

TC11, TU56

TC2-TC11 TEST #2
CZTCBEO

AH-9378E-MC
FICHE 1 OF 1

JUN 1980
COPYRIGHT © 72.80
MADE IN USA



IDENTIFICATION

SEQ 0001

PRODUCT CODE: AC-9377E-MC
PRODUCT NAME: CZTCBE0 TC2 - TC11 TEST 2
DATE: MAR 1980
MAINTAINER: ENGINEERING
AUTHOR: L. R. KOLLER

COPYRIGHT (C) 1972, 1980 DIGITAL EQUIPMENT CORP., MAYNARD, MASS.

THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT CORPORATION. DIGITAL EQUIPMENT CORPORATION ASSUMES NO RESPONSIBILITY FOR ANY ERRORS THAT MAY APPEAR IN THIS MANUAL.

THE SOFTWARE DESCRIBED IN THIS DOCUMENT IS FURNISHED UNDER A LICENSE AND MAY ONLY BE USED OR COPIED IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE.

DIGITAL EQUIPMENT CORPORATION ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS SOFTWARE ON EQUIPMENT THAT IS NOT SUPPLIED BY DIGITAL.

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. IF CACHE MEMORY IS PRESENT IN THE PROCESSOR, IT WILL BE TURNED OFF BEFORE THE TESTS ARE RUN.

1.1 SYSTEM REQUIREMENTS
HARDWARE REQUIREMENTS

- A) PDP-11 SYSTEM (12k 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.

1.2 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 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)

2.2 STARTING PROCEDURE

- A) UNIT 0: REMOTE/WRITE LOCK/. ALL OTHER UNITS OFF.
- B) WALL SWITCH ON, WRTM SWITCH OFF. WALL SWITCH IS LOCATED BEHIND BLANK PANEL ABOVE TU56.
- 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.

2.3 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.

3.0 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.

3.1 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 IUT 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 UNCONDITIONAL ERROR HALT ARE NOT WITHIN THE SCOPE OF THIS PROGRAM.

3.2 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:

- LOOK UP THE ADDRESS REFERENCED BY PC OYYYYY IN THE LISTING.
- OPPOSITE THE PC VALUE AN 'ERROR' STATEMENT WILL BE FOUND, AND IN THE COMMENTS SECTION, A DESCRIPTION OF THE ERROR.
- 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 XXXXX 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 FUNCTION OF SW15 AND SW13

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

SR7-SRO 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 SRO HAVE NO EFFECT ON THE OPERATION OF THE PROGRAM

4.0 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

ECO TABLE

CHGE1 - ADDED ROUTINE TO DISABLE CACHE

5.0 PROGRAM LISTING

```
1  
2  
3 .ABS  
4 .ENABL AMA  
5 .LIST MC,MD,BIN,LD,SEQ,ME  
6 .NLIST CND  
7 $SWR=167400  
8 $TN=0  
9 .ENABL ABS  
10 .MCALL .HEADER,.$SCATCH,.$SEOP,.$EQUAT  
11 .MCALL .SWRHI,.$SWRLO,.$SCOPE,.$SETUP  
12 .MCALL .$TYPOCT,.$TYPDEC,.$STRAP,.$POWER  
13 .MCALL .$ERROR,.$TYPE,STARS,.$ERRTYP  
14 .MCALL .SCMTAG  
15 .SETUP <.$SCOPE,.$SEOP,.$POWER,.$STRAP,.$ERROR>  
16 .LIST  
17 .HEADER <CZTCBEO TC2-TC11 TEST #2>,<1972,1979>,<J. COMEAU>  
18 .TITLE CZTCBEO TC2-TC11 TEST #2  
19 ;*COPYRIGHT (C) 1972,1979  
20 ;*DIGITAL EQUIPMENT CORP.  
21 ;*MAYNARD, MASS. 01754  
22 ;*  
23 ;*PROGRAM BY J. COMEAU  
24 ;*  
25 ;*THIS PROGRAM WAS ASSEMBLED USING THE PDP-11 MAINDEC SYSMAC  
26 ;*PACKAGE (MAINDEC-11-DZQAC-C3), JAN 19, 1977.  
27 ;*  
28 .SWRHI  
29 .SBTTL OPERATIONAL SWITCH SETTINGS  
30 ;*  
31 ;* SWITCH USE  
32 ;* -----  
33 ;* 15 HALT ON ERROR  
34 ;* 14 LOOP ON TEST  
35 ;* 13 INHIBIT ERROR TYPEOUTS  
36 ;* 11 INHIBIT ITERATIONS  
37 ;* 10 BELL ON ERROR  
38 ;* 9 LOOP ON ERROR  
39 .LIST  
40 ;* 8 LOOP ON TEST IN SWR<7:0>  
41 .MACRO .SWRLO S07,S06,S05,S04,S03,S02,S01,S00  
42 .IIF NB <S07>,* 7 S07  
43 .IIF NB <S06>,* 6 S06  
44 .IIF NB <S05>,* 5 S05  
45 .IIF NB <S04>,* 4 S04  
46 .IIF NB <S03>,* 3 S03  
47 .IIF NB <S02>,* 2 S02  
48 .IIF NB <S01>,* 1 S01  
49 .IIF NB <S00>,* 0 S00  
50 .ENDM .SWRLO  
51 ;* 7-0 # OF TEST TO LOOP ON IF SWR<8> IS SET  
52 .EQUAT  
53 .SBTTL BASIC DEFINITIONS  
54 ;*INITIAL ADDRESS OF THE STACK POINTER *** 1100 ***  
55 STACK= 1100  
56 .EQUIV EMT,ERROR ;;BASIC DEFINITION OF ERROR CALL
```



```

57      .EQUIV IOT,SCOPE      ;;BASIC DEFINITION OF SCOPE CALL
58
59      ;*MISCELLANEOUS DEFINITIONS
60      HT= 11                ;;CODE FOR HORIZONTAL TAB
61      LF= 12                ;;CODE FOR LINE FEED
62      CR= 15                ;;CODE FOR CARRIAGE RETURN
63      CRLF= 200             ;;CODE FOR CARRIAGE RETURN-LINE FEED
64      PS= 177776            ;;PROCESSOR STATUS WORD
65      .EQUIV PS,PSW
66      STKLM= 177774          ;;STACK LIMIT REGISTER
67      PIRQ= 177772           ;;PROGRAM INTERRUPT REQUEST REGISTER
68      DSWR= 177570           ;;HARDWARE SWITCH REGISTER
69      DDISP= 177570          ;;HARDWARE DISPLAY REGISTER
70
71      ;*GENERAL PURPOSE REGISTER DEFINITIONS
72      R0= %0                 ;;GENERAL REGISTER
73      R1= %1                 ;;GENERAL REGISTER
74      R2= %2                 ;;GENERAL REGISTER
75      R3= %3                 ;;GENERAL REGISTER
76      R4= %4                 ;;GENERAL REGISTER
77      R5= %5                 ;;GENERAL REGISTER
78      R6= %6                 ;;GENERAL REGISTER
79      R7= %7                 ;;GENERAL REGISTER
80      SP= %6                 ;;STACK POINTER
81      PC= %7                 ;;PROGRAM COUNTER
82
83      ;*PRIORITY LEVEL DEFINITIONS
84      PR0= 0                 ;;PRIORITY LEVEL 0
85      PR1= 40                ;;PRIORITY LEVEL 1
86      PR2= 100               ;;PRIORITY LEVEL 2
87      PR3= 140               ;;PRIORITY LEVEL 3
88      PR4= 200               ;;PRIORITY LEVEL 4
89      PR5= 240               ;;PRIORITY LEVEL 5
90      PR6= 300               ;;PRIORITY LEVEL 6
91      PR7= 340               ;;PRIORITY LEVEL 7
92
93      ;*'SWITCH REGISTER' SWITCH DEFINITIONS
94      SW15= 100000
95      SW14= 40000
96      SW13= 20000
97      SW12= 10000
98      SW11= 4000
99      SW10= 2000
100     SW09= 1000
101     SW08= 400
102     SW07= 200
103     SW06= 100
104     SW05= 40
105     SW04= 20
106     SW03= 10
107     SW02= 4
108     SW01= 2
109     SW00= 1
110     .EQUIV SW09,SW9
111     .EQUIV SW08,SW8
112     .EQUIV SW07,SW7

```



```
113 .EQUIV SW06,SW6
114 .EQUIV SW05,SW5
115 .EQUIV SW04,SW4
116 .EQUIV SW03,SW3
117 .EQUIV SW02,SW2
118 .EQUIV SW01,SW1
119 .EQUIV SW00,SW0
120
121 ;*DATA BIT DEFINITIONS (BIT00 TO BIT15)
122 100000 BIT15= 100000
123 040000 BIT14= 40000
124 020000 BIT13= 20000
125 010000 BIT12= 10000
126 004000 BIT11= 4000
127 002000 BIT10= 2000
128 001000 BIT09= 1000
129 000400 BIT08= 400
130 000200 BIT07= 200
131 000100 BIT06= 100
132 000040 BIT05= 40
133 000020 BIT04= 20
134 000010 BIT03= 10
135 000004 BIT02= 4
136 000002 BIT01= 2
137 000001 BIT00= 1
138 .EQUIV BIT09,BIT9
139 .EQUIV BIT08,BIT8
140 .EQUIV BIT07,BIT7
141 .EQUIV BIT06,BIT6
142 .EQUIV BIT05,BIT5
143 .EQUIV BIT04,BIT4
144 .EQUIV BIT03,BIT3
145 .EQUIV BIT02,BIT2
146 .EQUIV BIT01,BIT1
147 .EQUIV BIT00,BIT0
148
149 ;*BASIC "CPU" TRAP VECTOR ADDRESSES
150 000004 ERRVEC= 4 ;;TIME OUT AND OTHER ERRORS
151 000010 RESVEC= 10 ;;RESERVED AND ILLEGAL INSTRUCTIONS
152 000014 TBITVEC=14 ;;'T' BIT
153 000014 TRTVEC= 14 ;;TRACE TRAP
154 000014 BPTVEC= 14 ;;BREAKPOINT TRAP (BPT)
155 000020 IOTVEC= 20 ;;INPUT/OUTPUT TRAP (IOT) **SCOPE**
156 000024 PWRVEC= 24 ;;POWER FAIL
157 000030 EMTVEC= 30 ;;EMULATOR TRAP (EMT) **ERROR**
158 000034 TRAPVEC=34 ;;'TRAP' TRAP
159 000060 TKVEC= 60 ;;TTY KEYBOARD VECTOR
160 000064 TPVEC= 64 ;;TTY PRINTER VECTOR
161 000240 PIRQVEC=240 ;;PROGRAM INTERRUPT REQUEST VECTOR
162 .LIST
163 ;MISCELLANEOUS EQUATES
164 000000 .SCATCH START
165 .SBTTL TRAP CATCHER
166
167 000000 .=0
168 ;*ALL UNUSED LOCATIONS FROM 4 - 776 CONTAIN A '".+2,HALT'"
```

```
169 ;*SEQUENCE TO CATCH ILLEGAL TRAPS AND INTERRUPTS
170 ;*LOCATION 0 CONTAINS 0 TO CATCH IMPROPERLY LOADED VECTORS
171 .LIST
172      . =174
173 000174 000000 DISPREG: .WORD 0 ;;SOFTWARE DISPLAY REGISTER
174 000176 000000 SWREG: .WORD 0 ;;SOFTWARE SWITCH REGISTER
175
176 000200 000137 002314 .SBTTL STARTING ADDRESS(ES)
177      JMP @#START ;;JUMP TO STARTING ADDRESS OF PROGRAM
178 ;EQUATES
179      SPBOT=1000
180      NOP=240
181      OPEN=0
182      MANUAL=BIT15
183      PUSH=005746
184      PUSH2=024646
185      POPSP=005726
186      POPSP2=022626
187      BELL=007
188      TLAST=-1
189      TRC=3
190      RTSPC=207
191      I=40
192      X=-1
193      A=BIT15
194      B=BIT14
195      C=BIT13
196      V0=0
197      V1=4
198      V2=10
199      V3=14
200      V4=20
201      V5=24
202      V6=30
203      V7=34
204      MAINT=BIT13
205      DINH=BIT12
206      REV=BIT11
207 000204 000240 FWD=0
208      NOP
209      U0=0
210      U1=BIT8
211      U2=BIT9
212      U3=BIT9!BIT8
213      U4=BIT10
214      U5=BIT10!BIT8
215      U6=BIT10!BIT9
216      U7=BIT10!BIT9!BIT8
217      IE=BIT6
218      SAT=0
219      RNUM=BIT1
220      RDATA=BIT2
221      RALL=BIT2!BIT1
222      SST=BIT3
223      WRTM=BIT3!BIT1
224      WDATA=BIT3!BIT2
225      WALL=BIT3!BIT2!BIT1
```

```
225      000001      DO=BIT0
226      000000      EMTX=0
227      .MACRO      ADITAG
228      TCST:      177340      ;TC11 STATUS REGISTER.
229      TCCM:      177342      ;TC11 COMMAND REGISTER.
230      TCWC:      177344      ;TC11 WORD COUNT REGISTER.
231      TCBA:      177346      ;TC11 BUS ADDRESS REGISTER.
232      TCDT:      177350      ;TC11 DATA REGISTER.
233      TCVTR:      214        ;TC11 INTERRUPT VECTOR
234      TCLVL:      300        ;TC11 INTERRUPT PRIORITY LEVEL.
235      TPS:      177564      ;LSP CSR
236      TPB:      177566      ;LSP BUFFER
237      CODCAL: OPEN
238      RTNNO: OPEN
239      NXTST: OPEN
240      CURTST: OPEN
241      CRBUF: OPEN
242      CRBUFA: OPEN
243      CTPA: OPEN
244      SBDAT1: 50505
245      127272
246      SBDAT2: 72727
247      105050
248      SBDAT3: 72727
249      105056
250      POWPUS: .WORD 000000
251      POWPOP: .WORD 000000
252      TCCMT: OPEN
253      TCSTT: OPEN
254      CCR:      177746      ;CACHE CONTROL REGISTER
255      .ENDM      ADITAG
256
257      ;
258      .MACRO      SETRAP
259      MOV      #TRAP0,a#4      ;SETUP FATAL TRAP VECTOR JUST IN CASE
260      MOV      #340,a#6      ;NO INTERRUPTS WHILE SERVICING FATAL ERRORS
261      .ENDM      SETRAP
262      .MACR      C55
263      .BYTE      1,0,1,1,0,1      ;MTK CODE 55. REV END ZONE MARK.
264      .ENDM
265      .MACR      C25
266      .BYTE      0,1,0,1,0,1      ;MTK CODE 25. EXTENSION MARK.
267      .ENDM
268      .MACR      C26      B0,B1,B2,B3,B4,B5
269      .BYTE      0!B0,1!B1,0!B2,1!B3,1!B4,0!B5      ;FWD BLOCK MARK.
270      .ENDM
271      .MACR      C32      B0,B1,B2,B3,B4,B5
272      .BYTE      0!B0,1!B1,1!B2,0!B3,1!B4,0!B5      ;REV GUARD.
273      .ENDM
274      .MACR      C10      B0,B1,B2,B3,B4,B5
275      .BYTE      0!B0,0!B1,1!B2,0!B3,0!B4,0!B5      ;MTK CODE 10.
276      .ENDM
277      .MACR      C70      B0,B1,B2,B3,B4,B5
278      .BYTE      1!B0,1!B1,1!B2,0!B3,0!B4,0!B5      ;MTK CODE 70. DATA MARK.
279      .ENDM
280      .MACR      C73      B0,B1,B2,B3,B4,B5
```

```

281 .BYTE I!B0,I!B1,I!B2,0!B3,I!B4,I!B5 ;MTK CODE 73. DATA MARK.
282 .ENDM
283 .MACR C51 B0,B1,B2,B3,B4,B5
284 .BYTE I!B0,0!B1,I!B2,0!B3,0!B4,I!B5 ;MTK CODE 51. FWD GUARD.
285 .ENDM
286 .MACR C45 B0,B1,B2,B3,B4,B5
287 .BYTE I!B0,0!B1,0!B2,I!B3,0!B4,I!B5 ;MTK CODE 45. REV BLOCK MARK.
288 .ENDM
289 .MACR C22
290 .BYTE 0,I,0,0,I,0 ;MTK CODE 22. FWD END ZONE.
291 .ENDM
292 .MACR CEND
293 .BYTE -1
294 .ENDM
295 .MACR EMTE
296 .BYTE I,I,I,0,0,I
297 .ENDM
298 .MACR MTCOD MTADR,CNT
299 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
300 MTADR ;ADDRESS OF MARK TRACK CODES.
301 CNT ;MARK TRACK CODE COUNT.
302 .ENDM
303 .MACR MTCOE CALADR,MTADR,CNT
304 JSR R5,LMTCOE ;CALL LOAD MT CODES SUBROUTINE.
305 CALADR ;ADDR TO GO AFTER EACH CODE PASSED.
306 MTADR ;ADDRESS OF MARK TRACK CODES.
307 CNT ;MARK TRACK CODE COUNT.
308 .ENDM
309 .MACR EMTDEF NAMEA,NAMEB
310 .WORD NAMEB ;POINTER FOR EMT CALL NAMEA
311 .NLIST
312 NAMEA=EMT+EMTX
313 EMTX=EMTX+1
314 .LIST
315 .ENDM
316 .MACRO SCOMAC
317 CLR @TCCM
318 CLR 2(SP) ;PS TO =0 AFTER WE EXIT THE SCOPE ROUTINE
319 JSR PC,SRSETT
320 JSR PC,RSTMTK
321 .ENDM SCOMAC
322 000050 000050 .=50
323 000050 000000
324 000052 000000
325 000054
326 .MACRO $SCMREG A,B
327 $REG'A: .WORD 0 ;;CONTAINS (($REGAD)+'B)
328 .NLIST
329 $CM1=$CM1+1
330 $CM2=$CM2+2
331 .LIST
332 .ENDM $SCMREG
333 .MACRO $SCMTMP A
334 $TMP'A: .WORD 0 ;;USER DEFINED
335 .NLIST
336 $CM4=$CM4+1

```


CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 M 1
STARTING ADDRESS(ES) PAGE 8

SEQ 0012

337
338
339

.LIST
.ENDM \$\$CMTMP
.PAGE

```
340 .SBTTL COMMON TAGS
341
342 000054 STARS
343 ::*****
344 ::*THIS TABLE CONTAINS VARIOUS COMMON STORAGE LOCATIONS
345 ::*USED IN THE PROGRAM.
346
347      .=1100
348 001100 $CMTAG:      ::START OF COMMON TAGS
349 001100 $PASS:      ::CONTAINS PASS COUNT
350 001102 $STNM: .BYTE 0 ::CONTAINS THE TEST NUMBER
351 001103 $ERFLG: .BYTE 0 ::CONTAINS ERROR FLAG
352 001104 $ICNT: .WORD 0 ::CONTAINS SUBTEST ITERATION COUNT
353 001106 $LPADR: .WORD 0 ::CONTAINS SCOPE LOOP ADDRESS
354 001110 $LPERR: .WORD 0 ::CONTAINS SCOPE RETURN FOR ERRORS
355 001112 $ERTTL: .WORD 0 ::CONTAINS TOTAL ERRORS DETECTED
356 001114 $ITEMB: .BYTE 0 ::CONTAINS ITEM CONTROL BYTE
357 001115 $ERMAX: .BYTE 1 ::CONTAINS MAX. ERRORS PER TEST
358 001116 $ERRPC: .WORD 0 ::CONTAINS PC OF LAST ERROR INSTRUCTION
359 001120 $GDADR: .WORD 0 ::CONTAINS ADDRESS OF 'GOOD' DATA
360 001122 $BDADR: .WORD 0 ::CONTAINS ADDRESS OF 'BAD' DATA
361 001124 $GDDAT: .WORD 0 ::CONTAINS 'GOOD' DATA
362 001126 $BDDAT: .WORD 0 ::CONTAINS 'BAD' DATA
363 001130      .WORD 0 ::RESERVED--NOT TO BE USED
364 001132      .WORD 0
365 001134 $AUTOB: .BYTE 0 ::AUTOMATIC MODE INDICATOR
366 001135 $INTAG: .BYTE 0 ::INTERRUPT MODE INDICATOR
367 001136      .WORD 0
368 001140 $SWR: .WORD DSWR ::ADDRESS OF SWITCH REGISTER
369 001142 $DISPLAY: .WORD DDISP ::ADDRESS OF DISPLAY REGISTER
370 001144 $TKS: 177560 ::TTY KBD STATUS
371 001146 $TKB: 177562 ::TTY KBD BUFFER
372 001150 $TPS: 177564 ::TTY PRINTER STATUS REG. ADDRESS
373 001152 $TPB: 177566 ::TTY PRINTER BUFFER REG. ADDRESS
374 001154 $NULL: .BYTE 0 ::CONTAINS NULL CHARACTER FOR FILLS
375 001155 $FILLS: .BYTE 2 ::CONTAINS # OF FILLER CHARACTERS REQUIRED
376 001156 $FILLC: .BYTE 12 ::INSERT FILL CHARS. AFTER A 'LINE FEED'
377 001157 $TPFLG: .BYTE 0 ::'TERMINAL AVAILABLE' FLAG (BIT<07>=0=YES)
378 .LIST
379 001160 $REGAD: .WORD 0 ::CONTAINS THE ADDRESS FROM
380      .LIST ::WHICH ($REG0) WAS OBTAINED
381
382      .REPT $CM3
383      $$CMREG \SCM1,\SCM2
384      .ENDR
385 001162 $REG0: $$CMREG \SCM1,\SCM2
386 001162      .WORD 0 ::CONTAINS (($REGAD)+0)
387 .LIST
388 001164 $REG1: $$CMREG \SCM1,\SCM2
389 001164      .WORD 0 ::CONTAINS (($REGAD)+2)
390 .LIST
391 001166 $REG2: $$CMREG \SCM1,\SCM2
392 001166      .WORD 0 ::CONTAINS (($REGAD)+4)
393 .LIST
394 001170 $REG3: $$CMREG \SCM1,\SCM2
395 001170      .WORD 0 ::CONTAINS (($REGAD)+6)
```

```

396 .LIST
397 001172 $SCMREG \SCM1,\SCM2
398 001172 000000 $REG4: .WORD 0 ;;CONTAINS (($REGAD)+10)
399 .LIST
400 001174 $SCMREG \SCM1,\SCM2
401 001174 000000 $REG5: .WORD 0 ;;CONTAINS (($REGAD)+12)
402 .LIST
403 001176 $SCMREG \SCM1,\SCM2
404 001176 000000 $REG6: .WORD 0 ;;CONTAINS (($REGAD)+14)
405 .LIST
406 001200 $SCMREG \SCM1,\SCM2
407 001200 000000 $REG7: .WORD 0 ;;CONTAINS (($REGAD)+16)
408 .LIST
409 .LIST
410 .REPT 10
411 $SCMTMP \SCM4
412 .ENDR
413 001202 $SCMTMP \SCM4
414 001202 000000 $TMP0: .WORD 0 ;;USER DEFINED
415 .LIST
416 001204 $SCMTMP \SCM4
417 001204 000000 $TMP1: .WORD 0 ;;USER DEFINED
418 .LIST
419 001206 $SCMTMP \SCM4
420 001206 000000 $TMP2: .WORD 0 ;;USER DEFINED
421 .LIST
422 001210 $SCMTMP \SCM4
423 001210 000000 $TMP3: .WORD 0 ;;USER DEFINED
424 .LIST
425 001212 $SCMTMP \SCM4
426 001212 000000 $TMP4: .WORD 0 ;;USER DEFINED
427 .LIST
428 001214 $SCMTMP \SCM4
429 001214 000000 $TMP5: .WORD 0 ;;USER DEFINED
430 .LIST
431 001216 $SCMTMP \SCM4
432 001216 000000 $TMP6: .WORD 0 ;;USER DEFINED
433 .LIST
434 001220 $SCMTMP \SCM4
435 001220 000000 $TMP7: .WORD 0 ;;USER DEFINED
436 .LIST
437 001222 000000 $TIMES: 0 ;;MAX. NUMBER OF ITERATIONS
438 001224 000000 $ESCAPE: 0 ;;ESCAPE ON ERROR ADDRESS
439 001226 177607 000377 $BELL: .ASCIIZ <207><377><377> ;;CODE FOR BELL
440 001232 077 $QUES: .ASCII /?/ ;;QUESTION MARK
441 001233 015 $CRLF: .ASCII <15> ;;CARRIAGE RETURN
442 001234 000012 $LF: .ASCIIZ <12> ;;LINE FEED
443 001236 STARS
444 ;*****
445 .IRP A,<ADITAG>
446 A
447 .ENDM
448 001236 ADITAG
449 001236 177340 TCST: 177340 ;TC11 STATUS REGISTER.
450 001240 177342 TCCM: 177342 ;TC11 COMMAND REGISTER.
451 001242 177344 TCWC: 177344 ;TC11 WORD COUNT REGISTER.

```

452	001244	177346	TCBA:	177346		:TC11 BUS ADDRESS REGISTER.
453	001246	177350	TCDT:	177350		:TC11 DATA REGISTER.
454	001250	000214	TCVTR:	214		:TC11 INTERRUPT VECTOR
455	001252	000300	TCLVL:	300		:TC11 INTEPRUPT PRIORITY LEVEL.
456	001254	177564	TPS:	177564		:LSP CSR
457	001256	177566	TPB:	177566		:LSP BUFFER
458	001260	000000	CODCAL:	OPEN		
459	001262	000000	RTNNO:	OPEN		
460	001264	000000	NXTST:	OPEN		
461	001266	000000	CURTST:	OPEN		
462	001270	000000	CRBUF:	OPEN		
463	001272	000000	CRBUFA:	OPEN		
464	001274	000000	CTRA:	OPEN		
465	001276	050505	SBDAT1:	50505		
466	001300	127272		127272		
467	001302	072727	SBDAT2:	72727		
468	001304	105050		105050		
469	001306	072727	SBDAT3:	72727		
470	001310	105056		105056		
471	001312	000000	POWPUS:	.WORD	000000	
472	001314	000000	POWPOP:	.WORD	000000	
473	001316	000000	TCCMT:	OPEN		
474	001320	000000	TCSTT:	OPEN		
475	001322	177746	CCR:	177746		:CACHE CONTROL REGISTER
476			.PAGE			

```
477 .SBTTL ERROR POINTER TABLE
478
479 ;*THIS TABLE CONTAINS THE INFORMATION FOR EACH ERROR THAT CAN OCCUR.
480 ;*THE INFORMATION IS OBTAINED BY USING THE INDEX NUMBER FOUND IN
481 ;*LOCATION $ITEMB. THIS NUMBER INDICATES WHICH ITEM IN THE TABLE IS PERTINENT.
482 ;*NOTE1: IF $ITEMB IS 0 THE ONLY PERTINENT DATA IS ($ERRPC).
483 ;*NOTE2: EACH ITEM IN THE TABLE CONTAINS 4 POINTERS EXPLAINED AS FOLLOWS:
484
485 ;*      EM      ;;POINTS TO THE ERROR MESSAGE
486 ;*      DH      ;;POINTS TO THE DATA HEADER
487 ;*      DT      ;;POINTS TO THE DATA
488 ;*      DF      ;;POINTS TO THE DATA FORMAT
489
490
491 $ERRTB:
492
493 001324      EM1      ;; 'SAT (STOP ALL TRANSPORTS) COMMAND DID NOT CLEAR READY'
494 001324      EH1      ;;   PC      SP      PS      TEST#      TCCM      TCST''
495 001330      ET1      ;; $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
496 001332      000000
497
498
499 001334      EM2      ;; 'SST (STOP SELECTED TRANSPORT) DID NOT CLEAR READY'
500 001336      EH2      ;;   PC      SP      PS      TEST#      TCCM      TCST''
501 001340      ET2      ;; $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
502 001342      000000
503
504
505 001344      EM3      ;; 'READY BIT DID NOT CAUSE AN INTERRUPT''
506 001346      EH3      ;;   PC      SP      PS      TEST#      TCCM      TCST''
507 001350      ET3      ;; $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
508 001352      000000
509
510
511 001354      EM4      ;; 'READY BIT CAUSED AN INTERRUPT WITH PROCESSOR AND TC11 AT SAME PRIORITY
512 001356      EH4      ;;   PC      SP      PS      TEST#      TCCM      TCST''
513 001360      ET4      ;; $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
514 001362      000000
515
516
517 001364      EM5      ;; 'TC11 FAILED TO INTERRUPT''
518 001366      EH5      ;;   PC      SP      PS      TEST#      TCCM      TCST''
519 001370      ET5      ;; $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
520 001372      000000
521
522
523 001374      EM6      ;; 'TC11 DID NOT DROP INTERRUPT REQUEST AFTER IT WAS ACKNOLEDGED''
524 001376      EH6      ;;   PC      SP      PS      TEST#      TCCM      TCST''
525 001400      ET6      ;; $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
526 001402      000000
527
528
529 001404      EM7      ;; 'DOING A RESET INSTRUCTION DID NOT CLEAR UPS''
530 001406      EH7      ;;   PC      SP      PS      TEST#      TCCM      TCST''
531 001410      ET7      ;; $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
532 001412      000000
```

533				
534				
535	001414	017636	EM10	;'ENTERING MAINTANENCE MODE DID NOT SET UPS''
536	001416	017710	EH10	;' PC SP PS TEST# TCCM TCST''
537	001420	017766	ET10	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
538	001422	000000	000000	
539				
540				
541	001424	020004	EM11	;'UPS DID NOT CLEAR WHEN LEAVING MAINTANENCE MODE''
542	001426	020064	EH11	;' PC SP PS TEST# TCCM TCST''
543	001430	020142	ET11	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
544	001432	000000	000000	
545				
546				
547	001434	020160	EM12	;'TCST BIT 0 CAN BE SET WHILE IN MAINTANENCE MODE''
548	001436	020240	EH12	;' PC SP PS TEST# TCCM TCST''
549	001440	020316	ET12	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
550	001442	000000	000000	
551				
552				
553	001444	020334	EM13	;'TCST BIT 1 CAN BE SET WHILE IN MAINTANENCE MODE''
554	001446	020414	EH13	;' PC SP PS TEST# TCCM TCST''
555	001450	020472	ET13	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
556	001452	000000	000000	
557				
558				
559	001454	020510	EM14	;'WRTM COMMAND WITH WRTM SWITCH DISABLED FAILED TO SET ILO ERROR''
560	001456	020607	EH14	;' PC SP PS TEST# TCCM TCST''
561	001460	020666	ET14	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
562	001462	000000	000000	
563				
564				
565	001464	020704	EM15	;'ILO ERROR FAILED TO SET THE 'ERROR' BIT''
566	001466	020754	EH15	;' PC SP PS TEST# TCCM TCST''
567	001470	021032	ET15	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
568	001472	000000	000000	
569				
570				
571	001474	021050	EM16	;'CLEARING ILLEGAL OP FAILED TO CLEAR ILO ERROR''
572	001476	021126	EH16	;' PC SP PS TEST# TCCM TCST''
573	001500	021204	ET16	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
574	001502	000000	000000	
575				
576				
577	001504	021222	EM17	;'CLEARING ILLEGAL OP FAILED TO CLEAR THE 'ERROR' BIT''
578	001506	021306	EH17	;' PC SP PS TEST# TCCM TCST''
579	001510	021364	ET17	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
580	001512	000000	000000	
581				
582				
583	001514	021402	EM20	;'WRTM WITH WRTM SWITCH OFF DID NOT SET ILO ERROR BIT''
584	001516	021466	EH20	;' PC SP PS TEST# TCCM TCST''
585	001520	021544	ET20	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
586	001522	000000	000000	
587				
588				

589	001524	021562	EM21	;'ILO ERROR SETTING DID NOT CAUSE THE 'ERROR' BIT TO SET'
590	001526	021651	EH21	;' PC SP PS TEST# TCCM TCST'
591	001530	021730	ET21	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
592	001532	000000	000000	
593				
594				
595	001534	021746	EM22	;'CLEARING ERROR BIT ALSO CLEARED ILO ERROR'
596	001536	022020	EH22	;' PC SP PS TEST# TCCM TCST'
597	001540	022076	ET22	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
598	001542	000000	000000	
599				
600				
601	001544	022114	EM23	;'THE 'ERROR' BIT DID NOT SET'
602	001546	022150	EH23	;' PC SP PS TEST# TCCM TCST'
603	001550	022226	ET23	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
604	001552	000000	000000	
605				
606				
607	001554	022244	EM24	;'THE 'ERROR' BIT SET DID NOT CAUSE AN INTERRUPT'
608	001556	022323	EH24	;' PC SP PS TEST# TCCM TCST'
609	001560	022402	ET24	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
610	001562	000000	000000	
611				
612				
613	001564	022420	EM25	;'DOING A RESET INSTRUCTION DID NOT SET THE READY BIT'
614	001566	022504	EH25	;' PC SP PS TEST# TCCM TCST'
615	001570	022562	ET25	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
616	001572	000000	000000	
617				
618				
619	001574	022600	EM26	;'TEST EXECUTION IS OUT OF ORDER'
620	001576	022637	EH26	;' PC SP PS TEST# TEST# S/B'
621	001600	022712	ET26	;\$ERRPC,\$REG6,\$REG7,\$REG5,TEST# S/B
622	001602	000000	000000	
623				
624				
625	001604	022726	EM27	;'ERROR TRYING TO READ A BLOCK MARK'
626	001606	022770	EH27	;' PC SP PS TEST# TCCM TCST'
627	001610	023046	ET27	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
628	001612	000000	000000	
629				
630				
631	001614	023064	EM30	;'READY WAS NOT SET AFTER BLOCK MARK WAS SHIFTED INTO THE WINDOW REGISTE
632	001616	023174	EH30	;' PC SP PS TEST# TCCM TCST'
633	001620	023252	ET30	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
634	001622	000000	000000	
635				
636				
637	001624	023270	EM31	;'INCORRECT BLOCK # IN DATA REG AFTER BLOCK MARK WAS DETECTED'
638	001626	023364	EH31	;' PC SP PS TEST# TCCM TCST'
639	001630	023464	ET31	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
640	001632	000000	000000	
641				
642				
643	001634	023506	EM32	;'MTE WAS NOT SET BY AN ILLEGAL MARK TRACK CODE'
644	001636	023564	EH32	;' PC SP PS TEST# TCCM TCST'

[illegible]

701	001754	025436	EM44	;'WORD COUNT INCREMENTED IMPROPERLY''					
702	001756	025500	EH44	;'PC SP PS TEST# TCCM TCST TCWC''					
703	001760	025602	ET44	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCWC					
704	001762	000000							
705									
706									
707	001764	025624	EM45	;'TCBA INCREMENTED IMPROPERLY''					
708	001766	025660	EH45	;'PC SP PS TEST# TCCM TCST TCBA''					
709	001770	025762	ET45	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCBA					
710	001772	000000							
711									
712									
713	001774	026004	EM46	;'PARITY ERROR''					
714	001776	026021	EH46	;'PC SP PS TEST# TCCM TCST''					
715	002000	026100	ET46	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1					
716	002002	000000							
717									
718									
719	002004	026116	EM47	;'READY DID NOT SET AFTER READING WAS COMPLETED''					
720	002006	026174	EH47	;'PC SP PS TEST# TCCM TCST''					
721	002010	026252	ET47	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1					
722	002012	000000							
723									
724									
725	002014	026270	EM50	;'TRANSFERED TOO MANY WORDS''					
726	002016	026322	EH50	;'PC SP PS TEST# TCCM TCST RBUF+2''					
727	002020	026412	ET50	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,RBUF+2					
728	002022	000000							
729									
730									
731	002024	026432	EM51	;'TCBA CONTAINS AN INCORRECT ADDRESS''					
732	002026	026475	EH51	;'PC SP PS TEST# TCCM TCST TCBA TCBA S/B''					
733	002030	026576	ET51	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCBA TCBA S/B					
734	002032	000000							
735									
736									
737	002034	026620	EM52	;'PARRITY ERROR WAS NOT DETECTED''					
738	002036	026657	EH52	;'PC SP PS TEST# TCCM TCST''					
739	002040	026746	ET52	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1					
740	002042	000000							
741									
742									
743	002044	026766	EM53	;'PARITY ERROR DID NOT SET THE 'ERROR' BIT''					
744	002046	027037	EH53	;'PC SP PS TEST# TCCM TCST''					
745	002050	027126	ET53	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1					
746	002052	000000							
747									
748									
749	002054	027146	EM54	;'PARITY ERROR BIT WILL NOT CLEAR''					
750	002056	027206	EH54	;'PC SP PS TEST# TCCM TCST''					
751	002060	027274	ET54	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1					
752	002062	000000							
753									
754									
755	002064	027314	EM55	;'BLOCK MISS SHOULD NOT HAVE SET''					
756	002066	027353	EH55	;'PC SP PS TEST# TCCM TCST''					

757	002070	027442	ET55	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
758	002072	000000	000000	
759				
760				
761	002074	027462	EM56	;'RDATA WAS ISSUED BUT BLOCK MISS FAILED TO SET''
762	002076	027540	EH56	;' PC SP PS TEST# TCCM TCST''
763	002100	027626	ET56	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
764	002102	000000	000000	
765				
766				
767	002104	027646	EM57	;'BLOCK MISS SETTING DID NOT SET THE 'ERROR' BIT''
768	002106	027725	EH57	;' PC SP PS TEST# TCCM TCST''
769	002110	030014	ET57	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
770	002112	000000	000000	
771				
772				
773	002114	030034	EM60	;'CLEARING ERROR BIT FAILED TO CLEAR BLOCK MISS''
774	002116	030112	EH60	;' PC SP PS TEST# TCCM TCST''
775	002120	030200	ET60	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
776	002122	000000	000000	
777				
778				
779	002124	030220	EM61	;'FORWARD CHECKSUM WAS WRITTEN INCORRECTLY INTO CORE''
780	002126	030303	EH61	;' PC SP PS TEST# TCCM TCST RBUF+514''
781	002130	030402	ET61	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,RBUF+514
782	002132	000000	000000	
783				
784				
785	002134	030424	EM62	;'TCWC WAS MODIFIED DURING RAL''
786	002136	030462	EH62	;' PC SP PS TEST# TCCM TCST TCWC''
787	002140	030550	ET62	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCWC
788	002142	000000	000000	
789				
790				
791	002144	030570	EM63	;'TCBA WAS MODIFIED DURING RAL''
792	002146	030626	EH63	;' PC SP PS TEST# TCCM TCST TCBA''
793	002150	030730	ET63	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCBA
794	002152	000000	000000	
795				
796				
797	002154	030750	EM64	;'DATA MISS DID NOT SET''
798	002156	030776	EH64	;' PC SP PS TEST# TCCM TCST''
799	002160	031064	ET64	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
800	002162	000000	000000	
801				
802				
803	002164	031104	EM65	;'DATA MISS SETTING DID NOT CAUSE THE 'ERROR' BIT TO SET''
804	002166	031173	EH65	;' PC SP PS TEST# TCCM TCST''
805	002170	031252	ET65	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
806	002172	000000	000000	
807				
808				
809	002174	031270	EM66	;'CLEARING THE 'ERROR' BIT DID NOT CAUSE DATA MISS TO BE CLEARED''
810	002176	031367	EH66	;' PC SP PS TEST# TCCM TCST''
811	002200	031446	ET66	;\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
812	002202	000000	000000	

```
813
814
815 002204 031464 EM67 ;'READY BIT WAS NOT SET AFTER THE DATA WAS WRITTEN'
816 002206 031545 EH67 ;' PC SP PS TEST# TCCM TCST'
817 002210 031624 ET67 ;$ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
818 002212 000000 000000
819
820
821 002214 031642 EM70 ;'THE REVERSE CHECKSUM WAS WRITTEN INCORRECTLY'
822 002216 031717 EH70 ;' PC SP PS TEST# TCCM TCST RBUF+512 RBUF+512 S/B
823 002220 032026 ET70 ;$ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1,RBUF+512 RBUF+512 S/B
824 002222 000000 000000
825
826
827 002224 032050 EM71 ;'WORD COUNT MODIFIED DURING WRITE ALL'
828 002226 032116 EH71 ;' PC SP PS TEST# TCCM TCST TCWC'
829 002230 032204 ET71 ;$ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1,TCWC
830 002232 000000 000000
831
832
833 002234 032224 EM72 ;'TCBA MODIFIED DURING WRITE ALL'
834 002236 032264 EH72 ;' PC SP PS TEST# TCCM TCST TCBA'
835 002240 032352 ET72 ;$ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1,TCBA
836 002242 000000 000000
837
838
839 002244 032372 EM73 ;'SST DID NOT CAUSE A SELECT ERROR'
840 002246 032433 EH73 ;' PC SP PS TEST# TCCM TCST'
841 002250 032512 ET73 ;$ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
842 002252 000000 000000
843 002254 032530 EM74
844 002256 032603 EH74
845 002260 032642 ET74
846 002262 000000 0000
847
848 002264 032654 EM75
849 002266 032727 EH75
850 002270 032766 ET75
851 002272 000000 0000
852
853 002274 033000 EM76
854 002276 033053 EH76
855 002300 033112 ET76
856 002302 000000 0000
857
858 002304 033124 EM77
859 002306 033177 EH77
860 002310 033236 ET77
861 002312 000000 0000
862 002314 .SETUP <.$EOP,.$SCOPE,.$STRAP,.$ERROR,.$POWER>
863 .LIST
864 002314 000240 START: NOP
865 002316 000240 NOP
866 002320 000240 NOP
867 002322 000240 NOP
868 002324 SETUP 1000
```

```
869 .SBTTL INITIALIZE THE COMMON TAGS
870 ;;CLEAR THE COMMON TAGS ($CMTAG) AREA
871 002324 012706 001100 MOV #SCMTAG,R6 ;;FIRST LOCATION TO BE CLEARED
872 002330 005026 CLR (R6)+ ;;CLEAR MEMORY LOCATION
873 002332 022706 001140 CMP #SWR,R6 ;;DONE?
874 002336 001374 BNE #-6 ;;LOOP BACK IF NO
875 002340 012706 001000 MOV #1000,SP ;;SETUP THE STACK POINTER
876 ;;INITIALIZE A FEW VECTORS
877 002344 012737 013362 000020 MOV #SCOPE,@IOTVEC ;;IOT VECTOR FOR SCOPE ROUTINE
878 002352 012737 000340 000022 MOV #340,@IOTVEC+2 ;;LEVEL 7
879 002360 012737 013652 000030 MOV #ERROR,@EMTVEC ;;EMT VECTOR FOR ERROR ROUTINE
880 002366 012737 000340 000032 MOV #340,@EMTVEC+2 ;;LEVEL 7
881 002374 012737 015314 000034 MOV #TRAP,@TRAPVEC ;;TRAP VECTOR FOR TRAP CALLS
882 002402 012737 000340 000036 MOV #340,@TRAPVEC+2 ;;LEVEL 7
883 002410 012737 014074 000024 MOV #SPWRDN,@PWRVEC ;;POWER FAILURE VECTOR
884 002416 012737 000340 000026 MOV #340,@PWRVEC+2 ;;LEVEL 7
885 002424 013737 011604 011576 MOV $ENDCT,$EOPCT ;;SETUP END-OF-PROGRAM COUNTER
886 002432 005037 001222 CLR $TIMES ;;INITIALIZE NUMBER OF ITERATIONS
887 002436 005037 001224 CLR $ESCAPE ;;CLEAR THE ESCAPE ON ERROR ADDRESS
888 002442 112737 000001 001115 MOVB #1,$ERMAX ;;ALLOW ONE ERROR PER TEST
889 002450 012737 002450 001106 MOV #.,$LPADR ;;INITIALIZE THE LOOP ADDRESS FOR SCOPE
890 002456 012737 002456 001110 MOV #.,$LPERR ;;SETUP THE ERROR LOOP ADDRESS
891 .LIST
892 002464 SWRSU
893 ;;SIZE FOR A HARDWARE SWITCH REGISTER. IF NOT FOUND OR IT IS
894 ;;EQUAL TO A '-1', SETUP FOR A SOFTWARE SWITCH REGISTER.
895 002464 013746 000004 MOV @ERRVEC,-(SP) ;;SAVE ERROR VECTOR
896 002470 012737 002524 000004 MOV #64,$ERRVEC ;;SET UP ERROR VECTOR
897 002476 012737 177570 001140 MOV #DSWR,SWR ;;SETUP FOR A HARDWARE SWICH REGISTER
898 002504 012737 177570 001142 MOV #DDISP,DISPLAY ;;AND A HARDWARE DISPLAY REGISTER
899 002512 022777 177777 176420 CMP #-1,$SWR ;;TRY TO REFERENCE HARDWARE SWR
900 002520 001012 BNE 66$ ;;BRANCH IF NO TIMEOUT TRAP OCCURRED
901 ;;AND THE HARDWARE SWR IS NOT = -1
902 002522 000403 BR 65$ ;;BRANCH IF NO TIMEOUT
903 002524 012716 002532 64$: MOV #65$,(SP) ;;SET UP FOR TRAP RETURN
904 002530 000002 RTI
905 002532 012737 000176 001140 65$: MOV #SWREG,SWR ;;POINT TO SOFTWARE SWR
906 002540 012737 000174 001142 MOV #DISPREG,DISPLAY
907 002546 012637 000004 66$: MOV (SP)+,@ERRVEC ;;RESTORE ERROR VECTOR
908
909 002552 012706 001000 MOV #1000,SP ;SET BOTTOM OF SP STACK.
910 002556 005037 001262 CLR RTNNO
911 002562 104401 001233 TYPE $CRLF
912 002566 104401 015366 TYPE $TMES ;PRINTOUT STARTUP MESSAGE
913 002572 000240 NOP
914
915 002574 013746 000004 *****
916 002600 012737 002616 000004 CHGE1: MOV @ERRVEC,-(SP) ;SAVE ERROR VECTOR
917 002606 012777 000014 176506 MOV #1$,@ERRVEC ;SET UP ERROR VECTOR
918 002614 000403 BR 2$ ;DISABLE CACHE, IF THERE
919 002616 012716 002624 1$: MOV #2$,(SP) ;GET AROUND INTERRUPT SERV. ROUTINE
920 002622 000002 RTI ;NO CACHE MEM,SETUP TO RESTORE SP
921 002624 012637 000004 2$: MOV (SP)+,@ERRVEC ;RESTORE SP
922 ***** ;RESTORE ERROR VECTOR
923 002630 000000 HALT ;HERE IS YOUR CHANCE TO SET THE SWITCH REGISTER
924 002632 005737 000042 STARTX: TST 42
```



```
925 002636 001401          BEQ      GETRDY
926 002640 000005          RESET
927 002642 005037 177776   GETRDY: CLR      PSW
928 002646 012706 001000   MOV      #1000,SP      ;SET BOTTOM OF STACK.
929 002652 004737 012220   JSR      PC,SRSETT    ;ISSUE RESET.
930 002656 004737 012242   JSR      PC,RSTMTK    ;RESTORE MARK TRACK.
931 002662 000137 002666   JMP      T0001
932                                     .SBTTL T0001
933                                     ;CHECK THAT THE TCCM REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING
934                                     ;*****
935 002666 000004          T0001: SCOPE
936 002670 012737 002734 000004 MOV      #A0001,a#4      ;SETUP THE FATAL TRAP VECTOR
937 002676 012737 000340 000006 MOV      #340,a#6      ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP
938 002704 012706 001000 MOV      #1000,SP    ;SETUP THE STACK POINTER
939 002710 004737 011766 JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
940 002714 000001 000001 000001 ;HERE LIES THE NUMBER OF THIS TEST
941 002716 012706 001000 R0001: MOV      #1000,SP    ;INIT THE STACK POINTER
942 002722 005777 176312 TST      @TCCM        ;TRY TO READ THE TCCM
943 002726 005077 176306 CLR      @TCCM        ;TRY TO MODIFY THE TCCM
944 002732 000401 BR        T0002        ;NO ERRORS. GO ON TO THE NEXT TEXT
945 002734 104074 A0001: ERROR 74      ;COULD NOT ACCESS TCCM
946                                     .SBTTL T0002
947                                     ;CHECK THAT THE TCST REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING
948                                     ;*****
949 002736 000004          T0002: SCOPE
950 002740 012737 003004 000004 MOV      #A0002,a#4      ;SETUP THE FATAL TRAP VECTOR
951 002746 012737 000340 000006 MOV      #340,a#6      ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP
952 002754 012706 001000 MOV      #1000,SP    ;SETUP THE STACK POINTER
953 002760 004737 011766 JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
954 002764 000002 000002 000002 ;HERE LIES THE NUMBER OF THIS TEST
955 002766 012706 001000 R0002: MOV      #1000,SP    ;INIT THE STACK POINTER
956 002772 005777 176240 TST      @TCST        ;TRY TO READ THE TCST
957 002776 005077 176234 CLR      @TCST        ;TRY TO MODIFY THE TCST
958 003002 000401 BR        T0003        ;NO ERRORS. GO ON TO THE NEXT TEXT
959 003004 104075 A0002: ERROR 75      ;COULD NOT ACCESS TCST
960                                     ;CHECK THAT THE TCWC REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING
961                                     .SBTTL T0003
962                                     ;*****
963 003006 000004          T0003: SCOPE
964 003010 012737 003054 000004 MOV      #A0003,a#4      ;SETUP THE FATAL TRAP VECTOR
965 003016 012737 000340 000006 MOV      #340,a#6      ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP
966 003024 012706 001000 MOV      #1000,SP    ;SETUP THE STACK POINTER
967 003030 004737 011766 JSR      PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
968 003034 000003 000003 000003 ;HERE LIES THE NUMBER OF THIS TEST
969 003036 012706 001000 R0003: MOV      #1000,SP    ;INIT THE STACK POINTER
970 003042 005777 176174 TST      @TCWC        ;TRY TO READ THE TCWC
971 003046 005077 176170 CLR      @TCWC        ;TRY TO MODIFY THE TCWC
972 003052 000401 BR        T0004        ;NO ERRORS. GO ON TO THE NEXT TEXT
973 003054 104076 A0003: ERROR 76      ;COULD NOT ACCESS TCWC
974                                     ;CHECK THAT THE TCBA REGISTER CAN BE ACCESSED WITHOUT A TRAP OCCURING
975                                     .SBTTL T0004
976                                     ;*****
977 003056 000004          T0004: SCOPE
978 003060 012737 003124 000004 MOV      #A0004,a#4      ;SETUP THE FATAL TRAP VECTOR
979 003066 012737 000340 000006 MOV      #340,a#6      ;MAKE SURE WE GET NO INTERRUPTS IF WE TRAP
980 003074 012706 001000 MOV      #1000,SP    ;SETUP THE STACK POINTER
```



```

981 003100 004737 011766      JSR    PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
982 003104 000004              00004      ;HERE LIES THE NUMBER OF THIS TEST
983 003106 012706 001000      R0004:  MOV    #1000,SP      ;INIT THE STACK POINTER
984 003112 005777 176126      TST     @TCBA        ;TRY TO READ THE TCBA
985 003116 005077 176122      CLR     @TCBA        ;TRY TO MODIFY THE TCBA
986 003122 000401              BR      T0005      ;NO ERRORS. GO ON TO THE NEXT TEXT
987 003124 104077      A0004:  ERROR  77      ;COULD NOT ACCESS TCBA
988
989
990      ;CHECK THAT ISSUING A SAT COMMAND (STOP ALL TRANSPORTS) CAUSES READY BIT
991      ;TO CLEAR IMMEDIATELY (TCCM BIT 7).
992      .SBTTL T0005
993      ;*****
994 003126 000004      T0005:  SCOPE
995 003130 012737 011702 000004      MOV     #TRAP4,4      ;SETUP FATAL TRAP VECTORS
996 003136 012737 011672 000010      MOV     #TRAP10,10
997 003144 012737 000340 000006      MOV     #340,6
998 003152 012737 000340 000012      MOV     #340,12
999 003160 012706 001000      MOV     #1000,SP      ;SETUP THE STACK POINTER
1000 003164 004737 011766      JSR     PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1001 003170 000005      00005      ;HERE LIES THE NUMBER OF THIS TEST
1002 003172 013700 001240      R0005:  MOV     TCCM,R0      ;TCCM ADDR TO R0.
1003 003176 005010      CLR     (0)      ;SELECT U0, FUNCTION 0.(SAT COMMAND).
1004 003200 005210      INC     (0)      ;DO.
1005 003202 105710      TSTB    (0)      ;SEE IF READY IS SET.
1006 003204 100001      BPL     A0005      ;BR IF READY NOT SET. (OK).
1007 003206 104001      ERROR  1      ;SAT COMMAND FAILED TO CLEAR READY.
1008 003210 012706 001000      A0005:  MOV     #1000,SP      ;RESTORE THE STACK POINTER
1009 003214 000400      BR      T0006      ;GO ON TO THE NEXT TEST
1010      ;CHECK THAT ISSUING SST COMMAND (STOP SELECTED TRANSPORT) CAUSES READY
1011      ;BIT TO CLEAR IMMEDIATELY (TCCM BIT 7)
1012      .SBTTL T0006
1013      ;*****
1014 003216 000004      T0006:  SCOPE
1015 003220 012706 001000      MOV     #1000,SP      ;SETUP THE STACK POINTER
1016 003224 004737 011766      JSR     PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1017 003230 000006      00006      ;HERE LIES THE NUMBER OF THIS TEST
1018 003232 013700 001240      R0006:  MOV     TCCM,R0      ;TCCM ADDR TO R0.
1019 003236 012710 000010      MOV     #10,(0)      ;SELECT U0,FUNCTION 100. (SST COMMAND).
1020 003242 005210      INC     (0)      ;DO.
1021 003244 105710      TSTB    (0)      ;SEE IF READY IS SET.
1022 003246 100001      BPL     A0006      ;BR IF READY NOT SET. (OK).
1023 003250 104002      ERROR  2      ;SST COMMAND FAILED TO CLEAR READY.
1024 003252
1025 003252 012706 001000      A0006:  MOV     #1000,SP      ;RESTORE THE STACK POINTER
1026 003256 000400      BR      T0007      ;GO ON TO THE NEXT TEST
1027      ;TEST THAT READY BIT CAN CAUSE AN INTERRUPT. IF THE INTERRUPT IS SERVICED,
1028      ;IT WILL HAVE OCCURRED AT THE CORRECT VECTOR.
1029      .SBTTL T0007
1030      ;*****
1031 003260 000004      T0007:  SCOPE
1032 003262 012706 001000      MOV     #1000,SP      ;SETUP THE STACK POINTER
1033 003266 004737 011766      JSR     PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1034 003272 000007      00007      ;HERE LIES THE NUMBER OF THIS TEST
1035 003274 004737 012174      R0007:  JSR     PC,STTCV      ;SET INTERRUPT VECTOR TO CB.
1036 003300 003324

```

```
1037 003302 005077 175732          CLR    @TCCM          ;DISABLE TC11 INTERRUPTS.
1038 003306 005037 177776          CLR    PSW            ;SET PROCESSOR PRIORITY 0.
1039 003312 052777 000100 175720  BIS    #BIT6,@TCCM      ;ENABLE TC11 INTERRUPTS.
1040 003320 000240
1041 003322 104003          NOP
1042 003324          ERROR 3          ;READY DID NOT INTERRUPT.
1043 003324 012706 001000  A0007:  MOV    #1000,SP        ;RESTORE THE STACK POINTER
1044 003330 000400          BR     T0010        ;GO ON TO THE NEXT TEST
1045          ;TEST THAT READY DOES NOT CAUSE INTERRUPT WITH PROCESSOR AT SAME PRIORITY
1046          ;LEVEL AS THE TC11 INTERRUPT PRIORITY.
1047          .SBTTL T0010
1048          ;*****
1049 003332 000004  T0010:  SCOPE
1050 003334 012706 001000      MOV    #1000,SP        ;SETUP THE STACK POINTER
1051 003340 004737 011766      JSR    PC,TORDER      ;MAKE SURE TESTS ARE IN P.POER SEQUENCE
1052 003344 000010          00010          ;HERE LIES THE NUMBER OF THIS TEST
1053 003346 004737 012174  R0010:  JSR    PC,STTCV        ;SET INTERRUPT VECTOR TO DC.
1054 003352 003410          B0010
1055 003354 013737 001252 177776      MOV    TCLVL,PSW      ;SET PROCESSOR TO SAME PRTY AS TC11.
1056 003362 005077 175652          CLR    @TCCM          ;DISABLE TC11 INTERRUPTS.
1057 003366 052777 000100 175644  BIS    #BIT6,@TCCM      ;ENABLE TC11 INTERRUPTS.
1058 003374 000240          NOP
1059 003376 005077 175636  A0010:  CLR    @TCCM          ;DISABLE TC11 INTERRUPTS. (OK).
1060
1061 003402 012706 001000          MOV    #1000,SP        ;RESTORE THE STACK POINTER
1062 003406 000402          BR     T0011        ;GO ON TO THE NEXT TEST
1063 003410 104000  B0010:  ERROR          ;HERE IF INT. OCCURS.
1064          ;TC11 INTERRUPTED. WITH PROCESSOR AT SAME
1065 003412 000771          BR     A0010          ;PRTY AS TC11 INTERRUPT PRTY.
1066          ;TEST THAT TC11 INTERRUPTS WHEN PROCESSOR IS AT PRIORITY ONE LEVEL LOWER
1067          ;THAN THE TC11 INTERRUPT PRIORITY.
1068          .SBTTL T0011
1069          ;*****
1070 003414 000004  T0011:  SCOPE
1071 003416 012706 001000      MOV    #1000,SP        ;SETUP THE STACK POINTER
1072 003422 004737 011766      JSR    PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1073 003426 000011          00011          ;HERE LIES THE NUMBER OF THIS TEST
1074 003430 004737 012174  R0011:  JSR    PC,STTCV        ;SET INTERRUPT VECTOR TO EB.
1075 003434 003472          A0011
1076 003436 005077 175576          CLR    @TCCM          ;DISABLE TC11 INTERRUPTS.
1077 003442 013737 001252 177776      MOV    TCLVL,PSW      ;SET PROCESSOR TO PRTY ONE LEVEL LOWER
1078 003450 162737 000040 177776      SUB    #40,PSW        ;THAN TC11 INTERRUPT PRTY.
1079 003456 052777 000100 175554  BIS    #BIT6,@TCCM      ;ENABLE TC11 INTERRUPTS.
1080 003464 000240          NOP
1081 003466 104003          ERROR 3          ;TC11 FAILED TO INT. WITH PROCESSOR AT
1082 003470 000401          BR     B0011          ;PRTY ONE LEVEL LOWER THAN TC11 INT. PRTY.
1083 003472 022626  A0011:  POPSP2          ;HERE IF INT. OCCURS. POP STACK TWICE.
1084 003474 005077 175540  B0011:  CLR    @TCCM          ;DISABLE TC11 INTERRUPTS.
1085
1086 003500 012706 001000          MOV    #1000,SP        ;RESTORE THE STACK POINTER
1087 003504 000400          BR     T0012        ;GO ON TO THE NEXT TEST
1088
1089
1090          ;TEST TC11 DOES NOT REINTERRUPT AFTER INITIAL INTERRUPT HAS BEEN SERVICED.
1091          .SBTTL T0012
1092          ;*****
```

```
1093 003506 000004          T0012: SCOPE
1094 003510 012706 001000      MOV    #1000,SP      ;SETUP THE STACK POINTER
1095 003514 004737 011766      JSR    PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1096 003520 000012          00012      ;HERE LIES THE NUMBER OF THIS TEST
1097 003522 004737 012174      R0012: JSR    PC,STTCV      ;SET INTERRUPT VECTOR TO FC.
1098 003526 003564          B0012      ;
1099 003530 005077 175504      CLR    @TCCM      ;DISABLE TC11 INTERRUPTS.
1100 003534 005037 177776      CLR    PSW        ;SET PROCESSOR PRY 0.
1101 003540 052777 000100 175472  BIS    #BIT6,@TCCM    ;ENABLE TC11 INTERRUPTS.
1102 003546 000240          NOP
1103 003550 104005          ERROR 5      ;TC11 FAILED TO INTERRUPT.
1104 003552 005077 175462      A0012: CLR    @TCCM      ;DISABLE TC11 INTERRUPTS.
1105
1106 003556 012706 001000      MOV    #1000,SP      ;RESTORE THE STACK POINTER
1107 003562 000413          BR    T0013      ;GO ON TO THE NEXT TEST
1108 003564 012777 003604 175456 B0012: MOV    #D0012,@TCVTR    ;CHANGE INT POINTER TO FE.
1109 003572 012716 003600      MOV    #C0012,@SP      ;CHANGE INT EXIT POINTER TO FD.
1110 003576 000002          RTI          ;EXIT INTERRUPT.
1111 003600 000240          C0012: NOP          ;OK IF NO INT. REOCCURS.
1112 003602 000763          BR    A0012
1113 003604 022626          D0012: POPSP2      ;HERE IF REINTERRUPT OCCURS.
1114 003606 104006          ERROR 6      ;TC11 REINTERRUPTED AFTER RTI.
1115 003610 000760          BR    A0012
1116      ;TEST THAT SETTING MAINTENANCE BIT (TCCM BIT 13) SETS UPS BIT (TCST BIT 7)
1117      ;THAT CLEARING MAINTENANCE BIT C LARS UPS, AND THAT RESET CLEARS UPS.
1118      .SBTTL T0013
1119      ;*****
1120 003612 000004          T0013: SCOPE
1121 003614 012706 001000      MOV    #1000,SP      ;SETUP THE STACK POINTER
1122 003620 004737 011766      JSR    PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1123 003624 000013          00013      ;HERE LIES THE NUMBER OF THIS TEST
1124 003626 032777 000200 175402 R0013: BIT    #BIT7,@TCST    ;SEE IF UPS IS CLEAR.
1125 003634 001402          BEQ    A0013      ;BR IF UPS IS CLEAR.
1126 003636 104007          ERROR 7      ;RESET FAILED TO CLEAR UPS.
1127 003640 000421          BR    C0013
1128 003642 052777 020000 175370 A0013: BIS    #BIT13,@TCCM    ;SET MAINTENALCE BIT.
1129 003650 032777 000200 175360      BIT    #BIT7,@TCST    ;SEE IF UPS IS SET.
1130 003656 001002          BNE    B0013      ;BR IF UPS IS SET.
1131 003660 104010          ERROR 10     ;MAINT BIT FAILED TO SET UPS.
1132 003662 000410          BR    C0013
1133 003664 042777 020000 175346 B0013: BIC    #BIT13,@TCCM    ;CLEAR MAINT BIT.
1134 003672 032777 000200 175336      BIT    #BIT7,@TCST    ;SEE IF UPS IS CLEAR.
1135 003700 001401          BEQ    C0013      ;BR IF UPS IS CLEAR.
1136 003702 104011          ERROR 11     ;CLEARING MAINT. BIT FAILED TO CLEAR UPS.
1137 003704 052777 020000 175326 C0013: BIS    #BIT13,@TCCM    ;SET MAINT BIT TO SET UPS.
1138 003712 004737 012220      JSR    PC,SRSETT    ;ISSUE RESET TO CLEAR MAINT AND UPS BITS.
1139
1140 003716 012706 001000      MOV    #1000,SP      ;RESTORE THE STACK POINTER
1141 003722 000400          BR    T0014      ;GO ON TO THE NEXT TEST
1142      ;TEST THAT SETTING MAINT. BIT DISABLES LOADING XD16 (TCST BIT 0).
1143      .SBTTL T0014
1144      ;*****
1145 003724 000004          T0014: SCOPE
1146 003726 012706 001000      MOV    #1000,SP      ;SETUP THE STACK POINTER
1147 003732 004737 011766      JSR    PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1148 003736 000014          00014      ;HERE LIES THE NUMBER OF THIS TEST
```

```
1149 003740 052777 020000 175272 R0014: BIS #BIT13,@TCCM ;SET MAINTENANCE BIT
1150 003746 052777 000001 175262 BIS #BIT0,@TCST ;TRY SETTING XD16.
1151 003754 032777 000001 175254 BIT #BIT0,@TCST ;SEE IF XD16 IS SET.
1152 003762 001401 BEQ A0014 ;BR IF XD16 IS CLEAR.
1153 003764 104012 ERROR 12 ;MAINT BIT SET FAILS TO PREVENT LOADING
1154 003766 004737 012220 A0014: JSR PC,SRSETT ;OF XD16.
1155
1156 003772 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1157 003776 000400 BR T0015 ;GO ON TO THE NEXT TEST
1158 ;TEST THAT SETTING MAINT. BIT DISABLES LOADING XD17 (TCST BIT 1).
1159 .SBTTL T0015
1160 *****
1161 004000 000004 T0015: SCOPE
1162 004002 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1163 004006 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1164 004012 000015 00015 ;HERE LIES THE NUMBER OF THIS TEST
1165 004014 052777 020000 175216 R0015: BIS #BIT13,@TCCM ;SET MAINTENANCE BIT.
1166 004022 052777 000002 175206 BIS #BIT1,@TCST ;TRY SETTING XD17.
1167 004030 032777 000002 175200 BIT #BIT1,@TCST ;SEE IF XD17 IS SET.
1168 004036 001401 BEQ A0015 ;BR IF XD17 IS CLEAR.
1169 004040 104013 ERROR 13 ;MAINT BIT FAILED TO PREVENT SETTING
1170 004042 004737 012220 A0015: JSR PC,SRSETT ;OF XD17.
1171
1172 004046 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1173 004052 000400 BR T0016 ;GO ON TO THE NEXT TEST
1174
1175 ;CHECK THAT ISSUING WRTM COMMAND WITH WRTM SWITCH OFF CAUSES AN ILO ERROR.
1176 ; (ILLEGAL OP- TCST BIT 12), AND THAT ERROR BIT SETS.; (TCCM BIT 15).
1177 ;TEST DONE WITH MAINTENANCE BIT SET.
1178 .SBTTL T0016
1179 *****
1180 004054 000004 T0016: SCOPE
1181 004056 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1182 004062 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1183 004066 000016 00016 ;HERE LIES THE NUMBER OF THIS TEST
1184 004070 012777 020012 175142 R0016: MOV #MAINT!FWD!UO!WRTM,@TCCM
1185 004076 000240 NOP
1186 004100 032777 010000 175130 BIT #BIT12,@TCST ;SEE IF ILO ERROR IS SET.
1187 004106 001002 BNE A0016 ;BR IF ILO ERR IS SET.
1188 004110 104014 ERROR 14 ;WRTM COMMAND WITH WRTM SWITCH DISABLED
1189 004112 000421 BR D0016 ;FAILED TO SET ILO ERROR.
1190 004114 005777 175120 A0016: TST @TCCM ;SEE IF ERROR BIT IS SET.
1191 004120 100402 BMI B0016 ;BR IF ERROR BIT IS SET.
1192 004122 104015 ERROR 15 ;ILO ERR FAILED TO SET ERROP BIT.
1193 004124 000414 BR D0016
1194 004126 005077 175106 B0016: CLR @TCCM ;CLEAR ILLEGAL COMMAND.
1195 004132 032777 010000 175076 BIT #BIT12,@TCST ;SEE IF ILO ERROR IS SET.
1196 004140 001402 BEQ C0016 ;BR IF ILO ERROR IS CLEAR.
1197 004142 104016 ERROR 16 ;CLEARING ILLEGAL OP FAILED TO CLEAR
1198 004144 000404 BR D0016 ;ILO ERROR.
1199 004146 005777 175066 C0016: TST @TCCM ;SEE IF ERROR BIT IS CLEAR.
1200 004152 100001 BPL D0016 ;BR IF ERROR IS CLEAR.
1201 004154 104017 ERROR 17 ;CLEARING ILLEGAL OP FAILED TO
1202 004156 004737 012220 D0016: JSR PC,SRSETT ;CLEAR ERROR BIT.
1203
1204 004162 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
```

```
1205 004166 000400          BR      T0017          ;GO ON TO THE NEXT TEST
1206                          ;CHECK THAT ISSUING WRTM COMMAND (WRITE TIMING AND MARK) WITH WRTM SWITCH
1207                          ;OFF CAUSES AN ILO ERROR(ILLEGAL OP- TCST BIT 12),ALD THAT ERROR BIT SETS.
1208                          ;(TCCM BIT 15). TEST DONE WITH MAINTENANCE BIT SET.
1209                          .SBTTL T0017
1210                          ;*****
1211 004170 000004          T0017: SCOPE
1212 004172 012706 001000      MOV      #1000,SP          ;SETUP THE STACK POINTER
1213 004176 004737 011766      JSR      PC,TORDER          ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1214 004202 000017          00017          ;HERE LIES THE NUMBER OF THIS TEST
1215 004204 012777 020012 175026 R0017: MOV      #MAINT!FWD!UO!WRTM,@TCCM
1216 004212 000240          NOP
1217 004214 032777 010000 175014      BIT      #BIT12,@TCST          ;SEE IF ILO ERR IS SET.
1218 004222 001002          BNE      A0017          ;BR IF ILO SET.
1219 004224 104020          ERROR 20          ;WRTM WITH WRTM SW OFF FAILED TO SET
1220 004226 000421          BR      D0017          ;ILO ERROR.
1221 004230 005777 175004          A0017: TST      @TCCM          ;ERROR BIT SET?
1222 004234 100402          BMI      B0017          ;BR IF ERROR BIT SET.
1223 004236 104021          ERROR 21          ;ERROR BIT NOT SET WITH ILO ERR SET.
1224 004240 000414          BR      D0017
1225 004242 005077 174772          B0017: CLR      @TCCM          ;CLEAR ILLEGAL COMMAND.
1226 004246 032777 010000 174762      BIT      #BIT12,@TCST          ;SEE IF ILO ER IS CLEAR.
1227 004254 001402          BEQ      C0017          ;BR ID ILO ERR IS CLEAR.
1228 004256 104016          ERROR 16          ;CLEARING ILLEGAL OP FAILED TO
1229 004260 000404          BR      D0017          ;CLEAR ILO ERR.
1230 004262 005777 174752          C0017: TST      @TCCM          ;ERROR BIT SET?
1231 004266 100001          BPL      D0017          ;BR IF ERROR BIT IS CLEAR.
1232 004270 104017          ERROR 17          ;CLEARING ILLEGAL OP FAILED TO
1233 004272 004737 012220          D0017: JSR      PC,SRSETT          ;CLEAR ERROR BIT.
1234
1235 004276 012706 001000          MOV      #1000,SP          ;RESTORE THE STACK POINTER
1236 004302 000400          BR      T0020          ;GO ON TO THE NEXT TEST
1237
1238                          ;TEST THAT CLEARING ERROR BIT DOES NOT CLEAR ILO ERROR.
1239                          .SBTTL T0020
1240                          ;*****
1241 004304 000004          T0020: SCOPE
1242 004306 012706 001000      MOV      #1000,SP          ;SETUP THE STACK POINTER
1243 004312 004737 011766      JSR      PC,TORDER          ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1244 004316 000020          00020          ;HERE LIES THE NUMBER OF THIS TEST
1245 004320 012777 020012 174712 R0020: MOV      #MAINT!FWD!UO!WRTM,@TCCM
1246 004326 000240          NOP
1247 004330 005777 174704          TST      @TCCM          ;ERROR SET?
1248 004334 100402          BMI      A0020          ;BR IF ERROR BIT IS SET.
1249 004336 104023          ERROR 23          ;ERROR BIT FAILED TO SET.
1250 004340 000410          BR      B0020
1251 004342 042777 100000 174670          A0020: BIC      #BIT15,@TCCM          ;TRY CLEARING ERROR BIT.
1252 004350 032777 010000 174660      BIT      #BIT12,@TCST          ;ILO SET?
1253 004356 001001          BNE      B0020          ;BR IF ILO IS SET.
1254 004360 104022          ERROR 22          ;O TO ERROR BIT CLEARED ILO ERROR.
1255 004362 004737 012220          B0020: JSR      PC,SRSETT          ;RESET.
1256
1257 004366 012706 001000          MOV      #1000,SP          ;RESTORE THE STACK POINTER
1258 004372 000400          BR      T0021          ;GO ON TO THE NEXT TEST
1259                          ;TEST THAT ERROR BIT (TCCM BIT15) IS ABLE TO CAUSE AN INTERRUPT.
1260                          .SBTTL T0021
```

```
1261
1262 004374 000004
1263 004376 012706 001000
1264 004402 004737 011766
1265 004406 000021
1266 004410 004737 012174
1267 004414 004442
1268 004416 005077 174616
1269 004422 005037 177776
1270 004426 052777 000100 174604
1271 004434 000240
1272 004436 104005
1273 004440 000415
1274 004442 012777 004472 174600 A0021:
1275 004450 012716 004456 MOV #C0021,@TCVTR ;CHANGE INT VECTOR TO MD.
1276 004454 000002 MOV #B0021,@SP ;CHANGE INT EXIT POINTER TO MC.
1277 004456 052777 020012 174554 B0021: RTI ;EXIT INTERRUPT.
1278 004464 000240 BIS #MAINT!FWD!UO!WRTM,@TCCM
1279 004466 104024 NOP
1280 004470 000401 ERROR 24 ;ERROR BIT FAILED TO INTERRUPT.
1281 004472 022626 BR D0021
1282 004474 005077 174540 C0021: POPSP2 ;HERE IF ERROR INTERRUPTS.
1283 D0021: CLR @TCCM ;DISABLE INT. CLEAR ILLEGAL OP.
1284 004500 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1285 004504 000400 BR T0022 ;GO ON TO THE NEXT TEST
1286
1287 ;TEST THAT ISSUING RNUM COMMAND (READ BLOCK #) CLEARS READY BIT.
1288 ;RESET INSTRUCTION SHOULD SET READY. TEST DONE WITH MAINT. BIT SET.
1289 .SBTTL T0022
1290
1291 004506 000004
1292 004510 012706 001000
1293 004514 004737 011766
1294 004520 000022
1295 004522 105777 174512
1296 004526 100402
1297 004530 104025
1298 004532 000407
1299 004534 012777 020003 174476 A0022:
1300 004542 105777 174472 MOV #MAINT!UO!FWD!RNUM!DO,@TCCM
1301 004546 100001 TSTB @TCCM ;READY CLEAR?
1302 004550 104076 BPL B0022 ;BR IF READY IS CLEAR.
1303 004552 004737 012220 B0022: ERROR 76 ;RNUM,DO, FAILED TO CLEAR READY.
1304 JSR PC,SRSETT ;ISSUE RESET TO FORCE READY TO SET.
1305 004556 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1306 004562 000400 BR T0023 ;GO ON TO THE NEXT TEST
1307
1308 ;TEST THAT TC11 CONTROL CAN RECOGNIZE A BLOCK MARK. WITH MAINT BIT SET,
1309 ;RNUM COMMAND IS ISSUED. A SUBROUTINE PROVIDES TIMING AND MARK DATA.
1310 ;WHEN THE BLOCK MARK HAS BEEN SHIFTED INTO THE WINDOW, THE READY BIT SHOULD SET.
1311 .SBTTL T0023
1312 004564 000004
1313 004566 012706 001000
1314 004572 004737 011766
1315 004576 000023
1316 004600 005077 174434 R0023: CLR @TCCM ;HERE LIES THE NUMBER OF THIS TEST
```



```
1317 004604 012777 020003 174426      MOV      #MAINT!UO!FWD!RNUM!DO,@TCCM
1318 004612                                MTCOD      MTK7,6
1319 004612 004537 012674      JSR      R5,LMTCOD      ;CALL LOAD MT CODES SUB.
1320 004616 033306                                ;ADDRESS OF MARK TRACK CODES.
1321 004620 000006                                ;MARK TRACK CODE COUNT.
1322 004622 005777 174412      TST      @TCCM      ;ERROR BIT SET?
1323 004626 100002      BPL      A0023      ;BR IF NO ERROR.
1324 004630 104027      ERROR 27      ;ERROR BIT SET. EXAMINE TCST OR LIGHT PANEL.
1325 004632 000404      BR      B0023
1326 004634 105777 174400      A0023: TSTB      @TCCM      ;READY BIT SET?
1327 004640 100401      BMI      B0023      ;BR IF READY IS SET.
1328 004642 104030      ERROR 30      ;READY NOT SET AFTER BLOCK MARK WAS
1329                                ;SHIFTED INTO WINDOW REG WITH RNUM COMMAND
1330                                ;IN EFFECT.EVERYTHING IS SUSPECT AT THIS
1331                                ;POINT. ABILITY TO SHIFT TIMING AND MARK
1332                                ;DATA WHILE IN MAINT MODE HAS NOT BEEN
1333 004644                                B0023:
1334 004644 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
1335 004650 000400      BR      T0024      ;GO ON TO THE NEXT TEST
1336      ;TEST THAT TC11 CONTROL TRANSFERS THE BLOCK NUMBER TO THE DATA REGISTER
1337      ;WHEN BLOCK MARK IS DETECTED AND CONTROL IS DOING RNUM COMMAND. A SUBROUTINE
1338      ;PROVIDES TIMING, MARK, AND DATA. WHEN THE READY BIT SETS, THE BLOCK #
1339      ;EXPECTED IN THE DATA REGISTER IS 000525.
1340      .SBTTL T0024
1341      *****
1342 004652 000004      T0024: SCOPE
1343 004654 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1344 004660 004737 011766      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1345 004664 000024                                ;HERE LIES THE NUMBER OF THIS TEST
1346 004666 005077 174346      R0024: CLR      @TCCM
1347 004672 012777 020003 174340      MOV      #MAINT!UO!FWD!RNUM!DO,@TCCM
1348 004700      MTCOD      MTK7,6
1349 004700 004537 012674      JSR      R5,LMTCOD      ;CALL LOAD MT CODES SUB.
1350 004704 033306                                ;ADDRESS OF MARK TRACK CODES.
1351 004706 000006                                ;MARK TRACK CODE COUNT.
1352 004710 022777 052525 174330      CMP      #52525,@TCDT      ;TCDT=52525?
1353 004716 001415      BEQ      A0024      ;BR IF TCDT CORRECT.
1354 004720 017737 174322 001172      MOV      @TCDT,$REG4      ;SETUP BLOBK # FOR PRINTOUT
1355 004726 012737 052525 001162      MOV      #52525,$REG0      ;SETUP GOOD BLOBK # TO PRINTOUT
1356 004734 017737 174306 001172      MOV      @TCDT,$REG4      ;SETUP BLOBK # FOR PRINTOUT
1357 004742 012737 052525 001162      MOV      #52525,$REG0      ;SETUP GOOD BLOBK # TO PRINTOUT
1358 004750 104031      ERROR 31      ;ERROR.BLOK # IN TCDT NOT 52525. EXAMINE TCDT.
1359 004752      A0024:
1360 004752 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
1361 004756 000400      BR      T0025      ;GO ON TO THE NEXT TEST
1362      ;TEST THAT TC11 CONTROL IS ABLE TO DETECT AN INCORRECT MARK TRACK CODE.
1363      ;A SUBROUTINE PROVIDES TIMING AND MARK DATA WHILE CONTROL IS IN RNUM
1364      ;COMMAND. WHEN THE INCORRECT MARK IS SHIFTED, THE MTE AND ERR BITS SHOULD SET.
1365      .SBTTL T0025
1366      *****
1367 004760 000004      T0025: SCOPE
1368 004762 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1369 004766 004737 011766      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1370 004772 000025                                ;HERE LIES THE NUMBER OF THIS TEST
1371 004774 004537 012646      R0025: JSR      R5,BMOVE      ;SET INVALID CODE IN MARK TRACK.
1372 005000 033256      MTKER
```



```
1373 005002 033360 MTKVAR
1374 005004 000006 6
1375 005006 012777 020003 174224 MOV #MAINT!UO!FWD!RNUM!DO,@TCCM
1376 005014 MTCOD MTK7,9.
1377 005014 004537 012674 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
1378 005020 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
1379 005022 000011 9. ;MARK TRACK CODE COUNT.
1380 005024 032777 020000 174204 BIT #BIT13,@TCST ;MTE BIT SET? (MARK TRACK ERROR).
1381 005032 001002 BNE A0025 ;BR IF MTE BIT IS SET.
1382 005034 104032 ERROR 32 ;INVALID MARK TRACK CODE FAILED TO SET MTE.
1383 005036 000404 BR B0025
1384 005040 005777 174174 A0025: TST @TCCM ;ERROR BIT SET?
1385 005044 100401 BMI B0025 ;BR IF ERROR BIT IS SET.
1386 005046 104033 ERROR 33 ;MTE BIT FAILED TO SET ERROR BIT.
1387 005050 B0025:
1388 005050 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1389 005054 000400 BR T0026 ;GO ON TO THE NEXT TEST
1390 ;TEST THAT TC11 CONTROL DETECTS END ZONE MARK CODES. A SUBROUTINE PROVIDES
1391 ;TIMING AND MARK DATA WHILE CONTROL IS IN RNUM COMMAND. WHEN THE ENDZ
1392 ;MARK CODE IS SHIFTED INTO THE WINDOW, THE ENDZ AND ERROR BITS SHOULD SET.
1393 .SBTTL T0026
1394 *****
1395 005056 000004 T0026: SCOPE
1396 005060 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1397 005064 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1398 005070 000026 00026 ;HERE LIES THE NUMBER OF THIS TEST
1399 005072 004537 012646 R0026: JSR R5,BMOVE ;SET END CODE IN MARK TRACK.
1400 005076 033264 MTKEND
1401 005100 033336 MTK5
1402 005102 000006 6
1403 005104 012777 020003 174126 MOV #MAINT!UO!FWD!RNUM!DO,@TCCM
1404 005112 MTCOD MTK7,5
1405 005112 004537 012674 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
1406 005116 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
1407 005120 000005 5 ;MARK TRACK CODE COUNT.
1408 005122 005777 174110 TST @TCST ;ENDZ BIT SET?
1409 005126 100402 BMI A0026 ;BR IF ENDZ BIT IS SET.
1410 005130 104034 ERROR 34 ;ENDZ MARK FAILED TO SET ENDZ BIT.
1411 005132 000404 BR B0026
1412 005134 005777 174100 A0026: TST @TCCM ;ERROR BIT SET?
1413 005140 100401 BMI B0026 ;BR IF ERROR BIT IS SET.
1414 005142 104035 ERROR 35 ;ENDZ BIT FAILED TO SET ERROR BIT.
1415 005144 B0026:
1416 005144 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1417 005150 000400 BR T0027 ;GO ON TO THE NEXT TEST
1418 ;TEST THAT TC11 CONTROL DOES NOT RECOGNIZE MARK TRACK CODE 55 AS END ZONE
1419 ;BLOCK MARK. SUBROUTINE PROVIDES TIMING AND MARK DATA.
1420 .SBTTL T0027
1421 *****
1422 005152 000004 T0027: SCOPE
1423 005154 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1424 005160 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1425 005164 000027 00027 ;HERE LIES THE NUMBER OF THIS TEST
1426 005166 004537 012646 R0027: JSR R5,BMOVE ;SET CODE 55 IN MARK TRACK.
1427 005172 033272 MTK55
1428 005174 033336 MTK5
```



```
1429 005176 000006
1430 005200 005077 174034
1431 005204 012777 020003 174026
1432 005212
1433 005212 004537 012674
1434 005216 033306
1435 005220 000005
1436 005222 005777 174010
1437 005226 100002
1438 005230 104036
1439 005232 000404
1440 005234 005777 174000
1441 005240 100001
1442 005242 104037
1443 005244
1444 005244 012706 001000
1445 005250 000400
1446
1447
1448
1449
1450 005252 000004
1451 005254 012706 001000
1452 005260 004737 011766
1453 005264 000030
1454 005266 004737 012174
1455 005272 005332
1456 005274 005077 173740
1457 005300 012777 020103 173732
1458 005306
1459 005306 004537 012674
1460 005312 033306
1461 005314 000004
1462 005316 105777 173716
1463 005322 100402
1464 005324 104040
1465 005326 000401
1466 005330 104003
1467 005332
1468 005332 012706 001000
1469 005336 000400
1470
1471
1472
1473
1474
1475 005340 000004
1476 005342 012706 001000
1477 005346 004737 011766
1478 005352 000031
1479 005354 004737 012470
1480 005360 004737 012174
1481 005364 005530
1482 005366 005077 173646
1483 005372 012777 020103 173640
1484 005400

6
CLR @TCCM
MOV #MAINT!UO!FWD.RNUM!DO,@TCCM
MTCOD MTK7,5
JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
MTK7 ;ADDRESS OF MARK TRACK CODES.
5 ;MARK TRACK CODE COUNT.
TST @TCST ;ENDZ BIT SET?
BPL A0027 ;BR IF NOT SET.
ERROR 36 ;MARK CODE 55 INTERPRETED AS END ZONE.
BR B0027
A0027: TST @TCCM ;ERROR BIT SET?
BPL B0027 ;BR IF NO ERROR.
ERROR 37 ;ERROR BIT SET. EXAMINE TCST.
B0027:
MOV #1000,SP ;RESTORE THE STACK POINTER
BR T0030 ;GO ON TO THE NEXT TEST
;TEST THAT TC11 INTERRUPTS. RNUM COMMAND IS ISSUED. SUBROUTINE PROVIDES
;TIMING AND MARK. WHEN BLOCK IS FOUND INTERRUPT SHOULD OCCUR.
.SBTTL T0030
;*****
T0030: SCOPE
MOV #1000,SP ;SETUP THE STACK POINTER
JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
00030 ;HERE LIES THE NUMBER OF THIS TEST
R0030: JSR PC,STTCV ;SET INTERRUPT VECTOR TO UE.
D0030
CLR @TCCM
MOV #MAINT!UO!FWD!IE!RNUM!DO,@TCCM
MTCOD MTK7,4
JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
MTK7 ;ADDRESS OF MARK TRACK CODES.
4 ;MARK TRACK CODE COUNT.
TSTB @TCCM ;READY SET?
BMI A0030 ;BR IF READY SET.
ERROR 40 ;READY DID NOT SET.
BR D0030
A0030: ERROR 3 ;READY FAILED TO INTERRUPT.
D0030:
MOV #1000,SP ;RESTORE THE STACK POINTER
BR T0031 ;GO ON TO THE NEXT TEST
;TEST THAT TC11 IS ABLE TO TRANSFER ONE WORD TO CORE STORAGE. SUBROUTINE
;PROVIDES TIMING AND MARK. AFTER BLOCK IS 'FOUND' TEST SWITCHES TO
;RDATA COMMAND WITH WORD COUNT OF -1.
.SBTTL T0031
;*****
T0031: SCOPE
MOV #1000,SP ;SETUP THE STACK POINTER
JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
00031 ;HERE LIES THE NUMBER OF THIS TEST
R0031: JSR PC,CLRBUF ;CLEAR READ BUFFER.
JSR PC,STTCV ;SET INTERRUPT VECTOR TO VG.
G0031
CLR @TCCM
MOV #MAINT!UO!FWD!IE.RNUM!DO,@TCCM
MTCOD MTK7,7
```

```
1485 005400 004537 012674 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
1486 005404 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
1487 005406 000007 7 ;MARK TRACK CODE COUNT.
1488 005410 005777 173624 TST @TCCM ;ERROR BIT SET?
1489 005414 100002 BPL A0031 ;BR IF NO ERROR.
1490 005416 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1491 005420 000440 BR F0031
1492 005422 105777 173612 A0031: TSTB @TCCM ;READY BIT SET?
1493 005426 100002 BPL B0031 ;BR IF READY NOT SET.
1494 005430 104042 ERROR 42 ;READY SHOULD NOT BE SET.
1495 005432 000433 BR F0031
1496 005434 022737 050505 036430 B0031: CMP #50505,RBUF ;SEE IF 1ST WORD IN RBUF IS 50505.
1497 005442 001405 BEQ C0031 ;BR IF WORD IS 50505.
1498 005444 012737 050505 001162 MOV #50505,$REG0 ;GOOD DATA FOR PRINTOUT
1499 005452 104043 ERROR 43 ;WORD IN RBUF IS NOT 50505. EXAMINE RBUF.
1500 005454 000422 BR F0031 ;TRANSFER MAY NOT HAVE OCCURRED.
1501 005456 005777 173560 C0031: TST @TCWC ;WORD COUNT 0?
1502 005462 001407 BEQ D0031 ;BR IF WORD COUNT IS 0.
1503 005464 017737 173552 001172 MOV @TCWC,$REG4 ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1504 005472 005077 173464 CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1505 005476 104044 ERROR 44 ;WORD COUNT NOT 0.
1506 005500 000410 BR F0031
1507 005502 022777 036432 173534 D0031: CMP #RBUF+2,@TCBA ;DID BUS ADDRESS INCREMENT CORRECTLY?
1508 005510 001404 BEQ F0031 ;BR IF TCBA IS CORRECT.
1509 005512 017737 173526 001172 MOV @TCBA,$REG4
1510 005520 104045 ERROR 45 ;TCBA DID NOT INCREMENT OR DID IT INCORRECTLY.
1511 005522 F0031: MOV #1000,SP ;RESTORE THE STACK POINTER
1512 005522 012706 001000 BR T0032 ;GO ON TO THE NEXT TEST
1513 005526 000421 G0031: TST @TCCM ;HERE WHEN RNUM INTERRUPTS. ERROR BIT SET?
1514 005530 005777 173504 BPL I0031 ;BR IF NO ERROR.
1515 005534 100004 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1516 005536 104041
1517
1518 005540 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1519 005544 000412 BR T0032 ;GO ON TO THE NEXT TEST
1520 005546 012777 177777 173466 I0031: MOV #-1,@TCWC ;SET WORD COUNT TO -1.
1521 005554 012777 036430 173462 MOV #RBUF,@TCBA ;SET BUS ADDR TO RBUF.
1522 005562 112777 000005 173450 MOVB #RDATA!DO,@TCCM ;READ DATA COMMAND.
1523 005570 000002 RTI ;EXIT INTERRUPT.
1524 ;TEST THAT RDATA COMMAND WITH WORD COUNT SET TO -1 TRANSFERS ONLY ONE WORD.
1525 ;THAT READY IS SET WHEN THE ENTIRE 256 WORD BLOCK HAS BEEN PROCESSED, AND
1526 ;THAT NO PARITY ERROR OCCURS. TEST DONE UNDER MAINTENANCE MODE.
1527 .SBTTL T0032
1528 *****
1529 005572 000004 T0032: SCOPE
1530 005574 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1531 005600 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1532 005604 000032 00032 ;HERE LIES THE NUMBER OF THIS TEST
1533 005606 004737 012470 R0032: JSR PC,CLRBUF ;CLEAR READ BUFFER.
1534 005612 004737 012174 JSR PC,STTCV ;SET INTERRUPT VECTOR TO WI.
1535 005616 006002 I0032
1536 005620 005077 173414 CLR @TCCM
1537 005624 012777 020103 173406 MOV #MAINT!UO!FWD!IE!RNUM!DO,@TCCM
1538 005632 MTCOD MTK7,267.
1539 005632 004537 012674 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
1540 005636 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
```

```
1541 005640 000413 267. ;MARK TRACK CODE COUNT.
1542 005642 005777 173372 TST @TCCM ;ERROR BIT SET?
1543 005646 100010 BPL B0032 ;BR IF NO ERROR.
1544 005650 032777 040000 173360 BIT #BIT14,@TCST ;WAS IT PARITY ERROR?
1545 005656 001402 BEQ A0032 ;BR IF NOT PARITY ERROR.
1546 005660 104046 ERROR 46 ;PARITY ERROR.
1547 005662 000444 BR H0032
1548 005664 104041 A0032: ERROR 41 ;ERROR BIT SET. NOT DUE TO PARITY ERROR.
1549 005666 000442 BR H0032
1550 005670 105777 173344 B0032: TSTB @TCCM ;READY BIT SET?
1551 005674 100402 BMI C0032 ;BR IF READY IS SET.
1552 005676 104047 ERROR 47 ;READY FAILED TO SET AFTER COMPLETION
1553 005700 000435 BR H0032 ;OF RDATA COMMAND.
1554 005702 022737 050505 036430 C0032: CMP #50505,RBUF ;1ST WORD EQUAL 50505?
1555 005710 001405 BEQ D0032 ;BR IF WORD IS 50505.
1556 005712 012737 050505 001162 MOV #50505,$REG0 ;GOOD DATA FOR PRINTOUT
1557 005720 104043 ERROR 43 ;1ST WORD DID NOT TRANSFER TO RBUF CORRECTLY.
1558 005722 000424 BR H0032
1559 005724 005737 036432 D0032: TST RBUF+2 ;RBUF+2 EQUAL 0?
1560 005730 001402 BEQ F0032 ;BR IF RBUF+2 EQUAL 0.
1561 005732 104050 ERROR 50 ;RBUF+2 NOT 0. NO DATA SHOULD HAVE
1562 005734 000417 BR H0032 ;TRANSFERRED TO IT.
1563 005736 005777 173300 F0032: TST @TCWC ;WORD COUNT 0?
1564 005742 001407 BEQ G0032 ;BR IF WORD COUNT IS 0.
1565 005744 017737 173272 001172 MOV @TCWC,$REG4 ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1566 005752 005077 173204 CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1567 005756 104044 ERROR 44 ;WORD COUNT NOT 0.
1568 005760 000405 BR H0032
1569 005762 022777 036432 173254 G0032: CMP #RBUF+2,@TCBA ;IS BUS ADDR CORRECT?
1570 005770 001401 BEQ H0032 ;BR IF TCBA OK.
1571 005772 104045 ERROR 45 ;TCBA ADDR INCORRECT. SHOULD CONTAIN RBUF+2.
1572 005774 H0032:
1573 005774 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1574 006000 000421 BR T0033 ;GO ON TO THE NEXT TEST
1575 006002 005777 173232 I0032: TST @TCCM ;HERE WHEN RNUM INTERRUPTS. ERROR?
1576 006006 100004 BPL K0032 ;BR IF NO ERROR.
1577 006010 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1578
1579 006012 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1580 006016 000412 BR T0033 ;GO ON TO THE NEXT TEST
1581 006020 012777 177777 173214 K0032: MOV #-1,@TCWC ;SET WORD COUNT TO -1.
1582 006026 012777 036430 173210 MOV #RBUF,@TCBA ;SET BUS ADDR TO RBUF.
1583 006034 112777 000005 173176 MOVB #RDATA!DO,@TCCM ;READ DATA COMMAND.
1584 006042 000002 RTI ;EXIT INTERRUPT.
1585 ;TEST THAT TC11 IS ABLE TO DETECT INCORRECT PARITY. RDATA COMMAND IS ISSUED.
1586 ;TCWC=-1. BLOCK TO BE READ CONTAINS BAD CHECKSUM. TEST DONE IN MAINT. MODE.
1587 ;SBTTL T0033
1588 ;*****
1589 006044 000004 T0033: SCOPE
1590 006046 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1591 006052 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQLNCE
1592 006056 000033 00033 ;HERE LIES THE NUMBER OF THIS TEST
1593 006060 004737 013152 R0033: JSR PC,MBCKSM ;BAD CHECKSUM TO FCKSM.
1594 006064 004737 012470 JSR PC,CLRBUF ;CLEAR READ BUFFER.
1595 006070 004737 012174 JSR PC,STTCV ;SET INTERRUPT VECTOR TO XE.
1596 006074 006212 D0033
```

1597	006076	005077	173136		CLR	@TCCM	
1598	006102	012777	020103	173130	MOV	#MAINT!UO!FWD!IE!RNUM!DO,@TCCM	
1599	006110				MTCOD	MTK7,267.	
1600	006110	004537	012674		JSR	R5,LMTCOD	;CALL LOAD MT CODES SUB.
1601	006114	033306			MTK7		;ADDRESS OF MARK TRACK CODES.
1602	006116	000413			267.		;MARK TRACK CODE COUNT.
1603	006120	032777	040000	173110	BIT	#BIT14,@TCST	;PARITY ERROR SET?
1604	006126	001005			BNE	A0033	;BR IF PARITY ERROR SET.
1605	006130	017737	173106	001162	MOV	@TCWC,\$REGO	
1606	006136	104052			ERROR 52		;PARITY ERROR NOT DETECTED.(BIT NOT SET).
1607	006140	000421			BR	C0033	
1608	006142	005777	173072		A0033: TST	@TCCM	;ERROR BIT SET?
1609	006146	100405			BMI	B0033	;BR IF ERROR BIT SET.
1610	006150	017737	173066	001162	MOV	@TCWC,\$REGO	
1611	006156	104053			ERROR 53		;PARITY ERROR DID NOT SET ERROR BIT.
1612	006160	000411			BR	C0033	
1613	006162	005077	173052		B0033: CLR	@TCCM	;CLEAR COMMAND REGISTER.
1614	006166	005777	173046		TST	@TCCM	;ERROR BIT CLEAR?
1615	006172	100004			BPL	C0033	;BR IF ERROR BIT IS CLEAR.
1616	006174	017737	173042	001162	MOV	@TCWC,\$REGO	
1617	006202	104054			ERROR 54		;CLEARING TCCM FAILED TO CLEAR PARITY ERROR.
1618	006204				C0033:		
1619	006204	012706	001000		MOV	#1000,SP	;RESTORE THE STACK POINTER
1620	006210	000421			BR	T0034	;GO ON TO THE NEXT TEST
1621	006212	005777	173022		D0033: TST	@TCCM	;HERE WHEN RNUM INTERRUPTS. ERROR?
1622	006216	100004			BPL	G0033	;BR IF NO ERROR.
1623	006220	104041			ERROR 41		;ERROR BIT SET. EXAMINE TCST.
1624							
1625	006222	012706	001000		MOV	#1000,SP	;RESTORE THE STACK POINTER
1626	006226	000412			BR	T0034	;GO ON TO THE NEXT TEST
1627	006230	012777	177777	173004	G0033: MOV	#-1,@TCWC	; -1 TO WORD COUNT.
1628	006236	012777	036430	173000	MOV	#RBUF,@TCBA	;SET BUS ADDR TO RBUF.
1629	006244	112777	000005	172766	MOVB	#RDATA!DO,@TCCM	;RDATA COMMAND.
1630	006252	000002			RTI		;EXIT INTERRUPT.
1631							;READ 256 WORDS WITH RDATA COMMAND UNDER MAINTENANCE MODE. ALL DATA SHOULD
1632							;TRANSFER CORRECTLY. NO CONTROL ERRORS SHOULD OCCUR.
1633							;SBTTL T0034
1634							*****
1635	006254	000004			T0034: SCOPE		
1636	006256	012706	001000		MOV	#1000,SP	;SETUP THE STACK POINTER
1637	006262	004737	011766		JSR	PC,TORDER	;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1638	006266	000034			00034		;HERE LIES THE NUMBER OF THIS TEST
1639	006270	004737	012470		R0034: JSR	PC,CLRBUF	;CLEAR READ BUFFER.
1640	006274	004737	012174		JSR	PC,STTCV	;SET INTERRUPT VECTOR TO YF.
1641	006300	006416			F0034		
1642	006302	005077	172732		CLR	@TCCM	
1643	006306	012777	020103	172724	MOV	#MAINT!UO!FWD!IE!RNUM!DO,@TCCM	
1644	006314				MTCOD	MTK7,267.	
1645	006314	004537	012674		JSR	R5,LMTCOD	;CALL LOAD MT CODES SUB.
1646	006320	033306			MTK7		;ADDRESS OF MARK TRACK CODES.
1647	006322	000413			267.		;MARK TRACK CODE COUNT.
1648	006324	005777	172710		TST	@TCCM	;ERROR BIT SET?
1649	006330	100002			BPL	A0034	;BR IF NO ERROR.
1650	006332	104041			ERROR 41		;ERROR BIT SET. EXAMINE TCST.
1651	006334	000425			BR	D0034	
1652	006336	005777	172700		A0034: TST	@TCWC	;WORD COUNT 0?

```
1653 006342 001407 BEQ B0034 ;BR IF WORD COUNT IS 0.
1654 006344 017737 172672 001172 MOV @TCWC,$REG4 ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1655 006352 005077 172604 CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1656 006356 104044 ERROR 44 ;WORD COUNT NOT 0.
1657 006360 000413 BR D0034
1658 006362 022777 037430 172654 B0034: CMP #RBUF+512.,@TCBA;BUS ADDR CORRECT?
1659 006370 001402 BEQ C0034 ;BR IF TCBA OK.
1660 006372 104051 ERROR 51 ;TCBA INCORRECT. SHOULD BE EQUAL TO
1661 006374 000405 BR D0034 ;RBUF+512.
1662 006376 004537 013166 C0034: JSR R5,CKDAT ;COMPARE 256 WORDS STARTING AT RBUF.
1663 006402 001276 SBDAT1 ;REPORT ANY ERRORS.
1664 006404 036430 RBUF
1665 006406 000400 256.
1666 006410 D0034:
1667 006410 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1668 006414 000421 BR T0035 ;GO ON TO THE NEXT TEST
1669 006416 005777 172616 F0034: TST @TCCM ;HERE WHEN RNUM INTERRUPTS. ERROR?
1670 006422 100004 BPL H0034 ;BR IF NO ERROR.
1671 006424 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1672
1673 006426 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
1674 006432 000412 BR T0035 ;GO ON TO THE NEXT TEST
1675 006434 012777 177400 172600 H0034: MOV #-256.,@TCWC ;:-256 TO WORD COUNT.
1676 006442 012777 036430 172574 MOV #RBUF,@TCBA ;SET BUS ADDR TO RBUF.
1677 006450 112777 000005 172562 MOVB #RDATA!DO,@TCCM ;READ DATA COMMAND.
1678 006456 000002 RTI ;EXIT INTERRUPT.
1679 ;READ 2 DATA BLOCKS (512 WORDS) WITH RDATA COMMAND UNDER MAINTENANCE MODE.
1680 ;ALL DATA SHOULD TRANSFER CORRECTLY. NO ERRORS SHOULD OCCUR.
1681 .SBTTL T0035
1682 *****
1683 006460 000004 T0035: SCOPE
1684 006462 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1685 006466 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1686 006472 000035 00035 ;HERE LIES THE NUMBER OF THIS TEST
1687 006474 004737 012470 R0035: JSR PC,CLRBUF ;CLEAR READ BUFFER.
1688 006500 004737 012174 JSR PC,STTCV ;SET INTERRUPT VECTOR TOZF.
1689 006504 006622 F0035
1690 006506 005077 172526 CLR @TCCM
1691 006512 012777 020103 172520 MOV #MAINT!UO!FWD!IE!RNUM!DO,@TCCM
1692 006520 MTCOD MTK7,534.
1693 006520 004537 012674 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
1694 006524 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
1695 006526 001026 534. ;MARK TRACK CODE COUNT.
1696 006530 005777 172504 TST @TCCM ;ERROR BIT SET?
1697 006534 100002 BPL A0035 ;BR IF NO ERROR.
1698 006536 104041 ERROR 41 ;ERROR BIT SET EXAMINE TCST.
1699 006540 000425 BR D0035
1700 006542 005777 172474 A0035: TST @TCWC ;WORD COUNT 0?
1701 006546 001407 BEQ B0035 ;BR IF WORD COUNT IS 0.
1702 006550 017737 172466 001172 MOV @TCWC,$REG4 ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
1703 006556 005077 172400 CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
1704 006562 104044 ERROR 44 ;WORD COUNT NOT 0.
1705 006564 000413 BR D0035
1706 006566 022777 040430 172450 B0035: CMP #RBUF+1024.,@TCBA;TCBA CORRECT?
1707 006574 001402 BEQ C0035 ;BR IF TCBA IS OK.
1708 006576 104045 ERROR 45 ;TCBA INCORRECT. SHOULD BE RBUF+1024.
```

```
1709 006600 000405
1710 006602 004537 013166
1711 006606 001276
1712 006610 036430
1713 006612 001000
1714 006614
1715 006614 012706 001000
1716 006620 000421
1717 006622 005777 172412
1718 006626 100004
1719 006630 104041
1720
1721 006632 012706 001000
1722 006636 000412
1723 006640 012777 177000 172374
1724 006646 012777 036430 172370
1725 006654 112777 000005 172356
1726 006662 000002
1727
1728
1729
1730
1731 006664 000004
1732 006666 012706 001000
1733 006672 004737 011766
1734 006676 000036
1735 006700 004737 012470
1736 006704 004737 012174
1737 006710 007024
1738 006712 005077 172322
1739 006716 012777 020103 172314
1740 006724
1741 006724 004537 012674
1742 006730 033306
1743 006732 001026
1744 006734 005777 172300
1745 006740 100002
1746 006742 104041
1747 006744 000424
1748 006746 005777 172270
1749 006752 001407
1750 006754 017737 172262 001172
1751 006762 005077 172174
1752 006766 104044
1753 006770 000412
1754 006772 022777 040030 172244
1755 007000 001401
1756 007002 104045
1757 007004 004537 013166
1758 007010 001276
1759 007012 036430
1760 007014 000600
1761 007016
1762 007016 012706 001000
1763 007022 000421
1764 007024 005777 172210

C0035: BR D0035
JSR R5,CKDAT ;COMPARE 512 WORDS STARTING AT RBUF.
SBDAT1 ;REPORT ANY ERRORS.
RBUF
512.

D0035: MOV #1000,SP ;RESTORE THE STACK POINTER
BR T0036 ;GO ON TO THE NEXT TEST
F0035: TST @TCCM ;HERE WHEN RNUM INTERRUPTS. ERROR?
BPL H0035 ;BR IF NO ERROR.
ERROR 41 ;ERROR BIT SET. EXAMINE TCST.

MOV #1000,SP ;RESTORE THE STACK POINTER
BR T0036 ;GO ON TO THE NEXT TEST
H0035: MOV #-512.,@TCWC ;~-512 TO WORD COUNT.
MOV #RBUF,@TCBA ;SET BUS ADDR TO RBUF.
MOVB #RDATA!DO,@TCCM ;READ DATA COMMAND.
RTI ;EXIT INTERRUPT.
;READ 1.5 BLOCKS (384 WORDS) WITH RDATA COMMAND UNDER MAINTENANCE MODE.
;ALL DATA SHOULD TRANSFER CORRECTLY. NO ERRORS SHOULD OCCUR.
.SBTTL T0036
*****
T0036: SCOPE
MOV #1000,SP ;SETUP THE STACK POINTER
JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
00036 ;HERE LIES THE NUMBER OF THIS TEST
R0036: JSR PC,CLRBUF ;CLEAR READ BUFFER.
JSR PC,STTCV ;SET INTERRUPT VECTOR TO A1F.
F0036
CLR @TCCM
MOV #MAINT!UO!FWD!IE!RNUM!DO,@TCCM
MTCOD MTK7,534.
JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
MTK7 ;ADDRESS OF MARK TRACK CODES.
534. ;MARK TRACK CODE COUNT.
TST @TCCM ;ERROR BIT SET?
BPL A0036 ;BR IF NO ERROR.
ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
BR D0036
A0036: TST @TCWC ;WORD COUNT 0?
BEQ B0036 ;BR IF WORD COUNT 0.
MOV @TCWC,$REG4 ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
ERROR 44 ;WORD COUNT NOT 0.
BR D0036
B0036: CMP #RBUF+768.,@TCBA ;TCBA CORRECT?
BEQ C0036 ;BR IF TCBA OK.
ERROR 45 ;TCBA INCORRECT. SHOULD BE RBUF+768.
C0036: JSR R5,CKDAT ;COMPARE 384 WORDS STARTING AT RBUF.
SBDAT1 ;REPORT ANY ERRORS.
RBUF
384.

D0036: MOV #1000,SP ;RESTORE THE STACK POINTER
BR T0037 ;GO ON TO THE NEXT TEST
F0036: TST @TCCM ;HERE WHEN RNUM INTERRUPTS. ERROR?
```



```
1765 007030 100004      BPL      H0036      ;BR IF NO ERROR.
1766 007032 104041      ERROR 41      ;ERROR BIT SET. EXAMINE TCST.
1767
1768 007034 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
1769 007040 000412      BR      T0037      ;GO ON TO THE NEXT TEST
1770 007042 012777 177200 172172 H0036: MOV      #-384.,@TCWC      ;:-384 TO WORD COUNT.
1771 007050 012777 036430 172166      MOV      #RBUF,@TCBA      ;SET BUS ADDR TO RBUF.
1772 007056 112777 000005 172154      MOVB     #RDATA!DO,@TCCM      ;READ DATA COMMAND.
1773 007064 000002      RTI      ;EXIT INTERRUPT.
1774      ;COMPLEMENT OBVERSE READ TEST. READ ONE BLOCK (256 WORDS) WITH RDATA IN REVERSE.
1775      ;ALL DATA SHOULD COMPLEMENT OBVERSE CORRECTLY. NO CONTROL ERRORS SHOULD OCCUR.
1776      .SBTTL T0037
1777      ;*****
1778 007066 000004      T0037: SCOPE
1779 007070 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1780 007074 004737 011766      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1781 007100 000037      00037      ;HERE LIES THE NUMBER OF THIS TEST
1782 007102 004737 012470      R0037: JSR      PC,CLRBUF      ;CLEAR READ BUFFER
1783 007106 004737 012174      JSR      PC,STTCV      ;SET INTERRUPT VECTOR TO B1D
1784 007112 007170      C0037
1785 007114 005077 172120      CLR      @TCCM
1786 007120 012777 024103 172112      MOV      #MAINT!UO!REV!IE!RNUM!DO,@TCCM
1787 007126      MTCOD      MTK7,267.
1788 007126 004537 012674      JSR      R5,LMTCOD      ;CALL LOAD MT CODES SUB.
1789 007132 033306      MTK7      ;ADDRESS OF MARK TRACK CODES.
1790 007134 000413      267.      ;MARK TRACK CODE COUNT.
1791 007136 005777 172076      TST      @TCCM      ;ERROR BIT SET?
1792 007142 100002      BPL      A0037      ;BR IF NO ERROR.
1793 007144 104041      ERROR 41      ;ERROR BIT SET. EXAMINE TCST.
1794 007146 000405      BR      B0037
1795 007150 004537 013166      A0037: JSR      R5,CKDAT      ;COMPARE 256 WORDS STARTING AT RBUF.
1796 007154 001302      SBDAT2      ;REPORT ANY ERRORS.
1797 007156 036430      RBUF
1798 007160 000400      256.
1799 007162
1800 007162 012706 001000      B0037: MOV      #1000,SP      ;RESTORE THE STACK POINTER
1801 007166 000421      BR      T0040      ;GO ON TO THE NEXT TEST
1802 007170 005777 172044      C0037: TST      @TCCM      ;HERE WHEN RNUM INTERRUPTS. ERROR.
1803 007174 100004      BPL      F0037      ;BR IF NO ERROR.
1804 007176 104041      ERROR 41      ;ERROR BIT SET. EXAMINE TCST.
1805
1806 007200 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
1807 007204 000412      BR      T0040      ;GO ON TO THE NEXT TEST
1808 007206 012777 177400 172026 F0037: MOV      #-256.,@TCWC      ;:-256 TO AND COUNT.
1809 007214 012777 036430 172022      MOV      #RBUF,@TCBA      ;ADDR OF RBUF TO BUS ADDRESS.
1810 007222 112777 000005 172010      MOVB     #RDATA!DO,@TCCM      ;READ DATA COMMAND.
1811 007230 000002      RTI      ;EXIT INTERRUPT
1812      ;CHECK FOR CORRECT OPERATION OF BLOCK MISS ERROR.
1813      .SBTTL T0040
1814      ;*****
1815 007232 000004      T0040: SCOPE
1816 007234 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
1817 007240 004737 011766      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1818 007244 000040      00040      ;HERE LIES THE NUMBER OF THIS TEST
1819 007246 005077 171766      R0040: CLR      @TCCM
1820 007252 012777 177776 171762      MOV      #-2,@TCWC      ;:-2 TO WORD COUNT.
```


1821	007260	012777	036430	171756	MOV	#RBUF,@TCBA	:RBUF ADDR TO TCBA.
1822	007266	012777	020003	171744	MOV	#MAINT!UO!FWD!RNUM!DO,@TCCM	
1823	007274				MTCOD	MTK7,5	
1824	007274	004537	012674		JSR	R5,LMTCOD	:CALL LOAD MT CODES SUB.
1825	007300	033306			MTK7		:ADDRESS OF MARK TRACK CODES.
1826	007302	000005			5		:MARK TRACK CODE COUNT.
1827	007304	005777	171730		TST	@TCCM	:ERROR BIT SET?
1828	007310	100002			BPL	A0040	:BR IF NO ERROR.
1829	007312	104041			R0040A: ERROR 41		:ERROR BIT SET EXAMINE TCST.
1830	007314	000506			BR	F0040	
1831	007316	112777	000005	171714	A0040: MOV	#RDATA!DO,@TCCM	:ISSUE RDATA COMMAND.
1832	007324				MTCOD	MTK7A,2	
1833	007324	004537	012674		JSR	R5,LMTCOD	:CALL LOAD MT CODES SUB.
1834	007330	033344			MTK7A		:ADDRESS OF MARK TRACK CODES.
1835	007332	000002			2		:MARK TRACK CODE COUNT.
1836	007334	032777	002000	171674	BIT	#BIT10,@TCST	:BLOCK MISS ERROR SET?
1837	007342	001405			BEQ	B0040	:BR IF NO BLOCK MISS. OK.
1838	007344	017737	171672	001162	MOV	@TCWC,\$REGO	:MAKE WORD COUNT INFO PRINTABLE
1839	007352	104055			ERROR 55		:BLOCK MISS SET WHEN RDATA ISSUED JUST
1840	007354	000466			BR	F0040	:BEFORE REV CHECK MARK. SHOULDN'T HAVE.
1841	007356	005077	171656		B0040: CLR	@TCCM	
1842	007362	012777	177776	171652	MOV	#-2,@TCWC	: -2 TO WORD COUNT.
1843	007370	012777	036430	171646	MOV	#RBUF,@TCBA	:RBUF ADDR TO TCBA.
1844	007376	012777	020003	171634	MOV	#MAINT!UO!FWD!RNUM!DO,@TCCM	
1845	007404				MTCOD	MTK7,6	
1846	007404	004537	012674		JSR	R5,LMTCOD	:CALL LOAD MT CODES SUB.
1847	007410	033306			MTK7		:ADDRESS OF MARK TRACK CODES.
1848	007412	000006			6		:MARK TRACK CODE COUNT.
1849	007414	005777	171620		TST	@TCCM	:ERROR BIT SET?
1850	007420	100734			BMI	R0040A	:BR IF ERROR BIT SET?
1851	007422	112777	000005	171610	MOV	#RDATA!DO,@TCCM	:ISSUE RDATA COMMAND.
1852	007430				MTCOD	MTK7B,2	
1853	007430	004537	012674		JSR	R5,LMTCOD	:CALL LOAD MT CODES SUB.
1854	007434	033352			MTK7B		:ADDRESS OF MARK TRACK CODES.
1855	007436	000002			2		:MARK TRACK CODE COUNT.
1856	007440	032777	002000	171570	BIT	#BIT10,@TCST	:BLOCK MISS ERROR SET?
1857	007446	001005			BNE	C0040	:BR IF BLOCK MISS.
1858	007450	017737	171566	001162	MOV	@TCWC,\$REGO	:MAKE WORD COUNT INFO PRINTABLE
1859	007456	104056			ERROR 56		:BLOCK MISS FAILED TO SET WHEN RDATA ISSUED
1860	007460	000424			BR	F0040	:RIGHT AFTER REV CHECK MARK. IT SHOULD HAVE.
1861	007462	005777	171552		C0040: TST	@TCCM	:ERROR BIT SET?
1862	007466	100405			BMI	D0040	:BR IF ERROR BIT SET.
1863	007470	017737	171546	001162	MOV	@TCWC,\$REGO	:MAKE WORD COUNT INFO PRINTABLE
1864	007476	104057			ERROR 57		:BLOCK MISS FAILED TO SET ERROR BIT.
1865	007500	000414			BR	F0040	
1866	007502	005077	171532		D0040: CLR	@TCCM	:0 TO ERROR BIT.
1867	007506	032777	002000	171524	BIT	#BIT10,@TCCM	:BLOCK MISS CLEARED?
1868	007514	001406			BEQ	F0040	:BR IF BLOCK MISS CLEARED.
1869	007516	017737	171520	001162	MOV	@TCWC,\$REGO	:MAKE WORD COUNT INFO PRINTABLE
1870	007524	104060			ERROR 60		:0 TO ERROR FAILED TO CLEAR BLOCK MISS.
1871	007526	004737	012220		JSR	PC,SRCTT	
1872	007532				F0040:		
1873	007532	012706	001000		MOV	#1000,SP	:RESTORE THE STACK POINTER
1874	007536	000400			BR	T0041	:GO ON TO THE NEXT TEST
1875					:READ ALL TEST (RALL)		
1876					:AFTER BLOCK IS FOUND, SWITCH TO RALL. READ 258 WORDS. 1ST WORD READ SHOULD BE		

1877 :THE REVERSE CHECKSUM (SHOULD BE 0). LAST WORD READ SHOULD BE THE FORWARD
1878 :CHECKSUM (SHOULD BE 770000). ALL OTHER WORDS SHOULD BE DATA.
1879 :SBTTL T0041
1880 :*****
1881 007540 000004 T0041: SCOPE
1882 007542 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
1883 007546 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
1884 007552 000041 00041 ;HERE LIES THE NUMBER OF THIS TEST
1885 007554 004737 012470 R0041: JSR PC,CLRBUF ;CLEAR READ BUFFER.
1886 007560 004737 012174 JSR PC,STTCV ;SET INTERRUPT VECTOR TO EIF.
1887 007564 007754 F0041
1888 007566 005077 171446 CLR @TCCM
1889 007572 012777 020103 171440 MOV #MAINT!UC!FWD!IE!RNUM!DO,@TCCM
1890 007600 MTCOD MTK7,267.
1891 007600 004537 012674 JSR R5,LMTCD ;CALL LOAD MT CODES SUB.
1892 007604 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
1893 007606 000413 267. ;MARK TRACK CODE COUNT.
1894 007610 005777 171424 R0041A: TST @TCCM ;ERROR BIT SET?
1895 007614 100002 BPL R0041B ;BR IF NO ERROR.
1896 007616 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
1897 007620 000461 BR G0041
1898 007622 017724 171420 R0041B: MOV @TCDT,(4)+ ;SAVE DATA IN READ BUFFER.
1899 007626 005337 001274 DEC CTRA ;258 WORDS READ?
1900 007632 001401 BEQ A0041 ;BR IF 258 WORDS READ.
1901 007634 000002 RTI ;NOT DONE YET. EXIT INTERRUPT.
1902 007636 005737 036430 A0041: TST RBUF ;1ST WORD IN RBUF EQUAL 0?
1903 007642 001416 BEQ D0041 ;BR IF 1ST WORD IS 0.
1904 007644 022737 055555 036430 CMP #55555,RBUF ;1ST WORD EQUAL 55555?
1905 007652 001002 BNE B0041 ;BR IF NOT 55555.
1906 007654 104043 ERROR 43 ;55555. 1ST WORD READ WITH RALL WAS
1907 007656 000442 BR G0041 ;REV GUARD INSTEAD OF REV CHECKSUM.
1908 007660 022737 066666 036430 B0041: CMP #66666,RBUF ;1ST WORD EQUAL 66666?
1909 007666 001002 BNE C0041 ;BR IF NOT 66666.
1910 007670 104043 ERROR 43 ;66666. 1ST WORD READ WITH RALL WAS
1911 007672 000434 BR G0041 ;REV LOCK INSTEAD OF REV CHECKSUM.
1912 007674 104043 C0041: ERROR 43 ;1ST WORD READ WITH RALL WAS NOT
1913 007676 000432 BR G0041 ;REV CHECKSUM. EXAMINE RBUF (1ST WORD).
1914 007700 004537 013166 D0041: JSR R5,CKDAT
1915 007704 001276 SBDAT1
1916 007706 036432 RBUF+2
1917 007710 000400 256.
1918 007712 022737 170000 037432 CMP #170000,RBUF+514.;FWD CHKSUM EQUAL 170000? 1ST WORD READ.
1919 007720 001402 BEQ D0041A
1920 007722 104061 ERROR 61 ;LAST WORD READ SHOULD HAVE BEEN THE FWD CHECKSUM.
1921 007724 000417 BR G0041 ;IN CORE IT SHOULD BE 170000.
1922 007726 005777 171310 D0041A: TST @TCWC ;WORD COUNT STILL 0?
1923 007732 001402 BEQ D0041B
1924 007734 104062 ERROR 62 ;TCWC (WORD COUNT) WAS MODIFIED DURING
1925 007736 000412 BR G0041 ;RALL. SHOULDN'T HAVE.
1926 007740 022777 036430 171276 D0041B: CMP #RBUF,@TCBA ;BUS ADDRESS STILL EQUAL #RBUF?
1927 007746 001406 BEQ G0041
1928 007750 104063 ERROR 63 ;TCBA (BUS ADDRESS) MODIFIED DURING
1929 007752 000404 BR G0041 ;RALL. SHOULDN'T HAVE.
1930 007754 005777 171260 F0041: TST @TCCM ;HERE WHEN RNUM INTERRUPTS. ERROR.
1931 007760 100004 BPL I0041 ;BR IF NO ERROR.
1932 007762 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.

```
1933 007764          G0041:
1934 007764 012706 001000      MOV    #1000,SP      ;RESTORE THE STACK POINTER
1935 007770 000421          BR      T0042      ;GO ON TO THE NEXT TEST
1936 007772 012737 000402 001274 10041: MOV    #258.,CTRA    ;NUMBER OF WORDS TO READ TO CTRA.
1937 010000 012704 036430      MOV    #RBUF,R4      ;ADDR TO STORE DATA TO R4.
1938 010004 005077 171232      CLR     @TCWC      ;ZERO WORD COUNT.
1939 010010 012777 036430 171226  MOV    #RBUF,@TCBA    ;SET BUS ADDRESS TO RBUF.
1940 010016 004737 012174      JSR     PC,STTCV    ;SET INTERRUPT VECTOR TO E1AA.
1941 010022 007610          R0041A
1942 010024 112777 000107 171206  MOVB   #RALL!IE!DO,@TCCM    ;RALL COMMAND.
1943 010032 000002          RTI      ;EXIT INTERRUPT.
1944          ;DATA MISS TEST. TEST THAT DATA MISS ERROR SETS WHEN DATA REGISTER (TCDT) IS
1945          ;NOT REFERENCED UNDER RALL COMMAND, BEFORE THE NEXT DATA WORD IS LOADED INTO
1946          ;THE DATA REGISTER. (READY BIT IS CLEARED WHEN IN RALL BY REFERENCING
1947          ;THE DATA REGISTER (TCDT).
1948          ;SBTTL T0042
1949          ;*****
1950 010034 000004          T0042: SCOPE
1951 010036 012706 001000      MOV    #1000,SP      ;SETUP THE STACK POINTER
1952 010042 004737 011766      JSR     PC,TORDER    ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
1953 010046 000042          00042      ;HERE LIES THE NUMBER OF THIS TEST
1954 010050 004737 012174      R0042: JSR     PC,STTCV    ;SET INTERRUPT VECTOR TO F1E.
1955 010054 010156          D0042
1956 010056 005077 171156      CLR     @TCCM
1957 010062 012777 020103 171150  MOV    #MAINT!UO!FWD!IE!RNUM!DO,@TCCM
1958 010070          MTCOD    MTK7,7
1959 010070 004537 012674      JSR     R5,LMTCOD    ;CALL LOAD MT CODES SUB.
1960 010074 033306          MTK7      ;ADDRESS OF MARK TRACK CODES.
1961 010076 000007          7      ;MARK TRACK CODE COUNT.
1962 010100 032777 001000 171130  BIT     #BIT9,@TCST    ;DATA MISS ERROR SET?
1963 010106 001002          BNE     A0042      ;BR IF DATA MISS IS SET.
1964 010110 104064          ERROR 64      ;DATA MISS FAILED TO SET.
1965 010112 000416          BR      C0042
1966 010114 005777 171120      A0042: TST     @TCCM      ;ERROR BIT SET?
1967 010120 100402          BMI     B0042      ;BR IF ERROR BIT SET.
1968 010122 104065          ERROR 65      ;DATA MISS FAILED TO SET ERROR BIT.
1969 010124 000411          BR      C0042
1970 010126 005077 171106      B0042: CLR     @TCCM      ;0 TO ERROR BIT.
1971 010132 032777 001000 171076  BIT     #BIT9,@TCST    ;DATA MISS CLEARED?
1972 010140 001403          BEQ     C0042      ;BR IF DATA MISS IS CLEAR.
1973 010142 104066          ERROR 66      ;0 TO ERROR FAILED TO CLEAR DATA MISS.
1974 010144 004737 012220      JSR     PC,SRSETT
1975 010150          C0042:
1976 010150 012706 001000      MOV    #1000,SP      ;RESTORE THE STACK POINTER
1977 010154 000422          BR      T0043      ;GO ON TO THE NEXT TEST
1978 010156 005777 171056      D0042: TST     @TCCM      ;HERE WHEN RNUM INTERRUPTS. ERROR?
1979 010162 100004          BPL     G0042      ;BR IF NO ERROR.
1980 010164 104041          ERROR 41      ;ERROR BIT SET. EXAMINE TCST.
1981
1982 010166 012706 001000      MOV    #1000,SP      ;RESTORE THE STACK POINTER
1983 010172 000413          BR      T0043      ;GO ON TO THE NEXT TEST
1984 010174 004737 012174      G0042: JSR     PC,STTCV    ;SET INTERRUPT VECTOR TO F1H.
1985 010200 010212          H0042
1986 010202 112777 000107 171030  MOVB   #RALL!IE!DO,@TCCM ;ISSUE RALL. IE SET.
1987 010210 000002          RTI      ;EXIT INTERRUPT.
1988 010212 112777 000007 171020  H0042: MOVB   #RALL!DO,@TCCM ;HERE WHEN RALL INTERRUPTS. DISABLE INTERRUPTS.
```

```
1989 010220 000002
1990
1991
1992
1993
1994
1995
1996
1997
1998 010222 000004
1999 010224 012706 001000
2000 010230 004737 011766
2001 010234 000043
2002 010236 004737 013052
2003 010242 005077 170772
2004 010246 012777 020003 170764
2005 010254
2006 010254 004537 012674
2007 010260 033306
2008 010262 000605
2009 010264 005777 170750
2010 010270 100002
2011 010272 104041
2012 010274 000457
2013 010276 012777 177400 170736
2014 010304 012777 036430 170732
2015 010312 012704 037430
2016 010316 112777 000015 170714
2017 010324
2018 010324 004537 013044
2019 010330 010442
2020 010332 033344
2021 010334 000406
2022 010336 005777 170676
2023 010342 100002
2024 010344 104041
2025 010346 000432
2026 010350 105777 170664
2027 010354 100402
2028 010356 104067
2029 010360 000425
2030 010362 005777 170654
2031 010366 001407
2032 010370 017737 170646 001172
2033 010376 005077 170560
2034 010402 104044
2035 010404 000413
2036 010406 022777 037430 170630
2037 010414 001402
2038 010416 104045
2039 010420 000405
2040 010422 004537 013166
2041 010426 001276
2042 010430 037430
2043 010432 000400
2044 010434

RTI ;DO NOT READ TCDT, EXIT INTERRUPT.
;WRITE DATA TEST. AFTER BLOCK NUMBER IS 'FOUND', ISSUE WDATA COMMAND
;UNDER MAINTENANCE MODE, WORD COUNT = -256, TCBA = RBUF. AFTER
;EACH MARK TRACK CODE IS PASSED, THE DATA IN THE DATA REGISTER IS SAVED.
;WHEN THE OPERATION IS COMPLETED, A COMPARE OF WRITE DATA AND THE DATA
;REGISTER DATA SAVED IS MADE TO SEE IF THEY MATCH. WORD COUNT AND TCBA
;ARE ALSO CHECKED FOR CORRECT CONTENTS.
.SBTTL T0043
;*****
T0043: SCOPE
MOV #1000,SP ;SETUP THE STACK POINTER
JSR PC,ORDER ;MAKE SURE TESTS ARE IN PROPER SEQUENCE
00043 ;HERE LIES THE NUMBER OF THIS TEST
R0043: JSR PC,LBDAT1 ;SET UP WRITE DATA (256 WORDS).
CLR @TCCM
MOV #MAINT!UO!FWD!RNUM!DO,@TCCM
MTCOD MTK7,5
JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
MTK7 ;ADDRESS OF MARK TRACK CODES.
5 ;MARK TRACK CODE COUNT.
TST @TCCM ;ERROR BIT SET?
BPL A0043 ;BR IF NO ERROR.
ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
BR G0043
A0043: MOV #-256,@TCWC ;:-256 TO WORD COUNT.
MOV #RBUF,@TCBA ;ADDR OF RBUF TO TCBA.
MOV #RBUF+512,R4 ;ADDR TO SAVE TCDT DATA TO R4.
MOVB #WDATA!DO,@TCCM ;ISSUE WDATA COMMAND.
MTCOE H0043,MTK7A,262.
JSR R5,LMTCOE ;CALL LOAD MT CODES SUBROUTINE.
H0043 ;ADDR TO GO AFTER EACH CODE PASSED.
MTK7A ;ADDRESS OF MARK TRACK CODES.
262. ;MARK TRACK CODE COUNT.
TST @TCCM ;ERROR BIT SET?
BPL B0043 ;BR IF NO ERROR.
ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
BR G0043
B0043: TSTB @TCCM ;READY BIT SET?
BMI C0043 ;BR IF READY IS SET.
ERROR 67 ;READY BIT FAILED TO SET.
BR G0043
C0043: TST @TCWC ;WORD COUNT 0?
BEQ D0043 ;BR IF WORD COUNT IS 0.
MOV @TCWC,$REG4 ;PREPARE ERONIOUS WORD COUNT FOR PRINTOUT
CLR @SREG0 ;PREPARE GOOD WORD COUNT INFO FOR PRINTOUT
ERROR 44 ;WORD COUNT NOT 0.
BR G0043
D0043: CMP #RBUF+512,@TCBA ;TCBA CORRECT?
BEQ F0043 ;BR IF TCBA CORRECT.
ERROR 45 ;TCBA INCORRECT. SHOULD BE RBUF+512.
BR G0043
F0043: JSR R5,CKDAT ;COMPARE WRITE DATA AGAINST TCDT SAVED
SBDAT1 ;DATA. REPORT ERRORS.
RBUF+512.
256.
G0043:
```

```
2045 010434 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
2046 010440 000403              BR      T0044          ;GO ON TO THE NEXT TEST
2047 010442 017724 170600      H0043: MOV      @TCDT,(4)+      ;HERE AFTER EACH MARK CODE IS PASSED.
2048 010446 000002              RTI          ;SAVE TCDT DATA AND EXIT IOT TRAP.
2049                               ;WRITE DATA COMPLEMENT OBVERSE TEST.
2050                               .SBTTL T0044
2051                               *****
2052 010450 000004      T0044: SCOPE
2053 010452 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
2054 010456 004737 011766      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2055 010462 000044              00044          ;HERE LIES THE NUMBER OF THIS TEST
2056 010464 004737 013052      R0044: JSR      PC,LBDAT1      ;SET UP WRITE DATA (256 WORDS).
2057 010470 005077 170544      CLR      @TCCM
2058 010474 012777 024003 170536      MOV      #MAINT!UO!REV.RNUM!DO,@TCCM
2059 010502              MTCOD      MTK7,5
2060 010502 004537 012674      JSR      R5,LMTCOD      ;CALL LOAD MT CODES SUB.
2061 010506 033306              MTK7          ;ADDRESS OF MARK TRACK CODES.
2062 010510 000005              5          ;MARK TRACK CODE COUNT.
2063 010512 005777 170522      TST      @TCCM      ;ERROR BIT SET?
2064 010516 100002              BPL      A0044      ;BR IF NO ERROR.
2065 010520 104041              ERROR 41      ;ERROR BIT SET EXAMINE TCST.
2066 010522 000432              BR      C0044
2067 010524 012777 177400 170510 A0044: MOV      #-256,@TCWC      ; -256 TO WORD COUNT.
2068 010532 012777 036430 170504      MOV      #RBUF,@TCBA      ;ADDR OF RBUF TO TCBA.
2069 010540 012704 037430      MOV      #RBUF+512,R4      ;ADDR TO SAVE TCDT DATA TO R4.
2070 010544 112777 000015 170466      MOVB      #WDATA!DO,@TCCM      ;ISSUE WDATA COMMAND.
2071 010552              MTCOE      D0044,MTK7A,262.
2072 010552 004537 013044      JSR      R5,LMTCOE      ;CALL LOAD MT CODES SUBROUTINE.
2073 010556 010616              D0044          ;ADDR TO GO AFTER EACH CODE PASSED.
2074 010560 033344              MTK7A          ;ADDRESS OF MARK TRACK CODES.
2075 010562 000406              262.          ;MARK TRACK CODE COUNT.
2076 010564 005777 170450      TST      @TCCM      ;ERROR BIT SET?
2077 010570 100002              BPL      B0044      ;BR IF NO ERROR.
2078 010572 104041              ERROR 41      ;ERROR BIT SET. EXAMINE TCST.
2079 010574 000405              BR      C0044
2080 010576 004537 013166      B0044: JSR      R5,CKDAT      ;CHECK THAT SAVED TCDT DATA WAS COMPLEMENT
2081 010602 001306              SBDAT3      ;OBVERSED CORRECTLY.
2082 010604 037430              RBUF+512.
2083 010606 000400              256.
2084 010610              C0044:
2085 010610 012706 001000      MOV      #1000,SP      ;RESTORE THE STACK POINTER
2086 010614 000403              BR      T0045          ;GO ON TO THE NEXT TEST
2087 010616 017724 170424      D0044: MOV      @TCDT,(4)+      ;HERE AFTER EACH MARK CODE IS PASSED.
2088 010622 000002              RTI          ;SAVE TCDT DATA AND EXIT IOT TRAP.
2089                               ;WRITE ALL TEST.
2090                               .SBTTL T0045
2091                               *****
2092 010624 000004      T0045: SCOPE
2093 010626 012706 001000      MOV      #1000,SP      ;SETUP THE STACK POINTER
2094 010632 004737 011766      JSR      PC,TORDER      ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2095 010636 000045              00045          ;HERE LIES THE NUMBER OF THIS TEST
2096 010640 004737 013052      R0045: JSR      PC,LBDAT1      ;SET UP WRITE DATA.
2097 010644 005077 170370      CLR      @TCCM
2098 010650 012777 020003 170362      MOV      #MAINT!UO!FWD!RNUM!DO,@TCCM
2099 010656              MTCOD      MTK7,4
2100 010656 004537 012674      JSR      R5,LMTCOD      ;CALL LOAD MT CODES SUB.
```

```
2101 010662 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
2102 010664 000004 4 ;MARK TRACK CODE COUNT.
2103 010666 005777 170346 TST @TCCM ;ERROR BIT SET?
2104 010672 100002 BPL A0045 ;BR IF NO ERROR.
2105 010674 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
2106 010676 000470 BR G0045
2107 010700 005077 170336 A0045: CLR @TCWC ;0 TO WORD COUNT.
2108 010704 012777 036430 170332 MOV #RBUF,@TCBA ;ADDR OF RBUF TO TCBA.
2109 010712 012703 036426 MOV #RBUF-2,R3
2110 010716 012704 037430 MOV #RBUF+512.,R4
2111 010722 012737 000402 001274 MOV #258.,CTRA ;# OF WORDS TO WRITE TO CTRA.
2112 010730 004737 012174 JSR PC,STICV ;SET INTERRUPT VECTOR TO IIC.
2113 010734 010756 B0045
2114 010736 112777 000117 170274 MOVB #WALL!IE!DO,@TCCM;ISSUE WRITE ALL COMMAND. INTERRUPT ENABLED.
2115 010744 MTCOE I0045,MTK5,260.
2116 010744 004537 013044 JSR R5,LMTCOE ;CALL LOAD MT CODES SUBROUTINE.
2117 010750 011066 I0045 ;ADDR TO GO AFTER EACH CODE PASSED.
2118 010752 033336 MTK5 ;ADDRESS OF MARK TRACK CODES.
2119 010754 000404 260. ;MARK TRACK CODE COUNT.
2120 010756 005777 170256 B0045: TST @TCCM ;ERROR BIT SET?
2121 010762 100002 BPL B0045A ;BR IF NO ERROR.
2122 010764 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
2123 010766 000434 BR G0045
2124 010770 012377 170252 B0045A: MOV (3)+,@TCDT ;WRITE DATA TO TCDT.
2125 010774 005337 001274 DEC CTRA ;WROTE 257 WORDS?
2126 011000 001401 BEQ C0045 ;BR IF 257 WORDS WRITTEN.
2127 011002 000002 RTI ;NOT DONE. EXIT INTERRUPT.
2128 011004 005737 037430 C0045: TST @#RBUF+512. ;1ST WORD WRITTEN EQUAL 0?
2129 011010 001404 BEQ D0045 ;BR IF FIRST WORD 0.
2130 011012 005037 001162 CLR $REG0
2131 011016 104070 ERROR 70 ;1ST WORD WRITTEN NOT 0. (REV CHECKSUM).
2132 011020 000417 BR G0045
2133 011022 004537 013166 D0045: JSR R5,CKDAT ;CHECK THAT SAVED TCDT DATA MATCHES
2134 011026 001276 SBDAT1 ;WRITE DATA.
2135 011030 037432 RBUF+514.
2136 011032 000400 256.
2137 011034 005777 170202 TST @TCWC ;WORD COUNT STILL 0?
2138 011040 001402 BEQ F0045 ;BR IF WORD COUNT IS 0.
2139 011042 104071 ERROR 71 ;WORD COUNT MODIFIED DURING WRITE ALL.
2140 011044 000405 BR G0045
2141 011046 022777 036430 170170 F0045: CMP #RBUF,@TCBA ;TCBA STILL EQUAL RBUF?
2142 011054 001401 BEQ G0045 ;BR IF TCBA STILL SAME.
2143 011056 104072 ERROR 72 ;TCBA MODIFIED DURING WRITE ALL.
2144 011060 G0045:
2145 011060 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
2146 011064 000403 BR T0046 ;GO ON TO THE NEXT TEST
2147 011066 017724 170154 I0045: MOV @TCDT,(4)+ ;HERE AFTER EACH MARK CODE IS PASSED.
2148 011072 000002 RTI ;SAVE TCDT DATA AND EXIT IOT TRAP.
2149
2150 .SBTTL T0046
2151 *****
2152 011074 000004 T0046: SCOPE
2153 011076 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
2154 011102 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2155 011106 000046 00046 ;HERE LIES THE NUMBER OF THIS TEST
2156 011110 004537 013314 R0046: JSR R5,CKSELE ;SST TO U1.
```



```
2157 011114 000400          U1
2158 011116 104073          ERROR 73          ;SST TO U1 DID NOT CAUSE SFLECT ERROR.
2159
2160 011120 012706 001000    MOV      #1000,SP    ;RESTORE THE STACK POINTER
2161 011124 000400          BR      T0047        ;GO ON TO THE NEXT TEST
2162          .SBTTL T0047
2163          ;*****
2164 011126 000004          T0047: SCOPE
2165 011130 012706 001000    MOV      #1000,SP    ;SETUP THE STACK POINTER
2166
2167 011134 004737 011766    JSR      PC,TORDER  ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2168 011140 000047          00047                ;HERE LIES THE NUMBER OF THIS TEST
2169 011142 004537 013314    R0047: JSR      R5,CKSELE ;SST TO U2.
2170 011146 001000          U2
2171 011150 104073          ERROR 73          ;SST TO U2 DID NOT CAUSE SELECT ERROR.
2172
2173 011152 012706 001000    MOV      #1000,SP    ;RESTORE THE STACK POINTER
2174          .SBTTL T0050
2175          ;*****
2176 011156 000004          T0050: SCOPE
2177 011160 012706 001000    MOV      #1000,SP    ;SETUP THE STACK POINTER
2178 011164 004737 011766    JSR      PC,TORDER  ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2179 011170 000050          00050                ;HERE LIES THE NUMBER OF THIS TEST
2180 011172 004537 013314    R0050: JSR      R5,CKSELE ;SST TO U1.
2181 011176 001400          U3
2182 011200 104073          ERROR 73          ;SST TO U3 DID NOT CAUSE SELECT ERROR.
2183
2184 011202 012706 001000    MOV      #1000,SP    ;RESTORE THE STACK POINTER
2185          .SBTTL T0051
2186          ;*****
2187 011206 000004          T0051: SCOPE
2188 011210 012706 001000    MOV      #1000,SP    ;SETUP THE STACK POINTER
2189 011214 004737 011766    JSR      PC,TORDER  ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2190 011220 000051          00051                ;HERE LIES THE NUMBER OF THIS TEST
2191 011222 004537 013314    R0051: JSR      R5,CKSELE ;ISSUE A SST COMMAND
2192 011226 002000          U4
2193 011230 104073          ERROR 73          ;SST TO U4 DID NOT CAUSE SELECT ERROR.
2194
2195 011232 012706 001000    MOV      #1000,SP    ;RESTORE THE STACK POINTER
2196          .SBTTL T0052
2197          ;*****
2198 011236 000004          T0052: SCOPE
2199 011240 012706 001000    MOV      #1000,SP    ;SETUP THE STACK POINTER
2200 011244 004737 011766    JSR      PC,TORDER  ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2201 011250 000052          00052                ;HERE LIES THE NUMBER OF THIS TEST
2202 011252 004537 013314    R0052: JSR      R5,CKSELE ;ISSUE A SST COMMAND
2203 011256 002400          U5
2204 011260 104073          ERROR 73          ;SST TO U5 DID NOT CAUSE SELECT ERROR.
2205
2206 011262 012706 001000    MOV      #1000,SP    ;RESTORE THE STACK POINTER
2207          .SBTTL T0053
2208          ;*****
2209 011266 000004          T0053: SCOPE
2210 011270 012706 001000    MOV      #1000,SP    ;SETUP THE STACK POINTER
2211 011274 004737 011766    JSR      PC,TORDER  ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2212 011300 000053          00053                ;HERE LIES THE NUMBER OF THIS TEST
```



```
2213 011302 004537 013314 R0053: JSR R5,CKSELE ;ISSUE A SST COMMAND
2214 011306 003000 U6
2215 011310 104073 ERROR 73 ;SST TO U6 DID NOT CAUSE SELECT ERROR.
2216 011312 000240 NOP
2217 011314 000240 NOP
2218 011316 000240 NOP
2219
2220 011320 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
2221 .SBTTL T0054
2222 *****
2223 011324 000004 T0054: SCOPE
2224 011326 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
2225 011332 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2226 011336 000054 00054 ;HERE LIES THE NUMBER OF THIS TEST
2227 011340 004537 013314 R0054: JSR R5,CKSELE ;ISSUE A SST COMMAND
2228 011344 003400 U7
2229 011346 104073 ERROR 73 ;SST TO U7 DID NOT CAUSE SELECT ERROR.
2230
2231 011350 012706 001000 MOV #1000,SP ;RESTORE THE STACK POINTER
2232 .SBTTL T0055
2233 *****
2234 011354 000004 T0055: SCOPE
2235 011356 012706 001000 MOV #1000,SP ;SETUP THE STACK POINTER
2236 011362 004737 011766 JSR PC,TORDER ;MAKE SURE TESTS ARE IN PRPOER SEQUENCE
2237 011366 000055 00055 ;HERE LIES THE NUMBER OF THIS TEST
2238 011370 004737 013104 JSR PC,LBBIND ;LOAD BUFFER WITH BINARY DATA.
2239 011374 005077 167640 CLR @TCCM
2240 011400 012777 020003 167632 MOV #MAINT!UO!FWD!RNUM!DO,@TCCM
2241 011406 MTCOD MTK7,5
2242 011406 004537 012674 JSR R5,LMTCOD ;CALL LOAD MT CODES SUB.
2243 011412 033306 MTK7 ;ADDRESS OF MARK TRACK CODES.
2244 011414 000005 5 ;MARK TRACK CODE COUNT.
2245 011416 005777 167616 TST @TCCM ;ERROR BIT SET?
2246 011422 100002 BPL A0055 ;BR IF NO ERROR.
2247 011424 104041 ERROR 41 ;ERROR BIT SET. EXAMINE TCST.
2248 011426 000441 BR D0055
2249 011430 012777 177400 167604 A0055: MOV #-256,@TCWC ;:-256 TO WORD COUNT.
2250 011436 012777 036430 167600 MOV #RBUF,@TCBA ;RBUF ADDR TO TCBA.
2251 011444 012704 037430 MOV #RBUF+512.,R4 ;ADDR TO SAVE TCDT DATA TO R4.
2252 011450 112777 000015 167562 MOVB #WDATA!DO,@TCCM ;ISSUE WRITE DATA COMMAND.
2253 011456 MTCOE F0055,MTK7A,262.
2254 011456 004537 013044 JSR R5,LMTCOE ;CALL LOAD MT CODES SUBROUTINE.
2255 011462 011540 F0055 ;ADDR TO GO AFTER EACH CODE PASSED.
2256 011464 033344 MTK7A ;ADDRESS OF MARK TRACK CODES.
2257 011466 000406 262. ;MARK TRACK CODE COUNT.
2258 011470 005777 167544 TST @TCCM ;ERROR BIT SET?
2259 011474 100002 BPL B0055 ;BR IF NO ERROR.
2260 011476 104044 ERROR 44 ;ERROR BIT SET. EXAMINE TCST.
2261 011500 000414 BR D0055
2262 011502 012701 037430 B0055: MOV #RBUF+512.,R1 ;ADDR OF DATA TO CHECK TO R1.
2263 011506 012703 036430 MOV #RBUF,R3 ;ADDR OF EXPECTED DATA TO R3.
2264 011512 012702 000400 MOV #256.,R2 ;# OF WORDS TO CHECK TO R2.
2265 011516 005037 013312 CLR WDCNT
2266 011522 004737 013240 C0055: JSR PC,CDTCK ;CHECK DATA WORD.
2267 011526 005302 DEC R2 ;ALL WORDS CHECKED?
2268 011530 001374 BNE C0055 ;BR IF NOT DONE YET.
```

```
2269 011532
2270 011532 012706 001000
2271 011536 000403
2272 011540 017724 167502
2273 011544 000002
2274
2275
2276 011546 000004
2277 011550
2278
2279
2280 011550
2281
2282
2283
2284
2285
2286
2287 011550
2288 011550 000004
2289
2290 011552 005037 001102
2291 011556 005037 001222
2292 011562 005237 001100
2293 011566 042737 100000 001100
2294 011574 005327
2295 011576 000001
2296 011600 003022
2297 011602 012737
2298 011604 000001
2299 011606 011576
2300 011610 104401 011655
2301 011614
2302 011614 013746 001100
2303 011620 104405
2304 011622 104401 011652
2305 011626 013700 000042
2306 011632 001405
2307
2308 011634 000005
2309 011636 004710
2310 011640 000240
2311 011642 000240
2312 011644 000240
2313 011646
2314 011646 000137
2315 011650 002632
2316 011652 377 377 000
2317 011655 015 042412 042116
2318 011662 050040 051501 020123
2319 011670 000043
2320
2321 011672 012737 016041 011730
2322 011700 000403
2323 011702 012737 015717 011730
2324 011710 011600

D0055:
MOV #1000,SP ;RESTORE THE STACK POINTER
BR T0056 ;GO ON TO THE NEXT TEST
F0055: MOV @TCDT,(4)+ ;HERE AFTER EACH MARK CODE IS PASSED.
RTI ;SAVE TCDT DATA AND EXIT.

.SBTTL T0056
T0056: SCOPE
.SEOP STARTX,,PASCNT
.SBTTL END OF PASS ROUTINE

STARS
;*****
;*INCREMENT THE PASS NUMBER ($PASS)
;*TYPE 'END PASS #XXXXX' (WHERE XXXXX IS A DECIMAL NUMBER)
;*IF THERES A MONITOR GO TO IT
;*IF THERE ISN'T JUMP TO STARTX

$EOP:
SCOPE
.LIST
CLR $STNM ;:ZERO THE TEST NUMBER
CLR $TIMES ;:ZERO THE NUMBER OF ITERATIONS
INC $PASS ;:INCREMENT THE PASS NUMBER
BIC #100000,$PASS ;:DON'T ALLOW A NEG. NUMBER
DEC (PC)+ ;:LOOP?
$EOPCT: .WORD 1
BGT $DOAGN ;:YES
MOV (PC)+,@(PC)+ ;:RESTORE COUNTER
$ENDCT: .WORD 1
$EOPCT
TYPE $ENDMG ;:TYPE 'END PASS #'
TYPDEC $PASS
MOV $PASS,-(SP) ;:SAVE $PASS FOR TYPEOUT
TYPDS ;:GO TYPE--DECIMAL ASCII WITH SIGN
TYPE $ENULL ;:TYPE A NULL CHARACTER
$GET42: MOV @#42,R0 ;:GET MONITOR ADDRESS
BEQ $DOAGN ;:BRANCH IF NO MONITOR
.LIST
RESET
$ENDAD: JSR PC,(R0) ;:CLEAR THE WORLD
NOP ;:GO TO MONITOR
NOP ;:SAVE ROOM
NOP ;:FOR
NOP ;:ACT11
$DOAGN:
JMP @ (PC)+ ;:RETURN
$RTNAD: .WORD STARTX
$ENULL: .BYTE -1,-1,0 ;:NULL CHARACTER STRING
$ENDMG: .ASCIIZ <15><12>/END PASS #/

;* THIS ROUTINE HANDLES FATAL TRAP ERRORS
TRAP10: MOV #TRPM10,TMESAD ;ADDRESS OF TRAP TO 10 MESSAGE TO THE MESSAGE PO
BR TRAPX ;ENTER THE FATAL TRAP ERROR REPORT ROUTINE
TRAP4: MOV #TRPM4S,TMESAD
TRAPX: MOV (SP),R0 ;SAVE PC OF WHERE TRAP OCCURRED
```

2325	011712	162700	000002		SUB	#2,R0		;MAKE IT POINT EXACTLY AT THE OFFENDING WORD
2326	011716	012706	001000		MOV	#1000,SP		;MAKE SURE THAT THE STACK GIVES NO PROBLEMS
2327	011722	005046			CLR	-(SP)		;FAKEOUT THE PRINTOUT ROUTINE
2328	011724	004737	014266		JSR	PC,\$TYPE		;PRINT THE TRAP MESSAGE
2329	011730	000000		TMESAD:	000000			;ADDRESS OF THE TRAP MESSAGE GOES HERE
2330	011732	010016			MOV	R0,(SP)		;PUT ERROR PC BACK ONTO THE STACK
2331	011734	104402			TYPOC			
2332	011736	104401	001233	TRYAGN:	TYPE	,\$CRLF		
2333	011742	104401	015767		TYPE	,TRPMES		;THEN PRINTOUT THE TRAP MESSAGE
2334	011746	000240			NOP			;PATCHING SPACE, THOUGHTFULLY PROVIDED
2335	011750	000240			NOP			;PATCHING SPACE, THOUGHTFULLY PROVIDED
2336	011752	000240			NOP			;PATCHING SPACE, THOUGHTFULLY PROVIDED
2337	011754	000240			NOP			;PATCHING SPACE, THOUGHTFULLY PROVIDED
2338	011756	000240			NOP			;PATCHING SPACE, THOUGHTFULLY PROVIDED
2339	011760	000005			RESET			
2340	011762	000137	002314		JMP	@#START		
2341								;SUBROUTINE TO CHECK TO MAKE SURE THAT EACH TEST IN
2342								;RUNNING WHEN IT SHOULD
2343	011766	011637	001162	TORDER:	MOV	(SP),\$REGO		;GET ADDRESS OF TEST #
2344	011772	062716	000002		ADD	#2,(SP)		;BUMP PRETURN ADDRESS TO HOP OVER THE IN LINE TEST #
2345	011776	123777	001102		CMPB	\$TSTNM,@\$REGO		;FIND OUT IF THE TEST #'S MATCH
2346	012004	001410			BEQ	TORDER		;IF THEY DO HOP OVER THE ERROR SIGNAL STUFF
2347	012006	013737	001162		MOV	\$REGO,\$REG1		;SAVE ADDRESS OF TEST
2348	012014	017737	167142		MOV	@\$REGO,\$REGO		;GET TEST# WAS DATA READY FOR PRINTOUT
2349	012022	104026			ERROR	26		;PRINTOUT 'OUT OF ORDER' MESSAGE
2350	012024	000744			BR	TRYAGN		;GO TRY TO START OVER
2351	012026	000207		TORDER:	RTS	PC		;RETURN
2352								;SAVE REGS 0 TO 4 SUBROUTINE.
2353	012030	012666	177764	SV04:	MOV	(6)+,-12.(6)		;MOVE PC UPSTACK.
2354	012034	012737	000207		MOV	#RTSPC,SV05C		
2355	012042	000412	012106		BR	SV05B		
2356								;SUB TO SAVE REGS 0 TO 5 AND PLACE JSR PC IN R5.
2357	012044	012737	000240	SV05S:	MOV	#NOP,SV05C		
2358	012052	000403	012106		BR	SV05A		
2359								;SUB TO SAVE REGS 0 TO 5.
2360	012054	012737	000207	SV05:	MOV	#RTSPC,SV05C		
2361	012062	012666	177762	SV05A:	MOV	(6)+,-14.(6)		;MOVE PC UPSTACK.
2362	012066	010546			MOV	R5,-(6)		
2363	012070	010446		SV05B:	MOV	R4,-(6)		
2364	012072	010346			MOV	R3,-(6)		
2365	012074	010246			MOV	R2,-(6)		
2366	012076	010146			MOV	R1,-(6)		
2367	012100	010046			MOV	R0,-(6)		
2368	012102	162706	000002		SUB	#2,SP		
2369	012106	000207		SV05C:	RTS	PC		;RTS PC OR NOP.
2370	012110	016605	000016		MOV	14.(6),R5		;JSR PC TO R5.
2371	012114	000207			RTS	PC		;EXIT.
2372								;RESTORE REGS 0 TO 4 SUBROUTINE.
2373	012116	062706	000002	RS04:	ADD	#2,SP		
2374	012122	012600			MOV	(6)+,R0		;RESTORE REGS 0 TO 4.
2375	012124	012601			MOV	(6)+,R1		
2376	012126	012602			MOV	(6)+,R2		
2377	012130	012603			MOV	(6)+,R3		
2378	012132	012604			MOV	(6)+,R4		
2379	012134	016646	177764		MOV	-12.(6),-(6)		;MOVE PC DOWN STACK.
2380	012140	000207			RTS	PC		;EXIT

MACY11 30A(1052) 10-APR-80 15:18 PAGE 46
END OF PASS ROUTINE

L 4

```

;SUB TO SET R5 IN EMT PC AND RESTORE REGS 0 TO5.
RS05S: MOV R5,14.(6) ;SET EMT PC TO R5 CONTENTS.
;SUB TO RESTORE REGS 0 TO 5.
RS05: ADD #2,SP
MOV (6)+,R0
MOV (6)+,R1
MOV (6)+,R2
MOV (6)+,R3
MOV (6)+,R4
MOV (6)+,R5
MOV -14.(6),-(6) ;MOVE PC DOWNSTACK.
RTS PC ;EXIT
;ROUTINE TO SET TC11 INTERRUPT VECTOR AND PRIORITY
STTCV: JSR PC,SV05S
MOV TCVTR,R1 ;VECTOR TO R1.
MOV (5)+,(1)+ ;SET DESIRED VECTOR.
MOV TCLVL,(1)+ ;SET TC11 PRIORITY.
JSR PC,RS05S
RTS PC
;ROUTINE TO ISSUE RESET.
SRSETT: MOV R0,-(6) ;PUSH R0.
MOV #52525,R0 ;DATA TO R0.
COM R0 ;COMPLEMENT (R0).
MOV R0,SRSETT+4 ;(R0) TO SRSETT+4.
RESET ;ISSUE RESET. (R0) IS
MOV (6)+,R0 ;RESTORE R0.
RTS PC ;EXIT
RSTMTK: JSR R5,BMOVE ;RESTORE MTKVAR MARK CODE.
MTKC10 ;AND GOOD CHECKSUM.
MTKVAR
6
JSR R5,BMOVE
MTK5P
MTK5
6
JSR R5,BMOVE
GCKSM
FCKSM
6
RTS PC ;EXIT.
;COMMON HALT ROUTINE
CHLT: JSR PC,SV05S
MOV R5,R0 ;DEVELOP ADDR OF CALLER.
TST -(0)
HALT ;HALT CALL ADDR IN DATA LIGTHS.
JSR PC,RS05S
RTS PC ;EXIT.
;RANDOM NUMBER GENERATOR. ROUTINE EXITS WITH NUMBER IN REGISTER 0.
RNGEN: MOV RP1,R0
ROL R0
ROL R0
ADD RP2,R0
MOV R0,RP1
ROL R0
ROL R0
ADD RP2,R0

```

2437	012352	006100			ROL	R0	
2438	012354	006100			ROL	R0	
2439	012356	010037	012372		MOV	R0,RP2	
2440	012362	013700	012370		MOV	RP1,R0	
2441	012366	000207			RTS	PC	;EXIT. NUMBER IN R0
2442	012370	001233		RP1:	1233		
2443	012372	007622		RP2:	7622		
2444							
2445	012374	004737	012044				
2446	012400	012500		DLY:	JSR	PC,SV05S	;SUBROUTINE TO DELAY A SPECIFIED NUMBER OF MILLISECONDS
2447	012402	005037	177776		MOV	(5)+,R0	;DELAY COUNT TO R0.
2448	012406	012701	000226		CLR	PSW	;SET PRIORITY 0.
2449	012412	005301		DLYA:	MOV	#226,R1	;1 MSEC COUNT TO R1.
2450	012414	001376		DLYB:	DEC	R1	;DECREMENT 1 MSEC COUNT.
2451	012416	005300			BNE	DLYB	;BR IF NOT 0.
2452	012420	001372			DEC	R0	;DECREMENT DELAY COUNT.
2453	012422	004737	012142		BNE	DLYA	;BR IF NOT DONE DELAYING.
2454	012426	000207			JSR	PC,RS05S	
2455					RTS	PC	;EXIT.
2456							
2457	012430	004737	012044				
2458	012434	004737	012322				
2459	012440	043700	012466				
2460	012444	001407					
2461	012446	010037	012456				
2462	012452	004737	012374				
2463	012456	000000					
2464	012460	004737	012142				
2465	012464	000207					
2466	012466	000000					
2467							
2468	012470	005037	036430				
2469	012474	004537	012646				
2470	012500	036430					
2471	012502	036431					
2472	012504	001777					
2473	012506	000207					
2474							
2475	012510	012737	177777	012532			
2476	012516	004537	012646				
2477	012522	012532					
2478	012524	012533					
2479	012526	000013					
2480	012530	000207					
2481	012532	000000					
2482	012534	000000					
2483	012536	000000					
2484	012540	000000					
2485	012542	000000					
2486	012544	000000					
2487							
2488	012546	013737	012534	012536			
2489	012554	005137	012536				
2490	012560	005137	012532				
2491	012564	001002					
2492	012566	005237	012536				

ROL R0
MOV R0,RP2
MOV RP1,R0
RTS PC
;EXIT. NUMBER IN R0
RP1: 1233
RP2: 7622
;SUBROUTINE TO DELAY A SPECIFIED NUMBER OF MILLISECONDS
DLY: JSR PC,SV05S
MOV (5)+,R0 ;DELAY COUNT TO R0.
CLR PSW ;SET PRIORITY 0.
DLYA: MOV #226,R1 ;1 MSEC COUNT TO R1.
DLYB: DEC R1 ;DECREMENT 1 MSEC COUNT.
BNE DLYB ;BR IF NOT 0.
DEC R0 ;DECREMENT DELAY COUNT.
BNE DLYA ;BR IF NOT DONE DELAYING.
JSR PC,RS05S
RTS PC ;EXIT.
;SUBROUTINE TO STALL A RANDOM NUMBER OF MILLISECONDS. MAXIMUM STALL
;DETERMINED BY CONTENTS OF LOC STLMSK.
STAL: JSR PC,SV05S
JSR PC,RNGEN ;GO GET RANDOM NUMBER.
BIC STLMSK,R0 ;# IN R0. APPLY STALL MASK.
BEQ STALB ;BRANCH IF RESULT IS 0.
MOV R0,STALA
JSR PC,DLY ;DELAY
STALA: OPEN ;DELAY COUNT
JSR PC,RS05S
STALB: RTS PC ;DONE. EXIT.
STLMSK: OPEN ;STALL MASK.
;SUBROUTINE TO CLEAR DECTAPE READ BUFFER.
CLRBUF: CLR RBUF ;CLEAR 512 WORD READ BUFFER.
JSR R5,BMOVE ;TO ALL 0'S.
RBUF
RBUF+1
1023.
RTS PC ;EXIT.
;SUBROUTINE TO INITIALIZE BINARY COUNT PATTERNS
INBIN: MOV #-1,RIND ;SET ALL VARIABLES
JSR R5,BMOVE ;TO MINUS 1.
RIND
RIND+1
11.
RTS PC ;EXIT
RIND: OPEN
PT0: OPEN
PT1: OPEN
PIND: OPEN
PTOP: OPEN
PT1P: OPEN
;SPECIAL BINARY COUNT PATTERN SUBROUTINE. EXITS WITH BIN CHAR IN R0
GTBIN: MOV PT0,PT1 ;PREVIOUS BIN CHAR TO PT1
COM PT1
COM RIND
BNE +6
INC PT1

2493	012572	013737	012536	012534	MOV	PT1,PT0	:SAVE BIN CHAR IN PT0
2494	012600	013700	012536		MOV	PT1,R0	:BIN CHAR TO R0.
2495	012604	000207			RTS	PC	:EXIT.
2496	012606	013737	012542	012544	GTBINP: MOV	PTOP,PT1P	:PREVIOUS BIN CHAR TO PT1P
2497	012614	005137	012544		COM	PT1P	
2498	012620	005137	012540		COM	PIND	
2499	012624	001002			BNE	.+6	
2500	012626	005237	012544		INC	PT1P	
2501	012632	013737	012544	012542	MOV	PT1P,PTOP	:SAVE BIN CHAR IN PTO.
2502	012640	013701	012544		MOV	PT1P,R1	:BIN CHAR TO R1.
2503	012644	000207			RTS	PC	:EXIT.
2504					:SUBROUTINE TO MOVE A VARIABLE NUMBER OF BYTES.		
2505	012646	004737	012030		BMOVE: JSR	PC,SV04	:SAVE REGS.
2506	012652	012501			MOV	(5)+,R1	:GET 'FROM' ADDRESS
2507	012654	012502			MOV	(5)+,R2	:GET 'TO' ADDRESS
2508	012656	012503			MOV	(5)+,R3	:GET COUNT
2509	012660	112122			BMOVA: MOV	(1)+,(2)+	:MOVE BYTE
2510	012662	005303			DEC	R3	:DECREMENT COUNT
2511	012664	001375			BNE	BMOVA	:BRANCH IF NOT DONE.
2512	012666	004737	012116		JSR	PC,RS04	:RESTORE REGS.
2513	012672	000205			RTS	R5	:DONE EXIT
2514					:SUB TO PASS TIMING, MARK, AND DATA TO TC11 CONTROL UNDER MAINTENANCE MODE.		
2515	012674	005037	001260		LMTCD: CLR	CODCAL	:DO NOT CALL CODE AFTER EACH MARK
2516	012700	012537	013034		LMTCAA: MOV	(5)+,MTKADR	:GET MARK TRACK ADDRESS.
2517	012704	012537	013040		MOV	(5)+,CDCNT	:GET NTH CODE COUNT.
2518	012710	052777	020000	166322	BIS	#BIT13,@TCCM	:SET MAINTENANCE BIT.
2519	012716	013737	013040	013042	MOV	CDCNT,CDCTR	:CODE COUNT TO CODE COUNTER.
2520	012724	013701	001236		MOV	TCST,R1	:ADDR CONTAINING TCST ADDR TO R1.
2521	012730	012702	000100		MOV	#10C,R2	
2522	012734	013700	013034		LMTCA: MOV	MTKADR,R0	:MARK TRACK ADDR TO R0.
2523	012740	012737	000006	013036	LMTCB: MOV	#6,BTCTR	:6 TO BIT COUNTER.
2524	012746	111011			LMTCC: MOV	(0),(1)	:SET MARK TRACK BIT AND DATA .
2525	012750	150210			BISB	R2,(0)	
2526	012752	111011			MOV	(0),(1)	:TP1. LOADS MARK TRACK.
2527	012754	111011			MOV	(0),(1)	:RELOAD DATA.
2528	012756	140210			BICB	R2,(0)	
2529	012760	112011			MOV	(0)+,(1)	:TP0. SHIFTS DATA IN RWB.
2530	012762	005337	013036		DEC	BTCTR	:6TH BIT SET?
2531	012766	001413			BEQ	LMTCE	:BR IF 6TH BIT SET.
2532	012770	022737	000002	013036	CMP	#2,BTCTR	:NOT 6TH. 4TH BIT SET?
2533	012776	001363			BNE	LMTCC	:BRANCH IF NOT.
2534	013000	005737	001260		TST	CODCAL	:DO WE WANT TO CALL CODE
2535	013004	001760			BEQ	LMTCC	:DO NOT IF CODE CALL SWITCH = 0
2536	013006	005046			CLR	-(6)	:IF ITS NOT =0 FAKE A INTERRUPT
2537	013010	004777	166244		JSR	PC,@CODCAL	:TO LOCATION SPECIFIED IN CODE CALL SWITCH
2538	013014	000754			BR	LMTCC	
2539	013016	005337	013042		LMTCE: DEC	CDCTR	:NTH CODE SET?
2540	013022	001001			BNE	LMTCD	:BRANCH IF NOT.
2541	013024	000205			RTS	R5	:EXIT.
2542	013026	105710			LMTCD: TST	@R0	:LAST CODE?
2543	013030	100343			BPL	LMTCB	:BRANCH IF NOT LAST CODE.
2544	013032	000740			BR	LMTCA	:LAST CODE.
2545	013034	000000			MTKADR: OPEN		
2546	013036	000000			BTCTR: OPEN		
2547	013040	000000			CDCNT: OPEN		
2548	013042	000000			CDCTR: OPEN		

2549	013044	012537	001260	LMTCOE:	MOV	(5)+,CODCAL	;SAVE ADDRESS TO GO TO AFTER EACH MARK	
2550	013050	000713			BR	LMTCAA		
2551	013052	004737	012470	LBDAT1:	JSR	PC,CLPSUF	;CLEAR BUFFER AREA.	
2552	013056	004537	012646		JSR	R5,BMOVE	;LOAD 256 WORD BUFFER WITH SBDAT1 DATA.	
2553	013062	001276			SBDAT1			
2554	013064	036430			RBUF			
2555	013066	000004			4			
2556	013070	004537	012646		JSR	R5,BMOVE		
2557	013074	036430			RBUF			
2558	013076	036434			RBUF+4			
2559	013100	000774			508.			
2560	013102	000207			RTS	PC	;EXIT.	
2561	013104	004737	012030	LBBIND:	JSR	PC,SV04		
2562	013110	004737	012470		JSR	PC,CLRBUF	;CLEAR BUFFER AREA AND FILL	
2563	013114	012704	036430		MOV	#RBUF,R4	;256 WORD BUFFER WITH BINARY DATA.	
2564	013120	012737	000400	013150	MOV	#256.,CTRLB		
2565	013126	004737	012546	LBINDA:	JSR	PC,GTBIN	;GET BINARY WORD.	
2566	013132	010024			MOV	R0,(4)+	;STORE PER R4.	
2567	013134	005337	013150		DEC	CTRLB	;256 WORDS STORED?	
2568	013140	001372			BNE	LBINDA	;BR IF NOT DONE YET.	
2569	013142	004737	012116		JSR	PC,RS04		
2570	013146	000207			RTS	PC	;DONE. EXIT.	
2571	013150	000000		CTRLB:	OPEN			
2572	013152	004537	012646	MBCKSM:	JSR	R5,BMOVE	;BAD CHECKSUM TO FCKSM.	
2573	013156	036417			BCKSM			
2574	013160	036352			FCKSM			
2575	013162	000006			6			
2576	013164	000207			RTS	PC	;EXIT.	
2577	013166	004737	012030	CKDAT:	JSR	PC,SV04	;SAVE REGS.	
2578	013172	012537	013306		MOV	(5)+,SBDAT	;ADDR OF S/B DATA TO SBDAT.	
2579	013176	012501			MOV	(5)+,R1	;ADDR OF DATA TO R1.	
2580	013200	012502			MOV	(5)+,R2	;WORD COUNT TO R2.	
2581	013202	005037	013312		CLR	WDCNT	;CLEAR # OF WORD BEING CHECKED.	
2582	013206	013703	013306	CKDTA:	MOV	SBDAT,R3	;ADDR OF S/B DATA TO R3.	
2583	013212	004737	013240		JSR	PC,CDTCK	;GO CHECK DATA.	
2584	013216	005302			DEC	R2	;LAST WORD CHECKED?	
2585	013220	001404			BEQ	CKDTB	;BR IF LAST WORD CHECKED.	
2586	013222	004737	013240		JSR	PC,CDTCK	;CHECK ANOTHER WORD.	
2587	013226	005302			DEC	R2	;LAST WORD CHECKED?	
2588	013230	001366			BNE	CKDTA	;BR IF NOT LAST WORD.	
2589	013232	004737	012116	CKDTB:	JSR	PC,RS04	;RESTORE REGS.	
2590	013236	000205			RTS	R5	;EXIT.	
2591	013240	010137	013310	CDTCK:	MOV	R1,DATADR	;ADDR OF DATA TO DATADR.	
2592	013244	012337	001270		MOV	(3)+,CRBUF	;S/B WORD TO CRBUF.	
2593	013250	012137	001272		MOV	(1)+,CRBUFA	;WAS WORD TO CRBUFA.	
2594	013254	005237	013312		INC	WDCNT	;INCREMENT WORD NUMBER.	
2595	013260	023737	001270	001272	CMP	CRBUF,CRBUFA	;COMPARE S/B AND WAS DATA.	
2596	013266	001001			BNE	CDTCKA	;BR IF DATA NOT SAME.	
2597	013270	000207			RTS	PC	;EXIT.	
2598	013272	016737	000004	013304	CDTCKA:	MOV	4(PC),MLPC	;MAKE MAIN LINE PC ACCESSABLE
2599								
2600	013300	104035			ERROR	35	;PRINTOUT ERROR MESSAGE	
2601	013302	000207			RTS	PC	;EXIT	
2602	013304	000000		MLPC:	000000			
2603	013306	000000		SBDAT:	OPEN			
2604	013310	000000		DATADR:	OPEN			


```
2605 013312 000000 WDCNT: OPEN
2606 013314 012537 015364 CKSELE: MOV (5)+,CKSELT ;UNIT # TO CKSELT.
2607 013320 052737 000011 015364 BIS #SST!DO,CKSELT
2608 013326 013777 015364 165704 MOV CKSELT,@TCCM ;ISSUE SST TO DESIRED UNIT.
2609 013334 105777 165700 TSTB @TCCM ;WAIT FOR READY.
2610 013340 100375 BPL -4
2611 013342 032777 004000 165666 BIT #BIT11,@TCST ;SELECT ERROR SET?
2612 013350 001001 BNE +4 ;BR IF SELECT ERROR SET.
2613 013352 000205 RTS R5 ;ERROR EXIT. SELECT ERROR SHOULD BE SET.
2614 013354 062705 000006 ADD #6,R5
2615 013360 000205 RTS R5 ;OK EXIT.
2616 013362 .SSCOPE 4,SCOMAC
2617 .SBTTL SCOPE HANDLER ROUTINE
2618
2619 013362 STARS
2620 ;*****
2621 ;*THIS ROUTINE CONTROLS THE LOOPING OF SUBTESTS. IT WILL INCREMENT
2622 ;*AND LOAD THE TEST NUMBER($STNM) INTO THE DISPLAY REG.(DISPLAY<7:0>)
2623 ;*AND LOAD THE ERROR FLAG ($ERFLG) INTO DISPLAY<15:08>
2624 ;*THE SWITCH OPTIONS PROVIDED BY THIS ROUTINE ARE:
2625 ;*SW14=1 LOOP ON TEST
2626 ;*SW11=1 INHIBIT ITERATIONS
2627 ;*SW09=1 LOOP ON ERROR
2628 .LIST
2629 ;*SW08=1 LOOP ON TEST IN SWR<7:0>
2630 ;*CALL
2631 ;* SCOPE ;:SCOPE=10T
2632
2633 013362 $SCOPE:
2634 .IRP NEWINS,<SCOMAC>
2635 NEWINS
2636 .ENDM
2637 013362 SCOMAC
2638 013362 005077 165652 CLR @TCCM
2639 013366 005066 000002 CLR 2(SP) ;PS TO =0 AFTER WE EXIT THE SCOPE ROUTINE
2640 013372 004737 012220 JSR PC,SRSETT
2641 013376 004737 012242 JSR PC,RSTMTK
2642 013402 032777 040000 165530 1$: BIT #BIT14,@SWR ;:LOOP ON PRESENT TEST?
2643 013410 001111 BNE $OVER ;:YES IF SW14=1
2644 ;*****START OF CODE FOR THE XOR TESTER*****
2645 013412 000416 $XTSTR: BR 6$ ;:IF RUNNING ON THE 'XOR' TESTER CHANGE
2646 ;THIS INSTRUCTION TO A 'NOP' (NOP=240)
2647 013414 013746 000004 MOV @#ERRVEC,-(SP) ;:SAVE THE CONTENTS OF THE ERROR VECTOR
2648 013420 012737 013440 000004 MOV #5$,@#ERRVEC ;:SET FOR TIMEOUT
2649 013426 005737 177060 TST @#177060 ;:TIME OUT ON XOR?
2650 013432 012637 000004 MOV (SP)+,@#ERRVEC ;:RESTORE THE ERROR VECTOR
2651 013436 000463 BR $SVLAD ;:GO TO THE NEXT TEST
2652 013440 022626 5$: CMP (SP)+,(SP)+ ;:CLEAR THE STACK AFTER A TIME OUT
2653 013442 012637 000004 MOV (SP)+,@#ERRVEC ;:RESTORE THE ERROR VECTOR
2654 013446 000423 BR 7$ ;:LOOP ON THE PRESENT TEST
2655 013450 6$: ;*****END OF CODE FOR THE XOR TESTER*****
2656 013450 032777 000400 165462 BIT #BIT08,@SWR ;:LOOP ON SPEC. TEST?
2657 013456 001404 BEQ 2$ ;:BR IF NO
2658 013460 127737 165454 001102 CMPB @SWR,$STNM ;:ON THE RIGHT TEST? SWR<7:0>
2659 013466 001462 BEQ $OVER ;:BR IF YES
2660 013470 105737 001103 2$: TSTB $ERFLG ;:HAS AN ERROR OCCURRED?
```

```
2661 013474 001421      BEQ      3$          ;;BR IF NO
2662 013476 123737 001115 001103      CMPB     $ERMAX,$ERFLG  ;;MAX. ERRORS FOR THIS TEST OCCURRED?
2663 013504 101015      BHI      3$          ;;BR IF NO
2664 013506 032777 001000 165424      EIT      #BIT09,@SWR    ;;LOOP ON ERROR?
2665 013514 001404      BEQ      4$          ;;BR IF NO
2666 013516 013737 001110 001106 7$:   MOV      $LPERR,$LPADR  ;;SET LOOP ADDRESS TO LAST SCOPE
2667 013524 000443      BR       $OVER
2668 013526 105037 001103      4$:   CLRB     $ERFLG      ;;ZERO THE ERROR FLAG
2669 013532 005037 001222      CLR      $TIMES      ;;CLEAR THE NUMBER OF ITERATIONS TO MAKE
2670 013536 000415      BR       1$          ;;ESCAPE TO THE NEXT TEST
2671 013540 032777 004000 165372 3$:   BIT      #BIT11,@SWR    ;;INHIBIT ITERATIONS?
2672 013546 001011      BNE      1$          ;;BR IF YES
2673 013550 005737 001100      TST      $PASS      ;;IF FIRST PASS OF PROGRAM
2674 013554 001406      BEQ      1$          ;;INHIBIT ITERATIONS
2675 013556 005237 001104      INC      $ICNT      ;;INCREMENT ITERATION COUNT
2676 013562 023737 001222 001104      CMP      $TIMES,$ICNT  ;;CHECK THE NUMBER OF ITERATIONS MADE
2677 013570 002021      BGE      $OVER      ;;BR IF MORE ITERATION REQUIRED
2678 013572 012737 000001 001104 1$:   MOV      #1,$ICNT    ;;REINITIALIZE THE ITERATION COUNTER
2679 013600 013737 013650 001222      MOV      $MXCNT,$TIMES  ;;SET NUMBER OF ITERATIONS TO DO
2680 013606 105237 001102      $SVLAD: INCB     $TSTNM      ;;COUNT TEST NUMBERS
2681 013612 011637 001106      MOV      (SP),$LPADR  ;;SAVE SCOPE LOOP ADDRESS
2682 013616 011637 001110      MOV      (SP),$LPERR  ;;SAVE ERROR LOOP ADDRESS
2683 013622 005037 001224      CLR      $ESCAPE      ;;CLEAR THE ESCAPE FROM ERROR ADDRESS
2684 013626 112737 000001 001115      MOVB     #1,$ERMAX    ;;ONLY ALLOW ONE(1) ERROR ON NEXT TEST
2685 013634 013777 001102 165300 $OVER:  MOV      $TSTNM,@DISPLAY  ;;DISPLAY TEST NUMBER
2686 013642 013716 001106      MOV      $LPADR,(SP)  ;;FUDGE RETURN ADDRESS
2687 013646 000002      RTI
2688 013650 000004      $MXCNT: 4          ;;FIXES PS
2689      .MACRO      SAVE          ;;MAX. NUMBER OF ITERATIONS
2690      MOV      SP,$REG6
2691      SUB      #4,$REG6
2692      MOV      2(SP),$REG7
2693      CLR      $REG5
2694      MOVB     $TSTNM,$REG5
2695      MOV      @TCCM,$REG2
2696      MOV      @TCST,$REG1
2697      MOV      @TCBA,$REG3
2698      .ENDM SAVE
2699 013652      $ERROR $ERRTYP,SAVE
2700      .SBTTL  ERROR HANDLER ROUTINE
2701
2702 013652      STARS
2703      ;*****
2704      ;*THIS ROUTINE WILL INCREMENT THE ERROR FLAG AND THE ERROR COUNT,
2705      ;*SAVE THE ERROR ITEM NUMBER AND THE ADDRESS OF THE ERROR CALL
2706      ;*AND GO TO $ERRTYP ON ERROR
2707      ;*THE SWITCH OPTIONS PROVIDED BY THIS ROUTINE ARE:
2708      ;*SW15=1      HALT ON ERROR
2709      ;*SW13=1      INHIBIT ERROR TYPEOUTS
2710      ;*SW10=1      BELL ON ERROR
2711      ;*SW09=1      LOOP ON ERROR
2712      ;*CALL
2713      ;*      ERROR      N      ;;ERROR=EMT AND N=ERROR ITEM NUMBER
2714
2715 013652      $ERROR:
2716      .IRP NEWINS,<SAVE>
```

```
2717 NEWINS
2718 .ENDM
2719 013652 010637 001176 SAVE
2720 013652 162737 000004 001176 MOV SP,$REG6
2721 013656 016637 000002 001200 SUB #4,$REG6
2722 013664 005037 001174 MOV 2(SP),$REG7
2723 013672 113737 001102 001174 CLR $REG5
2724 013704 017737 165330 001166 MOVB $TSTNM,$REG5
2725 013712 017737 165320 001164 MOV @TCCM,$REG2
2726 013720 017737 165320 001170 MOV @TCST,$REG1
2727 013726 105237 001103 7$: MOV @TCBA,$REG3
2728 013732 001775 BEQ 7$ ;;SET THE ERROR FLAG
2729 013734 013777 001102 165200 MOV $TSTNM,@DISPLAY ;;DON'T LET THE FLAG GO TO ZERO
2730 013742 032777 002000 165170 BIT #BIT10,@SWR ;;DISPLAY TEST NUMBER AND ERROR FLAG
2731 013750 001402 BEQ 1$ ;;BELL ON ERROR?
2732 013752 104401 001226 TYPE $BELL ;;NO - SKIP
2733 013756 005237 001112 1$: INC $ERTTL ;;RING BELL
2734 013762 162737 000002 001116 MOV (SP),$ERRPC ;;COUNT THE NUMBER OF ERRORS
2735 013766 117737 165116 001114 SUB #2,$ERRPC ;;GET ADDRESS OF ERROR INSTRUCTION
2736 013774 032777 020000 165130 MOVB @ERRPC,$ITEMB ;;STRIP AND SAVE THE ERROR ITEM CODE
2737 014002 001004 BIT #BIT13,@SWR ;;SKIP TYPEOUT IF SET
2738 014010 004737 015160 BNE 20$ ;;SKIP TYPEOUTS
2739 014012 104401 001233 JSR PC,$ERRTP ;;GO TO USER ERROR ROUTINE
2740 014016 005777 165112 20$: TYPE $CRLF
2741 014022 100001 2$: TST @SWR ;;HALT ON ERROR
2742 014026 000000 BPL 3$ ;;SKIP IF CONTINUE
2743 014030 032777 001000 165100 3$: HALT ;;HALT ON ERROR!
2744 014032 001402 BEQ 4$ ;;LOOP ON ERROR SWITCH SET?
2745 014040 013716 001110 MOV $LPERR,(SP) ;;BR IF NO
2746 014042 005737 001224 4$: TST $ESCAPE ;;FUDGE RETURN FOR LOOPING
2747 014052 001402 BEQ 5$ ;;CHECK FOR AN ESCAPE ADDRESS
2748 014054 013716 001224 5$: MOV $ESCAPE,(SP) ;;BR IF NONE
2749 014060 .LIST ;;FUDGE RETURN ADDRESS FOR ESCAPE
2750 014060 022737 011636 000042 CMP #SENDAD,@#42 ;;ACT-11 AUTO-ACCEPT?
2751 014066 001001 BNE 6$ ;;BRANCH IF NO
2752 014070 000000 HALT ;;YES
2753 014072 000002 6$: RTI ;;RETURN
2754 014074 .POWER <<POWPUS>,<POWPOP>,<POWMES>>
2755 .SBTTL POWER DOWN AND UP ROUTINES
2756 014074 STARS
2757 *****
2758 .POWER DOWN ROUTINE
2759 $PWDRN: MOV #SILLUP,@PWVREC ;;SET FOR FAST UP
2760 MOV #340,@PWVREC+2 ;;PRIO:7
2761 PUSH <R0,R1,R2,R3,R4,R5>
2762 .IRP B,<R0,R1,R2,R3,R4,R5>
2763 MOV B,-(SP) ;;PUSH B ON STACK
2764 .ENDM
2765 MOV R0,-(SP) ;;PUSH R0 ON STACK
2766 MOV R1,-(SP) ;;PUSH R1 ON STACK
2767
2768
2769
2770
2771
2772
```

```
2773 014114 010246      MOV      R2,-(SP)      ;;PUSH R2 ON STACK
2774 014116 010346      MOV      R3,-(SP)      ;;PUSH R3 ON STACK
2775 014120 010446      MOV      R4,-(SP)      ;;PUSH R4 ON STACK
2776 014122 010546      MOV      R5,-(SP)      ;;PUSH R5 ON STACK
2777 014124              PUSH     <<POWPUS>,<POWPOP>,<POWMES>>
2778              .IRP      B,<<POWPUS>,<POWPOP>,<POWMES>>
2779              MOV      B,-(SP)      ;;PUSH B ON STACK
2780              .ENDM
2781 014124 013746 001312      MOV      POWPUS,-(SP)      ;;PUSH POWPUS ON STACK
2782 014130 013746 001314      MOV      POWPOP,-(SP)      ;;PUSH POWPOP ON STACK
2783 014134 013746 016172      MOV      POWMES,-(SP)      ;;PUSH POWMES ON STACK
2784 014140              PUSH     @SWR
2785              .IRP      B,<@SWR>
2786              MOV      B,-(SP)      ;;PUSH B ON STACK
2787              .ENDM
2788 014140 017746 164774      MOV      @SWR,-(SP)      ;;PUSH @SWR ON STACK
2789 014144 010637 014254      MOV      SP,$SAVR6      ;;SAVE SP
2790 014150 012737 014162 000024      MOV      #$PWRUP,@#PWRVEC ;;SET UP VECTOR
2791 014156 000000              HALT
2792 014160 000776              BR      -2      ;;HANG UP
2793
2794 014162              STARS
2795              ;*****
2796              ;POWER UP ROUTINE
2797 014162 012737 014250 000024      $PWRUP: MOV      #$ILLUP,@#PWRVEC ;;SET FOR FAST DOWN
2798 014170 013706 014254              MOV      $SAVR6,SP      ;;GET SP
2799 014174 005037 014254              CLR      $SAVR6      ;;WAIT LOOP FOR THE TTY
2800 014200 005237 014254      1$:      INC      $SAVR6      ;;WAIT FOR THE INC
2801 014204 001375              BNE     1$      ;;OF <POWPUS>,<POWPOP>,<POWMES> WORD
2802 014206              POP      @SWR
2803              .IRP      B,<@SWR>
2804              MOV      (SP)+,B      ;;POP STACK INTO B
2805              .ENDM
2806 014206 012677 164726      MOV      (SP)+,@SWR      ;;POP STACK INTO @SWR
2807 014212              POP      <R5,R4,R3,R2,R1,R0>
2808              .IRP      B,<R5,R4,R3,R2,R1,R0>
2809              MOV      (SP)+,B      ;;POP STACK INTO B
2810              .ENDM
2811              MOV      (SP)+,R5      ;;POP STACK INTO R5
2812              MOV      (SP)+,R4      ;;POP STACK INTO R4
2813              MOV      (SP)+,R3      ;;POP STACK INTO R3
2814              MOV      (SP)+,R2      ;;POP STACK INTO R2
2815              MOV      (SP)+,R1      ;;POP STACK INTO R1
2816              MOV      (SP)+,R0      ;;POP STACK INTO R0
2817 014226 012737 014074 000024      MOV      #$PWRDN,@#PWRVEC ;;SET UP THE POWER DOWN VECTOR
2818 014234 012737 000340 000026      MOV      #340,@#PWRVEC+2 ;;PRIO:7
2819 014242 104401              TYPE     $POWER      ;;REPORT THE POWER FAILURE
2820 014244 014256      $PWRMG: .WORD     $POWER      ;;POWER FAIL MESSAGE POINTER
2821 014246 000002              RTI
2822 014250 000000      $ILLUP: HALT      ;;THE POWER UP SEQUENCE WAS STARTED
2823 014252 000776              BR      -2      ;;BEFORE THE POWER DOWN WAS COMPLETE
2824 014254 000000      $SAVR6: 0      ;;PUT THE SP HERE
2825 014256 005015 047520 042527      $POWER: .ASCIIZ <15><12>'POWER'
2826 014264 000122
2827
2828 014266              .EVEN
                .$TYPE
```

```

2829 .SBTTL TYPE ROUTINE
2830
2831 014266
2832
2833 STARS
2834 ;*****
2835 ;*ROUTINE TO TYPE ASCIZ MESSAGE. MESSAGE MUST TERMINATE WITH A 0 BYTE.
2836 ;*THE ROUTINE WILL INSERT A NUMBER OF NULL CHARACTERS AFTER A LINE FEED.
2837 ;*NOTE1: $NULL CONTAINS THE CHARACTER TO BE USED AS THE FILLER CHARACTER.
2838 ;*NOTE2: $FILLS CONTAINS THE NUMBER OF FILLER CHARACTERS REQUIRED.
2839 ;*NOTE3: $FILLC CONTAINS THE CHARACTER TO FILL AFTER.
2840 ;*
2841 ;*CALL:
2842 ;*1) USING A TRAP INSTRUCTION
2843 ;*      TYPE      ,MESADR      ;;MESADR IS FIRST ADDRESS OF AN ASCIZ STRING
2844 ;*OR
2845 ;*      TYPE
2846 ;*      MESADR
2847
2847 014266 105737 001157 $TYPE: TSTB $TFPLG      ;;IS THERE A TERMINAL?
2848 014272 100002      BPL 1$      ;;BR IF YES
2849 014274 000000      HALT      ;;HALT HERE IF NO TERMINAL
2850 014276 000407      BR 3$      ;;LEAVE
2851 014300 010046 1$: MOV R0,-(SP)      ;;SAVE R0
2852 014302 017600      MOV @2(SP),R0      ;;GET ADDRESS OF ASCIZ STRING
2853 014306 112046 2$: MOVB (R0)+,-(SP)      ;;PUSH CHARACTER TO BE TYPED ONTO STACK
2854 014310 001005      BNE 4$      ;;BR IF IT ISN'T THE TERMINATOR
2855 014312 005726      TST (SP)+      ;;IF TERMINATOR POP IT OFF THE STACK
2856 014314 012600 60$: MOV (SP)+,R0      ;;RESTORE R0
2857 014316 062716 3$: ADD #2,(SP)      ;;ADJUST RETURN PC
2858 014322 000002      RTI      ;;RETURN
2859 014324 122716 000011 4$: CMPB #HT,(SP)      ;;BRANCH IF <HT>
2860 014330 001430      BEQ 8$
2861 014332 122716 000200      CMPB #CRLF,(SP)      ;;BRANCH IF NOT <CRLF>
2862 014336 001006      BNE 5$
2863 014340 005726      TST (SP)+      ;;POP <CR><LF> EQUIV
2864 014342 104401      TYPE      ;;TYPE A CR AND LF
2865 014344 001233      $CRLF
2866 014346 105037 014502      CLRB $CHARCNT      ;;CLEAR CHARACTER COUNT
2867 014352 000755      BR 2$      ;;GET NEXT CHARACTER
2868 014354 004737 014436 5$: JSR PC,$TYPEC      ;;GO TYPE THIS CHARACTER
2869 014360 123726 001156 6$: CMPB $FILLC,(SP)+      ;;IS IT TIME FOR FILLER CHARS.?
2870 014364 001350      BNE 2$      ;;IF NO GO GET NEXT CHAR.
2871 014366 013746 001154      MOV $NULL,-(SP)      ;;GET # OF FILLER CHARS. NEEDED
2872      ;;AND THE NULL CHAR.
2873 014372 105366 000001 7$: DECB 1(SP)      ;;DOES A NULL NEED TO BE TYPED?
2874 014376 002770      BLT 6$      ;;BR IF NO--GO POP THE NULL OFF OF STACK
2875 014400 004737 014436      JSR PC,$TYPEC      ;;GO TYPE A NULL
2876 014404 105337 014502      DECB $CHARCNT      ;;DO NOT COUNT AS A COUNT
2877 014410 000770      BR 7$      ;;LOOP
2878
2879 ;HORIZONTAL TAB PROCESSOR
2880
2881 014412 112716 000040 8$: MOVB #' ,(SP)      ;;REPLACE TAB WITH SPACE
2882 014416 004737 014436 9$: JSR PC,$TYPEC      ;;TYPE A SPACE
2883 014422 132737 000007 014502      BITB #7,$CHARCNT      ;;BRANCH IF NOT AT
2884 014430 001372      BNE 9$      ;;TAB STOP

```

```
2885 014432 005726          TST      (SP)+      ;;POP SPACE OFF STACK
2886 014434 000724          BR       2$          ;;GET NEXT CHARACTER
2887 014436 105777 164506    $TYPEC: TSTB     @STPS      ;;WAIT UNTIL PRINTER IS READY
2888 014442 100375          BPL      $TYPEC
2889 014444 116677 000002 164500  MOVB     2(SP),@STPB    ;;LOAD CHAR TO BE TYPED INTO DATA REG.
2890 014452 122766 000015 000002  CMPB     #CR,2(SP)    ;;IS CHARACTER A CARRIAGE RETURN?
2891 014460 001003          BNE      1$          ;;BRANCH IF NO
2892 014462 105037 014502    CLRB     $CHARCNT    ;;YES--CLEAR CHARACTER COUNT
2893 014466 000406          BR       $TYPEX      ;;EXIT
2894 014470 122766 000012 000002 1$: CMPB     #LF,2(SP)    ;;IS CHARACTER A LINE FEED?
2895 014476 001402          BEQ      $TYPEX      ;;BRANCH IF YES
2896 014500 105227          INCB     (PC)+      ;;COUNT THE CHARACTER
2897 014502 000000          $CHARCNT: .WORD 0      ;;CHARACTER COUNT STORAGE
2898 014504 000207          $TYPEX: RTS      PC
2899
2900 014506          .STYPDEC
2901          .SBTTL  CONVERT BINARY TO DECIMAL AND TYPE ROUTINE
2902
2903 014506          STARS
2904          ;*****
2905          ;*THIS ROUTINE IS USED TO CHANGE A 16-BIT BINARY NUMBER TO A 5-DIGIT
2906          ;*SIGNED DECIMAL (ASCII) NUMBER AND TYPE IT. DEPENDING ON WHETHER THE
2907          ;*NUMBER IS POSITIVE OR NEGATIVE A SPACE OR A MINUS SIGN WILL BE TYPED
2908          ;*BEFORE THE FIRST DIGIT OF THE NUMBER. LEADING ZEROS WILL ALWAYS BE
2909          ;*REPLACED WITH SPACES.
2910          ;*CALL:
2911          ;*      MOV      NUM,-(SP)      ;;PUT THE BINARY NUMBER ON THE STACK
2912          ;*      TYPDS      ;;GO TO THE ROUTINE
2913
2914 014506          $TYPDS: PUSH     <R0,R1,R2,R3,R5>
2915          .IRP      B,<R0,R1,R2,R3,R5>
2916          MOV      B,-(SP)      ;;PUSH B ON STACK
2917          .ENDM
2918 014506 010046          MOV      R0,-(SP)      ;;PUSH R0 ON STACK
2919 014510 010146          MOV      R1,-(SP)      ;;PUSH R1 ON STACK
2920 014512 010246          MOV      R2,-(SP)      ;;PUSH R2 ON STACK
2921 014514 010346          MOV      R3,-(SP)      ;;PUSH R3 ON STACK
2922 014516 010546          MOV      R5,-(SP)      ;;PUSH R5 ON STACK
2923 014520 012746 020200    MOV      #20200,-(SP)    ;;SET BLANK SWITCH AND SIGN
2924 014524 016605 000020    MOV      20(SP),R5      ;;GET THE INPUT NUMBER
2925 014530 100004          BPL      1$          ;;BR IF INPUT IS POS.
2926 014532 005405          NEG      R5          ;;MAKE THE BINARY NUMBER POS.
2927 014534 112766 000055 000001  MOVB     #'-,1(SP)    ;;MAKE THE ASCII NUMBER NEG.
2928 014542 005000          1$:  CLR      R0          ;;ZERO THE CONSTANTS INDEX
2929 014544 012703 014722    MOV      #$DBLK,R3      ;;SETUP THE OUTPUT POINTER
2930 014550 112723 000040    MOVB     #'',(R3)+      ;;SET THE FIRST CHARACTER TO A BLANK
2931 014554 005002          2$:  CLR      R2          ;;CLEAR THE BCD NUMBER
2932 014556 016001 014712    MOV      $DTBL(R0),R1    ;;GET THE CONSTANT
2933 014562 160105          3$:  SUB      R1,R5      ;;FORM THIS BCD DIGIT
2934 014564 002402          BLT      4$          ;;BR IF DONE
2935 014566 005202          INC      R2          ;;INCREASE THE BCD DIGIT BY 1
2936 014570 000774          BR       3$
2937 014572 060105          4$:  ADD      R1,R5      ;;ADD BACK THE CONSTANT
2938 014574 005702          TST      R2          ;;CHECK IF BCD DIGIT=0
2939 014576 001002          BNE      5$          ;;FALL THROUGH IF 0
2940 014600 105716          TSTB     (SP)          ;;STILL DOING LEADING 0'S?
```



```
2941 014602 100407
2942 014604 106316
2943 014606 103003
2944 014610 116663 000001 177777
2945 014616 052702 000060
2946 014622 052702 000040
2947 014626 110223
2948 014630 005720
2949 014632 020027 000010
2950 014636 002746
2951 014640 003002
2952 014642 010502
2953 014644 000764
2954 014646 105726
2955 014650 100003
2956 014652 116663 177777 177776
2957 014660 105013
2958 014662
2959
2960
2961
2962 014662 012605
2963 014664 012603
2964 014666 012602
2965 014670 012601
2966 014672 012600
2967 014674 104401 014722
2968 014700 016666 000002 000004
2969 014706 012616
2970 014710 000002
2971 014712 023420
2972 014714 001750
2973 014716 000144
2974 014720 000012
2975 014722 000004
2976 014732
2977
2978
2979 014732
2980
2981
2982
2983
2984
2985
2986
2987
2988
2989
2990
2991
2992
2993
2994
2995
2996
```

```
5$: BMI 7$ ;;BR IF YES
ASLB (SP) ;;MSD?
BCC 6$ ;;BR IF NO
MOVB 1(SP),-1(R3) ;;YES--SET THE SIGN
6$: BIS #'0,R2 ;;MAKE THE BCD DIGIT ASCII
7$: BIS #' ,R2 ;;MAKE IT A SPACE IF NOT ALREADY A DIGIT
MOVB R2,(R3)+ ;;PUT THIS CHARACTER IN THE OUTPUT BUFFER
TST (R0)+ ;;JUST INCREMENTING
CMP R0,#10 ;;CHECK THE TABLE INDEX
BLT 2$ ;;GO DO THE NEXT DIGIT
BGT 8$ ;;GO TO EXIT
MOV R5,R2 ;;GET THE LSD
BR 6$ ;;GO CHANGE TO ASCII
8$: TSTB (SP)+ ;;WAS THE LSD THE FIRST NON-ZERO?
BPL 9$ ;;BR IF NO
9$: MOVB -1(SP),-2(R3) ;;YES--SET THE SIGN FOR TYPING
CLRB (R3) ;;SET THE TERMINATOR
POP <R5,R3,R2,R1,R0>
.IRP B,<R5,R3,R2,R1,R0>
MOV (SP)+,B ;;POP STACK INTO B
.ENDM
MOV (SP)+,R5 ;;POP STACK INTO R5
MOV (SP)+,R3 ;;POP STACK INTO R3
MOV (SP)+,R2 ;;POP STACK INTO R2
MOV (SP)+,R1 ;;POP STACK INTO R1
MOV (SP)+,R0 ;;POP STACK INTO R0
TYPE $DBLK ;;NOW TYPE THE NUMBER
MOV 2(SP),4(SP) ;;ADJUST THE STACK
MOV (SP)+,(SP)
RTI ;;RETURN TO USER
$DTBL: 10000.
1000.
100.
10.
$DBLK: .BLKW 4
.$TYPOCT
.$BTTL BINARY TO OCTAL (ASCII) AND TYPE
STARS
;*****
;THIS ROUTINE IS USED TO CHANGE A 16-BIT BINARY NUMBER TO A 6-DIGIT
;OCTAL (ASCII) NUMBER AND TYPE IT.
;$TYPOS---ENTER HERE TO SETUP SUPPRESS ZEROS AND NUMBER OF DIGITS TO TYPE
;CALL:
;* MOV NUM,-(SP) ;;NUMBER TO BE TYPED
;* TYPOS ;;CALL FOR TYPEOUT
;* .BYTE N ;;N=1 TO 6 FOR NUMBER OF DIGITS TO TYPE
;* .BYTE M ;;M=1 OR 0
; ;;1=TYPE LEADING ZEROS
; ;;0=SUPPRESS LEADING ZEROS
;$TYPON----ENTER HERE TO TYPE OUT WITH THE SAME PARAMETERS AS THE LAST
;$TYPOS OR $TYPOC
;CALL:
;* MOV NUM,-(SP) ;;NUMBER TO BE TYPED
;* TYPON ;;CALL FOR TYPEOUT
```



```
2997
2998
2999
3000
3001
3002
3003 014732 017646 000000
3004 014736 116637 000001 015155
3005 014744 112637 015157
3006 014750 062716 000002
3007 014754 000406
3008 014756 112737 000001 015155
3009 014764 112737 000006 015157
3010 014772 112737 000005 015154
3011 015000 010346
3012 015002 010446
3013 015004 010546
3014 015006 113704 015157
3015 015012 005404
3016 015014 062704 000006
3017 015020 110437 015156
3018 015024 113704 015155
3019 015030 016605 000012
3020 015034 005003
3021 015036 006105
3022 015040 000404
3023 015042 006105
3024 015044 006105
3025 015046 006105
3026 015050 010503
3027 015052 006103
3028 015054 105337 015156
3029 015060 100016
3030 015062 042703 177770
3031 015066 001002
3032 015070 005704
3033 015072 001403
3034 015074 005204
3035 015076 052703 000060
3036 015102 052703 000040
3037 015106 110337 015152
3038 015112 104401 015152
3039 015116 105337 015154
3040 015122 003347
3041 015124 002402
3042 015126 005204
3043 015130 000744
3044 015132 012605
3045 015134 012604
3046 015136 012603
3047 015140 016666 000002 000004
3048 015146 012616
3049 015150 000002
3050 015152 000
3051 015153 000
3052 015154 000

; *
; * $TYPOC---ENTER HERE FOR TYPEOUT OF A 16 BIT NUMBER
; * CALL:
; *      MOV      NUM,-(SP)      ;;NUMBER TO BE TYPED
; *      TYPOC      ;;CALL FOR TYPEOUT
; *
$TYPOS: MOV      @ (SP),-(SP)      ;;PICKUP THE MODE
        MOV      1(SP), $OFILL      ;;LOAD ZERO FILL SWITCH
        MOV      (SP)+, $OMODE+1      ;;NUMBER OF DIGITS TO TYPE
        ADD      #2, (SP)      ;;ADJUST RETURN ADDRESS
        BR      $TYPON
$TYPOC: MOV      #1, $OFILL      ;;SET THE ZERO FILL SWITCH
        MOV      #6, $OMODE+1      ;;SET FOR SIX(6) DIGITS
$TYPON: MOV      #5, $OCNT      ;;SET THE ITERATION COUNT
        MOV      R3, -(SP)      ;;SAVE R3
        MOV      R4, -(SP)      ;;SAVE R4
        MOV      R5, -(SP)      ;;SAVE R5
        MOV      $OMODE+1, R4      ;;GET THE NUMBER OF DIGITS TO TYPE
        NEG      R4
        ADD      #6, R4      ;;SUBTRACT IT FOR MAX. ALLOWED
        MOV      R4, $OMODE      ;;SAVE IT FOR USE
        MOV      $OFILL, R4      ;;GET THE ZERO FILL SWITCH
        MOV      12(SP), R5      ;;PICKUP THE INPUT NUMBER
        CLR      R3      ;;CLEAR THE OUTPUT WORD
1$:     ROL      R5      ;;ROTATE MSB INTO 'C'
        BR      3$      ;;GO DO MSB
2$:     ROL      R5      ;;FORM THIS DIGIT
        ROL      R5
        MOV      R5, R3
3$:     ROL      R3      ;;GET LSB OF THIS DIGIT
        DECB     $OMODE      ;;TYPE THIS DIGIT?
        BPL      7$      ;;BR IF NO
        BIC      #177770, R3      ;;GET RID OF JUNK
        BNE      4$      ;;TEST FOR 0
        TST      R4      ;;SUPPRESS THIS 0?
        BEQ      5$      ;;BR IF YES
4$:     INC      R4      ;;DON'T SUPPRESS ANYMORE 0'S
        BIS      #'0, R3      ;;MAKE THIS DIGIT ASCII
5$:     BIS      #' , R3      ;;MAKE ASCII IF NOT ALREADY
        MOV      R3, 8$      ;;SAVE FOR TYPING
        TYPE     8$      ;;GO TYPE THIS DIGIT
7$:     DECB     $OCNT      ;;COUNT BY 1
        BGT      2$      ;;BR IF MORE TO DO
        BLT      6$      ;;BR IF DONE
        INC      R4      ;;INSURE LAST DIGIT ISN'T A BLANK
        BR      2$      ;;GO DO THE LAST DIGIT
6$:     MOV      (SP)+, R5      ;;RESTORE R5
        MOV      (SP)+, R4      ;;RESTORE R4
        MOV      (SP)+, R3      ;;RESTORE R3
        MOV      2(SP), 4(SP)      ;;SET THE STACK FOR RETURNING
        MOV      (SP)+, (SP)
        RTI      ;;RETURN
8$:     .BYTE     0      ;;STORAGE FOR ASCII DIGIT
        .BYTE     0      ;;TERMINATOR FOR TYPE ROUTINE
$OCNT:  .BYTE     0      ;;OCTAL DIGIT COUNTER
```

3053 015155 000
3054 015156 000000
3055 015160
3056
3057
3058 015160
3059
3060
3061
3062
3063
3064 015160
3065 015160 104401 001233
3066 015164 010046
3067 015166 005000
3068 015170 153700 001114
3069 015174 001004
3070
3071 015176
3072 015176 013746 001116
3073
3074 015202 104402
3075 015204 000426
3076 015206 005300
3077 015210 006300
3078 015212 006300
3079 015214 006300
3080 015216 062700 001324
3081 015222 012037 015232
3082 015226 001404
3083 015230 104401
3084 015232 000000
3085 015234 104401 001233
3086 015240 012037 015250
3087 015244 001404
3088 015246 104401
3089 015250 000000
3090 015252 104401 001233
3091 015256 011000
3092 015260 001004
3093 015262 012600
3094 015264 104401 001233
3095 015270 000207
3096 015272
3097 015272 013046
3098 015274 104402
3099 015276 005710
3100 015300 001770
3101 015302 104401 015310
3102 015306 000771
3103 015310 020040 000
3104 015314 015314
3105 015314
3106
3107
3108 015314

\$OFILL: .BYTE 0 ;;ZERO FILL SWITCH
\$OMODE: .WORD 0 ;;NUMBER OF DIGITS TO TYPE
.\$ERRTYP
.\$BTTL ERROR MESSAGE TYPEOUT ROUTINE
STARS

*THIS ROUTINE USES THE 'ITEM CONTROL BYTE' (\$ITEMB) TO DETERMINE WHICH
*ERROR IS TO BE REPORTED. IT THEN OBTAINS, FROM THE 'ERROR TABLE' (\$ERRTB),
*AND REPORTS THE APPROPRIATE INFORMATION CONCERNING THE ERROR.
\$ERRTYP:
TYPE \$CRLF ;;'CARRIAGE RETURN' & 'LINE FEED'
MOV RO,-(SP) ;;SAVE RO
CLR RO ;;PICKUP THE ITEM INDEX
BISB @(\$ITEMB,RO)
BNE 1\$;;IF ITEM NUMBER IS ZERO, JUST
;;TYPE THE PC OF THE ERROR
TYPOCT \$ERRPC,<ERROR ADDRESS>
MOV \$ERRPC,-(SP) ;;SAVE \$ERRPC FOR TYPEOUT
;;ERROR ADDRESS
TYPOC
BR 6\$;;GO TYPE--OCTAL ASCII(ALL DIGITS)
1\$: DEC RO ;;GET OUT
ASL RO ;;ADJUST THE INDEX SO THAT IT WILL
ASL RO ;;WORK FOR THE ERROR TABLE
ASL RO
ADD #(\$ERRTB,RO) ;;FORM TABLE POINTER
MOV (RO)+,2\$;;PICKUP 'ERROR MESSAGE' POINTER
BEQ 3\$;;SKIP TYPEOUT IF NO POINTER
TYPE ;;TYPE THE 'ERROR MESSAGE'
2\$: .WORD 0 ;;'ERROR MESSAGE' POINTER GOES HERE
TYPE \$CRLF ;;'CARRIAGE RETURN' & 'LINE FEED'
3\$: MOV (RO)+,4\$;;PICKUP 'DATA HEADER' POINTER
BEQ 5\$;;SKIP TYPEOUT IF 0
TYPE ;;TYPE THE 'DATA HEADER'
4\$: .WORD 0 ;;'DATA HEADER' POINTER GOES HERE
TYPE \$CRLF ;;'CARRIAGE RETURN' & 'LINE FEED'
5\$: MOV (RO),RO ;;PICKUP 'DATA TABLE' POINTER
BNE 7\$;;GO TYPE THE DATA
6\$: MOV (SP)+,RO ;;RESTORE RO
TYPE \$CRLF ;;'CARRIAGE RETURN' & 'LINE FEED'
RTS PC ;;RETURN
7\$: TYPOCT @ (RO)+
MOV @ (RO)+,-(SP) ;;TYPE AN OCTAL NUMBER
;;SAVE @ (RO)+ FOR TYPEOUT
TYPOC ;;GO TYPE--OCTAL ASCII(ALL DIGITS)
TST (RO) ;;IS THERE ANOTHER NUMBER?
BEQ 6\$;;BR IF NO
TYPE 8\$;;TYPE TWO(2) SPACES
BR 7\$;;LOOP
8\$: .ASCII2 / / ;;TWO(2) SPACES
.;\$TRAP
.\$BTTL TRAP DECODER
STARS

```

3109
3110
3111
3112
3113
3114
3115 015314 010046
3116 015316 016600 000002
3117 015322 005740
3118 015324 111000
3119 015326 006300
3120 015330 016000 015350
3121 015334 000200
3122
3123
3124
3125
3126 015336 011646
3127 015340 016666 000004 000002
3128 015346 000002
3129
3130
3131
3132
3133
3134
3135
3136
3137
3138
3139
3140
3141
3142
3143
3144
3145
3146
3147
3148
3149
3150
3151
3152
3153
3154
3155
3156 015350
3157 015350
3158
3159
3160
3161
3162
3163
3164

;*****
;THIS ROUTINE WILL PICKUP THE LOWER BYTE OF THE 'TRAP' INSTRUCTION
;AND USE IT TO INDEX THROUGH THE TRAP TABLE FOR THE STARTING ADDRESS
;OF THE DESIRED ROUTINE. THEN USING THE ADDRESS OBTAINED IT WILL
;GO TO THAT ROUTINE.

$TRAP: MOV R0, -(SP)      ;;SAVE R0
      MOV 2(SP), R0      ;;GET TRAP ADDRESS
      TST -(R0)          ;;BACKUP BY 2
      MOVB (R0), R0      ;;GET RIGHT BYTE OF TRAP
      ASL R0             ;;POSITION FOR INDEXING
      MOV $TRPAD(R0), R0 ;;INDEX TO TABLE
      RTS R0             ;;GO TO ROUTINE

;;THIS IS USE TO HANDLE THE 'GETPRI' MACRO

$TRAP2: MOV (SP), -(SP)  ;;MOVE THE PC DOWN
        MOV 4(SP), 2(SP) ;;MOVE THE PSW DOWN
        RTI             ;;RESTORE THE PSW

.MACRO SETTRAP A,B,MSG
  $$SET A,B,\<TRAP+$TRP>,\$TRP,<MSG>
.NLIST
$TRP=$TRP+1
.LIST
.ENDM SETTRAP
.MACRO $$SET A,B,C,D,COMNT
  .IF EQ $TRP-1
  .SBTTL TRAP TABLE

;THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
;BY THE 'TRAP' INSTRUCTION.

: ROUTINE
: -----
$TRPAD: .WORD $TRAP2
.ENDC
.IIF NDF GNS,.NLIST
      A= C
.IIF NDF GNS,.LIST
      B ;;CALL=A TRAP+D(C) COMNT
.ENDM $$SET
.MACRO TRMTRP
$TERM=-$TRPAD
.ENDM TRMTRP
.LIST
      SETTRAP TYPE,$TYPE,^/TTY TYPEOUT ROUTINE/
      $$SET TYPE,$TYPE,\<TRAP+$TRP>,\$TRP,<TTY TYPEOUT ROUTINE>
.SBTTL TRAP TABLE

;THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
;BY THE 'TRAP' INSTRUCTION.

: ROUTINE
: -----

```

3165	015350	015336			\$TRPAD: .WORD \$TRAP2
3166					.LIST
3167	015352	014266			\$TYPE ;;CALL=TYPE TRAP+1(104401) TTY TYPEOUT ROUTINE
3168					.LIST
3169	015354				SETTRAP TYPOC,\$TYPOC,^/TYPE OCTAL NUMBER (WITH LEADING ZEROS)/
3170	015354				\$\$SET TYPOC,\$TYPOC,\<TRAP+\$TRP>,\\$TRP,<TYPE OCTAL NUMBER (WITH LEADING ZEROS)>
3171					.LIST
3172	015354	014756			\$TYPOC ;;CALL=TYPOC TRAP+2(104402) TYPE OCTAL NUMBER (WITH LEADING ZEROS)
3173					.LIST
3174	015356				SETTRAP TYPOS,\$TYPOS,^/TYPE OCTAL NUMBER (NO LEADING ZEROS)/
3175	015356				\$\$SET TYPOS,\$TYPOS,\<TRAP+\$TRP>,\\$TRP,<TYPE OCTAL NUMBER (NO LEADING ZEROS)>
3176					.LIST
3177	015356	014732			\$TYPOS ;;CALL=TYPOS TRAP+3(104403) TYPE OCTAL NUMBER (NO LEADING ZEROS)
3178					.LIST
3179	015360				SETTRAP TYPON,\$TYPON,^/TYPE OCTAL NUMBER (AS PER LAST CALL)/
3180	015360				\$\$SET TYPON,\$TYPON,\<TRAP+\$TRP>,\\$TRP,<TYPE OCTAL NUMBER (AS PER LAST CALL)>
3181					.LIST
3182	015360	014772			\$TYPON ;;CALL=TYPON TRAP+4(104404) TYPE OCTAL NUMBER (AS PER LAST CALL)
3183					.LIST
3184	015362				SETTRAP TYPDS,\$TYPDS,^/TYPE DECIMAL NUMBER (WITH SIGN)/
3185	015362				\$\$SET TYPDS,\$TYPDS,\<TRAP+\$TRP>,\\$TRP,<TYPE DECIMAL NUMBER (WITH SIGN)>
3186					.LIST
3187	015362	014506			\$TYPDS ;;CALL=TYPDS TRAP+5(104405) TYPE DECIMAL NUMBER (WITH SIGN)
3188					.LIST
3189					
3190					
3191	015364	000000			CKSELT: OPEN
3192	015366	055103	041524	042502	STMES: .ASCII 'CZTCBEO TC2-TC11 TEST #2'<15><12>
3193	015374	020060	041524	026462	
3194	015402	041524	030461	052040	
3195	015410	051505	020124	031043	
3196	015416	005015			
3197	015420	042523	020124	047125	.ASCII 'SET UNITO TO REMOTE AND WRITE LOCK.'
3198	015426	052111	020060	047524	
3199	015434	051040	046505	052117	
3200	015442	020105	047101	020104	
3201	015450	051127	052111	020105	
3202	015456	047514	045503	056	
3203	015463	101	046114	047440	.ASCII 'ALL OTHER UNITS OFF.'<15><12>
3204	015470	044124	051105	052440	
3205	015476	044516	051524	047440	
3206	015504	043106	006456	012	
3207	015511	127	052122	020115	.ASCII 'WRTM SWITCH OFF, WALL SWITCH ON.'<15><12>
3208	015516	053523	052111	044103	
3209	015524	047440	043106	020054	
3210	015532	040527	046114	051440	
3211	015540	044527	041524	020110	
3212	015546	047117	006456	012	
3213	015553	116	052117	035105	.ASCIIZ 'NOTE: CACHE TURNED OFF (IF THERE) DURING TEST'<15><12>
3214	015560	041440	041501	042510	
3215	015566	052040	051125	042516	
3216	015574	020104	043117	020106	
3217	015602	044450	020106	044124	
3218	015610	051105	024505	042040	
3219	015616	051125	047111	020107	
3220	015624	042524	052123	005015	

3221	015632	000			
3222	015633	015	051412	052105	ASETSR: .ASCIZ <15><12>'SET SR OPTIONS. NORMAL SR = 0'
3223	015640	051440	020122	050117	
3224	015646	044524	047117	027123	
3225	015654	047040	051117	040515	
3226	015662	020114	051123	036440	
3227	015670	030040	000		
3228	015673	015	044412	053116	AINCRT: .ASCIZ <15><12>'INVALID TEST.'
3229	015700	046101	042111	052040	
3230	015706	051505	027124	000	
3231	015713	007			APGEND: .BYTE 007
3232	015714	025045	000		.ASCIZ '*'
3233	015717	106	052101	046101	TRPM4S: .ASCIZ 'FATAL ERROR TRAP TO LOCATION 4 FROM LOC'
3234	015724	042440	051122	051117	
3235	015732	052040	040522	020120	
3236	015740	047524	046040	041517	
3237	015746	052101	047511	020116	
3238	015754	020064	051106	046517	
3239	015762	046040	041517	000	
3240	015767	050	041077	042101	TRPMES: .ASCIZ ''(?BAD CPU?) ATTEMPTING TO RESTART PROGRAM''
3241	015774	041440	052520	024477	
3242	016002	040440	052124	046505	
3243	016010	052120	047111	020107	
3244	016016	047524	051040	051505	
3245	016024	040524	052122	050040	
3246	016032	047522	051107	046501	
3247	016040	000			
3248	016041	106	052101	046101	TRPM10: .ASCIZ 'FATAL ERROR TRAP TO LOCATION 10 FROM LOC ''
3249	016046	042440	051122	051117	
3250	016054	052040	040522	020120	
3251	016062	047524	046040	041517	
3252	016070	052101	047511	020116	
3253	016076	030061	043040	047522	
3254	016104	020115	047514	020103	
3255	016112	000			
3256	016113	124	051505	051524	RESTART: .ASCIZ 'TESTS ARE OUT OF SEQUENCE - - - RESTARTING....'
3257	016120	040440	042522	047440	
3258	016126	052125	047440	020106	
3259	016134	042523	052521	047105	
3260	016142	042503	026440	026440	
3261	016150	026440	051040	051505	
3262	016156	040524	052122	047111	
3263	016164	027107	027056	000056	
3264	016172	005015	042522	052123	POWMES: .ASCIZ <15> <12> 'RESTARTING AFTER A POWER FAILURE'<15> <12>
3265	016200	051101	044524	043516	
3266	016206	040440	052106	051105	
3267	016214	040440	050040	053517	
3268	016222	051105	043040	044501	
3269	016230	052514	042522	005015	
3270	016236	000			
3271	016237	123	052101	024040	EM1: .ASCIZ 'SAT (STOP ALL TRANSPORTS. COMMAND DID NOT CLEAR READY''
3272	016244	052123	050117	040440	
3273	016252	046114	052040	040522	
3274	016260	051516	047520	052122	
3275	016266	024523	041440	046517	
3276	016274	040515	042116	042040	

PC	PS	SP	TEST#	TCCM	TCST''
3277	016302	042111	047040	052117	
3278	016310	041440	042514	051101	
3279	016316	051040	040505	054504	
3280	016324	000			
3281	016325	040	050040	020103	EH1: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3282	016332	020040	020040	051440	
3283	016340	020120	020040	020040	
3284	016346	050040	020123	020040	
3285	016354	020040	042524	052123	
3286	016362	020043	020040	041524	
3287	016370	046503	020040	020040	
3288	016376	041524	052123	000	
3289		016404			
3290	016404	001116	001176	001200	.EVEN
3291	016412	001174	001166	001164	ET1: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3292	016420	000000			000000
3293					
3294					
3295	016422	051523	020124	051450	EM2: .ASCIZ ''SST (STOP SELECTED TRANSPORT) DID NOT CLEAR READY''
3296	016430	047524	020120	042523	
3297	016436	042514	052103	042105	
3298	016444	052040	040522	051516	
3299	016452	047520	052122	020051	
3300	016460	044504	020104	047516	
3301	016466	020124	046103	040505	
3302	016474	020122	042522	042101	
3303	016502	000131			
3304	016504	020040	041520	020040	EH2: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3305	016512	020040	020040	050123	
3306	016520	020040	020040	020040	
3307	016526	051520	020040	020040	
3308	016534	052040	051505	021524	
3309	016542	020040	052040	041503	
3310	016550	020115	020040	052040	
3311	016556	051503	000124		
3312					
3313	016562	001116	001176	001200	.EVEN
3314	016570	001174	001166	001164	ET2: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3315	016576	000000			000000
3316					
3317					
3318	016600	042522	042101	020131	EM3: .ASCIZ ''READY BIT DID NOT CAUSE AN INTERRUPT''
3319	016606	044502	020124	044504	
3320	016614	020104	047516	020124	
3321	016622	040503	051525	020105	
3322	016630	047101	044440	052116	
3323	016636	051105	052522	052120	
3324	016644	000			
3325	016645	040	050040	020103	EH3: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3326	016652	020040	020040	051440	
3327	016660	020120	020040	020040	
3328	016666	050040	020123	020040	
3329	016674	020040	042524	052123	
3330	016702	020043	020040	041524	
3331	016710	046503	020040	020040	
3332	016716	041524	052123	000	

3333		016724			.EVEN					
3334	016724	001116	001176	001200	ET3:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1				
3335	016732	001174	001166	001164						
3336	016740	000000				000000				
3337										
3338										
3339	016742	042522	042101	020131	EM4:	.ASCIZ 'READY BIT CAUSED AN INTERRUPT WITH PROCESSOR AND TC11 AT SAME PRIORITY'				
3340	016750	044502	020124	040503						
3341	016756	051525	042105	040440						
3342	016764	020116	047111	042524						
3343	016772	051122	050125	020124						
3344	017000	044527	044124	050040						
3345	017006	047522	042503	051523						
3346	017014	051117	040440	042116						
3347	017022	052040	030503	020061						
3348	017030	052101	051440	046501						
3349	017036	020105	051120	047511						
3350	017044	044522	054524	000						
3351	017051	040	050040	020103	EH4:	.ASCIZ '' PC SP PS TEST# TCCM TCST''				
3352	017056	020040	020040	051440						
3353	017064	020120	020040	020040						
3354	017072	050040	020123	020040						
3355	017100	020040	042524	052123						
3356	017106	020043	020040	041524						
3357	017114	046503	020040	020040						
3358	017122	041524	052123	000						
3359		017130			.EVEN					
3360	017130	001116	001176	001200	ET4:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1				
3361	017136	001174	001166	001164						
3362	017144	000000				000000				
3363										
3364										
3365	017146	041524	030461	043040	EM5:	.ASCIZ 'TC11 FAILED TO INTERRUPT'				
3366	017154	044501	042514	020104						
3367	017162	047524	044440	052116						
3368	017170	051105	052522	052120						
3369	017176	000								
3370	017177	040	050040	020103	EH5:	.ASCIZ '' PC SP PS TEST# TCCM TCST''				
3371	017204	020040	020040	051440						
3372	017212	020120	020040	020040						
3373	017220	050040	020123	020040						
3374	017226	020040	042524	052123						
3375	017234	020043	020040	041524						
3376	017242	046503	020040	020040						
3377	017250	041524	052123	000						
3378		017256			.EVEN					
3379	017256	001116	001176	001200	ET5:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1				
3380	017264	001174	001166	001164						
3381	017272	000000				000000				
3382										
3383										
3384	017274	041524	030461	042040	EM6:	.ASCIZ 'TC11 DID NOT DROP INTERRUPT REQUEST AFTER IT WAS ACKNOLEDGED'				
3385	017302	042111	047040	052117						
3386	017310	042040	047522	020120						
3387	017316	047111	042524	051122						
3388	017324	050125	020124	042522						

3445	017762	051503	000124		
3446				.EVEN	
3447	017766	001116	001176	ET10:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3448	017774	001174	001166		
3449	020002	000000			000000
3450					
3451					
3452	020004	050125	020123	EM11:	.ASCIZ 'UPS DID NOT CLEAR WHEN LEAVING MAINTANENCE MODE''
3453	020012	020104	047516		
3454	020020	046103	040505		
3455	020026	044127	047105		
3456	020034	040505	044526		
3457	020042	046440	044501		
3458	020050	047101	047105		
3459	020056	046440	042117		
3460	020064	020040	041520	EH11:	.ASCIZ '' PC SP PS TEST# TCCM TCST''
3461	020072	020040	020040		
3462	020100	020040	020040		
3463	020106	051520	020040		
3464	020114	052040	051505		
3465	020122	020040	052040		
3466	020130	020115	020040		
3467	020136	051503	000124		
3468				.EVEN	
3469	020142	001116	001176	ET11:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3470	020150	001174	001166		
3471	020156	000000			000000
3472					
3473					
3474	020160	041524	052123	EM12:	.ASCIZ 'TCST BIT 0 CAN BE SET WHILE IN MAINTANENCE MODF''
3475	020166	052111	030040		
3476	020174	047101	041040		
3477	020202	042523	020124		
3478	020210	046111	020105		
3479	020216	046440	044501		
3480	020224	047101	047105		
3481	020232	046440	042117		
3482	020240	020040	041520	EH12:	.ASCIZ '' PC SP PS TEST# TCCM TCST''
3483	020246	020040	020040		
3484	020254	020040	020040		
3485	020262	051520	020040		
3486	020270	052040	051505		
3487	020276	020040	052040		
3488	020304	020115	020040		
3489	020312	051503	000124		
3490				.EVEN	
3491	020316	001116	001176	ET12:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3492	020324	001174	001166		
3493	020332	000000			000000
3494					
3495					
3496	020334	041524	052123	EM13:	.ASCIZ 'TCST BIT 1 CAN BE SET WHILE IN MAINTANENCE MODE''
3497	020342	052111	030440		
3498	020350	047101	041040		
3499	020356	042523	020124		
3500	020364	046111	020105		

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 F 6
TRAP TABLE PAGE 66

SEQ 0070

PC	SP	PS	TEST#	TCCM	TCST
3501	020372	046440	044501	052116	
3502	020400	047101	047105	042503	
3503	020406	046440	042117	000105	
3504	020414	020040	041520	020040	EH13: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3505	020422	020040	020040	050123	
3506	020430	020040	020040	020040	
3507	020436	051520	020040	020040	
3508	020444	052040	051505	021524	
3509	020452	020040	052040	041503	
3510	020460	020115	020040	052040	
3511	020466	051503	000124		
3512					
3513	020472	001116	001176	001200	.EVEN
3514	020500	001174	001166	001164	ET13: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3515	020506	000000			000000
3516					
3517					
3518	020510	051127	046524	041440	EM14: .ASCIZ 'WRTM COMMAND WITH WRTM SWITCH DISABLED FAILED TO SET ILO ERROR''
3519	020516	046517	040515	042116	
3520	020524	053440	052111	020110	
3521	020532	051127	046524	051440	
3522	020540	044527	041524	020110	
3523	020546	044504	040523	046102	
3524	020554	042105	043040	044501	
3525	020562	042514	020104	047524	
3526	020570	051440	052105	044440	
3527	020576	047514	042440	051122	
3528	020604	051117	000		
3529	020607	040	050040	020103	EH14: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3530	020614	020040	020040	051440	
3531	020622	020120	020040	020040	
3532	020630	050040	020123	020040	
3533	020636	020040	042524	052123	
3534	020644	020043	020040	041524	
3535	020652	046503	020040	020040	
3536	020660	041524	052123	000	
3537		020666			
3538	020666	001116	001176	001200	.EVEN
3539	020674	001174	001166	001164	ET14: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3540	020702	000000			000000
3541					
3542					
3543	020704	046111	020117	051105	EM15: .ASCIZ ''ILO ERROR FAILED TO SET THE 'ERROR' BIT''
3544	020712	047522	020122	040506	
3545	020720	046111	042105	052040	
3546	020726	020117	042523	020124	
3547	020734	044124	020105	042447	
3548	020742	051122	051117	020047	
3549	020750	044502	000124		
3550	020754	020040	041520	020040	EH15: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3551	020762	020040	020040	050123	
3552	020770	020640	020040	020040	
3553	020776	051520	020040	020040	
3554	021004	052040	051505	021524	
3555	021012	020040	052040	041503	
3556	021020	020115	020040	052040	

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 G 6
TRAP TABLE PAGE 67

SEQ 0071

3557	021026	051503	000124		
3558					
3559	021032	001116	001176	001200	.EVEN
3560	021040	001174	001166	001164	ET15: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3561	021046	000000			000000
3562					
3563					
3564	021050	046103	040505	044522	EM16: .ASCIZ 'CLEARING ILLEGAL OP FAILED TO CLEAR ILO ERROR'
3565	021056	043516	044440	046114	
3566	021064	043505	046101	047440	
3567	021072	020120	040506	046111	
3568	021100	042105	052040	020117	
3569	021106	046103	040505	020122	
3570	021114	046111	020117	051105	
3571	021122	047522	000122		
3572	021126	020040	041520	020040	EH16: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3573	021134	020040	020040	050123	
3574	021142	020040	020040	020040	
3575	021150	051520	020040	020040	
3576	021156	052040	051505	021524	
3577	021164	020040	052040	041503	
3578	021172	020115	020040	052040	
3579	021200	051503	000124		
3580					
3581	021204	001116	001176	001200	.EVEN
3582	021212	001174	001166	001164	ET16: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3583	021220	000000			000000
3584					
3585					
3586	021222	046103	040505	044522	EM17: .ASCIZ 'CLEARING ILLEGAL OP FAILED TO CLEAR THE 'ERROR' BIT''
3587	021230	043516	044440	046114	
3588	021236	043505	046101	047440	
3589	021244	020120	040506	046111	
3590	021252	042105	052040	020117	
3591	021260	046103	040505	020122	
3592	021266	044124	020105	042447	
3593	021274	051122	051117	020047	
3594	021302	044502	000124		
3595	021306	020040	041520	020040	EH17: .ASCIZ '' PC SP PS TEST# TCCM TCST''
3596	021314	020040	020040	050123	
3597	021322	020040	020040	020040	
3598	021330	051520	020040	020040	
3599	021336	052040	051505	021524	
3600	021344	020040	052040	041503	
3601	021352	020115	020040	052040	
3602	021360	051503	000124		
3603					
3604	021364	001116	001176	001200	.EVEN
3605	021372	001174	001166	001164	ET17: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3606	021400	000000			000000
3607					
3608					
3609	021402	051127	046524	053440	EM20: .ASCIZ 'WRTM WITH WRTM SWITCH OFF DID NOT SET ILO ERROR BIT''
3610	021410	052111	020110	051127	
3611	021416	046524	051440	044527	
3612	021424	041524	020110	043117	

3613	021432	020106	044504	020104
3614	021440	047516	020124	042523
3615	021446	020124	046111	020117
3616	021454	051105	047522	020122
3617	021462	044502	000124	
3618	021466	020040	041520	020040
3619	021474	020040	020040	050123
3620	021502	020040	020040	020040
3621	021510	051520	020040	020040
3622	021516	052040	051505	021524
3623	021524	020040	052040	041503
3624	021532	020115	020040	052040
3625	021540	051503	000124	
3626				
3627	021544	001116	001176	001200
3628	021552	001174	001166	001164
3629	021560	000000		
3630				
3631				
3632	021562	046111	020117	051105
3633	021570	047522	020122	042523
3634	021576	052124	047111	020107
3635	021604	044504	020104	047516
3636	021612	020124	040503	051525
3637	021620	020105	044124	020105
3638	021626	042447	051122	051117
3639	021634	020047	044502	020124
3640	021642	047524	051440	052105
3641	021650	000		
3642	021651	040	050040	020103
3643	021656	020040	020040	051440
3644	021664	020120	020040	020040
3645	021672	050040	020123	020040
3646	021700	020040	042524	052123
3647	021706	020043	020040	041524
3648	021714	046503	020040	020040
3649	021722	041524	052123	000
3650		021730		
3651	021730	001116	001176	001200
3652	021736	001174	001166	001164
3653	021744	000000		
3654				
3655				
3656	021746	046103	040505	044522
3657	021754	043516	042440	051122
3658	021762	051117	041040	052111
3659	021770	040440	051514	020117
3660	021776	046103	040505	042522
3661	022004	020104	046111	020117
3662	022012	051105	047522	000122
3663	022020	020040	041520	020040
3664	022026	020040	020040	050123
3665	022034	020040	020040	020040
3666	022042	051520	020040	020040
3667	022050	052040	051505	021524
3668	022056	020040	052040	041503

```
EH20: .ASCII " PC      SP      PS      TEST#  TCCM      TCST"
```

```

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

```

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

EH21: .ASCIIZ " PC SP PS TEST# ICCM ICST"

```

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

```

EM22: .ASCIIZ 'CLEARING ERROR BIT ALSO CLEARED ILO ERROR'

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

3669	022064	020115	020040	052040		
3670	022072	051503	000124			
3671					.EVEN	
3672	022076	001116	001176	001200	ET22:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3673	022104	001174	001166	001164		
3674	022112	000000				000000
3675						
3676						
3677	022114	044124	020105	042447	EM23:	.ASCIIZ 'THE 'ERROR' BIT DID NOT SET''
3678	022122	051122	051117	020047		
3679	022130	044502	020124	044504		
3680	022136	020104	047516	020124		
3681	022144	042523	000124			
3682	022150	020040	041520	020040	EH23:	.ASCIIZ '' PC SP PS TEST# TCCM TCST''
3683	022156	020040	020040	050123		
3684	022164	020040	020040	020040		
3685	022172	051520	020040	020040		
3686	022200	052040	051505	021524		
3687	022206	020040	052040	041503		
3688	022214	020115	020040	052040		
3689	022222	051503	000124			
3690					.EVEN	
3691	022226	001116	001176	001200	ET23:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3692	022234	001174	001166	001164		
3693	022242	000000				000000
3694						
3695						
3696	022244	044124	020105	042447	EM24:	.ASCIIZ 'THE 'ERROR' BIT SET DID NOT CAUSE AN INTERRUPT''
3697	022252	051122	051117	020047		
3698	022260	044502	020124	042523		
3699	022266	020124	044504	020104		
3700	022274	047516	020124	040503		
3701	022302	051525	020105	047101		
3702	022310	044440	052116	051105		
3703	022316	052522	052120	000		
3704	022323	040	050040	020103	EH24:	.ASCIIZ '' PC SP PS TEST# TCCM TCST''
3705	022330	020040	020040	051440		
3706	022336	020120	020040	020040		
3707	022344	050040	020123	020040		
3708	022352	020040	042524	052123		
3709	022360	020043	020040	041524		
3710	022366	046503	020040	020040		
3711	022374	041524	052123	000		
3712		022402			.EVEN	
3713	022402	001116	001176	001200	ET24:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3714	022410	001174	001166	001164		
3715	022416	000000				000000
3716						
3717						
3718	022420	047504	047111	020107	EM25:	.ASCIIZ 'DOING A RESET INSTRUCTION DID NOT SET THE READY BIT''
3719	022426	020101	042522	042523		
3720	022434	020124	047111	052123		
3721	022442	052522	052103	047511		
3722	022450	020116	044504	020104		
3723	022456	047516	020124	042523		
3724	022464	020124	044124	020105		

[illegible]

3781	023064	042522	042101	020131	EM30:	.ASCIZ 'READY WAS NOT SET AFTER BLOCK MARK WAS SHIFTED INTO THE WINDOW REGISTER'									
3782	023072	040527	020123	047516											
3783	023100	020124	042523	020124											
3784	023106	043101	042524	020122											
3785	023114	046102	041517	020113											
3786	023122	040515	045522	053440											
3787	023130	051501	051440	044510											
3788	023136	052106	042105	044440											
3789	023144	052116	020117	044124											
3790	023152	020105	044527	042116											
3791	023160	053517	051040	043505											
3792	023166	051511	042524	000122											
3793	023174	020040	041520	020040	EH30:	.ASCIZ	'	PC	SP	PS	TEST#	TCCM	TCST'		
3794	023202	020040	020040	050123											
3795	023210	020040	020040	020040											
3796	023216	051520	020040	020040											
3797	023224	052040	051505	021524											
3798	023232	020040	052040	041503											
3799	023240	020115	020040	052040											
3800	023246	051503	000124												
3801					.EVEN										
3802	023252	001116	001176	001200	ET30:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1									
3803	023260	001174	001166	001164											
3804	023266	000000				000000									
3805															
3806															
3807	023270	047111	047503	051122	EM31:	.ASCIZ 'INCORRECT BLOCK # IN DATA REG AFTER BLOCK MARK WAS DETECTED'									
3808	023276	041505	020124	046102											
3809	023304	041517	020113	020043											
3810	023312	047111	042040	052101											
3811	023320	020101	042522	020107											
3812	023326	043101	042524	020122											
3813	023334	046102	041517	020113											
3814	023342	040515	045522	053440											
3815	023350	051501	042040	052105											
3816	023356	041505	042524	000104											
3817	023364	020040	041520	020040	EH31:	.ASCIZ	'	PC	SP	PS	TEST#	TCCM	TCST	TCDT	TCDT S/B'
3818	023372	020040	020040	050123											
3819	023400	020040	020040	020040											
3820	023406	051520	020040	020040											
3821	023414	052040	051505	021524											
3822	023422	020040	052040	041503											
3823	023430	020115	020040	052040											
3824	023436	051503	020124	020040											
3825	023444	052040	042103	020124											
3826	023452	052040	042103	020124											
3827	023460	027523	000102												
3828					.EVEN										
3829	023464	001116	001176	001200	ET31:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,\$REG4,\$REG0									
3830	023472	001174	001166	001164											
3831	023500	001172	001162												
3832	023504	000000				000000									
3833															
3834															
3835	023506	052115	020105	040527	EM32:	.ASCIZ 'MTE WAS NOT SET BY AN ILLEGAL MARK TRACK CODE'									
3836	023514	020123	047516	020124											

3949	024574	020040	052040	041503		
3950	024602	020115	020040	052040		
3951	024610	051503	000124			
3952					.EVEN	
3953	024614	001116	001176	001200	ET37:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3954	024622	001174	001166	001164		
3955	024630	000000				000000
3956						
3957						
3958	024632	042522	042101	020131	EM40:	.ASCIZ 'READY BIT DID NOT SET'
3959	024640	044502	020124	044504		
3960	024646	020104	047516	020124		
3961	024654	042523	000124			
3962	024660	020040	041520	020040	EH40:	.ASCIZ '' PC SP PS TEST# TCCM TCST''
3963	024666	020040	020040	050123		
3964	024674	020040	020040	020040		
3965	024702	051520	020040	020040		
3966	024710	052040	051505	021524		
3967	024716	020040	052040	041503		
3968	024724	020115	020040	052040		
3969	024732	051503	000124			
3970					.EVEN	
3971	024736	001116	001176	001200	ET40:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3972	024744	001174	001166	001164		
3973	024752	000000				000000
3974						
3975						
3976	024754	044124	020105	042447	EM41:	.ASCIZ 'THE 'ERROR' BIT SHOULD NOT HAVE SET'
3977	024762	051122	051117	020047		
3978	024770	044502	020124	044123		
3979	024776	052517	042114	047040		
3980	025004	052117	044040	053101		
3981	025012	020105	042523	000124		
3982	025020	020040	041520	020040	EH41:	.ASCIZ '' PC SP PS TEST# TCCM TCST''
3983	025026	020040	020040	050123		
3984	025034	020040	020040	020040		
3985	025042	051520	020040	020040		
3986	025050	052040	051505	021524		
3987	025056	020040	052040	041503		
3988	025064	020115	020040	052040		
3989	025072	051503	000124			
3990					.EVEN	
3991	025076	001116	001176	001200	ET41:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
3992	025104	001174	001166	001164		
3993	025112	000000				000000
3994						
3995						
3996	025114	042522	042101	020131	EM42:	.ASCIZ 'READY BIT SHOULD NOT HAVE SET'
3997	025122	044502	020124	044123		
3998	025130	052517	042114	047040		
3999	025136	052117	044040	053101		
4000	025144	020105	042523	000124		
4001	025152	020040	041520	020040	EH42:	.ASCIZ '' PC SP PS TEST# TCCM TCST''
4002	025160	020040	020040	050123		
4003	025166	020040	020040	020040		
4004	025174	051520	020040	020040		

4005	025202	052040	051505	021524															
4006	025210	020040	052040	041503															
4007	025216	020115	020040	052040															
4008	025224	051503	000124																
4009					.EVEN														
4010	025230	001116	001176	001200	ET42:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1													
4011	025236	001174	001166	001164															
4012	025244	000000				000000													
4013																			
4014																			
4015	025246	047527	042122	052040	EM43:	.ASCIZ 'WORD TRANSFERED INCORRECTLY TO CORE''													
4016	025254	040522	051516	042506															
4017	025262	042522	020104	047111															
4018	025270	047503	051122	041505															
4019	025276	046124	020131	047524															
4020	025304	041440	051117	000105															
4021	025312	020040	041520	020040	EH43:	.ASCIZ '' PC SP PS TEST# TCCM TCST RBUF RBUF S/B''													
4022	025320	020040	020040	050123															
4023	025326	020040	020040	020040															
4024	025334	051520	020040	020040															
4025	025342	052040	051505	021524															
4026	025350	020040	052040	041503															
4027	025356	020115	020040	052040															
4028	025364	051503	020124	020040															
4029	025372	051040	052502	020106															
4030	025400	020040	051040	052502															
4031	025406	020106	027523	000102															
4032					.EVEN														
4033	025414	001116	001176	001200	ET43:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,RBUF,\$RFG0													
4034	025422	001174	001166	001164															
4035	025430	036430	001162																
4036	025434	000000				000000													
4037																			
4038																			
4039	025436	047527	042122	041440	EM44:	.ASCIZ 'WORD COUNT INCREMENTED IMPROPERLY''													
4040	025444	052517	052																

[illegible]

SEQ 0081

4117	026240	020115	020040	052040		
4118	026246	051503	000124			
4119					.EVEN	
4120	026252	001116	001176	001200	ET47:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
4121	026260	001174	001166	001164		
4122	026266	000000				000000
4123						
4124						
4125	026270	051124	047101	043123	EM50:	.ASCIIZ 'TRANSFERED TOO MANY WORDS''
4126	026276	051105	042105	052040		
4127	026304	047517	046440	047101		
4128	026312	020131	047527	042122		
4129	026320	000123				
4130	026322	020040	041520	020040	EH50:	.ASCIIZ '' PC SP PS TEST# TCCM TCST RBUF+2''
4131	026330	020040	020040	050123		
4132	026336	020040	020040	020040		
4133	026344	051520	020040	020040		
4134	026352	052040	051505	021524		
4135	026360	020040	052040	041503		
4136	026366	020115	020040	052040		
4137	026374	051503	020124	020040		
4138	026402	051040	052502	025506		
4139	026410	000062				
4140					.EVEN	
4141	026412	001116	001176	001200	ET50:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,RBUF+2
4142	026420	001174	001166	001164		
4143	026426	036432				
4144	026430	000000				000000
4145						
4146						
4147	026432	041524	040502	041440	EM51:	.ASCIIZ 'TCBA CONTAINS AN INCORRECT ADDRESS''
4148	026440	047117	040524	047111		
4149	026446	020123	047101	044440		
4150	026454	041516	051117	042522		
4151	026462	052103	040440	042104		
4152	026470	042522	051523	000		
4153	026475	040	050040	020103	EH51:	.ASCIIZ '' PC SP PS TEST# TCCM TCST TCBA TCBA S/B''
4154	026502	020040	020040	051440		
4155	026510	020120	020040	020040		
4156	026516	050040	020123	020040		
4157	026524	020040	042524	052123		
4158	026532	020043	020040	041524		
4159	026540	046503	020040	020040		
4160	026546	041524	052123	020040		
4161	026554	020040	041524	040502		
4162	026562	020040	052040	041103		
4163	026570	020101	027523	000102		
4164					.EVEN	
4165	026576	001116	001176	001200	ET51:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,\$REG3,RBUF+512
4166	026604	001174	001166	001164		
4167	026612	001170	037142			
4168	026616	000000				000000
4169						
4170						
4171	026620	040520	051122	052111	EM52:	.ASCIIZ 'PARRITY ERROR WAS NOT DETECTED''
4172	026626	020131	051105	047522		

4173	026634	020122	040527	020123								
4174	026642	047516	020124	042504								
4175	026650	042524	052103	042105								
4176	026656	000										
4177	026657	040	050040	020103	EH52:	.ASCIIZ	''	PC	SP	PS	TEST#	TCCM
4178	026664	020040	020040	051440							TCST	TCWC''
4179	026672	020120	020040	020040								
4180	026700	050040	020123	020040								
4181	026706	020040	042524	052123								
4182	026714	020043	020040	041524								
4183	026722	046503	020040	020040								
4184	026730	041524	052123	020040								
4185	026736	020040	041524	041527								
4186	026744	000										
4187		026746			.EVEN							
4188	026746	001116	001176	001200	ET52:	\$ERRPC,	\$REG6,	\$REG7,	\$REG5,	\$REG2,	\$REG1,	\$REG0
4189	026754	001174	001166	001164								
4190	026762	001162										
4191	026764	000000										
4192												
4193												
4194	026766	040520	044522	054524	EM53:	.ASCIIZ	'PARITY ERROR DID NOT SET THE 'ERROR' BIT''					
4195	026774	042440	051122	051117								
4196	027002	042040	042111	047040								
4197	027010	052117	051440	052105								
4198	027016	052040	042510	023440								
4199	027024	051105	047522	023522								
4200	027032	041040	052111	000								
4201	027037	040	050040	020103	EH53:	.ASCIIZ	''	PC	SP	PS	TEST#	TCCM
4202	027044	020040	020040	051440							TCST	TCWC''
4203	027052	020120	020040	020040								
4204	027060	050040	020123	020040								
4205	027066	020040	042524	052123								
4206	027074	020043	020040	041524								
4207	027102	046503	020040	020040								
4208	027110	041524	052123	020040								
4209	027116	020040	041524	041527								
4210	027124	000										
4211		027126			.EVEN							
4212	027126	001116	001176	001200	ET53:	\$ERRPC,	\$REG6,	\$REG7,	\$REG5,	\$REG2,	\$REG1,	\$REG0
4213	027134	001174	001166	001164								
4214	027142	001162										
4215	027144	000000										
4216												
4217												
4218	027146	040520	044522	054524	EM54:	.ASCIIZ	'PARITY ERROR BIT WILL NOT CLEAR''					
4219	027154	042440	051122	051117								

[illegible]

[illegible]

[illegible]

4397	030706	052040	041103	020101		
4398	030714	020040	052040	041103		
4399	030722	020101	027523	000102		
4400					.EVEN	
4401	030730	001116	001176	001200	ET63:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,\$REG3
4402	030736	001174	001166	001164		
4403	030744	001170				
4404	030746	000000				000000
4405						
4406						
4407	030750	040504	040524	046440	EM64:	.ASCIZ 'DATA MISS DID NOT SET'
4408	030756	051511	020123	044504		
4409	030764	020104	047516	020124		
4410	030772	042523	000124			
4411	030776	020040	041520	020040	EH64:	.ASCIZ '' PC SP PS TEST# TCCM TCST TCWC''
4412	031004	020040	020040	050123		
4413	031012	020040	020040	020040		
4414	031020	051520	020040	020040		
4415	031026	052040	051505	021524		
4416	031034	020040	052040	041503		
4417	031042	020115	020040	052040		
4418	031050	051503	020124	020040		
4419	031056	052040	053503	000103		
4420					.EVEN	
4421	031064	001116	001176	001200	ET64:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,\$REG0
4422	031072	001174	001166	001164		
4423	031100	001162				
4424	031102	000000				000000
4425						
4426						
4427	031104	040504	040524	046440	EM65:	.ASCIZ 'DATA MISS SETTING DID NOT CAUSE THE 'ERROR' BIT TO SET'
4428	031112	051511	020123	042523		
4429	031120	052124	047111	020107		
4430	031126	044504	020104	047516		
4431	031134	020124	040503	051525		
4432	031142	020105	044124	020105		
4433	031150	042447	051122	051117		
4434	031156	020047	044502	020124		
4435	031164	047524	051440	052105		
4436	031172	000				
4437	031173	040	050040	020103	EH65:	.ASCIZ '' PC SP PS TEST# TCCM TCST''
4438	031200	020040	020040	051440		
4439	031206	020120	020040	020040		
4440	031214	050040	020123	020040		
4441	031222	020040	042524	052123		
4442	031230	020043	020040	041524		
4443	031236	046503	020040	020040		
4444	031244	041524	052123	000		
4445		031252			.EVEN	
4446	031252	001116	001176	001200	ET65:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
4447	031260	001174	001166	001164		
4448	031266	000000				000000
4449						
4450						
4451	031270	046103	040505	044522	EM66:	.ASCIZ ''CLEARING THE 'ERROR' BIT DID NOT CAUSE DATA MISS TO BE CLEARED''
4452	031276	043516	052040	042510		

4453	031304	023440	051105	047522
4454	031312	023522	041040	052111
4455	031320	042040	042111	047040
4456	031326	052117	041440	052501
4457	031334	042523	042040	052101
4458	031342	020101	044515	051523
4459	031350	052040	020117	042502
4460	031356	041440	042514	051101
4461	031364	042105	000	
4462	031367	040	050040	020103
4463	031374	020040	020040	051440
4464	031402	020120	020040	020040
4465	031410	050040	020123	020040
4466	031416	020040	042524	052123
4467	031424	020043	020040	041524
4468	031432	046503	020040	020040
4469	031440	041524	052123	000
4470		031446		
4471	031446	001116	001176	001200
4472	031454	001174	001166	001164
4473	031462	000000		
4474				
4475				
4476	031464	042522	042101	020131
4477	031472	044502	020124	040527
4478	031500	020123	047516	020124
4479	031506	042523	020124	043101
4480	031514	042524	020122	044124
4481	031522	020105	040504	040524
4482	031530	053440	051501	053440
4483	031536	044522	052124	047105
4484	031544	000		
4485	031545	040	050040	020103
4486	031552	020040	020040	051440
4487	031560	020120	020040	020040
4488	031566	050040	020123	020040
4489	031574	020040	042524	052123
4490	031602	020043	020040	041524
4491	031610	046503	020040	020040
4492	031616	041524	052123	000
4493		031624		
4494	031624	001116	001176	001200
4495	031632	001174	001166	001164
4496	031640	000000		
4497				
4498				
4499	031642	044124	020105	042522
4500	031650	042526	051522	020105
4501	031656	044103	041505	051513
4502	031664	046525	053440	051501
4503	031672	053440	044522	052124
4504	031700	047105	044440	041516
4505	031706	051117	042522	052103
4506	031714	054514	000	
4507	031717	040	050040	020103
4508	031724	020040	020040	051440

EH66: .ASCII " PC SP PS TEST# TCCM TCST"

```

.EVEN
ET66:  $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
000000

```

EM67: .ASCIIZ 'READY BIT WAS NOT SET AFTER THE DATA WAS WRITTEN'

EH67: .ASCII " PC SP PS TEST# TCCM TCST"

```

.EVEN
ET67:  $ERRPC,$REG6,$REG7,$REG5,$REG2,$REG1
       000000

```

EM70: .ASCIIZ 'THE REVERSE CHECKSUM WAS WRITTEN INCORRECTLY''

EH70: .ASCII " PC SP PS TES*# TCCM TCST RBUF+512 RBUF+512 S/B"

4509	031732	020120	020040	020040	
4510	031740	050040	020123	020040	
4511	031746	020040	042524	052123	
4512	031754	020043	020040	041524	
4513	031762	046503	020040	020040	
4514	031770	041524	052123	020040	
4515	031776	051040	052502	025506	
4516	032004	030465	020062	041122	
4517	032012	043125	032453	031061	
4518	032020	051440	041057	000	
4519		032026			
4520	032026	001116	001176	001200	.EVEN
4521	032034	001174	001166	001164	ET70: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,RBUF+512,\$REG0
4522	032042	037142	001162		
4523	032046	000000			000000
4524					
4525					
4526	032050	047527	042122	041440	EM71: .ASCIZ 'WORD COUNT MODIFIED DURING WRITE ALL''
4527	032056	052517	052116	046440	
4528	032064	042117	043111	042511	
4529	032072	020104	052504	051122	
4530	032100	047111	020107	051127	
4531	032106	052111	020105	046101	
4532	032114	000114			
4533	032116	020040	041520	020040	EH71: .ASCIZ '' PC SP PS TEST# TCCM TCST TCWC''
4534	032124	020040	020040	050123	
4535	032132	020040	020040	020040	
4536	032140	051520	020040	020040	
4537	032146	052040	051505	021524	
4538	032154	020040	052040	041503	
4539	032162	020115	020040	052040	
4540	032170	051503	020124	020040	
4541	032176	052040	053503	000103	
4542					
4543	032204	001116	001176	001200	.EVEN
4544	032212	001174	001166	001164	ET71: \$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,TCWC
4545	032220	001242			
4546	032222	000000			000000
4547					
4548					
4549	032224	041524	040502	046440	EM72: .ASCIZ 'TCBA MODIFIED DURING WRITE ALL''
4550	032232	042117	043111	042511	
4551	032240	020104	052504	051122	
4552	032246	047111	020107	051127	
4553	032254	052111	020105	046101	
4554	032262	000114			
4555	032264	020040	041520	020040	EH72: .ASCIZ '' PC SP PS TEST# TCCM TCST TCBA''
4556	032272	020040	020040	050123	
4557	032300	020040	020040	020040	
4558	032306	051520	020040	020040	
4559	032314	052040	051505	021524	
4560	032322	020040	052040	041503	
4561	032330	020115	020040	052040	
4562	032336	051503	020124	020040	
4563	032344	052040	041103	000101	
4564					.EVEN

4565	032352	001116	001176	001200	ET72:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1,\$REG3
4566	032360	001174	001166	001164		
4567	032366	001170				
4568	032370	000000				000000
4569						
4570						
4571	032372	051523	020124	044504	EM73:	.ASCIZ 'SST DID NOT CAUSE A SELECT ERROR'
4572	032400	020104	047516	020124		
4573	032406	040503	051525	020105		
4574	032414	020101	042523	042514		
4575	032422	052103	042440	051122		
4576	032430	051117	000			
4577	032433	040	050040	020103	EH73:	.ASCIZ '' PC SP PS TEST# TCCM TCST''
4578	032440	020040	020040	051440		
4579	032446	020120	020040	020040		
4580	032454	050040	020123	020040		
4581	032462	020040	042524	052123		
4582	032470	020043	020040	041524		
4583	032476	046503	020040	020040		
4584	032504	041524	052123	000		
4585		032512			.EVEN	
4586	032512	001116	001176	001200	ET73:	\$ERRPC,\$REG6,\$REG7,\$REG5,\$REG2,\$REG1
4587	032520	001174	001166	001164		
4588	032526	000000				000000
4589						
4590	032530	051124	050101	042520	EM74:	.ASCIZ 'TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCCM'
4591	032536	020104	047524	046040		
4592	032544	041517	032040	040440		
4593	032552	052124	046505	052120		
4594	032560	047111	020107	047524		
4595	032566	040440	041503	051505		
4596	032574	020123	041524	046503		
4597	032602	000				
4598	032603	040	050040	020103	EH74:	.ASCIZ '' PC SP PS TEST#''
4599	032610	020040	020040	051440		
4600	032616	020120	020040	020040		
4601	032624	050040	020123	020040		
4602	032632	020040	042524	052123		
4603	032640	000043				
4604					.EVEN	
4605	032642	001116	001176	001200	ET74:	\$ERRPC,\$REG6,\$REG7,\$REG5
4606	032650	001174				
4607	032652	000000				000000
4608	032654	051124	050101	042520	EM75:	.ASCIZ 'TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCST'
4609	032662	020104	047524	046040		
4610	032670	041517	032040	040440		
4611	032676	052124	046505	052120		
4612	032704	047111	020107	047524		
4613	032712	040440	041503	051505		
4614	032720	020123	041524	052123		
4615	032726	000				
4616	032727	040	050040	020103	EH75:	.ASCIZ '' PC SP PS TEST#''
4617	032734	020040	020040	051440		
4618	032742	020120	020040	020040		
4619	032750	050040	020123	020040		
4620	032756	020040	042524	052123		

4621	032764	000043						
4622					.EVEN			
4623	032766	001116	001176	001200	ET75:	\$ERRPC,\$REG6,\$REG7,\$REG5		
4624	032774	001174						
4625	032776	000000				000000		
4626	033000	051124	050101	042520	EM76:	.ASCIZ 'TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCWC'		
4627	033006	020104	047524	046040				
4628	033014	041517	032040	040440				
4629	033022	052124	046505	052120				
4630	033030	047111	020107	047524				
4631	033036	040440	041503	051505				
4632	033044	020123	041524	041527				
4633	033052	000						
4634	033053	040	050040	020103	EH76:	.ASCIZ '' PC SP PS TEST#''		
4635	033060	020040	020040	051440				
4636	033066	020120	020040	020040				
4637	033074	050040	020123	020040				
4638	033102	020040	042524	052123				
4639	033110	000043						
4640					.EVEN			
4641	033112	001116	001176	001200	ET76:	\$ERRPC,\$REG6,\$REG7,\$REG5		
4642	033120	001174						
4643	033122	000000				000000		
4644	033124	051124	050101	042520	EM77:	.ASCIZ 'TRAPPED TO LOC 4 ATTEMPTING TO ACCESS TCBA'		
4645	033132	020104	047524	046040				
4646	033140	041517	032040	040440				
4647	033146	052124	046505	052120				
4648	033154	047111	020107	047524				
4649	033162	040440	041503	051505				
4650	033170	020123	041524	040502				
4651	033176	000						
4652	033177	040	050040	020103	EH77:	.ASCIZ '' PC SP PS TEST#''		
4653	033204	020040	020040	051440				
4654	033212	020120	020040	020040				
4655	033220	050040	020123	020040				
4656	033226	020040	042524	052123				
4657	033234	000043						
4658					.EVEN			
4659	033236	001116	001176	001200	ET77:	\$ERRPC,\$REG6,\$REG7,\$REG5		
4660	033244	001174						
4661	033246	000000				000000		
4662	033250				MTKC10:			
4663	033250					C10 V7,V2,V7,V2,V7,V2		
4664	033250	034	010	074		.BYTE 0!V7,0!V2,1!V7,0!V2,0!V7,0!V2 ;MTK CODE 10.		
4665	033253	010	034	010				
4666	033256				MTKER:			
4667	033256					EMTE		
4668	033256	040	040	040		.BYTE 1,1,1,0,0,1		
4669	033261	000	000	040				
4670	033264				MTKEND:			
4671	033264					C22		
4672	033264	000	040	000		.BYTE 0,1,0,0,1,0 ;MTK CODE 22. FWD END ZONE.		
4673	033267	000	040	000				
4674	033272				MTK55:			
4675	033272					C55		
4676	033272	040	000	040		.BYTE 1,0,1,1,0,1 ;MTK CODE 55. REV END ZONE MARK.		

4677	033275	040	000	040		
4678	033300				MTK5P:	
4679	033300				C10	V0,V6,V6,V6,V6,V6
4680	033300	000	030	070	.BYTE	0!V0,0!V6,I!V6,0!V6,0!V6,0!V6 ;MTK CODE 10.
4681	033303	030	030	030		
4682	033306				MTK7:	
4683	033306				C25	
4684	033306	000	040	000	.BYTE	0,I,0,I,0,I ;MTK CODE 25. EXTENSION MARK.
4685	033311	040	000	040		
4686	033314				C25	
4687	033314	000	040	000	.BYTE	0,I,0,I,0,I ;MTK CODE 25. EXTENSION MARK.
4688	033317	040	000	040		
4689	033322				C26	V0,V5,V2,V5,V2,V5
4690	033322	000	064	010	.BYTE	0!V0,I!V5,0!V2,I!V5,I!V2,0!V5 ;FWD BLOCK MARK.
4691	033325	064	050	024		
4692	033330				C32	V0,V5,V5,V5,V5,V5
4693	033330	000	064	064	.BYTE	0!V0,I!V5,I!V5,0!V5,I!V5,0!V5 ;REV GUARD.
4694	033333	024	064	024		
4695	033336				MTK5:	
4696	033336				C10	V0,V6,V6,V6,V6,V6
4697	033336	000	030	070	.BYTE	0!V0,0!V6,I!V6,0!V6,0!V6,0!V6 ;MTK CODE 10.
4698	033341	030	030	030		
4699	033344				MTK7A:	
4700	033344				C10	V0,V0,V0,V0,V0,V0
4701	033344	000	000	040	.BYTE	0!V0,0!V0,I!V0,0!V0,0!V0,0!V0 ;MTK CODE 10.
4702	033347	000	000	000		
4703	033352				MTK7B:	
4704	033352				C10	V0,V5,V0,V5,V0,V5
4705	033352	000	024	040	.BYTE	0!V0,0!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 10.
4706	033355	024	000	024		
4707	033360				MTKVAR:	
4708	033360				C10	V7,V2,V7,V2,V7,V2
4709	033360	034	010	074	.BYTE	0!V7,0!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 10.
4710	033363	010	034	010		
4711		000176			.REPT	126.
4712					C70	V0,V5,V0,V5,V0,V5
4713					C70	V7,V2,V7,V2,V7,V2
4714					.ENDR	
4715	033366				C70	V0,V5,V0,V5,V0,V5
4716	033366	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4717	033371	024	000	024		
4718	033374				C70	V7,V2,V7,V2,V7,V2
4719	033374	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4720	033377	010	034	010		
4721	033402				C70	V0,V5,V0,V5,V0,V5
4722	033402	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4723	033405	024	000	024		
4724	033410				C70	V7,V2,V7,V2,V7,V2
4725	033410	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4726	033413	010	034	010		
4727	033416				C70	V0,V5,V0,V5,V0,V5
4728	033416	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4729	033421	024	000	024		
4730	033424				C70	V7,V2,V7,V2,V7,V2
4731	033424	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4732	033427	010	034	010		

4733	033432				C70	V0,V5,V0,V5,V0,V5	
4734	033432	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4735	033435	024	000	024			
4736	033440				C70	V7,V2,V7,V2,V7,V2	
4737	033440	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4738	033443	010	034	010			
4739	033446				C70	V0,V5,V0,V5,V0,V5	
4740	033446	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4741	033451	024	000	024			
4742	033454				C70	V7,V2,V7,V2,V7,V2	
4743	033454	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4744	033457	010	034	010			
4745	033462				C70	V0,V5,V0,V5,V0,V5	
4746	033462	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4747	033465	024	000	024			
4748	033470				C70	V7,V2,V7,V2,V7,V2	
4749	033470	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4750	033473	010	034	010			
4751	033476				C70	V0,V5,V0,V5,V0,V5	
4752	033476	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4753	033501	024	000	024			
4754	033504				C70	V7,V2,V7,V2,V7,V2	
4755	033504	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4756	033507	010	034	010			
4757	033512				C70	V0,V5,V0,V5,V0,V5	
4758	033512	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4759	033515	024	000	024			
4760	033520				C70	V7,V2,V7,V2,V7,V2	
4761	033520	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4762	033523	010	034	010			
4763	033526				C70	V0,V5,V0,V5,V0,V5	
4764	033526	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4765	033531	024	000	024			
4766	033534				C70	V7,V2,V7,V2,V7,V2	
4767	033534	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4768	033537	010	034	010			
4769	033542				C70	V0,V5,V0,V5,V0,V5	
4770	033542	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4771	033545	024	000	024			
4772	033550				C70	V7,V2,V7,V2,V7,V2	
4773	033550	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4774	033553	010	034	010			
4775	033556				C70	V0,V5,V0,V5,V0,V5	
4776	033556	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4777	033561	024	000	024			
4778	033564				C70	V7,V2,V7,V2,V7,V2	
4779	033564	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4780	033567	010	034	010			
4781	033572				C70	V0,V5,V0,V5,V0,V5	
4782	033572	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4783	033575	024	000	024			
4784	033600				C70	V7,V2,V7,V2,V7,V2	
4785	033600	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4786	033603	010	034	010			
4787	033606				C70	V0,V5,V0,V5,V0,V5	
4788	033606	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.

4789	033611	024	000	024		
4790	033614				C70	V7,V2,V7,V2,V7,V2
4791	033614	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4792	033617	010	034	010		
4793	033622				C70	V0,V5,V0,V5,V0,V5
4794	033622	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4795	033625	024	000	024		
4796	033630				C70	V7,V2,V7,V2,V7,V2
4797	033630	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4798	033633	010	034	010		
4799	033636				C70	V0,V5,V0,V5,V0,V5
4800	033636	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4801	033641	024	000	024		
4802	033644				C70	V7,V2,V7,V2,V7,V2
4803	033644	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4804	033647	010	034	010		
4805	033652				C70	V0,V5,V0,V5,V0,V5
4806	033652	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4807	033655	024	000	024		
4808	033660				C70	V7,V2,V7,V2,V7,V2
4809	033660	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4810	033663	010	034	010		
4811	033666				C70	V0,V5,V0,V5,V0,V5
4812	033666	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4813	033671	024	000	024		
4814	033674				C70	V7,V2,V7,V2,V7,V2
4815	033674	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4816	033677	010	034	010		
4817	033702				C70	V0,V5,V0,V5,V0,V5
4818	033702	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4819	033705	024	000	024		
4820	033710				C70	V7,V2,V7,V2,V7,V2
4821	033710	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4822	033713	010	034	010		
4823	033716				C70	V0,V5,V0,V5,V0,V5
4824	033716	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4825	033721	024	000	024		
4826	033724				C70	V7,V2,V7,V2,V7,V2
4827	033724	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4828	033727	010	034	010		
4829	033732				C70	V0,V5,V0,V5,V0,V5
4830	033732	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4831	033735	024	000	024		
4832	033740				C70	V7,V2,V7,V2,V7,V2
4833	033740	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4834	033743	010	034	010		
4835	033746				C70	V0,V5,V0,V5,V0,V5
4836	033746	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4837	033751	024	000	024		
4838	033754				C70	V7,V2,V7,V2,V7,V2
4839	033754	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4840	033757	010	034	010		
4841	033762				C70	V0,V5,V0,V5,V0,V5
4842	033762	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4843	033765	024	000	024		
4844	033770				C70	V7,V2,V7,V2,V7,V2

4845	033770	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4846	033773	010	034	010			
4847	033776				C70	V0,V5,V0,V5,V0,V5	
4848	033776	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4849	034001	024	000	024			
4850	034004				C70	V7,V2,V7,V2,V7,V2	
4851	034004	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4852	034007	010	034	010			
4853	034012				C70	V0,V5,V0,V5,V0,V5	
4854	034012	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4855	034015	024	000	024			
4856	034020				C70	V7,V2,V7,V2,V7,V2	
4857	034020	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4858	034023	010	034	010			
4859	034026				C70	V0,V5,V0,V5,V0,V5	
4860	034026	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4861	034031	024	000	024			
4862	034034				C70	V7,V2,V7,V2,V7,V2	
4863	034034	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4864	034037	010	034	010			
4865	034042				C70	V0,V5,V0,V5,V0,V5	
4866	034042	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4867	034045	024	000	024			
4868	034050				C70	V7,V2,V7,V2,V7,V2	
4869	034050	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4870	034053	010	034	010			
4871	034056				C70	V0,V5,V0,V5,V0,V5	
4872	034056	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4873	034061	024	000	024			
4874	034064				C70	V7,V2,V7,V2,V7,V2	
4875	034064	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4876	034067	010	034	010			
4877	034072				C70	V0,V5,V0,V5,V0,V5	
4878	034072	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4879	034075	024	000	024			
4880	034100				C70	V7,V2,V7,V2,V7,V2	
4881	034100	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4882	034103	010	034	010			
4883	034106				C70	V0,V5,V0,V5,V0,V5	
4884	034106	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4885	034111	024	000	024			
4886	034114				C70	V7,V2,V7,V2,V7,V2	
4887	034114	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4888	034117	010	034	010			
4889	034122				C70	V0,V5,V0,V5,V0,V5	
4890	034122	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4891	034125	024	000	024			
4892	034130				C70	V7,V2,V7,V2,V7,V2	
4893	034130	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4894	034133	010	034	010			
4895	034136				C70	V0,V5,V0,V5,V0,V5	
4896	034136	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4897	034141	024	000	024			
4898	034144				C70	V7,V2,V7,V2,V7,V2	
4899	034144	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4900	034147	010	034	010			

4901	034152				C70	V0,V5,V0,V5	
4902	034152	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4903	034155	024	000	024			
4904	034160				C70	V7,V2,V7,V2,V7,V2	
4905	034160	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4906	034163	010	034	010			
4907	034166				C70	V0,V5,V0,V5,V0,V5	
4908	034166	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4909	034171	024	000	024			
4910	034174				C70	V7,V2,V7,V2,V7,V2	
4911	034174	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4912	034177	010	034	010			
4913	034202				C70	V0,V5,V0,V5,V0,V5	
4914	034202	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4915	034205	024	000	024			
4916	034210				C70	V7,V2,V7,V2,V7,V2	
4917	034210	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4918	034213	010	034	010			
4919	034216				C70	V0,V5,V0,V5,V0,V5	
4920	034216	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4921	034221	024	000	024			
4922	034224				C70	V7,V2,V7,V2,V7,V2	
4923	034224	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4924	034227	010	034	010			
4925	034232				C70	V0,V5,V0,V5,V0,V5	
4926	034232	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4927	034235	024	000	024			
4928	034240				C70	V7,V2,V7,V2,V7,V2	
4929	034240	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4930	034243	010	034	010			
4931	034246				C70	V0,V5,V0,V5,V0,V5	
4932	034246	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4933	034251	024	000	024			
4934	034254				C70	V7,V2,V7,V2,V7,V2	
4935	034254	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4936	034257	010	034	010			
4937	034262				C70	V0,V5,V0,V5,V0,V5	
4938	034262	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4939	034265	024	000	024			
4940	034270				C70	V7,V2,V7,V2,V7,V2	
4941	034270	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4942	034273	010	034	010			
4943	034276				C70	V0,V5,V0,V5,V0,V5	
4944	034276	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4945	034301	024	000	024			
4946	034304				C70	V7,V2,V7,V2,V7,V2	
4947	034304	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4948	034307	010	034	010			
4949	034312				C70	V0,V5,V0,V5,V0,V5	
4950	034312	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
4951	034315	024	000	024			
4952	034320				C70	V7,V2,V7,V2,V7,V2	
4953	034320	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
4954	034323	010	034	010			
4955	034326				C70	V0,V5,V0,V5,V0,V5	
4956	034326	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.

4957	034331	024	000	024		
4958	034334				C70	V7,V2,V7,V2,V7,V2
4959	034334	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4960	034337	010	034	010		
4961	034342				C70	V0,V5,V0,V5,V0,V5
4962	034342	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4963	034345	024	000	024		
4964	034350				C70	V7,V2,V7,V2,V7,V2
4965	034350	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4966	034353	010	034	010		
4967	034356				C70	V0,V5,V0,V5,V0,V5
4968	034356	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4969	034361	024	000	024		
4970	034364				C70	V7,V2,V7,V2,V7,V2
4971	034364	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4972	034367	010	034	010		
4973	034372				C70	V0,V5,V0,V5,V0,V5
4974	034372	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4975	034375	024	000	024		
4976	034400				C70	V7,V2,V7,V2,V7,V2
4977	034400	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4978	034403	010	034	010		
4979	034406				C70	V0,V5,V0,V5,V0,V5
4980	034406	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4981	034411	024	000	024		
4982	034414				C70	V7,V2,V7,V2,V7,V2
4983	034414	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4984	034417	010	034	010		
4985	034422				C70	V0,V5,V0,V5,V0,V5
4986	034422	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4987	034425	024	000	024		
4988	034430				C70	V7,V2,V7,V2,V7,V2
4989	034430	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4990	034433	010	034	010		
4991	034436				C70	V0,V5,V0,V5,V0,V5
4992	034436	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4993	034441	024	000	024		
4994	034444				C70	V7,V2,V7,V2,V7,V2
4995	034444	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
4996	034447	010	034	010		
4997	034452				C70	V0,V5,V0,V5,V0,V5
4998	034452	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
4999	034455	024	000	024		
5000	034460				C70	V7,V2,V7,V2,V7,V2
5001	034460	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5002	034463	010	034	010		
5003	034466				C70	V0,V5,V0,V5,V0,V5
5004	034466	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5005	034471	024	000	024		
5006	034474				C70	V7,V2,V7,V2,V7,V2
5007	034474	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5008	034477	010	034	010		
5009	034502				C70	V0,V5,V0,V5,V0,V5
5010	034502	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5011	034505	024	000	024		
5012	034510				C70	V7,V2,V7,V2,V7,V2

5013	034510	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5014	034513	010	034	010			
5015	034516				C70	V0,V5,V0,V5,V0,V5	
5016	034516	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5017	034521	024	000	024			
5018	034524				C70	V7,V2,V7,V2,V7,V2	
5019	034524	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5020	034527	010	034	010			
5021	034532				C70	V0,V5,V0,V5,V0,V5	
5022	034532	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0 V5	;MTK CODE 70. DATA MARK.
5023	034535	024	000	024			
5024	034540				C70	V7,V2,V7,V2,V7,V2	
5025	034540	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5026	034543	010	034	010			
5027	034546				C70	V0,V5,V0,V5,V0,V5	
5028	034546	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5029	034551	024	000	024			
5030	034554				C70	V7,V2,V7,V2,V7,V2	
5031	034554	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5032	034557	010	034	010			
5033	034562				C70	V0,V5,V0,V5,V0,V5	
5034	034562	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5035	034565	024	000	024			
5036	034570				C70	V7,V2,V7,V2,V7,V2	
5037	034570	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5038	034573	010	034	010			
5039	034576				C70	V0,V5,V0,V5,V0,V5	
5040	034576	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5041	034601	024	000	024			
5042	034604				C70	V7,V2,V7,V2,V7,V2	
5043	034604	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5044	034607	010	034	010			
5045	034612				C70	V0,V5,V0,V5,V0,V5	
5046	034612	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5047	034615	024	000	024			
5048	034620				C70	V7,V2,V7,V2,V7,V2	
5049	034620	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5050	034623	010	034	010			
5051	034626				C70	V0,V5,V0,V5,V0,V5	
5052	034626	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5053	034631	024	000	024			
5054	034634				C70	V7,V2,V7,V2,V7,V2	
5055	034634	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5056	034637	010	034	010			
5057	034642				C70	V0,V5,V0,V5,V0,V5	
5058	034642	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5059	034645	024	000	024			
5060	034650				C70	V7,V2,V7,V2,V7,V2	
5061	034650	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5062	034653	010	034	010			
5063	034656				C70	V0,V5,V0,V5,V0,V5	
5064	034656	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5065	034661	024	000	024			
5066	034664				C70	V7,V2,V7,V2,V7,V2	
5067	034664	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5068	034667	010	034	010			

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 H 8
TRAP TABLE PAGE 94

SEQ 0098

5069	034672				C70	V0,V5,V0,V5,V0,V5	
5070	034672	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5071	034675	024	000	024			
5072	034700				C70	V7,V2,V7,V2,V7,V2	
5073	034700	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5074	034703	010	034	010			
5075	034706				C70	V0,V5,V0,V5,V0,V5	
5076	034706	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5077	034711	024	000	024			
5078	034714				C70	V7,V2,V7,V2,V7,V2	
5079	034714	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5080	034717	010	034	010			
5081	034722				C70	V0,V5,V0,V5,V0,V5	
5082	034722	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5083	034725	024	000	024			
5084	034730				C70	V7,V2,V7,V2,V7,V2	
5085	034730	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5086	034733	010	034	010			
5087	034736				C70	V0,V5,V0,V5,V0,V5	
5088	034736	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5089	034741	024	000	024			
5090	034744				C70	V7,V2,V7,V2,V7,V2	
5091	034744	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5092	034747	010	034	010			
5093	034752				C70	V0,V5,V0,V5,V0,V5	
5094	034752	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5095	034755	024	000	024			
5096	034760				C70	V7,V2,V7,V2,V7,V2	
5097	034760	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5098	034763	010	034	010			
5099	034766				C70	V0,V5,V0,V5,V0,V5	
5100	034766	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5101	034771	024	000	024			
5102	034774				C70	V7,V2,V7,V2,V7,V2	
5103	034774	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5104	034777	010	034	010			
5105	035002				C70	V0,V5,V0,V5,V0,V5	
5106	035002	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5107	035005	024	000	024			
5108	035010				C70	V7,V2,V7,V2,V7,V2	
5109	035010	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5110	035013	010	034	010			
5111	035016				C70	V0,V5,V0,V5,V0,V5	
5112	035016	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5113	035021	024	000	024			
5114	035024				C70	V7,V2,V7,V2,V7,V2	
5115	035024	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5116	035027	010	034	010			
5117	035032				C70	V0,V5,V0,V5,V0,V5	
5118	035032	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5119	035035	024	000	024			
5120	035040				C70	V7,V2,V7,V2,V7,V2	
5121	035040	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5122	035043	010	034	010			
5123	035046				C70	V0,V5,V0,V5,V0,V5	
5124	035046	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.

5125	035051	024	000	024		
5126	035054				C70	V7,V2,V7,V2,V7,V2
5127	035054	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5128	035057	010	034	010		
5129	035062				C70	V0,V5,V0,V5,V0,V5
5130	035062	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5131	035065	024	000	024		
5132	035070				C70	V7,V2,V7,V2,V7,V2
5133	035070	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5134	035073	010	034	010		
5135	035076				C70	V0,V5,V0,V5,V0,V5
5136	035076	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5137	035101	024	000	024		
5138	035104				C70	V7,V2,V7,V2,V7,V2
5139	035104	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5140	035107	010	034	010		
5141	035112				C70	V0,V5,V0,V5,V0,V5
5142	035112	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5143	035115	024	000	024		
5144	035120				C70	V7,V2,V7,V2,V7,V2
5145	035120	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5146	035123	010	034	010		
5147	035126				C70	V0,V5,V0,V5,V0,V5
5148	035126	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5149	035131	024	000	024		
5150	035134				C70	V7,V2,V7,V2,V7,V2
5151	035134	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5152	035137	010	034	010		
5153	035142				C70	V0,V5,V0,V5,V0,V5
5154	035142	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5155	035145	024	000	024		
5156	035150				C70	V7,V2,V7,V2,V7,V2
5157	035150	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5158	035153	010	034	010		
5159	035156				C70	V0,V5,V0,V5,V0,V5
5160	035156	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5161	035161	024	000	024		
5162	035164				C70	V7,V2,V7,V2,V7,V2
5163	035164	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5164	035167	010	034	010		
5165	035172				C70	V0,V5,V0,V5,V0,V5
5166	035172	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5167	035175	024	000	024		
5168	035200				C70	V7,V2,V7,V2,V7,V2
5169	035200	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5170	035203	010	034	010		
5171	035206				C70	V0,V5,V0,V5,V0,V5
5172	035206	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5173	035211	024	000	024		
5174	035214				C70	V7,V2,V7,V2,V7,V2
5175	035214	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5176	035217	010	034	010		
5177	035222				C70	V0,V5,V0,V5,V0,V5
5178	035222	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5179	035225	024	000	024		
5180	035230				C70	V7,V2,V7,V2,V7,V2

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

J 8
MACY11 30A(1052) 10-APR-80 15:18 PAGE 96
TRAP TABLE

SEQ 0100

5181	035230	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5182	035233	010	034	010			
5183	035236				C70	V0,V5,V0,V5,V0,V5	
5184	035236	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5185	035241	024	000	024			
5186	035244				C70	V7,V2,V7,V2,V7,V2	
5187	035244	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5188	035247	010	034	010			
5189	035252				C70	V0,V5,V0,V5,V0,V5	
5190	035252	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5191	035255	024	000	024			
5192	035260				C70	V7,V2,V7,V2,V7,V2	
5193	035260	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5194	035263	010	034	010			
5195	035266				C70	V0,V5,V0,V5,V0,V5	
5196	035266	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5197	035271	024	000	024			
5198	035274				C70	V7,V2,V7,V2,V7,V2	
5199	035274	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5200	035277	010	034	010			
5201	035302				C70	V0,V5,V0,V5,V0,V5	
5202	035302	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5203	035305	024	000	024			
5204	035310				C70	V7,V2,V7,V2,V7,V2	
5205	035310	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5206	035313	010	034	010			
5207	035316				C70	V0,V5,V0,V5,V0,V5	
5208	035316	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5209	035321	024	000	024			
5210	035324				C70	V7,V2,V7,V2,V7,V2	
5211	035324	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5212	035327	010	034	010			
5213	035332				C70	V0,V5,V0,V5,V0,V5	
5214	035332	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5215	035335	024	000	024			
5216	035340				C70	V7,V2,V7,V2,V7,V2	
5217	035340	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5218	035343	010	034	010			
5219	035346				C70	V0,V5,V0,V5,V0,V5	
5220	035346	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5221	035351	024	000	024			
5222	035354				C70	V7,V2,V7,V2,V7,V2	
5223	035354	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5224	035357	010	034	010			
5225	035362				C70	V0,V5,V0,V5,V0,V5	
5226	035362	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5227	035365	024	000	024			
5228	035370				C70	V7,V2,V7,V2,V7,V2	
5229	035370	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5230	035373	010	034	010			
5231	035376				C70	V0,V5,V0,V5,V0,V5	
5232	035376	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5233	035401	024	000	024			
5234	035404				C70	V7,V2,V7,V2,V7,V2	
5235	035404	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5236	035407	010	034	010			

5237	035412				C70	V0,V5,V0,V5,V0,V5	
5238	035412	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5239	035415	024	000	024			
5240	035420				C70	V7,V2,V7,V2,V7,V2	
5241	035420	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5242	035423	010	034	010			
5243	035426				C70	V0,V5,V0,V5,V0,V5	
5244	035426	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5245	035431	024	000	024			
5246	035434				C70	V7,V2,V7,V2,V7,V2	
5247	035434	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5248	035437	010	034	010			
5249	035442				C70	V0,V5,V0,V5,V0,V5	
5250	035442	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5251	035445	024	000	024			
5252	035450				C70	V7,V2,V7,V2,V7,V2	
5253	035450	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5254	035453	010	034	010			
5255	035456				C70	V0,V5,V0,V5,V0,V5	
5256	035456	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5257	035461	024	000	024			
5258	035464				C70	V7,V2,V7,V2,V7,V2	
5259	035464	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5260	035467	010	034	010			
5261	035472				C70	V0,V5,V0,V5,V0,V5	
5262	035472	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5263	035475	024	000	024			
5264	035500				C70	V7,V2,V7,V2,V7,V2	
5265	035500	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5266	035503	010	034	010			
5267	035506				C70	V0,V5,V0,V5,V0,V5	
5268	035506	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5269	035511	024	000	024			
5270	035514				C70	V7,V2,V7,V2,V7,V2	
5271	035514	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5272	035517	010	034	010			
5273	035522				C70	V0,V5,V0,V5,V0,V5	
5274	035522	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5275	035525	024	000	024			
5276	035530				C70	V7,V2,V7,V2,V7,V2	
5277	035530	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5278	035533	010	034	010			
5279	035536				C70	V0,V5,V0,V5,V0,V5	
5280	035536	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5281	035541	024	000	024			
5282	035544				C70	V7,V2,V7,V2,V7,V2	
5283	035544	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5284	035547	010	034	010			
5285	035552				C70	V0,V5,V0,V5,V0,V5	
5286	035552	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5287	035555	024	000	024			
5288	035560				C70	V7,V2,V7,V2,V7,V2	
5289	035560	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5290	035563	010	034	010			
5291	035566				C70	V0,V5,V0,V5,V0,V5	
5292	035566	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.

5293	035571	024	000	024		
5294	035574				C70	V7,V2,V7,V2,V7,V2
5295	035574	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5296	035577	010	034	010		
5297	035602				C70	V0,V5,V0,V5,V0,V5
5298	035602	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5299	035605	024	000	024		
5300	035610				C70	V7,V2,V7,V2,V7,V2
5301	035610	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5302	035613	010	034	010		
5303	035616				C70	V0,V5,V0,V5,V0,V5
5304	035616	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5305	035621	024	000	024		
5306	035624				C70	V7,V2,V7,V2,V7,V2
5307	035624	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5308	035627	010	034	010		
5309	035632				C70	V0,V5,V0,V5,V0,V5
5310	035632	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5311	035635	024	000	024		
5312	035640				C70	V7,V2,V7,V2,V7,V2
5313	035640	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5314	035643	010	034	010		
5315	035646				C70	V0,V5,V0,V5,V0,V5
5316	035646	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5317	035651	024	000	024		
5318	035654				C70	V7,V2,V7,V2,V7,V2
5319	035654	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5320	035657	010	034	010		
5321	035662				C70	V0,V5,V0,V5,V0,V5
5322	035662	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5323	035665	024	000	024		
5324	035670				C70	V7,V2,V7,V2,V7,V2
5325	035670	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5326	035673	010	034	010		
5327	035676				C70	V0,V5,V0,V5,V0,V5
5328	035676	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5329	035701	024	000	024		
5330	035704				C70	V7,V2,V7,V2,V7,V2
5331	035704	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5332	035707	010	034	010		
5333	035712				C70	V0,V5,V0,V5,V0,V5
5334	035712	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5335	035715	024	000	024		
5336	035720				C70	V7,V2,V7,V2,V7,V2
5337	035720	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5338	035723	010	034	010		
5339	035726				C70	V0,V5,V0,V5,V0,V5
5340	035726	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5341	035731	024	000	024		
5342	035734				C70	V7,V2,V7,V2,V7,V2
5343	035734	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5344	035737	010	034	010		
5345	035742				C70	V0,V5,V0,V5,V0,V5
5346	035742	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5347	035745	024	000	024		
5348	035750				C70	V7,V2,V7,V2,V7,V2

5349	035750	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5350	035753	010	034	010			
5351	035756				C70	V0,V5,V0,V5,V0,V5	
5352	035756	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5353	035761	024	000	024			
5354	035764				C70	V7,V2,V7,V2,V7,V2	
5355	035764	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5356	035767	010	034	010			
5357	035772				C70	V0,V5,V0,V5,V0,V5	
5358	035772	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5359	035775	024	000	024			
5360	036000				C70	V7,V2,V7,V2,V7,V2	
5361	036000	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5362	036003	010	034	010			
5363	036006				C70	V0,V5,V0,V5,V0,V5	
5364	036006	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5365	036011	024	000	024			
5366	036014				C70	V7,V2,V7,V2,V7,V2	
5367	036014	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5368	036017	010	034	010			
5369	036022				C70	V0,V5,V0,V5,V0,V5	
5370	036022	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5371	036025	024	000	024			
5372	036030				C70	V7,V2,V7,V2,V7,V2	
5373	036030	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5374	036033	010	034	010			
5375	036036				C70	V0,V5,V0,V5,V0,V5	
5376	036036	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5377	036041	024	000	024			
5378	036044				C70	V7,V2,V7,V2,V7,V2	
5379	036044	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5380	036047	010	034	010			
5381	036052				C70	V0,V5,V0,V5,V0,V5	
5382	036052	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5383	036055	024	000	024			
5384	036060				C70	V7,V2,V7,V2,V7,V2	
5385	036060	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5386	036063	010	034	010			
5387	036066				C70	V0,V5,V0,V5,V0,V5	
5388	036066	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5389	036071	024	000	024			
5390	036074				C70	V7,V2,V7,V2,V7,V2	
5391	036074	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5392	036077	010	034	010			
5393	036102				C70	V0,V5,V0,V5,V0,V5	
5394	036102	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5395	036105	024	000	024			
5396	036110				C70	V7,V2,V7,V2,V7,V2	
5397	036110	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5398	036113	010	034	010			
5399	036116				C70	V0,V5,V0,V5,V0,V5	
5400	036116	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5401	036121	024	000	024			
5402	036124				C70	V7,V2,V7,V2,V7,V2	
5403	036124	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5404	036127	010	034	010			

CZTCBE0 TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 N 8
TRAP TABLE PAGE 100

SEQ 0104

5405	036132				C70	V0,V5,V0,V5,V0,V5	
5406	036132	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5407	036135	024	000	024			
5408	036140				C70	V7,V2,V7,V2,V7,V2	
5409	036140	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5410	036143	010	034	010			
5411	036146				C70	V0,V5,V0,V5,V0,V5	
5412	036146	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5413	036151	024	000	024			
5414	036154				C70	V7,V2,V7,V2,V7,V2	
5415	036154	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5416	036157	010	034	010			
5417	036162				C70	V0,V5,V0,V5,V0,V5	
5418	036162	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5419	036165	024	000	024			
5420	036170				C70	V7,V2,V7,V2,V7,V2	
5421	036170	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5422	036173	010	034	010			
5423	036176				C70	V0,V5,V0,V5,V0,V5	
5424	036176	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5425	036201	024	000	024			
5426	036204				C70	V7,V2,V7,V2,V7,V2	
5427	036204	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5428	036207	010	034	010			
5429	036212				C70	V0,V5,V0,V5,V0,V5	
5430	036212	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5431	036215	024	000	024			
5432	036220				C70	V7,V2,V7,V2,V7,V2	
5433	036220	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5434	036223	010	034	010			
5435	036226				C70	V0,V5,V0,V5,V0,V5	
5436	036226	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0 V0,0!V5	;MTK CODE 70. DATA MARK.
5437	036231	024	000	024			
5438	036234				C70	V7,V2,V7,V2,V7,V2	
5439	036234	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5440	036237	010	034	010			
5441	036242				C70	V0,V5,V0,V5,V0,V5	
5442	036242	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5443	036245	024	000	024			
5444	036250				C70	V7,V2,V7,V2,V7,V2	
5445	036250	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5446	036253	010	034	010			
5447	036256				C70	V0,V5,V0,V5,V0,V5	
5448	036256	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5449	036261	024	000	024			
5450	036264				C70	V7,V2,V7,V2,V7,V2	
5451	036264	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5452	036267	010	034	010			
5453	036272				C70	V0,V5,V0,V5,V0,V5	
5454	036272	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.
5455	036275	024	000	024			
5456	036300				C70	V7,V2,V7,V2,V7,V2	
5457	036300	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2	;MTK CODE 70. DATA MARK.
5458	036303	010	034	010			
5459	036306				C70	V0,V5,V0,V5,V0,V5	
5460	036306	040	064	040	.BYTE	I.V0,I!V5,I!V0,0!V5,0!V0,0!V5	;MTK CODE 70. DATA MARK.

5461	036311	024	000	024		
5462	036314				C70	V7,V2,V7,V2,V7,V2
5463	036314	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5464	036317	010	034	010		
5465	036322				C70	V0,V5,V0,V5,V0,V5
5466	036322	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,0!V0,0!V5 ;MTK CODE 70. DATA MARK.
5467	036325	024	000	024		
5468	036330				C70	V7,V2,V7,V2,V7,V2
5469	036330	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,0!V7,0!V2 ;MTK CODE 70. DATA MARK.
5470	036333	010	034	010		
5471	036336				C73	V0,V5,V0,V5,V0,V5
5472	036336	040	064	040	.BYTE	I!V0,I!V5,I!V0,0!V5,I!V0,I!V5 ;MTK CODE 73. DATA MARK.
5473	036341	024	040	064		
5474	036344				C73	V7,V2,V7,V2,V7,V2
5475	036344	074	050	074	.BYTE	I!V7,I!V2,I!V7,0!V2,I!V7,I!V2 ;MTK CODE 73. DATA MARK.
5476	036347	010	074	050		
5477	036352				FCKSM:	
5478	036352				C73	V0,V0,V0,V0,V0,V0
5479	036352	040	040	040	.BYTE	I!V0,I!V0,I!V0,0!V0,I!V0,I!V0 ;MTK CODE 73. DATA MARK.
5480	036355	000	040	040		
5481	036360				C73	V0,V0,V0,V0,V0,V0
5482	036360	040	040	040	.BYTE	I!V0,I!V0,I!V0,0!V0,I!V0,I!V0 ;MTK CODE 73. DATA MARK.
5483	036363	000	040	040		
5484	036366				C51	V0,V0,V0,V0,V0,V0
5485	036366	040	000	040	.BYTE	I!V0,0!V0,I!V0,0!V0,0!V0,I!V0 ;MTK CODE 51. FWD GUARD.
5486	036371	000	000	040		
5487	036374				C45	V0,V0,V0,V0,V0,V0
5488	036374	040	000	000	.BYTE	I!V0,0!V0,0!V0,I!V0,0!V0,I!V0 ;MTK CODE 45. REV BLOCK MARK.
5489	036377	040	000	040		
5490	036402				C25	
5491	036402	000	040	000	.BYTE	0,I,0,I,0,I ;MTK CODE 25. EXTENSION MARK.
5492	036405	040	000	040		
5493	036410				CEND	
5494	036410	377			.BYTE	-1
5495	036411				GCKSM:	
5496	036411				C73	V7,V7,V0,V0,V0,V0
5497	036411	074	074	040	.BYTE	I!V7,I!V7,I!V0,0!V0,I!V0,I!V0 ;MTK CODE 73. DATA MARK.
5498	036414	000	040	040		
5499	036417				BCKSM:	
5500	036417				C73	V0,V0,V0,V0,V0,V0
5501	036417	040	040	040	.BYTE	I!V0,I!V0,I!V0,0!V0,I!V0,I!V0 ;MTK CODE 73. DATA MARK.
5502	036422	000	040	040		
5503		036426			.EVEN	
5504	036426	000000			OPEN	
5505		036430			RBUF=.	
5506		040430			. =RBUF+1024.	
5507		000001			.END	

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 C 9
PAGE 103
CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0106

A	= 100000	192#			
AINCRT	015673	3228#			
APGENO	015713	3231#			
ASETSR	015633	3222#			
A0001	002734	936	945#		
A0002	003004	950	959#		
A0003	003054	964	973#		
A0004	003124	978	987#		
A0005	003210	1005	1007#		
A0006	003252	1022	1024#		
A0007	003324	1036	1042#		
A0010	003376	1059#	1065		
A0011	003472	1075	1083#		
A0012	003552	1104#	1112	1115	
A0013	003642	1125	1128#		
A0014	003766	1152	1154#		
A0015	004042	1168	1170#		
A0016	004114	1187	1190#		
A0017	004230	1218	1221#		
A0020	004342	1248	1251#		
A0021	004442	1267	1274#		
A0022	004534	1296	1299#		
A0023	004634	1323	1326#		
A0024	004752	1353	1359#		
A0025	005040	1381	1384#		
A0026	005134	1409	1412#		
A0027	005234	1437	1440#		
A0030	005330	1463	1466#		
A0031	005422	1489	1492#		
A0032	005664	1545	1548#		
A0033	006142	1604	1608#		
A0034	006336	1649	1652#		
A0035	006542	1697	1700#		
A0036	006746	1745	1748#		
A0037	007150	1792	1795#		
A0040	007316	1828	1831#		
A0041	007636	1900	1902#		
A0042	010114	1963	1966#		
A0043	010276	2010	2013#		
A0044	010524	2064	2067#		
A0045	010700	2104	2107#		
A0055	011430	2246	2249#		
B	= 040000	193#			
BCKSM	036417	2573	5499#		
BELL	= 000007	186#			
BIT0	= 000001	147#	225	1150	1151
BIT00	= 000001	137#	147		
BIT01	= 000002	136#	146		
BIT02	= 000004	135#	145		
BIT03	= 000010	134#	144		
BIT04	= 000020	133#	143		
BIT05	= 000040	132#	142		
BIT06	= 000100	131#	141		
BIT07	= 000200	130#	140		
BIT08	= 000400	129#	139	2656	
BIT09	= 001000	128#	138	2664	2746

BIT1	=	000002	146#	218	220	222	224	1166	1167				
BIT10	=	002000	127#	212	213	214	215	1836	1856	1867	2731		
BIT11	=	004000	126#	205	2611	2671							
BIT12	=	010000	125#	204	1186	1195	1217	1226	1252				
BIT13	=	020000	124#	194	203	1128	1133	1137	1149	1165	1380	2518	2738
BIT14	=	040000	123#	193	1544	1603	2642						
BIT15	=	100000	122#	181	192	1251							
BIT2	=	000004	145#	219	220	223	224						
BIT3	=	000010	144#	221	222	223	224						
BIT4	=	000020	143#										
BIT5	=	000040	142#										
BIT6	=	000100	141#	216	1039	1057	1079	1101	1270				
BIT7	=	000200	140#	1124	1129	1134							
BIT8	=	000400	139#	209	211	213	215						
BIT9	=	001000	138#	210	211	214	215	1962	1971				
BMOVE	012660	2509#	2511										
BMOVE	012646	1371	1399	1426	2408	2412	2416	2469	2476	2505#	2552	2556	2572
BPTVEC	= 000014	154#											
BTCTR	013036	2523*	2530*	2532	2546#								
B0010	003410	1054	1063#										
B0011	003474	1082	1084#										
B0012	003564	1098	1108#										
B0013	003664	1130	1133#										
B0016	004126	1191	1194#										
B0017	004242	1222	1225#										
B0020	004362	1250	1253	1255#									
B0021	004456	1275	1277#										
B0022	004552	1298	1301	1303#									
B0023	004644	1325	1327	1333#									
B0025	005050	1383	1385	1387#									
B0026	005144	1411	1413	1415#									
B0027	005244	1439	1441	1443#									
B0031	005434	1493	1496#										
B0032	005670	1543	1550#										
B0033	006162	1609	1613#										
B0034	006362	1653	1658#										
B0035	006566	1701	1706#										
B0036	006772	1749	1754#										
B0037	007162	1794	1799#										
B0040	007356	1837	1841#										
B0041	007660	1905	1908#										
B0042	010126	1967	1970#										
B0043	010350	2023	2026#										
B0044	010576	2077	2080#										
B0045	010756	2113	2120#										
B0045A	010770	2121	2124#										
B0055	011502	2259	2262#										
C	= 020000	194#											
CCR	001322	475#	917*										
CDCNT	013040	2517*	2519	2547#									
CDCTR	013042	2519*	2539*	2548#									
CDTCK	013240	2266	2583	2586	2591#								
CDTCKA	013272	2596	2598#										
CHGE1	002574	915#											
CHLT	012302	2422#											
CKDAT	013166	1662	1710	1757	1795	1914	2040	2080	2133	2577#			

CKDTA	013206	2582#	2588																	
CKDTB	013232	2585	2589#																	
CKSELE	013314	2156	2169	2180	2191	2202	2213	2227	2606#											
CKSELT	015364	2606*	2607*	2608	3191#															
CLRBUF	012470	1479	1533	1594	1639	1687	1735	1782	1885	2468#	2551	2562								
CODCAL	001260	458#	2515*	2534	2537	2549*														
CR =	C00015	62#	2890	2900																
CRBUF	001270	462#	2592*	2595	3918															
CRBUFA	001272	463#	2593*	2595	3918															
CRLF =	C00200	63#	2861	2900																
CTRA	001274	464#	1899*	1936*	2111*	2125*														
CTRLB	013150	2564*	2567*	2571#																
CURTST	001266	461#																		
C0012	003600	1109	1111#																	
C0013	003704	1127	1132	1135	1137#															
C0016	004146	1196	1199#																	
C0017	004262	1227	1230#																	
C0021	004472	1274	1281#																	
C0031	005456	1497	1501#																	
C0032	005702	1551	1554#																	
C0033	006204	1607	1612	1615	1618#															
C0034	006376	1659	1662#																	
C0035	006602	1707	1710#																	
C0036	007004	1755	1757#																	
C0037	007170	1784	1802#																	
C0040	007462	1857	1861#																	
C0041	007674	1909	1912#																	
C0042	010150	1965	1969	1972	1975#															
C0043	010362	2027	2030#																	
C0044	010610	2066	2079	2084#																
C0045	011004	2126	2128#																	
C0055	011522	2266#	2268																	
DATADR	013310	2591*	2604#																	
DDISP =	177570	69#	369	898																
DINH =	010000	204#																		
DISPLA	001142	369#	898*	906*	2685*	2730*														
DISPRE	000174	173#	906																	
DLY	012374	2445#	2462																	
DLYA	012406	2448#	2452																	
DLYB	012412	2449#	2450																	
DO =	C000001	225#	1299	1317	1347	1375	1403	1431	1457	1483	1522	1537	1583	1598						
		1629	1643	1677	1691	1725	1739	1772	1786	1810	1822	1831	1844	1851						
		1889	1942	1957	1986	1988	2004	2016	2058	2070	2098	2114	2240	2252						
		2607																		
DSWR =	177570	68#	368	897																
D0012	003604	1108	1113#																	
D0016	004156	1189	1193	1198	1200	1202#														
D0017	004272	1220	1224	1229	1231	1233#														
D0021	004474	1273	1280	1282#																
D0030	005332	1455	1465	1467#																
D0031	005502	1502	1507#																	
D0032	005724	1555	1559#																	
D0033	006212	1596	1621#																	
D0034	006410	1651	1657	1661	1666#															
D0035	006614	1699	1705	1709	1714#															
D0036	007016	1747	1753	1761#																

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 PAGE 106
CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0109

D0040	007502	1862	1866#	
D0041	007700	1903	1914#	
D0041A	007726	1919	1922#	
D0041B	007740	1923	1926#	
D0042	010156	1955	1978#	
D0043	010406	2031	2036#	
D0044	010616	2073	2087#	
D0045	011022	2129	2133#	
D0055	011532	2248	2261	2269#
EH1	016325	494	3281#	
EH10	017710	536	3438#	
EH11	020064	542	3460#	
EH12	020240	548	3482#	
EH13	020414	554	3504#	
EH14	020607	560	3529#	
EH15	020754	566	3550#	
EH16	021126	572	3572#	
EH17	021306	578	3595#	
EH2	016504	500	3304#	
EH20	021466	584	3618#	
EH21	021651	590	3642#	
EH22	022020	596	3663#	
EH23	022150	602	3682#	
EH24	022323	608	3704#	
EH25	022504	614	3727#	
EH26	022637	620	3747#	
EH27	022770	626	3767#	
EH3	016645	506	3325#	
EH30	023174	632	3793#	
EH31	023364	638	3817#	
EH32	023564	644	3843#	
EH33	023732	650	3864#	
EH34	024103	656	662	3886#
EH35	024233	3905#		
EH36	024433	666	3929#	
EH37	024536	672	3944#	
EH4	017051	512	3351#	
EH40	024660	678	3962#	
EH41	025020	684	3982#	
EH42	025152	690	4001#	
EH43	025312	696	4021#	
EH44	025500	702	4045#	
EH45	025660	708	4068#	
EH46	026021	714	4089#	
EH47	026174	720	4111#	
EH5	017177	518	3370#	
EH50	026322	726	4130#	
EH51	026475	732	4153#	
EH52	026657	738	4177#	
EH53	027037	744	4201#	
EH54	027206	750	4224#	
EH55	027353	756	4246#	
EH56	027540	762	4271#	
EH57	027725	768	4295#	
EH6	017371	524	3395#	
EH60	030112	774	4320#	

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

MACY11 30A(1052) 10-APR-80 15:18 PAGE 107
CROSS REFERENCE TABLE -- USER SYMBOLS

G 9

SEQ 0110

EH61	030303	780	4345#	
EH62	030462	786	4368#	
EH63	030626	792	4389#	
EH64	030776	798	4411#	
EH65	031173	804	4437#	
EH66	031367	810	4462#	
EH67	031545	816	4485#	
EH7	017542	530	3417#	
EH70	031717	822	4507#	
EH71	032116	828	4533#	
EH72	032264	834	4555#	
EH73	032433	840	4577#	
EH74	032603	844	4598#	
EH75	032727	849	4616#	
EH76	033053	854	4634#	
EH77	033177	859	4652#	
EMTVEC=	000030	157#	879*	880*
EMTX =	000000	226#		
EM1	016237	493	3271#	
EM10	017636	535	3431#	
EM11	020004	541	3452#	
EM12	020160	547	3474#	
EM13	020334	553	3496#	
EM14	020510	559	3518#	
EM15	020704	565	3543#	
EM16	021050	571	3564#	
EM17	021222	577	3586#	
EM2	016422	499	3295#	
EM20	021402	583	3609#	
EM21	021562	589	3632#	
EM22	021746	595	3656#	
EM23	022114	601	3677#	
EM24	022244	607	3696#	
EM25	022420	613	3718#	
EM26	022600	619	3741#	
EM27	022726	625	3761#	
EM3	016600	505	3318#	
EM30	023064	631	3781#	
EM31	023270	637	3807#	
EM32	023506	643	3835#	
EM33	023660	649	3857#	
EM34	024026	655	661	3878#
EM35	024200	3900#		
EM36	024356	665	3921#	
EM37	024530	671	3943#	
EM4	016742	511	3339#	
EM40	024632	677	3958#	
EM41	024754	683	3976#	
EM42	025114	689	3996#	
EM43	025246	695	4015#	
EM44	025436	701	4039#	
EM45	025624	707	4063#	
EM46	026004	713	4086#	
EM47	026116	719	4103#	
EM5	017146	517	3365#	
EM50	026270	725	4125#	

MACY11 30A(1052) 10-APR-80 15:18 PAGE 108
CROSS REFERENCE TABLE -- USER SYMBOLS

EM51	026432	731	4147#
EM52	026620	737	4171#
EM53	026766	743	4194#
EM54	027146	749	4218#
EM55	027314	755	4240#
EM56	027462	761	4263#
EM57	027646	767	4287#
EM6	017274	523	3384#
EM60	030034	773	4312#
EM61	030220	779	4336#
EM62	030424	785	4363#
EM63	030570	791	4384#
EM64	030750	797	4407#
EM65	031104	803	4427#
EM66	031270	809	4451#
EM67	031464	815	4476#
EM7	017466	529	3409#
EM70	031642	821	4499#
EM71	032050	827	4526#
EM72	032224	833	4549#
EM73	032372	839	4571#
EM74	032530	843	4590#
EM75	032654	848	4608#
EM76	033000	853	4626#
EM77	033124	858	4644#
ERRVEC=	000004	150#	895
ET1	016404	495	3290#
ET10	017766	537	3447#
ET11	020142	543	3469#
ET12	020316	549	3491#
ET13	020472	555	3513#
ET14	020666	561	3538#
ET15	021032	567	3559#
ET16	021204	573	3581#
ET17	021364	579	3604#
ET2	016562	501	3313#
ET20	021544	585	3627#
ET21	021730	591	3651#
ET22	022076	597	3672#
ET23	022226	603	3691#
ET24	022402	609	3713#
ET25	022562	615	3736#
ET26	022712	621	3756#
ET27	023046	627	3776#
ET3	016724	507	3334#
ET30	023252	633	3802#
ET31	023464	639	3829#
ET32	023642	645	3852#
ET33	024010	651	3873#
ET34	024162	657	663
ET35	024336	3918#	
ET36	024512	667	3938#
ET37	024614	673	3953#
ET4	017130	513	3360#
ET40	024736	679	3971#
ET41	025076	685	3991#

896* 907* 915 916* 921* 2647 2648* 2650* 2653*

3895#

MACY11 30A(1052) 10-APR-80 15:18 PAGE 109
CROSS REFERENCE TABLE -- USER SYMBOLS

ET42	025230	691	4010#												
ET43	025414	697	4033#												
ET44	025602	703	4057#												
ET45	025762	709	4080#												
ET46	026100	715	4098#												
ET47	026252	721	4120#												
ET5	017256	519	3379#												
ET50	026412	727	4141#												
ET51	026576	733	4165#												
ET52	026746	739	4188#												
ET53	027126	745	4212#												
ET54	027274	751	4234#												
ET55	027442	757	4257#												
ET56	027626	763	4281#												
ET57	030014	769	4306#												
ET6	017450	525	3404#												
ET60	030000	775	4330#												
ET61	030402	781	4357#												
ET62	030550	787	4378#												
ET63	030730	793	4401#												
ET64	031064	799	4421#												
ET65	031252	805	4446#												
ET66	031446	811	4471#												
ET67	031624	817	4494#												
ET7	017620	531	3426#												
ET70	032026	823	4520#												
ET71	032204	829	4543#												
ET72	032352	835	4565#												
ET73	032512	841	4586#												
ET74	032642	845	4605#												
ET75	032766	850	4623#												
ET76	033112	855	4641#												
ET77	033236	860	4659#												
FCKSM	036352	2418	2574	5477#											
FWD =	000000	206#	1184	1215	1245	1277	1299	1317	1347	1375	1403	1431	1457	1483	
		1537	1598	1643	1691	1739	1822	1844	1889	1957	2004	2098	2240		
F0031	005522	1491	1495	1500	1506	1508	1511#								
F0032	005736	1560	1563#												
F0034	006416	1641	1669#												
F0035	006622	1689	1717#												
F0036	007024	1737	1764#												
F0037	007206	1803	1808#												
F0040	007532	1830	1840	1860	1865	1868	1872#								
F0041	007754	1887	1930#												
F0043	010422	2037	2040#												
F0045	011046	2138	2141#												
F0055	011540	2255	2272#												
GCKSM	036411	2417	5495#												
GETRDY	002642	925	927#												
GNS =	***** U	171	3166	3171	3176	3181	3186								
GTBIN	012546	2488#	2565												
GTBINP	012606	2496#													
G0031	005530	1481	1514#												
G0032	005762	1564	1569#												
G0033	006230	1622	1627#												
G0041	007764	1897	1907	1911	1913	1921	1925	1927	1929	1933#					

CZTCBEO TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

J 9
MACY11 30A(1052) 10-APR-80 15:18 PAGE 110
CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0113

G0042	010174	1979	1984#											
G0043	010434	2012	2025	2029	2035	2039	2044#							
G0045	011060	2106	2123	2132	2140	2142	2144#							
HT	= 000011	60#	2859	2900										
H0032	005774	1547	1549	1553	1558	1562	1568	1570	1572#					
H0034	006434	1670	1675#											
H0035	006640	1718	1723#											
H0036	007042	1765	1770#											
H0042	010212	1985	1988#											
H0043	010442	2019	2047#											
I	= 000040	190#	4664	4668	4672	4676	4680	4684	4687	4690	4693	4697	4701	4705
		4709	4716	4719	4722	4725	4728	4731	4734	4737	4740	4743	4746	4749
		4752	4755	4758	4761	4764	4767	4770	4773	4776	4779	4782	4785	4788
		4791	4794	4797	4800	4803	4806	4809	4812	4815	4818	4821	4824	4827
		4830	4833	4836	4839	4842	4845	4848	4851	4854	4857	4860	4863	4866
		4869	4872	4875	4878	4881	4884	4887	4890	4893	4896	4899	4902	4905
		4908	4911	4914	4917	4920	4923	4926	4929	4932	4935	4938	4941	4944
		4947	4950	4953	4956	4959	4962	4965	4968	4971	4974	4977	4980	4983
		4986	4989	4992	4995	4998	5001	5004	5007	5010	5013	5016	5019	5022
		5025	5028	5031	5034	5037	5040	5043	5046	5049	5052	5055	5058	5061
		5064	5067	5070	5073	5076	5079	5082	5085	5088	5091	5094	5097	5100
		5103	5106	5109	5112	5115	5118	5121	5124	5127	5130	5133	5136	5139
		5142	5145	5148	5151	5154	5157	5160	5163	5166	5169	5172	5175	5178
		5181	5184	5187	5190	5193	5196	5199	5202	5205	5208	5211	5214	5217
		5220	5223	5226	5229	5232	5235	5238	5241	5244	5247	5250	5253	5256
		5259	5262	5265	5268	5271	5274	5277	5280	5283	5286	5289	5292	5295
		5298	5301	5304	5307	5310	5313	5316	5319	5322	5325	5328	5331	5334
		5337	5340	5343	5346	5349	5352	5355	5358	5361	5364	5367	5370	5373
		5376	5379	5382	5385	5388	5391	5394	5397	5400	5403	5406	5409	5412
		5415	5418	5421	5424	5427	5430	5433	5436	5439	5442	5445	5448	5451
		5454	5457	5460	5463	5466	5469	5472	5475	5479	5482	5485	5488	5491
		5497	5501											
IE	= 000100	216#	1457	1483	1537	1598	1643	1691	1739	1786	1889	1942	1957	1986
		2114												
INBIN	012510	2475#												
IOTVEC=	000020	155#	877*	878*										
I0031	005546	1515	1520#											
I0032	006002	1535	1575#											
I0041	007772	1931	1936#											
I0045	011066	2117	2147#											
K0032	006020	1576	1581#											
LBBIND	013104	2238	2561#											
LB DAT1	013052	2002	2056	2096	2551#									
LBINDA	013126	2565#	2568											
LF	= 000012	61#	2894	2900										
LMTCA	012734	2522#	2544											
LMTCAA	012700	2516#	2550											
LMTCB	012740	2523#	2543											
LMTCC	012746	2524#	2533	2535	2538									
LMTCD	013026	2540	2542#											
LMTCE	013016	2531	2539#											
LMT COD	012674	1319	1349	1377	1405	1433	1459	1485	1539	1600	1645	1693	1741	1788
		1824	1833	1846	1853	1891	1959	2006	2060	2100	2242	2515#		
LMT COE	013044	2018	2072	2116	2254	2549#								
MAINT -	020000	203#	1184	1215	1245	1277	1299	1317	1347	1375	1403	1431	1457	1483
		1537	1598	1643	1691	1739	1786	1822	1844	1889	1957	2004	2058	2098

RIND	012532	2475*	2477	2478	2481#	2490*								
RNGEN	012322	2429#	2458											
RNUM	= 000002	218#	1299	1317	1347	1375	1403	1431	1457	1483	1537	1598	1643	1691
		1739	1786	1822	1844	1889	1957	2004	2058	2098	2240			
RP1	012370	2429	2433*	2440	2442#									
RP2	012372	2432	2436	2439*	2443#									
RSTMTK	012242	930	2408#	2641										
RS04	012116	2373#	2512	2569	2589									
RS05	012146	2384#												
RS05S	012142	2382#	2398	2426	2453	2464								
RTNNO	001262	459#	910*											
RTSPC	= 000207	189#	2354	2360										
R0001	002716	941#												
R0002	002766	955#												
R0003	003036	969#												
R0004	003106	983#												
R0005	003172	1001#												
R0006	003232	1018#												
R0007	003274	1035#												
R0010	003346	1053#												
R0011	003430	1074#												
R0012	003522	1097#												
R0013	003626	1124#												
R0014	003740	1149#												
R0015	004014	1165#												
R0016	004070	1184#												
R0017	004204	1215#												
R0020	004320	1245#												
R0021	004410	1266#												
R0022	004522	1295#												
R0023	004600	1316#												
R0024	004666	1346#												
R0025	004774	1371#												
R0026	005072	1399#												
R0027	005166	1426#												
R0030	005266	1454#												
R0031	005354	1479#												
R0032	005606	1533#												
R0033	006060	1593#												
R0034	006270	1639#												
R0035	006474	1687#												
R0036	006700	1735#												
R0037	007102	1782#												
R0040	007246	1819#												
R0040A	007312	1829#	1850											
R0041	007554	1885#												
R0041A	007610	1894#	1941											
R0041B	007622	1895	1898#											

[illegible]

[illegible]

MACY11 30A(1052) 10-APR-80 15:18 PAGE 115
CROSS REFERENCE TABLE -- USER SYMBOLS

B 10

[illegible]

		4752	4758	4764	4770	4776	4782	4788	4794	4800	4806	4812	4818	4824
		4830	4836	4842	4848	4854	4860	4866	4872	4878	4884	4890	4896	4902
		4908	4914	4920	4926	4932	4938	4944	4950	4956	4962	4968	4974	4980
		4986	4992	4998	5004	5010	5016	5022	5028	5034	5040	5046	5052	5058
		5064	5070	5076	5082	5088	5094	5100	5106	5112	5118	5124	5130	5136
		5142	5148	5154	5160	5166	5172	5178	5184	5190	5196	5202	5208	5214
		5220	5226	5232	5238	5244	5250	5256	5262	5268	5274	5280	5286	5292
		5298	5304	5310	5316	5322	5328	5334	5340	5346	5352	5358	5364	5370
		5376	5382	5388	5394	5400	5406	5412	5418	5424	5430	5436	5442	5448
		5454	5460	5466	5472	5479	5482	5485	5488	5497	5501			
V1	= 000004	196#												
V2	= 000010	197#	4664	4690	4709	4719	4725	4731	4737	4743	4749	4755	4761	4767
		4773	4779	4785	4791	4797	4803	4809	4815	4821	4827	4833	4839	4845
		4851	4857	4863	4869	4875	4881	4887	4893	4899	4905	4911	4917	4923
		4929	4935	4941	4947	4953	4959	4965	4971	4977	4983	4989	4995	5001
		5007	5013	5019	5025	5031	5037	5043	5049	5055	5061	5067	5073	5079
		5085	5091	5097	5103	5109	5115	5121	5127	5133	5139	5145	5151	5157
		5163	5169	5175	5181	5187	5193	5199	5205	5211	5217	5223	5229	5235
		5241	5247	5253	5259	5265	5271	5277	5283	5289	5295	5301	5307	5313
		5319	5325	5331	5337	5343	5349	5355	5361	5367	5373	5379	5385	5391
		5397	5403	5409	5415	5421	5427	5433	5439	5445	5451	5457	5463	5469
		5475												
V3	= 000014	198#												
V4	= 000020	199#												
V5	= 000024	200#	4690	4693	4705	4716	4722	4728	4734	4740	4746	4752	4758	4764
		4770	4776	4782	4788	4794	4800	4806	4812	4818	4824	4830	4836	4842
		4848	4854	4860	4866	4872	4878	4884	4890	4896	4902	4908	4914	4920
		4926	4932	4938	4944	4950	4956	4962	4968	4974	4980	4986	4992	4998
		5004	5010	5016	5022	5028	5034	5040	5046	5052	5058	5064	5070	5076
		5082	5088	5094	5100	5106	5112	5118	5124	5130	5136	5142	5148	5154
		5160	5166	5172	5178	5184	5190	5196	5202	5208	5214	5220	5226	5232
		5238	5244	5250	5256	5262	5268	5274	5280	5286	5292	5298	5304	5310
		5316	5322	5328	5334	5340	5346	5352	5358	5364	5370	5376	5382	5388
		5394	5400	5406	5412	5418	5424	5430	5436	5442	5448	5454	5460	5466
		5472												
V6	= 000030	201#	4680	4697										
V7	= 000034	202#	4664	4709	4719	4725	4731	4737	4743	4749	4755	4761	4767	4773
		4779	4785	4791	4797	4803	4809	4815	4821	4827	4833	4839	4845	4851
		4857	4863	4869	4875	4881	4887	4893	4899	4905	4911	4917	4923	4929
		4935	4941	4947	4953	4959	4965	4971	4977	4983	4989	4995	5001	5007
		5013	5019	5025	5031	5037	5043	5049	5055	5061	5067	5073	5079	5085
		5091	5097	5103	5109	5115	5121	5127	5133	5139	5145	5151	5157	5163
		5169	5175	5181	5187	5193	5199	5205	5211	5217	5223	5229	5235	5241
		5247	5253	5259	5265	5271	5277	5283	5289	5295	5301	5307	5313	5319
		5325	5331	5337	5343	5349	5355	5361	5367	5373	5379	5385	5391	5397
		5403	5409	5415	5421	5427	5433	5439	5445	5451	5457	5463	5469	5475
		5497												
WALL	= 000016	224#	2114											
WDATA	= 000014	223#	2016	2070	2252									
WDCNT	= 013312	2265*	2581*	2594*	2605#									
WRTM	= 000012	222#	1184	1215	1245	1277								
X	= 177777	191#												
SAUTOB	= 001134	365#												
SBDAOR	= 001122	360#												
SBDDAT	= 001126	362#												
SBELL	= 001226	439#	2733	2759										

[illegible]

\$PWRMG	014244	2820#													
\$PWRUP	014162	2790	2797#												
\$QUES	001232	440#	2759	2900											
\$RDCHR=	*****	U	3191												
\$RDDEC=	*****	U	3191												
\$RDLIN=	*****	U	3191												
\$RDOCT=	*****	U	3191												
\$REGAD	001160		379#												
\$REG0	001162		386#	1355*	1357*	1498*	1504*	1556*	1566*	1605*	1610*	1616*	1655*	1703*	1751*
			1838*	1858*	1863*	1869*	2033*	2130*	2343*	2345	2347	2348*	3756	3829	4033
			4057	4188	4212	4234	4257	4281	4306	4330	4357	4421	4520		
\$REG1	001164		389#	2347*	2726*	3290	3313	3334	3360	3379	3404	3426	3447	3469	3491
			3513	3538	3559	3581	3604	3627	3651	3672	3691	3713	3736	3776	3802
			3829	3852	3873	3895	3918	3938	3953	3971	3991	4010	4033	4057	4080
			4098	4120	4141	4165	4188	4212	4234	4257	4281	4306	4330	4357	4378
			4401	4421	4446	4471	4494	4520	4543	4565	4586				
\$REG2	001166		392#	2725*	3290	3313	3334	3360	3379	3404	3426	3447	3469	3491	3513
			3538	3559	3581	3604	3627	3651	3672	3691	3713	3736	3776	3802	3829
			3852	3873	3895	3918	3938	3953	3971	3991	4010	4033	4057	4080	4098
			4120	4141	4165	4188	4212	4234	4257	4281	4306	4330	4357	4378	4401
			4421	4446	4471	4494	4520	4543	4565	4586					
\$REG3	001170		395#	2727*	4165	4401	4565								
\$REG4	001172		398#	1354*	1356*	1503*	1509*	1565*	1654*	1702*	1750*	2032*	3829	4057	4080
\$REG5	001174		401#	2723*	2724*	3290	3313	3334	3360	3379	3404	3426	3447	3469	3491
			3513	3538	3559	3581	3604	3627	3651	3672	3691	3713	3736	3756	3776
			3802	3829	3852	3873	3895	3918	3938	3953	3971	3991	4010	4033	4057
			4080	4098	4120	4141	4165	4188	4212	4234	4257	4281	4306	4330	4357
			4378	4401	4421	4446	4471	4494	4520	4543	4565	4586	4605	4623	4641
			4659												
\$REG6	001176		404#	2720*	2721*	3290	3313	3334	3360	3379	3404	3426	3447	3469	3491
			3513	3538	3559	3581	3604	3627	3651	3672	3691	3713	3736	3756	3776
			3802	3829	3852	3873	3895	3918	3938	3953	3971	3991	4010	4033	4057
			4080	4098	4120	4141	4165	4188	4212	4234	4257	4281	4306	4330	4357
			4378	4401	4421	4446	4471	4494	4520	4543	4565	4586	4605	4623	4641

\$TKS	001144	370#																		
\$TMP0	001202	414#																		
\$TMP1	001204	417#																		
\$TMP2	001206	420#																		
\$TMP3	001210	423#																		
\$TMP4	001212	426#																		
\$TMP5	001214	429#																		
\$TMP6	001216	432#																		
\$TMP7	001220	435#																		
\$TN =	000000	7#	27																	
\$TPB	001152	373#	2889*	2900																
\$TPFLG	001157	377#	2847	2900																
\$TPS	001150	372#	2887	2900																
\$TRAP	015314	881	3115#																	
\$TRAP2	015336	3126#	3165																	
\$TRP =	000006	3155#	3157	3158	3168#	3170	3171	3173#	3175	3176	3178#	3180	3181	3183#						
		3185	3186	3188#																
\$TRPAD	015350	3120	3165#																	
\$TSTNM	001102	350#	2290*	2345	2623	2658	2680*	2685	2689	2724	2730	2759								
\$TYBN=	***** U	3189																		
\$TYPDS	014506	2914#	3184	3187																
\$TYPE	014266	2328	2847#	3156	3167															
\$YPEC	014436	2868	2875	2882	2887#	2888														
\$YPEX	014504	2893	2895	2898#																
\$YPOC	014756	3008#	3169	3172																
\$YPON	014772	3007	3010#	3182																
\$YPOS	014732	3003#	3177																	
\$XTSTR	013412	2645#																		
\$GET4=	000000	2307#	2308																	
\$OFILL	015155	3004*	3008*	3018	3053#															
\$LOCAT=	***** U	2642	2740																	
.	= 040430	167#	171	172#	322#	347#	443	874	889	890	2316	2320	2491	2499						
		2610	2612	2688	2689	2759	2792	2823	2900	2975#	3104#	3289#	3333#	3359#						
		3378#	3403#	3537#	3650#	3712#	3755#	3894#	3917#	3937#	4056#	4079#	4097#	4187#						
		4211#	4256#	4305#	4356#	4445#	4470#	4493#	4519#	4585#	55									

ADITAG	227#	448													
CEND	292#	5493													
COMMEN	1#	162#													
C10	274#	4663	4679	4696	4700	4704	4708								
C22	289#	4671													
C25	265#	4683	4686	5490											
C26	268#	4689													
C32	271#	4692													
C45	286#	5487													
C51	283#	5484													
C55	262#	4675													
C70	277#	4715	4718	4721	4724	4727	4730	4733	4736	4739	4742	4745	4748	4751	4754
	4757	4760	4763	4766	4769	4772	4775	4778	4781	4784	4787	4790	4793	4796	4799
	4802	4805	4808	4811	4814	4817	4820	4823	4826	4829	4832	4835	4838	4841	4844
	4847	4850	4853	4856	4859	4862	4865	4868	4871	4874	4877	4880	4883	4886	4889
	4892	4895	4898	4901	4904	4907	4910	4913	4916	4919	4922	4925	4928	4931	4934
	4937	4940	4943	4946	4949	4952	4955	4958	4961	4964	4967	4970	4973	4976	4979
	4982	4985	4988	4991	4994	4997	5000	5003	5006	5009	5012	5015	5018	5021	5024
	5027	5030	5033	5036	5039	5042	5045	5048	5051	5054	5057	5060	5063	5066	5069
	5072	5075	5078	5081	5084	5087	5090	5093	5096	5099	5102	5105	5108	5111	5114
	5117	5120	5123	5126	5129	5132	5135	5138	5141	5144	5147	5150	5153	5156	5159
	5162	5165	5168	5171	5174	5177	5180	5183	5186	5189	5192	5195	5198	5201	5204
	5207	5210	5213	5216	5219	5222	5225	5228	5231	5234	5237	5240	5243	5246	5249
	5252	5255	5258	5261	5264	5267	5270	5273	5276	5279	5282	5285	5288	5291	5294
	5297	5300	5303	5306	5309	5312	5315	5318	5321	5324	5327	5330	5333	5336	5339
	5342	5345	5348	5351	5354	5357	5360	5363	5366	5369	5372	5375	5378	5381	5384
	5387	5390	5393	5396	5399	5402	5405	5408	5411	5414	5417	5420	5423	5426	5429
	5432	5435	5438	5441	5444	5447	5450	5453	5456	5459	5462	5465	5468		
C73	280#	5471	5474	5478	5481	5496	5500								
EMTDEF	309#														
EMTE	295#	4667													
ENDCOM	1#	162#													
ERROR	56#	945	959	973	987	1006	1023	1041	1063	1081	1103	1114	1126	1131	1136
	1153	1169	1188	1192	1197	1201	1219	1223	1228	1232	1249	1254	1272	1279	1297
	1302	1324	1328	1358	1382	1386	1410	1414	1438	1442	1464	1466	1490	1494	1499
	1505	1510	1516	1546	1548	1552	1557	1561	1567	1571	1577	1606	1611	1617	1623
	1650	1656	1660	1671	1698	1704	1708	1719	1746	1752	1756	1766	1793	1804	1829
	1839	1859	1864	1870	1896	1906	1910	1912	1920	1924	1928	1932	1964	1968	1973
	1980	2011	2024	2028	2034	2038	2065	2078	2105	2122	2131	2139	2143	2158	2171
	2182	2193	2204	2215	2229	2247	2260	2349	2600						
ESCAPE	1#	162#													
GETPRI	1#	162#													
GETSWR	1#	162#													
MTCOD	298#	1318	1348	1376	1404	1432	1458	1484	1538	1599	1644	1692	1740	1787	1823
	1832	1845	1852	1890	1958	2005	2059	2099	2241						
MTCOE	303#	2017	2071	2115	2253										
MULT	1#	162#													
NEWTST	1#	162#													
POP	1#	162#	2802	2807	2958										
PUSH	1#	162#	2767	2777	2784	2914									
REPORT	1#	162#													
SAVE	2689#	2719													
SCOMAC	316#	2637													
SCOPE	57#	935	949	963	977	993	1014	1031	1049	1070	1093	1120	1145	1161	1180
	1211	1241	1262	1291	1312	1342	1367	1395	1422	1450	1475	1529	1589	1635	1683
	1731	1778	1815	1881	1950	1998	2052	2092	2152	2164	2176	2187	2198	2209	2223

[illegible]

CZTCBE0 TC2-TC11 TEST #2
CZTCBE.P11 10-APR-80 15:17

I 10
MACY11 30A(1052) 10-APR-80 15:18 PAGE 123
CROSS REFERENCE TABLE -- MACRO NAMES

SEQ 0125

.STRAP	1#	11#	3105
.STYPB	1#		
.STYPD	1#	11#	2900
.STYPE	1#	12#	2828
.STYPO	1#	11#	2976
.S40CA	1#		
.1170	1#		

. ABS. 040430 000

ERRORS DETECTED: 0

CZTCBE.BIN,CZTCBE.LST/CRF/SOL/NL:TOC=CZTCBE.SML,CZTCBE.P11
RUN-TIME: 42 60 6 SECONDS
RUN-TIME RATIO: 234/109=2.1
CORE USED: 34K (67 PAGES)