

KT11-D

ABORT
MD-11-DBKTF-C

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

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digital
MADE IN U.S.A.

Frame 1: Text data	Frame 2: Numerical data	Frame 3: Numerical data
Frame 4: Text data	Frame 5: Numerical data	Frame 6: Numerical data
Frame 7: Text data	Frame 8: Numerical data	Frame 9: Numerical data
Frame 10: Text data	Frame 11: Numerical data	Frame 12: Bar chart
Frame 13: Text data	Frame 14: Numerical data	Frame 15: Line graph
Frame 16: Text data	Frame 17: Numerical data	Frame 18: Numerical data
Frame 19: Text data	Frame 20: Numerical data	Frame 21: Numerical data
Frame 22: Text data	Frame 23: Numerical data	Frame 24: Numerical data

.REM *

IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DBKTF-C-D
PRODUCT NAME: MEMORY MANAGEMENT ABORT TESTS
DATE: MAY, 1976
MAINTAINER: DIAGNOSTIC GROUP
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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/ACCESS 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.

*
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; 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 PSM=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
000100

BIT14=40000
BIT13=20000
BIT8=400
BIT6=100

;MEMORY MANAGEMENT REGISTER SR0 BIT ASSIGNMENTS
ENMM=1 ;ENABLE MEMORY MANAGEMENT

000001
000000
000002
000004
000006
000010
000012
000014
000016
000000
000140
000000
000400
020000
040000
100000

VS0=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
DWN=10 ;EXPAND DOWN
W=100 ;'W' BIT IN PDR

000010
000000
000010
000100

;MEMORY MANAGEMENT REGISTER ADDRESS ASSIGNMENTS
SR0=177572 ;ADDRESS OF MEMORY MGMT REGISTER SR0
SR1=177574 ;SR1
SR2=177576 ;SR2

177572
177574
177576

;ADDRESS OF USER 'I' PDR'S

177600
177602
177604
177606
177610
177612
177614
177616

UIPDR0=177600
UIPDR1=177602
UIPDR2=177604
UIPDR3=177606
UIPDR4=177610
UIPDR5=177612
UIPDR6=177614
UIPDR7=177616

177640
177642
177644
177646
177650
177652
177654
177656

UIPAR0=177640
UIPAR1=177642
UIPAR2=177644
UIPAR3=177646
UIPAR4=177650
UIPAR5=177652
UIPAR6=177654
UIPAR7=177656

172300
172302
172304
172306

KIPDR0=172300
KIPDR1=172302
KIPDR2=172304
KIPDR3=172306

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)
 NRO=0 ;NON-RESIDENT ABORT ALL REFS.
 RDO=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
 PUI5=17200
 PUI4=17300
 PUI3=17400
 PUI2=17000
 PUI1=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
 000400 000400
 000030 000030
 000030 000442

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

000046 000046
 007024 . =46
 SENDAD

000052 000052
 040000 . =52
 40000

000176 000176
 000000 . =176
 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
 000167 . =200
 JMP START ;GO START TEST

000400 000400
 042737 000001 177572 . =400
 042737 140000 177776 ;USER HLT (HALT) TRAP SERVICE ROUTINE
 SHLT: BIC #1, @#SR0 ;TURN MEM MGMT OFF
 BIC #140000, @#PSW ;RETURN TO KERNEL
 SUB #2, (KSP) ;POINT PC TO TRAPPING INST.
 TST @ (KSP) ;WAS IT A HLT (HALT)
 BEQ SHLTA
 ADD #2, (KSP) ;RESTORE PC TO TRAPPING INST.
 JMP @#ERRVEC+2 ;GO HALT AT 6
 SHLTA: JMP @#176 ;GO HALT AT ADDRESS 176

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

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

```

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

MMK:    MOV      #73006, @#KIPDR0 ; RW, UP 167 BLOCKS
        MOV      #6, @#KIPDR6    ; RW, UP 1 BLOCK
        MOV      #77406, @#KIPDR7 ; RW, UP 200 BLOCKS
        MOV      #73006, @#UIPDR0 ; RW, UP 167 BLOCKS
        MOV      #6, @#UIPDR2    ; RW, UP 1 BLOCK
        MOV      #6, @#UIPDR1    ; RW, UP 1 BLOCK
        MOV      #6, @#UIPDR4    ; RW, UP 1 BLOCK
        MOV      #6, @#UIPDR5    ; RW, UP 1 BLOCK

001320 012737 073006 172300
001326 012737 000006 172314
001334 012737 077406 172316
001342 012737 073006 177600
001350 012737 000006 177604
001356 012737 000006 177602
001364 012737 000006 177610
001372 012737 000006 177612

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

K01

```

;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      012737  001510  000250      CLR      MMVEC+2
001462      005067  176564                MOV      #K10,R3
001466      012703  016700                MOV      R3,R2
001472      010302                CLR      (R3)
001474      005013                INC      @#SR0              ;ENABLE MEMORY MGMT
001476      005237  177572                SCC
001502      000277                TOA:    MOV      (R3),R2      ;MEM MGMT LENGTH ABORT AT SRC00
001504      011302                T0B:    HLT
001506      000000                T0C:    CMP      #KPTR-4,KSP  ;CHECK STACK PTR
001510      022706  001074                BEQ     .+4
001514      001401                HLT
001516      000000                CMP     #17,2(KSP)        ;CHECK THAT CORRECT STATUS
001520      022766  000017  000002        BEQ     .+4                ;WAS SAVED ON THE STACK
001526      001401                HLT                ;ERROR! INCORRECT STATUS
001530      000000                CMP     #PLA+1,SR0        ;CHECK SR0 (ABORT CONDITIONS
001532      022767  040001  176032        BEQ     .+4                ;& FAILING PAGE #)
001540      001401                HLT                ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
001542      000000                CMP     #TOA,SR2          ;CHECK CONTENTS OF SR2
001544      022767  001504  176024        BEQ     .+4                ;(PC OF ABORTED INSTRUCTION)
001552      001401                HLT                ;ERROR! INCORRECT PC IN SR2
001554      000000                CMP     R2,R3              ;CHECK THAT INSTRUCTIONS AS ABORTED
001556      020203                BEQ     .+4
001560      001401                HLT
001562      000000                ;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
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
001660      104000                ;ERROR!
                                ;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, @#MMVEC      ;LOAD MEM MGMT ERROR VECTOR
001670 012705 016700              MOV     #K10, R5
001674 010504              MOV     R5, R4
001676 005237 177572              INC     @#SR0              ;ENABLE MEMORY MGMT
001702 000277              SCC                    ;PRESET CC'S
001704 153504              T2A:   BISB     @(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
001756 104000              SCOPE                    ;ERROR! RS DID NOT AUTO-INCREMENT
;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, @#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     @#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
002106 001401              BEQ     .+4                ;CHECK THAT AUTO- DECREMENT TOOK PLACE
    
```


MO1

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002110 000000          HLT          ;ERROR! R2 FAILED TO AUTO-DECREMENT
002112 022703 100000  CMP          #UI4,R3    ;CHECK THAT R3 WAS NOT CHANGED
002116 001401          BEQ          .+4
002120 000000          HLT
002122 104000          SCOPE        ;ERROR!
;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, @#M1VEC ;LOAD MEM MGMT ERROR VECTOR
002132 012767 170000 175636  MOV      #UM+PUM, PSH ;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 ;ENABLE MEMORY MGMT
002160 145405          T4A: BICB   @-(R4), R5 ;NON-RESIDENT ABORT AT SRC13
002162 000000          T4B: HLT ;ERROR! FAILED TO ABORT
002164 022706 001074          T4C: CMP      #KPTR-4, KSP ;CHECK STACK PTR
002170 001401          BEQ      .+4
002172 000000          HLT
002174 022767 140157 175370  CMP      #NRA+PLA+UPG+VS7+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
002202 001401          BEQ      .+4 ;& 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      .+4 ;(PC OF ABORTED INSTRUCTION)
002216 000000          HLT ;ERROR! INCORRECT PC IN SR2
;CHECK CONTENTS OF REFERENCED PAGE DESCRIPTOR REGISTER (UIPDR5)
002220 032767 000100 175364  BIT      #W, UIPDR5 ;CHECK CONTENTS OF REFERENCED PDR
002226 001401          BEQ      .+4
002230 000000          HLT ;ERROR!
002232 042767 000100 175352  BIC      #W, UIPDR5
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, @#M1VEC ;LOAD MEM MGMT ERROR VECTOR
002270 012702 177777          MOV      #-1, R2
002274 005237 177572          INC      @#SR0 ;ENABLE MEMORY MGMT
002300 016702 014374          T6A: MOV      KIO, R2 ;SEG LENGTH ABORT AT SRC08
002304 000000          T6B: HLT ;ERROR! FAILED TO ABORT
002306          T6C:
002306 022767 040001 175256  CMP      #PLA+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
002314 001401          BEQ      .+4 ;& 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      .+4 ;(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

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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      @#SRO         ;ENABLE MEMORY MGMT
002356 067404 016700      T7A:    ADD      @KIO(R4),R4 ;SEG LEN ABORT AT SRC13
002362 000000      T7B:    HLT
002364          T7C:
002364 022767 040001 175200      CMP      #PLA+1,SRO   ;CHECK SRO (ABORT CONDITIONS
002372 001401          BEQ      .+4         ;& FAILING PAGE #)
002374 000000          HLT
002376 022767 002356 175172      CMP      #T7A,SR2    ;CHECK CONTENTS OF SR2
002404 001401          BEQ      .+4         ;(PC OF ABORTED INSTRUCTION)
002406 000000          HLT
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      @#SRO         ;ENABLE MEMORY MGMT
002434 013703 016700      T10A:   MOV      @#KIO,R3 ;SEG LEN ABORT AT SRC15
002440 000000      T10B:   HLT
002442          T10C:
002442 022767 040001 175122      CMP      #PLA+1,SRO   ;CHECK SRO (ABORT CONDITIONS
002450 001401          BEQ      .+4         ;& FAILING PAGE #)
002452 000000          HLT
002454 022767 002434 175114      CMP      #T10A,SR2    ;CHECK CONTENTS OF SR2
002462 001401          BEQ      .+4         ;(PC OF ABORTED INSTRUCTION)
002464 000000          HLT
002466 005703          TST      R3
002470 001401          BEQ      .+4
002472 000000          HLT
002474 104000          SCOPE         ;ERROR!
;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      #T130,@#PUI2+100 ;LOAD 'NEW' PC
002524 005037 017102          CLR      @#PUI2+102
002530 005237 177572          INC      @#SRO         ;ENABLE MEMORY MGMT
002534 002277          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

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002544 022706 001074 T13C: CMP #KPTR-4,KSP ;CHECK STACK PTR
002546 001401 BEQ .+4
002548 000000 HLT
002554 022766 170017 000002 CMP #UM+PUM+17,2(KSP) ;CHECK THAT CORRECT STATUS
002556 001401 BEQ .+4 ;WAS SAVED ON THE STACK
002558 000000 HLT ;ERROR! INCORRECT STATUS
002560 022767 040145 174776 CMP #PLA+UPG+VS2+1,SRO ;CHECK SRO (ABORT CONDITIONS
002562 001401 BEQ .+4 ; & FAILING PAGE #)
002564 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002566 022767 002536 174770 CMP #T13A,SR2 ;CHECK CONTENTS OF SR2
002568 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
002570 000000 HLT ;ERROR! INCORRECT PC IN SR2
002572 106506 MFPD USP ;PUSH USER STACK PTR ONTO KERNEL STACK
002574 022716 040102 CMP #UI2+102,(KSP) ;CHECK THAT USER STACK PTR WAS POPPED
002576 001401 BEQ .+4
002578 000000 HLT ;ERROR!
002580 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
    
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;CHECK ABORT AT RTI.01
;ABORTS WHEN SECOND WORD ON STACK (STATUS) IS FETCHED
002626 012737 002672 000250 MOV #T14C,2#MVEC ;LOAD MEM MGMT ERROR VECTOR
002628 012767 170000 175134 MOV #UM+PUM,PSW ;USER MODE!!!,PREV USER MODE!!
002630 012706 100076 MOV #UI4+76,USP
002632 012737 002670 017376 MOV #T14D,2#PUI4+76 ;LOAD USER STACK (PHYS ADRS.)
002634 005037 017400 CLR 2#PUI4+100 ;AND 'NEW' STATUS
002636 005237 177572 INC 2#SRO ;ENABLE MEMORY MGMT
002638 000076 T14A: RTT ;SEG LEN ABORT AFTER FIRST POP RTI.01
002640 000000 T14B: HLT ;ERROR! FAILED TO ABORT
002642 000000 T14D: HLT ;ERROR!
002644 000000 T14C:
    
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002672 022767 040151 174672 CMP #PLA+UPG+VS4+1,SRO ;CHECK SRO (ABORT CONDITIONS
002674 001401 BEQ .+4 ; & FAILING PAGE #)
002676 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
002678 022767 002664 174664 CMP #T14A,SR2 ;CHECK CONTENTS OF SR2
002680 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
002682 000000 HLT ;ERROR! INCORRECT PC IN SR2
002684 106506 MFPD USP ;PUSH USER STACK PTR ONTO KERNEL STACK
002686 022716 100102 CMP #UI4+102,(KSP) ;CHECK THAT USER STACK PTR POPPED TWICE
002688 001401 BEQ .+4
002690 000000 HLT
002692 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
    
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;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!!
002734 012706 020100 MOV #UI1+30,USP
002736 012737 002770 000250 MOV #T16C,2#MVEC ;LOAD MEM MGMT ERROR VECTOR
002738 012705 002766 MOV #T16D,RS
002740 005237 177572 INC 2#SRO ;ENABLE MEMORY MGMT
002742 000005 T16A: RTS ;ABORTS AT RTS.02 (STACK IS NON-RES)
002744 000000 T16B: HLT ;ERROR! RTS& ABORT FAILED
002746 000000 T16D: HLT ;ERROR! ABORT FAILED
002748 022706 001074 T16C: CMP #KPTR-4,KSP ;CHECK STACK PTR
002750 001401 BEQ .+4
002752 000000 HLT
002754 022767 040143 174564 CMP #PLA+UPG+VS1+1,SRO ;CHECK SRO (ABORT CONDITIONS
    
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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 #UI1+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,@#MVEC ; LOAD MEM MGMT ERROR VECTOR
003056 012702 177777 MOV # -1,R2 ; PRESET DEST REG
003062 012737 016702 016676 MOV #16702,@#KIO-2 ; 16702,000000 IS A MOV .+4,R2
003070 005037 016700 CLR @#KIO ; INSTRUCTION
003074 005037 016702 CLR @#KIO+2
003100 005237 177572 INC @#SR0 ; ENABLE MEMORY MGMT
003104 000277 SCC ; PRESET CC'S
003106 000137 016676 JMP @#KIO-2 ; GO TO MOV INST.
RETURN=
; ***** NOTE PC CHANGE *****
016676 016676 .#KIO-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
003112 022706 001074 T20C: CMP #KPTR-4,KSP ; CHECK STACK PTR
003116 001401 BEQ .+4
003120 000000 HLT
003122 022766 000017 000002 CMP #17,2(KSP) ; CHECK THAT CORRECT STATUS
003130 001401 BEQ .+4 ; WAS SAVED ON THE STACK
003132 000000 HLT ; ERROR! INCORRECT STATUS
003134 022767 040001 174430 CMP #PLA+IS+VSO+1,SR0 ; CHECK SR0 (ABORT CONDITIONS)
003142 001401 BEQ .+4 ; & FAILING PAGE #)
003144 000000 HLT ; ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003146 022767 016676 174422 CMP #T20A,SR2 ; CHECK CONTENTS OF SR2
003154 001401 BEQ .+4 ; (PC OF ABORTED INSTRUCTION)
003156 000000 HLT ; ERROR! INCORRECT PC IN SR2
003160 005202 INC R2
003162 001401 BEQ .+4
003164 000000 HLT
003166 104000 SCOPE ; SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

; CHECK ABORT AT SRC10
; ABORTS WHEN SOURCE INDEX IS FETCHED
; SOURCE MODE = 7
003170 012737 003232 000250 MOV #T21C,@#MVEC ; LOAD MEM MGMT ERROR VECTOR
003176 012737 177777 MOV # -1,@#PKI6
003204 012702 140000 MOV #K16,R2 ; LOAD INDEX REGISTER
003210 012737 017202 016676 MOV #017202,@#KIO-2 ; 017202,000000 IS A MOV @0(R2),R2
003216 005037 016700 CLR @#KIO ; INSTRUCTION

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003222 005237 177572      INC      @#SRO      ;ENABLE MEMORY MGMT
003226 000137 016676      JMP      @#K10-2
                                RETURN=.
;***** NOTE PC CHANGE *****
                                .=#K10-2
016676 017202 000000      T21A:   MOV      @0(R2),R2      ;SEG LEN ABORT AT SRC10
016702 000000      T21B:   HLT                      ;ERROR! FAILED TO ABORT
                                .=#RETURN
;***** RETURN PC *****

003232 022767 040001 174332      T21C:   CMP      @PLA+IS+VSO+1,SRO      ;CHECK SRC0 (ABORT CONDITIONS
003232 001401      BEQ     .+4                      ;& FAILING PAGE #)
003240 000000      HLT                      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
003242 000000      CMP      @T21A,SR2      ;CHECK CONTENTS OF SR2
003244 001401      BEQ     .+4                      ;(PC OF ABORTED INSTRUCTION)
003252 000000      HLT                      ;ERROR! INCORRECT PC IN SR2
003254 000000      CMP      @K16,R2      ;CHECK THAT R2 IS UNCHANGED
003256 022702 140000      BEQ     .+4
003262 001401      HLT
003264 000000      SCOPE
003266 104000      ;ERROR!
                                ;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,@#K10-2      ;077302=SOB R3,.-2
003302 005037 016674      CLR     @#K10-4      ;CLEAR INST. PRECEDING SOB (.-2)
003306 005037 016700      CLR     @#K10
003312 012737 003332 000250      MOV      @T22C,@#MVEC      ;LOAD MEM MGMT ERROR VECTOR
003320 005237 177572      INC     @#SRO      ;ENABLE MEMORY MGMT
003324 000277      SCC
003326 000137 016676      JMP     @#K10-2      ;GO TO SOB INST.

                                RETURN=.
                                .=#K10-4
016674 000000      T22:   HLT
016676 077302      T22A:  SOB      R3,.-2      ;ERROR! SOB BRANCHED & FAILED TO ABORT
016700 000000      T22AA: HLT      ;ABORTS WHEN NEXT INST. IS FETCHED
016702 000000      T22B:  0
                                .=#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+VSO+1,SRO      ;CHECK SRC0 (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 DECREMENTD
003402 001401      BEQ     .+4
003404 000700      HLT      ;ERROR! R3 WAS NOT DECREMENTED BY SOB

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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      #KM+PUM,PSW
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 001401  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 022767 040001 173740  T30C:  CMP      #PLA+1,SR0 ;CHECK SR0 (ABORT CONDITIONS
003632 001401  BEQ     .+4 ;& FAILING PAGE #)
003634 000000  HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT

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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      @#SR0        ;DISABLE MEMORY MGMT
003654 022703 016701      CMP      #K10+1,R3   ;CHECK AUTO-INC TWICE
003660 001401                    BEQ      .+4
003662 000000                    HLT                               ;ERROR!
003664 005237 016700      INC      @#K10
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
003706 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      @#SR0        ;ENABLE MEMORY MGMT
003742 114332      T31A:  MOVB    -(R3),@#(R2)+ ;NON-RESIDENT ABORT AT DST04
003744 000000      T31B:  HLT                               ;ERROR! FAILED TO ABORT

003746 003746 022767 140157 173616      T31C:  CMP      #NRA+PLA+UPG+VS7+1,SR0 ;CHECK SR0 (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      @#SR0        ;ENABLE MEMORY MGMT
004054 006632      T32A:  NTPI    @#(R2)+ ;NON-RESIDENT ABORT AT MOV03
004056 000000      T32B:  HLT                               ;ERROR! FAILED TO ABORT
004060 004060 022767 100147 173504      T32C:  CMP      #NRA+UPG+VS3+1,SR0 ;CHECK SR0 (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)
  
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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, @#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          @#SR0       ;ENABLE MEMORY MGMT
004160 106636          T33A: MTPD         @ (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, @#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          @#SR0       ;ENABLE MEMORY MGMT
004250 00277          SCC
004252 112754 177777          T35A: MOVB        #-1, @-(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!

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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 MOV #T36C, @MMVEC ;LOAD MEM MGMT ERROR VECTOR
 004336 012704 140002 MOV #KI6+2, R4
 004342 012703 016702 MOV #KI0+2, R3
 004346 012713 177777 MOV #-1, (R3)
 004352 005237 177572 INC @SR0 ;ENABLE MEMORY MGMT
 004356 154443 T36A: BISS -(R4), -(R3) ;SEG LENGTH ABORT AT DST15
 004360 000000 T36B: HLT ;ERROR! FAILED TO ABORT

004362 022767 040001 173202 T36C: CMP #PLA+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
 004370 001401 BEQ .+4 ;& FAILING PAGE #)
 004372 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
 004374 022767 004356 173174 CMP #T36A, SR2 ;CHECK CONTENTS OF SR2
 004402 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
 004404 000000 HLT ;ERROR! INCORRECT PC IN SR2
 004406 022703 016701 CMP #KI0+1, R3 ;CHECK AUTO-DEC
 004412 001401 BEQ .+4
 004414 000000 HLT ;ERROR!
 004416 022704 140001 CMP #KI6+1, R4 ;CHECK AUTO-DEC
 004422 001401 BEQ .+4
 004424 000000 HLT ;ERROR! AUTO-DEC FAILED
 004426 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT MOV08
 ;WHEN INSTRUCTION FETCHES DESTINATION INDEX VALUE
 MOV #T40C, @MMVEC ;LOAD MEM MGMT ERROR VECTOR
 MOV #NUM+PUM, PSW
 MOV #113767, @PUI2+74 ;113767, 020001, 177776
 MOV #20001, @PUI2+76 ;IS A MOV8 @20001, .+4
 MOV #177776, @PUI2+100 ;INSTRUCTION
 INC @SR0 ;ENABLE MEMORY MGMT
 JMP @PUI2+74

004430 012737 004476 000250 RETURN=.
 004436 012767 170000 173332 .=@PUI2+74
 004444 012737 113767 017074 T40A: MOV8 @20001, .+4 ;SEG LENGTH ABORT WHEN INST. FETCHES
 004452 012737 020001 017076 ;DEST INDEX WORD AT MOV08
 004460 012737 177776 017100 T40B: HLT ;ERROR! FAILED TO ABORT
 004466 005237 177572
 004472 000137 040074 .=@PUI2+74
 004476
 017074 113767 020001 177776
 017102 000000
 004476

004476 022767 040145 173066 T40C: CMP #PLA+UPG+VS2+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
 004504 001401 BEQ .+4 ;& FAILING PAGE #)
 004506 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
 004510 022767 040074 173060 CMP #PUI2+74, SR2 ;CHECK CONTENTS OF SR2
 004516 001401 BEQ .+4 ;(PC OF ABORTED INSTRUCTION)
 004520 000000 HLT ;ERROR! INCORRECT PC IN SR2
 004522 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT MOV17
 ;WHEN INSTRUCTION FETCHES DESTINATION OPERAND

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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      @#SRO              ;ENABLE MEMORY MGMT
004566 000137 120000                JMP      @#UIS
                                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, SRO    ;CHECK SRO (ABORT CONDITIONS
004572 001401                BEQ      .+4                ;& FAILING PAGE #)
004600 000000                HLT                    ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
004602 000000                HLT                    ;CHECK CONTENTS OF SR2
004604 022767 120000 172764      CMP      #UIS, SR2          ;CHECK CONTENTS OF SR2
004612 001401                BEQ      .+4                ;(PC OF ABORTED INSTRUCTION)
004614 000000                HLT                    ;ERROR! INCORRECT PC IN SR2
004616 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
004635 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      @#SRO              ;ENABLE MEMORY MGMT
004652 10553                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, SRO    ;CHECK SRO (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
004726 001401                BEQ      .+4
004730 000000                HLT                    ;ERROR! DID NOT AUTO-DEC
004732 104000                SCOPE                    ;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

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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
                                =RETURN
                                ;ERROR! JMP FAILED
005000 000000      T43C:   HLT
                                ;ERROR! FAILED TO ABORT
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

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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          RETURN=.
          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 170300 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          JSR     5,@TEMP ;NON-RES ABORT AT JSR01
005340 000000          T50A: HLT     ;JSR FAILED & DID NOT ABORT
005342 000000          T50B: 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
  
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;CHECK ABORT AT TRP11


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

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;CHECK ABORT AT TRP14
;ABORTS WHEN RETURN PC IS PUSHED ONTO USER STACK
005560 012737 005626 000250 MOV #T53C, @#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 @#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
005634 000000 HLT ;INCORRECT STACK PTR
005636 022716 005622 CMP #T53B, (KSP) ;CHECK RETURN PC
005642 001401 BEQ .+4
005644 000000 HLT
005646 022766 170000 000002 CMP #UM+PUM, 2(KSP) ;CHECK THAT CORRECT STATUS
005654 001401 BEQ .+4 ;WAS SAVED ON THE STACK
005656 000000 HLT ;ERROR! INCORRECT STATUS
005660 022767 040143 171704 CMP #PLA+UPG+VS1+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
005666 001401 BEQ .+4 ;& FAILING PAGE #)
005670 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
005672 022767 005620 171676 CMP #T53A, SR2 ;CHECK CONTENTS OF SR2

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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,@#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      @#PUI2+100
005774 005237 177572      INC      @#SRO      ;ENABLE MEMORY MGMT
006000 000002      T56B:    RTI
006002 006002      RETURN=.
017100 017100      T56A:    .=#PUI2+100
006002 022706 001074      T56C:    CMP      #KPTR-4,KSP ;CHECK STACK PTR
006006 001401      BEQ      .+4
006010 000000      HLT
006012 022767 040145 171552      CMP      #PLA+UPG+VS2+1,SRO ;CHECK SRO (ABORT CONDITIONS
006020 001401      BEQ      .+4      ;& FAILING PAGE #)
006022 000000      HLT      ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006024 022767 006000 171544      CMP      #T56B,SR2 ;CHECK CONTENTS OF SR2
006032 001401      BEQ      .+4      ;(PC OF ABORTED INSTRUCTION)
006034 000000      HLT      ;ERROR! INCORRECT PC IN SR2
006036 104000      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,@#MMVEC ;LOAD MEM MGMT ERROR VECTOR
006054 012737 000005 017076      MOV      #5,@#PUI2+76 ;5 IS A RESET INSTRUCTION
006062 005037 017100      CLR      @#PUI2+100
006066 005005      CLR      R5
006070 005237 177572      INC      @#SRO      ;ENABLE MEMORY MGMT
006074 000137 040076      JMP      @#UI2+76 ;GO EXECUTE RESET
006100 006100      RETURN=.
017076 017076      T60A:    .=#PUI2+76
006100 000005      RESET
017100 000000      HLT      ;ABORTS WHEN NEXT INST. FETCHED
006100 006100      .=#RETURN ;ERROR! FAILED TO ABORT

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
006134 012737 006164 000250
006142 012746
006144 006401
006146 012705 040100
006152 005037 017100
006156 005237 177572
006162 000116
006164
017100 000000
006164 022706 001074
006170 001401
006172 000000
006174 022767 040145 171370
006202 001401
006204 000000
006206 022767 000576 171362
006214 001401
006216 000000
006220 106506
006222 022716 000604
006226 001401
006230 000000
006232 023705 000602
006236 001401
006240 000000
006242 104000
SCOPE

MOV #UM+PUM,PSW
MOV #T63C,#MMVEC
MOV (PC)+,-(USP)
MARK 1
MOV #UI2+100,R5
CLR @#T63A
INC @#SRO
JMP (USP)
RETURN=.
.=PUI2+100
T63A: HLT
.=RETURN
T63C: CMP #KPTR-4,KSP
BEQ .+4
HLT
CMP #PLA+UPG+VS2+1,SRO
BEQ .+4
HLT
CMP #UPTR-2,SR2
BEQ .+4
HLT
MFPD USP
CMP #UPTR+4,(KSP)
BEQ .+4
HLT
CMP @#UPTR+2,R5
BEQ .+4
HLT
SCOPE
;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
;SEG ABORT WHEN THIS INST. FETCHED AT
;CHECK STACK PTR
;CHECK SRO (ABORT CONDITIONS
;& FAILING PAGE #)
;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
;CHECK CONTENTS OF SR2
;(PC OF ABORTED INSTRUCTION)
;ERROR! INCORRECT PC IN SR2
;PUSH USER STACK PTR ONTO KERNEL STACK
;CHECK USER STACK PTR
;ERROR! INCORRECT USER STACK PTR
;CHECK CONTENTS OF R5
;ERROR!
;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS
    
```

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;CHECK ABORT AT TST.10
;ABORTS WHEN INST FOLLOWING TST IS FETCHED
006244 012737 006300 000250
006252 012702 177777
006256 012737 105722 016676
006264 005037 016700
006270 005237 177572
006274 000137 016676
006300
016676 105722
016700 000000
006300 022767 040001 171264
006306 001401
006310 000000
006312 022767 016676 171256
006320 001401
006322 000000
006324 005702

MOV #T64C,#MMVEC
MOV #-1,R2
MOV #105722,@#KIO-2
CLR @#KIO
INC @#SRO
JMP @#KIO-2
RETURN=.
.=KIO-2
T64A: TSTB (R2)+
T64B: HLT
.=RETURN
T64C: CMP #PLA+VS0+1,SRO
BEQ .+4
HLT
CMP #T64A,SR2
BEQ .+4
HLT
TST R2
;LOAD MEM MGMT ERROR VECTOR
;R2=STATUS WORD ADDRESS (ODD BYTE)
;105722=TSTB (R2)+
;ENABLE MEMORY MGMT
;GO EXECUTE INSTRUCTION
;ABORTS WHEN NEXT INST. IS FETCHED
;ERROR! FAILED TO ABORT
;CHECK SRO (ABORT CONDITIONS
;& FAILING PAGE #)
;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
;CHECK CONTENTS OF SR2
;(PC OF ABORTED INSTRUCTION)
;ERROR! INCORRECT PC IN SR2
;CHECK AUTO-INC
    
```

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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 000.90
;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 006372 RETURN=.
016676 114203 T66A: MOVB -(R2), R3 ;ABORTS WHEN THE NEXT INST IS FETCHED
016700 006372 T66B: HLT ;ERROR! FAILED TO ABORT HERE
006372 006372 .=RETURN
006372 022767 040001 171172 T66C: CMP #PLA+VS0+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
006372 001401 BEQ .+4 ; & FAILING PAGE #)
006400 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006402 000000 HLT
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 ;CLEAR CORRESPONDING PHYSICAL ADDRESS
006450 005237 177572 INC @#SR0 ;ENABLE MEMORY MGMT
006454 000261 SEC ;SET 'C'
006456 005537 140000 T72A: ADC @#K16 ;ABORTS WHEN DATA IS FETCHED USING DATIP

006462 022767 020015 171102 T72C: CMP #AVA+VS6+1, SR0 ;CHECK SR0 (ABORT CONDITIONS
006462 001401 BEQ .+4 ; & FAILING PAGE #)
006470 000000 HLT ;ERROR! INCORRECT ABORT CONDITIONS OR PAGE IDENT
006472 000000 HLT
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

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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 @#SRO ;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,SRO ;CHECK SRO (ABORT CONDITIONS
006570 001401 .+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 .+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 .+4 ;WAS SAVED ON THE STACK
006616 000000 HLT ;ERROR! INCORRECT STATUS
006620 005037 177572 CLR @#SRO ;DISABLE MEMORY MGMT
006624 005737 016700 TST @#PKI6
006630 001401 BEQ .+4
006632 000000 HLT ;ERROR! ADDRESS WAS WRITTEN
006634 012737 000006 172314 MOV #6,@#KIPDR6 ;SET KOPDR R/W
006642 104000 SCOPE ;SCOPE STORES PC IN R1 & SETS ALL STACK PTRS

;CHECK ABORT AT SVC.80 USING 'T' BIT TRAP
;CHECK ABORT WHEN PSM IS NON-RESIDENT
006644 012737 006700 000250 MOV #T102C,@#MMVEC ;LOAD MEM MGMT ERROR VECTOR
DC-652 005002 CLR R2 ;PRESET DESTINATION
DC-654 005237 177572 INC @#SRO ;ENABLE MEMORY MGMT
006660 012746 140017 MOV #UM+17,-(KSP) ;'NEW' STATUS ON STACK
DC-664 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,SRO ;CHECK SRO (ABORT CONDITIONS
006706 001401 .+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 .+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 .+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 ;ERROR! DEST (R2) WAS CHANGED
006744 104000 SCOPE

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

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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	T130	=	002542	T4C	=	002164	T72A	=	006456
DONE1	=	007034	PUI3	=	017400	T14A	=	002664	T40A	=	017074	T72C	=	006462
ED	=	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	T430	=	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	T22C	=	016702	T50B	=	005340	UI2	=	040000
KIPDR1	=	172302	SROT	=	001202	T22C	=	003332	T50C	=	005344	UI3	=	060000
KIPDR2	=	172304	SR1	=	177574	T24A	=	003434	T500	=	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	T520	=	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	T530	=	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
LINK	=	001320	TRAPVE	=	000034	T31B	=	003744	T6A	=	002300	VS4	=	000010
MIVVEC	=	000250	TO	=	001454	T31C	=	003746	T6B	=	002304	VS5	=	000012
MNO	=	001232	TOA	=	001504	T32A	=	004054	T6C	=	002306	VS6	=	000014
N	=	000010	TOB	=	001506	T32B	=	004056	T60A	=	017076	VS7	=	000016
NRA	=	100000	TOC	=	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												

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DBK TFC.P11 SYMBOL TABLE

DEFAULT GLOBALS GENERATED: 0

*DBK TFC,DBK TFC/SOL=DBK TFC
RUN-TIME: 59.8 SECONDS
RUN-TIME RATIO: 49/15=3.2
CORE USED: 6K (11 PAGES)

