

KT11-D

ABORT
MD-11-DBKTF-C

EP-DBKTF-C-DL-A

NOV 1976

COPYRIGHT © 1976

digital

FICHE 1 OF 1

MADE IN U.S.A

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18
19	20	21
22	23	24
25	26	27
28	29	30
31	32	33
34	35	36
37	38	39
40	41	42
43	44	45
46	47	48
49	50	51
52	53	54
55	56	57
58	59	60
61	62	63
64	65	66
67	68	69
70	71	72
73	74	75
76	77	78
79	80	81
82	83	84
85	86	87
88	89	90
91	92	93
94	95	96
97	98	99
100	101	102

.REM *

IDENTIFICATION

PRODUCT CODE:	MAINDEC-11-DBKTF-C-D
PRODUCT NAME:	MEMORY MANAGEMENT ABORT TESTS
DATE:	MAY, 1976
MAINTAINER:	DIAGNOSTIC GROUP
AUTHOR:	ROBERT WHITTON

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 DOCUMENT.

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.

;COPYRIGHT 1972, 1973, 1976 DIGITAL EQUIPMENT CORP., MAYNARD, MASS.

1.0 ABSTRACT

PROGRAM DBKTF TESTS THE MEMORY MANAGEMENT ABORT LOGIC. THE PROGRAM IS WRITTEN TO CAUSE A MEMORY MANAGEMENT ABORT AT EVERY PDP11/40 MICRO STATE WHERE A MEMORY REFERENCE IS INITIATED. ABORTS ARE IN ALL CASES TRAPPED TO THE KERNEL, HOWEVER, THE INSTRUCTIONS CAUSING THE ABORT ARE EXECUTED IN BOTH MODES (KERNEL AND USER).

2.0 REQUIREMENTS

2.1 EQUIPMENT

PDP-11/40 WITH KT11-D (MEM. MGMT) INSTALLED

2.2 STORAGE

PROGRAM STORAGE - THE ROUTINE USES MEMORY 0-17777

2.3 PRELIMINARY PROGRAMS

TESTS DBKTA-DBKTD

3.0 LOADING AND STARTING PROCEDURE

LOAD PROGRAM INTO MEMORY USING ABS LOADER
LOAD ADDRESS 200
PRESS START.

THE PROGRAM WILL LOOP AND RING BELL ON COMPLETION.

4.0 SWITCH SETTINGS

5.0 SUBROUTINE ABSTRACTS

5.1 HLT

THE HLT (HALT) INSTRUCTION IS EXECUTED WHEN AN ERROR IS DETECTED. NOTE THAT THE HLT (HALT) INSTRUCTION TRAPS TO LOC 4 IN USER MODE. IF A HLT (HALT) INSTRUCTION IS EXECUTED IN THESE MODES THE TRAP IS TAKEN AND THE PROGRAM HALTS AT LOCATION 176 IN KERNEL MODE. PRESSING CONTINUE RESTARTS THE TEST. NOTE: THE USER STACK POINTER IS NOT AFFECTED. TO DETERMINE WHICH TEST THE PROGRAM WAS EXECUTING WHEN THE HLT OCCURRED REFER TO R1 WHOSE CONTENTS ARE THE LAST TEST SUCCESSFULLY EXECUTED AND ALSO THE KERNEL STACK THE TOP WORD OF WHICH IS THE VIRTUAL PC OF THE HLT INSTRUCTION +2.

5.2 SCOPE

THE SCOPE (ENT) SERVICE ROUTINE STORES IN R1 THE PC OF THE LAST TEST SUCCESSFULLY EXECUTED AND MAY BE USED AS AN AID IN DEBUGGING IF THE PROGRAM 'BOMBS' BECAUSE OF A HARDWARE FAILURE. A BRANCH INSTRUCTION MAY BE INSERTED AT THE SCOPE LOCATION TO THE PREVIOUS SCOPE (ENT) INSTRUCTION TO CONTINUOUSLY LOOP A TEST. ADDITIONALLY THE SCOPE ROUTINE SETS ALL STACK POINTERS TO THEIR INITIAL SETTINGS (SEE SEC 8.2) AND ENTERS EACH TEST IN KERNEL MODE, PREVIOUS KERNEL MODE.

6.0 ERRORS

THE TEST HALTS WHEN AN ERROR IS DETECTED AND DISPLAYS THE PC+2 OF THE HLT (HALT) INSTRUCTION IN THE ADDRESS LIGHTS.

6.1 ERROR RECOVERY

PRESS CONTINUE OR RESTART AT 200 OR PREVIOUS SCOPE.

6.2 ERROR LOOPING

TO LOOP ON AN ERROR REPLACE THE HLT INSTRUCTION WITH A BRANCH BACK TO THE PREVIOUS SCOPE. NOTE: IF THE ERROR IS INTERMITTENT THE TEST WILL DROP THROUGH THE HLT AND CONTINUE TO THE NEXT TEST. TO CONTINUOUSLY LOOP THE TEST REPLACE THE BEQ .+4 PRECEDING THE HLT WITH THE BRANCH.

7.0 RESTRICTIONS

7.1 STARTING RESTRICTION

NONE

7.2 OPERATIONAL RESTRICTION

NONE

8.0 MISCELLANEOUS

IF THE PROGRAM HALTS IN THE TRAP INTERRUPT VECTOR AREA (0-1000) EXAMINE REGISTER 6 (THE KERNEL STACK PTR). REGISTER 6 CONTAINS THE ADDRESS WHERE THE PC OF THE INSTRUCTION THAT CAUSED THE TRAP IS STORED. EXAMINE ALSO R1 (R1 SPECIFIES THE LAST TEST SUCCESSFULLY COMPLETED)

8.2 STACK POINTER

THE STACK POINTERS ARE INITIALLY SET TO THE FOLLOWING VALUES

KERNEL = 1060

USER = 600

AND ARE RESET TO THESE VALUES AT THE START OF EACH SUBTEST (BY SCOPE).

8.3 PASS COUNT

1000(8) PASSES ARE REQUIRED FOR COMPLETION OF THIS PROGRAM; AT WHICH TIME THE BELL WILL RING AT THE TTY.

8.4 DEBUGGING TIPS

WHEN THE FAILING SUBTEST HAS BEEN ISOLATED, REPLACE THE FIRST WORD OF THE INSTRUCTION PRECEDING THE INSTRUCTION THAT CAUSES THE ABORT WITH A BR SELF (00C777), AND RESTART THE PROGRAM. WHEN THE PROGRAM EXECUTES THE BR SELF STOP THE PROGRAM USING SINGLE INSTRUCTION, RESTORE THE INSTRUCTION, AND USING THE MAINTENANCE CARD SINGLE STEP THE PROGRAM THROUGH EACH MICRO STATE OBSERVING THE FLOW IN THE DATA/ADDRESS LIGHTS. THIS PRACTICE HAS BEEN FOUND TO BE SUCCESSFUL IN FINDING MOST MEMORY MANAGEMENT ERRORS.

8.5 MEMORY MANAGEMENT MEMORY MAP

THE MAPPING OF THE MEM MGMT REGISTERS IS DONE AT THE BEGINNING OF THE PROGRAM BEFORE ANY TESTING IS STARTED. THE USER SHOULD ACQUAINT HIMSELF WITH THE MEMORY MANAGEMENT MAP BEFORE USING THIS PROGRAM.

*
; COPYRIGHT 1972, 1973, 1976 DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASS.
; MEMORY MANAGEMENT ABORT TEST. THIS PROGRAM TESTS MEMORY MGMT ABORT ERRORS

; GENERAL REGISTER ASSIGNMENTS

000000 R0=X0
000001 R1=X1
000002 R2=X2
000003 R3=X3
000004 R4=X4
000005 R5=X5
000006 SP=X6
000007 PC=X7

; STACK POINTER REGISTERS

000006 KSP=X6 ; KERNEL STACK POINTER
000006 USP=X6 ; USER STACK POINTER

; STATUS REGISTER BIT ASSIGNMENTS

000001 C=1
000002 V=2
000004 Z=4
000010 N=10
000020 T=20
000340 PRTY7=340
000200 PRTY4=200
000000 KM=000000
140000 UM=140000
000000 PKM=000000
030000 PUM=030000

; 'T' BIT
; PRIORITY LEVEL 7
; PRIORITY LEVEL 4
; KERNEL MODE
; USER MODE
; PREVIOUS KERNEL MODE
; PREVIOUS USER MODE

; VECTOR ADDRESSES

000010 ERRVEC=10 ; ADDRESS OF ERROR VECTOR
000014 TBITVEC=14 ; ADDRESS OF 'T' BIT TRAP VECTOR
000020 IOTVEC=20 ; ADDRESS OF IOT TRAP VECTOR
000024 PFVEC=24 ; ADDRESS OF POWER FAIL TRAP VECTOR
000030 EMTVEC=30 ; ADDRESS OF EMT VECTOR
000034 TRAPVEC=34 ; ADDRESS OF TRAP VECTOR
000064 TPVEC=64 ; ADDRESS OF TTY PRINTER INTERRUPT VECTOR
000244 FPVEC=244 ; ADDRESS OF FLOATING POINT INT. VECTOR
000250 MMVEC=250 ; ADDRESS OF MEMORY MGMT ERROR TRAP VECTOR

; REGISTER ADDRESSES

177776 PSW=177776 ; ADDRESS OF STATUS REGISTER
177560 TKS=177560 ; ADDRESS OF KEYBOARD CSR
177562 TKB=177562 ; ADDRESS OF KEYBOARD BUFFER
177564 TPS=177564 ; ADDRESS OF TELEPRINTER CSR
177566 TPB=177566 ; ADDRESS OF TELEPRINTER BUFFER
177570 SWR=177570 ; ADDRESS OF CONSOL SWITCH REGISTER

; INITIAL STACK POINTER SETTINGS

001100 KPTR=1100 ; BOTTOM OF KERNEL STACK
000600 UPTR=600 ; USER STACK SETTING

; MISCELLANEOUS BIT ASSIGNMENTS

100000 BIT15=100000

040000
020000
000400
000100BIT14=40000
BIT13=20000
BIT8=400
BIT6=100;MEMORY MANAGEMENT REGISTER SRO BIT ASSIGNMENTS
ENMM=1 ;ENABLE MEMORY MANAGEMENT000001
000000
000002
000004
000006
000010
000012
000014
000016
000000
000140
000000
000400
020000
040000
100000VS0=0
VS1=2
VS2=4
VS3=6
VS4=10
VS5=12
VS6=14
VS7=16
IS=00
UPG=140
KPG=000
DM=400
AVA=20000
PLA=40000
NRA=100000;DESTINATION MODE
;ACCESS VIOLATION ABORT
;PAGE LENGTH ABORT
;NON-RESIDENT ABORT;PAGE DESCRIPTOR REGISTER (PDR) BIT ASSSIGNMENTS
ED=10 ;EXPANSION DIRECTION BIT IN PDR
UP=0 ;EXPAND UP
DMN=10 ;EXPAND DOWN
W=100 ;'W' BIT IN PDR000010
000000
000010
000100;MEMORY MANAGEMENT REGISTER ADDRESS ASSIGNMENTS
SRO=177572 ;ADDRESS OF MEMORY MGMT REGISTER SRO
SR1=177574 ;SR1
SR2=177576 ;SR2177572
177574
177576

;ADDRESS OF USER 'I' PDR'S

177600
177602
177604
177606
177610
177612
177614
177616UIPDR0=177600
UIPDR1=177602
UIPDR2=177604
UIPDR3=177606
UIPDR4=177610
UIPDR5=177612
UIPDR6=177614
UIPDR7=177616177640
177642
177644
177646
177650
177652
177654
177656UIPAR0=177640
UIPAR1=177642
UIPAR2=177644
UIPAR3=177646
UIPAR4=177650
UIPAR5=177652
UIPAR6=177654
UIPAR7=177656172300
172302
172304
172306KIPDR0=172300
KIPDR1=172302
KIPDR2=172304
KIPDR3=172306

H01

DBKTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 7
DBKTFC.P11

172310
172312
172314
172316

KIPDR4=172310
KIPDR5=172312
KIPDR6=172314
KIPDR7=172316

172340
172342
172344
172346
172350
172352
172354
172356

KIPAR0=172340
KIPAR1=172342
KIPAR2=172344
KIPAR3=172346
KIPAR4=172350
KIPAR5=172352
KIPAR6=172354
KIPAR7=172356

000000
000002
000004
000006

;ACCESS CONTROL FIELD DEFINITIONS (IN PDR)
NR0=0 ;NON-RESIDENT ABORT ALL REFS.
RD0=2 ;READ,ABORT ON WRITE
RWT=4 ;TRAP ON READ & WRITE
RW=6 ;READ & WRITE

000000
104000

;INSTRUCTION EQUATES
HLT=HALT
SCOPE=EMT ;SCOPE IS AN EMT TRAP

016700
140000
120000
100000
040000
020000
060000

;VIRTUAL ADDRESSES
K10=16700
K16=140000
U15=120000
U14=100000
U12=40000
U11=20000
U13=60000

016600
016700
017200
017300
017400
017000
017100

;CORRESPONDING PHYSICAL ADDRESSES
PK10=16600
PK16=16700
PU15=17200
PU14=17300
PU13=17400
PU12=17000
PU11=17100

.LIST ME
.NLIST MC,MD
;FILL TRAP AND INTERRUPT VECTOR AREA WITH
;. +2
;HALT

;UNEXPECTED TRAPS/INTERRUPTS WILL HALT AT VECTOR ADDRESS +2
;AND DISPLAY VECTOR ADDRESS+4 NOTE: LISTING DOES NOT SHOW LOADING THE
;VECTOR AREA.

000010 000010
000010 000400
000030 000030
000030 000442

.NLIST MC
.=ERRVEC
.WORD SHLT
.=EMTVEC
.WORD SCOPEA

```

000046 000046          . = 46
000046 007024          SENDAD

000052 000052          . = 52
000052 040000          40000

000176 000176          . = 176
000176 000000          HALT
                                ;ERROR! TO IDENTIFY WHICH TEST FAILED
                                ;EXAMINE R1 THE CONTENTS OF WHICH IS THE PC OF THE PRESENT TEST
                                ;THE TOP WORD ON THE KERNEL STACK CONTAINS THE VIRTUAL
                                ;ADDRESS OF THE HLT INSTRUCTION IN THE TEST THAT FAILED.

000200 000200 001006          . = 200
000200 000167          JMP      START          ;GO START TEST

000400 000400          . = 400
000400 042737 000001 177572  ;USER HLT (HALT) TRAP SERVICE ROUTINE
000406 042737 140000 177776  SHLT:  BIC      #1, @#SR0          ;TURN MEM MGMT OFF
000414 162716 000002          SUB      #140000, @#PSW        ;RETURN TO KERNEL
000420 005776 000000          TST      @2, (KSP)             ;POINT PC TO TRAPPING INST.
000424 001404          BEQ      SHLTA          ;WAS IT A HLT (HALT)
000426 062716 000002          ADD      #2, (KSP)             ;RESTORE PC TO TRAPPING INST.
000432 000137 000012          JMP      @#ERRVEC+2            ;GO HALT AT 6
000436 000137 000176          SHLTA:  JMP      @#176          ;GO HALT AT ADDRESS 176

000442 005037 177572          ;SCOPE (ENT) SERVICE ROUTINE
000446 011601          SCOPEA:  CLR      @#SR0          ;DISABLE MEMORY MGMT
000450 012706 001100          MOV      (KSP), R1          ;SAVE PC IN R1
000454 005046          MOV      #KPTR, KSP              ;SET KERNEL STACK PTR
000456 010146          CLR      -(KSP)                  ;SET UP FOR KERNEL MODE ON RETURN
000460 012746 000600          MOV      R1, -(KSP)          ;RETURN IN LINE
000464 012737 030000 177776  MOV      #UPTR, -(KSP)        ;USER STACK PTR ON KERNEL STACK
000472 106606          MTPD      USP                    ;PREVIOUS USER MODE
000474 001400          BEQ      SCOPEX                  ;SET USER STACK PTR
000476 000006          SCOPEX:  RTT                      ;RETURN TO NEXT TEST IN KERNEL MODE
                                ;WITH ALL STACK PTRS SET UP

001200 001200          . = 1200
001200 000000          ;TAGS
001202 000000          ICNT:    0                      ;CONTAINS PASS COUNT
001204 001204          SRJT:    0                      ;CONTAINS SR0 CONTENTS ON ERROR
001212          TEMP=.
                                . = .+6

```

```

; START MEMORY MANAGEMENT TEST.
001212 000240 START: NOP
001214 005067 177760 CLR ICNT ; CLEAR PASS COUNT
001220 012706 001100 BEGIN: MOV #KPTR,KSP ; SET KERNEL STACK PTR
001224 104000 SCOPE ; SCOPE SETS ALL STACK PTRS
001226 005037 000252 CLR 2#MMVEC+2 ; KERNEL MODE ON ABORT

; ROUTINE TO CLEAR MEMORY MANAGEMENT REGISTERS.
MMO: NOP
CLR SR0
MOV #UIPDR0,R2
MOV #8,R3
CLR (R2)+
SOB R3,-2
MOV #UIPAR0,R2
MOV #8,R3
CLR (R2)+
SOB R3,-2
MOV #KIPDR0,R2
MOV #8,R3
CLR (R2)+
SOB R3,-2
MOV #KIPAR0,R2
MOV #8,R3
CLR (R2)+
SOB R3,-2

001320 012737 073006 172300 MMK: MOV #73006,2#KIPDR0 ; RW, UP 167 BLOCKS
001326 012737 000006 172314 MOV #6,2#KIPDR6 ; RW, UP 1 BLOCK
001334 012737 077406 172316 MOV #77406,2#KIPDR7 ; RW, UP 200 BLOCKS
001342 012737 073006 177600 MOV #73006,2#UIPDR0 ; RW, UP 167 BLOCKS
001350 012737 000006 177604 MOV #6,2#UIPDR2 ; RW, UP 1 BLOCK
001356 012737 000006 177602 MOV #6,2#UIPDR1 ; RW, UP 1 BLOCK
001364 012737 000006 177610 MOV #6,2#UIPDR4 ; RW, UP 1 BLOCK
001372 012737 000006 177612 MOV #6,2#UIPDR5 ; RW, UP 1 BLOCK

001400 005067 170734 CLR KIPAR0 ; VA=PA=0000-16677
001404 012767 000167 170742 MOV #167,KIPAR6 ; VA=140000-140077;PA=16700-16777
001412 012767 007600 170736 MOV #7600,KIPAR7 ; VA=160000-177776,PA=760000-777776
001420 005067 176214 CLR UIPAR0 ; VA=PA=0-16677
001424 012767 000170 176212 MOV #170,UIPAR2 ; VA=40000-40077/PA=17000-17077
001432 012767 000171 176202 MOV #171,UIPAR1 ; VA=20000-20077/PA=17100-17177
001440 012767 000172 176204 MOV #172,UIPAR5 ; VA=120000-120077/PA=17200-17277
001446 012767 000173 176174 MOV #173,UIPAR4 ; VA=100000-100077/PA=17300-17377

```

K01

DSKTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 10
 DBKTF.C.P11

```

;CHECK ABORT AT SRC00
;ABORTS WHEN SOURCE OPERAND IS FETCHED
;SOURCE MODE=1
TO:
001454 012737 001510 000250      MOV      #TOC, @MMVEC      ;LOAD MEM MGMT ERROR VECTOR
001454 005067 176564             CLR      MMVEC+2
001466 012703 016700             MOV      #K10, R3
001472 010302             MOV      R3, R2
001474 005013             CLR      (R3)
001476 005237 177572             INC      @SR0      ;ENABLE MEMORY MGMT
001502 000277             SCC
001504 011302             TOA: MOV      (R3), R2      ;MEM MGMT LENGTH ABORT AT SRC00
001506 000000             TOB: HLT                      ;ERROR! DID NOT ABORT
001510 022706 001074             TOC: CMP      #KPTR-4, KSP      ;CHECK STACK PTR
001514 001401             BEQ      .+4
001516 000000             HLT
001520 022766 000017 000002      CMP      #17, 2(KSP)      ;CHECK THAT CORRECT STATUS
001526 001401             BEQ      .+4      ;WAS SAVED ON THE STACK
001530 000000             HLT      ;ERROR! INCORRECT STATUS
001532 022767 040001 176032      CMP      #PLA+1, SR0      ;CHECK SR0 (ABORT CONDITIONS
001540 001401             BEQ      .+4      ;& FAILING PAGE #)
001542 000000             HLT      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
001544 022767 001504 176024      CMP      #TOA, SR2      ;CHECK CONTENTS OF SR2
001552 001401             BEQ      .+4      ;(PC OF ABORTED INSTRUCTION)
001554 000000             HLT      ;ERROR! INCORRECT PC IN SR2
001556 020203             CMP      R2, R3      ;CHECK THAT INSTRUCTIONS AS ABORTED
001560 001401             BEQ      .+4
001562 000000             HLT      ;ERROR!
001564 104000             SCOPE      ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT SRC01
;ABORTS WHEN SOURCE OPERAND IS FETCHED
;SOURCE MODE=2, BYTE INSTRUCTION
001566 012737 001614 000250      MOV      #T1C, @MMVEC      ;LOAD MEM MGMT ERROR VECTOR
001574 012702 016700             MOV      #K10, R2
001600 010204             MOV      R2, R4
001632 005012             CLR      (R2)
001604 005237 177572             INC      @SR0      ;ENABLE MEMORY MGMT
001610 122202             T1A: CMPB     (R2)+, R2      ;SEG LENGTH ABORT AT SRC01
001612 000000             T1B: HLT                      ;ERROR! DID NOT ABORT
001614 022706 001074             T1C: CMP      #KPTR-4, KSP      ;CHECK STACK PTR
001620 001401             BEQ      .+4
001622 000000             HLT
001624 022767 040001 175740      CMP      #PLA+1, SR0      ;CHECK SR0 (ABORT CONDITIONS
001632 001401             BEQ      .+4      ;& FAILING PAGE #)
001634 000000             HLT      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
001636 022767 001610 175732      CMP      #T1A, SR2      ;CHECK CONTENTS OF SR2
001644 001401             BEQ      .+4      ;(PC OF ABORTED INSTRUCTION)
001646 000000             HLT      ;ERROR! INCORRECT PC IN SR2

;CHECK THAT REGISTER INCREMENTED PROPERLY
001650 022702 016701             CMP      #K10+1, R2
001654 001401             BEQ      .+4
001656 000000             HLT      ;ERROR!
001660 104000             SCOPE      ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

```

```

;CHECK ABORT AT SRC13
;ABORTS WHEN ADDRESS OF SOURCE OPERAND IS FETCHED
;SOURCE MODE=3
001662 012737 001710 000250      MOV      #T2C,2#MMVEC      ;LOAD MEM MGMT ERROR VECTOR
001670 012705 016700      MOV      #K10,R5
001674 010504      MOV      R5,R4
001676 005237 177572      INC      2#SR0      ;ENABLE MEMORY MGMT
001702 000277      SCC      ;PRESET CC'S
001704 153504      T2A:  B1SB      2(R5)+,R4      ;NON-RES ABORT AT S13.10
001706 000000      T2B:  HLT      ;ERROR! FAILED TO ABORT
001710      T2C:
001710 022766 000017 000002      CMP      #17,2(KSP)      ;CHECK THAT CORRECT STATUS
001716 001401      BEQ      .+4      ;WAS SAVED ON THE STACK
001720 000000      HLT      ;ERROR! INCORRECT STATUS
001722 022767 040001 175642      CMP      #PLA+1,SR0      ;CHECK SR0 (ABORT CONDITIONS
001730 001401      BEQ      .+4      ;& FAILING PAGE #)
001732 000000      HLT      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
001734 022767 001704 175634      CMP      #T2A,SR2      ;CHECK CONTENTS OF SR2
001742 001401      BEQ      .+4      ;(PC OF ABORTED INSTRUCTION)
001744 000000      HLT      ;ERROR! INCORRECT PC IN SR2
001746 022705 016702      CMP      #K10+2,R5
001752 001401      BEQ      .+4
001754 000000      HLT      ;ERROR! RS DID NOT AUTO-INCREMENT
001756 104000      SCOPE      ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT SRC02
;ABORTS WHEN SOURCE OPERAND IS FETCHED
;SOURCE MODE=4, USER MODE
001760 012737 002014 000250      MOV      #T3C,2#MMVEC      ;LOAD MEM MGMT ERROR VECTOR
001766 012767 170000 176002      MOV      #UM+PUM,PSW      ;USER MODE!!!, PREV USER MODE
001774 012702 100000      MOV      #UI4,R2
002000 010203      MOV      R2,R3
002002 005237 177572      INC      2#SR0      ;ENABLE MEMORY MGMT
002006 000277      SCC      ;PRESET CC'S
002010 064203      T3A:  ADD      -(R2),R3      ;NON-RESIDENT ABORT AT SRC02
002012 000000      T3B:  HLT      ;ERROR! FAILED TO ABORT
002014 022706 001074      T3C:  CMP      #KPTR-4,KSP      ;CHECK STACK PTR
002020 001401      BEQ      .+4
002022 000000      HLT
002024 022766 170017 000002      CMP      #UM+PUM+17,2(KSP)      ;CHECK THAT CORRECT STATUS
002032 001401      BEQ      .+4      ;WAS SAVED ON THE STACK
002034 000000      HLT      ;ERROR! INCORRECT STATUS
002036 022767 140147 175526      CMP      #NRA+PLA+UPG+VS3+1,SR0      ;CHECK SR0 (ABORT CONDITIONS
002044 001401      BEQ      .+4      ;& FAILING PAGE #)
002046 000000      HLT      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002050 022767 002010 175520      CMP      #T3A,SR2      ;CHECK CONTENTS OF SR2
002056 001401      BEQ      .+4      ;(PC OF ABORTED INSTRUCTION)
002060 000000      HLT      ;ERROR! INCORRECT PC IN SR2

;CHECK CONTENTS OF REFERENCED PAGE DESCRIPTOR REGISTER (UIPDR2)
002062 032767 000100 175514      BIT      #W,UIPDR2      ;CHECK CONTENTS OF REFERENCED PDR
002070 001401      BEQ      .+4
002072 000000      HLT      ;ERROR!
002074 042767 000100 175502      BIC      #W,UIPDR2
002102 022702 077776      CMP      #UI4-2,R2      ;CHECK THAT AUTO- DECREMENT TOOK PLACE
002106 001401      BEQ      .+4

```

```

002110 000000          HLT          ;ERROR! R2 FAILED TO AUTO-DECREMENT
002112 022703 100000    CMP          ;CHECK THAT R3 WAS NOT CHANGED
002116 001401          BEQ          ;+4
002120 000000          HLT          ;ERROR!
002122 104000          SCOPE        ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT SRC13
;ABORTS WHEN ADDRESS OF SOURCE OPERAND IS FETCHED
;SOURCE MODE=5, USER MODE
002124 012737 002164 000250    MOV      #T4C, @#MMVEC ;LOAD MEM MGMT ERROR VECTOR
002132 012767 170000 175636    MOV      #UM+PLM, PSW ;USER MODE!!!, PREV USER MODE!!
002140 012704 120002          MOV      #UI5+2, R4
002144 010405          MOV      R4, R5
002146 012737 177777 017200    MOV      #-1, @#PUI5
002154 005237 177572          INC      @#SR0
002160 145405          T4A: BICB      @-(R4), R5 ;ENABLE MEMORY MGMT
002162 000000          T4B: HLT          ;NON-RESIDENT ABORT AT SRC13
002164 022706 001074          T4C: CMP      #KPTR-4, KSP ;ERROR! FAILED TO ABORT
002170 001401          BEQ          ;CHECK STACK PTR
002172 000000          HLT          ;+4
002174 022767 140157 175370    CMP      #NRA+PLA+UPG+VS7+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
002202 001401          BEQ          ;& FAILING PAGE #)
002204 000000          HLT          ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002206 022767 002160 175362    CMP      #T4A, SR2 ;CHECK CONTENTS OF SR2
002214 001401          BEQ          ;(PC OF ABORTED INSTRUCTION)
002216 000000          HLT          ;ERROR! INCORRECT PC IN SR2
;CHECK CONTENTS OF REFERENCED PAGE DESCRIPTOR REGISTER (UIPDAS)
002220 032767 000100 175364    BIT      #W, UIPDAS ;CHECK CONTENTS OF REFERENCED PDR
002226 001401          BEQ          ;+4
002230 000000          HLT          ;ERROR!
002232 042767 000100 175352    BIC      #W, UIPDAS
002240 022704 120000          CMP      #UI5, R4 ;CHECK AUTO-DECREMENT
002244 001401          BEQ          ;+4
002246 000000          HLT          ;ERROR! FAILED TO AUTO-DECREMENT R4
002250 022705 120002          CMP      #UI5+2, R5 ;CHECK THAT R5 WAS UNCHANGED
002254 001401          BEQ          ;+4
002256 000000          HLT          ;ERROR!
002260 104000          SCOPE        ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT SRC08
;ABORTS WHEN SOURCE OPERAND IS FETCHED
;SOURCE MODE = 6
002262 012737 002306 000250    MOV      #T6C, @#MMVEC ;LOAD MEM MGMT ERROR VECTOR
002270 012702 177777          MOV      #-1, R2
002274 005237 177572          INC      @#SR0
002300 016702 014374          T6A: MOV      KIO, R2 ;ENABLE MEMORY MGMT
002304 000000          T6B: HLT          ;SEG LENGTH ABORT AT SRC08
002306          T6C:          ;ERROR! FAILED TO ABORT
002306 022767 040001 175256    CMP      #PLA+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
002314 001401          BEQ          ;& FAILING PAGE #)
002316 000000          HLT          ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002320 022767 002300 175250    CMP      #T6A, SR2 ;CHECK CONTENTS OF SR2
002326 001401          BEQ          ;(PC OF ABORTED INSTRUCTION)
002330 000000          HLT          ;ERROR! INCORRECT PC IN SR2
002332 005202          INC      R2 ;CHECK THAT R2 WAS NOT CHANGED
002334 001401          BEQ          ;+4

```

002336	000000			HLT		;ERROR!
002340	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
					:CHECK ABORT AT SRC13 :ABORTS WHEN ADDRESS OF SOURCE OPERAND IS FETCHED :SOURCE MODE = 7, PC	
002342	012737	002364	000250	MOV	#T7C, @#MMVEC	;LOAD MEM MGMT ERROR VECTOR
002350	005004			CLR	R4	
002352	005237	177572		INC	@#SR0	;ENABLE MEMORY MGMT
002356	067404	016700		T7A: ADD	@KIO(R4), R4	;SEG LEN ABORT AT SRC13
002362	000000			T7B: HLT		;ERROR! FAILED TO ABORT
002364				T7C:		
002364	022767	040001	175200	CMP	#PLA+1, SR0	;CHECK SR0 (ABORT CONDITIONS
002372	001401			BEQ	.+4	& FAILING PAGE #)
002374	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002376	022767	002356	175172	CMP	#T7A, SR2	;CHECK CONTENTS OF SR2
002404	001401			BEQ	.+4	(PC OF ABORTED INSTRUCTION)
002406	000000			HLT		;ERROR! INCORRECT PC IN SR2
002410	005704			TST	R4	
002412	001401			BEQ	.+4	
002414	000000			HLT		
002416	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
					:CHECK ABORT AT SRC15 :ABORTS WHEN SOURCE OPERAND IS FETCHED :SOURCE MODE = 3, PC	
002420	012737	002442	000250	MOV	#T10C, @#MMVEC	;LOAD MEM MGMT ERROR VECTOR
002426	005003			CLR	R3	
002430	005237	177572		INC	@#SR0	;ENABLE MEMORY MGMT
002434	013703	016700		T10A: MOV	@#KIO, R3	;SEG LEN ABORT AT SRC15
002440	000000			T10B: HLT		;ERROR! FAILED TO ABORT
002442				T10C:		
002442	022767	040001	175122	CMP	#PLA+1, SR0	;CHECK SR0 (ABORT CONDITIONS
002450	001401			BEQ	.+4	& FAILING PAGE #)
002452	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002454	022767	002434	175114	CMP	#T10A, SR2	;CHECK CONTENTS OF SR2
002462	001401			BEQ	.+4	(PC OF ABORTED INSTRUCTION)
002464	000000			HLT		;ERROR! INCORRECT PC IN SR2
002466	005703			TST	R3	
002470	001401			BEQ	.+4	
002472	000000			HLT		;ERROR!
002474	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
					:CHECK ABORT AT RTI.00 :ABORTS WHEN TOP WORD OFF STACK (PC) IS FETCHED	
002476	012737	002544	000250	MOV	#T13C, @#MMVEC	;LOAD MEM MGMT ERROR VECTOR
002504	012767	170000	175264	MOV	#UM+PUM, PSW	;USER MODE!!! PREV USER MODE!!
002512	012706	040100		MOV	#UI2+100, USP	;USER STACK PTR IS NON-RES
002516	012737	002542	017100	MOV	#T13D, @#PU12+100	;LOAD 'NEW' PC
002524	005037	017102		CLR	@#PU12+102	
002530	005237	177572		INC	@#SR0	;ENABLE MEMORY MGMT
002534	000277			SCC		
002536	000002			T13A: RTI		;NON-RES ABORT AT RTI.00
002540	000000			T13B: HLT		;ERROR! FAILED TO ABORT
002542	000000			T13C: HLT		;ERROR! RTI FAILED & DID NOT ABORT

```

002544 022706 001074 T13C: CMP #KPTR-4,KSP ;CHECK STACK PTR
002550 001401 BEQ .+4
002552 000000 HLT
002554 022766 170017 000002 CMP #UM+PUM+17,2(KSP) ;CHECK THAT CORRECT STATUS
002562 001401 BEQ .+4 ;WAS SAVED ON THE STACK
002564 000000 HLT ;ERROR! INCORRECT STATUS
002566 022767 040145 174776 CMP #PLA+UPG+VS2+1,SR0 ;CHECK SR0 (ABORT CONDITIONS
002574 001401 BEQ .+4 ;& FAILING PAGE #)
002576 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002600 022767 002536 174770 CMP #T13A,SR2 ;CHECK CONTENTS OF SR2
002606 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
002610 000000 HLT ;ERROR! INCORRECT PC IN SR2
002612 106506 MFPD USP ;PUSH USER STACK PTR ONTO KERNEL STACK
002614 022716 040102 CMP #UI2+102,(KSP) ;CHECK THAT USER STACK PTR WAS POPPED
002620 001401 BEQ .+4
002622 000000 HLT ;ERROR!
002624 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

```

```

;CHECK ABORT AT RTI.01
;ABORTS WHEN SECOND WORD ON STACK (STATUS) IS FETCHED
002626 012737 002672 000250 MOV #T14C,2#MEMVEC ;LOAD MEM MGMT ERROR VECTOR
002634 012767 170000 175134 MOV #UM+PUM,PSW ;USER MODE!!!,PREV USER MODE!!
002642 012706 100076 MOV #UI4+76,USP
002646 012737 002670 017376 MOV #T14D,2#PUI4+76 ;LOAD USER STACK (PHYS ADRS.)
002654 005037 017400 CLR 2#PUI4+100 ;AND 'NEW' STATUS
002660 005237 177572 INC 2#SR0 ;ENABLE MEMORY MGMT
002664 000076 T14A: RTT ;SEG LEN ABORT AFTER FIRST POP RTI.01
002666 000000 T14B: HLT ;ERROR! FAILED TO ABORT
002670 000000 T14D: HLT ;ERROR!
002672 022767 040151 174672 CMP #PLA+UPG+VS4+1,SR0 ;CHECK SR0 (ABORT CONDITIONS
002700 001401 BEQ .+4 ;& FAILING PAGE #)
002702 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002704 022767 002664 174664 CMP #T14A,SR2 ;CHECK CONTENTS OF SR2
002712 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
002714 000000 HLT ;ERROR! INCORRECT PC IN SR2
002716 106506 MFPD USP ;PUSH USER STACK PTR ONTO KERNEL STACK
002720 022716 100102 CMP #UI4+102,(KSP) ;CHECK THAT USER STACK PTR POPPED TWICE
002724 001401 BEQ .+4
002726 000000 HLT
002730 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

```

```

;CHECK ABORT AT RTS.02
;ABORTS WHEN TOP WORD ON USER STACK (RETURN PC) IS FETCHED
002732 012767 170000 175036 MOV #UM+PUM,PSW ;USER MODE!!! PREV USER MODE!!
002740 012706 020100 MOV #UI1+30,USP
002744 012737 002770 000250 MOV #T16C,2#MEMVEC ;LOAD MEM MGMT ERROR VECTOR
002752 012705 002766 MOV #T16D,RS
002756 005237 177572 INC 2#SR0 ;ENABLE MEMORY MGMT
002762 000000 T16A: RTS ;ABORTS AT RTS.02 (STACK IS NON-RES)
002764 000000 T16B: HLT ;ERROR! RTS& ABORT FAILED
002766 000000 T16D: HLT ;ERROR! ABORT FAILED
002770 022706 001074 T16C: CMP #KPTR-4,KSP ;CHECK STACK PTR
002774 001401 BEQ .+4
002776 000000 HLT
003000 022767 040143 174564 CMP #PLA+UPG+VS1+1,SR0 ;CHECK SR0 (ABORT CONDITIONS

```

```

003006 001401 BEQ .+4 ; & FAILING PAGE #)
003010 003000 HLT ; ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003012 022767 002762 174556 CMP #T16A,SR2 ; CHECK CONTENTS OF SR2
003020 001401 BEQ .+4 ; (PC OF ABORTED INSTRUCTION)
003022 000000 HLT ; ERROR! INCORRECT PC IN SR2
003024 022705 002766 CMP #T16D,RS ; CHECK THAT RS DID NOT CHANGE
003030 001401 BEQ .+4
003032 000000 HLT ; ERROR!
003034 106506 MFPO USP ; PUSH USER STACK PTR ONTO KERNEL STACK
003036 022716 020102 CMP #U11+102,(KSP) ; CHECK THAT USER STACK WAS POPPED
003042 001401 BEQ .+4
003044 000000 HLT ; ERROR! INCORRECT USER STACK PTR
003046 104000 SCOPE ; SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

; CHECK ABORT AT SRC07
; ABORTS WHEN SOURCE INDEX IS FETCHED
; SOURCE MODE = 6 PC
003050 012737 003112 000250 MOV #T20C,2#MVEC ; LOAD MEM MGMT ERROR VECTOR
003056 012702 177777 MOV #1,R2 ; PRESET DEST REG
003062 012737 016702 016676 MOV #16702,2#K10-2 ; 16702,000000 IS A MOV .+4,R2
003070 005037 016700 CLR 2#K10 ; INSTRUCTION
003074 005037 016702 CLR 2#K10+2
003100 005237 177572 INC 2#SR0 ; ENABLE MEMORY MGMT
003104 000277 SCC ; PRESET CC'S
003106 000137 016676 JMP 2#K10-2 ; GO TO MOV INST.
003112 003112 RETURN=

; ***** NOTE PC CHANGE *****
016676 016676 000000 .#K10-2
016702 000000 T20A: MOV .+4,R2 ; SEG LEN ABORT WHEN INDEX VALUE IS FETCHED
016702 000000 T20B: HLT ; ERROR! FAILED TO ABORT
; ***** RETURN PC *****
003112 003112 .=RETURN
003116 022706 001074 T20C: CMP #KPTR-4,KSP ; CHECK STACK PTR
003120 001401 BEQ .+4
003122 022766 000017 000002 HLT
003130 001401 CMP #17,2(KSP) ; CHECK THAT CORRECT STATUS
003132 000000 BEQ .+4 ; WAS SAVED ON THE STACK
003134 022767 040001 174430 HLT ; ERROR! INCORRECT STATUS
003142 001401 CMP #PLA+IS+VSO+1,SR0 ; CHECK SR0 (ABORT CONDITIONS)
003144 000000 BEQ .+4 ; & FAILING PAGE #)
003146 022767 016676 174422 HLT ; ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003154 001401 CMP #T20A,SR2 ; CHECK CONTENTS OF SR2
003160 005202 BEQ .+4 ; (PC OF ABORTED INSTRUCTION)
003162 001401 HLT ; ERROR! INCORRECT PC IN SR2
003164 000000 INC R2
003166 104000 HLT ; SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
SCOPE

; CHECK ABORT AT SRC10
; ABORTS WHEN SOURCE INDEX IS FETCHED
; SOURCE MODE = 7
003170 012737 003232 000250 MOV #T21C,2#MVEC ; LOAD MEM MGMT ERROR VECTOR
003176 012737 177777 MOV #1,2#PK16
003204 012702 140000 MOV #K16,R2 ; LOAD INDEX REGISTER
003210 012737 017202 016676 MOV #017202,2#K10-2 ; 017202,000000 IS A MOV 20(R2),R2
003216 005037 016700 CLR 2#K10 ; INSTRUCTION

```

D7*TF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 16
 DB*TF.C.P11

003222	005237	177572		INC	2#SR0	;ENABLE MEMORY MGMT
003226	000137	016676		JMP	2#K10-2	
	003232			RETURN=.		
				;***** NOTE PC CHANGE *****		
	016676			.=K10-2		
016676	017202	000000		T21A: MOV	20(R2),R2	;SEG LEN ABORT AT SRC10
016702	000000			T21B: HLT		;ERROR! FAILED TO ABORT
	003232			.=RETURN		
				;***** RETURN PC *****		
003232				T21C:		
003232	022767	040001	174332	CMP	#PLA+IS+VS0+1,SR0	;CHECK SR0 (ABORT CONDITIONS
003240	001401			BEQ	.+4	; & FAILING PAGE #)
003242	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003244	022767	016676	174324	CMP	#T21A,SR2	;CHECK CONTENTS OF SR2
003252	001401			BEQ	.+4	; (PC OF ABORTED INSTRUCTION)
003254	000000			HLT		;ERROR! INCORRECT PC IN SR2
003256	022702	140000		CMP	#K16,R2	;CHECK THAT R2 IS UNCHANGED
003262	001401			BEQ	.+4	
003264	000000			HLT		;ERROR!
003266	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
				;CHECK ABORT AT FET03		
				;ABORTS WHEN INST FOLLOWING SOB IS FETCHED		
003270	012703	000001		MOV	#1,X3	
003274	012737	077302	016676	MOV	#077302,2#K10-2	;077302=SOB R3,.-2
003302	005037	016674		CLR	2#K10-4	;CLEAR INST. PRECEDING SOB (.-2)
003306	005037	016700		CLR	2#K10	;PUT HLT FOLLOWING SOB
003312	012737	003332	000250	MOV	#T22C,2#MMVEC	;LOAD MEM MGMT ERROR VECTOR
003320	005237	177572		INC	2#SR0	;ENABLE MEMORY MGMT
003324	000277			SCC		;PRESET CC'S
003326	000137	016676		JMP	2#K10-2	;GO TO SOB INST.
	003332			RETURN=.		
	016674			.=K10-4		
016674	000000			T22: HLT		;ERROR! SOB BRANCHED & FAILED TO ABORT
016676	077302			T22A: SOB	R3,.-2	;ABORTS WHEN NEXT INST. IS FETCHED
016700	000000			T22AA: HLT		;ERROR! FAILED TO ABORT
016702	000000			T22B: 0		
	003332			.=RETURN		
003332	022706	001074		T22C: CMP	#KPTR-4,KSP	;CHECK STACK PTR
003336	001401			BEQ	.+4	
003340	000000			HLT		
003342	022766	000017	000002	CMP	#17,2(KSP)	;CHECK THAT CORRECT STATUS
003350	001401			BEQ	.+4	; WAS SAVED ON THE STACK
003352	000000			HLT		;ERROR! INCORRECT STATUS
003354	022767	040001	174210	CMP	#PLA+VS0+1,SR0	;CHECK SR0 (ABORT CONDITIONS
003362	001401			BEQ	.+4	; & FAILING PAGE #)
003364	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003366	022767	016676	174202	CMP	#T22A,SR2	;CHECK CONTENTS OF SR2
003374	001401			BEQ	.+4	; (PC OF ABORTED INSTRUCTION)
003376	000000			HLT		;ERROR! INCORRECT PC IN SR2
003400	005704			TST	R3	;CHECK THAT R3 DECREMENTED
003402	001401			BEQ	.+4	
003404	000700			HLT		;ERROR! R3 WAS NOT DECREMENTED BY SOB

003406	104000			SCOPE	;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT MOV16					
;ABORTS WHEN DEST OPERAND IS FETCHED					
003410	012767	030000	174360	MOV	#K1+PUM, SW
003416	012737	003440	000250	MOV	#T24C, #MMVEC ;LOAD MEM MGMT ERROR VECTOR
003424	012702	040000		MOV	#UI2, R2
003430	005237	177572		INC	#SR0 ;ENABLE MEMORY MGMT
003434	106542			T24A: MFPD	-(R2) ;NON-RESIDENT ABORT AT MOV16
003436	003000			T24B: HLT	
003440	022706	001074		T24C: CMP	#KPTR-4, KSP ;CHECK STACK PTR
003444	001401			BEQ	.+4
003446	000000			HLT	
003450	022767	040143	174114	CMP	#UPG+PLA+VS1+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
003456	001401			BEQ	.+4 ;& FAILING PAGE #)
003460	000000			HLT	ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003462	022767	003434	174106	CMP	#T24A, SR2 ;CHECK CONTENTS OF SR2
003470	001401			BEQ	.+4 ;(PC OF ABORTED INSTRUCTION)
003472	003000			HLT	ERROR! INCORRECT PC IN SR2
003474	022702	037776		CMP	#UI2-2, R2 ;CHECK THAT R2 AUTO-DECREMENTED
003500	001401			BEQ	.+4
003502	003000			HLT	ERROR! R2 DID NOT AUTO-DECREMENT
003504	104000			SCOPE	;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT DST00					
;ABORTS WHEN DEST OPERAND IS FETCHED					
003506	012737	003536	000250	MOV	#T25C, #MMVEC ;LOAD MEM MGMT ERROR VECTOR
003514	012702	177572		MOV	#SR0, R2
003520	012767	170000	174250	MOV	#UM+PUM, PSW
003526	005237	177572		INC	#SR0 ;ENABLE MEMORY MGMT
003532	001012			T25A: CLR	(R2) ;ABORT AT DST00
003534	003000			T25B: HLT	ERROR! FAILED TO ABORT
003536	022706	001074		T25C: CMP	#KPTR-4, KSP ;CHECK STACK PTR
003542	001401			BEQ	.+4
003544	000000			HLT	
003546	022767	140157	174016	CMP	#NRA+PLA+UPG+VS7+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
003554	001401			BEQ	.+4 ;& FAILING PAGE #)
003556	000000			HLT	ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003560	022767	003532	174010	CMP	#T25A, SR2 ;CHECK CONTENTS OF SR2
003566	001401			BEQ	.+4 ;(PC OF ABORTED INSTRUCTION)
003570	003000			HLT	ERROR! INCORRECT PC IN SR2
003572	104000			SCOPE	;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT DST01					
;ABORTS WHEN DEST OPERAND IS FETCHED					
003574	012737	003624	000250	MOV	#T30C, #MMVEC ;LOAD MEM MGMT ERROR VECTOR
003602	012703	016677		MOV	#KIO-1, R3
003606	012737	177777	016700	MOV	#-1, #KIO
003614	005237	177572		INC	#SR0 ;ENABLE MEMORY MGMT
003620	142323			T30A: BICB	(R3)+, (R3)+ ;SEG LENGTH ABORT AT DST01
003622	000000			HLT	ERROR! FAILED TO ABORT
003624				T30C:	
003624	022767	040001	173740	CMP	#PLA+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
003632	001401			BEQ	.+4 ;& FAILING PAGE #)
003634	000000			HLT	ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT

D9KTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 18
D8KTF.C.P11

003636	022767	003620	173732	CMP	#T30A,SR2	;CHECK CONTENTS OF SR2
003644	001401			BEQ	.+4	; (PC OF ABORTED INSTRUCTION)
003646	000000			HLT		;ERROR! INCORRECT PC IN SR2
003650	005037	177572		CLR	#SRO	;DISABLE MEMORY MGMT
003654	022703	016701		CMP	#KIO+1,R3	;CHECK AUTO-INC TWICE
003660	001401			BEQ	.+4	
003662	000000			HLT		;ERROR!
003664	005237	016700		INC	#KIO	
003670	001401			BEQ	.+4	
003672	000000			HLT		;ERROR!
003674	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT DST04						
;ABORTS WHEN ADDRESS OF DEST OPERAND IS FETCHED						
003676	012737	003746	000250	MOV	#T31C,#MMVEC	;LOAD MEM MGMT ERROR VECTOR
003704	012702	040000		MOV	#UI2,R2	
003710	012703	017100		MOV	#PUI1,R3	
003714	012713	177777		MOV	#-1,(R3)	
003720	011337	017000		MOV	(R3),#PUI2	
003724	012703	020002		MOV	#UI1+2,R3	;R3= USER VIRTUAL ADDRESS
003730	012767	170000	174040	MOV	#UM+PUM,PSW	
003736	005237	177572		INC	#SRO	;ENABLE MEMORY MGMT
003742	114332			T31A: MOVB	-(R3),#(R2)+	;NON-RESIDENT ABORT AT DST04
003744	000000			T31B: HLT		;ERROR! FAILED TO ABORT
T31C:						
003746	022767	140157	173616	CMP	#NRA+PLA+UPG+VS7+1,SRO	;CHECK SRO (ABORT CONDITIONS
003754	001401			BEQ	.+4	; & FAILING PAGE #)
003756	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003760	022767	003742	173610	CMP	#T31A,SR2	;CHECK CONTENTS OF SR2
003766	001401			BEQ	.+4	; (PC OF ABORTED INSTRUCTION)
003770	000000			HLT		;ERROR! INCORRECT PC IN SR2
003772	022702	040002		CMP	#UI2+2,R2	;CHECK AUTO-INC
003776	001401			BEQ	.+4	
004000	000000			HLT		;ERROR!
004002	022703	020001		CMP	#UI1+1,R3	;CHECK AUTO DECREMENT OF R3
004006	001401			BEQ	.+4	
004010	000000			HLT		;ERROR! R3 NOT AUTO-DECREMENTED
004012	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT MOV03						
004014	012737	004060	000250	MOV	#T32C,#MMVEC	;LOAD MEM MGMT ERROR VECTOR
004022	012767	170000	173746	MOV	#UM+PUM,PSW	
004030	012706	000600		MOV	#UPTR,USP	
004034	005016			CLR	(USP)	
004036	012702	060000		MOV	#UI3,R2	
004042	012737	177777	017400	MOV	#-1,#PUI3	
004050	005237	177572		INC	#SRO	;ENABLE MEMORY MGMT
004054	006632			T32A: NTPI	#(R2)+	;NON-RESIDENT ABORT AT MOV03
004056	000000			T32B: HLT		;ERROR! FAILED TO ABORT
T32C:						
004060	022767	100147	173504	CMP	#NRA+UPG+VS3+1,SRO	;CHECK SRO (ABORT CONDITIONS
004066	001401			BEQ	.+4	; & FAILING PAGE #)
004070	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
004072	022767	004054	173476	CMP	#T32A,SR2	;CHECK CONTENTS OF SR2
004100	001401			BEQ	.+4	; (PC OF ABORTED INSTRUCTION)

D9KTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 19
 DBK TFC.P11

004102	000000			HLT		;ERROR! INCORRECT PC IN SR2
004104	106506			MFPD	USP	;PUSH USER STACK PTR ONTO KERNEL STACK
004106	022716	000602		CMP	#UPTR+2,(KSP)	;CHECK THAT USER STACK PTR POPPED
004112	001401			BEQ	.+4	
004114	000000			HLT		;ERROR!
004116	022702	060002		CMP	#UI3+2,R2	;CHECK AUTO-INC
004122	001401			BEQ	.+4	
004124	000000			HLT		;ERROR!
004126	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT MOV11						
;ABORTS WHEN ADDRESS OF DEST OPERAND IS FETCHED						
004130	012737	004164	000250	MOV	#T33C,2#MMVEC	;LOAD MEM MGMT ERROR VECTOR
004136	012767	030000	173632	MOV	#KM+PUM,PSW	
004144	012716	117776		MOV	#UI5-2,(KSP)	;NON-RES ADDRESS
004150	012746	140000		MOV	#KI6,-(KSP)	;ADDRESS POINTER
004154	005237	177572		INC	2#SR0	;ENABLE MEMORY MGMT
004160	106636			T33A: MTPD	2(KSP)+	;NON-RESIDENT ABORT AT MOV11 WHEN MTPD
						;ADDRESSES FINAL ADDRESS
004162	000000			T33B: HLT		;ERROR! FAILED TO ABORT
004164				T33C:		
004164	022767	040151	173400	CMP	#PLA+UPG+VS4+1,SR0	;CHECK SR0 (ABORT CONDITIONS
004172	001401			BEQ	.+4	; & FAILING PAGE #)
004174	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
004176	022767	004160	173372	CMP	#T33A,SR2	;CHECK CONTENTS OF SR2
004204	001401			BEQ	.+4	; (PC OF ABORTED INSTRUCTION)
004206	000000			HLT		;ERROR! INCORRECT PC IN SR2
004210	106506			MFPD	KSP	;GET KERNEL STACK PTR
004212	022716	001076		CMP	#KPTR-2,(KSP)	;CHECK THAT KERNEL STACK PTR POPPED TWICE
004216	001401			BEQ	.+4	
004220	000000			HLT		;ERROR!
004222	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT MOV15						
;ABORTS WHEN ADDRESS OF DEST OPERAND IS FETCHED						
;DN=5						
004224	012737	004260	000250	MOV	#T35C,2#MMVEC	;LOAD MEM MGMT ERROR VECTOR
004232	012704	016702		MOV	#KI0+2,R4	
004236	012727	020000	016676	MOV	#20000,#KI0-2	
004244	005237	177572		INC	2#SR0	;ENABLE MEMORY MGMT
004250	00277			SCC		
004252	112754	177777		T35A: MOVB	#-1,2-(R4)	;SEG LENGTH ABORT AT MOV15
004256	000000			T35B: HLT		;ERROR! FAILED TO ABORT
004260				T35C:		
004260	022766	000017	000002	CMP	#17,2(KSP)	;CHECK THAT CORRECT STATUS
004266	001401			BEQ	.+4	; WAS SAVED ON THE STACK
004270	000000			HLT		;ERROR! INCORRECT STATUS
004272	022767	040001	173272	CMP	#PLA+VS0+1,SR0	;CHECK SR0 (ABORT CONDITIONS
004300	001401			BEQ	.+4	; & FAILING PAGE #)
004302	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
004304	022767	004252	173264	CMP	#T35A,SR2	;CHECK CONTENTS OF SR2
004312	001401			BEQ	.+4	; (PC OF ABORTED INSTRUCTION)
004314	000000			HLT		;ERROR! INCORRECT PC IN SR2
004316	022704	016700		CMP	#KI0,R4	
004322	001401			BEQ	.+4	
004324	000000			HLT		;ERROR!

004326 104000

SCOPE

;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT DST15
;ABORTS WHEN DEST OPERAND IS FETCHED
;DM=4

004330 012737 004362 000250
 004336 012704 140002
 004342 012703 016702
 004346 012713 177777
 004352 005237 177572
 004356 154443
 004360 000000

MOV #T36C, @MMVEC ;LOAD MEM MGMT ERROR VECTOR
 MOV #KI6+2, R4
 MOV #KI0+2, R3
 MOV #1, (R3)
 INC @SR0
 T36A: BISB -(R4), -(R3) ;ENABLE MEMORY MGMT
 T36B: HLT ;SEG LENGTH ABORT AT DST15
 ;ERROR! FAILED TO ABORT

004362
 004362 022767 040001 173202
 004370 001401
 004372 000000
 004374 022767 004356 173174
 004402 001401
 004404 000000
 004406 022703 016701
 004412 001401
 004414 000000
 004416 022704 140001
 004422 001401
 004424 000000
 004426 104000

T36C: CMP #PLA+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
 BEQ .+4 ;& FAILING PAGE #)
 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
 CMP #T36A, SR2 ;CHECK CONTENTS OF SR2
 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
 HLT ;ERROR! INCORRECT PC IN SR2
 CMP #KI0+1, R3 ;CHECK AUTO-DEC
 BEQ .+4
 HLT ;ERROR!
 CMP #KI6+1, R4 ;CHECK AUTO-DEC
 BEQ .+4
 HLT ;ERROR! AUTO-DEC FAILED
 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT MOV08
;WHEN INSTRUCTION FETCHES DESTINATION INDEX VALUE

004430 012737 004476 000250
 004436 012767 170000 173332
 004444 012737 113767 017074
 004452 012737 020001 017076
 004460 012737 177776 017100
 004466 005237 177572
 004472 000137 040074

MOV #T40C, @MMVEC ;LOAD MEM MGMT ERROR VECTOR
 MOV #MUM+PUM, PSW
 MOV #113767, @PUI2+74 ;113767, 020001, 177776
 MOV #20001, @PUI2+76 ;IS A MOV08 @20001, .+4
 MOV #177776, @PUI2+100 ;INSTRUCTION
 INC @SR0 ;ENABLE MEMORY MGMT
 JMP @PUI2+74

004476
 017074 113767 020001 177776
 017102 000000
 004476

RETURN=.
 .@PUI2+74
 T40A: MOV08 @20001, .+4 ;SEG LENGTH ABORT WHEN INST. FETCHES
 ;DEST INDEX WORD AT MOV08
 T40B: HLT ;ERROR! FAILED TO ABORT
 .@RETURN

004476
 004476 022767 040145 173066
 004504 001401
 004506 000000
 004510 022767 040074 173060
 004516 001401
 004520 000000
 004522 104000

T40C: CMP #PLA+UPG+VS2+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
 BEQ .+4 ;& FAILING PAGE #)
 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
 CMP @PUI2+74, SR2 ;CHECK CONTENTS OF SR2
 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
 HLT ;ERROR! INCORRECT PC IN SR2
 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT MOV17
;WHEN INSTRUCTION FETCHES DESTINATION OPERAND

DBKTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 21
DBKTF.C.P11

```

004524 012737 004572 000250      MOV      #T41C, @MMVEC      ;LOAD MEM MGMT ERROR VECTOR
004532 012767 170000 173236      MOV      @UM+PUM, PSW      ;USER MODE!!!, PREV USER MODE!!
004540 012703 100000                MOV      #UI4, R3
004544 012704 100102                MOV      #UI4+102, R4
004550 012737 010344 017200      MOV      #010344, @PUI5      ;012344 = MOV R3, -(R4)
004556 005037 017202                CLR      @PUI5+2
004562 005237 177572                INC      @SR0                ;ENABLE MEMORY MGMT
004566 000137 120000                JMP      @UI5
                                RETURN=.
                                . =PUI5
017200 010344      T41A:  MOV      R3, -(R4)      ;ABORT AT MOV17
017202 000000      T41B:  HLT                    ;ERROR! FAILED TO ABORT
                                . =RETURN

004572 022767 040151 172772      T41C:  CMP      @PLA+UPG+VS4+1, SR0      ;CHECK SR0 (ABORT CONDITIONS
004572 001401                BEQ      .+4                ; & FAILING PAGE #)
004600 000000                HLT                    ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
004602 022767 120000 172764      CMP      @UI5, SR2      ;CHECK CONTENTS OF SR2
004604 001401                BEQ      .+4                ; (PC OF ABORTED INSTRUCTION)
004612 000000                HLT                    ;ERROR! INCORRECT PC IN SR2
004614 022704 100100                CMP      #UI4+100, R4
004622 001401                BEQ      .+4
004624 000000                HLT
004626 104000                SCOPE                ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT MOV16
;(WHEN INSTRUCTION FETCHES ADDRESS OF DESTINATION OPERAND)
004630 012737 004666 000250      MOV      #T42C, @MMVEC      ;LOAD MEM MGMT ERROR VECTOR
004636 012767 030000 173132      MOV      @KM+PUM, PSW
004644 012703 140102                MOV      #KI6+102, R3
004650 012737 177777 017000      MOV      #-1, @PKI6+100
004656 005237 177572                INC      @SR0                ;ENABLE MEMORY MGMT
004662 104553      T42A:  MTPD      @-(R3)      ;SEG LENGTH ABORT AT MOV16
004664 000000      T42B:  HLT                    ;ERROR! FAILED TO ABORT

004666 022706 001076      T42C:  CMP      @KPTR-2, KSP      ;CHECK STACK PTR ( 1 POP, 2 PUSHES)
004672 001401                BEQ      .+4
004674 000000                HLT                    ;ERROR! INCORRECT STACK PTR
004676 022767 040015 172666      CMP      @PLA+VS6+1, SR0      ;CHECK SR0 (ABORT CONDITIONS
004704 001401                BEQ      .+4                ; & FAILING PAGE #)
004706 000000                HLT                    ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
004710 022767 004662 172660      CMP      #T42A, SR2      ;CHECK CONTENTS OF SR2
004716 001401                BEQ      .+4                ; (PC OF ABORTED INSTRUCTION)
004720 000000                HLT                    ;ERROR! INCORRECT PC IN SR2
004722 022703 140100                CMP      #KI6+100, R3      ;CHECK AUTO-DECREMENT
004726 001401                BEQ      .+4
004730 000000                HLT
004732 104000                SCOPE                ;ERROR! DID NOT AUTO-DEC
                                ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT DST04
;ABORTS WHEN ADDRESS TO JUMP TO IS FETCHED
004734 012737 005002 000250      MOV      #T43C, @MMVEC      ;LOAD MEM MGMT ERROR VECTOR
004742 012737 000137 017076      MOV      #137, @PUI2+76      ;000137, T430 =JMP @T430
004750 012737 005000 017100      MOV      #T430, @PUI2+100
004756 005037 017102                CLR      @PUI2+102

```

```

004762 012767 170000 173006      MOV      #UM+PUM,PSW
004770 005237 177572              INC      @#SR0      ;ENABLE MEMORY MGMT
004774 000137 040076              JMP      @#UI2+76      ;GO DO INSTRUCTION
                                RETURN=
                                ;=PUI2+76
017076 000137 005000      T43A:    JMP      @#T430
017102 000000      T43B:    HLT
                                ;ERROR! JMP FAILED
                                ;=RETURN
005000 000000      T43D:    HLT
                                ;ERROR! FAILED TO ABORT
                                T43C:
005002 022767 040145 172562      CMP      #PLA+UPG+VS2+1,SR0      ;CHECK SR0 (ABORT CONDITIONS
005010 001401              BEQ      .+4      ;& FAILING PAGE #)
005012 000000              HLT      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
005014 022767 040076 172554      CMP      @#UI2+76,SR2      ;CHECK CONTENTS OF SR2
005022 001401              BEQ      .+4      ;(PC OF ABORTED INSTRUCTION)
005024 000000              HLT      ;ERROR! INCORRECT PC IN SR2
005026 104000              SCOPE      ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT DST12
;WHEN INSTRUCTION FETCHES ADDRESS OF DEST. OPERAND. (UI5+4)
005030 012737 005100 000250      MOV      @T44C,@#MMVEC      ;LOAD MEM MGMT ERROR VECTOR
005036 012767 170000 172732      MOV      #UM+PUM,PSW      ;USER MODE!!!,PREV USER MODE!!
005044 012706 000600              MOV      #UPTR,USP      ;SET USER STACK PTR
005050 012703 120006              MOV      #UI5+6,R3
005054 012737 177776 017204      MOV      #-2,@#PUI5+4
005062 012737 004753 017200      MOV      @4753,@#PUI5      ;004753 = JSR 7,@-(R3)
005070 005237 177572              INC      @#SR0      ;ENABLE MEMORY MGMT
005074 000137 120000              JMP      @#UI5      ;GO DO INST.
                                RETURN=
                                ;=PUI5
017200 004753      T44A:    JSR      7,@-(R3)
017202 000000      T44B:    HLT      ;ERROR!
                                ;=RETURN
005100 022706 001074      T44C:    CMP      #KPTR-4,KSP      ;CHECK STACK PTR
005104 001401              BEQ      .+4
005106 000000              HLT      ;INCORRECT STACK PTR
005110 022767 140157 172454      CMP      #NRA+PLA+UPG+VS7+1,SR0      ;CHECK SR0 (ABORT CONDITIONS
005116 001401              BEQ      .+4      ;& FAILING PAGE #)
005120 000000              HLT      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
005122 022767 120000 172446      CMP      @#UI5,SR2      ;CHECK CONTENTS OF SR2
005130 001401              BEQ      .+4      ;(PC OF ABORTED INSTRUCTION)
005132 000000              HLT      ;ERROR! INCORRECT PC IN SR2
005134 106506      MFPD      USP      ;GET USER STACK PTR (ON KERNEL STACK)
005136 022716 000576      CMP      #UPTR-2,(KSP)      ;CHECK THAT USER STACK DID NOT
005142 001401              BEQ      .+4      ;GET PUSHED
005144 000000              HLT      ;ERROR!
005146 022703 120004      CMP      @#UI5+4,R3      ;CHECK AUTO-DEC
005152 001401              BEQ      .+4
005154 000000              HLT      ;ERROR!
005156 104000              SCOPE      ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT DST10
;WHEN INSTRUCTION FETCHES DESTINATION OPERAND (UIPDR5)
005160 012737 005232 000250      MOV      @T45C,@#MMVEC      ;LOAD MEM MGMT ERROR VECTOR
005166 012767 170000 172602      MOV      #UM+PUM,PSW      ;USER MODE!!!,PREV USER MODE!!
005174 012706 000600              MOV      #UPTR,USP      ;SET USER STACK PTR

```

K02

DBKTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 23
DBKTF.C.P11

```

005200 005016 CLR (USP)
005202 012737 012667 017200 MOV #012667, @#PUI5 ;012667, 057606 = MOV (USP)+, UIPDR5
005210 012737 057606 017202 MOV #57606, @#PUI5+2 ;INSTRUCTION
005216 005037 017204 CLR @#PUI5+4
005222 005237 177572 INC @#SR0 ;ENABLE MEMORY MGMT
005226 000137 120000 JMP @#UIS
005232 005232 RETURN=.
005232 017200 .=#PUI5
017200 012667 057606 T45A: MOV (USP)+, UIPDR5-UIS+PUI5
017204 000000 T45B: HLT ;ERROR! FAILED TO ABORT
005232 .=#RETURN

005232 T45C:
005232 022767 140157 172332 CMP #NRA+UPG+PLA+VS7+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
005240 001401 BEQ .+4 ;& FAILING PAGE #)
005242 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
005244 022767 120000 172324 CMP #UIS, SR2 ;CHECK CONTENTS OF SR2
005252 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
005254 000000 HLT ;ERROR! INCORRECT PC IN SR2
005256 005037 177572 CLR @#SR0 ;DISABLE MEMORY MGMT
005262 005737 177612 TST @#UIPDR5
005266 001001 BNE .+4
005270 000000 HLT
005272 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT JSR01
;ABORTS WHEN REGISTER (RS) IS PUSHED ON USER STACK
005274 012737 005344 000250 MOV #T50C, @#MMVEC ;LOAD MEM MGMT ERROR VECTOR
005302 012767 170000 172466 MOV #UM+PUM, PSW ;USER MODE!!!, PREV USER MODE!!
005310 012706 100000 MOV #UI4, USP ;SET USER STACK PTR
005314 005037 017276 CLR @#PUI4-2
005320 005005 CLR RS
005322 012767 005342 173654 MOV #T50D, TEMP
005330 005237 177572 INC @#SR0 ;ENABLE MEMORY MGMT
005334 004577 173644 T50A: JSR 5, @TEMP ;NON-RES ABORT AT JSR01
005340 000000 T50B: HLT ;JSR FAILED & DID NOT ABORT
005342 000000 T50C: HLT ;ERROR! FAILED TO ABORT
005344 T50C:
005344 022767 140147 172220 CMP #NRA+PLA+UPG+VS3+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
005352 001401 BEQ .+4 ;& FAILING PAGE #)
005354 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
005356 022767 005334 172212 CMP #T50A, SR2 ;CHECK CONTENTS OF SR2
005364 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
005366 000000 HLT ;ERROR! INCORRECT PC IN SR2
005370 106506 MFPD USP ;PUSH USER STACK PTR ONTO KERNEL STACK
005372 022716 077776 CMP #UI4-2, (KSP) ;CHECK THAT USER STACK PTR DEC-
005376 001401 BEQ .+4 ;REMENTED
005400 000000 HLT ;ERROR!
005402 005705 TST RS
005404 001401 BEQ .+4
005406 000000 HLT
005410 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

```

;CHECK ABORT AT TRP11

```

;ABORTS WHEN STATUS IS PUSHED ONTO USER STACK
005412 012737 005456 000250 MOV #T52C,2#MMVEC ;LOAD MEM MGMT ERROR VECTOR
005420 012767 140000 172374 MOV #UM,IOTVEC+2 ;USER MODE!!!,PREV USER MODE!!
005426 012767 005454 172364 MOV #T52D,IOTVEC ;SET USER STACK PTR
005434 012767 170000 172334 MOV #UM+PUM,PSW ;ENABLE MEMORY MGMT
005442 005006 CLR USP ;NON-RESIDENT ABORT AT TRP11
005444 005237 177572 INC 2#SR0 ;ERROR! IOT & ABORT FAILED
005450 000004 T52A: IOT ;ERROR! ABORT FAILED
005452 000000 T52B: HLT ;CHECK STACK PTR
005454 000000 T52D: HLT
005456 022706 001074 T52C: CMP #KPTR-4,KSP
005462 001401 BEQ .+4 ;INCORRECT STACK PTR
005464 000000 HLT ;CHECK THAT CORRECT STATUS
005466 022766 170000 000002 CMP #UM+PUM,2(KSP) ;WAS SAVED ON THE STACK
005474 001401 BEQ .+4 ;ERROR! INCORRECT STATUS
005476 000000 HLT ;CHECK SR0 (ABORT CONDITIONS
005500 022767 140157 172064 CMP #NRA+UPG+PLA+VS7+1,SR0 ;& FAILING PAGE #)
005506 001401 BEQ .+4 ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
005510 000000 HLT ;CHECK CONTENTS OF SR2
005512 022767 005450 172056 CMP #T52A,SR2 ;(PC OF ABORTED INSTRUCTION)
005520 001401 BEQ .+4 ;ERROR! INCORRECT PC IN SR2
005522 000000 HLT ;CHECK FOR CORRECT PSW ON ABORT
005524 122737 000060 177777 CMPB #60,2#PSW+1 ;(KM+PUM IN HIGH BYTE)
005532 001401 BEQ .+4 ;ERROR! INCORRECT PSW AFTER ABORT
005534 000000 HLT ;KERNEL MODE!!! PREV SUPER MODE!!
005536 012737 030000 177776 MOV #KM+PUM,2#PSW ;PUSH USER STACK PTR ONTO KERNEL STACK
005544 106506 MFPD USP ;CHECK PUSHES
005546 022716 177776 CMP #0-2,(KSP)
005552 001401 BEQ .+4 ;ERROR!
005554 000000 HLT ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
005556 104000 SCOPE

;CHECK ABORT AT TRP14
;ABORTS WHEN RETURN PC IS PUSHED ONTO USER STACK
005560 012737 005626 000250 MOV #T53C,2#MMVEC ;LOAD MEM MGMT ERROR VECTOR
005566 012767 170000 172202 MOV #UM+PUM,PSW ;USER MODE, PREV. USER MODE
005574 012706 040002 MOV #UI2+2,USP ;SET USER STACK PTR
005600 012767 005624 172212 MOV #T53D,IOTVEC
005606 012767 140340 172206 MOV #UM+PRTY7,IOTVEC+2
005614 005237 177572 INC 2#SR0 ;ENABLE MEMORY MGMT
005620 000004 T53A: IOT ;NON-RESIDENT ABORT AT TRP14
005622 000000 T53B: HLT ;ERROR! IOT & ABORT FAILED
005624 000000 T53D: HLT ;ERROR! ABORT FAILED
005626 022706 001074 T53C: CMP #KPTR-4,KSP ;CHECK STACK PTR
005632 001401 BEQ .+4 ;INCORRECT STACK PTR
005634 000000 HLT ;CHECK RETURN PC
005636 022716 005622 CMP #T53B,(KSP)
005642 001401 BEQ .+4 ;CHECK THAT CORRECT STATUS
005644 000000 HLT ;WAS SAVED ON THE STACK
005646 022766 170000 000002 CMP #UM+PUM,2(KSP) ;ERROR! INCORRECT STATUS
005654 001401 BEQ .+4 ;CHECK SR0 (ABORT CONDITIONS
005656 000000 HLT ;& FAILING PAGE #)
005660 022767 040143 171704 CMP #PLA+UPG+VS1+1,SR0 ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
005666 001401 BEQ .+4 ;CHECK CONTENTS OF SR2
005670 000000 HLT
005672 022767 005620 171676 CMP #T53A,SR2

```

M02

DBKTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 25
DBKTF.C.P11

```

005700 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
005702 000000 HLT ;ERROR! INCORRECT PC IN SR2
005704 012767 030000 172064 MOV #KM+PUM,PSW
005712 106506 MFPD USP ;PUSH USER STACK PTR ONTO KERNEL STACK
005714 022716 037776 CMP #UI2-2,(KSP) ;CHECK THAT USER STACK PTR WAS
005720 001401 BEQ .+4 ;DECREMENTED BY 4
005722 000000 HLT ;ERROR!
005724 005067 172072 CLR IOTVEC+2
005730 012767 000022 172062 MOV #IOTVEC+2,IOTVEC
005736 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT FET03
005740 012737 006002 000250 MOV #T56C,2#MMVEC ;LOAD MEM MGMT ERROR VECTOR
005746 012767 170000 172022 MOV #UM+PUM,PSW
005754 012706 000600 MOV #UPTR,USP
005760 012746 140000 MOV #UM,-(USP)
005764 012746 040100 MOV #UI2+100,-(USP)
005770 005037 017100 CLR 2#PUI2+100
005774 005237 177572 INC 2#SRO ;ENABLE MEMORY MGMT
006000 000002 T56B: RTI
006002 006002 RETURN=
017100 000000 T56A: HLT ;ERROR! FAILED TO ABORT AT FET03
006002 022706 001074 T56C: .=PUI2+100
006006 001401 CMP #KPTR-4,KSP ;CHECK STACK PTR
006010 000000 BEQ .+4
006012 022767 040145 171552 HLT
006020 001401 CMP #PLA+UPG+VS2+1,SRO ;CHECK SRO (ABORT CONDITIONS
006022 000000 BEQ .+4 ;& FAILING PAGE #)
006024 022767 006000 171544 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006032 001401 CMP #T56B,SR2 ;CHECK CONTENTS OF SR2
006034 000000 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
006036 104000 HLT ;ERROR! INCORRECT PC IN SR2
SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT FET02
006040 012767 170000 171730 MOV #UM+PUM,PSW
006046 012737 006100 000250 MOV #T60C,2#MMVEC ;LOAD MEM MGMT ERROR VECTOR
006054 012737 000005 017076 MOV #5,2#PUI2+76 ;5 IS A RESET INSTRUCTION
006062 005037 017100 CLR 2#PUI2+100
006066 005005 CLR R5
006070 005237 177572 INC 2#SRO ;ENABLE MEMORY MGMT
006074 000137 040076 JMP 2#UI2+76 ;GO EXECUTE RESET
006100 006100 RETURN=
017076 000005 T60A: .=PUI2+76
017100 000000 RESET ;ABORTS WHEN NEXT INST. FETCHED
006100 006100 HLT ;ERROR! FAILED TO ABORT
.=RETURN

T60C:
006100 022767 040145 171464 CMP #PLA+UPG+VS2+1,SRO ;CHECK SRO (ABORT CONDITIONS
006106 001401 BEQ .+4 ;& FAILING PAGE #)
006110 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006112 022767 040076 171456 CMP #UI2+76,SR2 ;CHECK CONTENTS OF SR2
006120 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
006122 000000 HLT ;ERROR! INCORRECT PC IN SR2

```

006124 104000

SCOPE

;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

```

;CHECK ABORT AT
;ABORTS WHEN INST FOLLOWING MARK IS FETCHED
006126 012767 170000 171642      MOV      #UM+PUM,PSW
006134 012737 006164 000250      MOV      #T63C,2#MMVEC
006142 012746                MOV      (PC)+,-(USP)
006144 006401                MARK      1
006146 012705 040100          MOV      #UI2+100,R5
006152 005037 017100          CLR      2#T63A
006156 005237 177572          INC      2#SR0
006162 000116                JMP      (USP)
                                ;LOAD MEM MGMT ERROR VECTOR
                                ;PUSH MARK INST ON USER STACK
                                ;PUSH THIS INST ON USER STACK
                                ;AFTER MARK EXECUTE INST AT T63A
                                ;WHICH IS A HALT
                                ;ENABLE MEMORY MGMT
                                ;GO EXECUTE MARK AT SPTR-2
                                RETURN=
                                ;=PUI2+100
017100 000000      T63A:      HLT
                                ;SEG ABORT WHEN THIS INST. FETCHED AT
                                ;=RETURN
006164 022706 001074      T63C:  CMP      #KPTR-4,KSP
                                ;CHECK STACK PTR
006170 001401                BEQ      .+4
006172 000000                HLT
006174 022767 040145 171370      CMP      #PLA+UPG+VS2+1,SR0
                                ;CHECK SR0 (ABORT CONDITIONS
006202 001401                BEQ      .+4
                                ;& FAILING PAGE #)
006204 000000                HLT
                                ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006206 022767 000576 171362      CMP      #UPTR-2,SR2
                                ;CHECK CONTENTS OF SR2
006214 001401                BEQ      .+4
                                ;(PC OF ABORTED INSTRUCTION)
006216 000000                HLT
                                ;ERROR! INCORRECT PC IN SR2
006220 106506                MFPO     USP
                                ;PUSH USER STACK PTR ONTO KERNEL STACK
006222 022716 000604      CMP      #UPTR+4,(KSP)
                                ;CHECK USER STACK PTR
006226 001401                BEQ      .+4
006230 000000                HLT
                                ;ERROR! INCORRECT USER STACK PTR
006232 023705 000602      CMP      2#UPTR+2,R5
                                ;CHECK CONTENTS OF R5
006236 001401                BEQ      .+4
006240 000000                HLT
                                ;ERROR!
006242 104000      SCOPE
                                ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

```

```

;CHECK ABORT AT TST.10
;ABORTS WHEN INST FOLLOWING TST IS FETCHED
006244 012737 016300 000250      MOV      #T64C,2#MMVEC
006252 012702 177777          MOV      #-1,R2
006256 012737 105722 016676      MOV      #105722,2#KIO-2
006264 005037 016700          CLR      2#KIO
006270 005237 177572          INC      2#SR0
006274 000137 016676          JMP      2#KIO-2
                                ;ENABLE MEMORY MGMT
                                ;GO EXECUTE INSTRUCTION
                                RETURN=
                                ;=KIO-2
016676 105722      T64A:      TSTB      (R2)+
                                ;ABORTS WHEN NEXT INST. IS FETCHED
016700 000000      T64B:      HLT
                                ;ERROR! FAILED TO ABORT
                                ;=RETURN
006300                T64C:
006300 022767 040001 171264      CMP      #PLA+VS0+1,SR0
                                ;CHECK SR0 (ABORT CONDITIONS
006306 001401                BEQ      .+4
                                ;& FAILING PAGE #)
006310 000000                HLT
                                ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006312 022767 016676 171256      CMP      #T64A,SR2
                                ;CHECK CONTENTS OF SR2
006320 001401                BEQ      .+4
                                ;(PC OF ABORTED INSTRUCTION)
006322 000000                HLT
                                ;ERROR! INCORRECT PC IN SR2
006324 005702      TST      R2
                                ;CHECK AUTO-INC

```

006326	001401			BEQ	.+4	
006330	000000			HLT		;ERROR! AUTO-INC FAILED
006332	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ABORT AT D00.90						
;ABORTS WHEN INSTRUCTION FOLLOWING MOVB IS FETCHED						
006334	012737	006372	000250	MOV	#T66C, @MMVEC	;LOAD MEM MGMT ERROR VECTOR
006342	012703	016700		MOV	#K10, R3	
006346	005013			CLR	(3)	;SET UP CODE (HALT)
006350	012743			MOV	(7)+, -(R3)	
006352	114203			MOVB	-(R2), R3	;THIS INSTRUCTION IS NOT EXECUTED
006354	012702	001204		MOV	#TEMP, R2	
006350	012722	100000		MOV	#100000, (R2)+	
006364	005237	177572		INC	@SR0	;ENABLE MEMORY MGMT
006370	000113			JMP	(R3)	;GO EXECUTE MOVB INSTRUCTION
	006372			RETURN=		
	016676			. =K10-2		
016676	114203			T66A: MOVB	-(R2), R3	;ABORTS WHEN THE NEXT INST IS FETCHED
016700	006372			T66B: HLT		;ERROR! FAILED TO ABORT HERE
				. =RETURN		
006372				T66C:		
006372	022767	040001	171172	CMP	#PLA+VS0+1, SR0	;CHECK SR0 (ABORT CONDITIONS
006400	001401			BEQ	.+4	& FAILING PAGE #)
006402	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006404	022767	016676	171164	CMP	#T66A, SR2	;CHECK CONTENTS OF SR2
006412	001401			BEQ	.+4	(PC OF ABORTED INSTRUCTION)
006414	000000			HLT		;ERROR! INCORRECT PC IN SR2
006416	022703	177600		CMP	#177600, R3	;MOVB TO A REGISTER EXTENDS
006422	001401			BEQ	.+4	THE SIGN
006424	000000			HLT		;ERROR! INCORRECT RESULT IN R3
006426	104000			SCOPE		;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
;CHECK ACCESS VIOLATION ABORT						
;ABORTS WHEN SOURCE DATA IS FETCHED USING DATIP WITH DEST ADDRESS READ ONLY						
006430	012737	006462	000250	MOV	#T72C, @MMVEC	;LOAD MEM MGMT ERROR VECTOR
006436	112737	000002	172314	MOVB	#R00, @KIPDR6	;SET KERNEL ADDRESS 140000-140077
006444	005037	016700		CLR	@PKI6	;READ ABORT ON WRITE
006450	005237	177572		INC	@SR0	;CLEAR CORRESPONDING PHYSICAL ADDRESS
006454	000261			SEC		;ENABLE MEMORY MGMT
006456	005537	140000		T72A: ADC	@K16	;SET 'C'
						;ABORTS WHEN DATA IS FETCHED USING DATIP
006462				T72C:		
006462	022767	020015	171102	CMP	#AVA+VS6+1, SR0	;CHECK SR0 (ABORT CONDITIONS
006470	001401			BEQ	.+4	& FAILING PAGE #)
006472	000000			HLT		;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006474	022767	006456	171074	CMP	#T72A, SR2	;CHECK CONTENTS OF SR2
006502	001401			BEQ	.+4	(PC OF ABORTED INSTRUCTION)
006504	000000			HLT		;ERROR! INCORRECT PC IN SR2
006506	022766	000001	000002	CMP	#C, 2(KSP)	;CHECK THAT CORRECT STATUS
006514	001401			BEQ	.+4	WAS SAVED ON THE STACK
006516	000000			HLT		;ERROR! INCORRECT STATUS
006520	005037	177572		CLR	@SR0	;DISABLE MEMORY MGMT
006524	005737	016700		TST	@PKI6	;CHECK THAT ADDRESS WAS NOT WRITTEN
006530	001401			BEQ	.+4	
006532	000000			HLT		;ERROR! DATA WRITTEN INTO READ ONLY ADDRESS

006534 104000

SCOPE

```

;CHECK ACCESS VIOLATION ABORT
;ABORTS WHEN SOURCE DATA IS FETCHED FROM READ ONLY SPACE USING A DATIP.
006536 012737 006562 000250      MOV    #T73C, @#MMVEC    ;LOAD MEM MGMT ERROR VECTOR
006544 005037 016700          CLR    @#PKI6        ;PRESET ADDRESS
006550 005237 177572          INC    @#SR0        ;ENABLE MEMORY MGMT
006554 000261          SEC          ;SET 'C'
006556 106037 140001      T73A:  RORB    @#KI6+1    ;ABORTS WHEN RESULT IS WRITTEN
006562          T73C:
006562 022767 020015 171002      CMP    #AVA+VS6+1, SR0    ;CHECK SR0 (ABORT CONDITIONS
006570 001401          BEQ    .+4        ;& FAILING PAGE #)
006572 000000          HLT          ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006574 022767 006556 170774      CMP    #T73A, SR2    ;CHECK CONTENTS OF SR2
006602 001401          BEQ    .+4        ;(PC OF ABORTED INSTRUCTION)
006604 000000          HLT          ;ERROR! INCORRECT PC IN SR2
006606 022766 000001 000002      CMP    #C, 2(KSP)    ;CHECK THAT CORRECT STATUS
006614 001401          BEQ    .+4        ;WAS SAVED ON THE STACK
006616 000000          HLT          ;ERROR! INCORRECT STATUS
006620 005037 177572          CLR    @#SR0        ;DISABLE MEMORY MGMT
006624 005737 016700          TST    @#PKI6
006630 001401          BEQ    .+4
006632 000000          HLT
006634 012737 000006 172314      MOV    #6, @#KIPDR6    ;ERROR! ADDRESS WAS WRITTEN
006642 104000          SCOPE    ;SET KIPDR R/W
                                ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

```

```

;CHECK ABORT AT SVC.80 USING 'T' BIT TRAP
;CHECK ABORT WHEN PSW IS NON-RESIDENT
006644 012737 006700 000250      MOV    #T102C, @#MMVEC    ;LOAD MEM MGMT ERROR VECTOR
006652 005002          CLR    R2        ;PRESET DESTINATION
006654 005237 177572          INC    @#SR0        ;ENABLE MEMORY MGMT
006660 012746 140017          MOV    #UM+17, -(KSP)    ;'NEW' STATUS ON STACK
006664 012746 006672          MOV    #.+6, -(KSP)    ;RETURN PC
006670 000002          RTI          ;SET STATUS AND EXECUTE NEXT INST.
006672 013702 177776      T102A:  MOV    @#PSW, R2    ;PSW IS NON-RESIDENT IN USER MODE
006676 000000          HLT          ;ERROR! FAILED TO ABORT
006700      T102C:
006700 022767 140157 170664      CMP    #NRA+PLA+UPG+VS7+1, SR0    ;CHECK SR0 (ABORT CONDITIONS
006706 001401          BEQ    .+4        ;& FAILING PAGE #)
006710 000000          HLT          ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006712 022767 006672 170656      CMP    #T102A, SR2    ;CHECK CONTENTS OF SR2
006720 001401          BEQ    .+4        ;(PC OF ABORTED INSTRUCTION)
006722 000000          HLT          ;ERROR! INCORRECT PC IN SR2
006724 022766 140017 000002      CMP    #UM+17, 2(KSP)    ;CHECK THAT CORRECT STATUS
006732 001401          BEQ    .+4        ;WAS SAVED ON THE STACK
006734 000000          HLT          ;ERROR! INCORRECT STATUS
006736 005702          TST    R2        ;CHECK THAT R2 WAS NOT LOADED
006740 001401          BEQ    .+4
006742 000000          HLT
006744 104000          SCOPE
                                ;ERROR! DEST (R2) WAS CHANGED

006746 005267 172226      END:    INC    ICNT
006752 022767 005000 172220      CMP    #5000, ICNT
006760 001402          BEQ    DONE
006762 000167 172232          JMP    BEGIN

```

DBKTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 29
 DBKTFC.P11

006766	012767	000007	170572	DONE:	MOV	#7,TPB	
006774	105767	170564			TSTB	TPS	
007000	100375				BPL	.-4	
007002	012767	000000	170556		MOV	#0,TPB	
007010	105767	170550			TSTB	TPS	
007014	100375				BPL	.-4	
007016	013702	000042			MOV	#42,x2	
007022	001404				BEQ	DONE1	
007024	004712			SENDAD:	JSR	7,(2)	
007026	000240				NOP		
007030	000240				NOP		
007032	000240				NOP		
007034	000167	172152		DONE1:	JMP	START	
	000001						
							.END

;GET DECTAPE MONITOR RETURN ADDRESS
 ;DO NOT RETURN TO MON IF (42)=0
 ;RETURN TO DECTAPE MONITOR
 ;ACT11
 ;OVERLAY
 ;AREA

AVA	= 020000	PFVEC	= 000024	T1C	001614	T33C	004164	T64A	016676
BEGIN	001220	PK10	= 016600	T10A	002434	T35A	004252	T64B	016700
BIT13	= 020000	PK16	= 016700	T10B	002440	T35B	004256	T64C	006300
BIT14	= 040000	PKM	= 000000	T10C	002442	T35C	004260	T66A	016676
BIT15	= 100000	PLA	= 040000	T102A	006672	T36A	004356	T66B	016700
BIT6	= 000100	PRTY4	= 000200	T102C	006700	T36B	004360	T66C	006372
BIT8	= 000400	PRTY7	= 000340	T13A	002536	T36C	004362	T7A	002356
C	= 000001	PSW	= 177776	T13B	002540	T4A	002160	T7B	002362
DM	= 000400	PUI1	= 017100	T13C	002544	T4B	002162	T7C	002364
DONE	006766	PUI2	= 017000	T13D	002542	T4C	002164	T72A	006456
DONE1	007034	PUI3	= 017400	T14A	002664	T40A	017074	T72C	006462
DWN	= 000010	PUI4	= 017300	T14B	002666	T40B	017102	T73A	006556
ED	= 000010	PUI5	= 017200	T14C	002672	T40C	004476	T73C	006562
ENTVEC	= 000030	PUM	= 030000	T14D	002670	T41A	017200	UIPAR0	= 177640
END	006746	R00	= 000002	T16A	002762	T41B	017202	UIPAR1	= 177642
ENMM	= 000001	RETURN	= 006372	T16B	002764	T41C	004572	UIPAR2	= 177644
ERRVEC	= 000010	RW	= 000006	T16C	002770	T42A	004662	UIPAR3	= 177646
FPVEC	= 000244	RWT	= 000004	T16D	002766	T42B	004664	UIPAR4	= 177650
HLT	= 000000	R0	=X000000	T2A	001704	T42C	004666	UIPAR5	= 177652
ICNT	001200	R1	=X000001	T2B	001706	T43A	017076	UIPAR6	= 177654
IOTVEC	= 000020	R2	=X000002	T2C	001710	T43B	017102	UIPAR7	= 177656
IS	= 000000	R3	=X000003	T20A	016676	T43C	005002	UIPDR0	= 177600
KIPAR0	= 172340	R4	=X000004	T20B	016702	T43D	005000	UIPDR1	= 177602
KIPAR1	= 172342	RS	=X000005	T20C	003112	T44A	017200	UIPDR2	= 177604
KIPAR2	= 172344	SCOPE	= 104000	T21A	016676	T44B	017202	UIPDR3	= 177606
KIPAR3	= 172346	SCOPEA	000442	T21B	016702	T44C	005100	UIPDR4	= 177610
KIPAR4	= 172350	SCOPEX	000476	T21C	003232	T45A	017200	UIPDR5	= 177612
KIPAR5	= 172352	SHLT	000400	T22	016674	T45B	017204	UIPDR6	= 177614
KIPAR6	= 172354	SHLTA	000436	T22A	016676	T45C	005232	UIPDR7	= 177616
KIPAR7	= 172356	SP	=X000006	T22B	016700	T50A	005334	UI1	= 020000
KIPDR0	= 172300	SRO	= 177572	T22B	016702	T50B	005340	UI2	= 040000
KIPDR1	= 172302	SROT	001202	T22C	003332	T50C	005344	UI3	= 060000
KIPDR2	= 172304	SR1	= 177574	T24A	003434	T50D	005342	UI4	= 100000
KIPDR3	= 172306	SR2	= 177576	T24B	003436	T52A	005450	UI5	= 120000
KIPDR4	= 172310	START	001212	T24C	003440	T52B	005452	UM	= 140000
KIPDR5	= 172312	SWR	= 177570	T25A	003532	T52C	005456	UP	= 000000
KIPDR6	= 172314	T	= 000020	T25B	003534	T52D	005454	UPG	= 000140
KIPDR7	= 172316	TBITVE	= 000014	T25C	003536	T53A	005620	UPTR	= 000600
KIO	= 016700	TEMP	= 001204	T3A	002010	T53B	005622	USP	=X000006
KI6	= 140000	TKB	= 177562	T3B	002012	T53C	005626	V	= 000002
KM	= 000000	TKS	= 177560	T3C	002014	T53D	005624	VS0	= 000000
KPG	= 000000	TPB	= 177566	T30A	003620	T56A	017100	VS1	= 000002
KPTR	= 001100	TPS	= 177564	T30C	003624	T56B	006000	VS2	= 000004
KSP	=X000006	TPVEC	= 000064	T31A	003742	T56C	006002	VS3	= 000006
MMK	001320	TRAPVE	= 000034	T31B	003744	T6A	002300	VS4	= 000010
MMVEC	= 000250	TO	001454	T31C	003746	T6B	002304	VS5	= 000012
MMO	001232	TOA	001504	T32A	004054	T6C	002306	VS6	= 000014
N	= 000010	T0B	001506	T32B	004056	T60A	017076	VS7	= 000016
NRA	= 100000	T0C	001510	T32C	004060	T60C	006100	W	= 000100
NRO	= 000000	T1A	001610	T33A	004160	T63A	017100	Z	= 000004
PC	=X000007	T1B	001612	T33B	004162	T63C	006164	SENDAD	007024
.	= 007040								

ERRORS DETECTED: 0

F03

DSKTF.B MACY11 27(732) 24-MAR-76 16:43 PAGE 32
DBKTFC.P11 SYMBOL TABLE

DEFAULT GLOBALS GENERATED: 0

*DBKTFC,DBKTFC/SOL=DBKTFC
RUN-TIME: 5 9 .8 SECONDS
RUN-TIME RATIO: 49/15=3.2
CORE USED: 6K (11 PAGES)

[illegible]