRINTABLE
1816 007326 104057 ERROR 57 ;BLOCK MISS FAILED TO SET ERROR BIT.
1817 007330 000414 BR F0040
1818 007332 005077 171674 D0040: CLR @TCCM ;0 TO ERROR BIT.
1819 007336 032777 002000 171666 BIT #BIT10,@TCCM ;BLOCK MISS CLEARED?
1820 007344 001406 BEQ F0040 ;BR IF BLOCK MISS CLEARED.
1821 007346 017737 171662 001154 MOV @TCWC,$REGO ;MAKE WORD COUNT INFO PRINTABLE
1822 007354 104060 ERROR 60 ;0 TO ERROR FAILED TO CLEAR BLOCK MISS.
1823 007356 004737 012046 JSR PC,SRSETT
1824 007362 F0040:
1825 007362 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1826 007366 000400 BR T0041 ;GO ON TO THE NEXT TEST
1827
1828 ;READ ALL TEST (RALL)
1829 ;AFTER BLOCK IS FOUND, SWITCH TO RALL. READ 258 WORDS. 1ST WORD READ SHOULD BE
1830 ;THE REVERSE CHECKSUM (SHOULD BE 0). LAST WORD READ SHOULD BE THE FORWARD
1831 ;CHECKSUM (SHOULD BE 770000). ALL OTHER WORDS SHOULD BE DATA.
1832 ;SBTTL T0041
1833 *****
1834 T0041: SCOPE
1835 MOV #1000,SP ;SETUP THE STACK POINTER
1836 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1837 D0041 ;HERE LIES THE NUMBER OF THIS TEST
1838 R0041: JSR PC,CLRBUF ;CLEAR READ BUFFER.
1839 JSR PC,STTCV ;SET INTERRUPT VECTOR TO EIF.
1840 F0041
1841 CLR @TCCM
1842 MOV #MAINT!UD!FWD!IE!RNUM!DO,@TCCM
1843 MTCOD MTK7,267.
1844 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
1845 MTK7 ;ADDRESS OF MARK TRACK CODES.
1846 267. ;MARK TRACK CODE COUNT.
1847 R0041A: TST @TCCM ;ERROR BIT SET?
1848 BPL R0041B ;BR IF NO ERROR.
1849 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1850 BR G0041
1851 R0041B: MOV @TCDT,(4)+ ;SAVE DATA IN READ BUFFER.
1852 DEC CTRA ;258 WORDS READ?
1853 BEQ A0041 ;BR IF 258 WORDS READ.
1854 RTI ;NOT DONE YET. EXIT INTERRUPT.
1855 A0041: TST RBUF ;1ST WORD IN RBUF EQUAL 0?
1856 BEQ D0041 ;BR IF 1ST WORD IS 0.
1857 CMP #55555,RBUF ;1ST WORD EQUAL 55555?
1858 BNE B0041 ;BR IF NOT 55555.
1859 BR G0041 ;55555. 1ST WORD READ WITH RALL WAS
;REV GUARD INSTEAD OF REV CHECKSUM.

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1860 007510 022737 066666 036010 B0041: CMP #66666,RBUF ;1ST WORD EQUAL 66666?
1861 007516 001002 BNE C0041 ;BR IF NOT 66666.
1862 007520 104043 ERROR 43 ;66666. 1ST WORD READ WITH RALL WAS
1863 007522 000434 BR G0041 ;REV LOCK INSTEAD OF REV CHECKSUM.
1864 007524 104043 C0041: ERROR 43 ;1ST WORD READ WITH RALL WAS NOT
1865 007526 000432 BR G0041 ;REV CHECKSUM. EXAMINE RBUF (1ST WORD).
1866 007530 004537 013014 D0041: JSR R5,CKDAT
1867 007534 001270 SBDAT1
1868 007536 036012 RBUF+2
1869 007540 000400 256.
1870 007542 022737 170000 037012 CMP #170000,RBUF+514.;FWD CHKSUM EQUAL 170000? 1ST WORD READ.
1871 007550 001402 BEQ D0041A
1872 007552 104061 ERROR 61 ;LAST WORD READ SHOULD HAVE BEEN THE FWD CHECKSUM.
1873 007554 000417 BR G0041 ;IN CORE IT SHOULD BE 170000.
1874 007556 005777 171452 D0041A: TST @TCWC ;WORD COUNT STILL 0?
1875 007562 001402 BEQ D0041B
1876 007564 104062 ERROR 62 ;TCWC (WORD COUNT) WAS MODIFIED DURING
1877 007566 000412 BR G0041 ;RALL. SHOULDN'T HAVE.
1878 007570 022777 036010 171440 D0041B: CMP #RBUF,@TCBA ;BUS ADDRESS STILL EQUAL #RBUF?
1879 007576 001406 BEQ G0041
1880 007600 104063 ERROR 63 ;TCBA (BUS ADDRESS) MODIFIED DURING
1881 007602 000404 BR G0041 ;RALL. SHOULDN'T HAVE.
1882 007604 005777 171422 F0041: TST @TCCH ;HERE WHEN RNUM INTERRUPTS. ERROR!
1883 007610 100004 BPL I0041 ;BR IF NO ERROR.
1884 007612 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1885 007614 G0041:
1886 007614 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1887 007620 000421 BR T0042 ;GO ON TO THE NEXT TEST
1888 007622 012737 000402 001266 I0041: MOV #258,CTRA ;NUMBER OF WORDS TO READ TO CTRA.
1889 007630 012704 036010 MOV #RBUF,R4 ;ADDR TO STORE DATA TO R4.
1890 007634 005077 171374 CLR @TCWC ;ZERO WORD COUNT.
1891 007640 012777 036010 171370 MOV #RBUF,@TCBA ;SET BUS ADDRESS TO RBUF.
1892 007646 004737 012022 JSR PC,STTCV ;SET INTERRUPT VECTOR TO E1AA.
1893 007652 007440 R0041A
1894 007654 112777 000107 171350 MOVB #RALL!IE!DO,@TCCH ;RALL COMMAND.
1895 007662 000002 RTI ;EXIT INTERRUPT.
1896
1897 ;DATA MISS TEST. TEST THAT DATA MISS ERROR SETS WHEN DATA REGISTER (TCDT) IS
1898 ;NOT REFERENCED UNDER RALL COMMAND, BEFORE THE NEXT DATA WORD IS LOADED INTO
1899 ;THE DATA REGISTER. (READY BIT IS CLEARED WHEN IN RALL BY REFERENCING
1900 ;THE DATA REGISTER (TCDT).
1901 ;SBTTL T0042
1902 ;*****
1902 007664 000004 T0042: SCOPE
1903 007666 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1904 007672 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1905 007676 000042 00042 ;HERE LIES THE NUMBER OF THIS TEST
1906 007700 004737 012022 R0042: JSR PC,STTCV ;SET INTERRUPT VECTOR TO F1E.
1907 007704 010006 D0042
1908 007706 005077 171320 CLR @TCCH
1909 007712 012777 020103 171312 MOV #MAINT!UO!FWD!IE!RNUM!DO,@TCCH
1910 007720 MTCOD MTK7,7
1911 007720 004537 012522 JSR R5,LATCOD ;CALL LOAD MT CODES SUB.
1912 007724 032666 MTK7 ;ADDRESS OF MARK TRACK CODES.
1913 007726 000007 7 ;MARK TRACK CODE COUNT.
1914 007730 032777 001000 171272 BIT #BIT9,@TCST ;DATA MISS ERROR SET?
1915 007736 001002 BNE A0042 ;BR IF DATA MISS IS SET.

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1916 007740 104064          ERROR 64          ;DATA MISS FAILED TO SET.
1917 007742 000416          BR C0042
1918 007744 005777 171262 A0042: TST @TCCM          ;ERROR BIT SET?
1919 007750 100402          BMI B0042          ;BR IF ERROR BIT SET.
1920 007752 104065          ERROR 65          ;DATA MISS FAILED TO SET ERROR BIT.
1921 007754 000411          BR C0042
1922 007756 005077 171250 B0042: CLR @TCCM          ;0 TO ERROR BIT.
1923 007762 032777 001000 171240 BIT @BIT9,@TCST    ;DATA MISS CLEARED?
1924 007770 001403          BEQ C0042          ;BR IF DATA MISS IS CLEAR.
1925 007772 104066          ERROR 66          ;0 TO ERROR FAILED TO CLEAR DATA MISS.
1926 007774 004737 012046 JSR PC,SRSETT
1927 010000          C0042:
1928 010000 012706 001000 MOV #1000,SP        ;RESTORE THE STACK POINTER
1929 010004 000422          BR T0043          ;GO ON TO THE NEXT TEST
1930 010006 005777 171220 D0042: TST @TCCM          ;HERE WHEN RNUM INTERRUPTS. ERROR?
1931 010012 100004          BPL G0042          ;BR IF NO ERROR.
1932 010014 104041          ERROR 41          ;ERROR BIT SET. EXAMINE TCST.
1933
1934 010016 012706 001000 MOV #1000,SP        ;RESTORE THE STACK POINTER
1935 010022 000413          BR T0043          ;GO ON TO THE NEXT TEST
1936 010024 004737 012022 G0042: JSR PC,STCV          ;SET INTERRUPT VECTOR TO FIH.
1937 010030 010042          H0042
1938 010032 112777 000107 171172 MOVB @RALL!IE!DO,@TCCM ;ISSUE RALL. IE SET.
1939 010040 000002          RTI              ;EXIT INTERRUPT.
1940 010042 112777 000007 171162 H0042: MOVB @RALL!DO,@TCCM ;HERE WHEN RALL INTERRUPTS. DISABLE INTERRUPTS,
1941 010050 000002          RTI              ;DO NOT READ TCDT, EXIT INTERRUPT.
1942 ;WRITE DATA TEST. AFTER BLOCK NUMBER IS "FOUND" ISSUE WDATA COMMAND
1943 ;UNDER MAINTENANCE MODE, WORD COUNT = -256, TCBA = RBUF. AFTER
1944 ;EACH MARK TRACK CODE IS PASSED, THE DATA IN THE DATA REGISTER IS SAVED.
1945 ;WHEN THE OPERATION IS COMPLETED, A COMPARE OF WRITE DATA AND THE DATA
1946 ;REGISTER DATA SAVED IS MADE TO SEE IF THEY MATCH. WORD COUNT AND TCBA
1947 ;ARE ALSO CHECKED FOR CORRECT CONTENTS.
1948 .SBTTL T0043
1949 *****
1950 010052 000004          T0043: SCOPE
1951 010054 012706 001000 MOV #1000,SP        ;SETUP THE STACK POINTER
1952 010060 004737 011614 JSR PC,TORDER      ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1953 010064 000043          R0043:          ;HERE LIES THE NUMBER OF THIS TEST
1954 010066 004737 012700 JSR PC,LBDAT1      ;SET UP WRITE DATA (256 WORDS).
1955 010072 005077 171134 CLR @TCCM
1956 010076 012777 020003 171126 MOV @MAINT!UO!FWD!RNUM!DO,@TCCM
1957 010104          MTCOD MTK7,5
1958 010104 004537 012522 JSR RS,LATCOD      ;CALL LOAD MT CODES SUB.
1959 010110 032666          MTK7             ;ADDRESS OF MARK TRACK CODES.
1960 010112 000005          S              ;MARK TRACK CODE COUNT.
1961 010114 005777 171112 TST @TCCM          ;ERROR BIT SET?
1962 010120 100002          BPL A0043          ;BR IF NO ERROR.
1963 010122 104041          ERROR 41          ;ERROR BIT SET. EXAMINE TCST.
1964 010124 000457          BR G0043
1965 010126 012777 177400 171100 A0043: MOV #-256,@TCCM    ;-256 TO WORD COUNT.
1966 010134 012777 036010 171074 MOV @RBUF,@TCBA    ;ADDR OF RBUF TO TCBA.
1967 010142 012704 037010 MOV @RBUF+512,R4   ;ADDR TO SAVE TCDT DATA TO R4.
1968 010146 112777 000015 171056 MOVB @WDATA!DO,@TCCM ;ISSUE WDATA COMMAND.
1969 010154          MTCOE H0043,MTK7A,262.
1970 010154 004537 012672 JSR RS,LATCOE      ;CALL LOAD MT CODES SUBROUTINE.
1971 010160 010272          H0043          ;ADDR TO GO AFTER EACH CODE PASSED.

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1972 010162 032724 MTK7A ;ADDRESS OF MARK TRACK CODES.
1973 010164 000406 262. ;MARK TRACK CODE COUNT.
1974 010166 005777 171040 TST @TCCM ;ERROR BIT SET?
1975 010172 100002 BPL B0043 ;BR IF NO ERROR.
1976 010174 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1977 010176 000432 BR G0043
1978 010200 105777 171026 B0043: TSTB @TCCM ;READY BIT SET?
1979 010204 100402 BMI C0043 ;BR IF READY IS SET.
1980 010206 104067 ERROR 67 ;READY BIT FAILED TO SET.
1981 010210 000425 BR G0043
1982 010212 005777 171016 C0043: TST @TCWC ;WORD COUNT 0?
1983 010216 001407 BEQ D0043 ;BR IF WORD COUNT IS 0.
1984 010220 017737 171010 001164 MOV @TCWC,SREG4 ;PREPERE ERONIOUS WORD COUNT FOR PRINTOUT
1985 010226 005077 170722 CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1986 010232 104044 ERROR 44 ;WORD COUNT NOT 0.
1987 010234 000413 BR G0043
1988 010236 022777 037010 170772 D0043: CMP #RBUF+512.,@TCBA ;TCBA CORRECT?
1989 010244 001402 BEQ F0043 ;BR IF TCBA CORRECT.
1990 010246 104045 ERROR 45 ;TCBA INCORRECT. SHOULD BE RBUF+512.
1991 010250 000405 BR G0043
1992 010252 004537 013014 F0043: JSR R5,CKDAT ;COMPARE WRITE DATA AGAINST TCDT SAVED
1993 010256 001270 SBDAT1 ;DATA. REPORT ERRORS.
1994 010260 037010 RBUF+512.
1995 010262 000400 256.
1996 010264 G0043:
1997 010264 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1998 010270 000403 BR T0044 ;GO ON TO THE NEXT TEST
1999 010272 017724 170742 H0043: MOV @TCDT,(4)+ ;HERE AFTER EACH MARK CODE IS PASSED.
2000 010276 000002 RTI ;SAVE TCDT DATA AND EXIT IOT TRAP.
2001 ;WRITE DATA COMPLEMENT OBVERSE TEST.
2002 .SBTTL T0044
2003 *****
2004 T0044: SCOPE
2005 010300 000004 MOV #1000,SP ;SETUP THE STACK POINTER
2006 010302 012706 001000 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2007 010306 004737 011614 D0044 ;HERE LIES THE NUMBER OF THIS TEST
2008 010312 000044 JSR PC,LBDAT1 ;SET UP WRITE DATA (256 WORDS).
2009 010314 004737 012700 R0044: CLR @TCCM
2010 010320 005077 170706 MOV #MAINT!UO!REV!RNUM!DO,@TCCM
2011 010324 012777 024003 170700 MTCOD MTK7,5
2012 010332 004537 012522 JSR R5,LATCOD ;CALL LOAD MT CODES SUB.
2013 010336 032666 MTK7 ;ADDRESS OF MARK TRACK CODES.
2014 010340 000005 5 ;MARK TRACK CODE COUNT.
2015 010342 005777 170664 TST @TCCM ;ERROR BIT SET?
2016 010346 100002 BPL A0044 ;BR IF NO ERROR.
2017 010350 104041 ERROR 41 ;ERROR BIT SET EXAMINE TCST.
2018 010352 000432 BR C0044
2019 010354 012777 177400 170652 A0044: MOV #-256,@TCWC ;-256 TO WORD COUNT.
2020 010362 012777 036010 170646 MOV #RBUF,@TCBA ;ADDR OF RBUF TO TCBA.
2021 010370 012704 037010 MOV #RBUF+512.,R4 ;ADDR TO SAVE TCDT DATA TO R4.
2022 010374 112777 000015 170630 MOVB #WDATA!DO,@TCCM ;ISSUE WDATA COMMAND.
2023 010402 MTCOE D0044 MTK7A,262.
2024 010402 004537 012672 JSR R5,LATCOE ;CALL LOAD MT CODES SUBROUTINE.
2025 010406 010446 D0044 ;ADDR TO GO AFTER EACH CODE PASSED.
2026 010410 032724 MTK7A ;ADDRESS OF MARK TRACK CODES.
2027 010412 000406 262. ;MARK TRACK CODE COUNT.

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2028 010414 005777 170612      TST      @TCCM      ;ERROR BIT SET?
2029 010420 100002          BPL      B0044      ;BR IF NO ERROR.
2030 010422 104041          ERROR 41          ;ERROR BIT SET. EXAMINE TCST.
2031 010424 000405          BR       C0044
2032 010426 004537 013014      B0044: JSR      R5,CKDAT ;CHECK THAT SAVED TCDT DATA WAS COMPLEMENT
2033 010432 001300          SBDAT3          ;OBSERVED CORRECTLY.
2034 010434 037010          RBUF+512.
2035 010436 000400
2036 010440
2037 010440 012706 001000      C0044: MOV      #1000,SP ;RESTORE THE STACK POINTER
2038 010444 000403          BR       T0045      ;GO ON TO THE NEXT TEST
2039 010446 017724 170566      D0044: MOV      @TCDT,(4)+ ;HERE AFTER EACH MARK CODE IS PASSED.
2040 010452 000002          RTI           ;SAVE TCDT DATA AND EXIT IOT TRAP.
2041
2042 ;WRITE ALL TEST.
2043 .SBTTL T0045
2044 *****
2044 010454 000004      T0045: SCOPE
2045 010456 012706 001000      MOV      #1000,SP ;SETUP THE STACK POINTER
2046 010462 004737 011614      JSR      PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
2047 010466 000045          00045          ;HERE LIES THE NUMBER OF THIS TEST
2048 010470 004737 012700      R0045: JSR      PC,LBDAT1 ;SET UP WRITE DATA.
2049 010474 005077 170532          CLR      @TCCM
2050 010500 012777 020003 170524      MOV      @MAINT!UO!FWD!RNUM!DO,@TCCM
2051 010506          MTCOD      MTK7,4
2052 010506 004537 012522      JSR      R5,LMTCOD ;CALL LOAD MT CODES SUB.
2053 010512 032666          MTK7          ;ADDRESS OF MARK TRACK CODES.
2054 010514 000004          4            ;MARK TRACK CODE COUNT.
2055 010516 005777 170510      TST      @TCCM      ;ERROR BIT SET?
2056 010522 100002          BPL      A0045      ;BR IF NO ERROR.
2057 010524 104041          ERROR 41          ;ERROR BIT SET. EXAMINE TCST.
2058 010526 000470          BR       G0045
2059 010530 005077 170500      A0045: CLR      @TCCM      ;0 TO WORD COUNT.
2060 010534 012777 036010 170474      MOV      @RBUF,@TCBA ;ADDR OF RBUF TO TCBA.
2061 010542 012703 036006          MOV      @RBUF-2,R3
2062 010546 012704 037010          MOV      @RBUF+512,R4
2063 010552 012737 000402 001266      MOV      #258,CTRA ;# OF WORDS TO WRITE TO CTRA.
2064 010560 004737 012022      JSR      PC,STICV ;SET INTERRUPT VECTOR TO IIC.
2065 010564 010606          B0045
2066 010566 112777 000117 170436      MOV      @WALL!IE!DO,@TCCM;ISSUE WRITE ALL COMMAND. INTERRUPT ENABLED.
2067 010574          MTCOE      I0045,MTK5,260.
2068 010574 004537 012672      JSR      R5,LMTCOE ;CALL LOAD MT CODES SUBROUTINE.
2069 010600 010716          I0045          ;ADDR TO GO AFTER EACH CODE PASSED.
2070 010602 032716          MTK5          ;ADDRESS OF MARK TRACK CODES.
2071 010604 000404          260.         ;MARK TRACK CODE COUNT.
2072 010606 005777 170420      B0045: TST      @TCCM      ;ERROR BIT SET?
2073 010612 100002          BPL      B0045A     ;BR IF NO ERROR.
2074 010614 104041          ERROR 41          ;ERROR BIT SET. EXAMINE TCST.
2075 010616 000434          BR       G0045
2076 010620 012377 170414      B0045A: MOV      (3)+,@TCDT ;WRITE DATA TO TCDT.
2077 010624 005337 001266      DEC      CTRA      ;WROTE 257 WORDS?
2078 010630 001401          BEQ      C0045      ;BR IF 257 WORDS WRITTEN.
2079 010632 000002          RTI           ;NOT DONE. EXIT INTERRUPT.
2080 010634 005737 037010      C0045: TST      @RBUF+512. ;1ST WORD WRITTEN EQUAL 0?
2081 010640 001404          BEQ      D0045      ;BR IF FIRST WORD 0.
2082 010642 005037 001154          CLR      @REGO
2083 010646 104070          ERROR 70      ;1ST WORD WRITTEN NOT 0. (REV CHECKSUM).

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2084 010650 000417
2085 010652 004537 013014 D0045: BR G0045
2086 010656 001270 SBDAT1 R5,CKDAT ;CHECK THAT SAVED TCDT DATA MATCHES
2087 010660 037012 RBUF+514. ;WRITE DATA.
2088 010662 000400 256.
2089 010664 005777 170344 TST @TCWC ;WORD COUNT STILL 0?
2090 010670 001402 BEQ F0045 ;BR IF WORD COUNT IS 0.
2091 010672 104071 ERROR 71 ;WORD COUNT MODIFIED DURING WRITE ALL.
2092 010674 000405 BR G0045
2093 010676 022777 036010 170332 F0045: CMP #RBUF,@TCBA ;TCBA STILL EQUAL RBUF?
2094 010704 001401 BEQ G0045 ;BR IF TCBA STILL SAME.
2095 010706 104072 ERROR 72 ;TCBA MODIFIED DURING WRITE ALL.
2096 010710 G0045:
2097 010710 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
2098 010714 000403 BR T0046 ;GO ON TO THE NEXT TEST
2099 010716 017724 170316 I0045: MOV @TCDT,(4)+ ;HERE AFTER EACH MARK CODE IS PASSED.
2100 010722 000002 RTI ;SAVE TCDT DATA AND EXIT IOT TRAP.
2101
2102 .SBTTL T0046
2103 *****
2104 010724 000004 T0046: SCOPE
2105 010726 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
2106 010732 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2107 010736 000046 00046 ;HERE LIES THE NUMBER OF THIS TEST
2108 010740 004537 013142 R0046: JSR R5,CKSELE ;SST TO U1.
2109 010744 000400 U1
2110 010746 104073 ERROR 73 ;SST TO U1 DID NOT CAUSE SELECT ERROR.
2111
2112 010750 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
2113 010754 000400 BR T0047 ;GO ON TO THE NEXT TEST
2114 .SBTTL T0047
2115 *****
2116 010756 000004 T0047: SCOPE
2117 010760 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
2118 010764 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2119 010770 000047 00047 ;HERE LIES THE NUMBER OF THIS TEST
2120 010772 004537 013142 R0047: JSR R5,CKSELE ;SST TO U2.
2121 010776 001000 U2
2122 011000 104073 ERROR 73 ;SST TO U2 DID NOT CAUSE SELECT ERROR.
2123
2124 011002 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
2125 .SBTTL T0050
2126 *****
2127 011006 000004 T0050: SCOPE
2128 011010 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
2129 011014 004737 011614 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2130 011020 000050 00050 ;HERE LIES THE NUMBER OF THIS TEST
2131 011022 004537 013142 R0050: JSR R5,CKSELE ;SST TO U1.
2132 011026 001400 U3
2133 011030 104073 ERROR 73 ;SST TO U3 DID NOT CAUSE SELECT ERROR.
2134
2135 011032 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
2136 .SBTTL T0051
2137 *****
2138 011036 000004 T0051: SCOPE
2139 011040 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER

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2140 011044 004737 011614      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2141 011050 000051              00051                    ;HERE LIES THE NUMBER OF THIS TEST
2142 011052 004537 013142      RO051: JSR      R5,CKSELE ;ISSUE A SST COMMAND
2143 011056 002000              U4
2144 011060 104073              ERROR 73                ;SST TO U4 DID NOT CAUSE SELECT ERPR.
2145
2146 011062 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
2147 .SBTTL TO052
2148 *****
2149 011066 000004      TO052: SCOPE
2150 011070 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
2151 011074 004737 011614      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2152 011100 000052              00052                    ;HERE LIES THE NUMBER OF THIS TEST
2153 011102 004537 013142      RO052: JSR      R5,CKSELE ;ISSUE A SST COMMAND
2154 011106 002400              U5
2155 011110 104073              ERROR 73                ;SST TO U5 DID NOT CAUSE SELECT ERROR.
2156
2157 011112 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
2158 .SBTTL TO053
2159 *****
2160 011116 000004      TO053: SCOPE
2161 011120 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
2162 011124 004737 011614      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2163 011130 000053              00053                    ;HERE LIES THE NUMBER OF THIS TEST
2164 011132 004537 013142      RO053: JSR      R5,CKSELE ;ISSUE A SST COMMAND
2165 011136 003000              U6
2166 011140 104073              ERROR 73                ;SST TO U6 DID NOT CAUSE SELECT ERROR.
2167 011142 000240              NOP
2168 011144 000240              NOP
2169 011146 000240              NOP
2170
2171 011150 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
2172 .SBTTL TO054
2173 *****
2174 011154 000004      TO054: SCOPE
2175 011156 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
2176 011162 004737 011614      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2177 011166 000054              00054                    ;HERE LIES THE NUMBER OF THIS TEST
2178 011170 004537 013142      RO054: JSR      R5,CKSELE ;ISSUE A SST COMMAND
2179 011174 003400              U7
2180 011176 104073              ERROR 73                ;SST TO U7 DID NOT CAUSE SELECT ERROR.
2181
2182 011200 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
2183 .SBTTL TO055
2184 *****
2185 011204 000004      TO055: SCOPE
2186 011206 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
2187 011212 004737 011614      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2188 011216 000055              00055                    ;HERE LIES THE NUMBER OF THIS TEST
2189 011220 004737 012732      JSR      PC,LBBIND      ;LOAD BUFFER WITH BINARY DATA.
2190 011224 005077 170002      CLR      @TCCM
2191 011230 012777 020003 167774      MOV      #MAINT!U0!FWD!RNUM!DO,@TCCM
2192 011236              MTCOD      MTK7,5
2193 011236 004537 012522      JSR      R5,LATCOD      ;CALL LOAD MT CODES SUB.
2194 011242 032666              MTK7
2195 011244 000005              5                        ;ADDRESS OF MARK TRACK CODES.
                           ;MARK TRACK CODE COUNT.

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2196 011246 005777 167760      TST      @TCCM      ;ERROR BIT SET?
2197 011252 100002             BPL      A0055      ;BR IF NO ERROR.
2198 011254 104041             ERROR 41           ;ERROR BIT SET. EXAMINE TCST.
2199 011256 000441             BR       D0055
2200 011260 012777 177400 167746 A0055: MOV      #-256.,@TCWC ; -256 TO WORD COUNT.
2201 011266 012777 036010 167742 MOV      #RBUF,@TCBA ;RBUF ADDR TO TCBA.
2202 011274 012704 037010      MOV      #RBUF+512.,R4 ;ADDR TO SAVE TCDT DATA TO R4.
2203 011300 112777 000015 167724 MOV      #WDATA!DO,@TCCM ;ISSUE WRITE DATA COMMAND.
2204 011306             MTCOE      F0055,MTK7A,262.
2205 011306 004537 012672      JSR      R5,LMTCOE ;CALL LOAD MT CODES SUBROUTINE.
2206 011312 011370             F0055           ;ADDR TO GO AFTER EACH CODE PASSED.
2207 011314 032724             MTK7A           ;ADDRESS OF MARK TRACK CODES.
2208 011316 000406             262.           ;MARK TRACK CODE COUNT.
2209 011320 005777 167706      TST      @TCCM      ;ERROR BIT SET?
2210 011324 100002             BPL      B0055      ;BR IF NO ERROR.
2211 011326 104044             ERROR 44           ;ERROR BIT SET. EXAMINE TCST.
2212 011330 000414             BR       D0055
2213 011332 012701 037010      B0055: MOV      #RBUF+512.,R1 ;ADDR OF DATA TO CHECK TO R1.
2214 011336 012703 036010      MOV      #RBUF,R3   ;ADDR OF EXPECTED DATA TO R3.
2215 011342 012702 000400      MOV      #256.,R2  ;# OF WORDS TO CHECK TO R2.
2216 011346 005037 013140      CLR      WDCNT
2217 011352 004737 013066      C0055: JSR      PC,CDTCK ;CHECK DATA WORD.
2218 011356 005302             DEC      R2        ;ALL WORDS CHECKED?
2219 011360 001374             BNE      C0055     ;BR IF NOT DONE YET.
2220 011362             D0055:
2221 011362 012706 001000      MOV      #1000,SP  ;RESTORE THE STACK POINTER
2222 011366 000403             BR       T0056     ;GO ON TO THE NEXT TEST
2223 011370 017724 167644      F0055: MOV      @TCDT,(4)+ ;HERE AFTER EACH MARK CODE IS PASSED.
2224 011374 000002             RTI              ;SAVE TCDT DATA AND EXIT.
2225
2226             .SBTTL T0056
2227 011376 000004      T0056: SCOPE
2228 011400             .SEOP STARTX,,PASCNT
2229 011400             STARS
2230             ;;*****
2231
2232             .SBTTL END OF PASS ROUTINE
2233
2234             ;*INCREMENT THE PASS NUMBER ($PASS)
2235             ;*TYPE "END PASS #XXXXX" (WHERE XXXXX IS A DECIMAL NUMBER)
2236             ;*IF THERES A MONITOR GO TO IT
2237             ;*IF THERE ISN'T JUMP TO STARTX
2238
2239             $EOP:
2240             SCOPE
2241 011402 005037 001102      CLR      $TSTNM    ;ZERO THE TEST NUMBER
2242 011406 005037 001214      CLR      $TIMES    ;ZERO THE NUMBER OF ITERATIONS
2243 011412 005237 001100      INC      $PASS     ;INCREMENT THE PASS NUMBER
2244 011416 042737 100000 001100 BIC      #!00000,$PASS ;DON'T ALLOW A NEG. NUMBER
2245 011424 005327             DEC      (PC)+    ;LOOP?
2246 011426 000001      $EOPCT: .WORD    1
2247 011430 003021      BGT      $DOAGN   ;YES
2248 011432 012737      MOV      (PC)+,@(PC)+ ;RESTORE COUNTER
2249 011434 000001      $ENDCT: .WORD    1
2250 011436 011426             $EOPCT
2251 011440 104400 011500      TYPE      ,SENDMG ;TYPE "END PASS #"

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2252 011444          TYPDEC  $PASS
2253 011444 013746 001100      MOV    $PASS,-(SP)          ;SAVE $PASS FOR TYPEOUT
2254 011450 104410          TYPDS          ;GO TYPE--DECIMAL ASCII WITH SIGN
2255 011452 104400 011515      TYPE    $ENULL            ;TYPE A NULL CHARACTER
2256 011456 013700 000042      SGET42: MOV   @#42,RO      ;GET MONITOR ADDRESS
2257 011462 001404          BEQ    $DOAGN            ;IF NONE
2258 011464 004710          SENDAD: JSR   PC,(RO)     ;GO TO MONITOR
2259 011466 000240          NOP
2260 011470 000240          NOP          ;SAVE ROOM
2261 011472 000240          NOP          ;FOR
2262 011474 000137 002462      $DOAGN: JMP   @#STARTX    ;ACT11
2263 011500 005015 047105 020104 SENDMG: .ASCIZ <15><12>/END PASS #/ ;RETURN
2264 011506 040520 051523 021440
2265 011514          000
2266 011515          377      377      000 $ENULL: .BYTE -1,-1,0      ;NULL CHARACTER STRING
2267          ;* THIS ROUTINE HANDLES FATAL TRAP ERRORS
2268 011520 012737 015421 011556 TRAP10: MOV   #TRPM10,TMESAD ;ADDRESS OF TRAP TO 10 MESSAGE TO THE MESSAGE PO
2269 011526 000403          BR    TRAPX            ;ENTER THE FATAL TRAP ERROR REPORT ROUTINE
2270 011530 012737 015277 011556 TRAP4:  MOV   #TRPM45,TMESAD
2271 011536 011600          TRAPX: MOV   (SP),RO      ;SAVE PC OF WHERE TRAP OCCURRED
2272 011540 162700 000002      SUB   #2,RO            ;MAKE IT POINT EXACTLY AT THE OFFENDING WORD
2273 011544 012706 001000      MOV   #1000,SP        ;MAKE SURE THAT THE STACK GIVES NO PROBLEMS
2274 011550 005046          CLR   -(SP)           ;FAKEOUT THE PRINTOUT ROUTINE
2275 011552 004737 014062      JSR   PC,$TYPE        ;PRINT THE TRAP MESSAGE
2276 011556 000000          TMESAD: 000000        ;ADDRESS OF THE TRAP MESSAGE GOES HERE
2277 011560 010016          MOV   RO,(SP)         ;PUT ERROR PC BACK ONTO THE STACK
2278 011562 104402          TYPOC
2279 011564 104400 001225      TRYAGN: TYPE  , $CRLF
2280 011570 104400 015347      TYPE  , TRPMES        ;THEN PRINTOUT THE TRAP MESSAGE
2281 011574 000240          NOP          ;PATCHING SPACE, THOUGHTFULLY PROVIDED
2282 011576 000240          NOP          ;PATCHING SPACE, THOUGHTFULLY PROVIDED
2283 011600 000240          NOP          ;PATCHING SPACE, THOUGHTFULLY PROVIDED
2284 011602 000240          NOP          ;PATCHING SPACE, THOUGHTFULLY PROVIDED
2285 011604 000240          NOP          ;PATCHING SPACE, THOUGHTFULLY PROVIDED
2286 011606 000005          RESET
2287 011610 000137 002304      JMP   @#START
2288          ;SUBROUTINE TO CHECK TO MAKE SURE THAT EACH TEST IN
2289          ;RUNNING WHEN IT SHOULD
2290 011614 011637 001154      TORDER: MOV   (SP), $REGO ;GET ADDRESS OF TEST #
2291 011620 062716 000002      ADD   #2,(SP)         ;BUMP PRETURN ADDRESS TO HOP OVER THE IN LINE TEST #
2292 011624 123777 001102 167322 CMPB   $TSTNM,@$REGO    ;FIND OUT IF THE TEST #'S MATCH
2293 011632 001410          BEQ   TORDER          ;IF THEY DO HOP OVER THE ERROR SIGNAL STUFF
2294 011634 013737 001154 001156 MOV   $REGO,$REG1      ;SAVE ADDRESS OF TEST
2295 011642 017737 167306 001154 MOV   @$REG0,$REG0     ;GET TEST# WAS DATA READY FOR PRINTOUT
2296 011650 104026          ERROR 26            ;PRINTOUT "OUT OF ORDER" MESSAGE
2297 011652 000744          BR    TRYAGN         ;GO TRY TO START OVER
2298 011654 000207          TORDER: RTS   PC      ;RETURN
2299          ;SAVE REGS 0 TO 4 SUBROUTINE.
2300 011656 012666 177764      $V04:  MOV   (6)+,-12.(6) ;MOVE PC UPSTACK.
2301 011662 012737 000207 011734 MOV   #RTSPC,$V05C
2302 011670 000412          BR    $V05B
2303          ;SUB TO SAVE REGS 0 TO 5 AND PLACE JSR PC IN R5.
2304 011672 012737 000240 011734 $V05S: MOV   #NOP,$V05C
2305 011700 000403          BR    $V05A
2306          ;SUB TO SAVE REGS 0 TO 5.
2307 011702 012737 000207 011734 $V05:  MOV   #RTSPC,$V05C

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|      |        |        |        |         |  |               |                             |
|------|--------|--------|--------|---------|--|---------------|-----------------------------|
| 2308 | 011710 | 012666 | 177762 | SV05A:  | MOV  | (6)+, -14.(6) | ;MOVE PC UPSTACK.           |
| 2309 | 011714 | 010546 |        |         | MOV  | R5, -(6)      |                             |
| 2310 | 011716 | 010446 |        | SV05B:  | MOV  | R4, -(6)      |                             |
| 2311 | 011720 | 010346 |        |         | MOV  | R3, -(6)      |                             |
| 2312 | 011722 | 010246 |        |         | MOV  | R2, -(6)      |                             |
| 2313 | 011724 | 010146 |        |         | MOV  | R1, -(6)      |                             |
| 2314 | 011726 | 010046 |        |         | MOV  | RO, -(6)      |                             |
| 2315 | 011730 | 162706 | 000002 |         | SUB  | #2, SP        |                             |
| 2316 | 011734 | 000207 |        | SV05C:  | RTS  | PC            | ;RTS PC OR NOP.             |
| 2317 | 011736 | 016605 | 000016 |         | MOV  | 14.(6), R5    | ;JSR PC TO R5.              |
| 2318 | 011742 | 000207 |        |         | RTS  | PC            | ;EXIT.                      |
| 2319 |        |        |        |         | ;RESTORE REGS 0 TO 4 SUBROUTINE.                   |               |                             |
| 2320 | 011744 | 062706 | 000002 | RS04:   | ADD  | #2, SP        |                             |
| 2321 | 011750 | 012600 |        |         | MOV  | (6)+, RO      | ;RESTORE REGS 0 TO 4.       |
| 2322 | 011752 | 012601 |        |         | MOV  | (6)+, R1      |                             |
| 2323 | 011754 | 012602 |        |         | MOV  | (6)+, R2      |                             |
| 2324 | 011756 | 012603 |        |         | MOV  | (6)+, R3      |                             |
| 2325 | 011760 | 012604 |        |         | MOV  | (6)+, R4      |                             |
| 2326 | 011762 | 016646 | 177764 |         | MOV  | -12.(6), -(6) | ;MOVE PC DOWN STACK.        |
| 2327 | 011766 | 000207 |        |         | RTS  | PC            | ;EXIT                       |
| 2328 |        |        |        |         | ;SUB TO SET R5 IN EMT PC AND RESTORE REGS 0 TO 5.  |               |                             |
| 2329 | 011770 | 010566 | 000016 | RS05S:  | MOV  | R5, 14.(6)    | ;SET EMT PC TO R5 CONTENTS. |
| 2330 |        |        |        |         | ;SUB TO RESTORE REGS 0 TO 5.                       |               |                             |
| 2331 | 011774 | 062706 | 000002 | RS05:   | ADD  | #2, SP        |                             |
| 2332 | 012000 | 012600 |        |         | MOV  | (6)+, RO      |                             |
| 2333 | 012002 | 012601 |        |         | MOV  | (6)+, R1      |                             |
| 2334 | 012004 | 012602 |        |         | MOV  | (6)+, R2      |                             |
| 2335 | 012006 | 012603 |        |         | MOV  | (6)+, R3      |                             |
| 2336 | 012010 | 012604 |        |         | MOV  | (6)+, R4      |                             |
| 2337 | 012012 | 012605 |        |         | MOV  | (6)+, R5      |                             |
| 2338 | 012014 | 015646 | 177762 |         | MOV  | -14.(6), -(6) | ;MOVE PC DOWNSTACK.         |
| 2339 | 012020 | 000207 |        |         | RTS  | PC            | ;EXIT                       |
| 2340 |        |        |        |         | ;ROUTINE TO SET TC11 INTERRUPT VECTOR AND PRIORITY |               |                             |
| 2341 | 012022 | 004737 | 011672 | STTCV:  | JSR  | PC, SV05S     |                             |
| 2342 | 012026 | 013701 | 001242 |         | MOV  | TCVTR, R1     | ;VECTOR TO R1.              |
| 2343 | 012032 | 012521 |        |         | MOV  | (5)+, (1)+    | ;SET DESIRED VECTOR.        |
| 2344 | 012034 | 013721 | 001244 |         | MOV  | TCLVL, (1)+   | ;SET TC11 PRIORITY.         |
| 2345 | 012040 | 004737 | 011770 |         | JSR  | PC, RS05S     |                             |
| 2346 | 012044 | 000207 |        |         | RTS  | PC            |                             |
| 2347 |        |        |        |         | ;ROUTINE TO ISSUE RESET.                           |               |                             |
| 2348 | 012046 | 010046 |        | SRSETT: | MOV  | RO, -(6)      | ;PUSH RO.                   |
| 2349 | 012050 | 012700 | 052525 |         | MOV  | #52525, RO    | ;DATA TO RO.                |
| 2350 | 012054 | 005100 |        |         | COM  | RO            | ;COMPLEMENT (RO).           |
| 2351 | 012056 | 010037 | 012052 |         | MOV  | RO, SRSETT+4  | ; (RO) TO SRSETT+4.         |
| 2352 | 012062 | 000005 |        |         | RESET  |               | ;ISSUE RESET. (RO) IS       |
| 2353 | 012064 | 012600 |        |         | MOV  | (6)+, RO      | ;RESTORE RO.                |
| 2354 | 012066 | 000207 |        |         | RTS  | PC            | ;EXIT                       |
| 2355 | 012070 | 004537 | 012474 | RSTMTK: | JSR  | R5, BMOVE     | ;RESTORE MTKVAR MARK CODE.  |
| 2356 | 012074 | 032630 |        |         | MTKC10   |               | ;AND GOOD CHECKSUM.         |
| 2357 | 012076 | 032740 |        |         | MTKVAR   |               |                             |
| 2358 | 012100 | 000006 |        |         | 6  |               |                             |
| 2359 | 012102 | 004537 | 012474 |         | JSR  | R5, BMOVE     |                             |
| 2360 | 012106 | 032660 |        |         | MTKSP  |               |                             |
| 2361 | 012110 | 032716 |        |         | MTK5   |               |                             |
| 2362 | 012112 | 000006 |        |         | 6  |               |                             |
| 2363 | 012114 | 004537 | 012474 |         | JSR  | R5, BMOVE     |                             |

|      |        |        |        |             |   |                                  |
|------|--------|--------|--------|-------------|---|----------------------------------|
| 2364 | 012120 | 035771 |        | GCKSM       |   |                                  |
| 2365 | 012122 | 035732 |        | FCKSM       |   |                                  |
| 2366 | 012124 | 000006 |        | 6           |   |                                  |
| 2367 | 012126 | 000207 |        | RTS         | PC  | ;EXIT.                           |
| 2368 |        |        |        | :COMMON     | HALT ROUTINE  |                                  |
| 2369 | 012130 | 004737 | 011672 | CHLT:       | JSR PC,SV05S  |                                  |
| 2370 | 012134 | 010500 |        | MOV         | RS,RO   | ;DEVELOP ADDR OF CALLER.         |
| 2371 | 012136 | 005740 |        | TST         | -(0)  |                                  |
| 2372 | 012140 | 000000 |        | HALT        |   | ;HALT CALL ADDR IN DATA LIGTHS.  |
| 2373 | 012142 | 004737 | 011770 | JSR         | PC,RS05S  |                                  |
| 2374 | 012146 | 000207 |        | RTS         | PC  | ;EXIT.                           |
| 2375 |        |        |        | :RANDOM     | NUMBER GENERATOR. ROUTINE                               | EXITS WITH NUMBER IN REGISTER 0. |
| 2376 | 012150 | 013700 | 012216 | RNGEN:      | MOV RP1,RO  |                                  |
| 2377 | 012154 | 006100 |        | ROL         | RO  |                                  |
| 2378 | 012156 | 006100 |        | ROL         | RO  |                                  |
| 2379 | 012160 | 063700 | 012220 | ADD         | RP2,RO  |                                  |
| 2380 | 012164 | 010037 | 012216 | MOV         | RO,RP1  |                                  |
| 2381 | 012170 | 006100 |        | ROL         | RO  |                                  |
| 2382 | 012172 | 006100 |        | ROL         | RO  |                                  |
| 2383 | 012174 | 063700 | 012220 | ADD         | RP2,RO  |                                  |
| 2384 | 012200 | 006100 |        | ROL         | RO  |                                  |
| 2385 | 012202 | 006100 |        | ROL         | RO  |                                  |
| 2386 | 012204 | 010037 | 012220 | MOV         | RO,RP2  |                                  |
| 2387 | 012210 | 013700 | 012216 | MOV         | RP1,RO  |                                  |
| 2388 | 012214 | 000207 |        | RTS         | PC  | ;EXIT. NUMBER IN RO              |
| 2389 | 012216 | 001233 |        | RP1:        | 1233  |                                  |
| 2390 | 012220 | 007622 |        | RP2:        | 7622  |                                  |
| 2391 |        |        |        | :SUBROUTINE | TO DELAY A SPECIFIED NUMBER OF MILLISECONDS             |                                  |
| 2392 | 012222 | 004737 | 011672 | DLY:        | JSR PC,SV05S  |                                  |
| 2393 | 012226 | 012500 |        | MOV         | (5)+,RO   | ;DELAY COUNT TO RO.              |
| 2394 | 012230 | 005037 | 177776 | CLR         | PSW   | ;SET PRIORITY 0.                 |
| 2395 | 012234 | 012701 | 000226 | DLYA:       | MOV #226,R1   | ;1 MSEC COUNT TO R1.             |
| 2396 | 012240 | 005301 |        | DLYB:       | DEC R1  | ;DECREMENT 1 MSEC COUNT.         |
| 2397 | 012242 | 001376 |        | BNE         | DLYB  | ;BR IF NOT 0.                    |
| 2398 | 012244 | 005300 |        | DEC         | RO  | ;DECREMENT DELAY COUNT.          |
| 2399 | 012246 | 001372 |        | BNE         | DLYA  | ;BR IF NOT DONE DELAYING.        |
| 2400 | 012250 | 004737 | 011770 | JSR         | PC,RS05S  |                                  |
| 2401 | 012254 | 000207 |        | RTS         | PC  | ;EXIT.                           |
| 2402 |        |        |        | :SUBROUTINE | TO STALL A RANDOM NUMBER OF MILLISECONDS. MAXIMUM STALL |                                  |
| 2403 |        |        |        | :DETERMINED | BY CONTENTS OF LOC STLMSK.                              |                                  |
| 2404 | 012256 | 004737 | 011672 | STAL:       | JSR PC,SV05S  |                                  |
| 2405 | 012262 | 004737 | 012150 | JSR         | PC,RNGEN  | ;GO GET RANDOM NUMBER.           |
| 2406 | 012266 | 043700 | 012314 | BIC         | STLMSK,RO   | ;# IN RO. APPLY STALL MASK.      |
| 2407 | 012272 | 001407 |        | BEQ         | STALB   | ;BRANCH IF RESULT IS 0.          |
| 2408 | 012274 | 010037 | 012304 | MOV         | RO,STALA  |                                  |
| 2409 | 012300 | 004737 | 012222 | JSR         | PC,DLY  | ;DELAY                           |
| 2410 | 012304 | 000000 |        | STALA:      | OPEN  | ;DELAY COUNT                     |
| 2411 | 012306 | 004737 | 011770 | JSR         | PC,RS05S  |                                  |
| 2412 | 012312 | 000207 |        | STALB:      | RTS PC  | ;DONE. EXIT.                     |
| 2413 | 012314 | 000000 |        | STLMSK:     | OPEN  | ;STALL MASK.                     |
| 2414 |        |        |        | :SUBROUTINE | TO CLEAR DECTAPE READ BUFFER.                           |                                  |
| 2415 | 012316 | 005037 | 036010 | CLRBUF:     | CLR RBUF  | ;CLEAR 512 WORD READ BUFFER.     |
| 2416 | 012322 | 004537 | 012474 | JSR         | RS,BMOVE  | ;TO ALL 0'S.                     |
| 2417 | 012326 | 036010 |        | RBUF        |   |                                  |
| 2418 | 012330 | 036011 |        | RBUF+1      |   |                                  |
| 2419 | 012332 | 001777 |        | 1023.       |   |                                  |

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2420 012334 000207          RTS      PC          ;EXIT.
2421          ;SUBROUTINE TO INITIALIZE BINARY COUNT PATTERNS
2422 012336 012737 177777 012360 INBIN: MOV     #-1,RIND ;SET ALL VARIABLES
2423 012344 004537 012474          JSR     RS,BMOVE   ;TO MINUS 1.
2424 012350 012360          RIND
2425 012352 012361          RIND+1
2426 012354 000013          II.
2427 012356 000207          RTS      PC          ;EXIT
2428 012360 000000          RIND: OPEN
2429 012362 000000          PTO: OPEN
2430 012364 000000          PT1: OPEN
2431 012366 000000          PIND: OPEN
2432 012370 000000          PTOP: OPEN
2433 012372 000000          PT1P: OPEN
2434          ;SPECIAL BINARY COUNT PATTERN SUBROUTINE. EXITS WITH BIN CHAR IN RO
2435 012374 013737 012362 012364 GTBIN: MOV     PTO,PT1 ;PREVIOUS BIN CHAR TO PT1
2436 012402 005137 012364          COM     PT1
2437 012406 005137 012360          COM     RIND
2438 012412 001002          BNE     .+6
2439 012414 005237 012364          INC     PT1
2440 012420 013737 012364 012362 MOV     PT1,PTO ;SAVE BIN CHAR IN PTO
2441 012426 013700 012364          MOV     PT1,RO ;BIN CHAR TO RO.
2442 012432 000207          RTS      PC          ;EXIT.
2443 012434 013737 012370 012372 GTBINP: MOV    PTOP,PT1P ;PREVIOUS BIN CHAR TO PT1P
2444 012442 005137 012372          COM     PT1P
2445 012446 005137 012366          COM     PIND
2446 012452 001002          BNE     .+6
2447 012454 005237 012372          INC     PT1P
2448 012460 013737 012372 012370 MOV    PT1P,PTOP ;SAVE BIN CHAR IN PTO.
2449 012466 013701 012372          MOV    PT1P,R1 ;BIN CHAR TO R1.
2450 012472 000207          RTS      PC          ;EXIT.
2451          ;SUBROUTINE TO MOVE A VARIABLE NUMBER OF BYTES.
2452 012474 004737 011656 BMOVE: JSR    PC,SVO4 ;SAVE REGS.
2453 012500 012501          MOV    (5)+,R1 ;GET FROM ADDRESS
2454 012502 012502          MOV    (5)+,R2 ;GET TO ADDRESS
2455 012504 012503          MOV    (5)+,R3 ;GET COUNT
2456 012506 112122 BMOVA: MOV    (1)+,(2)+ ;MOVE BYTE
2457 012510 005303          DEC    R3 ;DECREMENT COUNT
2458 012512 001375          BNE    BMOVA ;BRANCH IF NOT DONE.
2459 012514 004737 011744          JSR    PC,RSO4 ;RESTORE REGS.
2460 012520 000205          RTS      RS ;DONE EXIT
2461          ;SUB TO PASS TIMING, MARK, AND DATA TO TC11 CONTROL UNDER MAINTENANCE MODE.
2462 012522 005037 001252 LMTCOD: CLR   CODCAL ;DO NOT CALL CODE AFTER EACH MARK
2463 012526 012537 012662 LMTCAA: MOV   (5)+,MTKADR ;GET MARK TRACK ADDRESS.
2464 012532 012537 012666          MOV   (5)+,CDCNT ;GET NTH CODE COUNT.
2465 012536 052777 020000 166466 BIS    #BIT13,ATCCM ;SET MAINTENANCE BIT.
2466 012544 013737 012666 012670 MOV   CDCNT,CDCTR ;CODE COUNT TO CODE COUNTER.
2467 012552 013701 001230          MOV   TCST,R1 ;ADDR CONTAINING TCST ADDR TO R1.
2468 012556 012702 000100          MOV   #100,R2
2469 012562 013700 012662 LMTCA: MOV   MTKADR,RO ;MARK TRACK ADDR TO RO.
2470 012566 012737 000006 012664 LMTCB: MOV   #6,BTCTR ;6 TO BIT COUNTER.
2471 012574 111011 LMTCC: MOV    (0),(1) ;SET MARK TRACK BIT AND DATA.
2472 012576 150210          BIS    R2,(0)
2473 012600 111011          MOV    (0),(1) ;TP1. LOADS MARK TRACK.
2474 012602 111011          MOV    (0),(1) ;RELOAD DATA.
2475 012604 140210          BIC    R2,(0)

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|      |        |        |        |         |        |             |  |  |
|------|--------|--------|--------|---------|--------|-------------|--|--|
| 2476 | 012606 | 112011 |        |         | MOVB   | (0)+(1)     |  | ;TPO. SHIFTS DATA IN RWB.                  |
| 2477 | 012610 | 005337 | 012664 |         | DEC    | BTCTR       |  | ;6TH BIT SET?                              |
| 2478 | 012614 | 001413 |        |         | BEQ    | LMTCE       |  | ;BR IF 6TH BIT SET.                        |
| 2479 | 012616 | 022737 | 000002 | 012664  | CMP    | #2,BTCTR    |  | ;NOT 6TH. 4TH BIT SET?                     |
| 2480 | 012624 | 001363 |        |         | BNE    | LMTCC       |  | ;BRANCH IF NOT.                            |
| 2481 | 012626 | 005737 | 001252 |         | TST    | CODCAL      |  | ;DO WE WANT TO CALL CODE                   |
| 2482 | 012632 | 001760 |        |         | BEQ    | LMTCC       |  | ;DO NOT IF CODE CALL SWITCH = 0            |
| 2483 | 012634 | 005046 |        |         | CLR    | -(6)        |  | ;IF ITS NOT =0 FAKE A INTERRUPT            |
| 2484 | 012636 | 004777 | 166410 |         | JSR    | PC,CODCAL   |  | ;TO LOCATION SPECIFIED IN CODE CALL SWITCH |
| 2485 | 012642 | 000754 |        |         | BR     | LMTCC       |  |  |
| 2486 | 012644 | 005337 | 012670 | LMTCE:  | DEC    | CDCTR       |  | ;NTH CODE SET?                             |
| 2487 | 012650 | 001001 |        |         | BNE    | LMTCD       |  | ;BRANCH IF NOT.                            |
| 2488 | 012652 | 000205 |        |         | RTS    | R5          |  | ;EXIT.                                     |
| 2489 | 012654 | 105710 |        | LMTCD:  | TSTB   | JRO         |  | ;LAST CODE?                                |
| 2490 | 012656 | 100343 |        |         | BPL    | LMTCB       |  | ;BRANCH IF NOT LAST CODE.                  |
| 2491 | 012660 | 000740 |        |         | BR     | LMTCA       |  | ;LAST CODE.                                |
| 2492 | 012662 | 000000 |        | MTKADR: | OPEN   |             |  |  |
| 2493 | 012664 | 000000 |        | BTCTR:  | OPEN   |             |  |  |
| 2494 | 012666 | 000000 |        | CDCNT:  | OPEN   |             |  |  |
| 2495 | 012670 | 000000 |        | CDCTR:  | OPEN   |             |  |  |
| 2496 | 012672 | 012537 | 001252 | LMTCOE: | MOV    | (5)+,CODCAL |  | ;SAVE ADDRESS TO GO TO AFTER EACH MARK     |
| 2497 | 012676 | 000713 |        |         | BR     | LMTCAA      |  |  |
| 2498 | 012700 | 004737 | 012316 | LBDAT1: | JSR    | PC,CLRBUF   |  | ;CLEAR BUFFER AREA.                        |
| 2499 | 012704 | 004537 | 012474 |         | JSR    | R5,BMOVE    |  | ;LOAD 256 WORD BUFFER WITH SBDAT1 DATA.    |
| 2500 | 012710 | 001270 |        |         | SBDAT1 |             |  |  |
| 2501 | 012712 | 036010 |        |         | RBUF   |             |  |  |
| 2502 | 012714 | 000004 |        |         | 4      |             |  |  |
| 2503 | 012716 | 004537 | 012474 |         | JSR    | R5,BMOVE    |  |  |
| 2504 | 012722 | 036010 |        |         | RBUF   |             |  |  |
| 2505 | 012724 | 036014 |        |         | RBUF+4 |             |  |  |
| 2506 | 012726 | 000774 |        |         | 508.   |             |  |  |
| 2507 | 012730 | 000207 |        |         | RTS    | PC          |  | ;EXIT.                                     |
| 2508 | 012732 | 004737 | 011656 | LBBIND: | JSR    | PC,SV04     |  |  |
| 2509 | 012736 | 004737 | 012316 |         | JSR    | PC,CLRBUF   |  | ;CLEAR BUFFER AREA AND FILL                |
| 2510 | 012742 | 012704 | 036010 |         | MOV    | #RBUF,R4    |  | ;256 WORD BUFFER WITH BINARY DATA.         |
| 2511 | 012746 | 012737 | 000400 | 012776  | MOV    | #256,CTRLB  |  |  |
| 2512 | 012754 | 004737 | 012374 | LBINDA: | JSR    | PC,GTBIN    |  | ;GET BINARY WORD.                          |
| 2513 | 012760 | 010024 |        |         | MOV    | R0,(4)+     |  | ;STORE PER R4.                             |
| 2514 | 012762 | 005337 | 012776 |         | DEC    | CTRLB       |  | ;256 WORDS STORED?                         |
| 2515 | 012766 | 001372 |        |         | BNE    | LBINDA      |  | ;BR IF NOT DONE YET.                       |
| 2516 | 012770 | 004737 | 011744 |         | JSR    | PC,RS04     |  |  |
| 2517 | 012774 | 000207 |        |         | RTS    | PC          |  | ;DONE. EXIT.                               |
| 2518 | 012776 | 000000 |        | CTRLB:  | OPEN   |             |  |  |
| 2519 | 013000 | 004537 | 012474 | MCKSM:  | JSR    | R5,BMOVE    |  | ;BAD CHECKSUM TO FCKSM.                    |
| 2520 | 013004 | 035777 |        |         | BCKSM  |             |  |  |
| 2521 | 013006 | 035732 |        |         | FCKSM  |             |  |  |
| 2522 | 013010 | 000006 |        |         | 6      |             |  |  |
| 2523 | 013012 | 000207 |        |         | RTS    | PC          |  | ;EXIT.                                     |
| 2524 | 013014 | 004737 | 011656 | CKDAT:  | JSR    | PC,SV04     |  | ;SAVE REGS.                                |
| 2525 | 013020 | 012537 | 013134 |         | MOV    | (5)+,SBDAT  |  | ;ADDR OF S/B DATA TO SBDAT.                |
| 2526 | 013024 | 012501 |        |         | MOV    | (5)+,R1     |  | ;ADDR OF DATA TO R1.                       |
| 2527 | 013026 | 012502 |        |         | MOV    | (5)+,R2     |  | ;WORD COUNT TO R2.                         |
| 2528 | 013030 | 005037 | 013140 |         | CLR    | WDCNT       |  | ;CLEAR # OF WORD BEING CHECKED.            |
| 2529 | 013034 | 013703 | 013134 | CKDTA:  | MOV    | SBDAT,R3    |  | ;ADDR OF S/B DATA TO R3.                   |
| 2530 | 013040 | 004737 | 013066 |         | JSR    | PC,CDTCK    |  | ;GO CHECK DATA.                            |
| 2531 | 013044 | 005302 |        |         | DEC    | R2          |  | ;LAST WORD CHECKED?                        |

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2532 013046 001404      BEQ      CKDTB      ;BR IF LAST WORD CHECKED.
2533 013050 004737 013066      JSR      PC,CDTCK   ;CHECK ANOTHER WORD.
2534 013054 005302      DEC      R2         ;LAST WORD CHECKED?
2535 013056 001366      BNE     CKDTA      ;BR IF NOT LAST WORD.
2536 013060 004737 011744      CKDTB: JSR      PC,R504 ;RESTORE REGS.
2537 013064 000205      RTS     R5         ;EXIT.
2538 013066 010137 013136      CDTCK: MOV     R1,DATADR ;ADDR OF DATA TO DATADR.
2539 013072 012337 001262      MOV     (3)+,CRBUF ;S/B WORD TO CRBUF.
2540 013076 012137 001264      MOV     (1)+,CRBUFA ;WAS WORD TO CRBUFA.
2541 013102 005237 013140      INC     WDCNT      ;INCREMENT WORD NUMBER.
2542 013106 023737 001262 001264      CMP     CRBUF,CRBUFA ;COMPARE S/B AND WAS DATA.
2543 013114 001001      BNE     CDTCKA     ;BR IF DATA NOT SAME.
2544 013116 000207      RTS     PC         ;EXIT.
2545 013120 016737 000004 013132      CDTCKA: MOV    4(PC),MLPC ;MAKE MAIN LINE PC ACCESSABLE
2546
2547 013126 104035      ERROR   35         ;PRINTOUT ERROR MESSAGE
2548 013130 000207      RTS     PC         ;EXIT
2549 013132 000000      MLPC:   000000
2550 013134 000000      SBDAT:  OPEN
2551 013136 000000      DATADR: OPEN
2552 013140 000000      WDCNT:  OPEN
2553 013142 012537 015030      CKSELE: MOV    (5)+,CKSELT ;UNIT # TO CKSELT.
2554 013146 052737 000011 015030      BIS     #SST!DO,CKSELT
2555 013154 013777 015030 166050      MOV    CKSELT,@TCCM ;ISSUE SST TO DESIRED UNIT.
2556 013162 105777 166044      TSTB   @TCCM      ;WAIT FOR READY.
2557 013166 100375      BPL    #-4
2558 013170 032777 004000 166032      BIT    #BIT11,@TCST ;SELECT ERROR SET?
2559 013176 001001      BNE    +4         ;BR IF SELECT ERROR SET.
2560 013200 000205      RTS    R5         ;ERROR EXIT. SELECT ERROR SHOULD BE SET.
2561 013202 062705 000006      ADD    #6,R5
2562 013206 000205      RTS    R5         ;OK EXIT.
2563 013210      $SCOPE 4,SCOMAC
2564 013210      STARS
2565      ;*****
2566
2567      .SBTTL SCOPE HANDLER ROUTINE
2568
2569      ;#SW14=1      LOOP ON TEST
2570      ;#SW11=1      INHIBIT ITERATIONS
2571      ;#SW09=1      LOOP ON ERROR
2572      ;#SW08=1      LOOP ON TEST IN SWR<7:0>
2573      ;#THE TEST NUMBER ($STNM) IS INCREMENTED AND DISPLAYED IN DISPLAY<7:0>
2574      ;#AND THE ERROR FLAG ($ERFLG) IS DISPLAYED IN DISPLAY<15:08>
2575
2576 013210      $SCOPE:
2577      .IRP NEWINS,<SCOMAC>
2578          NEWINS
2579      .ENDM
2580
2581 013210 005077 166016      SCOMAC
2582 013214 005066 000002      CLR    @TCCM
2583 013220 004737 012046      CLR    2(SP)      ;PS TO =0 AFTER WE EXIT THE SCOPE ROUTINE
2584 013224 004737 012070      JSR    PC,SRSETT
2585 013230 006137 177570      JSR    PC,RSTMTK
2586 013234 100511      ROL    @SWR      ;LOOP ON PRESENT TEST?
2587      SMI    $OVER   ;YES IF SW14=1
                ;*****START OF CODE FOR THE XOR TESTER*****

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2588 013236 000416 $XTSTR: BR 6$ ; IF RUNNING ON THE "XOR" TESTER CHANGE
2589 ; THIS INSTRUCTION TO A "NOP" (NOP=240)
2590 013240 013746 000004 MOV @#ERRVEC, -(SP) ; SAVE THE CONTENTS OF THE ERROR VECTOR
2591 013244 012737 013264 000004 MOV #55, @#ERRVEC ; SET FOR TIMEOUT
2592 013252 005737 177060 TST @#177060 ; TIME OUT ON XOR?
2593 013256 012637 000004 MOV (SP)+, @#ERRVEC ; RESTORE THE ERROR VECTOR
2594 013262 000463 BR $SVLAD ; GO TO THE NEXT TEST
2595 013264 022626 5$: CMP (SP)+, (SP)+ ; CLEAR THE STACK AFTER A TIME OUT
2596 013266 012637 000004 MOV (SP)+, @#ERRVEC ; RESTORE THE ERROR VECTOR
2597 013272 000423 BR 7$ ; LOOP ON THE PRESENT TEST
2598 013274 6$: ; *****END OF CODE FOR THE XOR TESTER*****
2599 013274 032737 000400 177570 BIT #SW08, @#SWR ; LOOP ON SPEC. TEST?
2600 013302 001404 BEQ 2$ ; BR IF NO
2601 013304 123737 177570 001102 CMPB @#SWR, $TSTNM ; ON THE RIGHT TEST? : SWR<7:0>
2602 013312 001462 BEQ $OVER ; BR IF YES
2603 013314 105737 001103 2$: TSTB $ERFLG ; HAS AN ERROR OCCURRED?
2604 013320 001421 BEQ 3$ ; BR IF NO
2605 013322 123737 001115 001103 CMPB $ERMAX, $ERFLG ; MAX. ERRORS FOR THIS TEST OCCURRED?
2606 013330 101015 BHI 3$ ; BR IF NO
2607 013332 032737 001000 177570 BIT #SW09, @#SWR ; LOOP ON ERROR?
2608 013340 001404 BEQ 4$ ; BR IF NO
2609 013342 013737 001110 001106 7$: MOV $LPERR, $LPADR ; SET LOOP ADDRESS TO LAST SCOPE
2610 013350 000443 BR $OVER
2611 013352 105037 001103 4$: CLRB $ERFLG ; ZERO THE ERROR FLAG
2612 013356 005037 001214 CLR $TIMES ; CLEAR THE NUMBER OF ITERATIONS TO MAKE
2613 013362 000415 BR 1$ ; ESCAPE TO THE NEXT TEST
2614 013364 032737 004000 177570 3$: BIT #SW11, @#SWR ; INHIBIT ITERATIONS?
2615 013372 001011 BNE 1$ ; BR IF YES
2616 013374 005737 001100 TST $PASS ; IF FIRST PASS OF PROGRAM
2617 013400 001406 BEQ 1$ ; INHIBIT ITERATIONS
2618 013402 005237 001104 INC $ICNT ; INCREMENT ITERATION COUNT
2619 013406 023737 001214 001104 CMP $TIMES, $ICNT ; CHECK THE NUMBER OF ITERATIONS MADE
2620 013414 002021 BGE $OVER ; BR IF MORE ITERATION REQUIRED
2621 013416 012737 000001 001104 1$: MOV #1, $ICNT ; REINITIALIZE THE ITERATION COUNTER
2622 013424 013737 013474 001214 MOV $MXCNT, $TIMES ; SET NUMBER OF ITERATIONS TO DO
2623 013432 105237 001102 $SVLAD: INCB $TSTNM ; COUNT TEST NUMBERS
2624 013436 011637 001106 MOV (SP), $LPADR ; SAVE SCOPE LOOP ADDRESS
2625 013442 011637 001110 MOV (SP), $LPERR ; SAVE ERROR LOOP ADDRESS
2626 013446 005037 001216 CLR $ESCAPE ; CLEAR THE ESCAPE FROM ERROR ADDRESS
2627 013452 112737 000001 001115 MOVB #1, $ERMAX ; ONLY ALLOW ONE(1) ERROR ON NEXT TEST
2628 013460 013737 001102 177570 $OVER: MOV $TSTNM, @#DISPLAY ; DISPLAY TEST NUMBER
2629 013466 013716 001106 MOV $LPADR, (SP) ; FUDGE RETURN ADDRESS
2630 013472 000002 RTI ; FIXES PS
2631 013474 000004 $MXCNT: 4 ; MAX. NUMBER OF ITERATIONS
2632 .MACRO SAVE
2633 MOV SP, $REG6
2634 SUB #4, $REG6
2635 MOV 2(SP), $REG7
2636 CLR $REG5
2637 MOVB $TSTNM, $REG5
2638 MOV @#CCM, $REG2
2639 MOV @#CST, $REG1
2640 MOV @#CBA, $REG3
2641 .ENDM SAVE
2642 013476 $ERROR $ERRTYP, SAVE
2643 013476 STARS

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2644 ;*****
2645
2646 .SBTTL ERROR HANDLER ROUTINE
2647
2648 ;*SW15=1 HALT ON ERROR
2649 ;*SW13=1 INHIBIT ERROR TYPEOUTS
2650 ;*SW10=1 BELL ON ERROR
2651 ;*SW09=1 LOOP ON ERROR
2652 ;*GO TO $ERRTYP ON ERROR
2653
2654 013476 $ERROR:
2655 .IRP NEWINS, <SAVE>
2656 NEWINS
2657 .ENDM
2658 013476 SAVE
2659 013476 010637 001170 MOV SP, $REG6
2660 013502 162737 000004 001170 SUB #4, $REG6
2661 013510 016637 000002 001172 MOV 2(SP), $REG7
2662 013516 005037 001166 CLR $REG5
2663 013522 113737 001102 001166 MOVB $STNM, $REG5
2664 013530 017737 165476 001160 MOV $TCCM, $REG2
2665 013536 017737 165466 001156 MOV $TGST, $REG1
2666 013544 017737 165466 001162 MOV $TCBA, $REG3
2667 013552 105237 001103 7$: INCB $ERFLG ; SET THE ERROR FLAG
2668 013556 001775 BEQ 7$ ; DON'T LET THE FLAG GO TO ZERO
2669 013560 013737 001102 177570 MOV $STNM, $DISPLAY ; DISPLAY TEST NUMBER AND ERROR FLAG
2670 013566 032737 0020C3 177570 BIT $SW10, $SWR ; BELL ON ERROR?
2671 013574 001402 BEQ 1$ ; NO - SKIP
2672 013576 104400 TYPE $BELL ; RING BELL
2673 013602 005237 001112 1$: INC $ERTTL ; COUNT THE NUMBER OF ERRORS
2674 013606 011637 001116 MOV (SP), $ERRPC ; GET ADDRESS OF ERROR INSTRUCTION
2675 013612 162737 000002 001116 SUB #2, $ERRPC
2676 013620 117737 165272 001114 MOVB $ERRPC, $ITEMB ; STRIP AND SAVE THE ERROR ITEM CODE
2677 013626 032737 020000 177570 BIT $SW13, $SWR ; SKIP TYPEOUT IF SET
2678 013634 001004 BNE 2$ ; SKIP TYPEOUTS
2679 013636 004737 014642 JSR PC, $ERRTYP ; GO TO USER ERROR ROUTINE
2680 013642 104400 TYPE $CRLF
2681 013646 005737 177570 2$: TST $SWR ; HALT ON ERROR
2682 013652 100001 BPL 3$ ; SKIP IF CONTINUE
2683 013654 000000 HALT ; HALT ON ERROR!
2684 013656 032737 001000 177570 3$: BIT $SW09, $SWR ; LOOP ON ERROR SWITCH SET?
2685 013664 001402 BEQ 4$ ; BR IF NO
2686 013666 013716 001110 MOV $LPERR, (SP) ; FUDGE RETURN FOR LOOPING
2687 013672 005737 001216 4$: TST $ESCAPE ; CHECK FOR AN ESCAPE ADDRESS
2688 013676 001402 BEQ 5$ ; BR IF NONE
2689 013700 013716 001216 MOV $ESCAPE, (SP) ; FUDGE RETURN ADDRESS FOR ESCAPE
2690 013704 000002 5$: RTI ; RETURN
2691 013706 .$POWER <<POWPUS>, <POWPOP>, <POWMES>>
2692 013706 STARS
2693 ;*****
2694
2695 .SBTTL POWER DOWN AND UP ROUTINES
2696
2697 ;POWER DOWN ROUTINE
2698 013706 012737 014044 000024 $PWRDN: MOV $SILLUP, $PWRVEC ; SET FOR FAST UP
2699 013714 012737 000340 000026 MOV #340, $PWRVEC+2 ; Prio:7

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2700 013722          PUSH  <R0,R1,R2,R3,R4,R5>
2701                .IRP   B,<R0,R1,R2,R3,R4,R5>
2702                MOV    B,-(SP)          ;PUSH B ON STACK
2703                .ENDM
2704 013722 010046    MOV    R0,-(SP)          ;PUSH R0 ON STACK
2705 013724 010146    MOV    R1,-(SP)          ;PUSH R1 ON STACK
2706 013726 010246    MOV    R2,-(SP)          ;PUSH R2 ON STACK
2707 013730 010346    MOV    R3,-(SP)          ;PUSH R3 ON STACK
2708 013732 010446    MOV    R4,-(SP)          ;PUSH R4 ON STACK
2709 013734 010546    MOV    R5,-(SP)          ;PUSH R5 ON STACK
2710 013736          PUSH  <<POWPUS>,<POWPOP>,<POWMES>>
2711                .IRP   B,<<POWPUS>,<POWPOP>,<POWMES>>
2712                MOV    B,-(SP)          ;PUSH B ON STACK
2713                .ENDM
2714 013736 013746 001304  MOV    POWPUS,-(SP)      ;PUSH POWPUS ON STACK
2715 013742 013746 001306  MOV    POWPOP,-(SP)      ;PUSH POWPOP ON STACK
2716 013746 013746 015552  MOV    POWMES,-(SP)      ;PUSH POWMES ON STACK
2717 013752 010637 014050  MOV    SP,$SAVR6         ;SAVE SP
2718 013756 012737 013770 000024  MOV    $SPWRUP,$PWRVEC   ;SET UP VECTOR
2719 013764 000000          HALT
2720 013766 000776          BR     .-2              ;HANG UP
2721
2722                :POWER UP ROUTINE
2723 013770 013706 014050  $PWRUP: MOV    $SAVR6,SP   ;GET SP
2724 013774 005037 014050          CLR    $SAVR6           ;WAIT LOOP FOR THE TTY
2725 014000 005237 014050  IS:     INC    $SAVR6           ;WAIT FOR THE INC
2726 014004 001375          BNE   IS                ;OF <POWPUS>,<POWPOP>,<POWMES> WORD
2727 014006          POP    <R5,R4,R3,R2,R1,R0>
2728                .IRP   B,<R5,R4,R3,R2,R1,R0>
2729                MOV    (SP)+,B          ;POP STACK INTO B
2730                .ENDM
2731 014006 012605          MOV    (SP)+,R5         ;POP STACK INTO R5
2732 014010 012604          MOV    (SP)+,R4         ;POP STACK INTO R4
2733 014012 012603          MOV    (SP)+,R3         ;POP STACK INTO R3
2734 014014 012602          MOV    (SP)+,R2         ;POP STACK INTO R2
2735 014016 012601          MOV    (SP)+,R1         ;POP STACK INTO R1
2736 014020 012600          MOV    (SP)+,R0         ;POP STACK INTO R0
2737 014022 012737 013706 000024  MOV    $SPWRUP,$PWRVEC   ;SET UP THE POWER DOWN VECTOR
2738 014030 012737 000340 000026  MOV    #340,$PWRVEC+2    ;PRIO:7
2739 014036 104400 014052          TYPE  , $POWER          ;POWER FAIL MESSAGE
2740 014042 000002          RTI
2741 014044 000000          $ILLUP: HALT
2742 014046 000776          BR     .-2              ;THE POWER UP SEQUENCE WAS STARTED
2743 014050 000000          $SAVR6: 0                ;BEFORE THE POWER DOWN WAS COMPLETE
2744 014052 005015 047520 042527  $POWER: .ASCIZ <15><12>"POWER"
2745 014060 000122          .EVEN
2746
2747 014062          .STYPE
2748 014062          STARS
2749          ;*****
2750
2751          .SBTTL TYPE ROUTINE
2752
2753          ;*ROUTINE TO TYPE ASCIZ MESSAGE. MESSAGE MUST TERMINATE WITH A 0 BYTE.
2754          ;*THE ROUTINE WILL INSERT A NUMBER OF NULL CHARACTERS AFTER A LINE FEED.
2755          ;*NOTE1: $NULL CONTAINS THE CHARACTER TO BE USED AS THE FILLER CHARACTER.

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2771 014062 105737 001151  
2772 014066 100002  
2773 014070 000000  
2774 014072 000407  
2775 014074 010046  
2776 014076 017600 000002  
2777 014102 112046  
2778 014104 001005  
2779 014106 005726  
2780 014110 012600  
2781 014112 062716 000002  
2782 014116 000002  
2783 014120 004737 014152  
2784 014124 123726 001150  
2785 014130 001364  
2786 014132 013746 001146  
2787  
2788 014136 105366 000001  
2789 014142 002770  
2790 014144 004737 014152  
2791 014150 000772  
2792 014152 105777 164764  
2793 014156 100375  
2794 014160 116677 000002 164756  
2795 014166 000207  
2796 014170  
2797 014170  
2798  
2799  
2800  
2801  
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2803  
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2805  
2806 014170  
2807  
2808  
2809  
2810 014170 010046  
2811 014172 010146

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;*NOTE2:          $FILLS CONTAINS THE NUMBER OF FILLER CHARACTERS REQUIRED.
;*NOTE3:          $FILLC CONTAINS THE CHARACTER TO FILL AFTER.
*
*CALL:
*1) USING A TRAP INSTRUCTION
*   TYPE      ,MESADR          ;MESADR IS FIRST ADDRESS OF AN ASCIZ STRING
*OR
*   TYPE
*   MESADR
*2) USING A JSR INSTRUCTION
*   MOV      PS,-(SP)          ;PUSH PROCESSOR STATUS WORD ON THE STACK
*   JSR      PC,$TYPE          ;CALL TYPE ROUTINE
*   MESADDR          ;FIRST ADDRESS OF MESSAGE
$TYPE:  TSTB     $TPFLG          ;IS THERE A TERMINAL?
        BPL     1$              ;BR IF YES
        HALT    2$              ;HALT HERE IF NO TERMINAL
        BR      3$              ;LEAVE
1$:     MOV      RO,-(SP)        ;SAVE RO
        MOV      22(SP),RO      ;GET ADDRESS OF ASCIZ STRING
2$:     MOVB    (RO)+,-(SP)     ;PUSH CHARACTER TO BE TYPED ONTO STACK
        BNE     4$              ;BR IF IT ISN'T THE TERMINATOR
        TST     (SP)+          ;IF TERMINATOR POP IT OFF THE STACK
        MOV     (SP)+,RO        ;RESTORE RO
3$:     ADD     #2,(SP)         ;ADJUST RETURN PC
        RTI
4$:     JSR     PC,7$           ;GO TYPE THIS CHARACTER
5$:     CMPB   $FILLC,(SP)+    ;IS IT TIME FOR FILLER CHARS.?
        BNE     2$              ;IF NO GO GET NEXT CHAR.
        MOV     $NULL,-(SP)    ;GET # OF FILLER CHARS. NEEDED
        AND    AND THE NULL CHAR.
6$:     DECB   1(SP)           ;DOES A NULL NEED TO BE TYPED?
        BLT    5$              ;BR IF NO--GO POP THE NULL OFF OF STACK
        JSR    PC,7$           ;GO TYPE A NULL
        BR     6$              ;LOOP
7$:     TSTB   2$TPB          ;WAIT UNTIL PRINTER IS READY
        BPL    7$              ;LOAD CHAR TO BE TYPED INTO DATA REG.
        MOVB  2(SP),2$TPB
        RTS    PC
$STYPDEC
$STARS
;*****
.SBTTL  CONVERT BINARY TO DECIMAL AND TYPE ROUTINE
*CALL:
*   MOV      NUM,-(SP)          ;PUT THE BINARY NUMBER ON THE STACK
*   TYPDS
*                               ;GO TO THE ROUTINE
$TYPDS: PUSH    <RO,R1,R2,R3,R5>
.IRP   B,<RO,R1,R2,R3,R5>
        MOV    B,-(SP)          ;PUSH B ON STACK
.ENDM
        MOV    RO,-(SP)          ;PUSH RO ON STACK
        MOV    R1,-(SP)          ;PUSH R1 ON STACK

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|      |        |        |        |        |        |                    |   |  |
|------|--------|--------|--------|--------|--------|--------------------|---|--|
| 2812 | 014174 | 010246 |        |        | MOV    | R2,-(SP)           |   | :PUSH R2 ON STACK                        |
| 2813 | 014176 | 010346 |        |        | MOV    | R3,-(SP)           |   | :PUSH R3 ON STACK                        |
| 2814 | 014200 | 010546 |        |        | MOV    | R5,-(SP)           |   | :PUSH R5 ON STACK                        |
| 2815 | 014202 | 012746 | 020200 |        | MOV    | #20200,-(SP)       |   | :SET BLANK SWITCH AND SIGN               |
| 2816 | 014206 | 016605 | 000020 |        | MOV    | 20(SP),R5          |   | :GET THE INPUT NUMBER                    |
| 2817 | 014212 | 100004 |        |        | BPL    | 1\$                |   | :BR IF INPUT IS POS.                     |
| 2818 | 014214 | 005405 |        |        | NEG    | R5                 |   | :MAKE THE BINARY NUMBER POS.             |
| 2819 | 014216 | 112766 | 000055 | 000001 | MOVB   | #',-1(SP)          |   | :MAKE THE ASCII NUMBER NEG.              |
| 2820 | 014224 | 005000 |        |        | CLR    | R0                 |   | :ZERO THE CONSTANTS INDEX                |
| 2821 | 014226 | 012703 | 014404 |        | MOV    | #\$DBLK,R3         |   | :SETUP THE OUTPUT POINTER                |
| 2822 | 014232 | 112723 | 000040 |        | MOVB   | #',(R3)+           |   | :SET THE FIRST CHARACTER TO A BLANK      |
| 2823 | 014236 | 005002 |        |        | CLR    | R2                 |   | :CLEAR THE BCD NUMBER                    |
| 2824 | 014240 | 016001 | 014374 |        | MOV    | \$DTBL(R0),R1      |   | :GET THE CONSTANT                        |
| 2825 | 014244 | 160105 |        |        | SUB    | R1,R5              |   | :FORM THIS BCD DIGIT                     |
| 2826 | 014246 | 002402 |        |        | BLT    | 4\$                |   | :BR IF DONE                              |
| 2827 | 014250 | 005202 |        |        | INC    | R2                 |   | :INCREASE THE BCD DIGIT BY 1             |
| 2828 | 014252 | 000774 |        |        | BR     | 3\$                |   |  |
| 2829 | 014254 | 060105 |        |        | ADD    | R1,R5              |   | :ADD BACK THE CONSTANT                   |
| 2830 | 014256 | 005702 |        |        | TST    | R2                 |   | :CHECK IF BCD DIGIT=0                    |
| 2831 | 014260 | 001002 |        |        | BNE    | 5\$                |   | :FALL THROUGH IF 0                       |
| 2832 | 014262 | 105716 |        |        | TSTB   | (SP)               |   | :STILL DOING LEADING 0'S?                |
| 2833 | 014264 | 100407 |        |        | BMI    | 7\$                |   | :BR IF YES                               |
| 2834 | 014266 | 106316 |        |        | ASLB   | (SP)               |   | :MSD?                                    |
| 2835 | 014270 | 103003 |        |        | BCC    | 6\$                |   | :BR IF NO                                |
| 2836 | 014272 | 116663 | 000001 | 177777 | MOVB   | 1(SP),-1(R3)       |   | :YES--SET THE SIGN                       |
| 2837 | 014300 | 052702 | 000060 |        | BIS    | #'0,R2             |   | :MAKE THE BCD DIGIT ASCII                |
| 2838 | 014304 | 052702 | 000040 |        | BIS    | #',R2              |   | :MAKE IT A SPACE IF NOT ALREADY A DIGIT  |
| 2839 | 014310 | 110223 |        |        | MOVB   | R2,(R3)+           |   | :PUT THIS CHARACTER IN THE OUTPUT BUFFER |
| 2840 | 014312 | 005720 |        |        | TST    | (R0)+              |   | :JUST INCREMENTING                       |
| 2841 | 014314 | 020027 | 000010 |        | CMP    | R0,#10             |   | :CHECK THE TABLE INDEX                   |
| 2842 | 014320 | 002746 |        |        | BLT    | 2\$                |   | :GO DO THE NEXT DIGIT                    |
| 2843 | 014322 | 003002 |        |        | BGT    | 8\$                |   | :GO TO EXIT                              |
| 2844 | 014324 | 010502 |        |        | MOV    | R5,R2              |   | :GET THE LSD                             |
| 2845 | 014326 | 000764 |        |        | BR     | 6\$                |   | :GO CHANGE TO ASCII                      |
| 2846 | 014330 | 105726 |        |        | TSTB   | (SP)+              |   | :WAS THE LSD THE FIRST NON-ZERO?         |
| 2847 | 014332 | 100003 |        |        | BPL    | 9\$                |   | :BR IF NO                                |
| 2848 | 014334 | 116663 | 177777 | 177776 | MOVB   | -1(SP),-2(R3)      |   | :YES--SET THE SIGN FOR TYPING            |
| 2849 | 014342 | 105013 |        |        | CLRB   | (R3)               |   | :SET THE TERMINATOR                      |
| 2850 | 014344 |        |        |        | POP    | (R5,R3,R2,R1,R0)   |   |  |
| 2851 |        |        |        |        | .IRP   | B,(R5,R3,R2,R1,R0) |   |  |
| 2852 |        |        |        |        | MOV    | (SP)+,B            |   | :POP STACK INTO B                        |
| 2853 |        |        |        |        | .ENDM  |                    |   |  |
| 2854 | 014344 | 012605 |        |        | MOV    | (SP)+,R5           |   | :POP STACK INTO R5                       |
| 2855 | 014346 | 012603 |        |        | MOV    | (SP)+,R3           |   | :POP STACK INTO R3                       |
| 2856 | 014350 | 012602 |        |        | MOV    | (SP)+,R2           |   | :POP STACK INTO R2                       |
| 2857 | 014352 | 012601 |        |        | MOV    | (SP)+,R1           |   | :POP STACK INTO R1                       |
| 2858 | 014354 | 012600 |        |        | MOV    | (SP)+,R0           |   | :POP STACK INTO R0                       |
| 2859 | 014356 | 104400 | 014404 |        | TYPE   | \$DBLK             |   | :NOW TYPE THE NUMBER                     |
| 2860 | 014362 | 016666 | 000002 | 000004 | MOV    | 2(SP),4(SP)        |   | :ADJUST THE STACK                        |
| 2861 | 014370 | 012616 |        |        | MOV    | (SP)+,(SP)         |   |  |
| 2862 | 014372 | 000002 |        |        | RTI    |                    |   | :RETURN TO USER                          |
| 2863 | 014374 | 023420 |        |        | SDTBL: | 10000.             |   |  |
| 2864 | 014376 | 001750 |        |        |        | 1000.              |   |  |
| 2865 | 014400 | 000144 |        |        |        | 100.               |   |  |
| 2866 | 014402 | 000012 |        |        |        | 10.                |   |  |
| 2867 | 014404 | 000004 |        |        | SDBLK: | .BLKW              | 4 |  |

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2868 014414 .STYPOCT
2869 014414 STARS
2870 ;*****
2871
2872 .SBTTL BINARY TO OCTAL (ASCII) AND TYPE
2873
2874 ;*STYPOS---ENTER HERE TO SETUP SUPPRESS ZEROS AND NUMBER OF DIGITS TO TYPE
2875 ;*CALL:
2876 ;*      MOV      NUM,-(SP)          ;NUMBER TO BE TYPED
2877 ;*      TYPOS    ;CALL FOR TYPEOUT
2878 ;*      .BYTE   N          ;N=1 TO 6 FOR NUMBER OF DIGITS TO TYPE
2879 ;*      .BYTE   M          ;M=1 OR 0
2880 ;*                               ;1=TYPE LEADING ZEROS
2881 ;*                               ;0=SUPPRESS LEADING ZEROS
2882
2883 ;*STYPON----ENTER HERE TO TYPE OUT WITH THE SAME PARAMETERS AS THE LAST
2884 ;*STYPOS OR STYPOC
2885 ;*CALL:
2886 ;*      MOV      NUM,-(SP)          ;NUMBER TO BE TYPED
2887 ;*      TYPON    ;CALL FOR TYPEOUT
2888
2889 ;*STYPOC---ENTER HERE FOR TYPEOUT OF A 16 BIT NUMBER
2890 ;*CALL:
2891 ;*      MOV      NUM,-(SP)          ;NUMBER TO BE TYPED
2892 ;*      TYPOC    ;CALL FOR TYPEOUT
2893
2894 014414 017646 000000 STYPOS: MOV      2(SP),-(SP)          ;PICKUP THE MODE
2895 014420 116637 000001 014637 MOVVB   1(SP),SOFILL ;LOAD ZERO FILL SWITCH
2896 014426 112637 014641 MOVVB   (SP)+,SOMODE+1 ;NUMBER OF DIGITS TO TYPE
2897 014432 062716 000002 ADD      #2,(SP) ;ADJUST RETURN ADDRESS
2898 014436 000406 BR      STYPON
2899 014440 112737 000001 014637 STYPOC: MOVVB   #1,SOFILL ;SET THE ZERO FILL SWITCH
2900 014446 112737 000006 014641 MOVVB   #6,SOMODE+1 ;SET FOR SIX(6) DIGITS
2901 014454 112737 000005 014636 STYPON: MOVVB   #5,SOCNT ;SET THE ITERATION COUNT
2902 014462 010346 MOV      R3,-(SP) ;SAVE R3
2903 014464 010446 MOV      R4,-(SP) ;SAVE R4
2904 014466 010546 MOV      R5,-(SP) ;SAVE R5
2905 014470 113704 014641 MOVVB   SOMODE+1,R4 ;GET THE NUMBER OF DIGITS TO TYPE
2906 014474 005404 NEG      R4
2907 014476 062704 000006 ADD      #6,R4 ;SUBTRACT IT FOR MAX. ALLOWED
2908 014502 110437 014640 MOVVB   R4,SOMODE ;SAVE IT FOR USE
2909 014506 113704 014637 MOVVB   SOFILL,R4 ;GET THE ZERO FILL SWITCH
2910 014512 016605 000012 MOV      12(SP),R5 ;PICKUP THE INPUT NUMBER
2911 014516 005003 CLR      R3 ;CLEAR THE OUTPUT WORD
2912 014520 006105 15: ROL     R5 ;ROTATE MSB INTO "C"
2913 014522 000404 BR      35 ;GO DO MSB
2914 014524 006105 25: ROL     R5 ;FORM THIS DIGIT
2915 014526 006105 ROL     R5
2916 014530 006105 ROL     R5
2917 014532 010503 MOV      R5,R3
2918 014534 006103 35: ROL     R3 ;GET LSB OF THIS DIGIT
2919 014536 105337 014640 DECB    SOMODE ;TYPE THIS DIGIT?
2920 014542 100016 BPL     75 ;BR IF NO
2921 014544 042703 177770 BIC     #177770,R3 ;GET RID OF JUNK
2922 014550 001002 BNE     45 ;TEST FOR 0
2923 014552 005704 TST     R4 ;SUPPRESS THIS 0?

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2924 014554 001403          BEQ      5$          ;BR IF YES
2925 014556 005204          4$: INC      R4          ;DON'T SUPPRESS ANYMORE 0'S
2926 014560 052703 000060    BIS      #'0,R3       ;MAKE THIS DIGIT ASCII
2927 014564 052703 000040    5$: BIS      #' ,R3       ;MAKE ASCII IF NOT ALREADY
2928 014570 110337 014634    MOVB     R3,8$        ;SAVE FOR TYPING
2929 014574 104400 014634    TYPE     8$          ;GO TYPE THIS DIGIT
2930 014600 105337 014636    7$: DECB    $OCNT      ;COUNT BY 1
2931 014604 003347          BGT      2$          ;BR IF MORE TO DO
2932 014606 002402          BLT      6$          ;BR IF DONE
2933 014610 005204          INC      R4          ;INSURE LAST DIGIT ISN'T A BLANK
2934 014612 000744          BR       2$          ;GO DO THE LAST DIGIT
2935 014614 012605          6$: MOV     (SP)+,R5    ;RESTORE R5
2936 014616 012604          MOV     (SP)+,R4    ;RESTORE R4
2937 014620 012603          MOV     (SP)+,R3    ;RESTORE R3
2938 014622 016666 000002 000004  MOV     2(SP),4(SP) ;SET THE STACK FOR RETURNING
2939 014630 012616          MOV     (SP)+,(SP)
2940 014632 000002          RTI          ;RETURN
2941 014634          8$: .BYTE   0          ;STORAGE FOR ASCII DIGIT
2942 014635          .BYTE   0          ;TERMINATOR FOR TYPE ROUTINE
2943 014636          .BYTE   0          ;OCTAL DIGIT COUNTER
2944 014637          .BYTE   0          ;ZERO FILL SWITCH
2945 014640 000000          SOMODE: 0          ;NUMBER OF DIGITS TO TYPE
2946 014642          .SERRTYP
2947 014642          STARS
2948          ;*****
2949          ;
2950          .SBTTL  ERROR MESSAGE TYPEOUT ROUTINE
2951          ;
2952          ;*THIS ROUTINE USES THE "ITEM CONTROL BYTE" ($ITEMB) TO DETERMINE WHICH
2953          ;*ERROR IS TO BE REPORTED. IT THEN OBTAINS, FROM THE "ERROR TABLE" ($ERRTB),
2954          ;*AND REPORTS THE APPROPRIATE INFORMATION CONCERNING THE ERROR.
2955          ;
2956          $ERRTYP:
2957 014642 104400 001225          TYPE     $SCRLF      ;"CARRIAGE RETURN" & "LINE FEED"
2958 014646 010046          MOV     RO,-(SP)     ;SAVE RO
2959 014650 005000          CLR     RO           ;PICKUP THE ITEM INDEX
2960 014652 153700 001114    BISB    2*$ITEMB,RO
2961 014656 001004          BNE     1$          ;IF ITEM NUMBER IS ZERO, JUST
2962          ;TYPE THE PC OF THE ERROR
2963 014660          TYPOCT $ERRPC,<ERROR ADDRESS>
2964 014660 013746 001116    MOV     $ERRPC,-(SP) ;SAVE $ERRPC FOR TYPEOUT
2965          ;ERROR ADDRESS
2966 014664 104402          TYPOC   ;GO TYPE--OCTAL ASCII(ALL DIGITS)
2967 014666 000426          BR      6$          ;GET OUT
2968 014670 005300          1$: DEC     RO        ;ADJUST THE INDEX SO THAT IT WILL
2969 014672 006300          ASL     RO          ;WORK FOR THE ERROR TABLE
2970 014674 006300          ASL     RO
2971 014676 006300          ASL     RO
2972 014700 062700 001314    ADD     #$ERRTB,RO   ;FORM TABLE POINTER
2973 014704 012037 014714    MOV     (RO)+,2$     ;PICKUP "ERROR MESSAGE" POINTER
2974 014710 001404          BEQ     3$          ;SKIP TYPEOUT IF NO POINTER
2975 014712 104400          TYPE    ;TYPE THE "ERROR MESSAGE"
2976 014714 000000          2$: .WORD   0          ;"ERROR MESSAGE" POINTER GOES HERE
2977 014716 104400 001225          TYPE    $SCRLF      ;"CARRIAGE RETURN" & "LINE FEED"
2978 014722 012037 014732    3$: MOV     (RO)+,4$   ;PICKUP "DATA HEADER" POINTER
2979 014726 001404          BEQ     5$          ;SKIP TYPEOUT IF 0

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2980 014730 104400          TYPE                                ;TYPE THE "DATA HEADER"
2981 014732 000000          4$:  WORD 0                                ;"DATA HEADER" POINTER GOES HERE
2982 014734 104400 001225  TYPE ,SCRLF                          ;"CARRIAGE RETURN" & "LINE FEED"
2983 014740 011000          5$:  MOV (RO),RO                          ;PICKUP "DATA TABLE" POINTER
2984 014742 001004          BNE 7$                                ;GO TYPE THE DATA
2985 014744 012600          6$:  MOV (SP)+,RO                          ;RESTORE RO
2986 014746 104400 001225  TYPE ,SCRLF                          ;"CARRIAGE RETURN" & "LINE FEED"
2987 014752 000207          RTS PC                                ;RETURN
2988 014754          7$:  TYPOCT 2(RO)+                          ;TYPE AN OCTAL NUMBER
2989 014754 013046          MOV 2(RO)+,-(SP)                      ;SAVE 2(RO)+ FOR TYPEOUT
2990 014756 104402          TYPOC                                ;GO TYPE--OCTAL ASCII(ALL DIGITS)
2991 014760 005710          TST (RO)                              ;IS THERE ANOTHER NUMBER?
2992 014762 001770          BEQ 6$                                ;BR IF NO
2993 014764 104400 014772  TYPE ,8$                              ;TYPE TWO(2) SPACES
2994 014770 000771          BR 7$                                ;LOOP
2995 014772 020040 000     8$:  .ASCIZ / /                          ;TWO(2) SPACES
2996 014776          .EVEN
2997 014776          .STRAP
2998 014776          STARS
2999          ;;*****
3000          .SBTTL TRAP DECODER
3001
3002
3003          ;*THIS ROUTINE WILL PICKUP THE LOWER BYTE OF THE "TRAP" INSTRUCTION
3004          ;*AND USE IT TO INDEX THROUGH THE TRAP TABLE FOR THE STARTING ADDRESS
3005          ;*OF THE DESIRED ROUTINE. THEN USING THE ADDRESS OBTAINED IT WILL
3006          ;*GO TO THAT ROUTINE.
3007
3008 014776 010046          STRAP: MOV RO,-(SP)                          ;SAVE RO
3009 015000 016600 000002  MOV 2(SP),RO                          ;GET TRAP ADDRESS
3010 015004 005740          TST -(RO)                              ;BACKUP BY 2
3011 015006 111000          MOVB (RO),RO                          ;GET RIGHT BYTE OF TRAP
3012 015010 016000 015016  MOV $TRPAD(RO),RO                      ;INDEX TO TABLE
3013 015014 000200          RTS RO                                ;GO TO ROUTINE
3014
3015          .MACRO SETTRAP A,B,MSG
3016          $$SET A,B,\<TRAP+STRP>,\STRP,<MSG>
3017
3018          .NLIST
3019          $TRP=$TRP+2
3020          .LIST
3021          .ENDM SETTRAP
3022          .MACRO $$SET A,B,C,D,COMNT
3023          .IF EQ $TRP
3024          .SBTTL TRAP TABLE
3025
3026          ;*THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
3027          ;*BY THE "TRAP" INSTRUCTION.
3028
3029          : ROUTINE
3030          : -----
3031          $TRPAD:
3032          .ENDC
3033          .IIF NDF GNS,.NLIST
3034          A= C
3035          .IIF NDF GNS,.LIST
    
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3036                                     B                ;CALL=A TRAP+D(C)        COMNT
3037                                     .ENDM          $$SET
3038                                     .MACRO        TRMTRP
3039                                     $TERM=-.STRPAD
3040                                     .ENDM          TRMTRP
3041                                     .LIST
3042 015016                               SETTRAP TYPE,$TYPE,↑/TTY TYPEOUT ROUTINE/
3043 015016                               $$SET TYPE,$TYPE,\<TRAP+STRP>,\STRP,<TTY TYPEOUT ROUTINE>
3044
3045                                     .SBTTL TRAP TABLE
3046
3047                                     ;*THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
3048                                     ;*BY THE "TRAP" INSTRUCTION.
3049
3050                                     ; ROUTINE
3051                                     ; -----
3052 015016                               $TRPAD:
3053                                     .LIST
3054 015016 014062                       $TYPE                ;CALL=TYPE TRAP+0(104400) TTY TYPEOUT ROUTINE
3055                                     .LIST
3056 015020                               SETTRAP TYPOC,$TYPOC,↑/TYPE OCTAL NUMBER (WITH LEADING ZEROS)/
3057 015020                               $$SET TYPOC,$TYPOC,\<TRAP+STRP>,\STRP,<TYPE OCTAL NUMBER (WITH LEADING ZEROS)>
3058                                     .LIST
3059 015020 014440                       $TYPOC                ;CALL=TYPOC TRAP+2(104402) TYPE OCTAL NUMBER (WITH LEADING
3060                                     .LIST
3061 015022                               SETTRAP TYPOS,$TYPOS,↑/TYPE OCTAL NUMBER (NO LEADING ZEROS)/
3062 015022                               $$SET TYPOS,$TYPOS,\<TRAP+STRP>,\STRP,<TYPE OCTAL NUMBER (NO LEADING ZEROS)>
3063                                     .LIST
3064 015022 014414                       $TYPOS                ;CALL=TYPOS TRAP+4(104404) TYPE OCTAL NUMBER (NO LEADING ZE
3065                                     .LIST
3066 015024                               SETTRAP TYPON,$TYPON,↑/TYPE OCTAL NUMBER (AS PER LAST CALL)/
3067 015024                               $$SET TYPON,$TYPON,\<TRAP+STRP>,\STRP,<TYPE OCTAL NUMBER (AS PER LAST CALL)>
3068                                     .LIST
3069 015024 014454                       $TYPON                ;CALL=TYPON TRAP+6(104406) TYPE OCTAL NUMBER (AS PER LAST C
3070                                     .LIST
3071 015026                               SETTRAP TYPDS,$TYPDS,↑/TYPE DECIMAL NUMBER (WITH SIGN)/
3072 015026                               $$SET TYPDS,$TYPDS,\<TRAP+STRP>,\STRP,<TYPE DECIMAL NUMBER (WITH SIGN)>
3073                                     .LIST
3074 015026 014170                       $TYPDS                ;CALL=TYPDS TRAP+10(104410) TYPE DECIMAL NUMBER (WITH SIGN)
3075                                     .LIST
3076 015030 000000                       CKSELT: OPEN
3077 015032 055104 041524 026502       STMES: .ASCII 'DZTCB-C - TC11 TEST'<15><12>
3078 015040 020103 020055 041524
3079 015046 030461 052040 051505
3080 015054 006524 012
3081 015057 123 052105 052440          .ASCII 'SET UNITO TO REMOTE AND WRITE LOCK.'
3082 015064 044516 030124 052040
3083 015072 020117 042522 047515
3084 015100 042524 040440 042116
3085 015106 053440 044522 042524
3086 015114 046040 041517 027113
3087 015122 046101 020114 052117          .ASCII 'ALL OTHER UNITS OFF.'<15><12>
3088 015130 042510 020122 047125
3089 015136 052111 020123 043117
3090 015144 027106 005015
3091 015150 051127 046524 051440          .ASCIZ 'WRTM SWITCH OFF, WALL SWITCH ON.'<15><12>

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|      |        |        |        |        |  |
|------|--------|--------|--------|--------|--|
| 3092 | 015156 | 044527 | 041524 | 020110 |  |
| 3093 | 015164 | 043117 | 026106 | 053440 |  |
| 3094 | 015172 | 046101 | 020114 | 053523 |  |
| 3095 | 015200 | 052111 | 044103 | 047440 |  |
| 3096 | 015206 | 027116 | 005015 | 000    |  |
| 3097 | 015213 | 015    | 051412 | 052105 | ASETSR: .ASCIZ <15><12>'SET SR OPTIONS. NORMAL SR = 0'               |
| 3098 | 015220 | 051440 | 020122 | 050117 |  |
| 3099 | 015226 | 044524 | 047117 | 027123 |  |
| 3100 | 015234 | 047040 | 051117 | 040515 |  |
| 3101 | 015242 | 020114 | 051123 | 036440 |  |
| 3102 | 015250 | 030040 | 000    |        |  |
| 3103 | 015253 | 015    | 044412 | 053116 | AINCRT: .ASCIZ <15><12>'INVALID TEST.'                               |
| 3104 | 015260 | 046101 | 042111 | 052040 |  |
| 3105 | 015266 | 051505 | 027124 | 000    |  |
| 3106 | 015273 | 007    |        |        | APGEND: .BYTE 007  |
| 3107 | 015274 | 025045 | 000    |        | .ASCIZ '%*'  |
| 3108 | 015277 | 106    | 052101 | 046101 | TRPM4S: .ASCIZ "FATAL ERROR TRAP TO LOCATION 4 FROM LOC"             |
| 3109 | 015304 | 042440 | 051122 | 051117 |  |
| 3110 | 015312 | 052040 | 040522 | 020120 |  |
| 3111 | 015320 | 047524 | 046040 | 041517 |  |
| 3112 | 015326 | 052101 | 047511 | 020116 |  |
| 3113 | 015334 | 020064 | 051106 | 046517 |  |
| 3114 | 015342 | 046040 | 041517 | 000    |  |
| 3115 | 015347 | 050    | 041077 | 042101 | TRPMES: .ASCIZ "(?BAD CPU?) ATTEMPTING TO RESTART PROGRAM"           |
| 3116 | 015354 | 041440 | 052520 | 024477 |  |
| 3117 | 015362 | 040440 | 052124 | 046505 |  |
| 3118 | 015370 | 052120 | 047111 | 020107 |  |
| 3119 | 015376 | 047524 | 051040 | 051505 |  |
| 3120 | 015404 | 040524 | 052122 | 050040 |  |
| 3121 | 015412 | 047522 | 051107 | 046501 |  |
| 3122 | 015420 | 000    |        |        |  |
| 3123 | 015421 | 106    | 052101 | 046101 | TRPM10: .ASCIZ "FATAL ERROR TRAP TO LOCATION 10 FROM LOC "           |
| 3124 | 015426 | 042440 | 051122 | 051117 |  |
| 3125 | 015434 | 052040 | 040522 | 020120 |  |
| 3126 | 015442 | 047524 | 046040 | 041517 |  |
| 3127 | 015450 | 052101 | 047511 | 020116 |  |
| 3128 | 015456 | 030061 | 043040 | 047522 |  |
| 3129 | 015464 | 020115 | 047514 | 020103 |  |
| 3130 | 015472 | 000    |        |        |  |
| 3131 | 015473 | 124    | 051505 | 051524 | RESTART: .ASCIZ "TESTS ARE OUT OF SEQUENCE - - - RESTARTING...."     |
| 3132 | 015500 | 040440 | 042522 | 047440 |  |
| 3133 | 015506 | 052125 | 047440 | 020106 |  |
| 3134 | 015514 | 042523 | 052521 | 047105 |  |
| 3135 | 015522 | 042503 | 026440 | 026440 |  |
| 3136 | 015530 | 026440 | 051040 | 051505 |  |
| 3137 | 015536 | 040524 | 052122 | 047111 |  |
| 3138 | 015544 | 027107 | 027056 | 000056 |  |
| 3139 | 015552 | 005015 | 042522 | 052123 | POWMES: .ASCIZ <15> <12> "RESTARTING AFTER A POWER FAILURE"<15> <12> |
| 3140 | 015560 | 051101 | 044524 | 043516 |  |
| 3141 | 015566 | 040440 | 052106 | 051105 |  |
| 3142 | 015574 | 040440 | 050040 | 053517 |  |
| 3143 | 015602 | 051105 | 043040 | 044501 |  |
| 3144 | 015610 | 052514 | 042522 | 005015 |  |
| 3145 | 015616 | 000    |        |        |  |
| 3146 | 015617 | 123    | 052101 | 024040 | EM1: .ASCIZ "SAT (STOP ALL TRANSPORTS) COMMAND DID NOT CLEAR READY"  |
| 3147 | 015624 | 052123 | 050117 | 040440 |  |

|      |        |        |        |        |       |  |   |    |    |                  |
|------|--------|--------|--------|--------|-------|--|---|----|----|------------------|
| 3148 | 015632 | 046114 | 052040 | 040522 |       |  |   |    |    |                  |
| 3149 | 015640 | 051516 | 047520 | 052122 |       |  |   |    |    |                  |
| 3150 | 015646 | 024523 | 041440 | 046517 |       |  |   |    |    |                  |
| 3151 | 015654 | 040515 | 042116 | 042040 |       |  |   |    |    |                  |
| 3152 | 015662 | 042111 | 047040 | 052117 |       |  |   |    |    |                  |
| 3153 | 015670 | 041440 | 042514 | 051101 |       |  |   |    |    |                  |
| 3154 | 015676 | 051040 | 040505 | 054504 |       |  |   |    |    |                  |
| 3155 | 015704 | 000    |        |        |       |  |   |    |    |                  |
| 3156 | 015705 | 040    | 050040 | 020103 | EH1:  | .ASCIZ                                     | " PC  | SP | PS | TEST# TCCM TCST" |
| 3157 | 015712 | 020040 | 020040 | 051440 |       |  |   |    |    |                  |
| 3158 | 015720 | 020120 | 020040 | 020040 |       |  |   |    |    |                  |
| 3159 | 015726 | 050040 | 020123 | 020040 |       |  |   |    |    |                  |
| 3160 | 015734 | 020040 | 042524 | 052123 |       |  |   |    |    |                  |
| 3161 | 015742 | 020043 | 020040 | 041524 |       |  |   |    |    |                  |
| 3162 | 015750 | 046503 | 020040 | 020040 |       |  |   |    |    |                  |
| 3163 | 015756 | 041524 | 052123 | 000    |       |  |   |    |    |                  |
| 3164 |        | 015764 |        |        | .EVEN |  |   |    |    |                  |
| 3165 | 015764 | 001116 | 001170 | 001172 | ET1:  | \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1 |   |    |    |                  |
| 3166 | 015772 | 001166 | 001160 | 001156 |       |  |   |    |    |                  |
| 3167 | 016000 | 000000 |        |        |       | 000000                                     |   |    |    |                  |
| 3168 |        |        |        |        |       |  |   |    |    |                  |
| 3169 |        |        |        |        |       |  |   |    |    |                  |
| 3170 | 016002 | 051523 | 020124 | 051450 | EM2:  | .ASCIZ                                     | "SST (STOP SELECTED TRANSPORT) DID NOT CLEAR READY" |    |    |                  |
| 3171 | 016010 | 047524 | 020120 | 042523 |       |  |   |    |    |                  |
| 3172 | 016016 | 042514 | 052103 | 042105 |       |  |   |    |    |                  |
| 3173 | 016024 | 052040 | 040522 | 051516 |       |  |   |    |    |                  |
| 3174 | 016032 | 047520 | 052122 | 020051 |       |  |   |    |    |                  |
| 3175 | 016040 | 044504 | 020104 | 047516 |       |  |   |    |    |                  |
| 3176 | 016046 | 020124 | 046103 | 040505 |       |  |   |    |    |                  |
| 3177 | 016054 | 020122 | 042522 | 042101 |       |  |   |    |    |                  |
| 3178 | 016062 | 000131 |        |        |       |  |   |    |    |                  |
| 3179 | 016064 | 020040 | 041520 | 020040 | EH2:  | .ASCIZ                                     | " PC  | SP | PS | TEST# TCCM TCST" |
| 3180 | 016072 | 020040 | 020040 | 050123 |       |  |   |    |    |                  |
| 3181 | 016100 | 020040 | 020040 | 020040 |       |  |   |    |    |                  |
| 3182 | 016106 | 051520 | 020040 | 020040 |       |  |   |    |    |                  |
| 3183 | 016114 | 052040 | 051505 | 021524 |       |  |   |    |    |                  |
| 3184 | 016122 | 020040 | 052040 | 041503 |       |  |   |    |    |                  |
| 3185 | 016130 | 020115 | 020040 | 052040 |       |  |   |    |    |                  |
| 3186 | 016136 | 051503 | 000124 |        |       |  |   |    |    |                  |
| 3187 |        |        |        |        | .EVEN |  |   |    |    |                  |
| 3188 | 016142 | 001116 | 001170 | 001172 | ET2:  | \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1 |   |    |    |                  |
| 3189 | 016150 | 001166 | 001160 | 001156 |       |  |   |    |    |                  |
| 3190 | 016156 | 000000 |        |        |       | 000000                                     |   |    |    |                  |
| 3191 |        |        |        |        |       |  |   |    |    |                  |
| 3192 |        |        |        |        |       |  |   |    |    |                  |
| 3193 | 016160 | 042522 | 042101 | 020131 | EM3:  | .ASCIZ                                     | "READY BIT DID NOT CAUSE AN INTERRUPT"              |    |    |                  |
| 3194 | 016166 | 044502 | 020124 | 044504 |       |  |   |    |    |                  |
| 3195 | 016174 | 020104 | 047516 | 020124 |       |  |   |    |    |                  |
| 3196 | 016202 | 040503 | 051525 | 020105 |       |  |   |    |    |                  |
| 3197 | 016210 | 047101 | 044440 | 052116 |       |  |   |    |    |                  |
| 3198 | 016216 | 051105 | 052522 | 052120 |       |  |   |    |    |                  |
| 3199 | 016224 | 000    |        |        |       |  |   |    |    |                  |
| 3200 | 016225 | 040    | 050040 | 020103 | EH3:  | .ASCIZ                                     | " PC  | SP | PS | TEST# TCCM TCST" |
| 3201 | 016232 | 020040 | 020040 | 051440 |       |  |   |    |    |                  |
| 3202 | 016240 | 020120 | 020040 | 020040 |       |  |   |    |    |                  |
| 3203 | 016246 | 050040 | 020123 | 020040 |       |  |   |    |    |                  |

|      |        |        |        |        |       |   |
|------|--------|--------|--------|--------|-------|---|
| 3204 | 016254 | 020040 | 042524 | 052123 |       |   |
| 3205 | 016262 | 020043 | 020040 | 041524 |       |   |
| 3206 | 016270 | 046503 | 020040 | 020040 |       |   |
| 3207 | 016276 | 041524 | 052123 | 000    |       |   |
| 3208 |        | 016304 |        |        |       |   |
| 3209 | 016304 | 001116 | 001170 | 001172 | .EVEN |   |
| 3210 | 016312 | 001166 | 001160 | 001156 | ET3:  | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                                 |
| 3211 | 016320 | 000000 |        |        |       | 000000  |
| 3212 |        |        |        |        |       |   |
| 3213 |        |        |        |        |       |   |
| 3214 | 016322 | 042522 | 042101 | 020131 | EM4:  | .ASCIZ "READY BIT CAUSED AN INTERRUPT WITH PROCESSOR AND TC11 AT SAME PRIORITY" |
| 3215 | 016330 | 044502 | 020124 | 040503 |       |   |
| 3216 | 016336 | 051525 | 042105 | 040440 |       |   |
| 3217 | 016344 | 020116 | 047111 | 042524 |       |   |
| 3218 | 016352 | 051122 | 050125 | 020124 |       |   |
| 3219 | 016360 | 044527 | 044124 | 050040 |       |   |
| 3220 | 016366 | 047522 | 042503 | 051523 |       |   |
| 3221 | 016374 | 051117 | 040440 | 042116 |       |   |
| 3222 | 016402 | 052040 | 030503 | 020061 |       |   |
| 3223 | 016410 | 052101 | 051440 | 046501 |       |   |
| 3224 | 016416 | 020105 | 051120 | 047511 |       |   |
| 3225 | 016424 | 044522 | 054524 | 000    |       |   |
| 3226 | 016431 | 040    | 050040 | 020103 | EM4:  | .ASCIZ " PC SP PS TEST# TCCM TCST"  |
| 3227 | 016436 | 020040 | 020040 | 051440 |       |   |
| 3228 | 016444 | 020120 | 020040 | 020040 |       |   |
| 3229 | 016452 | 050040 | 020123 | 020040 |       |   |
| 3230 | 016460 | 020040 | 042524 | 052123 |       |   |
| 3231 | 016466 | 020043 | 020040 | 041524 |       |   |
| 3232 | 016474 | 046503 | 020040 | 020040 |       |   |
| 3233 | 016502 | 041524 | 052123 | 000    |       |   |
| 3234 |        | 016510 |        |        |       |   |
| 3235 | 016510 | 001116 | 001170 | 001172 | .EVEN |   |
| 3236 | 016516 | 001166 | 001160 | 001156 | ET4:  | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                                 |
| 3237 | 016524 | 000000 |        |        |       | 000000  |
| 3238 |        |        |        |        |       |   |
| 3239 |        |        |        |        |       |   |
| 3240 | 016526 | 041524 | 030461 | 043040 | EM5:  | .ASCIZ "TC11 FAILED TO INTERRUPT"   |
| 3241 | 016534 | 044501 | 042514 | 020104 |       |   |
| 3242 | 016542 | 047524 | 044440 | 052116 |       |   |
| 3243 | 016550 | 051105 | 052522 | 052120 |       |   |
| 3244 | 016556 | 000    |        |        |       |   |
| 3245 | 016557 | 040    | 050040 | 020103 | EHS:  | .ASCIZ " PC SP PS TEST# TCCM TCST"  |
| 3246 | 016564 | 020040 | 020040 | 051440 |       |   |
| 3247 | 016572 | 020120 | 020040 | 020040 |       |   |
| 3248 | 016600 | 050040 | 020123 | 020040 |       |   |
| 3249 | 016606 | 020040 | 042524 | 052123 |       |   |
| 3250 | 016614 | 020043 | 020040 | 041524 |       |   |
| 3251 | 016622 | 046503 | 020040 | 020040 |       |   |
| 3252 | 016630 | 041524 | 052123 | 000    |       |   |
| 3253 |        | 016636 |        |        |       |   |
| 3254 | 016636 | 001116 | 001170 | 001172 | .EVEN |   |
| 3255 | 016644 | 001166 | 001160 | 001156 | ET5:  | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1                                 |
| 3256 | 016652 | 000000 |        |        |       | 000000  |
| 3257 |        |        |        |        |       |   |
| 3258 |        |        |        |        |       |   |
| 3259 | 016654 | 041524 | 030461 | 042040 | EM6:  | .ASCIZ "TC11 DID NOT DROP INTERRUPT REQUEST AFTER IT WAS ACKNOWLEDGED"          |



|      |        |        |        |        |       |  |  |  |  |  |  |
|------|--------|--------|--------|--------|-------|--|--|--|--|--|--|
| 3316 | 017312 | 051520 | 020040 | 020040 |       |  |  |  |  |  |  |
| 3317 | 017320 | 052040 | 051505 | 021524 |       |  |  |  |  |  |  |
| 3318 | 017326 | 020040 | 052040 | 041503 |       |  |  |  |  |  |  |
| 3319 | 017334 | 020115 | 020040 | 052040 |       |  |  |  |  |  |  |
| 3320 | 017342 | 051503 | 000124 |        |       |  |  |  |  |  |  |
| 3321 |        |        |        |        | .EVEN |  |  |  |  |  |  |
| 3322 | 017346 | 001116 | 001170 | 001172 | ET10: | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1          |  |  |  |  |  |
| 3323 | 017354 | 001166 | 001160 | 001156 |       |  |  |  |  |  |  |
| 3324 | 017362 | 000000 |        |        |       | 000000   |  |  |  |  |  |
| 3325 |        |        |        |        |       |  |  |  |  |  |  |
| 3326 |        |        |        |        |       |  |  |  |  |  |  |
| 3327 | 017364 | 050125 | 020123 | 044504 | EM11: | .ASCIZ "UPS DID NOT CLEAR WHEN LEAVING MAINTANENCE MODE" |  |  |  |  |  |
| 3328 | 017372 | 020104 | 047516 | 020124 |       |  |  |  |  |  |  |
| 3329 | 017400 | 046103 | 040505 | 020122 |       |  |  |  |  |  |  |
| 3330 | 017406 | 044127 | 047105 | 046040 |       |  |  |  |  |  |  |
| 3331 | 017414 | 040505 | 044526 | 043516 |       |  |  |  |  |  |  |
| 3332 | 017422 | 046440 | 044501 | 052116 |       |  |  |  |  |  |  |
| 3333 | 017430 | 047101 | 047105 | 042503 |       |  |  |  |  |  |  |
| 3334 | 017436 | 046440 | 042117 | 000105 |       |  |  |  |  |  |  |
| 3335 | 017444 | 020040 | 041520 | 020040 | EM11: | .ASCIZ " PC SP PS TEST# TCCM TCST"                       |  |  |  |  |  |
| 3336 | 017452 | 020040 | 020040 | 050123 |       |  |  |  |  |  |  |
| 3337 | 017460 | 020040 | 020040 | 020040 |       |  |  |  |  |  |  |
| 3338 | 017466 | 051520 | 020040 | 020040 |       |  |  |  |  |  |  |
| 3339 | 017474 | 052040 | 051505 | 021524 |       |  |  |  |  |  |  |
| 3340 | 017502 | 020040 | 052040 | 041503 |       |  |  |  |  |  |  |
| 3341 | 017510 | 020115 | 020040 | 052040 |       |  |  |  |  |  |  |
| 3342 | 017516 | 051503 | 000124 |        |       |  |  |  |  |  |  |
| 3343 |        |        |        |        | .EVEN |  |  |  |  |  |  |
| 3344 | 017522 | 001116 | 001170 | 001172 | ET11: | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1          |  |  |  |  |  |
| 3345 | 017530 | 001166 | 001160 | 001156 |       |  |  |  |  |  |  |
| 3346 | 017536 | 000000 |        |        |       | 000000   |  |  |  |  |  |
| 3347 |        |        |        |        |       |  |  |  |  |  |  |
| 3348 |        |        |        |        |       |  |  |  |  |  |  |
| 3349 | 017540 | 041524 | 052123 | 041040 | EM12: | .ASCIZ "TCST BIT 0 CAN BE SET WHILE IN MAINTANENCE MODE" |  |  |  |  |  |
| 3350 | 017546 | 052111 | 030040 | 041440 |       |  |  |  |  |  |  |
| 3351 | 017554 | 047101 | 041040 | 020105 |       |  |  |  |  |  |  |
| 3352 | 017562 | 042523 | 020124 | 044127 |       |  |  |  |  |  |  |
| 3353 | 017570 | 046111 | 020105 | 047111 |       |  |  |  |  |  |  |
| 3354 | 017576 | 046440 | 044501 | 052116 |       |  |  |  |  |  |  |
| 3355 | 017604 | 047101 | 047105 | 042503 |       |  |  |  |  |  |  |
| 3356 | 017612 | 046440 | 042117 | 000105 |       |  |  |  |  |  |  |
| 3357 | 017620 | 020040 | 041520 | 020040 | EM12: | .ASCIZ " PC SP PS TEST# TCCM TCST"                       |  |  |  |  |  |
| 3358 | 017626 | 020040 | 020040 | 050123 |       |  |  |  |  |  |  |
| 3359 | 017634 | 020040 | 020040 | 020040 |       |  |  |  |  |  |  |
| 3360 | 017642 | 051520 | 020040 | 020040 |       |  |  |  |  |  |  |
| 3361 | 017650 | 052040 | 051505 | 021524 |       |  |  |  |  |  |  |
| 3362 | 017656 | 020040 | 052040 | 041503 |       |  |  |  |  |  |  |
| 3363 | 017664 | 020115 | 020040 | 052040 |       |  |  |  |  |  |  |
| 3364 | 017672 | 051503 | 000124 |        |       |  |  |  |  |  |  |
| 3365 |        |        |        |        | .EVEN |  |  |  |  |  |  |
| 3366 | 017676 | 001116 | 001170 | 001172 | ET12: | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1          |  |  |  |  |  |
| 3367 | 017704 | 001166 | 001160 | 001156 |       |  |  |  |  |  |  |
| 3368 | 017712 | 000000 |        |        |       | 000000   |  |  |  |  |  |
| 3369 |        |        |        |        |       |  |  |  |  |  |  |
| 3370 |        |        |        |        |       |  |  |  |  |  |  |
| 3371 | 017714 | 041524 | 052123 | 041040 | EM13: | .ASCIZ "TCST BIT 1 CAN BE SET WHILE IN MAINTANENCE MODE" |  |  |  |  |  |



|      |        |        |        |        |  |
|------|--------|--------|--------|--------|--|
| 3428 | 020356 | 051520 | 020040 | 020040 |  |
| 3429 | 020364 | 052040 | 051505 | 021524 |  |
| 3430 | 020372 | 020040 | 052040 | 041503 |  |
| 3431 | 020400 | 020115 | 020040 | 052040 |  |
| 3432 | 020406 | 051503 | 000124 |        |  |
| 3433 |        |        |        |        | .EVEN  |
| 3434 | 020412 | 001116 | 001170 | 001172 | ET15: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1              |
| 3435 | 020420 | 001166 | 001160 | 001156 |  |
| 3436 | 020426 | 000000 |        |        | 000000   |
| 3437 |        |        |        |        |  |
| 3438 |        |        |        |        |  |
| 3439 | 020430 | 046103 | 040505 | 044522 | EM16: .ASCIZ "CLEARING ILLEGAL OP FAILED TO CLEAR ILO ERROR"       |
| 3440 | 020436 | 043516 | 044440 | 046114 |  |
| 3441 | 020444 | 043505 | 046101 | 047440 |  |
| 3442 | 020452 | 020120 | 040506 | 046111 |  |
| 3443 | 020460 | 042105 | 052040 | 020117 |  |
| 3444 | 020466 | 046103 | 040505 | 020122 |  |
| 3445 | 020474 | 046111 | 020117 | 051105 |  |
| 3446 | 020502 | 047522 | 000122 |        |  |
| 3447 | 020506 | 020040 | 041520 | 020040 | EH16: .ASCIZ " PC SP PS TEST# TCCM TCST"                           |
| 3448 | 020514 | 020040 | 020040 | 050123 |  |
| 3449 | 020522 | 020040 | 020040 | 020040 |  |
| 3450 | 020530 | 051520 | 020040 | 020040 |  |
| 3451 | 020536 | 052040 | 051505 | 021524 |  |
| 3452 | 020544 | 020040 | 052040 | 041503 |  |
| 3453 | 020552 | 020115 | 020040 | 052040 |  |
| 3454 | 020560 | 051503 | 000124 |        |  |
| 3455 |        |        |        |        | .EVEN  |
| 3456 | 020564 | 001116 | 001170 | 001172 | ET16: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1              |
| 3457 | 020572 | 001166 | 001160 | 001156 |  |
| 3458 | 020600 | 000000 |        |        | 000000   |
| 3459 |        |        |        |        |  |
| 3460 |        |        |        |        |  |
| 3461 | 020602 | 046103 | 040505 | 044522 | EM17: .ASCIZ "CLEARING ILLEGAL OP FAILED TO CLEAR THE 'ERROR' BIT" |
| 3462 | 020610 | 043516 | 044440 | 046114 |  |
| 3463 | 020616 | 043505 | 046101 | 047440 |  |
| 3464 | 020624 | 020120 | 040506 | 046111 |  |
| 3465 | 020632 | 042105 | 052040 | 020117 |  |
| 3466 | 020640 | 046103 | 040505 | 020122 |  |
| 3467 | 020646 | 044124 | 020105 | 042447 |  |
| 3468 | 020654 | 051122 | 051117 | 020047 |  |
| 3469 | 020662 | 044502 | 000124 |        |  |
| 3470 | 020666 | 020040 | 041520 | 020040 | EH17: .ASCIZ " PC SP PS TEST# TCCM TCST"                           |
| 3471 | 020674 | 020040 | 020040 | 050123 |  |
| 3472 | 020702 | 020040 | 020040 | 020040 |  |
| 3473 | 020710 | 051520 | 020040 | 020040 |  |
| 3474 | 020716 | 052040 | 051505 | 021524 |  |
| 3475 | 020724 | 020040 | 052040 | 041503 |  |
| 3476 | 020732 | 020115 | 020040 | 052040 |  |
| 3477 | 020740 | 051503 | 000124 |        |  |
| 3478 |        |        |        |        | .EVEN  |
| 3479 | 020744 | 001116 | 001170 | 001172 | ET17: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1              |
| 3480 | 020752 | 001166 | 001160 | 001156 |  |
| 3481 | 020760 | 000000 |        |        | 000000   |
| 3482 |        |        |        |        |  |
| 3483 |        |        |        |        |  |

|      |        |        |        |        |
|------|--------|--------|--------|--------|
| 3484 | 020762 | 051127 | 046524 | 053440 |
| 3485 | 020770 | 052111 | 020110 | 051127 |
| 3486 | 020776 | 046524 | 051440 | 044527 |
| 3487 | 021004 | 041524 | 020110 | 043117 |
| 3488 | 021012 | 020106 | 044504 | 020104 |
| 3489 | 021020 | 047516 | 020124 | 042523 |
| 3490 | 021026 | 020124 | 046111 | 020117 |
| 3491 | 021034 | 051105 | 047522 | 020122 |
| 3492 | 021042 | 044502 | 000124 |        |
| 3493 | 021046 | 020040 | 041520 | 020040 |
| 3494 | 021054 | 020040 | 020040 | 050123 |
| 3495 | 021062 | 020040 | 020040 | 020040 |
| 3496 | 021070 | 051520 | 020040 | 020040 |
| 3497 | 021076 | 052040 | 051505 | 021524 |
| 3498 | 021104 | 020040 | 052040 | 041503 |
| 3499 | 021112 | 020115 | 020040 | 052040 |
| 3500 | 021120 | 051503 | 000124 |        |
| 3501 |        |        |        |        |
| 3502 | 021124 | 001116 | 001170 | 001172 |
| 3503 | 021132 | 001166 | 001160 | 001156 |
| 3504 | 021140 | 000000 |        |        |
| 3505 |        |        |        |        |
| 3506 |        |        |        |        |
| 3507 | 021142 | 046111 | 020117 | 051105 |
| 3508 | 021150 | 047522 | 020122 | 042523 |
| 3509 | 021156 | 052124 | 047111 | 020107 |
| 3510 | 021164 | 044504 | 020104 | 047516 |
| 3511 | 021172 | 020124 | 040503 | 051525 |
| 3512 | 021200 | 020105 | 044124 | 020105 |
| 3513 | 021206 | 042447 | 051122 | 051117 |
| 3514 | 021214 | 020047 | 044502 | 020124 |
| 3515 | 021222 | 047524 | 051440 | 052105 |
| 3516 | 021230 | 000    |        |        |
| 3517 | 021231 | 040    | 050040 | 020103 |
| 3518 | 021236 | 020040 | 020040 | 051440 |
| 3519 | 021244 | 020120 | 020040 | 020040 |
| 3520 | 021252 | 050040 | 020123 | 020040 |
| 3521 | 021260 | 020040 | 042524 | 052123 |
| 3522 | 021266 | 020043 | 020040 | 041524 |
| 3523 | 021274 | 046503 | 020040 | 020040 |
| 3524 | 021302 | 041524 | 052123 | 000    |
| 3525 |        | 021310 |        |        |
| 3526 | 021310 | 001116 | 001170 | 001172 |
| 3527 | 021316 | 001166 | 001160 | 001156 |
| 3528 | 021324 | 000000 |        |        |
| 3529 |        |        |        |        |
| 3530 |        |        |        |        |
| 3531 | 021326 | 046103 | 040505 | 044522 |
| 3532 | 021334 | 043516 | 042440 | 051122 |
| 3533 | 021342 | 051117 | 041040 | 052111 |
| 3534 | 021350 | 040440 | 051514 | 020117 |
| 3535 | 021356 | 046103 | 040505 | 042522 |
| 3536 | 021364 | 020104 | 046111 | 020117 |
| 3537 | 021372 | 051105 | 047522 | 000122 |
| 3538 | 021400 | 020040 | 041520 | 020040 |
| 3539 | 021406 | 020040 | 020040 | 050123 |

EM20: .ASCIZ "WRTM WITH WRTM SWITCH OFF DID NOT SET ILO ERROR BIT"

EH20: .ASCIZ " PC SP PS TEST# TCCM TCST"

.EVEN  
ET20: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000

EM21: .ASCIZ "ILO ERROR SETTING DID NOT CAUSE THE 'ERROR' BIT TO SET"

EH21: .ASCIZ " PC SP PS TEST# TCCM TCST"

.EVEN  
ET21: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1  
000000

EM22: .ASCIZ "CLEARING ERROR BIT ALSO CLEARED ILO ERROR"

EH22: .ASCIZ " PC SP PS TEST# TCCM TCST"



|      |        |        |        |        |       |          |                                     |         |         |         |        |            |
|------|--------|--------|--------|--------|-------|----------|-------------------------------------|---------|---------|---------|--------|------------|
| 3596 | 022022 | 052522 | 052103 | 047511 |       |          |                                     |         |         |         |        |            |
| 3597 | 022030 | 020116 | 044504 | 020104 |       |          |                                     |         |         |         |        |            |
| 3598 | 022036 | 047516 | 020124 | 042523 |       |          |                                     |         |         |         |        |            |
| 3599 | 022044 | 020124 | 044124 | 020105 |       |          |                                     |         |         |         |        |            |
| 3600 | 022052 | 042522 | 042101 | 020131 |       |          |                                     |         |         |         |        |            |
| 3601 | 022060 | 044502 | 000124 |        |       |          |                                     |         |         |         |        |            |
| 3602 | 022064 | 020040 | 041520 | 020040 | EH25: | .ASCIZ   | "                                   | PC      | SP      | PS      | TEST#  | TCCM TCST" |
| 3603 | 022072 | 020040 | 020040 | 050123 |       |          |                                     |         |         |         |        |            |
| 3604 | 022100 | 020040 | 020040 | 020040 |       |          |                                     |         |         |         |        |            |
| 3605 | 022106 | 051520 | 020040 | 020040 |       |          |                                     |         |         |         |        |            |
| 3606 | 022114 | 052040 | 051505 | 021524 |       |          |                                     |         |         |         |        |            |
| 3607 | 022122 | 020040 | 052040 | 041503 |       |          |                                     |         |         |         |        |            |
| 3608 | 022130 | 020115 | 020040 | 052040 |       |          |                                     |         |         |         |        |            |
| 3609 | 022136 | 051503 | 000124 |        |       |          |                                     |         |         |         |        |            |
| 3610 |        |        |        |        | .EVEN |          |                                     |         |         |         |        |            |
| 3611 | 022142 | 001116 | 001170 | 001172 | ET25: | \$ERRPC, | \$REG6,                             | \$REG7, | \$REG5, | \$REG2, | \$REG1 |            |
| 3612 | 022150 | 001166 | 001160 | 001156 |       |          |                                     |         |         |         |        |            |
| 3613 | 022156 | 000000 |        |        |       | 000000   |                                     |         |         |         |        |            |
| 3614 |        |        |        |        |       |          |                                     |         |         |         |        |            |
| 3615 |        |        |        |        |       |          |                                     |         |         |         |        |            |
| 3616 | 022160 | 042524 | 052123 | 042440 | EM26: | .ASCIZ   | "TEST EXECUTION IS OUT OF ORDER"    |         |         |         |        |            |
| 3617 | 022166 | 042530 | 052503 | 044524 |       |          |                                     |         |         |         |        |            |
| 3618 | 022174 | 047117 | 044440 | 020123 |       |          |                                     |         |         |         |        |            |
| 3619 | 022202 | 052517 | 020124 | 043117 |       |          |                                     |         |         |         |        |            |
| 3620 | 022210 | 047440 | 042122 | 051105 |       |          |                                     |         |         |         |        |            |
| 3621 | 022216 | 000    |        |        |       |          |                                     |         |         |         |        |            |
| 3622 | 022217 | 040    | 050040 | 020103 | EH26: | .ASCIZ   | "                                   | PC      | SP      | PS      | TEST#  | TEST# S/B" |
| 3623 | 022224 | 020040 | 020040 | 051440 |       |          |                                     |         |         |         |        |            |
| 3624 | 022232 | 020120 | 020040 | 020040 |       |          |                                     |         |         |         |        |            |
| 3625 | 022240 | 050040 | 020123 | 020040 |       |          |                                     |         |         |         |        |            |
| 3626 | 022246 | 020040 | 042524 | 052123 |       |          |                                     |         |         |         |        |            |
| 3627 | 022254 | 020043 | 052040 | 051505 |       |          |                                     |         |         |         |        |            |
| 3628 | 022262 | 021524 | 051440 | 041057 |       |          |                                     |         |         |         |        |            |
| 3629 | 022270 | 000    |        |        |       |          |                                     |         |         |         |        |            |
| 3630 |        | 022272 |        |        | .EVEN |          |                                     |         |         |         |        |            |
| 3631 | 022272 | 001116 | 001170 | 001172 | ET26: | \$ERRPC, | \$REG6,                             | \$REG7, | \$REG0, | \$REG5  |        |            |
| 3632 | 022300 | 001154 | 001166 |        |       |          |                                     |         |         |         |        |            |
| 3633 | 022304 | 000000 |        |        |       | 000000   |                                     |         |         |         |        |            |
| 3634 |        |        |        |        |       |          |                                     |         |         |         |        |            |
| 3635 |        |        |        |        |       |          |                                     |         |         |         |        |            |
| 3636 | 022306 | 051105 | 047522 | 020122 | EM27: | .ASCIZ   | "ERROR TRYING TO READ A BLOCK MARK" |         |         |         |        |            |
| 3637 | 022314 | 051124 | 044531 | 043516 |       |          |                                     |         |         |         |        |            |
| 3638 | 022322 | 052040 | 020117 | 042522 |       |          |                                     |         |         |         |        |            |
| 3639 | 022330 | 042101 | 040440 | 041040 |       |          |                                     |         |         |         |        |            |
| 3640 | 022336 | 047514 | 045503 | 046440 |       |          |                                     |         |         |         |        |            |
| 3641 | 022344 | 051101 | 000113 |        |       |          |                                     |         |         |         |        |            |
| 3642 | 022350 | 020040 | 041520 | 020040 | EH27: | .ASCIZ   | "                                   | PC      | SP      | PS      | TEST#  | TCCM TCST" |
| 3643 | 022356 | 020040 | 020040 | 050123 |       |          |                                     |         |         |         |        |            |
| 3644 | 022364 | 020040 | 020040 | 020040 |       |          |                                     |         |         |         |        |            |
| 3645 | 022372 | 051520 | 020040 | 020040 |       |          |                                     |         |         |         |        |            |
| 3646 | 022400 | 052040 | 051505 | 021524 |       |          |                                     |         |         |         |        |            |
| 3647 | 022406 | 020040 | 052040 | 041503 |       |          |                                     |         |         |         |        |            |
| 3648 | 022414 | 020115 | 020040 | 052040 |       |          |                                     |         |         |         |        |            |
| 3649 | 022422 | 051503 | 000124 |        |       |          |                                     |         |         |         |        |            |
| 3650 |        |        |        |        | .EVEN |          |                                     |         |         |         |        |            |
| 3651 | 022426 | 001116 | 001170 | 001172 | ET27: | \$ERRPC, | \$REG6,                             | \$REG7, | \$REG5, | \$REG2, | \$REG1 |            |







|      |        |        |        |        |   |
|------|--------|--------|--------|--------|---|
| 3820 | 024124 | 020040 | 020040 | 050123 |   |
| 3821 | 024132 | 020040 | 020040 | 020040 |   |
| 3822 | 024140 | 051520 | 020040 | 020040 |   |
| 3823 | 024146 | 052040 | 051505 | 021524 |   |
| 3824 | 024154 | 020040 | 052040 | 041503 |   |
| 3825 | 024162 | 020115 | 020040 | 052040 |   |
| 3826 | 024170 | 051503 | 000124 |        |   |
| 3827 |        |        |        |        | .EVEN   |
| 3828 | 024174 | 001116 | 001170 | 001172 | ET37: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1 |
| 3829 | 024202 | 001166 | 001160 | 001156 |   |
| 3830 | 024210 | 000000 |        |        | 000000  |
| 3831 |        |        |        |        |   |
| 3832 |        |        |        |        |   |
| 3833 | 024212 | 042522 | 042101 | 020131 | EM40: .ASCIZ "READY BIT DID NOT SET"                  |
| 3834 | 024220 | 044502 | 020124 | 044504 |   |
| 3835 | 024226 | 020104 | 047516 | 020124 |   |
| 3836 | 024234 | 042523 | 000124 |        |   |
| 3837 | 024240 | 020040 | 041520 | 020040 | EH40: .ASCIZ " PC SP PS TEST# TCCM TCST"              |
| 3838 | 024246 | 020040 | 020040 | 050123 |   |
| 3839 | 024254 | 020040 | 020040 | 020040 |   |
| 3840 | 024262 | 051520 | 020040 | 020040 |   |
| 3841 | 024270 | 052040 | 051505 | 021524 |   |
| 3842 | 024276 | 020040 | 052040 | 041503 |   |
| 3843 | 024304 | 020115 | 020040 | 052040 |   |
| 3844 | 024312 | 051503 | 000124 |        |   |
| 3845 |        |        |        |        | .EVEN   |
| 3846 | 024316 | 001116 | 001170 | 001172 | ET40: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1 |
| 3847 | 024324 | 001166 | 001160 | 001156 |   |
| 3848 | 024332 | 000000 |        |        | 000000  |
| 3849 |        |        |        |        |   |
| 3850 |        |        |        |        |   |
| 3851 | 024334 | 044124 | 020105 | 042447 | EM41: .ASCIZ "THE 'ERROR' BIT SHOULD NOT HAVE SET"    |
| 3852 | 024342 | 051122 | 051117 | 020047 |   |
| 3853 | 024350 | 044502 | 020124 | 044123 |   |
| 3854 | 024356 | 052517 | 042114 | 047040 |   |
| 3855 | 024364 | 052117 | 044040 | 053101 |   |
| 3856 | 024372 | 020105 | 042523 | 000124 |   |
| 3857 | 024400 | 020040 | 041520 | 020040 | EH41: .ASCIZ " PC SP PS TEST# TCCM TCST"              |
| 3858 | 024406 | 020040 | 020040 | 050123 |   |
| 3859 | 024414 | 020040 | 020040 | 020040 |   |
| 3860 | 024422 | 051520 | 020040 | 020040 |   |
| 3861 | 024430 | 052040 | 051505 | 021524 |   |
| 3862 | 024436 | 020040 | 052040 | 041503 |   |
| 3863 | 024444 | 020115 | 020040 | 052040 |   |
| 3864 | 024452 | 051503 | 000124 |        |   |
| 3865 |        |        |        |        | .EVEN   |
| 3866 | 024456 | 001116 | 001170 | 001172 | ET41: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1 |
| 3867 | 024464 | 001166 | 001160 | 001156 |   |
| 3868 | 024472 | 000000 |        |        | 000000  |
| 3869 |        |        |        |        |   |
| 3870 |        |        |        |        |   |
| 3871 | 024474 | 042522 | 042101 | 020131 | EM42: .ASCIZ "READY BIT SHOULD NOT HAVE SET"          |
| 3872 | 024502 | 044502 | 020124 | 044123 |   |
| 3873 | 024510 | 052517 | 042114 | 047040 |   |
| 3874 | 024516 | 052117 | 044040 | 053101 |   |
| 3875 | 024524 | 020105 | 042523 | 000124 |   |





|      |        |        |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
|------|--------|--------|--------|--------|-------|----------|-------------|----------|---------|-----------|----------|---------|----------|---------|------|------|--|--|--|
| 3988 | 025570 | 020040 | 020040 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3989 | 025576 | 051520 | 020040 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3990 | 025604 | 052040 | 051505 | 021524 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3991 | 025612 | 020040 | 052040 | 041503 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3992 | 025620 | 020115 | 020040 | 052040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3993 | 025626 | 051503 | 000124 |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3994 |        |        |        |        | .EVEN |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3995 | 025632 | 001116 | 001170 | 001172 | ET47: | \$ERRPC, | \$REG6,     | \$REG7,  | \$REG5, | \$REG2,   | \$REG1   |         |          |         |      |      |  |  |  |
| 3996 | 025640 | 001166 | 001160 | 001156 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3997 | 025646 | 000000 |        |        |       |          |             |          |         |           |          | 000000  |          |         |      |      |  |  |  |
| 3998 |        |        |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 3999 |        |        |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4000 | 025650 | 051124 | 047101 | 043123 | EM50: | .ASCIZ   | "TRANSFERED | TOO      | MANY    | WORDS"    |          |         |          |         |      |      |  |  |  |
| 4001 | 025656 | 051105 | 042105 | 052040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4002 | 025664 | 047517 | 046440 | 047101 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4003 | 025672 | 020131 | 047527 | 042122 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4004 | 025700 | 000123 |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4005 | 025702 | 020040 | 041520 | 020040 | EH50: | .ASCIZ   | "           | PC       | SP      | PS        | TEST#    | TCCM    | TCST     | RBUF+2" |      |      |  |  |  |
| 4006 | 025710 | 020040 | 020040 | 050123 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4007 | 025716 | 020040 | 020040 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4008 | 025724 | 051520 | 020040 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4009 | 025732 | 052040 | 051505 | 021524 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4010 | 025740 | 020040 | 052040 | 041503 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4011 | 025746 | 020115 | 020040 | 052040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4012 | 025754 | 051503 | 020124 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4013 | 025762 | 051040 | 052502 | 025506 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4014 | 025770 | 000062 |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4015 |        |        |        |        | .EVEN |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4016 | 025772 | 001116 | 001170 | 001172 | ET50: | \$ERRPC, | \$REG6,     | \$REG7,  | \$REG5, | \$REG2,   | \$REG1,  | RBUF+2  |          |         |      |      |  |  |  |
| 4017 | 026000 | 001166 | 001160 | 001156 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4018 | 026006 | 036012 |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4019 | 026010 | 000000 |        |        |       |          |             |          |         |           |          | 000000  |          |         |      |      |  |  |  |
| 4020 |        |        |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4021 |        |        |        |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4022 | 026012 | 041524 | 040502 | 041440 | EM51: | .ASCIZ   | "TCBA       | CONTAINS | AN      | INCORRECT | ADDRESS" |         |          |         |      |      |  |  |  |
| 4023 | 026020 | 047117 | 040524 | 047111 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4024 | 026026 | 020123 | 047101 | 044440 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4025 | 026034 | 041516 | 051117 | 042522 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4026 | 026042 | 052103 | 040440 | 042104 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4027 | 026050 | 042522 | 051523 | 000    |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4028 | 026055 | 040    | 050040 | 020103 | EH51: | .ASCIZ   | "           | PC       | SP      | PS        | TEST#    | TCCM    | TCST     | TCBA    | TCBA | S/B" |  |  |  |
| 4029 | 026062 | 020040 | 020040 | 051440 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4030 | 026070 | 020120 | 020040 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4031 | 026076 | 050040 | 020123 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4032 | 026104 | 020040 | 042524 | 052123 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4033 | 026112 | 020043 | 020040 | 041524 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4034 | 026120 | 046503 | 020040 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4035 | 026126 | 041524 | 052123 | 020040 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4036 | 026134 | 020040 | 041524 | 040502 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4037 | 026142 | 020040 | 052040 | 041103 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4038 | 026150 | 020101 | 027523 | 000102 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4039 |        |        |        |        | .EVEN |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4040 | 026156 | 001116 | 001170 | 001172 | ET51: | \$ERRPC, | \$REG6,     | \$REG7,  | \$REG5, | \$REG2,   | \$REG1,  | \$REG3, | RBUF+512 |         |      |      |  |  |  |
| 4041 | 026164 | 001166 | 001160 | 001156 |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4042 | 026172 | 001162 | 036522 |        |       |          |             |          |         |           |          |         |          |         |      |      |  |  |  |
| 4043 | 026176 | 000000 |        |        |       |          |             |          |         |           |          | 000000  |          |         |      |      |  |  |  |

|      |        |        |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------|--------|--------|--------|--------|-------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 4044 |        |        |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4045 |        |        |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4046 | 026200 | 040520 | 051122 | 052111 | EMS2: | .ASCIZ "PARRITY ERROR WAS NOT DETECTED"                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4047 | 026206 | 020131 | 051105 | 047522 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4048 | 026214 | 020122 | 040527 | 020123 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4049 | 026222 | 047516 | 020124 | 042504 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4050 | 026230 | 042524 | 052103 | 042105 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4051 | 026236 | 000    |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4052 | 026237 | 040    | 050040 | 020103 | EH52: | .ASCIZ " PC SP PS TEST# TCCM TCST TCWC"                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4053 | 026244 | 020040 | 020040 | 051440 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4054 | 026252 | 020120 | 020040 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4055 | 026260 | 050040 | 020123 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4056 | 026266 | 020040 | 042524 | 052123 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4057 | 026274 | 020043 | 020040 | 041524 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4058 | 026302 | 046503 | 020040 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4059 | 026310 | 041524 | 052123 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4060 | 026316 | 020040 | 041524 | 041527 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4061 | 026324 | 000    |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4062 |        | 026326 |        |        | .EVEN |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4063 | 026326 | 001116 | 001170 | 001172 | ETS2: | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, \$REG0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4064 | 026334 | 001166 | 001160 | 001156 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4065 | 026342 | 001154 |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4066 | 026344 | 000000 |        |        |       | 000000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4067 |        |        |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4068 |        |        |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4069 | 026346 | 040520 | 044522 | 054524 | EMS3: | .ASCIZ "PARITY ERROR DID NOT SET THE 'ERROR' BIT"       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4070 | 026354 | 042440 | 051122 | 051117 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4071 | 026362 | 042040 | 042111 | 047040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4072 | 026370 | 052117 | 051440 | 052105 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4073 | 026376 | 052040 | 042510 | 023440 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4074 | 026404 | 051105 | 047522 | 023522 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4075 | 026412 | 041040 | 052111 | 000    |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4076 | 026417 | 040    | 050040 | 020103 | EH53: | .ASCIZ " PC SP PS TEST# TCCM TCST TCWC"                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4077 | 026424 | 020040 | 020040 | 051440 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4078 | 026432 | 020120 | 020040 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4079 | 026440 | 050040 | 020123 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4080 | 026446 | 020040 | 042524 | 052123 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4081 | 026454 | 020043 | 020040 | 041524 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4082 | 026462 | 046503 | 020040 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4083 | 026470 | 041524 | 052123 | 020040 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4084 | 026476 | 020040 | 041524 | 041527 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4085 | 026504 | 000    |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4086 |        | 026506 |        |        | .EVEN |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4087 | 026506 | 001116 | 001170 | 001172 | ETS3: | \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, \$REG0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4088 | 026514 | 001166 | 001160 | 001156 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4089 | 026522 | 001154 |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4090 | 026524 | 000000 |        |        |       | 000000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4091 |        |        |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4092 |        |        |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4093 | 026526 | 040520 | 044522 | 054524 | EMS4: | .ASCIZ "PARITY ERROR BIT WILL NOT CLEAR"                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4094 | 026534 | 042440 | 051122 | 051117 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4095 | 026542 | 041040 | 052111 | 053440 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4096 | 026550 | 046111 | 020114 | 047516 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4097 | 026556 | 020124 | 046103 | 040505 |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4098 | 026564 | 000122 |        |        |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4099 | 026566 | 020040 | 041520 | 020040 | EH54: | .ASCIZ " PC SP PS TEST# TCCM TCST TCWC"                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|      |        |        |        |        |
|------|--------|--------|--------|--------|
| 4100 | 026574 | 020040 | 020040 | 050123 |
| 4101 | 026602 | 020040 | 020040 | 020040 |
| 4102 | 026610 | 051520 | 020040 | 020040 |
| 4103 | 026616 | 052040 | 051505 | 021524 |
| 4104 | 026624 | 020040 | 052040 | 041503 |
| 4105 | 026632 | 020115 | 020040 | 052040 |
| 4106 | 026640 | 051503 | 020124 | 020040 |
| 4107 | 026646 | 052040 | 053503 | 000103 |
| 4108 |        |        |        |        |
| 4109 | 026654 | 001116 | 001170 | 001172 |
| 4110 | 026662 | 001166 | 001160 | 001156 |
| 4111 | 026670 | 001154 |        |        |
| 4112 | 026672 | 000000 |        |        |
| 4113 |        |        |        |        |
| 4114 |        |        |        |        |
| 4115 | 026674 | 046102 | 041517 | 020113 |
| 4116 | 026702 | 044515 | 051523 | 051440 |
| 4117 | 026710 | 047510 | 046125 | 020104 |
| 4118 | 026716 | 047516 | 020124 | 040510 |
| 4119 | 026724 | 042526 | 051440 | 052105 |
| 4120 | 026732 | 000    |        |        |
| 4121 | 026733 | 040    | 050040 | 020103 |
| 4122 | 026740 | 020040 | 020040 | 051440 |
| 4123 | 026746 | 020120 | 020040 | 020040 |
| 4124 | 026754 | 050040 | 020123 | 020040 |
| 4125 | 026762 | 020040 | 042524 | 052123 |
| 4126 | 026770 | 020043 | 020040 | 041524 |
| 4127 | 026776 | 046503 | 020040 | 020040 |
| 4128 | 027004 | 041524 | 052123 | 020040 |
| 4129 | 027012 | 020040 | 041524 | 041527 |
| 4130 | 027020 | 000    |        |        |
| 4131 |        | 027022 |        |        |
| 4132 | 027022 | 001116 | 001170 | 001172 |
| 4133 | 027030 | 001166 | 001160 | 001156 |
| 4134 | 027036 | 001154 |        |        |
| 4135 | 027040 | 000000 |        |        |
| 4136 |        |        |        |        |
| 4137 |        |        |        |        |
| 4138 | 027042 | 042122 | 052101 | 020101 |
| 4139 | 027050 | 040527 | 020123 | 051511 |
| 4140 | 027056 | 052523 | 042105 | 041040 |
| 4141 | 027064 | 052125 | 041040 | 047514 |
| 4142 | 027072 | 045503 | 046440 | 051511 |
| 4143 | 027100 | 020123 | 040506 | 046111 |
| 4144 | 027106 | 042105 | 052040 | 020117 |
| 4145 | 027114 | 042523 | 000124 |        |
| 4146 | 027120 | 020040 | 041520 | 020040 |
| 4147 | 027126 | 020040 | 020040 | 050123 |
| 4148 | 027134 | 020040 | 020040 | 020040 |
| 4149 | 027142 | 051520 | 020040 | 020040 |
| 4150 | 027150 | 052040 | 051505 | 021524 |
| 4151 | 027156 | 020040 | 052040 | 041503 |
| 4152 | 027164 | 020115 | 020040 | 052040 |
| 4153 | 027172 | 051503 | 020124 | 020040 |
| 4154 | 027200 | 052040 | 053503 | 000103 |
| 4155 |        |        |        |        |

.EVEN  
ET54: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, \$REG0

000000

EM55: .ASCIZ "BLOCK MISS SHOULD NOT HAVE SET"

EM55: .ASCIZ " PC SP PS TEST# TCCM TCST TCWC"

.EVEN  
ET55: \$ERRPC, \$REG6, \$REG7, \$REG5, \$REG2, \$REG1, \$REG0

000000

EM56: .ASCIZ "RDATA WAS ISSUED BUT BLOCK MISS FAILED TO SET"

EM56: .ASCIZ " PC SP PS TEST# TCCM TCST TCWC"

.EVEN





|      |        |        |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
|------|--------|--------|--------|--------|-------|----------|---------|---------|---------|---------|---------|--------|--------|---------|-----|----|------|--|--|--|
| 4268 | 030236 | 052040 | 051505 | 021524 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4269 | 030244 | 020040 | 052040 | 041503 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4270 | 030252 | 020115 | 020040 | 052040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4271 | 030260 | 051503 | 020124 | 020040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4272 | 030266 | 052040 | 041103 | 020101 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4273 | 030274 | 020040 | 052040 | 041103 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4274 | 030302 | 020101 | 027523 | 000102 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4275 |        |        |        |        | .EVEN |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4276 | 030310 | 001116 | 001170 | 001172 | ET63: | \$ERRPC, | \$REG6, | \$REG7, | \$REG5, | \$REG2, | \$REG1, | \$REG3 |        |         |     |    |      |  |  |  |
| 4277 | 030316 | 001166 | 001160 | 001156 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4278 | 030324 | 001162 |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4279 | 030326 | 000000 |        |        |       |          |         |         |         |         |         |        | 000000 |         |     |    |      |  |  |  |
| 4280 |        |        |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4281 |        |        |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4282 | 030330 | 040504 | 040524 | 046440 | EM64: | .ASCIZ   | "DATA   | MISS    | DID     | NOT     | SET"    |        |        |         |     |    |      |  |  |  |
| 4283 | 030336 | 051511 | 020123 | 044504 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4284 | 030344 | 020104 | 047516 | 020124 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4285 | 030352 | 042523 | 000124 |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4286 | 030356 | 020040 | 041520 | 020040 | EM64: | .ASCIZ   | "       | PC      | SP      | PS      | TEST#   | TCCM   | TCST   | TCWC"   |     |    |      |  |  |  |
| 4287 | 030364 | 020040 | 020040 | 050123 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4288 | 030372 | 020040 | 020040 | 020040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4289 | 030400 | 051520 | 020040 | 020040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4290 | 030406 | 052040 | 051505 | 021524 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4291 | 030414 | 020040 | 052040 | 041503 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4292 | 030422 | 020115 | 020040 | 052040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4293 | 030430 | 051503 | 020124 | 020040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4294 | 030436 | 052040 | 053503 | 000103 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4295 |        |        |        |        | .EVEN |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4296 | 030444 | 001116 | 001170 | 001172 | ET64: | \$ERRPC, | \$REG6, | \$REG7, | \$REG5, | \$REG2, | \$REG1, | \$REG0 |        |         |     |    |      |  |  |  |
| 4297 | 030452 | 001166 | 001160 | 001156 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4298 | 030460 | 001154 |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4299 | 030462 | 000000 |        |        |       |          |         |         |         |         |         |        | 000000 |         |     |    |      |  |  |  |
| 4300 |        |        |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4301 |        |        |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4302 | 030464 | 040504 | 040524 | 046440 | EM65: | .ASCIZ   | "DATA   | MISS    | SETTING | DID     | NOT     | CAUSE  | THE    | 'ERROR' | BIT | TO | SET" |  |  |  |
| 4303 | 030472 | 051511 | 020123 | 042523 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4304 | 030500 | 052124 | 047111 | 020107 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4305 | 030506 | 044504 | 020104 | 047516 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4306 | 030514 | 020124 | 040503 | 051525 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4307 | 030522 | 020105 | 044124 | 020105 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4308 | 030530 | 042447 | 051122 | 051117 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4309 | 030536 | 020047 | 044502 | 020124 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4310 | 030544 | 047524 | 051440 | 052105 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4311 | 030552 | 000    |        |        |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4312 | 030553 | 040    | 050040 | 020103 | EM65: | .ASCIZ   | "       | PC      | SP      | PS      | TEST#   | TCCM   | TCST"  |         |     |    |      |  |  |  |
| 4313 | 030560 | 020040 | 020040 | 051440 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4314 | 030566 | 020120 | 020040 | 020040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4315 | 030574 | 050040 | 020123 | 020040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4316 | 030602 | 020040 | 042524 | 052123 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4317 | 030610 | 020043 | 020040 | 041524 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4318 | 030616 | 046503 | 020040 | 020040 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4319 | 030624 | 041524 | 052123 | 000    |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4320 |        | 030632 |        |        | .EVEN |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4321 | 030632 | 001116 | 001170 | 001172 | ET65: | \$ERRPC, | \$REG6, | \$REG7, | \$REG5, | \$REG2, | \$REG1  |        |        |         |     |    |      |  |  |  |
| 4322 | 030640 | 001166 | 001160 | 001156 |       |          |         |         |         |         |         |        |        |         |     |    |      |  |  |  |
| 4323 | 030646 | 000000 |        |        |       |          |         |         |         |         |         |        | 000000 |         |     |    |      |  |  |  |





|      |        |        |        |        |       |          |  |         |         |         |         |        |
|------|--------|--------|--------|--------|-------|----------|--|---------|---------|---------|---------|--------|
| 4436 | 031710 | 020115 | 020040 | 052040 |       |          |  |         |         |         |         |        |
| 4437 | 031716 | 051503 | 020124 | 020040 |       |          |  |         |         |         |         |        |
| 4438 | 031724 | 052040 | 041103 | 000101 |       |          |  |         |         |         |         |        |
| 4439 |        |        |        |        | .EVEN |          |  |         |         |         |         |        |
| 4440 | 031732 | 001116 | 001170 | 001172 | ET72: | \$ERRPC, | \$REG6,                                      | \$REG7, | \$REG5, | \$REG2, | \$REG1, | \$REG3 |
| 4441 | 031740 | 001166 | 001160 | 001156 |       |          |  |         |         |         |         |        |
| 4442 | 031746 | 001162 |        |        |       |          |  |         |         |         |         |        |
| 4443 | 031750 | 000000 |        |        |       | 000000   |  |         |         |         |         |        |
| 4444 |        |        |        |        |       |          |  |         |         |         |         |        |
| 4445 |        |        |        |        |       |          |  |         |         |         |         |        |
| 4446 | 031752 | 051523 | 020124 | 044504 | EM73: | .ASCIZ   | "SST DID NOT CAUSE A SELECT ERROR"           |         |         |         |         |        |
| 4447 | 031760 | 020104 | 047516 | 020124 |       |          |  |         |         |         |         |        |
| 4448 | 031766 | 040503 | 051525 | 020105 |       |          |  |         |         |         |         |        |
| 4449 | 031774 | 020101 | 042523 | 042514 |       |          |  |         |         |         |         |        |
| 4450 | 032002 | 052103 | 042440 | 051122 |       |          |  |         |         |         |         |        |
| 4451 | 032010 | 051117 | 000    |        |       |          |  |         |         |         |         |        |
| 4452 | 032013 | 040    | 050040 | 020103 | EH73: | .ASCIZ   | " PC SP PS TEST# TCCM TCST"                  |         |         |         |         |        |
| 4453 | 032020 | 020040 | 020040 | 051440 |       |          |  |         |         |         |         |        |
| 4454 | 032026 | 020120 | 020040 | 020040 |       |          |  |         |         |         |         |        |
| 4455 | 032034 | 050040 | 020123 | 020040 |       |          |  |         |         |         |         |        |
| 4456 | 032042 | 020040 | 042524 | 052123 |       |          |  |         |         |         |         |        |
| 4457 | 032050 | 020043 | 020040 | 041524 |       |          |  |         |         |         |         |        |
| 4458 | 032056 | 046503 | 020040 | 020040 |       |          |  |         |         |         |         |        |
| 4459 | 032064 | 041524 | 052123 | 000    |       |          |  |         |         |         |         |        |
| 4460 |        | 032072 |        |        | .EVEN |          |  |         |         |         |         |        |
| 4461 | 032072 | 001116 | 001170 | 001172 | ET73: | \$ERRPC, | \$REG6,                                      | \$REG7, | \$REG5, | \$REG2, | \$REG1  |        |
| 4462 | 032100 | 001166 | 001160 | 001156 |       |          |  |         |         |         |         |        |
| 4463 | 032106 | 000000 |        |        |       | 000000   |  |         |         |         |         |        |
| 4464 |        |        |        |        |       |          |  |         |         |         |         |        |
| 4465 | 032110 | 051124 | 050101 | 042520 | EM74: | .ASCIZ   | "TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCCM" |         |         |         |         |        |
| 4466 | 032116 | 020104 | 047524 | 046040 |       |          |  |         |         |         |         |        |
| 4467 | 032124 | 041517 | 032040 | 040440 |       |          |  |         |         |         |         |        |
| 4468 | 032132 | 052124 | 046505 | 052120 |       |          |  |         |         |         |         |        |
| 4469 | 032140 | 047111 | 020107 | 047524 |       |          |  |         |         |         |         |        |
| 4470 | 032146 | 040440 | 041503 | 051505 |       |          |  |         |         |         |         |        |
| 4471 | 032154 | 020123 | 041524 | 046503 |       |          |  |         |         |         |         |        |
| 4472 | 032162 | 000    |        |        |       |          |  |         |         |         |         |        |
| 4473 | 032163 | 040    | 050040 | 020103 | EH74: | .ASCIZ   | " PC SP PS TEST#"                            |         |         |         |         |        |
| 4474 | 032170 | 020040 | 020040 | 051440 |       |          |  |         |         |         |         |        |
| 4475 | 032176 | 020120 | 020040 | 020040 |       |          |  |         |         |         |         |        |
| 4476 | 032204 | 050040 | 020123 | 020040 |       |          |  |         |         |         |         |        |
| 4477 | 032212 | 020040 | 042524 | 052123 |       |          |  |         |         |         |         |        |
| 4478 | 032220 | 000043 |        |        |       |          |  |         |         |         |         |        |
| 4479 |        |        |        |        | .EVEN |          |  |         |         |         |         |        |
| 4480 | 032222 | 001116 | 001170 | 001172 | ET74: | \$ERRPC, | \$REG6,                                      | \$REG7, | \$REG5  |         |         |        |
| 4481 | 032230 | 001166 |        |        |       |          |  |         |         |         |         |        |
| 4482 | 032232 | 000000 |        |        |       | 000000   |  |         |         |         |         |        |
| 4483 | 032234 | 051124 | 050101 | 042520 | EM75: | .ASCIZ   | "TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCST" |         |         |         |         |        |
| 4484 | 032242 | 020104 | 047524 | 046040 |       |          |  |         |         |         |         |        |
| 4485 | 032250 | 041517 | 032040 | 040440 |       |          |  |         |         |         |         |        |
| 4486 | 032256 | 052124 | 046505 | 052120 |       |          |  |         |         |         |         |        |
| 4487 | 032264 | 047111 | 020107 | 047524 |       |          |  |         |         |         |         |        |
| 4488 | 032272 | 040440 | 041503 | 051505 |       |          |  |         |         |         |         |        |
| 4489 | 032300 | 020123 | 041524 | 052123 |       |          |  |         |         |         |         |        |
| 4490 | 032306 | 000    |        |        |       |          |  |         |         |         |         |        |
| 4491 | 032307 | 040    | 050040 | 020103 | EH75: | .ASCIZ   | " PC SP PS TEST#"                            |         |         |         |         |        |

|      |        |        |        |        |         |   |  |  |  |
|------|--------|--------|--------|--------|---------|---|--|--|--|
| 4492 | 032314 | 020040 | 020040 | 051440 |         |   |  |  |  |
| 4493 | 032322 | 020120 | 020040 | 020040 |         |   |  |  |  |
| 4494 | 032330 | 050040 | 020123 | 020040 |         |   |  |  |  |
| 4495 | 032336 | 020040 | 042524 | 052123 |         |   |  |  |  |
| 4496 | 032344 | 000043 |        |        |         |   |  |  |  |
| 4497 |        |        |        |        | .EVEN   |   |  |  |  |
| 4498 | 032346 | 001116 | 001170 | 001172 | ET75:   | \$ERRPC,\$REG6,\$REG7,\$REG5                        |  |  |  |
| 4499 | 032354 | 001166 |        |        |         |   |  |  |  |
| 4500 | 032356 | 000000 |        |        |         | 000000  |  |  |  |
| 4501 | 032360 | 051124 | 050101 | 042520 | EM76:   | .ASCIZ "TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCWC" |  |  |  |
| 4502 | 032366 | 020104 | 047524 | 046040 |         |   |  |  |  |
| 4503 | 032374 | 041517 | 032040 | 040440 |         |   |  |  |  |
| 4504 | 032402 | 052124 | 046505 | 052120 |         |   |  |  |  |
| 4505 | 032410 | 047111 | 020107 | 047524 |         |   |  |  |  |
| 4506 | 032416 | 040440 | 041503 | 051505 |         |   |  |  |  |
| 4507 | 032424 | 020123 | 041524 | 041527 |         |   |  |  |  |
| 4508 | 032432 | 000    |        |        |         |   |  |  |  |
| 4509 | 032433 | 040    | 050040 | 020103 | EH76:   | .ASCIZ " PC SP PS TEST#"                            |  |  |  |
| 4510 | 032440 | 020040 | 020040 | 051440 |         |   |  |  |  |
| 4511 | 032446 | 020120 | 020040 | 020040 |         |   |  |  |  |
| 4512 | 032454 | 050040 | 020123 | 020040 |         |   |  |  |  |
| 4513 | 032462 | 020040 | 042524 | 052123 |         |   |  |  |  |
| 4514 | 032470 | 000043 |        |        |         |   |  |  |  |
| 4515 |        |        |        |        | .EVEN   |   |  |  |  |
| 4516 | 032472 | 001116 | 001170 | 001172 | ET76:   | \$ERRPC,\$REG6,\$REG7,\$REG5                        |  |  |  |
| 4517 | 032500 | 001166 |        |        |         |   |  |  |  |
| 4518 | 032502 | 000000 |        |        |         | 000000  |  |  |  |
| 4519 | 032504 | 051124 | 050101 | 042520 | EM77:   | .ASCIZ "TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCBA" |  |  |  |
| 4520 | 032512 | 020104 | 047524 | 046040 |         |   |  |  |  |
| 4521 | 032520 | 041517 | 032040 | 040440 |         |   |  |  |  |
| 4522 | 032526 | 052124 | 046505 | 052120 |         |   |  |  |  |
| 4523 | 032534 | 047111 | 020107 | 047524 |         |   |  |  |  |
| 4524 | 032542 | 040440 | 041503 | 051505 |         |   |  |  |  |
| 4525 | 032550 | 020123 | 041524 | 040502 |         |   |  |  |  |
| 4526 | 032556 | 000    |        |        |         |   |  |  |  |
| 4527 | 032557 | 040    | 050040 | 020103 | EH77:   | .ASCIZ " PC SP PS TEST#"                            |  |  |  |
| 4528 | 032564 | 020040 | 020040 | 051440 |         |   |  |  |  |
| 4529 | 032572 | 020120 | 020040 | 020040 |         |   |  |  |  |
| 4530 | 032600 | 050040 | 020123 | 020040 |         |   |  |  |  |
| 4531 | 032606 | 020040 | 042524 | 052123 |         |   |  |  |  |
| 4532 | 032614 | 000043 |        |        |         |   |  |  |  |
| 4533 |        |        |        |        | .EVEN   |   |  |  |  |
| 4534 | 032616 | 001116 | 001170 | 001172 | ET77:   | \$ERRPC,\$REG6,\$REG7,\$REG5                        |  |  |  |
| 4535 | 032624 | 001166 |        |        |         |   |  |  |  |
| 4536 | 032626 | 000000 |        |        |         | 000000  |  |  |  |
| 4537 | 032630 |        |        |        | MTKC10: |   |  |  |  |
| 4538 | 032630 |        |        |        |         | C10 V7,V2,V7,V2,V7,V2                               |  |  |  |
| 4539 | 032630 | 034    | 010    | 074    |         | .BYTE 0!V7,0!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 10.   |  |  |  |
| 4540 | 032633 | 010    | 034    | 010    |         |   |  |  |  |
| 4541 | 032636 |        |        |        | MTKER:  |   |  |  |  |
| 4542 | 032636 |        |        |        |         | EMTE  |  |  |  |
| 4543 | 032636 | 040    | 040    | 040    |         | .BYTE I,I,I,O,O,I                                   |  |  |  |
| 4544 | 032641 | 000    | 000    | 040    |         |   |  |  |  |
| 4545 | 032644 |        |        |        | MTKEND: |   |  |  |  |
| 4546 | 032644 |        |        |        |         | C22   |  |  |  |
| 4547 | 032644 | 000    | 040    | 000    |         | .BYTE 0,I,O,O,I,O ;MTK CODE 22. FWD END ZONE.       |  |  |  |

|      |        |     |     |     |         |  |
|------|--------|-----|-----|-----|---------|--|
| 4548 | 032647 | 000 | 040 | 000 |         |  |
| 4549 | 032652 |     |     |     | MTK55:  |  |
| 4550 | 032652 |     |     |     |         | C55  |
| 4551 | 032652 | 040 | 000 | 040 |         | .BYTE I,0,I,I,0,I ;MTK CODE 55. REV END ZONE MARK.           |
| 4552 | 032655 | 040 | 000 | 040 |         |  |
| 4553 | 032660 |     |     |     | MTK5P:  |  |
| 4554 | 032660 |     |     |     |         | C10 V0,V6,V6,V6,V6,V6  |
| 4555 | 032660 | 000 | 030 | 070 |         | .BYTE 0!V0,0!V6,I!V6,0!V6,0!V6,0!V6 ;MTK CODE 10.            |
| 4556 | 032663 | 030 | 030 | 030 |         |  |
| 4557 | 032666 |     |     |     | MTK7:   |  |
| 4558 | 032666 |     |     |     |         | C25  |
| 4559 | 032666 | 000 | 040 | 000 |         | .BYTE 0,I,0,I,0,I ;MTK CODE 25. EXTENSION MARK.              |
| 4560 | 032671 | 040 | 000 | 040 |         |  |
| 4561 | 032674 |     |     |     |         | C25  |
| 4562 | 032674 | 000 | 040 | 000 |         | .BYTE 0,I,0,I,0,I ;MTK CODE 25. EXTENSION MARK.              |
| 4563 | 032677 | 040 | 000 | 040 |         |  |
| 4564 | 032702 |     |     |     |         | C26 V0,V5,V2,V5,V2,V5  |
| 4565 | 032702 | 000 | 064 | 010 |         | .BYTE 0!V0,I!V5,0!V2,I!V5,I!V2,0!V5 ;FWD BLOCK MARK.         |
| 4566 | 032705 | 064 | 050 | 024 |         |  |
| 4567 | 032710 |     |     |     |         | C32 V0,V5,V5,V5,V5,V5  |
| 4568 | 032710 | 000 | 064 | 064 |         | .BYTE 0!V0,I!V5,I!V5,0!V5,I!V5,0!V5 ;REV GUARD.              |
| 4569 | 032713 | 024 | 064 | 024 |         |  |
| 4570 | 032716 |     |     |     | MTK5:   |  |
| 4571 | 032716 |     |     |     |         | C10 V0,V6,V6,V6,V6,V6  |
| 4572 | 032716 | 000 | 030 | 070 |         | .BYTE 0!V0,0!V6,I!V6,0!V6,0!V6,0!V6 ;MTK CODE 10.            |
| 4573 | 032721 | 030 | 030 | 030 |         |  |
| 4574 | 032724 |     |     |     | MTK7A:  |  |
| 4575 | 032724 |     |     |     |         | C10 V0,V0,V0,V0,V0,V0  |
| 4576 | 032724 | 000 | 000 | 040 |         | .BYTE 0!V0,0!V0,I!V0,0!V0,0!V0,0!V0 ;MTK CODE 10.            |
| 4577 | 032727 | 000 | 000 | 000 |         |  |
| 4578 | 032732 |     |     |     | MTK7B:  |  |
| 4579 | 032732 |     |     |     |         | C10 V0,V5,V0,V5,V0,V5  |
| 4580 | 032732 | 000 | 024 | 040 |         | .BYTE 0!V0,0!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 10.            |
| 4581 | 032735 | 024 | 000 | 024 |         |  |
| 4582 | 032740 |     |     |     | MTKVAR: |  |
| 4583 | 032740 |     |     |     |         | C10 V7,V2,V7,V2,V7,V2  |
| 4584 | 032740 | 034 | 010 | 074 |         | .BYTE 0!V7,0!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 10.            |
| 4585 | 032743 | 010 | 034 | 010 |         |  |
| 4586 |        |     |     |     |         | .REPT 126.   |
| 4587 |        |     |     |     |         | C70 V0,V5,V0,V5,V0,V5  |
| 4588 |        |     |     |     |         | C70 V7,V2,V7,V2,V7,V2  |
| 4589 |        |     |     |     |         | .ENDR  |
| 4590 | 032746 |     |     |     |         | C70 V0,V5,V0,V5,V0,V5  |
| 4591 | 032746 | 040 | 064 | 040 |         | .BYTE I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4592 | 032751 | 024 | 000 | 024 |         |  |
| 4593 | 032754 |     |     |     |         | C70 V7,V2,V7,V2,V7,V2  |
| 4594 | 032754 | 074 | 050 | 074 |         | .BYTE I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4595 | 032757 | 010 | 034 | 010 |         |  |
| 4596 | 032762 |     |     |     |         | C70 V0,V5,V0,V5,V0,V5  |
| 4597 | 032762 | 040 | 064 | 040 |         | .BYTE I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4598 | 032765 | 024 | 000 | 024 |         |  |
| 4599 | 032770 |     |     |     |         | C70 V7,V2,V7,V2,V7,V2  |
| 4600 | 032770 | 074 | 050 | 074 |         | .BYTE I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4601 | 032773 | 010 | 034 | 010 |         |  |
| 4602 | 032776 |     |     |     |         | C70 V0,V5,V0,V5,V0,V5  |
| 4603 | 032776 | 040 | 064 | 040 |         | .BYTE I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |

|      |        |     |     |     |       |                                    |                           |
|------|--------|-----|-----|-----|-------|------------------------------------|---------------------------|
| 4604 | 033001 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4605 | 033004 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4606 | 033004 | 074 | 050 | 074 |       |                                    |                           |
| 4607 | 033007 | 010 | 034 | 010 |       |                                    |                           |
| 4608 | 033012 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4609 | 033012 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4610 | 033015 | 024 | 000 | 024 |       |                                    |                           |
| 4611 | 033020 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4612 | 033020 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4613 | 033023 | 010 | 034 | 010 |       |                                    |                           |
| 4614 | 033026 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4615 | 033026 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4616 | 033031 | 024 | 000 | 024 |       |                                    |                           |
| 4617 | 033034 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4618 | 033034 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4619 | 033037 | 010 | 034 | 010 |       |                                    |                           |
| 4620 | 033042 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4621 | 033042 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4622 | 033045 | 024 | 000 | 024 |       |                                    |                           |
| 4623 | 033050 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4624 | 033050 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4625 | 033053 | 010 | 034 | 010 |       |                                    |                           |
| 4626 | 033056 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4627 | 033056 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4628 | 033061 | 024 | 000 | 024 |       |                                    |                           |
| 4629 | 033064 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4630 | 033064 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4631 | 033067 | 010 | 034 | 010 |       |                                    |                           |
| 4632 | 033072 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4633 | 033072 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4634 | 033075 | 024 | 000 | 024 |       |                                    |                           |
| 4635 | 033100 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4636 | 033100 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4637 | 033103 | 010 | 034 | 010 |       |                                    |                           |
| 4638 | 033106 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4639 | 033106 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4640 | 033111 | 024 | 000 | 024 |       |                                    |                           |
| 4641 | 033114 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4642 | 033114 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4643 | 033117 | 010 | 034 | 010 |       |                                    |                           |
| 4644 | 033122 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4645 | 033122 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4646 | 033125 | 024 | 000 | 024 |       |                                    |                           |
| 4647 | 033130 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4648 | 033130 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4649 | 033133 | 010 | 034 | 010 |       |                                    |                           |
| 4650 | 033136 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4651 | 033136 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4652 | 033141 | 024 | 000 | 024 |       |                                    |                           |
| 4653 | 033144 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4654 | 033144 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4655 | 033147 | 010 | 034 | 010 |       |                                    |                           |
| 4656 | 033152 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4657 | 033152 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4658 | 033155 | 024 | 000 | 024 |       |                                    |                           |
| 4659 | 033160 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |

# M07

|      |        |     |     |     |       |                               |                          |
|------|--------|-----|-----|-----|-------|-------------------------------|--------------------------|
| 4660 | 033160 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4661 | 033163 | 010 | 034 | 010 |       |                               |                          |
| 4662 | 033166 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4663 | 033166 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4664 | 033171 | 024 | 000 | 024 |       |                               |                          |
| 4665 | 033174 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4666 | 033174 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4667 | 033177 | 010 | 034 | 010 |       |                               |                          |
| 4668 | 033202 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4669 | 033202 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4670 | 033205 | 024 | 000 | 024 |       |                               |                          |
| 4671 | 033210 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4672 | 033210 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4673 | 033213 | 010 | 034 | 010 |       |                               |                          |
| 4674 | 033216 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4675 | 033216 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4676 | 033221 | 024 | 000 | 024 |       |                               |                          |
| 4677 | 033224 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4678 | 033224 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4679 | 033227 | 010 | 034 | 010 |       |                               |                          |
| 4680 | 033232 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4681 | 033232 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4682 | 033235 | 024 | 000 | 024 |       |                               |                          |
| 4683 | 033240 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4684 | 033240 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4685 | 033243 | 010 | 034 | 010 |       |                               |                          |
| 4686 | 033246 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4687 | 033246 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4688 | 033251 | 024 | 000 | 024 |       |                               |                          |
| 4689 | 033254 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4690 | 033254 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4691 | 033257 | 010 | 034 | 010 |       |                               |                          |
| 4692 | 033262 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4693 | 033262 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4694 | 033265 | 024 | 000 | 024 |       |                               |                          |
| 4695 | 033270 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4696 | 033270 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4697 | 033273 | 010 | 034 | 010 |       |                               |                          |
| 4698 | 033276 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4699 | 033276 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4700 | 033301 | 024 | 000 | 024 |       |                               |                          |
| 4701 | 033304 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4702 | 033304 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4703 | 033307 | 010 | 034 | 010 |       |                               |                          |
| 4704 | 033312 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4705 | 033312 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4706 | 033315 | 024 | 000 | 024 |       |                               |                          |
| 4707 | 033320 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4708 | 033320 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4709 | 033323 | 010 | 034 | 010 |       |                               |                          |
| 4710 | 033326 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4711 | 033326 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4712 | 033331 | 024 | 000 | 024 |       |                               |                          |
| 4713 | 033334 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4714 | 033334 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4715 | 033337 | 010 | 034 | 010 |       |                               |                          |

|      |        |     |     |     |       |                                    |                           |
|------|--------|-----|-----|-----|-------|------------------------------------|---------------------------|
| 4716 | 033342 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4717 | 033342 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4718 | 033345 | 024 | 000 | 024 |       |                                    |                           |
| 4719 | 033350 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4720 | 033350 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4721 | 033353 | 010 | 034 | 010 |       |                                    |                           |
| 4722 | 033356 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4723 | 033356 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4724 | 033361 | 024 | 000 | 024 |       |                                    |                           |
| 4725 | 033364 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4726 | 033364 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4727 | 033367 | 010 | 034 | 010 |       |                                    |                           |
| 4728 | 033372 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4729 | 033372 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4730 | 033375 | 024 | 000 | 024 |       |                                    |                           |
| 4731 | 033400 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4732 | 033400 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4733 | 033403 | 010 | 034 | 010 |       |                                    |                           |
| 4734 | 033406 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4735 | 033406 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4736 | 033411 | 024 | 000 | 024 |       |                                    |                           |
| 4737 | 033414 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4738 | 033414 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4739 | 033417 | 010 | 034 | 010 |       |                                    |                           |
| 4740 | 033422 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4741 | 033422 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4742 | 033425 | 024 | 000 | 024 |       |                                    |                           |
| 4743 | 033430 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4744 | 033430 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4745 | 033433 | 010 | 034 | 010 |       |                                    |                           |
| 4746 | 033436 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4747 | 033436 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4748 | 033441 | 024 | 000 | 024 |       |                                    |                           |
| 4749 | 033444 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4750 | 033444 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4751 | 033447 | 010 | 034 | 010 |       |                                    |                           |
| 4752 | 033452 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4753 | 033452 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4754 | 033455 | 024 | 000 | 024 |       |                                    |                           |
| 4755 | 033460 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4756 | 033460 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4757 | 033463 | 010 | 034 | 010 |       |                                    |                           |
| 4758 | 033466 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4759 | 033466 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4760 | 033471 | 024 | 000 | 024 |       |                                    |                           |
| 4761 | 033474 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4762 | 033474 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4763 | 033477 | 010 | 034 | 010 |       |                                    |                           |
| 4764 | 033502 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4765 | 033502 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 4766 | 033505 | 024 | 000 | 024 |       |                                    |                           |
| 4767 | 033510 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4768 | 033510 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4769 | 033513 | 010 | 034 | 010 |       |                                    |                           |
| 4770 | 033516 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4771 | 033516 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |

|      |        |     |     |     |       |                                    |                           |
|------|--------|-----|-----|-----|-------|------------------------------------|---------------------------|
| 4772 | 033521 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4773 | 033524 |     |     |     | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4774 | 033524 | 074 | 050 | 074 |       |                                    |                           |
| 4775 | 033527 | 010 | 034 | 010 |       |                                    |                           |
| 4776 | 033532 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4777 | 033532 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4778 | 033535 | 024 | 000 | 024 |       |                                    |                           |
| 4779 | 033540 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4780 | 033540 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4781 | 033543 | 010 | 034 | 010 |       |                                    |                           |
| 4782 | 033546 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4783 | 033546 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4784 | 033551 | 024 | 000 | 024 |       |                                    |                           |
| 4785 | 033554 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4786 | 033554 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4787 | 033557 | 010 | 034 | 010 |       |                                    |                           |
| 4788 | 033562 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4789 | 033562 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4790 | 033565 | 024 | 000 | 024 |       |                                    |                           |
| 4791 | 033570 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4792 | 033570 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4793 | 033573 | 010 | 034 | 010 |       |                                    |                           |
| 4794 | 033576 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4795 | 033576 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4796 | 033601 | 024 | 000 | 024 |       |                                    |                           |
| 4797 | 033604 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4798 | 033604 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4799 | 033607 | 010 | 034 | 010 |       |                                    |                           |
| 4800 | 033612 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4801 | 033612 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4802 | 033615 | 024 | 000 | 024 |       |                                    |                           |
| 4803 | 033620 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4804 | 033620 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4805 | 033623 | 010 | 034 | 010 |       |                                    |                           |
| 4806 | 033626 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4807 | 033626 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4808 | 033631 | 024 | 000 | 024 |       |                                    |                           |
| 4809 | 033634 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4810 | 033634 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4811 | 033637 | 010 | 034 | 010 |       |                                    |                           |
| 4812 | 033642 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4813 | 033642 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4814 | 033645 | 024 | 000 | 024 |       |                                    |                           |
| 4815 | 033650 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4816 | 033650 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4817 | 033653 | 010 | 034 | 010 |       |                                    |                           |
| 4818 | 033656 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4819 | 033656 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4820 | 033661 | 024 | 000 | 024 |       |                                    |                           |
| 4821 | 033664 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 4822 | 033664 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, O!V2, O!V7, O!V2 | ; MTK CODE 70. DATA MARK. |
| 4823 | 033667 | 010 | 034 | 010 |       |                                    |                           |
| 4824 | 033672 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4825 | 033672 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, O!V5, O!V0, O!V5 | ; MTK CODE 70. DATA MARK. |
| 4826 | 033675 | 024 | 000 | 024 |       |                                    |                           |
| 4827 | 033700 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |

|      |        |     |     |     |       |                               |                          |
|------|--------|-----|-----|-----|-------|-------------------------------|--------------------------|
| 4828 | 033700 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4829 | 033703 | 010 | 034 | 010 |       |                               |                          |
| 4830 | 033706 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4831 | 033706 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4832 | 033711 | 024 | 000 | 024 |       |                               |                          |
| 4833 | 033714 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4834 | 033714 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4835 | 033717 | 010 | 034 | 010 |       |                               |                          |
| 4836 | 033722 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4837 | 033722 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4838 | 033725 | 024 | 000 | 024 |       |                               |                          |
| 4839 | 033730 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4840 | 033730 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4841 | 033733 | 010 | 034 | 010 |       |                               |                          |
| 4842 | 033736 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4843 | 033736 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4844 | 033741 | 024 | 000 | 024 |       |                               |                          |
| 4845 | 033744 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4846 | 033744 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4847 | 033747 | 010 | 034 | 010 |       |                               |                          |
| 4848 | 033752 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4849 | 033752 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4850 | 033755 | 024 | 000 | 024 |       |                               |                          |
| 4851 | 033760 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4852 | 033760 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4853 | 033763 | 010 | 034 | 010 |       |                               |                          |
| 4854 | 033766 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4855 | 033766 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4856 | 033771 | 024 | 000 | 024 |       |                               |                          |
| 4857 | 033774 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4858 | 033774 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4859 | 033777 | 010 | 034 | 010 |       |                               |                          |
| 4860 | 034002 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4861 | 034002 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4862 | 034005 | 024 | 000 | 024 |       |                               |                          |
| 4863 | 034010 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4864 | 034010 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4865 | 034013 | 010 | 034 | 010 |       |                               |                          |
| 4866 | 034016 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4867 | 034016 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4868 | 034021 | 024 | 000 | 024 |       |                               |                          |
| 4869 | 034024 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4870 | 034024 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4871 | 034027 | 010 | 034 | 010 |       |                               |                          |
| 4872 | 034032 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4873 | 034032 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4874 | 034035 | 024 | 000 | 024 |       |                               |                          |
| 4875 | 034040 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4876 | 034040 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4877 | 034043 | 010 | 034 | 010 |       |                               |                          |
| 4878 | 034046 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4879 | 034046 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4880 | 034051 | 024 | 000 | 024 |       |                               |                          |
| 4881 | 034054 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4882 | 034054 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4883 | 034057 | 010 | 034 | 010 |       |                               |                          |

|      |        |     |     |     |       |                               |                          |
|------|--------|-----|-----|-----|-------|-------------------------------|--------------------------|
| 4884 | 034062 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4885 | 034062 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4886 | 034065 | 024 | 000 | 024 |       |                               |                          |
| 4887 | 034070 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4888 | 034070 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4889 | 034073 | 010 | 034 | 010 |       |                               |                          |
| 4890 | 034076 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4891 | 034076 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4892 | 034101 | 024 | 000 | 024 |       |                               |                          |
| 4893 | 034104 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4894 | 034104 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4895 | 034107 | 010 | 034 | 010 |       |                               |                          |
| 4896 | 034112 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4897 | 034112 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4898 | 034115 | 024 | 000 | 024 |       |                               |                          |
| 4899 | 034120 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4900 | 034120 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4901 | 034123 | 010 | 034 | 010 |       |                               |                          |
| 4902 | 034126 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4903 | 034126 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4904 | 034131 | 024 | 000 | 024 |       |                               |                          |
| 4905 | 034134 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4906 | 034134 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4907 | 034137 | 010 | 034 | 010 |       |                               |                          |
| 4908 | 034142 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4909 | 034142 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4910 | 034145 | 024 | 000 | 024 |       |                               |                          |
| 4911 | 034150 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4912 | 034150 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4913 | 034153 | 010 | 034 | 010 |       |                               |                          |
| 4914 | 034156 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4915 | 034156 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4916 | 034161 | 024 | 000 | 024 |       |                               |                          |
| 4917 | 034164 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4918 | 034164 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4919 | 034167 | 010 | 034 | 010 |       |                               |                          |
| 4920 | 034172 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4921 | 034172 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4922 | 034175 | 024 | 000 | 024 |       |                               |                          |
| 4923 | 034200 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4924 | 034200 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4925 | 034203 | 010 | 034 | 010 |       |                               |                          |
| 4926 | 034206 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4927 | 034206 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4928 | 034211 | 024 | 000 | 024 |       |                               |                          |
| 4929 | 034214 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4930 | 034214 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4931 | 034217 | 010 | 034 | 010 |       |                               |                          |
| 4932 | 034222 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4933 | 034222 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 4934 | 034225 | 024 | 000 | 024 |       |                               |                          |
| 4935 | 034230 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 4936 | 034230 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 4937 | 034233 | 010 | 034 | 010 |       |                               |                          |
| 4938 | 034236 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 4939 | 034236 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |

## E08

M3INDEC-11-DZTCB-C  
DZTCBC.P11TC11 TEST #2  
TRAP TABLE

MACY11 27(732) 14-SEP-76 10:51 PAGE 91

|      |        |     |     |     |       |  |
|------|--------|-----|-----|-----|-------|--|
| 4940 | 034241 | 024 | 000 | 024 |       |  |
| 4941 | 034244 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4942 | 034244 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4943 | 034247 | 010 | 034 | 010 |       |  |
| 4944 | 034252 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4945 | 034252 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4946 | 034255 | 024 | 000 | 024 |       |  |
| 4947 | 034260 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4948 | 034260 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4949 | 034263 | 010 | 034 | 010 |       |  |
| 4950 | 034266 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4951 | 034266 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4952 | 034271 | 024 | 000 | 024 |       |  |
| 4953 | 034274 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4954 | 034274 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4955 | 034277 | 010 | 034 | 010 |       |  |
| 4956 | 034302 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4957 | 034302 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4958 | 034305 | 024 | 000 | 024 |       |  |
| 4959 | 034310 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4960 | 034310 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4961 | 034313 | 010 | 034 | 010 |       |  |
| 4962 | 034316 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4963 | 034316 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4964 | 034321 | 024 | 000 | 024 |       |  |
| 4965 | 034324 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4966 | 034324 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4967 | 034327 | 010 | 034 | 010 |       |  |
| 4968 | 034332 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4969 | 034332 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4970 | 034335 | 024 | 000 | 024 |       |  |
| 4971 | 034340 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4972 | 034340 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4973 | 034343 | 010 | 034 | 010 |       |  |
| 4974 | 034346 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4975 | 034346 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4976 | 034351 | 024 | 000 | 024 |       |  |
| 4977 | 034354 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4978 | 034354 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4979 | 034357 | 010 | 034 | 010 |       |  |
| 4980 | 034362 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4981 | 034362 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4982 | 034365 | 024 | 000 | 024 |       |  |
| 4983 | 034370 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4984 | 034370 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4985 | 034373 | 010 | 034 | 010 |       |  |
| 4986 | 034376 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4987 | 034376 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4988 | 034401 | 024 | 000 | 024 |       |  |
| 4989 | 034404 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |
| 4990 | 034404 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK. |
| 4991 | 034407 | 010 | 034 | 010 |       |  |
| 4992 | 034412 |     |     |     | C70   | V0,V5,V0,V5,V0,V5                                      |
| 4993 | 034412 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK. |
| 4994 | 034415 | 024 | 000 | 024 |       |  |
| 4995 | 034420 |     |     |     | C70   | V7,V2,V7,V2,V7,V2                                      |

# F08

|      |        |     |     |     |       |                                    |                           |
|------|--------|-----|-----|-----|-------|------------------------------------|---------------------------|
| 4996 | 034420 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 4997 | 034423 | 010 | 034 | 010 |       |                                    |                           |
| 4998 | 034426 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 4999 | 034426 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5000 | 034431 | 024 | 000 | 024 |       |                                    |                           |
| 5001 | 034434 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5002 | 034434 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5003 | 034437 | 010 | 034 | 010 |       |                                    |                           |
| 5004 | 034442 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5005 | 034442 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5006 | 034445 | 024 | 000 | 024 |       |                                    |                           |
| 5007 | 034450 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5008 | 034450 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5009 | 034453 | 010 | 034 | 010 |       |                                    |                           |
| 5010 | 034456 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5011 | 034456 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5012 | 034461 | 024 | 000 | 024 |       |                                    |                           |
| 5013 | 034464 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5014 | 034464 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5015 | 034467 | 010 | 034 | 010 |       |                                    |                           |
| 5016 | 034472 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5017 | 034472 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5018 | 034475 | 024 | 000 | 024 |       |                                    |                           |
| 5019 | 034500 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5020 | 034500 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5021 | 034503 | 010 | 034 | 010 |       |                                    |                           |
| 5022 | 034506 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5023 | 034506 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5024 | 034511 | 024 | 000 | 024 |       |                                    |                           |
| 5025 | 034514 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5026 | 034514 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5027 | 034517 | 010 | 034 | 010 |       |                                    |                           |
| 5028 | 034522 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5029 | 034522 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5030 | 034525 | 024 | 000 | 024 |       |                                    |                           |
| 5031 | 034530 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5032 | 034530 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5033 | 034533 | 010 | 034 | 010 |       |                                    |                           |
| 5034 | 034536 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5035 | 034536 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5036 | 034541 | 024 | 000 | 024 |       |                                    |                           |
| 5037 | 034544 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5038 | 034544 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5039 | 034547 | 010 | 034 | 010 |       |                                    |                           |
| 5040 | 034552 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5041 | 034552 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5042 | 034555 | 024 | 000 | 024 |       |                                    |                           |
| 5043 | 034560 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5044 | 034560 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5045 | 034563 | 010 | 034 | 010 |       |                                    |                           |
| 5046 | 034566 |     |     |     | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5047 | 034566 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5048 | 034571 | 024 | 000 | 024 |       |                                    |                           |
| 5049 | 034574 |     |     |     | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5050 | 034574 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5051 | 034577 | 010 | 034 | 010 |       |                                    |                           |

|      |        |     |     |     |       |                               |                          |
|------|--------|-----|-----|-----|-------|-------------------------------|--------------------------|
| 5052 | 034602 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5053 | 034602 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5054 | 034605 | 024 | 000 | 024 |       |                               |                          |
| 5055 | 034610 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5056 | 034610 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5057 | 034613 | 010 | 034 | 010 |       |                               |                          |
| 5058 | 034616 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5059 | 034616 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5060 | 034621 | 024 | 000 | 024 |       |                               |                          |
| 5061 | 034624 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5062 | 034624 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5063 | 034627 | 010 | 034 | 010 |       |                               |                          |
| 5064 | 034632 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5065 | 034632 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5066 | 034635 | 024 | 000 | 024 |       |                               |                          |
| 5067 | 034640 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5068 | 034640 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5069 | 034643 | 010 | 034 | 010 |       |                               |                          |
| 5070 | 034646 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5071 | 034646 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5072 | 034651 | 024 | 000 | 024 |       |                               |                          |
| 5073 | 034654 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5074 | 034654 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5075 | 034657 | 010 | 034 | 010 |       |                               |                          |
| 5076 | 034662 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5077 | 034662 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5078 | 034665 | 024 | 000 | 024 |       |                               |                          |
| 5079 | 034670 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5080 | 034670 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5081 | 034673 | 010 | 034 | 010 |       |                               |                          |
| 5082 | 034676 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5083 | 034676 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5084 | 034701 | 024 | 000 | 024 |       |                               |                          |
| 5085 | 034704 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5086 | 034704 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5087 | 034707 | 010 | 034 | 010 |       |                               |                          |
| 5088 | 034712 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5089 | 034712 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5090 | 034715 | 024 | 000 | 024 |       |                               |                          |
| 5091 | 034720 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5092 | 034720 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5093 | 034723 | 010 | 034 | 010 |       |                               |                          |
| 5094 | 034726 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5095 | 034726 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5096 | 034731 | 024 | 000 | 024 |       |                               |                          |
| 5097 | 034734 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5098 | 034734 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5099 | 034737 | 010 | 034 | 010 |       |                               |                          |
| 5100 | 034742 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5101 | 034742 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5102 | 034745 | 024 | 000 | 024 |       |                               |                          |
| 5103 | 034750 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5104 | 034750 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5105 | 034753 | 010 | 034 | 010 |       |                               |                          |
| 5106 | 034756 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5107 | 034756 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |

|      |        |     |     |     |       |  |
|------|--------|-----|-----|-----|-------|--|
| 5108 | 034761 | 024 | 000 | 024 |       |  |
| 5109 | 034764 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5110 | 034764 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5111 | 034767 | 010 | 034 | 010 |       |  |
| 5112 | 034772 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5113 | 034772 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5114 | 034775 | 024 | 000 | 024 |       |  |
| 5115 | 035000 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5116 | 035000 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5117 | 035003 | 010 | 034 | 010 |       |  |
| 5118 | 035006 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5119 | 035006 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5120 | 035011 | 024 | 000 | 024 |       |  |
| 5121 | 035014 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5122 | 035014 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5123 | 035017 | 010 | 034 | 010 |       |  |
| 5124 | 035022 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5125 | 035022 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5126 | 035025 | 024 | 000 | 024 |       |  |
| 5127 | 035030 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5128 | 035030 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5129 | 035033 | 010 | 034 | 010 |       |  |
| 5130 | 035036 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5131 | 035036 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5132 | 035041 | 024 | 000 | 024 |       |  |
| 5133 | 035044 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5134 | 035044 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5135 | 035047 | 010 | 034 | 010 |       |  |
| 5136 | 035052 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5137 | 035052 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5138 | 035055 | 024 | 000 | 024 |       |  |
| 5139 | 035060 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5140 | 035060 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5141 | 035063 | 010 | 034 | 010 |       |  |
| 5142 | 035066 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5143 | 035066 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5144 | 035071 | 024 | 000 | 024 |       |  |
| 5145 | 035074 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5146 | 035074 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5147 | 035077 | 010 | 034 | 010 |       |  |
| 5148 | 035102 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5149 | 035102 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5150 | 035105 | 024 | 000 | 024 |       |  |
| 5151 | 035110 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5152 | 035110 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5153 | 035113 | 010 | 034 | 010 |       |  |
| 5154 | 035116 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5155 | 035116 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5156 | 035121 | 024 | 000 | 024 |       |  |
| 5157 | 035124 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |
| 5158 | 035124 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ; MTK CODE 70. DATA MARK. |
| 5159 | 035127 | 010 | 034 | 010 |       |  |
| 5160 | 035132 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                       |
| 5161 | 035132 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ; MTK CODE 70. DATA MARK. |
| 5162 | 035135 | 024 | 000 | 024 |       |  |
| 5163 | 035140 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                       |

|      |        |     |     |     |       |                                    |                           |
|------|--------|-----|-----|-----|-------|------------------------------------|---------------------------|
| 5164 | 035140 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5165 | 035143 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5166 | 035146 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5167 | 035146 | 040 | 064 | 040 |       |                                    |                           |
| 5168 | 035151 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5169 | 035154 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5170 | 035154 | 074 | 050 | 074 |       |                                    |                           |
| 5171 | 035157 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5172 | 035162 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5173 | 035162 | 040 | 064 | 040 |       |                                    |                           |
| 5174 | 035165 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5175 | 035170 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5176 | 035170 | 074 | 050 | 074 |       |                                    |                           |
| 5177 | 035173 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5178 | 035176 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5179 | 035176 | 040 | 064 | 040 |       |                                    |                           |
| 5180 | 035201 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5181 | 035204 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5182 | 035204 | 074 | 050 | 074 |       |                                    |                           |
| 5183 | 035207 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5184 | 035212 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5185 | 035212 | 040 | 064 | 040 |       |                                    |                           |
| 5186 | 035215 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5187 | 035220 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5188 | 035220 | 074 | 050 | 074 |       |                                    |                           |
| 5189 | 035223 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5190 | 035226 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5191 | 035226 | 040 | 064 | 040 |       |                                    |                           |
| 5192 | 035231 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5193 | 035234 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5194 | 035234 | 074 | 050 | 074 |       |                                    |                           |
| 5195 | 035237 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5196 | 035242 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5197 | 035242 | 040 | 064 | 040 |       |                                    |                           |
| 5198 | 035245 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5199 | 035250 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5200 | 035250 | 074 | 050 | 074 |       |                                    |                           |
| 5201 | 035253 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5202 | 035256 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5203 | 035256 | 040 | 064 | 040 |       |                                    |                           |
| 5204 | 035261 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5205 | 035264 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5206 | 035264 | 074 | 050 | 074 |       |                                    |                           |
| 5207 | 035267 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5208 | 035272 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5209 | 035272 | 040 | 064 | 040 |       |                                    |                           |
| 5210 | 035275 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5211 | 035300 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5212 | 035300 | 074 | 050 | 074 |       |                                    |                           |
| 5213 | 035303 | 010 | 034 | 010 | C70   | V0, V5, V0, V5, V0, V5             |                           |
| 5214 | 035306 |     |     |     | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 | ; MTK CODE 70. DATA MARK. |
| 5215 | 035306 | 040 | 064 | 040 |       |                                    |                           |
| 5216 | 035311 | 024 | 000 | 024 | C70   | V7, V2, V7, V2, V7, V2             |                           |
| 5217 | 035314 |     |     |     | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 | ; MTK CODE 70. DATA MARK. |
| 5218 | 035314 | 074 | 050 | 074 |       |                                    |                           |
| 5219 | 035317 | 010 | 034 | 010 |       |                                    |                           |

|      |        |     |     |     |       |                               |                          |
|------|--------|-----|-----|-----|-------|-------------------------------|--------------------------|
| 5220 | 035322 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5221 | 035322 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5222 | 035325 | 024 | 000 | 024 |       |                               |                          |
| 5223 | 035330 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5224 | 035330 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5225 | 035333 | 010 | 034 | 010 |       |                               |                          |
| 5226 | 035336 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5227 | 035336 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5228 | 035341 | 024 | 000 | 024 |       |                               |                          |
| 5229 | 035344 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5230 | 035344 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5231 | 035347 | 010 | 034 | 010 |       |                               |                          |
| 5232 | 035352 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5233 | 035352 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5234 | 035355 | 024 | 000 | 024 |       |                               |                          |
| 5235 | 035360 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5236 | 035360 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5237 | 035363 | 010 | 034 | 010 |       |                               |                          |
| 5238 | 035366 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5239 | 035366 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5240 | 035371 | 024 | 000 | 024 |       |                               |                          |
| 5241 | 035374 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5242 | 035374 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5243 | 035377 | 010 | 034 | 010 |       |                               |                          |
| 5244 | 035402 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5245 | 035402 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5246 | 035405 | 024 | 000 | 024 |       |                               |                          |
| 5247 | 035410 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5248 | 035410 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5249 | 035413 | 010 | 034 | 010 |       |                               |                          |
| 5250 | 035416 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5251 | 035416 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5252 | 035421 | 024 | 000 | 024 |       |                               |                          |
| 5253 | 035424 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5254 | 035424 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5255 | 035427 | 010 | 034 | 010 |       |                               |                          |
| 5256 | 035432 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5257 | 035432 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5258 | 035435 | 024 | 000 | 024 |       |                               |                          |
| 5259 | 035440 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5260 | 035440 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5261 | 035443 | 010 | 034 | 010 |       |                               |                          |
| 5262 | 035446 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5263 | 035446 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5264 | 035451 | 024 | 000 | 024 |       |                               |                          |
| 5265 | 035454 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5266 | 035454 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5267 | 035457 | 010 | 034 | 010 |       |                               |                          |
| 5268 | 035462 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5269 | 035462 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |
| 5270 | 035465 | 024 | 000 | 024 |       |                               |                          |
| 5271 | 035470 |     |     |     | C70   | V7,V2,V7,V2,V7,V2             |                          |
| 5272 | 035470 | 074 | 050 | 074 | .BYTE | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK. |
| 5273 | 035473 | 010 | 034 | 010 |       |                               |                          |
| 5274 | 035476 |     |     |     | C70   | V0,V5,V0,V5,V0,V5             |                          |
| 5275 | 035476 | 040 | 064 | 040 | .BYTE | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK. |

|      |        |     |     |     |       |   |
|------|--------|-----|-----|-----|-------|---|
| 5276 | 035501 | 024 | 000 | 024 |       |   |
| 5277 | 035504 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5278 | 035504 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5279 | 035507 | 010 | 034 | 010 |       |   |
| 5280 | 035512 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5281 | 035512 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5282 | 035515 | 024 | 000 | 024 |       |   |
| 5283 | 035520 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5284 | 035520 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5285 | 035523 | 010 | 034 | 010 |       |   |
| 5286 | 035526 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5287 | 035526 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5288 | 035531 | 024 | 000 | 024 |       |   |
| 5289 | 035534 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5290 | 035534 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5291 | 035537 | 010 | 034 | 010 |       |   |
| 5292 | 035542 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5293 | 035542 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5294 | 035545 | 024 | 000 | 024 |       |   |
| 5295 | 035550 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5296 | 035550 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5297 | 035553 | 010 | 034 | 010 |       |   |
| 5298 | 035556 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5299 | 035556 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5300 | 035561 | 024 | 000 | 024 |       |   |
| 5301 | 035564 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5302 | 035564 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5303 | 035567 | 010 | 034 | 010 |       |   |
| 5304 | 035572 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5305 | 035572 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5306 | 035575 | 024 | 000 | 024 |       |   |
| 5307 | 035600 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5308 | 035600 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5309 | 035603 | 010 | 034 | 010 |       |   |
| 5310 | 035606 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5311 | 035606 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5312 | 035611 | 024 | 000 | 024 |       |   |
| 5313 | 035614 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5314 | 035614 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5315 | 035617 | 010 | 034 | 010 |       |   |
| 5316 | 035622 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5317 | 035622 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5318 | 035625 | 024 | 000 | 024 |       |   |
| 5319 | 035630 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5320 | 035630 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5321 | 035633 | 010 | 034 | 010 |       |   |
| 5322 | 035636 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5323 | 035636 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5324 | 035641 | 024 | 000 | 024 |       |   |
| 5325 | 035644 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |
| 5326 | 035644 | 074 | 050 | 074 | .BYTE | I!V7, I!V2, I!V7, 0!V2, 0!V7, 0!V2 ;MTK CODE 70. DATA MARK. |
| 5327 | 035647 | 010 | 034 | 010 |       |   |
| 5328 | 035652 |     |     |     | C70   | V0, V5, V0, V5, V0, V5                                      |
| 5329 | 035652 | 040 | 064 | 040 | .BYTE | I!V0, I!V5, I!V0, 0!V5, 0!V0, 0!V5 ;MTK CODE 70. DATA MARK. |
| 5330 | 035655 | 024 | 000 | 024 |       |   |
| 5331 | 035660 |     |     |     | C70   | V7, V2, V7, V2, V7, V2                                      |

|      |        |        |     |     |               |                               |                               |
|------|--------|--------|-----|-----|---------------|-------------------------------|-------------------------------|
| 5332 | 035660 | 074    | 050 | 074 | .BYTE         | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK.      |
| 5333 | 035663 | 010    | 034 | 010 |               |                               |                               |
| 5334 | 035666 |        |     |     | C70           | V0,V5,V0,V5,V0,V5             |                               |
| 5335 | 035666 | 040    | 064 | 040 | .BYTE         | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK.      |
| 5336 | 035671 | 024    | 000 | 024 |               |                               |                               |
| 5337 | 035674 |        |     |     | C70           | V7,V2,V7,V2,V7,V2             |                               |
| 5338 | 035674 | 074    | 050 | 074 | .BYTE         | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK.      |
| 5339 | 035677 | 010    | 034 | 010 |               |                               |                               |
| 5340 | 035702 |        |     |     | C70           | V0,V5,V0,V5,V0,V5             |                               |
| 5341 | 035702 | 040    | 064 | 040 | .BYTE         | I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 | ;MTK CODE 70. DATA MARK.      |
| 5342 | 035705 | 024    | 000 | 024 |               |                               |                               |
| 5343 | 035710 |        |     |     | C70           | V7,V2,V7,V2,V7,V2             |                               |
| 5344 | 035710 | 074    | 050 | 074 | .BYTE         | I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 | ;MTK CODE 70. DATA MARK.      |
| 5345 | 035713 | 010    | 034 | 010 |               |                               |                               |
| 5346 | 035716 |        |     |     | C73           | V0,V5,V0,V5,V0,V5             |                               |
| 5347 | 035716 | 040    | 064 | 040 | .BYTE         | I!V0,I!V5,I!V0,0!V5,I!V0,I!V5 | ;MTK CODE 73. DATA MARK.      |
| 5348 | 035721 | 024    | 040 | 064 |               |                               |                               |
| 5349 | 035724 |        |     |     | C73           | V7,V2,V7,V2,V7,V2             |                               |
| 5350 | 035724 | 074    | 050 | 074 | .BYTE         | I!V7,I!V2,I!V7,0!V2,I!V7,I!V2 | ;MTK CODE 73. DATA MARK.      |
| 5351 | 035727 | 010    | 074 | 050 |               |                               |                               |
| 5352 | 035732 |        |     |     | FCKSM:        |                               |                               |
| 5353 | 035732 |        |     |     | C73           | V0,V0,V0,V0,V0,V0             |                               |
| 5354 | 035732 | 040    | 040 | 040 | .BYTE         | I!V0,I!V0,I!V0,0!V0,I!V0,I!V0 | ;MTK CODE 73. DATA MARK.      |
| 5355 | 035735 | 000    | 040 | 040 |               |                               |                               |
| 5356 | 035740 |        |     |     | C73           | V0,V0,V0,V0,V0,V0             |                               |
| 5357 | 035740 | 040    | 040 | 040 | .BYTE         | I!V0,I!V0,I!V0,0!V0,I!V0,I!V0 | ;MTK CODE 73. DATA MARK.      |
| 5358 | 035743 | 000    | 040 | 040 |               |                               |                               |
| 5359 | 035746 |        |     |     | C51           | V0,V0,V0,V0,V0,V0             |                               |
| 5360 | 035746 | 040    | 000 | 040 | .BYTE         | I!V0,0!V0,I!V0,0!V0,0!V0,I!V0 | ;MTK CODE 51. FWD GUARD.      |
| 5361 | 035751 | 000    | 000 | 040 |               |                               |                               |
| 5362 | 035754 |        |     |     | C45           | V0,V0,V0,V0,V0,V0             |                               |
| 5363 | 035754 | 040    | 000 | 000 | .BYTE         | I!V0,0!V0,0!V0,I!V0,0!V0,I!V0 | ;MTK CODE 45. REV BLOCK MARK. |
| 5364 | 035757 | 040    | 000 | 040 |               |                               |                               |
| 5365 | 035762 |        |     |     | C25           |                               |                               |
| 5366 | 035762 | 000    | 040 | 000 | .BYTE         | 0,I,0,I,0,I                   | ;MTK CODE 25. EXTENSION MARK. |
| 5367 | 035765 | 040    | 000 | 040 |               |                               |                               |
| 5368 | 035770 |        |     |     | CEND          |                               |                               |
| 5369 | 035770 | 377    |     |     | .BYTE         | -1                            |                               |
| 5370 | 035771 |        |     |     | GCKSM:        |                               |                               |
| 5371 | 035771 |        |     |     | C73           | V7,V7,V0,V0,V0,V0             |                               |
| 5372 | 035771 | 074    | 074 | 040 | .BYTE         | I!V7,I!V7,I!V0,0!V0,I!V0,I!V0 | ;MTK CODE 73. DATA MARK.      |
| 5373 | 035774 | 000    | 040 | 040 |               |                               |                               |
| 5374 | 035777 |        |     |     | BCKSM:        |                               |                               |
| 5375 | 035777 |        |     |     | C73           | V0,V0,V0,V0,V0,V0             |                               |
| 5376 | 035777 | 040    | 040 | 040 | .BYTE         | I!V0,I!V0,I!V0,0!V0,I!V0,I!V0 | ;MTK CODE 73. DATA MARK.      |
| 5377 | 036002 | 000    | 040 | 040 |               |                               |                               |
| 5378 |        | 036006 |     |     | .EVEN         |                               |                               |
| 5379 | 036006 | 000000 |     |     | OPEN          |                               |                               |
| 5380 |        | 036010 |     |     | RBUF=         |                               |                               |
| 5381 |        | 040010 |     |     | . =RBUF+1024. |                               |                               |
| 5382 |        | 000001 |     |     | .END          |                               |                               |

|        |   |        |       |       |           |
|--------|---|--------|-------|-------|-----------|
| A      | = | 100000 | 180#  |       |           |
| AINCRT |   | 015253 | 3103# |       |           |
| APGEN0 |   | 015273 | 3106# |       |           |
| ASETSR |   | 015213 | 3097# |       |           |
| A0001  |   | 002564 | 889   | 898#  |           |
| A0002  |   | 002634 | 903   | 912#  |           |
| A0003  |   | 002704 | 917   | 926#  |           |
| A0004  |   | 002754 | 931   | 940#  |           |
| A0005  |   | 003040 | 958   | 960#  |           |
| A0006  |   | 003102 | 975   | 977#  |           |
| A0007  |   | 003154 | 989   | 995#  |           |
| A0C10  |   | 003226 | 1012# | 1018  |           |
| A0011  |   | 003322 | 1028  | 1036# |           |
| A0012  |   | 003402 | 1056# | 1064  | 1067      |
| A0013  |   | 003472 | 1077  | 1080# |           |
| A0014  |   | 003616 | 1104  | 1106# |           |
| A0015  |   | 003672 | 1120  | 1122# |           |
| A0016  |   | 003744 | 1139  | 1142# |           |
| A0017  |   | 004060 | 1170  | 1173# |           |
| A0020  |   | 004172 | 1200  | 1203# |           |
| A0021  |   | 004272 | 1219  | 1226# |           |
| A0022  |   | 004364 | 1248  | 1251# |           |
| A0023  |   | 004464 | 1275  | 1278# |           |
| A0024  |   | 004602 | 1305  | 1311# |           |
| A0025  |   | 004670 | 1333  | 1336# |           |
| A0026  |   | 004764 | 1361  | 1364# |           |
| A0027  |   | 005064 | 1389  | 1392# |           |
| A0030  |   | 005160 | 1415  | 1418# |           |
| A0031  |   | 005252 | 1441  | 1444# |           |
| A0032  |   | 005514 | 1497  | 1500# |           |
| A0033  |   | 005772 | 1556  | 1560# |           |
| A0034  |   | 006166 | 1601  | 1604# |           |
| A0035  |   | 006372 | 1649  | 1652# |           |
| A0036  |   | 006576 | 1697  | 1700# |           |
| A0037  |   | 007000 | 1744  | 1747# |           |
| A0040  |   | 007146 | 1780  | 1783# |           |
| A0041  |   | 007466 | 1852  | 1854# |           |
| A0042  |   | 007744 | 1915  | 1918# |           |
| A0043  |   | 010126 | 1962  | 1965# |           |
| A0044  |   | 010354 | 2016  | 2019# |           |
| A0045  |   | 010530 | 2056  | 2059# |           |
| A0055  |   | 011260 | 2197  | 2200# |           |
| B      | = | 040000 | 181#  |       |           |
| BCKSM  |   | 035777 | 2520  | 5374# |           |
| BELL   | = | 000007 | 174#  |       |           |
| BIT0   | = | 000001 | 134#  | 213   | 1102 1103 |
| BIT00  | = | 000001 | 124#  | 134   |           |
| BIT01  | = | 000002 | 123#  | 133   |           |
| BIT02  | = | 000004 | 122#  | 132   |           |
| BIT03  | = | 000010 | 121#  | 131   |           |
| BIT04  | = | 000020 | 120#  | 130   |           |
| BIT05  | = | 000040 | 119#  | 129   |           |
| BIT06  | = | 000100 | 118#  | 128   |           |
| BIT07  | = | 000200 | 117#  | 127   |           |
| BIT08  | = | 000400 | 116#  | 126   |           |
| BIT09  | = | 001000 | 115#  | 125   |           |





|       |        |       |       |       |
|-------|--------|-------|-------|-------|
| D0045 | 010652 | 2081  | 2085# |       |
| D0055 | 011362 | 2199  | 2212  | 2220# |
| EH1   | 015705 | 480   | 3156# |       |
| EH10  | 017270 | 522   | 3313# |       |
| EH11  | 017444 | 528   | 3335# |       |
| EH12  | 017620 | 534   | 3357# |       |
| EH13  | 017774 | 540   | 3379# |       |
| EH14  | 020167 | 546   | 3404# |       |
| EH15  | 020334 | 552   | 3425# |       |
| EH16  | 020506 | 558   | 3447# |       |
| EH17  | 020666 | 564   | 3470# |       |
| EH2   | 016064 | 486   | 3179# |       |
| EH20  | 021046 | 570   | 3493# |       |
| EH21  | 021231 | 576   | 3517# |       |
| EH22  | 021400 | 582   | 3538# |       |
| EH23  | 021530 | 588   | 3557# |       |
| EH24  | 021703 | 594   | 3579# |       |
| EH25  | 022064 | 600   | 3602# |       |
| EH26  | 022217 | 606   | 3622# |       |
| EH27  | 022350 | 612   | 3642# |       |
| EH3   | 016225 | 492   | 3200# |       |
| EH30  | 022554 | 618   | 3668# |       |
| EH31  | 022744 | 624   | 3692# |       |
| EH32  | 023144 | 630   | 3718# |       |
| EH33  | 023312 | 636   | 3739# |       |
| EH34  | 023463 | 642   | 648   | 3761# |
| EH35  | 023613 | 3780# |       |       |
| EH36  | 024013 | 652   | 3804# |       |
| EH37  | 024116 | 658   | 3819# |       |
| EH4   | 016431 | 498   | 3226# |       |
| EH40  | 024240 | 664   | 3837# |       |
| EH41  | 024400 | 670   | 3857# |       |
| EH42  | 024532 | 676   | 3876# |       |
| EH43  | 024672 | 682   | 3896# |       |
| EH44  | 025060 | 688   | 3920# |       |
| EH45  | 025240 | 694   | 3943# |       |
| EH46  | 025401 | 700   | 3964# |       |
| EH47  | 025554 | 706   | 3986# |       |
| EH5   | 016557 | 504   | 3245# |       |
| EH50  | 025702 | 712   | 4005# |       |
| EH51  | 026055 | 718   | 4028# |       |
| EH52  | 026237 | 724   | 4052# |       |
| EH53  | 026417 | 730   | 4076# |       |
| EH54  | 026566 | 736   | 4099# |       |
| EH55  | 026733 | 742   | 4121# |       |
| EH56  | 027120 | 748   | 4146# |       |
| EH57  | 027305 | 754   | 4170# |       |
| EH6   | 016751 | 510   | 3270# |       |
| EH60  | 027472 | 760   | 4195# |       |
| EH61  | 027663 | 766   | 4220# |       |
| EH62  | 030042 | 772   | 4243# |       |
| EH63  | 030206 | 778   | 4264# |       |
| EH64  | 030356 | 784   | 4286# |       |
| EH65  | 030553 | 790   | 4312# |       |
| EH66  | 030747 | 796   | 4337# |       |
| EH67  | 031125 | 802   | 4360# |       |

|         |        |       |       |       |
|---------|--------|-------|-------|-------|
| EH7     | 017122 | 516   | 3292# |       |
| EH70    | 031277 | 808   | 4382# |       |
| EH71    | 031476 | 814   | 4408# |       |
| EH72    | 031644 | 820   | 4430# |       |
| EH73    | 032013 | 826   | 4452# |       |
| EH74    | 032163 | 830   | 4473# |       |
| EH75    | 032307 | 835   | 4491# |       |
| EH76    | 032433 | 840   | 4509# |       |
| EH77    | 032557 | 845   | 4527# |       |
| EMTVEC= | 000030 | 144#  | 862*  | 863*  |
| EMTX =  | 000000 | 214#  |       |       |
| EM1     | 015617 | 479   | 3146# |       |
| EM10    | 017216 | 521   | 3306# |       |
| EM11    | 017364 | 527   | 3327# |       |
| EM12    | 017540 | 533   | 3349# |       |
| EM13    | 017714 | 539   | 3371# |       |
| EM14    | 020070 | 545   | 3393# |       |
| EM15    | 020264 | 551   | 3418# |       |
| EM16    | 020430 | 557   | 3439# |       |
| EM17    | 020602 | 563   | 3461# |       |
| EM2     | 016002 | 485   | 3170# |       |
| EM20    | 020762 | 569   | 3484# |       |
| EM21    | 021142 | 575   | 3507# |       |
| EM22    | 021326 | 581   | 3531# |       |
| EM23    | 021474 | 587   | 3552# |       |
| EM24    | 021624 | 593   | 3571# |       |
| EM25    | 022000 | 599   | 3593# |       |
| EM26    | 022160 | 605   | 3616# |       |
| EM27    | 022306 | 611   | 3636# |       |
| EM3     | 016160 | 491   | 3193# |       |
| EM30    | 022444 | 617   | 3656# |       |
| EM31    | 022650 | 623   | 3682# |       |
| EM32    | 023066 | 629   | 3710# |       |
| EM33    | 023240 | 635   | 3732# |       |
| EM34    | 023406 | 641   | 647   | 3753# |
| EM35    | 023560 | 3775# |       |       |
| EM36    | 023736 | 651   | 3796# |       |
| EM37    | 024110 | 657   | 3818# |       |
| EM4     | 016322 | 497   | 3214# |       |
| EM40    | 024212 | 663   | 3833# |       |
| EM41    | 024334 | 669   | 3851# |       |
| EM42    | 024474 | 675   | 3871# |       |
| EM43    | 024626 | 681   | 3890# |       |
| EM44    | 025016 | 687   | 3914# |       |
| EM45    | 025204 | 693   | 3938# |       |
| EM46    | 025364 | 699   | 3961# |       |
| EM47    | 025476 | 705   | 3978# |       |
| EM5     | 016526 | 503   | 3240# |       |
| EM50    | 025650 | 711   | 4000# |       |
| EM51    | 026012 | 717   | 4022# |       |
| EM52    | 026200 | 723   | 4046# |       |
| EM53    | 026346 | 729   | 4069# |       |
| EM54    | 026526 | 735   | 4093# |       |
| EM55    | 026674 | 741   | 4115# |       |
| EM56    | 027042 | 747   | 4138# |       |
| EM57    | 027226 | 753   | 4162# |       |

|         |        |       |       |       |       |       |
|---------|--------|-------|-------|-------|-------|-------|
| EM6     | 016654 | 509   | 3259# |       |       |       |
| EM60    | 027414 | 759   | 4187# |       |       |       |
| EM61    | 027600 | 765   | 4211# |       |       |       |
| EM62    | 030004 | 771   | 4238# |       |       |       |
| EM63    | 030150 | 777   | 4259# |       |       |       |
| EM64    | 030330 | 783   | 4282# |       |       |       |
| EM65    | 030464 | 789   | 4302# |       |       |       |
| EM66    | 030650 | 795   | 4326# |       |       |       |
| EM67    | 031044 | 801   | 4351# |       |       |       |
| EM7     | 017046 | 515   | 3284# |       |       |       |
| EM70    | 031222 | 807   | 4374# |       |       |       |
| EM71    | 031430 | 813   | 4401# |       |       |       |
| EM72    | 031604 | 819   | 4424# |       |       |       |
| EM73    | 031752 | 825   | 4446# |       |       |       |
| EM74    | 032110 | 829   | 4465# |       |       |       |
| EM75    | 032234 | 834   | 4483# |       |       |       |
| EM76    | 032360 | 839   | 4501# |       |       |       |
| EM77    | 032504 | 844   | 4519# |       |       |       |
| ERRVEC= | 000004 | 137#  | 2590  | 2591* | 2593* | 2596* |
| ET1     | 015764 | 481   | 3165# |       |       |       |
| ET10    | 017346 | 523   | 3322# |       |       |       |
| ET11    | 017522 | 529   | 3344# |       |       |       |
| ET12    | 017676 | 535   | 3366# |       |       |       |
| ET13    | 020052 | 541   | 3388# |       |       |       |
| ET14    | 020246 | 547   | 3413# |       |       |       |
| ET15    | 020412 | 553   | 3434# |       |       |       |
| ET16    | 020564 | 559   | 3456# |       |       |       |
| ET17    | 020744 | 565   | 3479# |       |       |       |
| ET2     | 016142 | 487   | 3188# |       |       |       |
| ET20    | 021124 | 571   | 3502# |       |       |       |
| ET21    | 021310 | 577   | 3526# |       |       |       |
| ET22    | 021456 | 583   | 3547# |       |       |       |
| ET23    | 021606 | 589   | 3566# |       |       |       |
| ET24    | 021762 | 595   | 3588# |       |       |       |
| ET25    | 022142 | 601   | 3611# |       |       |       |
| ET26    | 022272 | 607   | 3631# |       |       |       |
| ET27    | 022426 | 613   | 3651# |       |       |       |
| ET3     | 016304 | 493   | 3209# |       |       |       |
| ET30    | 022632 | 619   | 3677# |       |       |       |
| ET31    | 023044 | 625   | 3704# |       |       |       |
| ET32    | 023222 | 631   | 3727# |       |       |       |
| ET33    | 023370 | 637   | 3748# |       |       |       |
| ET34    | 023542 | 643   | 649   | 3770# |       |       |
| ET35    | 023716 | 3793# |       |       |       |       |
| ET36    | 024072 | 653   | 3813# |       |       |       |
| ET37    | 024174 | 659   | 3828# |       |       |       |
| ET4     | 016510 | 499   | 3235# |       |       |       |
| ET40    | 024316 | 665   | 3846# |       |       |       |
| ET41    | 024456 | 671   | 3866# |       |       |       |
| ET42    | 024610 | 677   | 3885# |       |       |       |
| ET43    | 024774 | 683   | 3908# |       |       |       |
| ET44    | 025162 | 689   | 3932# |       |       |       |
| ET45    | 025342 | 695   | 3955# |       |       |       |
| ET46    | 025460 | 701   | 3973# |       |       |       |
| ET47    | 025632 | 707   | 3995# |       |       |       |
| ETS     | 016636 | 505   | 3254# |       |       |       |

















|                 |       |       |       |       |       |      |       |      |      |      |      |      |      |  |
|-----------------|-------|-------|-------|-------|-------|------|-------|------|------|------|------|------|------|--|
| V3 = 000014     | 186#  |       |       |       |       |      |       |      |      |      |      |      |      |  |
| V4 = 000020     | 187#  |       |       |       |       |      |       |      |      |      |      |      |      |  |
| V5 = 000024     | 188#  | 4565  | 4568  | 4580  | 4591  | 4597 | 4603  | 4609 | 4615 | 4621 | 4627 | 4633 | 4639 |  |
|                 | 4645  | 4651  | 4657  | 4663  | 4669  | 4675 | 4681  | 4687 | 4693 | 4699 | 4705 | 4711 | 4717 |  |
|                 | 4723  | 4729  | 4735  | 4741  | 4747  | 4753 | 4759  | 4765 | 4771 | 4777 | 4783 | 4789 | 4795 |  |
|                 | 4801  | 4807  | 4813  | 4819  | 4825  | 4831 | 4837  | 4843 | 4849 | 4855 | 4861 | 4867 | 4873 |  |
|                 | 4879  | 4885  | 4891  | 4897  | 4903  | 4909 | 4915  | 4921 | 4927 | 4933 | 4939 | 4945 | 4951 |  |
|                 | 4957  | 4963  | 4969  | 4975  | 4981  | 4987 | 4993  | 4999 | 5005 | 5011 | 5017 | 5023 | 5029 |  |
|                 | 5035  | 5041  | 5047  | 5053  | 5059  | 5065 | 5071  | 5077 | 5083 | 5089 | 5095 | 5101 | 5107 |  |
|                 | 5113  | 5119  | 5125  | 5131  | 5137  | 5143 | 5149  | 5155 | 5161 | 5167 | 5173 | 5179 | 5185 |  |
|                 | 5191  | 5197  | 5203  | 5209  | 5215  | 5221 | 5227  | 5233 | 5239 | 5245 | 5251 | 5257 | 5263 |  |
|                 | 5269  | 5275  | 5281  | 5287  | 5293  | 5299 | 5305  | 5311 | 5317 | 5323 | 5329 | 5335 | 5341 |  |
|                 | 5347  |       |       |       |       |      |       |      |      |      |      |      |      |  |
| V6 = 000030     | 189#  | 4555  | 4572  |       |       |      |       |      |      |      |      |      |      |  |
| V7 = 000034     | 190#  | 4539  | 4584  | 4594  | 4600  | 4606 | 4612  | 4618 | 4624 | 4630 | 4636 | 4642 | 4648 |  |
|                 | 4654  | 4660  | 4666  | 4672  | 4678  | 4684 | 4690  | 4696 | 4702 | 4708 | 4714 | 4720 | 4726 |  |
|                 | 4732  | 4738  | 4744  | 4750  | 4756  | 4762 | 4768  | 4774 | 4780 | 4786 | 4792 | 4798 | 4804 |  |
|                 | 4810  | 4816  | 4822  | 4828  | 4834  | 4840 | 4846  | 4852 | 4858 | 4864 | 4870 | 4876 | 4882 |  |
|                 | 4888  | 4894  | 4900  | 4906  | 4912  | 4918 | 4924  | 4930 | 4936 | 4942 | 4948 | 4954 | 4960 |  |
|                 | 4966  | 4972  | 4978  | 4984  | 4990  | 4996 | 5002  | 5008 | 5014 | 5020 | 5026 | 5032 | 5038 |  |
|                 | 5044  | 5050  | 5056  | 5062  | 5068  | 5074 | 5080  | 5086 | 5092 | 5098 | 5104 | 5110 | 5116 |  |
|                 | 5122  | 5128  | 5134  | 5140  | 5146  | 5152 | 5158  | 5164 | 5170 | 5176 | 5182 | 5188 | 5194 |  |
|                 | 5200  | 5206  | 5212  | 5218  | 5224  | 5230 | 5236  | 5242 | 5248 | 5254 | 5260 | 5266 | 5272 |  |
|                 | 5278  | 5284  | 5290  | 5296  | 5302  | 5308 | 5314  | 5320 | 5326 | 5332 | 5338 | 5344 | 5350 |  |
|                 | 5372  |       |       |       |       |      |       |      |      |      |      |      |      |  |
| WALL = 000016   | 212#  | 2066  |       |       |       |      |       |      |      |      |      |      |      |  |
| WDATA = 000014  | 211#  | 1968  | 2022  | 2203  |       |      |       |      |      |      |      |      |      |  |
| WDCNT = 013140  | 2216* | 2528* | 2541* | 2552* |       |      |       |      |      |      |      |      |      |  |
| WRTM = 000012   | 210#  | 1136  | 1167  | 1197  | 1229  |      |       |      |      |      |      |      |      |  |
| X = 177777      | 179#  |       |       |       |       |      |       |      |      |      |      |      |      |  |
| SBDADR = 001122 | 352#  |       |       |       |       |      |       |      |      |      |      |      |      |  |
| SBDAT = 001126  | 354#  |       |       |       |       |      |       |      |      |      |      |      |      |  |
| SBELL = 001220  | 425#  | 2672  | 2691  |       |       |      |       |      |      |      |      |      |      |  |
| SCMTAG = 001100 | 340#  | 855   | 862   | 868   | 869   |      |       |      |      |      |      |      |      |  |
| SCM1 = 000010   | 367#  | 371   | 373#  | 374   | 376#  | 377  | 379#  | 380  | 382# | 383  | 385# | 386  | 388# |  |
|                 | 389   | 391#  | 392   | 394#  |       |      |       |      |      |      |      |      |      |  |
| SCM2 = 000020   | 367#  | 371   | 373#  | 374   | 376#  | 377  | 379#  | 380  | 382# | 383  | 385# | 386  | 388# |  |
|                 | 389   | 391#  | 392   | 394#  |       |      |       |      |      |      |      |      |      |  |
| SCM3 = 000010   | 364#  | 365   | 368   |       |       |      |       |      |      |      |      |      |      |  |
| SCM4 = 000010   | 395#  | 399   | 401#  | 402   | 404#  | 405  | 407#  | 408  | 410# | 411  | 413# | 414  | 416# |  |
|                 | 417   | 419#  | 420   | 422#  |       |      |       |      |      |      |      |      |      |  |
| SCRFL = 001225  | 427#  | 873   | 2279  | 2680  | 2691  | 2957 | 2977  | 2982 | 2986 |      |      |      |      |  |
| SDBLK = 014404  | 2821  | 2859  | 2867# |       |       |      |       |      |      |      |      |      |      |  |
| SDOAGN = 011474 | 2247  | 2257  | 2262# |       |       |      |       |      |      |      |      |      |      |  |
| SDTBL = 014374  | 2824  | 2863# |       |       |       |      |       |      |      |      |      |      |      |  |
| SENDAD = 011464 | 336   | 2258# |       |       |       |      |       |      |      |      |      |      |      |  |
| SENDCT = 011434 | 868   | 2249# |       |       |       |      |       |      |      |      |      |      |      |  |
| SENDMG = 011500 | 2251  | 2263# |       |       |       |      |       |      |      |      |      |      |      |  |
| SENULL = 011515 | 2255  | 2266# |       |       |       |      |       |      |      |      |      |      |      |  |
| SEOP = 011400   | 2239# |       |       |       |       |      |       |      |      |      |      |      |      |  |
| SEOPCT = 011426 | 868#  | 2246# | 2250  |       |       |      |       |      |      |      |      |      |      |  |
| SERFLG = 001103 | 343#  | 2574  | 2603  | 2605  | 2611* | 2632 | 2667* | 2691 |      |      |      |      |      |  |
| SERMAX = 001115 | 349#  | 869#  | 2605  | 2627* | 2632  |      |       |      |      |      |      |      |      |  |
| SERROR = 013476 | 862   | 2654# |       |       |       |      |       |      |      |      |      |      |      |  |
| SERRPC = 001116 | 350#  | 2674* | 2675* | 2676  | 2691  | 2964 | 3165  | 3188 | 3209 | 3235 | 3254 | 3279 | 3301 |  |
|                 | 3322  | 3344  | 3366  | 3388  | 3413  | 3434 | 3456  | 3479 | 3502 | 3526 | 3547 | 3566 | 3588 |  |

|          |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
|----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|          |        | 3611  | 3631  | 3651  | 3677  | 3704  | 3727  | 3748  | 3770  | 3793  | 3813  | 3828  | 3846  | 3866  |
|          |        | 3885  | 3908  | 3932  | 3955  | 3973  | 3995  | 4016  | 4040  | 4063  | 4087  | 4109  | 4132  | 4156  |
|          |        | 4181  | 4205  | 4232  | 4253  | 4276  | 4296  | 4321  | 4346  | 4369  | 4395  | 4418  | 4440  | 4461  |
|          |        | 4480  | 4498  | 4516  | 4534  |       |       |       |       |       |       |       |       |       |
|          |        | 477#  | 2972  |       |       |       |       |       |       |       |       |       |       |       |
| SERRTB   | 001314 | 2679  | 2956# |       |       |       |       |       |       |       |       |       |       |       |
| SERRTY   | 014642 | 347#  | 2673* | 2691  |       |       |       |       |       |       |       |       |       |       |
| SERTTL   | 001112 | 424#  | 2626* | 2687  | 2689  | 2691  |       |       |       |       |       |       |       |       |
| SESCAP   | 001216 | 362#  | 2784  | 2796  |       |       |       |       |       |       |       |       |       |       |
| SFILLC   | 001150 | 361#  | 2796  |       |       |       |       |       |       |       |       |       |       |       |
| SFILLS   | 001147 | 351#  |       |       |       |       |       |       |       |       |       |       |       |       |
| SGDADR   | 001120 | 353#  |       |       |       |       |       |       |       |       |       |       |       |       |
| SGDDAT   | 001124 | 2256# |       |       |       |       |       |       |       |       |       |       |       |       |
| SGET42   | 011456 | 29    |       |       |       |       |       |       |       |       |       |       |       |       |
| SHD =    | 000000 | 344#  | 2618* | 2619  | 2621* | 2631  |       |       |       |       |       |       |       |       |
| SICNT    | 001104 | 2698  | 2741# |       |       |       |       |       |       |       |       |       |       |       |
| SILLUP   | 014044 | 348#  | 2676* | 2691  | 2960  |       |       |       |       |       |       |       |       |       |
| SITENB   | 001114 | 428#  | 2691  |       |       |       |       |       |       |       |       |       |       |       |
| SLF      | 001226 | 345#  | 870*  | 2609* | 2624* | 2629  | 2631  |       |       |       |       |       |       |       |
| SLPADR   | 001106 | 346#  | 2609  | 2625* | 2631  | 2686  |       |       |       |       |       |       |       |       |
| SLPERR   | 001110 | 2622  | 2631# |       |       |       |       |       |       |       |       |       |       |       |
| SMXCNT   | 013474 | 360#  | 2786  | 2796  |       |       |       |       |       |       |       |       |       |       |
| SNLL     | 001146 | 2901# | 2930* | 2943# |       |       |       |       |       |       |       |       |       |       |
| SOCNT    | 014636 | 2896# | 2900* | 2905  | 2908* | 2919* | 2945# |       |       |       |       |       |       |       |
| SOMODE   | 014640 | 2586  | 2602  | 2610  | 2620  | 2628# |       |       |       |       |       |       |       |       |
| SOVER    | 013460 | 341#  | 2243* | 2244* | 2253  | 2263  | 2616  | 2632  |       |       |       |       |       |       |
| SPASS    | 001100 | 2739  | 2744# |       |       |       |       |       |       |       |       |       |       |       |
| SPWER    | 014052 | 866   | 2698# | 2737  |       |       |       |       |       |       |       |       |       |       |
| SPWRON   | 013706 | 2718  | 2723# |       |       |       |       |       |       |       |       |       |       |       |
| SPWRUP   | 013770 | 426#  | 2691  |       |       |       |       |       |       |       |       |       |       |       |
| SQUES    | 001224 | 3076  |       |       |       |       |       |       |       |       |       |       |       |       |
| SROCHR=  | *****  | 3076  |       |       |       |       |       |       |       |       |       |       |       |       |
| SRODEC=  | *****  | 3076  |       |       |       |       |       |       |       |       |       |       |       |       |
| SROLIN=  | *****  | 3076  |       |       |       |       |       |       |       |       |       |       |       |       |
| SRODOCT= | *****  | 3076  |       |       |       |       |       |       |       |       |       |       |       |       |
| SREGAD   | 001152 | 365#  |       |       |       |       |       |       |       |       |       |       |       |       |
| SREGO    | 001154 | 372#  | 1307* | 1309* | 1450* | 1456* | 1508* | 1518* | 1557* | 1562* | 1568* | 1607* | 1655* | 1703* |
|          |        | 1790# | 1810* | 1815* | 1821* | 1985* | 2082* | 2290* | 2292  | 2294  | 2295* | 3631  | 3704  | 3908  |
|          |        | 3932  | 4063  | 4087  | 4109  | 4132  | 4156  | 4181  | 4205  | 4232  | 4296  | 4395  |       |       |
| SREG1    | 001156 | 375#  | 2294* | 2665* | 3165  | 3188  | 3209  | 3235  | 3254  | 3279  | 3301  | 3322  | 3344  | 3366  |
|          |        | 3388  | 3413  | 3434  | 3456  | 3479  | 3502  | 3526  | 3547  | 3566  | 3588  | 3611  | 3651  | 3677  |
|          |        | 3704  | 3727  | 3748  | 3770  | 3793  | 3813  | 3828  | 3846  | 3866  | 3885  | 3908  | 3932  | 3955  |
|          |        | 3973  | 3995  | 4016  | 4040  | 4063  | 4087  | 4109  | 4132  | 4156  | 4181  | 4205  | 4232  | 4253  |
|          |        | 4276  | 4296  | 4321  | 4346  | 4369  | 4395  | 4418  | 4440  | 4461  |       |       |       |       |
| SREG2    | 001160 | 378#  | 2664* | 3165  | 3188  | 3209  | 3235  | 3254  | 3279  | 3301  | 3322  | 3344  | 3366  | 3388  |
|          |        | 3413  | 3434  | 3456  | 3479  | 3502  | 3526  | 3547  | 3566  | 3588  | 3611  | 3651  | 3677  | 3704  |
|          |        | 3727  | 3748  | 3770  | 3793  | 3813  | 3828  | 3846  | 3866  | 3885  | 3908  | 3932  | 3955  | 3973  |
|          |        | 3995  | 4016  | 4040  | 4063  | 4087  | 4109  | 4132  | 4156  | 4181  | 4205  | 4232  | 4253  | 4276  |
|          |        | 4296  | 4321  | 4346  | 4369  | 4395  | 4418  | 4440  | 4461  |       |       |       |       |       |
| SREG3    | 001162 | 381#  | 2666* | 4040  | 4276  | 4440  |       |       |       |       |       |       |       |       |
| SREG4    | 001164 | 384#  | 1306* | 1308* | 1455* | 1461* | 1517* | 1606* | 1654* | 1702* | 1984* | 3704  | 3932  | 3955  |
| SREG5    | 001166 | 387#  | 2662* | 2663* | 3165  | 3188  | 3209  | 3235  | 3254  | 3279  | 3301  | 3322  | 3344  | 3366  |
|          |        | 3388  | 3413  | 3434  | 3456  | 3479  | 3502  | 3526  | 3547  | 3566  | 3588  | 3611  | 3631  | 3651  |
|          |        | 3677  | 3704  | 3727  | 3748  | 3770  | 3793  | 3813  | 3828  | 3846  | 3866  | 3885  | 3908  | 3932  |
|          |        | 3955  | 3973  | 3995  | 4016  | 4040  | 4063  | 4087  | 4109  | 4132  | 4156  | 4181  | 4205  | 4232  |
|          |        | 4253  | 4276  | 4296  | 4321  | 4346  | 4369  | 4395  | 4418  | 4440  | 4461  | 4480  | 4498  | 4516  |
|          |        | 4534  |       |       |       |       |       |       |       |       |       |       |       |       |

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|         |          |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SREG6   | 001170   | 390#  | 2659* | 2660* | 3165  | 3188  | 3209  | 3235  | 3254  | 3279  | 3301  | 3322  | 3344  | 3366  |
|         |          | 3388  | 3413  | 3434  | 3456  | 3479  | 3502  | 3526  | 3547  | 3566  | 3588  | 3611  | 3631  | 3651  |
|         |          | 3677  | 3704  | 3727  | 3748  | 3770  | 3793  | 3813  | 3828  | 3846  | 3866  | 3885  | 3908  | 3932  |
|         |          | 3955  | 3973  | 3995  | 4016  | 4040  | 4063  | 4087  | 4109  | 4132  | 4156  | 4181  | 4205  | 4232  |
|         |          | 4253  | 4276  | 4296  | 4321  | 4346  | 4369  | 4395  | 4418  | 4440  | 4461  | 4480  | 4498  | 4516  |
|         |          | 4534  |       |       |       |       |       |       |       |       |       |       |       |       |
| SREG7   | 001172   | 393#  | 2661* | 3165  | 3188  | 3209  | 3235  | 3254  | 3279  | 3301  | 3322  | 3344  | 3366  | 3388  |
|         |          | 3413  | 3434  | 3456  | 3479  | 3502  | 3526  | 3547  | 3566  | 3588  | 3611  | 3631  | 3651  | 3677  |
|         |          | 3704  | 3727  | 3748  | 3770  | 3793  | 3813  | 3828  | 3846  | 3866  | 3885  | 3908  | 3932  | 3955  |
|         |          | 3973  | 3995  | 4016  | 4040  | 4063  | 4087  | 4109  | 4132  | 4156  | 4181  | 4205  | 4232  | 4253  |
|         |          | 4276  | 4296  | 4321  | 4346  | 4369  | 4395  | 4418  | 4440  | 4461  | 4480  | 4498  | 4516  | 4534  |
|         |          | 3076  |       |       |       |       |       |       |       |       |       |       |       |       |
| SSAVRE= | ***** U  | 2717* | 2723  | 2724* | 2725* | 2743# |       |       |       |       |       |       |       |       |
| SSAVR6  | 014050   | 860   | 2576# |       |       |       |       |       |       |       |       |       |       |       |
| SSCOPE  | 013210   | 17#   | 849#  | 860   | 862   | 864   | 866   | 868   | 869   | 870   | 2241  |       |       |       |
| SSETUP= | 010037   | 17#   | 849#  |       |       |       |       |       |       |       |       |       |       |       |
| SSTUP = | 177777   |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SSVLAD  | 013432   | 2594  | 2623# |       |       |       |       |       |       |       |       |       |       |       |
| SSMR =  | 167400   | 8#    | 29    | 35    | 36    | 37    | 38    | 39    | 40    | 41    | 423   | 424   | 425   | 869   |
|         |          | 870   | 2236  | 2242  | 2256  | 2263  | 2569  | 2570  | 2571  | 2572  | 2585  | 2597  | 2599  | 2600  |
|         |          | 2603  | 2604  | 2605  | 2612  | 2613  | 2614  | 2625  | 2628  | 2631  | 2648  | 2649  | 2650  | 2651  |
|         |          | 2670  | 2677  | 2681  | 2684  | 2691  |       |       |       |       |       |       |       |       |
|         |          | 423#  | 2242* | 2612* | 2619  | 2622* | 2631  |       |       |       |       |       |       |       |
| STIMES  | 001214   | 357#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STKB    | 001140   | 356#  | 857   |       |       |       |       |       |       |       |       |       |       |       |
| STKS    | 001136   | 400#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP0   | 001174   | 403#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP1   | 001176   | 406#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP2   | 001200   | 409#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP3   | 001202   | 412#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP4   | 001204   | 415#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP5   | 001206   | 418#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP6   | 001210   | 421#  |       |       |       |       |       |       |       |       |       |       |       |       |
| STMP7   | 001212   | 9#    | 29    |       |       |       |       |       |       |       |       |       |       |       |
| STN =   | 000100   | 359#  | 2794* | 2796  |       |       |       |       |       |       |       |       |       |       |
| STPB    | 001144   | 363#  | 2771  | 2796  |       |       |       |       |       |       |       |       |       |       |
| STPFLG  | 001151   | 358#  | 2792  | 2796  |       |       |       |       |       |       |       |       |       |       |
| STPS    | 001142   | 864   | 3008# |       |       |       |       |       |       |       |       |       |       |       |
| STRAP   | 014776   | 3041# | 3043  | 3044  | 3055# | 3057  | 3058  | 3060# | 3062  | 3063  | 3065# | 3067  | 3068  | 3070# |
| STRP =  | 000012   | 3072  | 3073  | 3075# |       |       |       |       |       |       |       |       |       |       |
| STRPAD  | 015016   | 3012  | 3052# |       |       |       |       |       |       |       |       |       |       |       |
| STSTNM  | 001102   | 342#  | 2241* | 2292  | 2574  | 2601  | 2623* | 2628  | 2632  | 2663  | 2669  | 2691  |       |       |
| STYPBN= | ***** U  | 3076  |       |       |       |       |       |       |       |       |       |       |       |       |
| STYPDS  | 014170   | 2806# | 3071  | 3074  |       |       |       |       |       |       |       |       |       |       |
| STYPE   | 014062   | 2275  | 2771# | 3042  | 3054  |       |       |       |       |       |       |       |       |       |
| STYPOC  | 014440   | 2899# | 3056  | 3059  |       |       |       |       |       |       |       |       |       |       |
| STYPOB  | 014454   | 2898  | 2901# | 3069  |       |       |       |       |       |       |       |       |       |       |
| STYPOS  | 014414   | 2894# | 3064  |       |       |       |       |       |       |       |       |       |       |       |
| SXTSTR  | 013236   | 2588# |       |       |       |       |       |       |       |       |       |       |       |       |
| SOFILL  | 014537   | 2895# | 2899* | 2909  | 2944# |       |       |       |       |       |       |       |       |       |
| .       | = 040010 | 155#  | 159   | 162#  | 309#  | 335#  | 338#  | 429   | 858   | 870   | 2263  | 2267  | 2438  | 2446  |
|         |          | 2557  | 2559  | 2631  | 2632  | 2691  | 2720  | 2742  | 2796  | 2867# | 2996# | 3164# | 3208# | 3234# |
|         |          | 3253# | 3278# | 3412# | 3525# | 3587# | 3630# | 3769# | 3792# | 3812# | 3931# | 3954# | 3972# | 4062# |
|         |          | 4086# | 4131# | 4180# | 4231# | 4320# | 4345# | 4368# | 4394# | 4460# | 5378# | 5380  | 5381# |       |





|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ADD  | 2291 | 2320 | 2331 | 2379 | 2383 | 2561 | 2781 | 2829 | 2897 | 2907 | 2972 |      |      |      |      |
| ASL  | 2969 | 2970 | 2971 |      |      |      |      |      |      |      |      |      |      |      |      |
| ASLB | 2934 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| BCC  | 2835 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| BEQ  | 878  | 1077 | 1087 | 1104 | 1120 | 1148 | 1179 | 1305 | 1449 | 1454 | 1460 | 1497 | 1507 | 1512 | 1516 |
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|      | 2608 | 2617 | 2668 | 2671 | 2685 | 2688 | 2924 | 2974 | 2979 | 2992 |      |      |      |      |      |
| BGE  | 2620 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| BGT  | 2247 | 2843 | 2931 |      |      |      |      |      |      |      |      |      |      |      |      |
| BHI  | 2606 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| BIC  | 1085 | 1203 | 2244 | 2406 | 2921 |      |      |      |      |      |      |      |      |      |      |
| BICB | 2475 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| BIS  | 992  | 1010 | 1032 | 1053 | 1080 | 1089 | 1101 | 1102 | 1117 | 1118 | 1222 | 1229 | 2465 | 2554 | 2837 |
|      | 2838 | 2926 | 2927 |      |      |      |      |      |      |      |      |      |      |      |      |
| BISB | 2472 | 2960 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| BIT  | 1076 | 1081 | 1086 | 1103 | 1119 | 1138 | 1147 | 1169 | 1178 | 1204 | 1332 | 1496 | 1555 | 1788 | 1808 |
|      | 1819 | 1914 | 1923 | 2558 | 2599 | 2607 | 2614 | 2670 | 2677 | 2684 |      |      |      |      |      |
| BLT  | 2789 | 2826 | 2842 | 2932 |      |      |      |      |      |      |      |      |      |      |      |
| BMI  | 1143 | 1174 | 1200 | 1248 | 1279 | 1337 | 1361 | 1365 | 1415 | 1503 | 1561 | 1802 | 1814 | 1919 | 1979 |
|      | 2586 | 2833 |      |      |      |      |      |      |      |      |      |      |      |      |      |
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| BPL  | 958  | 975  | 1152 | 1183 | 1253 | 1275 | 1389 | 1393 | 1441 | 1445 | 1467 | 1495 | 1528 | 1567 | 1574 |
|      | 1601 | 1622 | 1649 | 1670 | 1697 | 1717 | 1744 | 1755 | 1780 | 1847 | 1883 | 1931 | 1962 | 1975 | 2016 |
|      | 2029 | 2056 | 2073 | 2197 | 2210 | 2490 | 2557 | 2682 | 2772 | 2793 | 2817 | 2847 | 2920 |      |      |
| BR   | 897  | 911  | 925  | 939  | 962  | 979  | 997  | 1015 | 1018 | 1035 | 1040 | 1059 | 1064 | 1067 | 1079 |
|      | 1084 | 1093 | 1109 | 1125 | 1141 | 1145 | 1150 | 1157 | 1172 | 1176 | 1181 | 1188 | 1202 | 1210 | 1225 |
|      | 1232 | 1237 | 1250 | 1258 | 1277 | 1287 | 1313 | 1335 | 1341 | 1363 | 1369 | 1391 | 1397 | 1417 | 1421 |
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|      | 1564 | 1572 | 1578 | 1603 | 1609 | 1613 | 1620 | 1626 | 1651 | 1657 | 1661 | 1668 | 1674 | 1699 | 1705 |
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|      | 1877 | 1881 | 1887 | 1917 | 1921 | 1929 | 1935 | 1964 | 1977 | 1981 | 1987 | 1991 | 1998 | 2018 | 2031 |
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| CLR  | 856  | 872  | 880  | 896  | 910  | 924  | 938  | 955  | 990  | 991  | 1009 | 1012 | 1029 | 1037 | 1051 |
|      | 1052 | 1056 | 1146 | 1177 | 1220 | 1221 | 1234 | 1268 | 1298 | 1382 | 1408 | 1434 | 1456 | 1488 | 1518 |
|      | 1549 | 1565 | 1594 | 1607 | 1642 | 1655 | 1690 | 1703 | 1737 | 1771 | 1793 | 1818 | 1840 | 1890 | 1908 |
|      | 1922 | 1955 | 1985 | 2009 | 2049 | 2059 | 2082 | 2190 | 2216 | 2241 | 2242 | 2274 | 2394 | 2415 | 2462 |
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| CLRB | 2611 | 2849 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| CMP  | 857  | 1304 | 1448 | 1459 | 1506 | 1521 | 1610 | 1658 | 1706 | 1856 | 1860 | 1870 | 1878 | 1988 | 2093 |
|      | 2479 | 2542 | 2595 | 2619 | 2841 |      |      |      |      |      |      |      |      |      |      |
| CMPB | 2292 | 2601 | 2605 | 2784 |      |      |      |      |      |      |      |      |      |      |      |
| COM  | 2350 | 2436 | 2437 | 2444 | 2445 |      |      |      |      |      |      |      |      |      |      |
| DEC  | 1851 | 2077 | 2218 | 2245 | 2396 | 2398 | 2457 | 2477 | 2486 | 2514 | 2531 | 2534 | 2968 |      |      |
| DECB | 2788 | 2919 | 2930 |      |      |      |      |      |      |      |      |      |      |      |      |
| EMT  | 59   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HALT | 159  | 876  | 2372 | 2683 | 2719 | 2741 | 2773 |      |      |      |      |      |      |      |      |
| INC  | 956  | 973  | 2243 | 2439 | 2447 | 2541 | 2618 | 2673 | 2725 | 2827 | 2925 | 2933 |      |      |      |
| INCB | 2623 | 2667 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| IOT  | 60   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| JMP  | 164  | 884  | 2262 | 2287 |      |      |      |      |      |      |      |      |      |      |      |
| JSR  | 882  | 883  | 892  | 906  | 920  | 934  | 952  | 969  | 986  | 988  | 1004 | 1006 | 1025 | 1027 | 1047 |

|       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|       | 1049 | 1074 | 1090 | 1099 | 1106 | 1115 | 1122 | 1134 | 1154 | 1165 | 1185 | 1195 | 1207 | 1216 | 1218 |
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|       | 1709 | 1732 | 1734 | 1735 | 1740 | 1747 | 1769 | 1776 | 1785 | 1798 | 1805 | 1823 | 1835 | 1837 | 1838 |
|       | 1843 | 1866 | 1892 | 1904 | 1906 | 1911 | 1926 | 1936 | 1952 | 1954 | 1958 | 1970 | 1992 | 2006 | 2008 |
|       | 2012 | 2024 | 2032 | 2046 | 2048 | 2052 | 2064 | 2068 | 2085 | 2106 | 2108 | 2118 | 2120 | 2129 | 2131 |
|       | 2140 | 2142 | 2151 | 2153 | 2162 | 2164 | 2176 | 2178 | 2187 | 2189 | 2193 | 2205 | 2217 | 2258 | 2275 |
|       | 2341 | 2345 | 2355 | 2359 | 2363 | 2369 | 2373 | 2392 | 2400 | 2404 | 2405 | 2409 | 2411 | 2416 | 2423 |
|       | 2452 | 2459 | 2484 | 2498 | 2499 | 2503 | 2508 | 2509 | 2512 | 2516 | 2519 | 2524 | 2530 | 2533 | 2536 |
|       | 2583 | 2584 | 2679 | 2783 | 2790 |      |      |      |      |      |      |      |      |      |      |
| MOV   | 855  | 859  | 860  | 861  | 862  | 863  | 864  | 865  | 866  | 867  | 868  | 870  | 871  | 881  | 889  |
|       | 890  | 891  | 894  | 903  | 904  | 905  | 908  | 917  | 918  | 919  | 922  | 931  | 932  | 933  | 936  |
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|       | 1136 | 1156 | 1164 | 1167 | 1187 | 1194 | 1197 | 1209 | 1215 | 1226 | 1227 | 1236 | 1244 | 1251 | 1257 |
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|       | 1886 | 1888 | 1889 | 1891 | 1903 | 1909 | 1928 | 1934 | 1951 | 1956 | 1965 | 1966 | 1967 | 1984 | 1997 |
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| MOV B | 869  | 1474 | 1535 | 1581 | 1629 | 1677 | 1724 | 1762 | 1783 | 1803 | 1894 | 1938 | 1940 | 1968 | 2022 |
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| NOP   | 195  | 850  | 851  | 852  | 853  | 875  | 993  | 1011 | 1033 | 1054 | 1063 | 1137 | 1168 | 1198 | 1223 |
|       | 1230 | 2167 | 2168 | 2169 | 2259 | 2260 | 2261 | 2281 | 2282 | 2283 | 2284 | 2285 |      |      |      |
| RESET | 879  | 2286 | 2352 |      |      |      |      |      |      |      |      |      |      |      |      |
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| RTI   | 1062 | 1228 | 1475 | 1536 | 1582 | 1630 | 1678 | 1725 | 1763 | 1853 | 1895 | 1939 | 1941 | 2000 | 2040 |
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| RTS   | 2298 | 2316 | 2318 | 2327 | 2339 | 2346 | 2354 | 2367 | 2374 | 2388 | 2401 | 2412 | 2420 | 2427 | 2442 |
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| SUB   | 1031 | 2272 | 2315 | 2660 | 2675 | 2825 |      |      |      |      |      |      |      |      |      |
| TRAP  | 3043 | 3057 | 3062 | 3067 | 3072 |      |      |      |      |      |      |      |      |      |      |
| TST   | 877  | 895  | 909  | 923  | 937  | 1142 | 1151 | 1173 | 1182 | 1199 | 1274 | 1336 | 1360 | 1364 | 1388 |
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|       | 1930 | 1961 | 1974 | 1982 | 2015 | 2028 | 2055 | 2072 | 2080 | 2089 | 2196 | 2209 | 2371 | 2481 | 2592 |
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# H10

|        | 957  | 974  | 1247 | 1252 | 1278 | 1414 | 1444 | 1502 | 1978 | 2489 | 2556 | 2603 | 2771 | 2792 | 2832 |
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| .ASCIZ | 426  | 427  | 3077 | 3081 | 3087 |      |      |      |      |      |      |      |      |      |      |
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| .BLKW  | 2867 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
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|        | 5050 | 5053 | 5056 | 5059 | 5062 | 5065 | 5068 | 5071 | 5074 | 5077 | 5080 | 5083 | 5086 | 5089 | 5092 |
|        | 5095 | 5098 | 5101 | 5104 | 5107 | 5110 | 5113 | 5116 | 5119 | 5122 | 5125 | 5128 | 5131 | 5134 | 5137 |
|        | 5140 | 5143 | 5146 | 5149 | 5152 | 5155 | 5158 | 5161 | 5164 | 5167 | 5170 | 5173 | 5176 | 5179 | 5182 |
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|        | 5230 | 5233 | 5236 | 5239 | 5242 | 5245 | 5248 | 5251 | 5254 | 5257 | 5260 | 5263 | 5266 | 5269 | 5272 |
|        | 5275 | 5278 | 5281 | 5284 | 5287 | 5290 | 5293 | 5296 | 5299 | 5302 | 5305 | 5308 | 5311 | 5314 | 5317 |
|        | 5320 | 5323 | 5326 | 5329 | 5332 | 5335 | 5338 | 5341 | 5344 | 5347 | 5350 | 5354 | 5357 | 5360 | 5363 |
|        | 5366 | 5369 | 5372 | 5376 |      |      |      |      |      |      |      |      |      |      |      |
| .ENABL | 1    | 5    | 10   |      |      |      |      |      |      |      |      |      |      |      |      |
| .END   | 5382 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| .ENDC  | 17   | 24   | 38   | 40   | 41   | 42   | 59   | 135  | 149  | 165  | 329  | 339  | 365  | 395  | 423  |
|        | 424  | 425  | 426  | 459  | 462  | 849  | 859  | 860  | 862  | 864  | 866  | 868  | 869  | 870  | 2231 |
|        | 2234 | 2235 | 2236 | 2238 | 2241 | 2247 | 2250 | 2251 | 2256 | 2263 | 2266 | 2267 | 2566 | 2575 | 2585 |
|        | 2587 | 2598 | 2601 | 2603 | 2605 | 2607 | 2614 | 2618 | 2623 | 2628 | 2631 | 2632 | 2645 | 2653 | 2667 |
|        | 2674 | 2680 | 2681 | 2691 | 2694 | 2717 | 2727 | 2740 | 2747 | 2750 | 2799 | 2871 | 2949 | 2968 | 2997 |
|        | 3000 | 3009 | 3012 | 3053 | 3056 | 3058 | 3063 | 3068 | 3071 | 3073 | 3076 |      |      |      |      |
| .EQUIV | 59   | 60   | 62   | 77   | 78   | 97   | 98   | 99   | 100  | 101  | 102  | 103  | 104  | 105  | 106  |
|        | 125  | 126  | 127  | 128  | 129  | 130  | 131  | 132  | 133  | 134  |      |      |      |      |      |
| .EVEN  | 2746 | 2996 | 3164 | 3187 | 3208 | 3234 | 3253 | 3278 | 3300 | 3321 | 3343 | 3365 | 3387 | 3412 | 3433 |
|        | 3455 | 3478 | 3501 | 3525 | 3546 | 3565 | 3587 | 3610 | 3630 | 3650 | 3676 | 3703 | 3726 | 3747 | 3769 |
|        | 3792 | 3812 | 3827 | 3845 | 3865 | 3884 | 3907 | 3931 | 3954 | 3972 | 3994 | 4015 | 4039 | 4062 | 4086 |
|        | 4108 | 4131 | 4155 | 4180 | 4204 | 4231 | 4252 | 4275 | 4295 | 4320 | 4345 | 4368 | 4394 | 4417 | 4439 |
|        | 4460 | 4479 | 4497 | 4515 | 4533 | 5378 |      |      |      |      |      |      |      |      |      |
| .IF    | 17   | 20   | 38   | 39   | 40   | 41   | 42   | 57   | 107  | 135  | 160  | 328  | 338  | 364  | 365  |
|        | 395  | 423  | 424  | 425  | 429  | 461  | 849  | 855  | 859  | 860  | 862  | 864  | 866  | 868  | 869  |
|        | 870  | 2230 | 2234 | 2235 | 2236 | 2237 | 2238 | 2240 | 2246 | 2249 | 2251 | 2256 | 2262 | 2263 | 2565 |
|        | 2574 | 2577 | 2585 | 2597 | 2599 | 2600 | 2603 | 2604 | 2605 | 2614 | 2616 | 2625 | 2631 | 2632 | 2644 |
|        | 2652 | 2655 | 2670 | 2677 | 2679 | 2680 | 2681 | 2684 | 2691 | 2693 | 2710 | 2727 | 2739 | 2740 | 2744 |
|        | 2749 | 2798 | 2870 | 2948 | 2967 | 2983 | 2999 | 3008 | 3012 | 3042 | 3044 | 3056 | 3058 | 3063 | 3068 |

|        |                                    |                                    |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                              |                              |
|--------|------------------------------------|------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|
| .IFF   | 3071<br>38<br>2263<br>2949         | 3073<br>40<br>2566<br>2968         | 3076<br>41<br>2598<br>2997  | 42<br>2601<br>3000          | 57<br>2605<br>3009          | 329<br>2631                 | 339<br>2645                 | 364<br>2652                 | 462<br>2670                 | 860<br>2691                 | 2231<br>2694                | 2237<br>2740                | 2241<br>2750                | 2247<br>2799                 | 2250<br>2871                 |
| .IFT   | 2613                               | 2680                               |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                              |                              |
| .IFTF  | 2611                               | 2679                               |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                              |                              |
| .IIF   | 19<br>2241<br>2649                 | 24<br>2242<br>2650                 | 29<br>2254<br>2651          | 35<br>2263<br>2691          | 36<br>2267<br>2796          | 37<br>2569<br>2965          | 38<br>2570<br>2990          | 159<br>2571<br>3053         | 429<br>2572<br>3058         | 860<br>2612<br>3063         | 862<br>2613<br>3068         | 868<br>2628<br>3073         | 869<br>2631                 | 870<br>2632                  | 2235<br>2648                 |
| .IRP   | 17                                 | 429                                | 849                         | 2577                        | 2655                        | 2701                        | 2711                        | 2728                        | 2807                        | 2851                        |                             |                             |                             |                              |                              |
| .LIST  | 1<br>395<br>3063                   | 6<br>401<br>3065                   | 17<br>404<br>3068           | 149<br>407<br>3070          | 159<br>410<br>3073          | 364<br>413<br>3075          | 367<br>416                  | 373<br>419                  | 376<br>422                  | 379<br>849                  | 382<br>3041                 | 385<br>3053                 | 388<br>3055                 | 391<br>3058                  | 394<br>3060                  |
| .MACR  | 249                                | 252                                | 255                         | 258                         | 261                         | 264                         | 267                         | 270                         | 273                         | 276                         | 279                         | 282                         | 285                         | 290                          | 296                          |
| .MACRO | 1                                  | 42                                 | 215                         | 245                         | 303                         | 313                         | 320                         | 2632                        | 3015                        | 3021                        | 3038                        |                             |                             |                              |                              |
| .MCALL | 11                                 | 12                                 | 13                          | 14                          | 15                          | 149                         |                             |                             |                             |                             |                             |                             |                             |                              |                              |
| .NLIST | 1<br>395<br>3063                   | 7<br>401<br>3065                   | 17<br>404<br>3068           | 149<br>407<br>3070          | 159<br>410<br>3073          | 364<br>413<br>3075          | 367<br>416                  | 373<br>419                  | 376<br>422                  | 379<br>849                  | 382<br>3041                 | 385<br>3053                 | 388<br>3055                 | 391<br>3058                  | 394<br>3060                  |
| .PAGE  | 326                                | 459                                |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                              |                              |
| .REPT  | 159                                | 368                                | 396                         | 4586                        |                             |                             |                             |                             |                             |                             |                             |                             |                             |                              |                              |
| .SBTTL | 31<br>1043<br>1425<br>2125<br>3001 | 55<br>1070<br>1479<br>2136<br>3045 | 153<br>1095<br>1539<br>2147 | 161<br>1111<br>1585<br>2158 | 330<br>1130<br>1633<br>2172 | 463<br>1161<br>1681<br>2183 | 885<br>1191<br>1728<br>2226 | 899<br>1212<br>1765<br>2232 | 914<br>1241<br>1831<br>2567 | 928<br>1262<br>1900<br>2646 | 944<br>1292<br>1948<br>2695 | 965<br>1317<br>2002<br>2751 | 982<br>1345<br>2042<br>2800 | 1000<br>1372<br>2102<br>2872 | 1021<br>1400<br>2114<br>2950 |
| .TITLE | 19                                 |                                    |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |                              |                              |
| .WORD  | 159<br>372<br>421                  | 310<br>375<br>455                  | 311<br>378<br>456           | 341<br>381<br>2246          | 344<br>384<br>2249          | 345<br>387<br>2976          | 346<br>390<br>2981          | 347<br>393                  | 350<br>400                  | 351<br>403                  | 352<br>406                  | 353<br>409                  | 354<br>412                  | 355<br>415                   | 365<br>418                   |

ERRORS DETECTED: 0  
DEFAULT GLOBALS GENERATED: 0

\*DZTCBC, DZTCBC, SEQ/SOL/CRF/DS:ERFZ/EN:ABS=DSKM:SYSMAC.SML, DSKM:DZTCBC.P11  
RUN-TIME: 41 51 10 SECONDS  
RUN-TIME RATIO: 133/103=1.2  
CORE USED: 23K (46 PAGES)

