Table of contents

Table of contents

```
                                        .TITLE  TSDEFS -- Table definitions
                                        .ENABL  LC
                                        .ENABL  AMA
000000                                  .CSECT  TSDEFS
                                        .GLOBL  TSDEFS
000000                          TSDEFS:
                                ;
                                ;  TSDEFS is the module of TSX-Plus that contains the template definitions
                                ;  for various tables and flags used by TSX-Plus.
                                ;
                                ;  Copyright (c) 1980,1981,1982,1983,1984,1985,1986,1987,1988.
                                ;  S&H Computer Systems, Inc.  Nashville, Tn
                                ;
                                ;--------------------------------------------------------------------------
                                ;  Macro definitions
                                ;
                                ;  Macro to define the start of a template.
                                ;
                                        .MACRO  RZ
                                $AC     =       0
                                        .ENDM   RZ
                                ;
                                ;  Macro to define a symbol and reserve the specified number of words.
                                ;
                                        .MACRO  RW      NAME,SIZE
                                        .DSABL  CRF
                                        .GLOBL  NAME
                                        .IF     NE,<$AC&1>
                                $AC     =       $AC+1
                                        .ENDC
                                        .ENABL  CRF
                                        .LIST
                                                                NAME=$AC
                                        .NLIST
                                        .DSABL  CRF
                                $AC     =       $AC+<2*<SIZE>>
                                        .ENABL  CRF
                                        .ENDM   RW
                                ;
                                ;  Macro to define a symbol and reserve the specified number of bytes.
                                ;
                                        .MACRO  RB      NAME,SIZE
                                        .DSABL  CRF
                                        .GLOBL  NAME
                                        .ENABL  CRF
                                        .LIST
                                                                NAME=$AC
                                        .NLIST
                                        .DSABL  CRF
                                $AC     =       $AC+<SIZE>
                                        .ENABL  CRF
                                        .ENDM   RB
                                ;
                                ;  Macro to define a symbol equated to a constant value.
                                ;
                                        .MACRO  M       NAME,VALUE
                                        .DSABL  CRF
```

```
     58                                          .GLOBL  NAME
     59                                          .ENABL  CRF
     60                                  NAME    =       VALUE
     61                                          .ENDM   M
```

```
                                            .SBTTL  Status flags in LSW tables
                                    ;------------------------------------------------------------------------
                                    ;   Status flags in LSW table.
                                    ;
 000000                             M       $DILUP  100000  ;Line is logged on
 000000                             M       $KINIT  40000   ;KMON initialization completed
 000000                             M       $INCOR  20000   ;Job is in memory now
 000000                             M       $NDMEM  10000   ;Job waiting for memory expansion
 000000                             M       $DOOFF  4000    ;In the process of logging off
 000000                             M       $INIT   2000    ;Line has been initialized
 000000                             M       $DISCN  1000    ;Line disconnect has occured
 000000                             M       $SUSPN  40      ;Job has been suspended by another job
 000000                             M       $VNOTT  20      ;Virtual line not connected to a terminal
 000000                             M       $DETCH  10      ;Job is detached
 000000                             M       $1ESC   4       ;One Escape received
 000000                             M       $FPUEX  2       ;FPU expection interrupt occurred for job
 000000                             M       $CTRLC  1       ;Ctrl-C received.  Abort task.
 000000                             M       $SPLJB  $VNOTT!$DETCH ;Low-priority job
```

```
                                        ;-----------------------------------------------------------------------
                                        ;  Status flags in LSW2 table.
                                        ;
   000000                               M       $SCOPE  100000  ;CRT type terminal
   000000                               M       $ECHO   40000   ;Echoplex mode
   000000                               M       $TAPE   20000   ;Terminal is in "paper-tape" mode (x-on/x-off control)
   000000                               M       $8BIT   10000   ;8-bit character support
   000000                               M       $START  4000    ;Auto start line during initialization
   000000                               M       $ALTER  2000    ;Allow .GTLIN to receive ! and activate on ^C
   000000                               M       $TAB    1000    ;Do not simulate tabs for terminal
   000000                               M       $FORM   400     ;Do not simulate form feeds for terminal
   000000                               M       $AUTO   200     ;Autobaud speed
   000000                               M       $PAGE   100     ;Enable ctrl-S/ctrl-Q processing
   000000                               M       $LC     40      ;Allow lower case character input
   000000                               M       $NOVLN  20      ;Disable virtual line switching
   000000                               M       $DEFER  10      ;Deferred type character echoing
   000000                               M       $QTSET  4       ;Set TT quiet
   000000                               M       $SYSPS  2       ;Require system password before logon
   000000                               M       $PHONE  1       ;Dial-up phone line
                                        ;
                                        ;  Combinations of LSW2 flags based on terminal types.
                                        ;
                                        ;  Flags for LA36.
   000000                               M       LA36FL  0
   000000                               M       LA36NO  $SCOPE!$TAB!$FORM
                                        ;  Flags for LA120.
   000000                               M       LA12FL  $PAGE!$TAB!$FORM
   000000                               M       LA12NO  $SCOPE
                                        ;  Flags for VT52.
   000000                               M       VT52FL  $SCOPE!$TAB!$PAGE
   000000                               M       VT52NO  $FORM!$8BIT
                                        ;  Flags for VT100
   000000                               M       VT10FL  $SCOPE!$TAB!$PAGE
   000000                               M       VT10NO  $FORM!$8BIT
                                        ;  Flags for VT200
   000000                               M       VT20FL  $SCOPE!$TAB!$PAGE!$8BIT
   000000                               M       VT20NO  $FORM
                                        ;  Flags for Diablo.
   000000                               M       DIABFL  $FORM!$PAGE
   000000                               M       DIABNO  $SCOPE!$TAB
                                        ;  Flags for Qume.
   000000                               M       QUMEFL  $FORM!$PAGE
   000000                               M       QUMENO  $SCOPE!$TAB
                                        ;  Flags for ADM3A.
   000000                               M       ADM3FL  $SCOPE
   000000                               M       ADM3NO  $TAB!$FORM
                                        ;  Flags for Hazeltine terminals
   000000                               M       HAZLFL  $SCOPE
   000000                               M       HAZLNO  $TAB!$FORM
```

```
                                   ;-----------------------------------------------------------------------
                                   ;  Status flags in LSW3 table.
                                   ;
 000000                            M       $NOIN   100000  ;Ignore input from line
 000000                            M       $CARUP  40000   ;Carrier is detected for dial-up line
 000000                            M       $HARD   20000   ;Line is a real (hardware connected) line
 000000                            M       $DEAD   10000   ;Device is not installed
 000000                            M       $TRNSP  4000    ;Output is in transparent mode
 000000                            M       $XCHAR  2000    ;Character transmission is in progress
 000000                            M       $CTRLO  1000    ;Ctrl-O received.  Discard TT output.
 000000                            M       $RBOUT  400     ;Rubout sequence in progress
 000000                            M       $NOOUT  200     ;Temporarily suppress TT output
 000000                            M       $1STCH  100     ;Some input characters have been received since CR
 000000                            M       $CTRLW  40      ;Ctrl-W pending
 000000                            M       $CTRLS  20      ;Ctrl-S TT output suspension in effect
 000000                            M       $DODFR  10      ;We are now deferring char echoing
 000000                            M       $GCECO  4       ;GETCHR must echo characters
 000000                            M       $GCESC  2       ;GETCHR: next char part of VT50 esc sequence
 000000                            M       $TRCHR  1       ;Send next char in transparency mode
                                   ;
 000000                            M       KL3CLR  $TRNSP!$CTRLO!$TRCHR
```

```
                        ;-----------------------------------------------------------------------
                        ;  Status flags in LSW4 table.
                        ;
  000000                M       $RFRSH  100000  ;Currently doing window refresh
  000000                M       $CFCCL  40000   ;Command file is expanded CCL command
  000000                M       $QUIET  20000   ;Don't list command file
  000000                M       $INKMN  10000   ;KMON is running
  000000                M       $UCTLC  4000    ;Ctrl-C is user defined activation character
  000000                M       $SETCC  2000    ;Need to tell user about 2 ctrl-C's
  000000                M       $ODTMD  1000    ;ODT character activation mode
  000000                M       $CFOPN  400     ;Command file channel is open
  000000                M       $CFALL  200     ;Get all TT characters from command file
  000000                M       $GTLIN  100     ;.GTLIN is being executed
  000000                M       $CFDCC  40      ;Ctrl-C deferred till terminating .GTLIN
  000000                M       $FORMO  20      ;Do form-feed on TT write of block 0
  000000                M       $TTERR  10      ;Error occured on TT input
  000000                M       $CFSOT  4       ;Suppress program output
  000000                M       $HITTY  2       ;High efficienty TT mode
  000000                M       $FLAGC  1       ;User has been told no TT chars available
                        ;
  000000                M       KL4CLR  $UCTLC!$SETCC!$ODTMD!$GTLIN!$HITTY!$TTERR
  000000                M       CFLFL4  $QUIET!$CFALL!$CFSOT ;Command file flags that are pushed & popped
```

```
                                ;-------------------------------------------------------------------------
                                ;  Status flags in LSW5 table.
                                ;
  000000                        M       $CCLRN  100000  ;CCL Translator is running
  000000                        M       $TECO   40000   ;TECO is the default editor
  000000                        M       $WILD   20000   ;Use implicit wildcards
  000000                        M       $PRGLK  10000   ;Program is locked to line
  000000                        M       $SCCA   4000    ;Suppress Control-C abort
  000000                        M       $1CTLC  2000    ;One Ctrl-C char received
  000000                        M       $CLTST  1000    ;Display CCL generated commands
  000000                        M       $OITIM  400     ;Output character interrupt timer
  000000                        M       $IITIM  200     ;Input character interrupt timer
  000000                        M       $VTESC  100     ;Activate on VT50 esc-letter sequence
  000000                        M       $CHACT  40      ;Enable single-character activation
  000000                        M       $NOWTT  20      ;Allow non-wait TT input (.TTINR)
  000000                        M       $KED    10      ;KED or K52 is default system editor
  000000                        M       $INDDF  4       ;Execute IND by default for @ files
  000000                        M       $INDRN  2       ;IND program is currently executing
  000000                        M       $CARMN  1       ;Monitor carrier and log off if carrier lost
                                ;
                                ;  LSW5 flags that are inherited by subprocesses:
                                ;
  000000                        M       ISPF5   $TECO!$WILD!$KED!$INDDF
```

```
                          ;------------------------------------------------------------------------
                          ;  Status flags in LSW6 table.
                          ;
  000000                  M      $SNWTT  100000  ;SET TT NOWAIT done
  000000                  M      $1STLG  40000   ;First Logon on line has occured
  000000                  M      $IOMAP  20000   ;Map user par7 to I/O page
  000000                  M      $XSTOP  10000   ;We have sent X-off to stop transmission to us
  000000                  M      $MLOCK  4000    ;Job is currently locked in memory
  000000                  M      $NLOCK  2000    ;Job is waiting to be locked in low memory
  000000                  M      $CFABT  1000    ;Abort all open command files (double ctrl-c typed)
  000000                  M      $DBGMD  400     ;Debugger is in control of terminal
  000000                  M      $NOLF   200     ;Suppress auto echo of lf following cr
  000000                  M      $CFKIL  100     ;Abort IND and any nested command files
  000000                  M      $EMTTR  40      ;Trace EMT calls (SET EMT TRACE)
  000000                  M      $INDDW  20      ;IND data segment has been written to INDTMP file
  000000                  M      $DUPRN  10      ;DUP is running
  000000                  M      $WDISP  4       ;Need to redisplay current window for job
  000000                  M      $DIBOL  2       ;DIBOL is default compiler rather than DBL
  000000                  M      $STSNG  1       ;SET TT SINGLE (default to single char activation)
                          ;
                          ;  LSW6 flags that are inherited by subprocesses
                          ;
  000000                  M      ISPF6   $SNWTT!$DIBOL!$STSNG
```

```
                                     ;------------------------------------------------------------------------
                                     ;  Status flags in LSW7
                                     ;
  000000                             M       $INDAB  1       ;Abort IND command files if errors occur
  000000                             M       $TTGAG  2       ;SET TT QUIET done (suppress SEND messages)
  000000                             M       $MAPOK  4       ;Memory mapping info in context block is valid
  000000                             M       $SOTFN  10      ;Set job scheduling for output buffer low or empty
  000000                             M       $UKMRN  20      ;User command processor is running
  000000                             M       $UCLRN  40      ;TSXUCL program is running
  000000                             M       $UCLCF  100     ;SET UCL FIRST
  000000                             M       $UCLCM  200     ;SET UCL MIDDLE
  000000                             M       $UCLCL  400     ;SET UCL LAST
  000000                             M       $SLON   1000    ;Enable Single Line Editor is enabled for this line
  000000                             M       $SLTTY  2000    ;Enable SL to operate on .TTYIN input
  000000                             M       $SLLET  4000    ;Enable LET option for SL
  000000                             M       $SLKED  10000   ;Enable KED option for SL
  000000                             M       $SLINI  20000   ;SL has been initialized for current edit line
  000000                             M       $UKMON  40000   ;User command processor enabled
  000000                             M       $NOINT  100000  ;Do not schedule this job as interactive
                                     ;
                                     ;  LSW7 flags that are inherited by subprocesses
                                     ;
  000000                             M       ISPF7   $SLON!$SLKED!$SLTTY!$SLLET!$INDAB!$TTGAG!$UCLCF!$UCLCM!$UCLCL
  000000                             M       ISPF7   ISPF7!$UKMON
```

```
                                  ;-----------------------------------------------------------------------------
                                  ;  Status flags in LSW8
                                  ;
 000000                           M       $SGQ0   1       ;Signal terminal if QUAN0 exceeded
 000000                           M       $SGQ1   2       ;Signal terminal if QUAN1 exceeded
 000000                           M       $SGQ1A  4       ;Signal terminal if QUAN1A exceeded
 000000                           M       $SGQ1B  10      ;Signal terminal if QUAN1B exceeded
 000000                           M       $SGQ1C  20      ;Signal terminal if QUAN1C exceeded
 000000                           M       $SGQ2   40      ;Signal terminal if QUAN2 exceeded
 000000                           M       $SGQ3   100     ;Signal terminal if QUAN3 exceeded
 000000                           M       $SGIIO  1000    ;Signal terminal if INTIOC exceeded
 000000                           M       $SGHIO  2000    ;Signal terminal if HIPRCT exceeded
                                  ;
                                  ;  All signal flags cleared by SET SIGNAL OFF
                                  ;
 000000                           M       $SGALL  $SGQ0!$SGQ1!$SGQ1A!$SGQ1B!$SGQ1C!$SGQ2!$SGQ3!$SGIIO!$SGHIO
```

```
                 ;-------------------------------------------------------------------------------
                 ;  Status flags in LSW9
                 ;
000000           M       $SUCF   1       ;Processing a startup command file
000000           M       $LOFCF  2       ;Processing a logoff command file
000000           M       $VIRJB  4       ;Virtual job -- Don't map UPAR7 to RMON
000000           M       $DEBUG  10      ;Program is being run with the debugger
000000           M       $DBGBK  20      ;Force a debugger breakpoint (user typed ctrl-D)
000000           M       $DBKMN  40      ;Use debugger on TSKMON
000000           M       $CTRLD  100     ;Allow ctrl-D to enter debugger
000000           M       $RNIOP  200     ;Map PAR7 to I/O page for program being run
000000           M       $NABRS  400     ;Need to reset speed for autobaud detection
000000           M       $NTGCC  1000    ;Deferred control-C for non-terminating .GTLIN
000000           M       $RTCS   2000    ;Receiving terminal control sequence
000000           M       $NOUCR  4000    ;Do not execute any user-mode completion routines
000000           M       $NOABT  10000   ;Do not allow job aborts
000000           M       $RNMLK  20000   ;Lock program being started in low memory
000000           M       $SETRN  40000   ;SETUP program is running
000000           M       $VBELL  100000  ;Bell has been rung to signal virtual wait condition
                 ;
                 ;  LSW9 flags that are inherited by subprocesses
                 ;
000000           M       ISPF9   $CTRLD
```

```
      1                               ;-------------------------------------------------------------------------
      2                               ;  Status flags in LSW10
      3                               ;
      4 000000                        M       $SXOFF  2       ;Tell transmitter interrupt rtn to send an XOFF
      5 000000                        M       $SXON   4       ;Tell transmitter interrupt rtn to send an XON
      6 000000                        M       $HISTP  10      ;XOFF has been transmitted due to input silo full
      7 000000                        M       $NDICP  20      ;Need to do input character processing for this line
      8 000000                        M       $DNICP  40      ;Did input char processing during this clock cycle
      9 000000                        M       $ICPFK  100     ;An input character processing fork is active
     10 000000                        M       $RBRK   200     ;Received break (framing error)
     11 000000                        M       $DHXOF  400     ;Force XOFF transmission to DH11 line
     12 000000                        M       $DHXON  1000    ;Force XON transmission to DH11 line
     13 000000                        M       $DHBF1  2000    ;DH11 DMA buffer 1 is ready for transmission
     14 000000                        M       $DHBF2  4000    ;DH11 DMA buffer 2 is currently being transmitted
     15 000000                        M       $DHCDO  10000   ;DH line needs clock driven output processing
```

```
                                ;-----------------------------------------------------------------------
                                ;  Status flags in LSW11
                                ;
 000000                         M       $PWKEY  1       ;Enable keyboard control character to print windows
 000000                         M       $NOWIN  2       ;Suppress process windowing
 000000                         M       $V52EM  4       ;VT52 emulation mode (flag set in primary line entry)
 000000                         M       $TDEAD  10      ;Flag line as dead after buffer allocation
 000000                         M       $GEMAR  20      ;Getting EMT argument block, return 0 if mem trap
 000000                         M       $RCLRV  40      ;Recall SL commands in reverse order (oldest 1st)
 000000                         M       $UDSPC  100     ;User has enabled I and D space separation
 000000                         M       $RDSAV  100000  ;In process of reading SAV file to start program
                                ;
                                ;  LSW11 flags that are inherited by subprocesses
                                ;
 000000                         M       ISPF11  $PWKEY!$RCLRV
```

```
                                          .SBTTL  Privilege Flags
                                  ;-----------------------------------------------------------------------------
                                  ;  The following flags grant privileges to jobs.
                                  ;  Note, if any privileges are changed, the following items must also
                                  ;  be changed:
                                  ;
                                  ;   1. The table of privilege keywords in TSKMN3.
                                  ;   2. The TSAUTH program.
                                  ;   3. The LOGON program.
                                  ;
                                  ;  Flags in the first privilege word.
                                  ;
 000000                           M       P0$NEW  100000  ;New privilege control has been set for job
 000000                           M       P0$ALC  40000   ;ALLOCATE - Allocate devices
 000000                           M       P0$DBG  20000   ;DEBUG - Enable use of debugging facilities
 000000                           M       P0$DET  10000   ;DETACH - Allow use of detached jobs
 000000                           M       P0$SPF  4000    ;SPFUN - Allow use of .SPFUN to dir-structured dev
 000000                           M       P0$MEM  2000    ;MEMMAP - Access any area of physical memory
 000000                           M       P0$BYP  1000    ;BYPASS - Bypass all file access restrictions
 000000                           M       P0$OPR  400     ;OPER - Provide operator privileges
 000000                           M       P0$LOK  200     ;PSWAPM - Allow job to be locked in memory
 000000                           M       P0$RT   100     ;REALTIME - Allow use of real-time facilities
 000000                           M       P0$SND  40      ;SEND - Allow use of SEND command and EMT
 000000                           M       P0$NAM  20      ;SETNAME - Allow job to change name and password
 000000                           M       P0$SPV  10      ;SETPRV - Allow job to change any privilege
 000000                           M       P0$NFR  4       ;NFSREAD - Non-file-structured open for read access
 000000                           M       P0$NFW  2       ;NFSWRITE - Non-file-structured open for write access
 000000                           M       P0$SYS  1       ;SYSPRV - Allow system manager privilege
                                  ;
                                  ;  Privilege flags in second privilege control word
                                  ;
 000000                           M       P2$TRM  100000  ;TERMINAL - Allow terminal control
 000000                           M       P2$WRL  40000   ;WORLD - Provide access to any other job
 000000                           M       P2$GRP  20000   ;GROUP - Access other jobs with same project number
 000000                           M       P2$SAM  10000   ;SAME - Access other jobs with same PPN
 000000                           M       P2$VIR  4000    ;VIRTUAL - Allow use of virtual jobs
 000000                           M       P2$MSG  2000    ;MESSAGE - Use message communication facility
 000000                           M       P2$RLK  1000    ;RLOCK - Allow use of record-locking facility
 000000                           M       P2$CGR  400     ;SYSGBL - Allow job to use global regions
 000000                           M       P2$CXT  200     ;GETCXT - Copy file context from another job
 000000                           M       P2$UP4  10      ;User privilege 4
 000000                           M       P2$UP3  4       ;User privilege 3
 000000                           M       P2$UP2  2       ;User privilege 2
 000000                           M       P2$UP1  1       ;User privilege 1
                                  ;
                                  ;  Number of words to hold privilege flags
                                  ;
 000000                           M       PVNPW   2       ;Number of words for privilege flags
                                  ;
                                  ;  Standard privileges for users without operator privilege
                                  ;
 000000                           M       P0$$NP  P0$NEW!P0$ALC!P0$DBG!P0$DET!P0$SPF!P0$SND!P0$NAM!P0$NFR!P0$NFW
 000000                           M       P2$$NP  P2$SAM!P2$VIR!P2$MSG!P2$RLK
```

```
      1                                           .SBTTL  Job Execution States
      2                                   ;-----------------------------------------------------------------------
      3                                   ;  A logged on job will always be in one of the following states.
      4                                   ;  The state of a job is stored in the LSTATE table.
      5                                   ;  The lower the state number, the higher the priority.
      6                                   ;
      7 000000                            RZ
      8 000000                            RB      S$DUMY  1       ;Dummy entry to make first entry value = 1
                000000                                                                  S$DUMY=$AC
      9                                   ;
     10                                   ;  Real-time high-priority state
     11                                   ;
     12 000000                            RB      S$RT    1       ;Real time priority (PRIHI - 99)
                000001                                                                  S$RT=$AC
     13 000000                            RB      S$$RT   1       ;End of Real-time priority states
                000002                                                                  S$$RT=$AC
     14                                   ;
     15                                   ;  High-priority states
     16                                   ;
     17 000000                            RB      S$TTSC  1       ;TT input done and doing single character activation
                000003                                                                  S$TTSC=$AC
     18 000000                            RB      S$TTFN  1       ;TT input done (activation character received)
                000004                                                                  S$TTFN=$AC
     19 000000                            RB      S$OTFN  1       ;TT output buffer empty
                000005                                                                  S$OTFN=$AC
     20 000000                            RB      S$HICP  1       ;Interactive job computation
                000006                                                                  S$HICP=$AC
     21 000000                            RB      S$TWFN  1       ;Timed wait completion (.TWAIT or .MRKT)
                000007                                                                  S$TWFN=$AC
     22 000000                            RB      S$OTLO  1       ;Output buffer low
                000010                                                                  S$OTLO=$AC
     23 000000                            RB      S$IOFN  1       ;I/O Completed
                000011                                                                  S$IOFN=$AC
     24 000000                            RB      S$$HIP  1       ;End of high-priority states
                000012                                                                  S$$HIP=$AC
     25                                   ;
     26                                   ;  Compute-bound states
     27                                   ;
     28 000000                            RB      S$CPU   1       ;CPU-bound job
                000013                                                                  S$CPU=$AC
     29 000000                            RB      S$LOW   1       ;Low priority computation (priority 0 - PRILOW)
                000014                                                                  S$LOW=$AC
     30 000000                            RB      S$$RUN  1       ;Lowest priority of jobs that want to run
                000015                                                                  S$$RUN=$AC
     31                                   ;
     32                                   ;  Wait states
     33                                   ;
     34 000000                            RB      S$NEDQ  1       ;Waiting for I/O queue element
                000016                                                                  S$NEDQ=$AC
     35 000000                            RB      S$QMIO  1       ;Waiting to do a mapped I/O operation
                000017                                                                  S$QMIO=$AC
     36 000000                            RB      S$QCCB  1       ;Waiting for data cache control block
                000020                                                                  S$QCCB=$AC
     37 000000                            RB      S$QCXB  1       ;Waiting for access to job context block buffer
                000021                                                                  S$QCXB=$AC
     38 000000                            RB      S$QUSR  1       ;Waiting for access to USR data base
                000022                                                                  S$QUSR=$AC
     39 000000                      RB      S$IOWT  1       ;Waiting for I/O to finish
               000023                                                          S$IOWT=$AC
     40 000000                      RB      S$OTWT  1       ;Waiting for TT output buffer space
               000024                                                          S$OTWT=$AC
     41 000000                      RB      S$SFWT  1       ;Waiting for locked block in shared file
               000025                                                          S$SFWT=$AC
     42 000000                      RB      S$WSMB  1       ;Waiting for free system message buffer
               000026                                                          S$WSMB=$AC
     43 000000                      RB      S$SPDB  1       ;Waiting for spool file disk space
               000027                                                          S$SPDB=$AC
     44 000000                      RB      S$INWT  1       ;Waiting for input from TT
               000030                                                          S$INWT=$AC
     45 000000                      RB      S$QSPD  1       ;Waiting for access to special device data base
               000031                                                          S$QSPD=$AC
     46 000000                      RB      S$SPCB  1       ;Waiting for spool file control block
               000032                                                          S$SPCB=$AC
     47 000000                      RB      S$MSWT  1       ;Waiting for inter-job message
               000033                                                          S$MSWT=$AC
     48 000000                      RB      S$SPND  1       ;.SPND done -- Waiting for .RSUM to restart job
               000034                                                          S$SPND=$AC
     49 000000                      RB      S$TMWT  1       ;Waiting for timed interval to pass
               000035                                                          S$TMWT=$AC
     50 000000                      RB      S$WFM   1       ;Waiting for memory expansion
               000036                                                          S$WFM=$AC
```

```
      1                                          .SBTTL  System message buffers
      2                                  ;-----------------------------------------------------------------------------
      3                                  ;   Format of a system message buffer block.
      4                                  ;
      5 000000                           RZ
      6 000000                           RW      SB$LNK  1       ;Link to next message block
                000000                                                                         SB$LNK=$AC
      7 000000                           RW      SB$PNT  1       ;Pointer to next character in buffer
                000002                                                                         SB$PNT=$AC
      8 000000                           RW      SB$TXT  44.     ;Storage area for message text
                000004                                                                         SB$TXT=$AC
      9 000000                           RW      SB$END  0       ;End of text storage area
                000134                                                                         SB$END=$AC
     10 000000                           RW      SB$$SZ  0       ;Size of system message block
                000134                                                                         SB$$SZ=$AC
      1                                              .SBTTL  Configuration and system generation words
      2                                      ;-------------------------------------------------------------------------------
      3                                      ;  System configuration word (300)
      4                                      ;
      5 000000                               M       CW$FB   1       ;FB monitor
      6 000000                               M       CW$GDH  4       ;Graphics display hardware (VT-11 or VS-60)
      7 000000                               M       CW$BTH  10      ;Batch is in control
      8 000000                               M       CW$SLE  20      ;Single-line editor active
      9 000000                               M       CW$50H  40      ;50-Hz clock
     10 000000                               M       CW$FPU  100     ;Floating point unit installed
     11 000000                               M       CW$FGJ  200     ;Foreground job active
     12 000000                               M       CW$LGS  400     ;Linked with graphics scroller
     13 000000                               M       CW$USR  1000    ;USR permanently resident
     14 000000                               M       CW$LSI  4000    ;CPU is LSI-11
     15 000000                               M       CW$XM   10000   ;XM Monitor
     16 000000                               M       CW$CSR  20000   ;System cllock has a status register
     17 000000                               M       CW$KWP  40000   ;KW11P clock exists
     18 000000                               M       CW$LPC  100000  ;System has a clock
     19                                      ;
     20                                      ;  Extended configuration word (370)
     21                                      ;
     22 000000                               M       CW$CSH  1       ;Cache memory present
     23 000000                               M       CW$PAR  2       ;Parity memory installed
     24 000000                               M       CW$RSR  4       ;Readable switch register
     25 000000                               M       CW$WCD  10      ;Writable console display
     26 000000                               M       CW$RLH  20      ;A handler has been released
     27 000000                               M       CW$ESP  40      ;Set exit noswap
     28 000000                               M       CW$QBS  100     ;Running on Q-bus system
     29 000000                               M       CW$CIS  200     ;Hardware has CIS instructions
     30 000000                               M       CW$EIS  400     ;Hardware has EIS instructions
     31 000000                               M       CW$V60  1000    ;VT60 display exists
     32 000000                               M       CW$PRO  20000   ;Running on PRO-xxx "personal" computer
     33 000000                               M       CW$70   40000   ;Processor is 11/70
     34 000000                               M       CW$60   100000  ;Processor is 11/60
     35                                      ;
     36                                      ;  System generation flag word (372)
     37                                      ;
     38 000000                               M       SG$ELG  1       ;Error logging is present
     39 000000                               M       SG$MMU  2       ;Memory management option is present
     40 000000                               M       SG$IOT  4       ;I/O timeout support is present
     41 000000                               M       SG$EMT  10      ;Running under RT-11 emulator
     42 000000                               M       SG$PAR  1000    ;Memory parity option is present
     43 000000                               M       SG$MTM  2000    ;SJ mark-time option present
     44 000000                               M       SG$MTS  20000   ;Multi-terminal option present
     45 000000                               M       SG$SYJ  40000   ;System job support present
     46 000000                               M       SG$TSX  100000  ;Running under TSX-Plus
     47                                      ;
     48                                      ;  Spooler control flags stored in SPSTAT (RMON offset 414)
     49                                      ;
     50 000000                               M       SS$RUN  200     ;Spooler is running
     51 000000                               M       SS$PRT  10000   ;Print screen from PI handler
     52                                      ;
     53                                      ;  IND control flags stored in INDSTA (RMON offset 417)
     54                                      ;
     55 000000                               M       IN$ACT  200     ;IND is active and should be recalled on command exit
     56 000000                               M       IN$CNT  100     ;IND is being reentered by KMON to continue processing
     57 000000                               M       IN$CMD  40      ;IND is passing a command to KMON for execution
```

```
                                    ;
                                    ;  Command file control word flags CFSTS (RMON offset 366)
                                    ;
   000000                           M       CFACFL  110400  ;Input is coming from a command file
                                    ;
                                    ;  RT-11 TT option word (word preceding word pointed to by location 30)
                                    ;
   000000                           M       TO$TAB  1       ;Hardware tab supported by terminal
   000000                           M       TO$FF   4       ;Hardware form-feed supported by terminal
   000000                           M       TO$LC   40000   ;Allow lower-case character input
   000000                           M       TO$SCP  100000  ;Do scope type processing of rub-out characters
                                    ;
                                    ;  RT-11 command file option flags in CFSTS (RMON offset 366)
                                    ;
   000000                           M       CF$IND  4       ;Command files are to be processed by IND
   000000                           M       CF$QUT  2000    ;Set TT quiet has been done
                                    ;
                                    ;  RT-11 offset from start of RMON to EMT dispatch table (RMON offset 316)
                                    ;
                                    ;  This word is now reserved for use by DBL.  It must be zeroed at
                                    ;  job initialization and not used by the operating system.
                                    ;
```

```
                                        .SBTTL  Overlay system region offsets
                                ;------------------------------------------------------------------------------
                                ;  Format of the overlay table $OVTAB.
                                ;
000000                          RZ
000000                          RW      O.ADR   1       ;Overlay virtual address
        000000                                                                    O.ADR=$AC
000000                          RW      O.PAR   0       ;Overlay par5 value (initialized when loaded)
        000002                                                                    O.PAR=$AC
000000                          RW      O.BLK   1       ;Overlay starting disk block number
        000002                                                                    O.BLK=$AC
000000                          RW      O.SIZ   1       ;Overlay size in number of words
        000004                                                                    O.SIZ=$AC

                                        .SBTTL  Virtual overlay handler offsets
                                ;------------------------------------------------------------------------------
                                ;  The following offsets are relative to a jobs overlay table.
                                ;  The address of the overlay table is stored in location 64 of the SAV file.
                                ;
000000                          M       VO$WDE  -16     ;Pointer past end of PLAS Window Definition Blocks
000000                          M       VO$WDB  -14     ;Pointer to first PLAS Window Definition Block
000000                          M       VO$RDB  -12     ;Pointer to Region Definition Block
000000                          M       VO$HIR  -4      ;Address beyond end of root segment
000000                          M       VO$HIO  -2      ;Address beyond end of /O overlays
```

```
                                        .SBTTL  I/O System Tables
                                ;----------------------------------------------------------------------
                                ;  Format of an I/O Channel.
                                ;
000000                          RZ
000000                          RW      C.CSW   1       ;Channel Status Word (CSW)
        000000                                                                  C.CSW=$AC
000000                          RW      C.SBLK  1       ;Starting block number of file
        000002                                                                  C.SBLK=$AC
000000                          RW      C.LENG  1       ;Number of blocks allocated for file
        000004                                                                  C.LENG=$AC
000000                          RW      C.USED  1       ;Highest block number written to file
        000006                                                                  C.USED=$AC
000000                          RB      C.NUMQ  1       ;Number of I/O requests pending for channel
        000010                                                                  C.NUMQ=$AC
000000                          RB      C.DEVQ  1       ;Device unit number
        000011                                                                  C.DEVQ=$AC
000000                          RW      CHNSIZ  0       ;Size of I/O channel block
        000012                                                                  CHNSIZ=$AC
                                ;
                                ;  Flags in the Channel Status Word (C.CSW).
                                ;
000000                          M       CS$OPN  100000  ;Channel is open
000000                          M       CS$RON  40000   ;Read-only access
000000                          M       CS$EOF  20000   ;End of file hit
000000                          M       CS$SEG  17400   ;Directory segment number containing entry for file
000000                          M       CS$ENT  200     ;Channel was opened with a .ENTER
000000                          M       CS$SPL  100     ;Channel is opened to spooled device
000000                          M       CS$NMX  76      ;Device table index
000000                          M       CS$ERR  1       ;Hard error occured
```

```
      1                                             .SBTTL  I/O queue entry
      2                                     ;-----------------------------------------------------------------------
      3                                     ;  Format of an I/O queue entry.
      4                                     ;
      5 000000                              RZ
      6 000000                              RW      Q.LINK  1       ;Flink to next Queue entry
                  000000                                                                      Q.LINK=$AC
      7 000000                              RW      Q.CSW   1       ;Address of CSW for channel making request
                  000002                                                                      Q.CSW=$AC
      8 000000                              RW      Q.BLKN  1       ;Physical block number of request
                  000004                                                                      Q.BLKN=$AC
      9 000000                              RB      Q.FUNC  1       ;Special function code
                  000006                                                                      Q.FUNC=$AC
     10 000000                              RB      Q.UNIT  1       ;Device unit number
                  000007                                                                      Q.UNIT=$AC
     11 000000                              M       Q.JNUM  Q.UNIT  ;Job number issuing request
     12 000000                              RW      Q.BUFF  1       ;User buffer address relative to Q.PAR
                  000010                                                                      Q.BUFF=$AC
     13 000000                              RW      Q.WCNT  1       ;Word count (+=>Read, 0=>Seek, -=>Write)
                  000012                                                                      Q.WCNT=$AC
     14 000000                              RW      Q.COMP  1       ;Address of completion routine for request
                  000014                                                                      Q.COMP=$AC
     15 000000                              RW      Q.PAR   1       ;PAR relocation bias for buffer address
                  000016                                                                      Q.PAR=$AC
     16 000000                              RW      Q.PA5   1       ;Mapping value for kernel PAR 5
                  000020                                                                      Q.PA5=$AC
     17 000000                              RW      Q.UMRX  1       ;Address of unibus map register block assigned for I/O
                  000022                                                                      Q.UMRX=$AC
     18 000000                              RW      Q.CHAN  1       ;User channel # associated with I/O request
                  000024                                                                      Q.CHAN=$AC
     19 000000                              RB      Q.DEVX  1       ;Device index number
                  000026                                                                      Q.DEVX=$AC
     20 000000                              RB      Q.FLAG  1       ;QF$xxx control flags (see below)
                  000027                                                                      Q.FLAG=$AC
     21 000000                              RB      Q.JOB   1       ;Number of job that is making request
                  000030                                                                      Q.JOB=$AC
     22 000000                              RB      Q.UMVB  1       ;Unibus base register number
                  000031                                                                      Q.UMVB=$AC
     23 000000                              RW      Q.UMPB  1       ;Original value of Q.BUFF when I/O was initiated
                  000032                                                                      Q.UMPB=$AC
     24 000000                              RW      Q.UMPP  1       ;Original value of Q.PAR when I/O was initiated
                  000034                                                                      Q.UMPP=$AC
     25 000000                              RW      Q.PA6   1       ;Mapping for job's context block
                  000036                                                                      Q.PA6=$AC
     26 000000                              RW      Q.UCSW  1       ;Address of user's channel block
                  000040                                                                      Q.UCSW=$AC
     27 000000                              RW      Q.ICSW  5       ;Internal channel block passed with Q elem to handlrs
                  000042                                                                      Q.ICSW=$AC
     28 000000                              RW      IOQSIZ  0       ;Size of I/O queue entry
                  000054                                                                      IOQSIZ=$AC
```

```
                                        .SBTTL  Completion queue entry
                                ;-----------------------------------------------------------------------
                                ;  Format of a completion queue element.
                                ;  Note: A completion queue entry is allocated the same number of words
                                ;        as an I/O queue entry and the fields in a completion queue entry
                                ;        are mapped over the fields in an I/O queue entry.
                                ;
 000000                         M       CQ$LNK  Q.LINK  ;Link to next queue entry
 000000                         M       CQ$HOT  Q.CSW   ;High-order time for timer queue elements
 000000                         M       CQ$LOT  Q.BLKN  ;Low-order time for timer queue elements
 000000                         M       CQ$JOB  Q.FUNC  ;Job number (byte)
 000000                         M       CQ$RNS  Q.UNIT  ;Execution state for completion routine (byte)
 000000                         M       CQ$R0   Q.BUFF  ;Value to pass in R0 when compl routine called
 000000                         M       CQ$R1   Q.WCNT  ;Value to pass in R1 when compl routine called
 000000                         M       CQ$RTN  Q.COMP  ;Address of completion routine
 000000                         M       CQ$PA5  Q.PA5   ;Value for kernel PAR 5 mapping for compl routine
 000000                         M       CQ$FLG  Q.FLAG  ;QF$xxx control flags (byte) (see below)
 000000                         M       CQ$PRI  Q.DEVX  ;Execution priority for completion routine (byte)
 000000                         M       CQ$CP   Q.UMRX  ;Completion routine class priority (see CP$xxx below)

                                ;------------------------------------------------------------------------
                                ;  Control flags stored in the Q.FLAG cell of I/O queue elements and the
                                ;  CQ$FLG cell of completion routine queue elements.
                                ;
 000000                         M       QF$SCR  1       ;Completion routine is for system - run in kernel mode
 000000                         M       QF$MIO  2       ;Secondary I/O operation for mapped I/O
 000000                         M       QF$CIO  4       ;Secondary I/O operation for data caching operation
 000000                         M       QF$OWC  10      ;(For mapped I/O) Use original word count
 000000                         M       QF$IOT  20      ;Completion routine for handler .TIMIO request
 000000                         M       QF$SYN  40      ;Completion routine for .SYNCH
```

```
      1                                         .SBTTL  I/O timer requests
      2                                 ;------------------------------------------------------------------------
      3                                 ;   Format of a queue element used to store a device handler i/o
      4                                 ;   timeout request.
      5                                 ;
      6 000000                          RZ
      7 000000                          RW      IT$HOT  1       ;High-order time value
                000000                                                                  IT$HOT=$AC
      8 000000                          RW      IT$LOT  1       ;Low-order time value
                000002                                                                  IT$LOT=$AC
      9 000000                          RW      IT$LNK  1       ;Link to next timer queue element
                000004                                                                  IT$LNK=$AC
     10 000000                          RW      IT$JOB  1       ;Number of job to synch with
                000006                                                                  IT$JOB=$AC
     11 000000                          RW      IT$SEQ  1       ;Request sequence number
                000010                                                                  IT$SEQ=$AC
     12 000000                          RW      IT$SYS  1       ;Not used
                000012                                                                  IT$SYS=$AC
     13 000000                          RW      IT$RTN  1       ;Address of completion routine
                000014                                                                  IT$RTN=$AC
```

```
                                          .SBTTL  Swapper Command Packets
                                  ;-------------------------------------------------------------------------
                                  ;  The following packets are used to pass special function commands
                                  ;  to the job swapper.
                                  ;
  000000                          RZ
  000000                          RW      SP$LNK  1       ;Link to next packet on list
         000000                                                                       SP$LNK=$AC
  000000                          RB      SP$CMD  1       ;Command value (see SA$xxx below)
         000002                                                                       SP$CMD=$AC
  000000                          RB      SP$JOB  1       ;Number of associated job
         000003                                                                       SP$JOB=$AC
  000000                          RW      SP$DW1  1       ;Data word 1
         000004                                                                       SP$DW1=$AC
  000000                          RW      SP$$SZ  0       ;Size of a command packet
         000006                                                                       SP$$SZ=$AC
                                  ;
                                  ;  Command values that can be passed to the swapper (must be even values)
                                  ;
  000000                          M       SA$LOK  0       ;Lock a job in low memory
  000000                          M       SA$RGN  2       ;Allocate memory for a shared global PLAS region
```

```
     1                                          .SBTTL  Job initiation information blocks
     2                                  ;-----------------------------------------------------------------------
     3                                  ;   The following template is applied to an I/O queue element used to
     4                                  ;   pass information to the job initiator.
     5                                  ;
     6 000000                           M       SF2LEN  16.     ;Number of bytes to reserve for 2ndary command file
     7                                  ;
     8 000000                           RZ
     9 000000                           RB      IB$SF2  SF2LEN  ;Name of secondary start-up command file
               000000                                                                   IB$SF2=$AC
    10 000000                           RB      IB$IJ   1       ;Index number of initiating job
               000020                                                                   IB$IJ=$AC
    11                                  ;
    12 000000                           RW      IB$$SZ  0       ;End of initiation information block
               000022                                                                   IB$$SZ=$AC
```

```
                                      .SBTTL  Job monitoring control block
                               ;-----------------------------------------------------------------------
                               ;   The following control blocks are used to implement the facility
                               ;   that allows one TSX-Plus job to monitor the status of another job.
                               ;
 000000                        RZ
 000000                        RW      JM$LNK  1       ;Link to next control block
           000000                                                        JM$LNK=$AC
 000000                        RW      JM$RTN  1       ;Address of completion routine
           000002                                                        JM$RTN=$AC
 000000                        RB      JM$JOB  1       ;Job index # of monitoring job
           000004                                                        JM$JOB=$AC
 000000                        RW      JM$$SZ  0       ;Size of control block
           000006                                                        JM$$SZ=$AC
                               ;
                               ;   Status code values generated by the system to indicate job state changes
                               ;
 000000                        M       JS$ON   1       ;Job initialization
 000000                        M       JS$LOG  2       ;Job logged on with LOGON program
 000000                        M       JS$RUN  3       ;Began execution of a program
 000000                        M       JS$KMN  4       ;Program exited to TSKMON
 000000                        M       JS$OFF  5       ;Job logged off
```

```
                                  .SBTTL  Process window control block
                                ;------------------------------------------------------------------------
                                ;  Format of a process window control block.
                                ;
 000000                         M       TCSBSZ  12.     ;Max number of chars in a terminal control sequence
                                ;
 000000                         RZ
 000000                         RB      DW$JOB  1       ;Job number of owner job
         000000                                                             DW$JOB=$AC
 000000                         RB      DW$ID   1       ;Window id number
         000001                                                             DW$ID=$AC
 000000                         RW      DW$LIN  1       ;Current line number
         000002                                                             DW$LIN=$AC
 000000                         RW      DW$COL  1       ;Current column number
         000004                                                             DW$COL=$AC
 000000                         RW      DW$LPP  1       ;Number of lines per page
         000006                                                             DW$LPP=$AC
 000000                         RW      DW$CPL  1       ;Number of columns per line
         000010                                                             DW$CPL=$AC
 000000                         RW      DW$TLN  1       ;Number of line at base of buffer
         000012                                                             DW$TLN=$AC
 000000                         RW      DW$SRT  1       ;Top line of scrolling region
         000014                                                             DW$SRT=$AC
 000000                         RW      DW$SRB  1       ;Bottom line of scrolling region
         000016                                                             DW$SRB=$AC
 000000                         RW      DW$AW   1       ;Control flags (see AW$xxx flags below)
         000020                                                             DW$AW=$AC
 000000                         RW      DW$CSP  1       ;Pointer to next char position in DW$CCB
         000022                                                             DW$CSP=$AC
 000000                         RW      DW$CSR  1       ;Address of processing routine for next char
         000024                                                             DW$CSR=$AC
 000000                         RW      DW$LPT  1       ;Pointer to 1st char of current line
         000026                                                             DW$LPT=$AC
 000000                         RW      DW$RID  1       ;Address of region control block
         000030                                                             DW$RID=$AC
 000000                         RW      DW$MAP  1       ;Value to map PAR to region
         000032                                                             DW$MAP=$AC
 000000                         RB      DW$SLN  1       ;Saved line number
         000034                                                             DW$SLN=$AC
 000000                         RB      DW$SCL  1       ;Saved column number
         000035                                                             DW$SCL=$AC
 000000                         RB      DW$SCA  1       ;Saved character attributes
         000036                                                             DW$SCA=$AC
 000000                         RB      DW$MSL  1       ;Max # lines that may scroll while detached from term
         000037                                                             DW$MSL=$AC
 000000                         RB      DW$NSL  1       ;Number of lines which have scrolled since detached
         000040                                                             DW$NSL=$AC
 000000                         RB      DW$CCA  1       ;Current character attribute flags
         000041                                                             DW$CCA=$AC
 000000                         RB      DW$G0M  1       ;Current designation for G0 characters *keep together*
         000042                                                             DW$G0M=$AC
 000000                         RB      DW$G1M  1       ;Current designation for G1 characters *keep together*
         000043                                                             DW$G1M=$AC
 000000                         RB      DW$G2M  1       ;Current designation for G2 characters *keep together*
         000044                                                             DW$G2M=$AC
 000000                         RB      DW$G3M  1       ;Current designation for G3 characters *keep together*
         000045                                                             DW$G3M=$AC
```

```
     33 000000                      RB      DW$GLM  1       ;Current mapping for GL
                000046                                                             DW$GLM=$AC
     34 000000                      RB      DW$GRM  1       ;Current mapping for GR
                000047                                                             DW$GRM=$AC
     35 000000                      RB      DW$GLS  1       ;Mapping for next GL char if doing single shifting
                000050                                                             DW$GLS=$AC
     36 000000                      RB      DW$CSB  TCSBSZ  ;Control sequence buffer
                000051                                                             DW$CSB=$AC
     37                             ;
     38 000000                      RW      DW$$SZ  0       ;Size of control block
                000066                                                             DW$$SZ=$AC
```

```
                        ;
                        ;  Line attribute flags stored starting at WV$AL at front of window region
                        ;
  000000                M       AL$DHB  1       ;Bottom portion of a double-high line
  000000                M       AL$DHT  2       ;Top portion of a double-high line
  000000                M       AL$DWD  4       ;Double wide line
                        ;
                        ;  Character attribute flags
                        ;
  000000                M       AC$SET  3       ;Character set for this character
  000000                M       AC$BLD  20      ;Bold
  000000                M       AC$BLK  40      ;Blinking
  000000                M       AC$REV  100     ;Reverse video
  000000                M       AC$ULN  200     ;Underlined
                        ;
                        ;  Attributes for the entire window
                        ;
  000000                M       AW$52   1       ;VT52 terminal mode
  000000                M       AW$200  2       ;VT200 terminal mode
  000000                M       AW$132  4       ;132 column mode
  000000                M       AW$INS  10      ;Insert mode
  000000                M       AW$ACK  20      ;Application mode for cursor keys
  000000                M       AW$REV  40      ;Reverse video (dark chars on light background)
  000000                M       AW$ORS  100     ;Origin relative to scroll region
  000000                M       AW$AKM  200     ;Application keypad mode
  000000                M       AW$VCR  400     ;Make cursor visible
  000000                M       AW$SS   1000    ;Single shift for next character
  000000                M       AW$S52  2000    ;Simulate VT52 mode (term is actually VT100/200)
  000000                M       AW$RPT  4000    ;Automatic keypad repeat is on
  000000                M       AW$PRT  10000   ;Printer port has been selected (suspend windowing)
  000000                M       AW$SPN  20000   ;Suspend window data processing
  000000                M       AW$DDC  40000   ;Don't pass characters through to terminal
  000000                M       AW$PRM  100000  ;Window is permanent
```

```
                                        .SBTTL  Printer attribute flags
                               ;-----------------------------------------------------------------------
                               ;  The following flags define printer attributes used to pass information
                               ;  from the SET PRINTWINDOW Kmon command to the WINPRT program.
                               ;
   000000                      M        PA$GRC  1        ;Can print graphics (line drawing) character set
   000000                      M        PA$UKC  2        ;Can print U.K. national character set
   000000                      M        PA$DSC  4        ;Can print Dec supplemental character set
   000000                      M        PA$BLD  10       ;Can print bold characters
   000000                      M        PA$ULN  20       ;Can underline characters
   000000                      M        PA$DWD  40       ;Can print double-wide characters
   000000                      M        PA$HQL  100      ;Can print in both draft and letter quality modes
   000000                      M        PA$LET  200      ;Select letter-quality mode
   000000                      M        PA$BEL  400      ;Ring bell when window data queued for printing
   000000                      M        PA$NWD  1000     ;Suppress printer width control (/NOWIDTH)
   000000                      M        PA$DTS  2000     ;Date/time stamp printed window
   000000                      M        PA$FLG  4000     ;Use flag pages (print to block 0)
```

```
      1                                             .SBTTL  Key definition blocks
      2                                     ;----------------------------------------------------------------------------
      3                                     ;  Information related to user-defined keys (i.e., DEFINE/KEY ...)
      4                                     ;
      5                                     ;  Maximum number of characters in key definition string (including null).
      6                                     ;
      7 000000                              M       KEYMXT  65.     ;Max # chars in key definition
      8                                     ;
      9                                     ;  Control block used to hold each key definition.
     10                                     ;
     11 000000                              RZ
     12 000000                              RB      KD$COD  1       ;Key code (KC$xxx)
                000000                                                                        KD$COD=$AC
     13 000000                              RB      KD$TYP  1       ;Key type (KT$xxx)
                000001                                                                        KD$TYP=$AC
     14 000000                              RB      KD$FLG  1       ;KF$xxx flags (see below)
                000002                                                                        KD$FLG=$AC
     15 000000                              RB      KD$TXT  KEYMXT  ;Key definition text string (asciz)
                000003                                                                        KD$TXT=$AC
     16 000000                              RW      KD$$SZ  0       ;Size of key definition block
                000104                                                                        KD$$SZ=$AC
     17                                     ;
     18                                     ;  Status flags stored in KD$FLG cell
     19                                     ;
     20 000000                              M       KF$ECO  1       ;Echo the key definition when it is used
     21 000000                              M       KF$TRM  2       ;Terminate input line with key definition
     22                                     ;
     23                                     ;  Key type codes
     24                                     ;
     25 000000                              M       KT$NRM  1       ;Normal function key
     26 000000                              M       KT$GLD  2       ;Gold key pressed with function key
     27 000000                              M       KT$LET  3       ;Key from keyboard
     28 000000                              M       KT$GLT  4       ;Gold letter key
     29                                     ;
     30                                     ;  Key codes
     31                                     ;
     32 000000                              M       KC$PF1  1       ;PF1
     33 000000                              M       KC$PF2  2       ;PF2
     34 000000                              M       KC$PF3  3       ;PF3
     35 000000                              M       KC$PF4  4       ;PF4
     36 000000                              M       KC$KP0  5       ;KP0
     37 000000                              M       KC$KP1  6       ;KP1
     38 000000                              M       KC$KP2  7       ;KP2
     39 000000                              M       KC$KP3  10      ;KP3
     40 000000                              M       KC$KP4  11      ;KP4
     41 000000                              M       KC$KP5  12      ;KP5
     42 000000                              M       KC$KP6  13      ;KP6
     43 000000                              M       KC$KP7  14      ;KP7
     44 000000                              M       KC$KP8  15      ;KP8
     45 000000                              M       KC$KP9  16      ;KP9
     46 000000                              M       KC$DOT  17      ;PERIOD
     47 000000                              M       KC$COM  20      ;COMMA
     48 000000                              M       KC$MIN  21      ;MINUS
     49 000000                              M       KC$ENT  22      ;ENTER
     50 000000                              M       KC$UP   23      ;UP ARROW
     51 000000                              M       KC$DWN  24      ;DOWN ARROW
     52 000000                              M       KC$LFT  25      ;LEFT ARROW
     53 000000                              M        KC$RIT  26      ;RIGHT ARROW
     54 000000                              M        KC$E1   27      ;E1 - Find
     55 000000                              M        KC$E2   30      ;E2 - Insert here
     56 000000                              M        KC$E3   31      ;E3 - Remove
     57 000000                              M        KC$E4   32      ;E4 - Select
     58 000000                              M        KC$E5   33      ;E5 - Prev screen
     59 000000                              M        KC$E6   34      ;E6 - Next screen
     60 000000                              M        KC$F6   35      ;F6
     61 000000                              M        KC$F7   36      ;F7
     62 000000                              M        KC$F8   37      ;F8
     63 000000                              M        KC$F9   40      ;F9
     64 000000                              M        KC$F10  41      ;F10
     65 000000                              M        KC$F11  42      ;F11
     66 000000                              M        KC$F12  43      ;F12
     67 000000                              M        KC$F13  44      ;F13
     68 000000                              M        KC$F14  45      ;F14
     69 000000                              M        KC$F15  46      ;F15 - Help
     70 000000                              M        KC$F16  47      ;F16 - Do
     71 000000                              M        KC$F17  50      ;F17
     72 000000                              M        KC$F18  51      ;F18
     73 000000                              M        KC$F19  52      ;F19
     74 000000                              M        KC$F20  53      ;F20
```

```
                                            .SBTTL  Synch request control block
                                    ;------------------------------------------------------------------
                                    ;  Format of a .synch request control block.
                                    ;
  000000                            RZ
  000000                            RW      SN$LNK  1       ;Link to next active synch control block for job
          000000                                                                    SN$LNK=$AC
  000000                            RW      SN$JOB  1       ;Number of job doing .synch request
          000002                                                                    SN$JOB=$AC
  000000                            RW      SN$XX1  1       ;(unused)
          000004                                                                    SN$XX1=$AC
  000000                            RW      SN$XX2  1       ;(unused)
          000006                                                                    SN$XX2=$AC
  000000                            RW      SN$ID   1       ;Synch ID code passed to synch routine in R0
          000010                                                                    SN$ID=$AC
  000000                            RW      SN$XX3  1       ;(unused)
          000012                                                                    SN$XX3=$AC
  000000                            RW      SN$RTN  1       ;Address of synch routine to be called
          000014                                                                    SN$RTN=$AC

                                            .SBTTL  Vector control block
                                    ;------------------------------------------------------------------
                                    ;  A vector control block is used to associate an interrupt vector with
                                    ;  a real-time program.
                                    ;  Note: if the size of a vector control block is changed, TSGEN must be
                                    ;        changed since it allocates space for vector control blocks.
                                    ;
  000000                            RZ
  000000                            RW      VC$JSR  2       ;Space for [JSR R2,RTINT] instruction
          000000                                                                    VC$JSR=$AC
  000000                            RW      VC$RTN  1       ;Address of user's completion routine
          000004                                                                    VC$RTN=$AC
  000000                            RB      VC$VEC  1       ;Address of interrupt vector / 2
          000006                                                                    VC$VEC=$AC
  000000                            RB      VC$JOB  1       ;Number of job associated with vector
          000007                                                                    VC$JOB=$AC
  000000                            RB      VC$PRI  1       ;Priority of completion routine
          000010                                                                    VC$PRI=$AC
  000000                            RB      VC$FLG  1       ;VF$xxx flags (see below)
          000011                                                                    VC$FLG=$AC
  000000                            RW      VC$$SZ  0       ;Size of a vector control block
          000012                                                                    VC$$SZ=$AC
                                    ;
                                    ;  Status flags stored in VC$FLG cell
                                    ;
  000000                            M       VF$DIR  1       ;Interrupt is directly connected to service routine
  000000                            M       VF$DET  2       ;Interrupt has been disconnected by .DEVICE
```

```
                                   .SBTTL  TSXUCL data base definitions
                           ;-----------------------------------------------------------------------
                           ;  Define data structures in TSXUCL data base.
                           ;
  000000                   M       UCLMKL  11.             ;Maximum length of a command keyword
  000000                   M       UCLMCL  80.             ;Maximum length of a command string
                           ;
                           ;  Command control information
                           ;
  000000                   RZ
  000000                   RW      UC$NDC  1               ;Number of defined commands
          000000                                                             UC$NDC=$AC
  000000                   RW      UC$MDC  1               ;Maximum allowed defined commands
          000002                                                             UC$MDC=$AC
  000000                   RW      UC$$SZ  0               ;Size of control block
          000004                                                             UC$$SZ=$AC
                           ;
                           ;  Command name template
                           ;
  000000                   RZ
  000000                   RB      UK$NAM  UCLMKL+1        ;Asciz keyword name string
          000000                                                             UK$NAM=$AC
  000000                   RW      UK$PTR  1               ;Pointer to command string descriptor
          000014                                                             UK$PTR=$AC
  000000                   RW      UK$$SZ  0               ;Size of keyword descriptor block
          000016                                                             UK$$SZ=$AC
                           ;
                           ;  Command string storage
                           ;
  000000                   RZ
  000000                   RB      US$TXT  UCLMCL          ;Asciz command string
          000000                                                             US$TXT=$AC
  000000                   RW      US$$SZ  0               ;Size of command descriptor
          000120                                                             US$$SZ=$AC
```

```
      1                                          .SBTTL  PLAS region and window descriptor blocks
      2                                  ;-------------------------------------------------------------------------
      3                                  ;  Region Control Block format
      4                                  ;
      5 000000                           RZ
      6 000000                           RW      RC$LEN  1       ;Number 64-byte pages allocated for region
                000000                                                                   RC$LEN=$AC
      7 000000                           RW      RC$PAG  1       ;Number 512-byte pages allocated for region
                000002                                                                   RC$PAG=$AC
      8 000000                           RW      RC$BAS  1       ;Base 64-byte page number of region in memory
                000004                                                                   RC$BAS=$AC
      9 000000                           RW      RC$BLK  1       ;Block number in swap file / ptr to global RCB
                000006                                                                   RC$BLK=$AC
     10 000000                           RW      RC$FLG  1       ;Control flags -- See below
                000010                                                                   RC$FLG=$AC
     11 000000                           RW      RC$NAM  2       ;Name of region
                000012                                                                   RC$NAM=$AC
     12 000000                           RB      RC$CNT  1       ;Number of jobs attached to region
                000016                                                                   RC$CNT=$AC
     13 000000                           RB      RC$OWN  1       ;Job index number of job that created region
                000017                                                                   RC$OWN=$AC
     14 000000                           RW      RC$$SZ  0       ;Size of a region control block
                000020                                                                   RC$$SZ=$AC
     15                                  ;
     16                                  ;  Control flags stored in RC$FLG
     17                                  ;
     18 000000                           M       RC$INM  1       ;Region is currently in memory
     19 000000                           M       RC$SFA  2       ;Space in swap file has been allocated for region
     20 000000                           M       RC$GBL  4       ;This is a named region
     21 000000                           M       RC$PVT  10      ;This region is private (local) to a job
     22 000000                           M       RC$LCG  20      ;This RCB is local copy of global RCB
     23 000000                           M       RC$EXC  40      ;Creating job has exclusive access to region
     24 000000                           M       RC$AGE  100     ;Automatically eliminate region when idle
     25 000000                           M       RC$EXI  200     ;Eliminate region on program exit or abort
     26 000000                           M       RC$OFF  400     ;Eliminate region on logoff
     27 000000                           M       RC$AEP  1000    ;Automatical elimination (AGE) pending next attach
     28 000000                           M       RC$PRM  2000    ;This is a permanent global region
     29 000000                           M       RC$DSP  4000    ;Map this region through D-space
     30 000000                           M       RC$UNM  10000   ;.ELRG caused window(s) to be unmapped
     31 000000                           M       RC$USE  100000  ;This RCB is in use
     32
     33                                  ;-------------------------------------------------------------------------
     34                                  ;  Region Definition Block format  (in user's job area)
     35                                  ;
     36 000000                           RZ
     37 000000                           RW      R.GID   1       ;Address of region control block
                000000                                                                   R.GID=$AC
     38 000000                           RW      R.GSIZ  1       ;Number of 64-byte pages to allocate for region
                000002                                                                   R.GSIZ=$AC
     39 000000                           RW      R.GSTS  1       ;Status flags (see below)
                000004                                                                   R.GSTS=$AC
     40 000000                           RW      R.NAME  2       ;Global region name (Rad50)
                000006                                                                   R.NAME=$AC
     41                                  ;
     42                                  ;  Status flags stored in R.GSTS
     43                                  ;
     44 000000                           M       RS.CRR  100000  ;Region was successfully created (status)
     45 000000                            M       RS.UNM  40000   ;Windows were unmapped during .ELRG (status)
     46 000000                            M       RS.NAL  20000   ;Region was not previously allocated (status)
     47 000000                            M       RS.NEW  10000   ;Global region created due to attach request (status)
     48 000000                            M       RS.GBL  4000    ;Create local region within global region (w. error)
     49 000000                            M       RS.CGR  2000    ;Create local region within global region (create)
     50 000000                            M       RS.AGE  1000    ;Automatic global region elimination
     51 000000                            M       RS.EGR  400     ;Eliminate global region
     52 000000                            M       RS.EXI  200     ;Eliminate global region on exit or abort
     53 000000                            M       RS.DSP  2       ;Map this region through D-space
     54 000000                            M       RS.PVT  1       ;This is a private region
```

```
      1                                     ;-------------------------------------------------------------
      2                                     ;  Window Control Block
      3                                     ;
      4 000000                              RZ
      5 000000                              RW      WC$RCB  1       ;Address of region control block (0 if not mapped)
                 000000                                                                 WC$RCB=$AC
      6 000000                              RW      WC$SIZ  1       ;# 64-byte pages for window (0 if not allocated)
                 000002                                                                 WC$SIZ=$AC
      7 000000                              RW      WC$VLO  1       ;Virtual address of window base
                 000004                                                                 WC$VLO=$AC
      8 000000                              RW      WC$VHI  1       ;Virtual address of window top (addr of last byte)
                 000006                                                                 WC$VHI=$AC
      9 000000                              RW      WC$LEN  1       ;# 64-byte pages actually mapped by window
                 000010                                                                 WC$LEN=$AC
     10 000000                              RW      WC$OFF  1       ;Offset into region where window base starts
                 000012                                                                 WC$OFF=$AC
     11 000000                              RB      WC$PAR  1       ;Base PAR index # (2 * PAR #)
                 000014                                                                 WC$PAR=$AC
     12 000000                              RB      WC$NPR  1       ;# PAR's affected by window
                 000015                                                                 WC$NPR=$AC
     13 000000                              RB      WC$MAP  1       ;Mapping flags (0=unmapped, 1=plas- 2=fast-mapped)
                 000016                                                                 WC$MAP=$AC
     14 000000                              RB      WC$TRP  1       ;Number of fast map trap region, else -1
                 000017                                                                 WC$TRP=$AC
     15 000000                              RW      WC$$SZ  0       ;Size of a Window Control Block
                 000020                                                                 WC$$SZ=$AC
     16                                     ;
     17                                     ;  Flags in WC$MAP (byte) cell
     18                                     ;
     19 000000                              M       WC.MAP  1       ;Window was mapped via PLAS requests (.MAP or .CRAW)
     20 000000                              M       WC.FST  2       ;Window was mapped by fast map
     21
     22                                     ;-------------------------------------------------------------
     23                                     ;  Window Definition Block  (in user's job area)
     24                                     ;
     25 000000                              RZ
     26 000000                              RB      W.NID   1       ;Window ID
                 000000                                                                 W.NID=$AC
     27 000000                              RB      W.NAPR  1       ;Base PAR for window
                 000001                                                                 W.NAPR=$AC
     28 000000                              RW      W.NBAS  1       ;Base virtual address
                 000002                                                                 W.NBAS=$AC
     29 000000                              RW      W.NSIZ  1       ;# 64-byte pages for window
                 000004                                                                 W.NSIZ=$AC
     30 000000                              RW      W.NRID  1       ;Address of region control block
                 000006                                                                 W.NRID=$AC
     31 000000                              RW      W.NOFF  1       ;Offet into region where window base starts
                 000010                                                                 W.NOFF=$AC
     32 000000                              RW      W.NLEN  1       ;# 64-byte pages to map
                 000012                                                                 W.NLEN=$AC
     33 000000                              RW      W.NSTS  1       ;Status flags -- See below
                 000014                                                                 W.NSTS=$AC
     34 000000                              RW      W.SIZE  0       ;Size of window definition block
                 000016                                                                 W.SIZE=$AC
     35                                     ;
     36                                     ;  Status flags stored in W.NSTS
     37                                     ;
```

```
   000000                           M       WS.MAP  400     ;Automatically map after .CRAW
   000000                           M       WS.OVR  2000    ;Allow windows to overlap !!!NON-STANDARD!!!
   000000                           M       WS.ELW  20000   ;A window was eliminated
   000000                           M       WS.UNM  40000   ;A window was unmapped
   000000                           M       WS.CRW  100000  ;Window was successfully created
```

```
                                        .SBTTL  Unibus Map Register descriptor block
                                ;-------------------------------------------------------------------------
                                ;  The following descriptor block is used to hold information about
                                ;  a Unibus map register set.
                                ;  Note: The format of this descriptor must match the table generated
                                ;        by the UMRDEF macro in TSGEN.
                                ;
  000000                        RZ
  000000                        RB      UM$UMR  1       ;Number of register that is at base of this set
          000000                                                                       UM$UMR=$AC
  000000                        RB      UM$NMR  1       ;Number of registers in this set
          000001                                                                       UM$NMR=$AC
  000000                        RW      UM$WDS  1       ;Number of words that can be handled by this set
          000002                                                                       UM$WDS=$AC
  000000                        RW      UM$IOQ  1       ;0==>UMR free; non-zero==>Address of associated IOQ
          000004                                                                       UM$IOQ=$AC
  000000                        RW      UM$$SZ  0       ;Size of UMR descriptor block
          000006                                                                       UM$$SZ=$AC
```

```
      1                                          .SBTTL  Mapped I/O control blocks
      2                                  ;-----------------------------------------------------------------------
      3                                  ;  The following control blocks are used to store information about
      4                                  ;  I/O transferrs that need to be mapped because the device controller
      5                                  ;  only supports 18-bit addresses and we are running on a 22-bit
      6                                  ;  Q-bus system.
      7                                  ;  The head of the free list of these control blocks is MIOBHD.
      8                                  ;  Note: If the size of this control block is changed, TSGEN must
      9                                  ;  also be changed since it allocates space for the blocks.
     10                                  ;
     11 000000                           RZ
     12 000000                           RW      MI$LNK  1       ;Link to next control block
                000000                                                                  MI$LNK=$AC
     13 000000                           RW      MI$OQE  1       ;Address of original I/O queue element
                000002                                                                  MI$OQE=$AC
     14 000000                           RW      MI$TRW  1       ;Total number of words left to be transferred
                000004                                                                  MI$TRW=$AC
     15 000000                           RW      MI$CWC  1       ;Number of words being transferred by current op.
                000006                                                                  MI$CWC=$AC
     16 000000                           RW      MI$UBP  1       ;64-byte block base of user's buffer
                000010                                                                  MI$UBP=$AC
     17 000000                           RW      MI$UBO  1       ;Offset within 64-byte block of base of user's buffer
                000012                                                                  MI$UBO=$AC
     18 000000                           RW      MI$SBP  1       ;64-byte block base of system buffer
                000014                                                                  MI$SBP=$AC
     19 000000                           RB      MI$RWF  1       ;Read/Write flag (0=Read, 1=Write)
                000016                                                                  MI$RWF=$AC
     20 000000                           RB      MI$JOB  1       ;Job number doing the I/O operation
                000017                                                                  MI$JOB=$AC
     21 000000                           RW      MI$$SZ  0       ;Size of a control block
                000020                                                                  MI$$SZ=$AC
     22
     23                                  ;-----------------------------------------------------------------------
     24                                  ;  Wait blocks used to queue up requests for mapped I/O operations
     25                                  ;  by the system.
     26                                  ;
     27 000000                           RZ
     28 000000                           RW      MW$LNK  1       ;Link to next block
                000000                                                                  MW$LNK=$AC
     29 000000                           RW      MW$IOQ  1       ;Address of pending I/O queue element
                000002                                                                  MW$IOQ=$AC
     30 000000                           RW      MW$$SZ  0       ;Size of control block
                000004                                                                  MW$$SZ=$AC
```

```
                                 .SBTTL  Cached I/O control block
                                ;-------------------------------------------------------------------------
                                ;  Control block used by an I/O operation that is accessing a data
                                ;  cached device.
                                ;
 000000                         RZ
 000000                         RW      CC$LNK  1       ;Link to next cache control block
         000000                                                                     CC$LNK=$AC
 000000                         RW      CC$BLK  1       ;Block number
         000002                                                                     CC$BLK=$AC
 000000                         RW      CC$DVU  1       ;Unit number (high byte), device index (low byte)
         000004                                                                     CC$DVU=$AC
 000000                         RW      CC$WCT  1       ;Word count (always positive)
         000006                                                                     CC$WCT=$AC
 000000                         RW      CC$OQE  1       ;Address of original I/O queue element
         000010                                                                     CC$OQE=$AC
 000000                         RW      CC$UBP  1       ;64-byte block number of base of user's buffer
         000012                                                                     CC$UBP=$AC
 000000                         RW      CC$UBO  1       ;Offset within 64-byte block of user buffer base
         000014                                                                     CC$UBO=$AC
 000000                         RW      CC$CBP  1       ;64-byte block number of cache buffer
         000016                                                                     CC$CBP=$AC
 000000                         RB      CC$WFL  1       ;Non-zero ==> Write to device taking place
         000020                                                                     CC$WFL=$AC
                                ;
 000000                         RW      CC$$SZ  0       ;Size of block
         000022                                                                     CC$$SZ=$AC
```

```
      1
      2                                                 .SBTTL  Shared run-time descriptor block
      3                                         ;-----------------------------------------------------------------------
      4                                         ;  The following descriptor block is used to hold information
      5                                         ;  about a shared run-time system.
      6                                         ;
      7 000000                                  RZ
      8 000000                                  RW      RT$DEV  1       ;Rad50 device name
                000000                                                                          RT$DEV=$AC
      9 000000                                  RW      RT$NAM  2       ;Rad50 file name
                000002                                                                          RT$NAM=$AC
     10 000000                                  RW      RT$EXT  1       ;Rad50 extension
                000006                                                                          RT$EXT=$AC
     11 000000                                  RW      RT$BAS  1       ;Base 64-byte block # of run-time in phys memory
                000010                                                                          RT$BAS=$AC
     12 000000                                  RW      RT$TOP  1       ;Top 64-byte block # of run-time in phys memory
                000012                                                                          RT$TOP=$AC
     13 000000                                  RB      RT$FLG  1       ;Control flags (RF$xxx see below)
                000014                                                                          RT$FLG=$AC
     14 000000                                  RB      RT$SKP  1       ;# blocks to skip at front of file
                000015                                                                          RT$SKP=$AC
     15 000000                                  RW      RT$$SZ  0       ;Size of descriptor block
                000016                                                                          RT$$SZ=$AC
     16                                         ;
     17                                         ;  Control flags stored in RT$FLG
     18                                         ;
     19 000000                                  M       RF$WRT  1       ;Write access is allowed to run-time
```

```
                                              .SBTTL  Device status flags
                                     ;-------------------------------------------------------------------------------
                                     ;  Fields defined in the device status table DVSTAT.
                                     ;
     000000                          M          DS$DIR   100000  ;Device is directory structured
     000000                          M          DS$RON   40000   ;Read-only device
     000000                          M          DS$WON   20000   ;Write-only device
     000000                          M          DS$NRD   10000   ;Non RT-11 directory device (MT & CT)
     000000                          M          DS$ABT   4000    ;Handler abort code flag
     000000                          M          DS$SFN   2000    ;Handler accepts .SPFUN requests
     000000                          M          DS$AJT   1000    ;Enter handler abort entry every time a job terminates
     000000                          M          DS$VSZ   400     ;.SPFUN 373 can be used to determine volume size
     000000                          M          DS$ID    377     ;Device type code (See DI$xxx below)
                                     ;
                                     ;  Device type codes
                                     ;
     000000                          M          DI$RK    0       ;RK05
     000000                          M          DI$DT    1       ;TC11 DECtape
     000000                          M          DI$EL    2       ;Error logger
     000000                          M          DI$LP    3       ;Line printer
     000000                          M          DI$TT    4       ;Terminal
     000000                          M          DI$DL    5       ;RL01/RL02
     000000                          M          DI$DY    6       ;RX02
     000000                          M          DI$PC    7       ;PC11 Reader/Punch
     000000                          M          DI$MT    11      ;TM11 tape
     000000                          M          DI$RF    12      ;RF11
     000000                          M          DI$CT    13      ;TA11
     000000                          M          DI$CR    14      ;CR11 Card reader
     000000                          M          DI$DS    16      ;RJS03/RJS04
     000000                          M          DI$MM    20      ;TJU16/TU45 magtape
     000000                          M          DI$DP    21      ;RP11/RP02/RP03 disk
     000000                          M          DI$DX    22      ;RX01
     000000                          M          DI$DM    23      ;RK06/RK07 disk
     000000                          M          DI$NL    25      ;Null device
     000000                          M          DI$DD    34      ;TU58
     000000                          M          DI$MS    35      ;TS11/TS04 magtape
     000000                          M          DI$PD    36      ;PDT-11/130
     000000                          M          DI$LS    41      ;Serial line printer
     000000                          M          DI$MQ    42      ;Message queue server
     000000                          M          DI$DR    43      ;DRV11J
     000000                          M          DI$LD    46      ;Logical disk
     000000                          M          DI$VM    47      ;Virtual memory handler
     000000                          M          DI$DU    50      ;MSCP disk (RA80,RC25)
     000000                          M          DI$SL    51      ;Single line editor
     000000                          M          DI$PI    54      ;Professional PI handler
     000000                          M          DI$XL    57      ;XL handler for VTCOM
     000000                          M          DI$CL    DI$XL   ;TSX-Plus communications line (CL)
     000000                          M          DI$MU    60      ;TK50 cassette magtape
     000000                          M          DI$NC    61      ;Ethernet class handler
```

```
                                           ;
                                           ;  Flags defined in device table DVFLAG.
                                           ;
  000000                                   M       DX$DMA  1        ;This is a DMA device
  000000                                   M       DX$MAP  2        ;18-bit controller -- may require mapped I/O
  000000                                   M       DX$EBA  4        ;Buffer must be on even byte boundary
  000000                                   M       DX$NCA  10       ;Do not do caching for this device
  000000                                   M       DX$NMT  20       ;Do not allow mounts for this device
  000000                                   M       DX$RAL  40       ;Require device to be allocated before use
  000000                                   M       DX$MPH  100      ;Map the handler for this device
  000000                                   M       DX$NHM  200      ;Do not map the handler for this device
  000000                                   M       DX$IBH  400      ;Handler contains internal I/O buffer
  000000                                   M       DX$NRD  1000     ;Do .SPFUN to tell handler about directory ops
  000000                                   M       DX$NST  2000     ;Do not reload handler after SET done to it

                                           ;---------------------------------------------------------------------------
                                           ;  Logical Disk Status Flags
                                           ;  The following flags are stored in the LDFLAG cell for a logical disk:
                                           ;
  000000                                   M       LD$RON  1        ;Read-only disk

```

```
                                        .SBTTL  Device handler file format
                                ;-----------------------------------------------------------------------
                                ;  The following offsets are to cells containing values in blocks 0 and 1
                                ;  of handler files.
                                ;
000000                          M       H.FET   02      ;Address of handler fetch code
000000                          M       H.LOAD  04      ;Address of handler load code
000000                          M       H.SIZ   52      ;Size of handler (bytes)
000000                          M       H.DVSZ  54      ;Number of 256-word blocks on device
000000                          M       H.DSTS  56      ;Device status flags
000000                          M       H.GEN   60      ;Sysgen options for handler
000000                          M       H.CSR   176     ;CSR address
000000                          M       H.INS   200     ;Installation routine
000000                          M       H.VEC   1000    ;Vector address
000000                          M       H.INT   1002    ;Pointer to interrupt service routine
000000                          M       H.PRI   1004    ;Priority (340)
000000                          M       H.LQE   1006    ;Pointer to last queue element
000000                          M       H.CQE   1010    ;Pointer to current queue element
000000                          M       H.ENT   1012    ;Handler entry point and HSR$xx flags
                                ;
                                ;  Handler service routine flags set in the low-order 5 bits of
                                ;  the H.ENT word (the rest of the word is a NOP instruction).
                                ;  (Note: This was added in RT-11 version 5.03)
                                ;
000000                          M       HSR$FE  1       ;Handler Fetch service routine
000000                          M       HSR$RE  2       ;Handler Release service routine
000000                          M       HSR$LO  4       ;Handler Load service routine
000000                          M       HSR$UN  10      ;Handler Unload service routine

                                ;-----------------------------------------------------------------------
                                ;  The following table format is used to describe handler "SET" options.
                                ;
000000                          RZ
000000                          RW      SH$VAL  1       ;Value passed in R3 to handler set routine
                000000                                                          SH$VAL=$AC
000000                          RW      SH$NAM  2       ;Rad50 value of option name
                000002                                                          SH$NAM=$AC
000000                          RB      SH$RTN  1       ;Offset to routine in handler for process set option
                000006                                                          SH$RTN=$AC
000000                          RB      SH$FLG  1       ;Control flags for option (See SO$xxx below)
                000007                                                          SH$FLG=$AC
000000                          RW      SH$$SZ  0       ;Size of option descriptor block
                000010                                                          SH$$SZ=$AC
                                ;
                                ;  Option flags stored in SH$FLG
                                ;
000000                          M       SO$NO   200     ;"NO" allowed with option word
000000                          M       SO$NVL  100     ;Numeric parameter required with option
000000                          M       SO$OCT  40      ;Numeric parameter is in octal

                                        .SBTTL  Special device function codes
                                ;-----------------------------------------------------------------
                                ;  The following function codes are passed to the handler for directory
                                ;  operations on "Special Devices" such as magnetic tapes and cassettes.
                                ;  The function code is stored in the Q.FUNC cell of the I/O queue entry.
                                ;
000000                          M       DF$CLS  1       ;Close file
```

```
     53 000000                         M       DF$DEL  2       ;Delete file
     54 000000                         M       DF$LOK  3       ;Lookup file
     55 000000                         M       DF$ENT  4       ;Enter file
     56 000000                         M       DF$REN  5       ;Rename file
```

```
      1                                         .SBTTL  File directory entries
      2                                 ;-----------------------------------------------------------------------
      3                                 ;  Format of a file directory entry.
      4                                 ;
      5 000000                          RZ
      6 000000                          RW      FD$STA  1       ;Entry status word (see below)
                000000                                                                  FD$STA=$AC
      7 000000                          RW      FD$NAM  3       ;File name and extension
                000002                                                                  FD$NAM=$AC
      8 000000                          RW      FD$LEN  1       ;Allocated size of file
                000010                                                                  FD$LEN=$AC
      9 000000                          RB      FD$JOB  1       ;Number of job using tentative file entry
                000012                                                                  FD$JOB=$AC
     10 000000                          RB      FD$CHN  1       ;Number of channel using tentative file entry
                000013                                                                  FD$CHN=$AC
     11 000000                          M       FD$TIM  FD$JOB  ;Time of file creation (3-second units)
     12 000000                          RW      FD$DAT  1       ;Creation date of file
                000014                                                                  FD$DAT=$AC
     13 000000                          RW      FD$OPT  0       ;Start of optional words
                000016                                                                  FD$OPT=$AC
     14 000000                          RW      FD$$SZ  0       ;Size of directory entry
                000016                                                                  FD$$SZ=$AC
     15                                 ;
     16                                 ;  The following additional entries are allocated in directory entries
     17                                 ;  stored in the directory cache table.
     18                                 ;  They are not present in file directory entries stored on disk.
     19                                 ;  Note, if the size of this entry is changed, TSGEN must be changed.
     20                                 ;
     21 000000                          RW      FC$CDX  1       ;Address of cached-device table entry for device
                000016                                                                  FC$CDX=$AC
     22 000000                          RW      FC$LNK  1       ;Link to next entry in cache table
                000020                                                                  FC$LNK=$AC
     23 000000                          M       FC$SBL  FD$JOB  ;Starting block # of file
     24 000000                          RW      FC$$SZ  0       ;Size of cache table entry
                000022                                                                  FC$$SZ=$AC
     25                                 ;
     26                                 ;  Status flags stored in FD$STA.
     27                                 ;
     28 000000                          M       FS$PRO  100000  ;File is "Protected"
     29 000000                          M       FS$EOS  4000    ;End of directory segment marker
     30 000000                          M       FS$PRM  2000    ;Permanent file entry
     31 000000                          M       FS$EMP  1000    ;Empty file slot
     32 000000                          M       FS$TEN  400     ;Tentative file entry
```

```
                            ;----------------------------------------------------------------------
                            ;   Format of Directory Segment header.
                            ;
000000                      RZ
000000                      RW      DH$NSG  1       ;Number of directory segments available
           000000                                                           DH$NSG=$AC
000000                      RW      DH$NXT  1       ;Number of next segment in directory
           000002                                                           DH$NXT=$AC
000000                      RW      DH$HIS  1       ;Number of highest segment currently in use
           000004                                                           DH$HIS=$AC
000000                      RW      DH$NEB  1       ;Number of extra bytes per directory entry
           000006                                                           DH$NEB=$AC
000000                      RW      DH$BLK  1       ;Block number where files in this segment begin
           000010                                                           DH$BLK=$AC
000000                      RW      DH$$SZ  0       ;Size of Directory header
           000012                                                           DH$$SZ=$AC
                            ;
000000                      M       DH$$BS  6.      ;Block number where 1st directory segment is located
000000                      M       DH$$MS  31.     ;Maximum number of directory segments
000000                      M       DH$$LB  DH$$BS+<2*DH$$MS>-1 ;# of highest block that can have dir

                                    .SBTTL  Directory cache device table
                            ;-----------------------------------------------------------------------
                            ;   A table with the following types of entries is allocated by TSGEN.
                            ;   The table is used to indicate which devices are to have their
                            ;   directory entries cached.
                            ;   Note, if the size of this table is changed, TSGEN must be changed.
                            ;
                            ;   Number of bytes to use for flags to indicate which jobs have
                            ;   mounted the device. This should be large enough to allow enough
                            ;   bits equal to the maximum job number.
                            ;
000000                      M       CD$$UB  8.      ;Number of bytes for user-mount flags (64 jobs)
                            ;
000000                      RZ                      ;Start of cached-device table entry
000000                      RW      CD$DVU  1       ;Physical device # (low-order), Phys unit # (high byt)
           000000                                                           CD$DVU=$AC
000000                      RW      CD$BAS  1       ;Base block number if this is a logical disk
           000002                                                           CD$BAS=$AC
000000                      RW      CD$TOP  1       ;1 above top block if this is a logical disk
           000004                                                           CD$TOP=$AC
000000                      RW      CD$NAM  2       ;File name if this is a logical disk
           000006                                                           CD$NAM=$AC
000000                      RB      CD$JOB  CD$$UB  ;Bit flags indicating which users have device mounted
           000012                                                           CD$JOB=$AC
000000                      RW      CD$$SZ  0       ;Size of entry
           000022                                                           CD$$SZ=$AC
```

```
     1                                        .SBTTL  Assign table
     2                               ;-------------------------------------------------------------------------
     3                               ;  Format of table used to hold information for device assignments.
     4                               ;  ASNTBL is label for 1st entry in table, ASNEND is label past last entry.
     5                               ;
     6 000000                        RZ
     7 000000                        RW       AT$LOG  1       ;Logical device name
               000000                                                            AT$LOG=$AC
     8 000000                        RW       AT$SIZ  1       ;Size specified with file that is assigned to
               000002                                                            AT$SIZ=$AC
     9 000000                        RW       AT$DEV  1       ;Physical device name
               000004                                                            AT$DEV=$AC
    10 000000                        RW       AT$FIL  2       ;File name
               000006                                                            AT$FIL=$AC
    11 000000                        RW       AT$EXT  1       ;File extension
               000012                                                            AT$EXT=$AC
    12 000000                        RW       AT$$SZ  0       ;Size of table entry
               000014                                                            AT$$SZ=$AC
    13
    14                                        .SBTTL  Access command table
    15                               ;-------------------------------------------------------------------------
    16                               ,  Format of table entry used to hold information about device-file
    17                               ;  specifications provided by the ACCESS command.
    18                               ;
    19 000000                        RZ
    20 000000                        RW       OF$FIL  3       ;File name and extension
               000000                                                            OF$FIL=$AC
    21 000000                        RB       OF$DEV  1       ;Device index number
               000006                                                            OF$DEV=$AC
    22 000000                        RB       OF$UNT  1       ;Unit number
               000007                                                            OF$UNT=$AC
    23 000000                        RB       OF$FLG  1       ;Control flags (see OT$xxx below)
               000010                                                            OF$FLG=$AC
    24 000000                        RW       OF$$SZ  0       ;Size of table entry
               000012                                                            OF$$SZ=$AC
    25                               ;
    26                               ;  Control flags stored in OF$FLG.
    27                               ;
    28 000000                        M        OT$RON  1       ;Read-only access allowed
    29
    30                                        .SBTTL  Device allocation table
    31                               ;-------------------------------------------------------------------------
    32                               ;  The following table entries are used to keep track of which device
    33                               ;  units have been allocated by use of the ALLOCATE command.
    34                               ;  Note if the size of these table entries is changed, TSGEN must be changed.
    35                               ;
    36 000000                        RZ
    37 000000                        RW       AD$DVU  1       ;Physical device # (low-order), Phys unit # (high byt)
               000000                                                            AD$DVU=$AC
    38 000000                        RB       AD$JOB  1       ;Index number of job to which this device is allocated
               000002                                                            AD$JOB=$AC
    39 000000                        RB       AD$FLG  1       ;Control flags
               000003                                                            AD$FLG=$AC
    40 000000                        RW       AD$$SZ  0       ;Size of the control block
               000004                                                            AD$$SZ=$AC
```

```
                                        .SBTTL  Fork queue entry block
                                ;---------------------------------------------------------------------
                                ;  Format of a fork queue entry.
                                ;
                                ;  Note: When change the size of the fork queue entry, TSGEN must also
                                ;  be altered to reflect the increase.
                                ;
000000                          RZ
000000                          RW      FQ$LNK  1       ;Link to next entry in queue
        000000                                                                      FQ$LNK=$AC
000000                          RW      FQ$RTN  1       ;Address of routine to call
        000002                                                                      FQ$RTN=$AC
000000                          RW      FQ$R5   1       ;Saved value of R5
        000004                                                                      FQ$R5=$AC
000000                          RW      FQ$R4   1       ;Saved value of R4
        000006                                                                      FQ$R4=$AC
000000                          RW      FQ$R3   1       ;Saved value of R3
        000010                                                                      FQ$R3=$AC
000000                          RW      FQ$R2   1       ;Saved value of R2
        000012                                                                      FQ$R2=$AC
000000                          RW      FQ$R1   1       ;Saved value of R1
        000014                                                                      FQ$R1=$AC
000000                          RW      FQ$UFB  1       ;Addr of FQ$RTN is user specified fork block
        000016                                                                      FQ$UFB=$AC
000000                          RW      FQ$PA5  1       ;Saved value of KPAR5
        000020                                                                      FQ$PA5=$AC
000000                          RW      FQ$PA6  1       ;Saved value of KPAR6
        000022                                                                      FQ$PA6=$AC
000000                          RB      FQ$PRI  1       ;Fork processing priority value
        000024                                                                      FQ$PRI=$AC
000000                          RW      FQ$$SZ  0       ;Size of a fork block
        000026                                                                      FQ$$SZ=$AC
```

```
      1                                         .SBTTL  Installed program table
      2                                ;--------------------------------------------------------------------------
      3                                ;  There is an entry of the following form for each INSTALLed program.
      4                                ;
      5 000000                         RZ
      6 000000                         RW      II$NAM  4       ;Device, file-name, extension
                 000000                                                                  II$NAM=$AC
      7 000000                         RW      II$FLG  1       ;Run flags (see AF$xxx) below
                 000010                                                                  II$FLG=$AC
      8 000000                         RW      II$PRV  PVNPW   ;Privilege flags to enable when program is running
                 000012                                                                  II$PRV=$AC
      9 000000                         RW      II$NPV  PVNPW   ;Privilege flags to disable when program is running
                 000016                                                                  II$NPV=$AC
     10 000000                         RW      II$$SZ  0       ;Size of install table entry
                 000022                                                                  II$$SZ=$AC
     11                                ;
     12                                ;  Flags stored in II$FLG
     13                                ;
     14 000000                         M       AF$NOW  1               ;Non-wait TT input
     15 000000                         M       AF$HIE  2               ;High efficiency mode
     16 000000                         M       AF$NOI  4               ;Non-interactive execution
     17 000000                         M       AF$IOP  10              ;Map user PAR 7 to I/O page
     18 000000                         M       AF$SCA  20              ;Single character activation
     19 000000                         M       AF$MEM  40              ;Lock program in low memory
     20 000000                         M       AF$PLK  100             ;Lock program to line (RUN/LOCK)
     21 000000                         M       AF$DBG  200             ;Run program with debugger
     22 000000                         M       AF$BYA  400             ;Bypass user ASSIGNs
     23 000000                         M       AF$TPO  1000            ;Transparent output
     24 000000                         M       AF$DUP  2000            ;DUP program special handling
     25 000000                         M       AF$IND  4000            ;IND program special handling
     26 000000                         M       AF$UCL  10000           ;TSXUCL program special handling
     27 000000                         M       AF$SET  20000           ;SETUP program special handling
     28 000000                         M       AF$CCA  40000           ;Suppress control-C abort
     29 000000                         M       AF$NPW  100000          ;No process windowing while running
```

```
                                        .SBTTL  Memory allocation table values
                               ;------------------------------------------------------------------------
                               ;  The following values are stored in the memory allocation table
                               ;  to indicate portion of memory that are being used by the system.
                               ;  Memory allocation values for system use must be negative.
                               ;  A zero value indicates the memory area is free.
                               ;  A positive value indicates the memory area is being used by the
                               ;  job whose index number is the value.
                               ;
   000000                      M        MA$SYS  -1      ;Operating system itself
   000000                      M        MA$SRT  -2      ;Shared run-time system
   000000                      M        MA$RGN  -3      ;Shared global PLAS region
```

```
                                            .SBTTL  PRO-350 Related Values
                                    ;--------------------------------------------------------------------------
                                    ;  Values related to the PRO-350 system clock.
                                    ;
                                    ;  Registers and vectors
                                    ;
000000                              M       PCCSEC  173000          ;Seconds value register
000000                              M       PCCSAL  173002          ;Seconds alarm register
000000                              M       PCCMIN  173004          ;Minutes value register
000000                              M       PCCMAL  173006          ;Minutes alarm register
000000                              M       PCCHRS  173010          ;Hours value register
000000                              M       PCCHAL  173012          ;Hours alarm register
000000                              M       PCCDAY  173014          ;Day value register
000000                              M       PCCDAT  173016          ;Date of month
000000                              M       PCCMON  173020          ;Month value register
000000                              M       PCCYR   173022          ;Year value register
000000                              M       PCCCR0  173024          ;CSR0
000000                              M       PCCCR1  173026          ;CSR1
000000                              M       PCCCR2  173030          ;CSR2
000000                              M       PCCCR3  173032          ;CSR3
                                    ;
000000                              M       PCCVEC  100             ;Vector address
                                    ;
                                    ;  Flags in CSR2
                                    ;
000000                              M       PC$UF   20              ;Update ended interrupt flag
000000                              M       PC$AF   40              ;Alarm interrupt flag
000000                              M       PC$PF   100             ;Periodic interrupt flag
000000                              M       PC$IRQ  200             ;Interrupt request flag
```

```
                                          .SBTTL  Spooling Control Tables
                                ;--------------------------------------------------------------------------------------
                                ;   Format of a Spool File Control Block (SFCB).
                                ;   There is one SFCB for each spool file.
                                ;   Warning: if the SFCB definition is changed here, it must also be
                                ;   changed in TSGEN.
                                ;
000000                          RZ
000000                          RB       SFUSER  1       ;Number of user writing to this file
          000000                                                                          SFUSER=$AC
000000                          RB       SFFLAG  1       ;Control flags (see below)
          000001                                                                          SFFLAG=$AC
000000                          RW       SFCHAN  1       ;Number of channel opened to this file
          000002                                                                          SFCHAN=$AC
000000                          RW       SFSDCB  1       ;SDCB wanted by this file
          000004                                                                          SFSDCB=$AC
000000                          RW       SFNMBL  1       ;Number of blocks for file on disk
          000006                                                                          SFNMBL=$AC
000000                          RW       SFSTRT  1       ;Block number of start of file on disk
          000010                                                                          SFSTRT=$AC
000000                          RW       SFFLNK  1       ;Disk address where next block goes
          000012                                                                          SFFLNK=$AC
000000                          RW       SFFORM  3       ;Form name (6 characters)
          000014                                                                          SFFORM=$AC
000000                          RW       SFFILE  2       ;File name (Rad50)
          000022                                                                          SFFILE=$AC
000000                          RW       SFID    1       ;File ID
          000026                                                                          SFID=$AC
000000                          RW       SFQLNK  1       ;Queue link of files for same device
          000030                                                                          SFQLNK=$AC
000000                          RW       SFCBSZ  0       ;Size of spool file control block
          000032                                                                          SFCBSZ=$AC
                                ;
                                ;   Control flags stored in SFFLAG.
                                ;
000000                          M        SF$BSY  1       ;File is being processed by spooler
000000                          M        SF$BN1  2       ;Make 1st write be block # 1 rather than 0
000000                          M        SF$1ST  4       ;First write has been done
000000                          M        SF$HLD  10      ;Don't start output till channel closed
000000                          M        SF$DEL  20      ;Delete this spool file
```

```
                                 ;---------------------------------------------------------------
                                 ;  Format of Spooled Device Control Block (SDCB).
                                 ;  There is one SDCB for each spooled device.
                                 ;  Warning: if the definition of a SDCB is changed here, it also must be
                                 ;  changed in TSGEN.
                                 ;
 000000                          RZ
 000000                          RW      SDCHAN  5       ;System channel block for spooled device
           000000                                                                 SDCHAN=$AC
 000000                          RW      SDSFCB  1       ;Current SFCB being processed by spooler
           000012                                                                 SDSFCB=$AC
 000000                          RW      SDFLNK  1       ;Disk address of next block in file
           000014                                                                 SDFLNK=$AC
 000000                          RW      SDBUF1  1       ;Buffer being written by spooler
           000016                                                                 SDBUF1=$AC
 000000                          RW      SDBUF2  1       ;Buffer being read into
           000020                                                                 SDBUF2=$AC
 000000                          RW      SDUSER  1       ;Number of user device is reserved for
           000022                                                                 SDUSER=$AC
 000000                          RW      SDNAME  1       ;RAD50 name of spooled device
           000024                                                                 SDNAME=$AC
 000000                          RW      SDDVU   1       ;Spooled device index (low byte), unit # (high byte)
           000026                                                                 SDDVU=$AC
 000000                          RW      SDWLST  1       ;Queue flink if waiting for a buffer
           000030                                                                 SDWLST=$AC
 000000                          RW      SDBLK   1       ;Block number for next spooled device write
           000032                                                                 SDBLK=$AC
 000000                          RW      SDFHD   1       ;Pointer to first SFCB waiting for this device
           000034                                                                 SDFHD=$AC
 000000                          RW      SDFORM  3       ;Current form name (6 chars)
           000036                                                                 SDFORM=$AC
 000000                          RB      SDANAM  3       ;ASCII name of spooled device (only 3 chars used)
           000044                                                                 SDANAM=$AC
 000000                          RW      SDFLAG  1       ;Control flags (see below)
           000050                                                                 SDFLAG=$AC
 000000                          RW      SDSKIP  1       ;Number of blocks to skip
           000052                                                                 SDSKIP=$AC
 000000                          RW      SDFRBL  1       ;Number of free private spool blocks for device
           000054                                                                 SDFRBL=$AC
 000000                          RW      SDBU    0       ;Backup save block numbers (must be last)
           000056                                                                 SDBU=$AC
                                 ;
                                 ;  Control flags in SDFLAG.
                                 ;
 000000                          M       SD$INR  1       ;Read from spool file in progress
 000000                          M       SD$BWT  2       ;Spooler is waiting for a buffer
 000000                          M       SD$DEL  4       ;Delete current file
 000000                          M       SD$WFM  10      ;Waiting for form mount
 000000                          M       SD$FLK  20      ;Form is locked
 000000                          M       SD$HLD  40      ;Don't start output till channel is closed
 000000                          M       SD$SNG  100     ;Single file mode
 000000                          M       SD$SMS  200     ;Form mount message sent
 000000                          M       SD$BAK  400     ;Backup has been requested
 000000                          M       SD$FLG  1000    ;Print flag page on this device
 000000                          M       SD$WID  2000    ;Page is 132. columns wide
 000000                          M       SD$RSV  100000  ;Reserved for returning non-spooled error to user
 000000                          M       SD$CLR  SD$DEL!SD$WFM!SD$SMS!SD$BAK
```

```
                                        .SBTTL  Accounting file format
                                ;----------------------------------------------------------------------------
                                ;   The following items describe the format of an accounting file record.
                                ;
000000                          RZ
000000                          RB      AR$PRJ  2.      ;Project number
        000000                                                                           AR$PRJ=$AC
000000                          RB      AR$PRG  2.      ;Programmer number
        000002                                                                           AR$PRG=$AC
000000                          RB      AR$PWD  8.      ;Password
        000004                                                                           AR$PWD=$AC
000000                          RB      AR$PRV  2.      ;Privilege flags
        000014                                                                           AR$PRV=$AC
000000                          RB      AR$SUF  16.     ;Start-up command file
        000016                                                                           AR$SUF=$AC
000000                          RB      AR$CON  2.      ;Connect time (minutes)
        000036                                                                           AR$CON=$AC
000000                          RB      AR$CNT  2.      ;Number of sessions
        000040                                                                           AR$CNT=$AC
000000                          RB      AR$CPH  2.      ;High-order CPU time
        000042                                                                           AR$CPH=$AC
000000                          RB      AR$CPL  2.      ;Low-order CPU time
        000044                                                                           AR$CPL=$AC
000000                          RB      AR$UNM  12.     ;User name
        000046                                                                           AR$UNM=$AC
000000                          RB      AR$PRI  1.      ;Maximum authorized priority
        000062                                                                           AR$PRI=$AC
000000                          RB      AR$DMY  13.     ;Unused (reserved)
        000063                                                                           AR$DMY=$AC
000000                          RW      AR$$SZ  0       ;Size of authorization record
        000100                                                                           AR$$SZ=$AC
                                ;
000000                          M       ARNRPB  512./AR$$SZ ;Number of authorization records per block
```

```
                                                 .SBTTL  Log file control flags
                                         ;-----------------------------------------------------------------------
                                         ;  Control flags stored in LOGFLG used to control the operation of
                                         ;  the log file.
                                         ;
  000000                                 M       LF$OPN  1       ;Log file is open
  000000                                 M       LF$WRT  2       ;Enable writes to log file
  000000                                 M       LF$IN   4       ;Log input (received) characters
  000000                                 M       LF$OUT  10      ;Log output (transmitted) characters
```

```
      1                                               .SBTTL  Shared file control tables
      2                                       ;-----------------------------------------------------------------------
      3                                       ;  Shared file Channel Descriptor Block (CDB).
      4                                       ;  There is one active CDB for each channel opened to a shared file.
      5                                       ;  Free list head = FCFREE.
      6                                       ;
      7 000000                                RZ
      8 000000                                RB        FC$CHN  1          ;Channel number
                000000                                                                      FC$CHN=$AC
      9 000000                                RB        FC$UN   1          ;User number
                000001                                                                      FC$UN=$AC
     10 000000                                RB        FC$FLG  1          ;Control flags (see below)
                000002                                                                      FC$FLG=$AC
     11 000000                                RB        FC$NLB  1          ;Number of blocks currently locked by channel
                000003                                                                      FC$NLB=$AC
     12 000000                                RW        FC$ACC  1          ;Access protection flags
                000004                                                                      FC$ACC=$AC
     13 000000                                RW        FC$FDB  2          ;Pointer to FDB for file
                000006                                                                      FC$FDB=$AC
     14 000000                                RW        FC$FLK  2          ;Flink to next CDB for this file
                000012                                                                      FC$FLK=$AC
     15 000000                                RW        FC$CLK  2          ;Flink to next CDB for this user
                000016                                                                      FC$CLK=$AC
     16 000000                                RW        FC$LBN  0          ;Start of table of locked block numbers
                000022                                                                      FC$LBN=$AC
     17                                       ;
     18 000000                                RW        FC$$SS  0          ;Size of block
                000022                                                                      FC$$SS=$AC
     19                                       ;
     20                                       ;  Control flags found in FC$FLG.
     21                                       ;
     22 000000                                M         FL$ACT  1          ;Some other user has written to this file
     23 000000                                M         FL$EFL  2          ;Entire file is locked
     24 000000                                M         FL$NDC  4          ;Suppress data caching
     25 000000                                M         FL$SPN  10         ;CDB is suspended (because of save status)
```

```
                                ;-----------------------------------------------------------------------------
                                ;  Format of Shared File Descriptor Block (FDB).
                                ;  There is one active FDB for each shared file that is open.
                                ;  Free head = FFFREE; Active list head = FFHEAD.
                                ;
 000000                         RZ
 000000                         RW      FF$FID  2       ;File identification
          000000                                                                FF$FID=$AC
 000000                         RW      FF$CDB  2       ;Pointer to first CDB for this file
          000004                                                                FF$CDB=$AC
 000000                         RW      FF$DCD  2       ;Pointer to first data cache descriptor for this file
          000010                                                                FF$DCD=$AC
 000000                         RW      FF$FWD  2       ;Pointer to first wait block for this file
          000014                                                                FF$FWD=$AC
 000000                         RW      FF$NLB  1       ;Number of blocks currently locked
          000020                                                                FF$NLB=$AC
 000000                         RB      FF$FLG  1       ;Status flags (see below)
          000022                                                                FF$FLG=$AC
 000000                         RW      FF$FLK  2       ;Flink to next active FDB
          000024                                                                FF$FLK=$AC
 000000                         RW      FF$$SZ  0       ;Size of FDB
          000030                                                                FF$$SZ=$AC
                                ;
                                ;  Status flags stored in FF$FLG.
                                ;
 000000                         M       FT$EFL  1       ;Entire file locked

                                ;---------------------------------------------------------------------------
                                ;  Format of shared file wait queue element.
                                ;  There is one entry for each user who is waiting for a locked block.
                                ;  Free head = FWFREE.
                                ;
 000000                         RZ
 000000                         RW      FW$DBN  1       ;Block number we are waiting for
          000000                                                                FW$DBN=$AC
 000000                         RW      FW$UN   1       ;User number
          000002                                                                FW$UN=$AC
 000000                         RW      FW$WLK  2       ;Flink to next wait element for this file
          000004                                                                FW$WLK=$AC
 000000                         RW      FW$$SZ  0       ;Size of wait queue element
          000010                                                                FW$$SZ=$AC
```

```
                             ;-------------------------------------------------------------------
                             ;  Format of a data cache descriptor block
                             ;  There is one of these descriptor blocks for each data cache buffer.
                             ;  (Note: the size of these descriptor blocks is assumed in TSGEN)
                             ;
  000000                     RZ
  000000                     RW      DC$NXT  2       ;Pointer to next DCD
          000000                                                               DC$NXT=$AC
  000000                     RW      DC$FDB  2       ;Addr of FDB for shared file assoc with this entry
          000004                                                               DC$FDB=$AC
  000000                     RW      DC$BLK  1       ;File block # whose data is in this cache buffer
          000010                                                               DC$BLK=$AC
  000000                     RW      DC$USE  1       ;Use counter
          000012                                                               DC$USE=$AC
  000000                     RW      DC$LNK  2       ;Link to next cache descriptor for this file
          000014                                                               DC$LNK=$AC
  000000                     RW      DC$PAR  1       ;Map PAR address for this cache buffer
          000020                                                               DC$PAR=$AC
  000000                     RW      DC$$SZ  0       ;Size of cache descriptor
          000022                                                               DC$$SZ=$AC
```

```
                                         .SBTTL  Message communication control tables
                                 ;-----------------------------------------------------------------------
                                 ;  Offsets into EMT block for message EMT's.
                                 ;
 000000                          RZ
 000000                          RW      EB$XX    1       ;Not used
          000000                                                                  EB$XX=$AC
 000000                          RW      EB$NAM   1       ;Pointer to channel name string
          000002                                                                  EB$NAM=$AC
 000000                          RW      EB$BUF   1       ;Address of user's buffer
          000004                                                                  EB$BUF=$AC
 000000                          RW      EB$SIZ   1       ;Message byte size
          000006                                                                  EB$SIZ=$AC
 000000                          RW      EB$RTN   1       ;Address of completion routine
          000010                                                                  EB$RTN=$AC
                                 ;
                                 ;  Format of message control block
                                 ;
 000000                          RZ
 000000                          RW      MB$FLK   1       ;Link to next message control block
          000000                                                                  MB$FLK=$AC
 000000                          RW      MB$NAM   3       ;Name of message channel (6 characters)
          000002                                                                  MB$NAM=$AC
 000000                          RW      MB$BUF   1       ;Pointer to 1st pending message text block
          000010                                                                  MB$BUF=$AC
 000000                          RW      MB$REQ   1       ;Pointer to 1st pending message request block
          000012                                                                  MB$REQ=$AC
 000000                          RW      MB$$SZ   0       ;Size of message control block
          000014                                                                  MB$$SZ=$AC
                                 ;
                                 ;  Format of a message request block
                                 ;
 000000                          RZ
 000000                          RW      MR$LNK   1       ;Link to next message request block
          000000                                                                  MR$LNK=$AC
 000000                          RW      MR$UBA   1       ;Address of user's buffer area
          000002                                                                  MR$UBA=$AC
 000000                          RW      MR$UBS   1       ;Size of user's buffer area
          000004                                                                  MR$UBS=$AC
 000000                          RW      MR$RTN   1       ;Address of user's completion routine
          000006                                                                  MR$RTN=$AC
 000000                          RW      MR$BUF   1       ;Pointer to message text buffer to be passed
          000010                                                                  MR$BUF=$AC
 000000                          RB      MR$JOB   1       ;Job index number
          000012                                                                  MR$JOB=$AC
 000000                          RW      MR$$SZ   0       ;Size of block
          000014                                                                  MR$$SZ=$AC
                                 ;
                                 ;  Format of a message text buffer
                                 ;
 000000                          RZ
 000000                          RW      MU$FLK   1       ;Link to next buffer
          000000                                                                  MU$FLK=$AC
 000000                          RW      MU$SIZ   1       ;Message size (bytes)
          000002                                                                  MU$SIZ=$AC
 000000                          RB      MU$JOB   1       ;Job index number of job that sent message
          000004                                                                  MU$JOB=$AC
```

```
     38 000000                           RW       MU$TXT  0        ;Start of message text
                000006                                                                                  MU$TXT=$AC
```

```
                         .SBTTL  Generic data set control and status flags
                 ;--------------------------------------------------------------------------
                 ;  The following generic status and control flags are used to check the
                 ;  status of data sets and perform control operations.
                 ;
000000           M       MS$RNG  1       ;Phone is ringing
000000           M       MS$CAR  2       ;Carrier is detected
000000           M       MS$DTR  4       ;Data Terminal Ready is asserted
000000           M       MS$BRK  10      ;Transmit a break


                         .SBTTL  DL11 Control and Status Registers
                 ;-------------------------------------------------------------------------
                 ;  DL11 Line interface control and status flags.
                 ;
                 ;  Receiver status register
                 ;
000000           M       STATCH  100000  ;Data set status change
000000           M       RING    40000   ;Ring indication
000000           M       SNDCLR  20000   ;Clear to send
000000           M       CARDET  10000   ;Carrier detect
000000           M       RCVACT  4000    ;Receiver is active
000000           M       RCVDON  200     ;Receive done
000000           M       RCVINT  100     ;Receiver interrupt enable
000000           M       DSINT   40      ;Data set interrupt enable
000000           M       REQSND  4       ;Request to send
000000           M       TRMRDY  2       ;Data terminal ready
000000           M       RDINT   RCVINT
                 ;
                 ;  Receiver data buffer register
                 ;
000000           M       RBERR   100000  ;Error in input
000000           M       OVRRUN  40000   ;Character overrun
000000           M       FRMERR  20000   ;Framing error
000000           M       RCVPAR  10000   ;Receive parity error
                 ;
                 ;  Transmitter status register
                 ;
000000           M       TRRDY   200     ;Transmitter ready
000000           M       TRINT   100     ;Transmitter interrupt enable
000000           M       TRBRK   1       ;Transmit a break
```

```
                                        .SBTTL  DZ11 Control and Status Registers
                                ;---------------------------------------------------------------------------
                                ;  DZ11 Mux flags
                                ;
                                ;
                                ;  Control and Status Register (CSR).
                                ;
  000000                        M       TRDY    100000  ;Transmitter ready
  000000                        M       TIE     40000   ;Transmitter interrupt enable
  000000                        M       TLINE   3400    ;Transmitter line number
  000000                        M       RDONE   200     ;Receiver done
  000000                        M       RIE     100     ;Receiver interrupt enable
  000000                        M       MSE     40      ;Master scan enable
  000000                        M       ZCLR    20      ;Master clear
  000000                        M       INTMX1  TIE!RIE!MSE ;Initial flags for DZ11
                                ;
                                ;  Receiver Buffer Register (RBUF).
                                ;
  000000                        M       DATVAL  100000  ;Data valie
  000000                        M       ZFRMER  20000   ;Framing error
  000000                        M       DZERR   70000   ;DZ11 input error flags
  000000                        M       RLINE   3400    ;Receive line number
                                ;
                                ;  Line parameter register (LPR)
                                ;
  000000                        M       DZ$PAR  100     ;Enable parity
  000000                        M       DZ$ODD  200     ;Odd parity
  000000                        M       DZ$LEN  30      ;Character length code
  000000                        M       DZ$7BT  20      ;7 bit characters
  000000                        M       DZ$8BT  30      ;8 bit characters
```

```
                                          .SBTTL  DH11 Control and Status Registers
                                  ;-----------------------------------------------------------------------
                                  ;  DH11 Control and Status Registers
                                  ;
                                  ;  Status flags stored in the DH11 System Control Register (MH$SCR)
                                  ;
  000000                          M       HF$TI   100000  ;Transmitter interrupt flag
  000000                          M       HF$SI   40000   ;Storage interrupt flag
  000000                          M       HF$TIE  20000   ;Transmitter interrupt enable flag
  000000                          M       HF$SIE  10000   ;Storage interrupt enable flag
  000000                          M       HF$MC   4000    ;Master clear
  000000                          M       HF$NXM  2000    ;Non-existant memory flag
  000000                          M       HF$MM   1000    ;Mainentnance mode
  000000                          M       HF$CNI  400     ;Clear non-existant memory interrupt flag
  000000                          M       HF$RI   200     ;Receiver interrupt flag
  000000                          M       HF$RIE  100     ;Receiver interrupt enable flag
  000000                          M       HF$LIN  17      ;Line number field mask
                                  ;
                                  ;  Status flags stored in DH11 Received Character Register (MH$RCR)
                                  ;
  000000                          M       HF$VDP  100000  ;Valid Data Character Present flag
  000000                          M       HF$DO   40000   ;Data overrun
  000000                          M       HF$FE   20000   ;Framing error
  000000                          M       HF$PE   10000   ;Parity error
                                  ;
                                  ;  Status flags stored in DH11 Line Parameter Register (MH$LPR)
                                  ;
  000000                          M       HF$AEE  100000  ;Auto echo enable
  000000                          M       HF$HD   40000   ;Half-duplex
  000000                          M       HF$ODD  40      ;Odd parity
  000000                          M       HF$PAR  20      ;Parity enable
  000000                          M       HF$TSB  4       ;Two stop bits
  000000                          M       HF$LEN  3       ;Character length field
  000000                          M       HF$7BT  2       ;7 bit characters
  000000                          M       HF$8BT  3       ;8 bit characters
                                  ;
                                  ;  Status flags stored in DM11 Control Status Register (DM$CSR)
                                  ;
  000000                          M       MF$CS   4000    ;Clear scanner
  000000                          M       MF$CM   2000    ;Clear multiplexer
  000000                          M       MF$STP  400     ;Step to next line
  000000                          M       MF$DON  200     ;Done
  000000                          M       MF$IE   100     ;Interrupt enable
  000000                          M       MF$SE   40      ;Scanner enable
  000000                          M       MF$BSY  20      ;Busy
  000000                          M       MF$LIN  17      ;Line number field mask
                                  ;
                                  ;  Status flags stored in DM11 Line Status Register (DM$LSR)
                                  ;
  000000                          M       MF$RNG  200     ;Ring signal
  000000                          M       MF$CAR  100     ;Carrier detect
  000000                          M       MF$CTS  40      ;Clear to send
  000000                          M       MF$SR   20      ;Secondary receive
  000000                          M       MF$ST   10      ;Secondary transmit
  000000                          M       MF$RTS  4       ;Request to send
  000000                          M       MF$DTR  2       ;Data terminal ready
  000000                          M       MF$LE   1       ;Line enable
```

```
                                             .SBTTL  DHV11 Control and Status Registers
                              ;-----------------------------------------------------------------------
                              ;   Status and control flags for DHV11 registers
                              ;
                              ;   Status flags stored in the DHV11 Control Status Register (VH$CSR)
                              ;
000000                        M      VF$TR   100000  ;Transmitter ready for another character
000000                        M      VF$TIE  40000   ;Transmitter interrupt enable
000000                        M      VF$DF   20000   ;Diagnostics failure
000000                        M      VF$TDE  10000   ;Transmit DMA error
000000                        M      VF$XLN  3400    ;Transmitter interrupt line # field
000000                        M      VF$RDA  200     ;Receive data available
000000                        M      VF$RIE  100     ;Receive interrupt enable
000000                        M      VF$MR   40      ;Master reset
000000                        M      VF$LIN  17      ;Line number select field
                              ;
                              ;   Status flags stored in the DHV11 Data Buffer Register (VH$DBR)
                              ;   The following flags are in the receiver buffer register which is accessed
                              ;   when VH$DBR is read.
                              ;
000000                        M      VF$DV   100000  ;Data valid
000000                        M      VF$OE   40000   ;Data overrun error
000000                        M      VF$FE   20000   ;Framing error
000000                        M      VF$PER  10000   ;Parity error
                              ;
                              ;   The following status flags are used with the transmitter buffer register
                              ;   which is accessed when VH$DBR is written.
                              ;
000000                        M      VF$TDV  100000  ;Transmit data valid
                              ;
                              ;   Status flags stored in the DHV11 Line Parameter Register (VH$LPR)
                              ;
000000                        M      VF$LEN  30      ;Field for character length
000000                        M      VF$7BT  20      ;7 bit characters
000000                        M      VF$8BT  30      ;8 bit characters
000000                        M      VF$PAR  40      ;Parity enable
000000                        M      VF$EVN  100     ;Even parity
000000                        M      VF$SC   200     ;Stop code
                              ;
                              ;   Status flags stored in the DHV11 Line Status Register (VH$LSR)
                              ;
000000                        M      VF$DSR  100000  ;Data set ready
000000                        M      VF$RNG  20000   ;Ring indication
000000                        M      VF$DCD  10000   ;Carrier detected
000000                        M      VF$CTS  4000    ;Clear to send
                              ;
                              ;   Status flags stored in the DHV11 Line Control Register (VH$LCR)
                              ;
000000                        M      VF$RTS  10000   ;Request to send
000000                        M      VF$DTR  1000    ;Data terminal ready
000000                        M      VF$LT   400     ;Link type (1=>Modem RTS/CTS protocol)
000000                        M      VF$XOF  40      ;Force transmission of XOFF
000000                        M      VF$OFC  20      ;Do automatic output flow control
000000                        M      VF$BC   10      ;Break control
000000                        M      VF$RE   4       ;Receiver enable
000000                        M      VF$IFC  2       ;Automatic flow control
000000                        M      VF$ABT  1       ;DMA transfer abort
```

```
                                   ;
                                   ;  Status flags stored in the DHV11 transmitter buffer addr reg 2
                                   ;
   000000                          M       VF$TEN  100000  ;Enable transmitter
   000000                          M       VF$TGO  200     ;Start DMA transmission

```

```
                                                 .SBTTL  Line Speed Codes
                                         ;-----------------------------------------------------------------------------
                                         ;  The following symbolic values are used to encode the line speed codes.
                                         ;
  000000                                 M       S50      0       ;50
  000000                                 M       S75      1       ;75
  000000                                 M       S110     2       ;110
  000000                                 M       S134.5   3       ;134.5
  000000                                 M       S150     4       ;150
  000000                                 M       S300     5       ;300
  000000                                 M       S600     6       ;600
  000000                                 M       S1200    7       ;1200
  000000                                 M       S1800    10      ;1800
  000000                                 M       S2000    11      ;2000
  000000                                 M       S2400    12      ;2400
  000000                                 M       S3600    13      ;3600
  000000                                 M       S4800    14      ;4800
  000000                                 M       S7200    15      ;7200
  000000                                 M       S9600    16      ;9600
  000000                                 M       S19200   17      ;19200
                                         ;
                                         ;  The following flags are used to encode the character length, parity
                                         ;  on/off, and even/odd status for a line.
                                         ;
  000000                                 M       LP$SPD   17      ;Bits used to encode speed (see above for values)
  000000                                 M       LP$7BT   40      ;0==>8 bit characters, 1==>7 bit characters
  000000                                 M       LP$PAR   100     ;0==>No parity, 1==>Enable parity
  000000                                 M       LP$ODD   200     ;0==>Even parity, 1==>Odd parity
```

```
                                          .SBTTL  Communication Line (CL) Handler Flags
                                  ;----------------------------------------------------------------------
                                  ;  The following flags relate to the CL handler
                                  ;
                                  ;  Option flags stored in CL$OPT table
                                  ;
  000000                          M       CO$FF    1                 ;Device supports hardware form feeds
  000000                          M       CO$TAB   2                 ;Device supports hardware tabs
  000000                          M       CO$LC    4                 ;Allow lower-case characters to be sent
  000000                          M       CO$LFO   10                ;Transmit line-feed chars to device
  000000                          M       CO$LFI   20                ;Accept line feed characters coming in
  000000                          M       CO$FFO   40                ;Send form feed on write of block 0
  000000                          M       CO$BNO   100               ;Binary output mode
  000000                          M       CO$BNI   200               ;Binary input mode
  000000                          M       CO$CR    400               ;Allow carriage return to be sent
  000000                          M       CO$CTL   1000              ;Allow control characters to be sent
  000000                          M       CO$DTR   2000              ;Raise Data Terminal Ready (DTR)
  000000                          M       CO$8BT   4000              ;Eight bit character support
                                  ;
  000000                          M       CO$DEF   CO$LC!CO$LFO!CO$LFI!CO$CR!CO$CTL ;Default option flags
                                  ;
                                  ;  Status flags stored in CL$STA table
                                  ;
  000000                          M       CM$WRT   2                 ;A write operation has been done to this unit
  000000                          M       CM$EFP   4                 ;Currently doing end-of-file output processing
  000000                          M       CM$CRL   10                ;Carriage return was last char transmitted
  000000                          M       CM$TBS   20                ;Doing tab expansion simulation
  000000                          M       CM$EOF   40                ;Return end-of-file on next read
  000000                          M       CM$ON    100               ;Line is turned on
  000000                          M       CM$BRK   200               ;Currently transmitting a break
  000000                          M       CM$FFS   400               ;Doing form-feed simulation
  000000                          M       CM$IRG   1000              ;IRINGG routine active for this unit
  000000                          M       CM$ORP   2000              ;ORINGP routine active for this unit
  000000                          M       CM$DTR   4000              ;Data Terminal Ready has been asserted
  000000                          M       CM$MCC   10000             ;Next char is modem control or literal char
  000000                          M       CM$FFI   20000             ;Ignore FF if it immediately follows a skip
                                  ;
                                  ;  Status flags returned by SPFUN 204 (get CL status)
                                  ;
  000000                          M       XL$XFX   1                 ;XOFF has been transmitted
  000000                          M       XL$XFR   2                 ;XOFF has been received
  000000                          M       XL$CTS   4                 ;CTS is asserted
  000000                          M       XL$CD    10                ;Carrier is detected
  000000                          M       XL$RI    20                ;Ring is detected
                                  ;
                                  ;  Special function code values for CL handler
                                  ;
  000000                          M       CLSFCH   201               ;Clear handler status
  000000                          M       CLSFBC   202               ;Break transmission control
  000000                          M       CLSFRB   203               ;Read with byte count
  000000                          M       CLSFHS   204               ;Get handler status
  000000                          M       CLSFDL   205               ;Deactivate line
  000000                          M       CLSFSO   250               ;Set selected option flags
  000000                          M       CLSFCO   251               ;Clear selected option flags
  000000                          M       CLSFSL   252               ;Set page length
  000000                          M       CLSFSS   253               ;Set number of lines to skip
  000000                          M       CLSFSW   254               ;Set line width
```

```
     58 000000                         M        CLSFMS  255             ;Get data set status code
     59 000000                         M        CLSFSP  256             ;Set receive/transmit speed
     60 000000                         M        CLSFAB  257             ;Abort all pending reads and writes
     61 000000                         M        CLSFRL  260             ;Read line with byte count
     62 000000                         M        CLSFIC  261             ;Get # pending input bytes
     63 000000                         M        CLSFOC  262             ;Get # pending output bytes
     64 000000                         M        CLSFWB  263             ;Write with byte count
     65 000000                         M        CLSFEP  264             ;Set end-of-file output control
     66 000000                         M        CLSFRS  265             ;Reset status of CL unit
     67 000000                         M        CLSFGO  266             ;Get CL options and settings
```

```
      1                                         .SBTTL  Memory Management values
      2                                 ;----------------------------------------------------------------------
      3                                 ;  Values related to memory management
      4                                 ;
      5                                 ;  Status and control registers
      6                                 ;
      7                                 ;  Kernel-mode page base registers
      8                                 ;
      9 000000                          M       KPAR0   172340
     10 000000                          M       KPAR1   KPAR0+2
     11 000000                          M       KPAR2   KPAR0+4
     12 000000                          M       KPAR3   KPAR0+6
     13 000000                          M       KPAR4   KPAR0+10
     14 000000                          M       KPAR5   KPAR0+12
     15 000000                          M       KPAR6   KPAR0+14
     16 000000                          M       KPAR7   KPAR0+16
     17                                 ;
     18                                 ;  Kernel-mode page descriptor registers
     19                                 ;
     20 000000                          M       KPDR0   172300
     21 000000                          M       KPDR1   KPDR0+2
     22 000000                          M       KPDR2   KPDR0+4
     23 000000                          M       KPDR3   KPDR0+6
     24 000000                          M       KPDR4   KPDR0+10
     25 000000                          M       KPDR5   KPDR0+12
     26 000000                          M       KPDR6   KPDR0+14
     27 000000                          M       KPDR7   KPDR0+16
     28                                 ;
     29                                 ;  User-mode page address registers -- I space (default)
     30                                 ;
     31 000000                          M       UPAR0   177640
     32 000000                          M       UPAR1   UPAR0+2
     33 000000                          M       UPAR2   UPAR0+4
     34 000000                          M       UPAR3   UPAR0+6
     35 000000                          M       UPAR4   UPAR0+10
     36 000000                          M       UPAR5   UPAR0+12
     37 000000                          M       UPAR6   UPAR0+14
     38 000000                          M       UPAR7   UPAR0+16
     39                                 ;
     40                                 ;  User-mode page descriptor registers -- I space (default)
     41                                 ;
     42 000000                          M       UPDR0   177600
     43 000000                          M       UPDR1   UPDR0+2
     44 000000                          M       UPDR2   UPDR0+4
     45 000000                          M       UPDR3   UPDR0+6
     46 000000                          M       UPDR4   UPDR0+10
     47 000000                          M       UPDR5   UPDR0+12
     48 000000                          M       UPDR6   UPDR0+14
     49 000000                          M       UPDR7   UPDR0+16
     50                                 ;
     51                                 ;  User-mode page address registers -- D space (optional)
     52                                 ;
     53 000000                          M       UDAR0   177660
     54 000000                          M       UDAR1   UDAR0+2
     55 000000                          M       UDAR2   UDAR0+4
     56 000000                          M       UDAR3   UDAR0+6
     57 000000                          M       UDAR4   UDAR0+10
     58 000000                        M       UDAR5   UDAR0+12
     59 000000                        M       UDAR6   UDAR0+14
     60 000000                        M       UDAR7   UDAR0+16
     61                               ;
     62                               ;  User-mode page descriptor registers -- D space (optional)
     63                               ;
     64 000000                        M       UDDR0   177620
     65 000000                        M       UDDR1   UDDR0+2
     66 000000                        M       UDDR2   UDDR0+4
     67 000000                        M       UDDR3   UDDR0+6
     68 000000                        M       UDDR4   UDDR0+10
     69 000000                        M       UDDR5   UDDR0+12
     70 000000                        M       UDDR6   UDDR0+14
     71 000000                        M       UDDR7   UDDR0+16
     72                               ;
     73                               ;  Control and status registers
     74                               ;
     75 000000                        M       SR0MMR  177572
     76 000000                        M               MMENBL  1       ;Memory management enable bit in SR0
     77 000000                        M       SR1MMR  177574
     78 000000                        M       SR2MMR  177576
     79 000000                        M       SR3MMR  172516
     80 000000                        M               USDSPC  1       ;User-mode D space enable/disable
     81 000000                        M               EMMAP   20      ;Extended 22-bit memory mapping
     82 000000                        M               IOMAP   40      ;Extended UNIBUS I/O 22-bit mapping
     83                               ;
     84                               ;  Unibus map registers
     85                               ;
     86 000000                        M       UMRADR  170200          ;Start of Unibus map registers
     87                               ;
     88                               ;  Memory parity control registers
     89                               ;
     90 000000                        M       MPAR0   172100          ;Memory parity control register # 0
     91 000000                        M       MPAR16  172136          ;Memory parity control register # 16
     92 000000                        M               PARENL  1       ;Enable memory parity
```

```
                        .SBTTL  Terminal type names
                ;---------------------------------------------------------------------------
                ;  The following terminal type names are used with the TRMTYP macro
                ;  in TSGEN to define terminal types.  The actual type code is stored
                ;  in the LTRMTP line table.
                ;
000000          M       LA36    1               ;DEC LA36
000000          M       LA120   2               ;DEC LA120
000000          M       VT52    10              ;DEC VT52
000000          M       VT100   20              ;DEC VT100
000000          M       ADM3A   100             ;Lear Siegler ADM3A
000000          M       HAZEL   200             ;Hazeltine
000000          M       DIABLO  1000            ;Diablo
000000          M       QUME    2000            ;Qume
000000          M       VT2007  4000            ;VT200 with 7 bit control codes
000000          M       VT2008  10000           ;VT200 with 8 bit control codes
000000          M       VT200   VT2007          ;Generic VT200

                        .SBTTL  System Editor names
                ;-----------------------------------------------------------------------
                ;  The following symbolic names are used in TSGEN to declare the default
                ;  system editor.
                ;
000000          M       EDIT    1               ;EDIT
000000          M       TECO    2               ;TECO
000000          M       KED     3               ;KED or K52
000000          M       K52     4               ;K52 or KED
```

```
                                        .SBTTL  Flags in Job Status Word (JSW)
                                ;-------------------------------------------------------------------------
                                ;  Flags stored in the Job Status Word (JSW).
                                ;
000000                          M       NOUSWP  100000  ;Disable USR swapping
000000                          M       LCBIT   40000   ;Enable lower case input
000000                          M       REENT   20000   ;Program can be reentered
000000                          M       SPCTTY  10000   ;Special TT mode (i.e., EDIT)
000000                          M       PASLIN  4000    ;Pass line to KMON on exit
000000                          M       VIMAGE  2000    ;Virtual image flag
000000                          M       OVLBIT  1000    ;Program is overlayed
000000                          M       CHAIN   400     ;Program was chained to
000000                          M       ERRHLT  200     ;Halt on I/O error
000000                          M       NOWAIT  100     ;No wait on .TTYIN requests
000000                          M       SCHAIN  40      ;Special chain - pass command to KMON
000000                          M       DISSLE  20      ;Disable single-line editor
000000                          M       GTLTTY  10      ;.GTLIN from TT not @file

                                        .SBTTL  Performance monitor control and status flags
                                ;-----------------------------------------------------------------------
                                ;  The following flags are stored in PMFLGS and control the operation
                                ;  of the TSX-Plus performance monitoring feature.
                                ;
000000                          M       PF$IOW  1       ;Include I/O wait time in analysis
000000                          M       PF$SYS  2       ;Analize system execution rather than user job
000000                          M       PF$OVF  100000  ;An overflow occured

                                ;-------------------------------------------------------------------------
                                ;  The following flags are returned in response to the JBINFO EMT
                                ;  that is used to determine the status of a specific line.
                                ;
000000                          M       JIVLN   1       ;This is a virtual line
000000                          M       JIDLN   2       ;This is a detached line
000000                          M       JIMLOK  100     ;Job is locked in memory
000000                          M       JIPRIV  200     ;Job has operator command privilege

                                        .SBTTL  Simulated RMON parameters
                                ;-------------------------------------------------------------------------
                                ;  The following parameters relate to the simulated RMON that is
                                ;  mapped into page 7 of the user's virtual address space.
                                ;
000000                          M       RMNBAS  160002  ;Virtual address of simulated RMON value vector
000000                          M       INDERR  RMNBAS+416 ;IND error cell virtual address
000000                          M       INDSTA  RMNBAS+417 ;IND status flag cell virtual address
```

```
                                                 .SBTTL  Misc. parameters
                                         ;-----------------------------------------------------------------------------------
                                         ;  Misc. parameters.
                                         ;
  000000                                 M       MAXSLO  255.     ;Max size of TT and CL silo buffers (bytes)
  000000                                 M       MAXASN  25.      ;Max # ASSIGN commands allowed
  000000                                 M       MAXACC  30.      ;Max # ACCESS commands allowed
  000000                                 M       MXCPRM  6.       ;Max # parameters on command file call
  000000                                 M       MXCCHR  60.      ;Max # chars in command file paramameter string
  000000                                 M       MAXLD   8.       ;Max # of logical disks
  000000                                 M       NUMRCB  8.       ;Max # PLAS regions that can be created by job
  000000                                 M       NUMWCB  8.       ;Max # PLAS windows that can be created by job
  000000                                 M       MXPRMT  8.       ;Max # chars in KMON prompt string
  000000                                 M       SLMXLN  80.      ;Max # chars in Single Line Editor buffer
  000000                                 M       SLBFSZ  300.     ;Size of SLE save buffer
  000000                                 M       MAXSRD  40.      ;Max # shared run-time region descriptors
  000000                                 M       MAXPRI  127.     ;Maximum job priority
  000000                                 M       VPAR1   20000    ;Virtual address of PAR 1 region
  000000                                 M       VPAR5   120000   ;Virtual address of PAR 5 system mapping region
  000000                                 M       CXTBAS  140000   ;Virtual address of Job Context Area
  000000                                 M       VPAR6   140000   ;Virtual address of PAR 6 mapping region
  000000                                 M       IOPAGE  177600   ;I/O page address
  000000                                 M       CPLEMT  2        ;Location where completion routine exit emt is stored
  000000                                 M       SUPRTN  300      ;Location where GETCSR routine for SETUP is stored
  000000                                 M       USRLOC  46       ;Cell with USR load address
  000000                                 M       JSWLOC  44       ;Cell with Job Status Word
  000000                                 M       HIMLOC  50       ;Cell with Top of memory address
  000000                                 M       ERRLOC  52       ;Cell with EMT error code
  000000                                 M       USERRB  53       ;Error severity set by user
  000000                                 M       RMON    54       ;Cell with RMON base address
  000000                                 M       BLKWDS  256.     ;Number of words per disk block
  000000                                 M       ACFLAG  100000   ;Flag character as an activation char
  000000                                 M       ESCFLG  377      ;Flag char that says following char part of escape seq
  000000                                 M       TRNSFL  100000   ;Send char in transparency mode
  000000                                 M       CCFLG   100000   ;Ctrl-C trap flag for .SCCA
  000000                                 M       DIBFSZ  155.     ;Size of Diablo character buffer
  000000                                 M       SBUFSZ  512.     ;Size of spool buffer (bytes)
  000000                                 M       SBUFWD  256.     ;Size of spool buffer (words)
  000000                                 M       PR7     340      ;Priority 7 in PS
  000000                                 M       CFLAG   1        ;C-flag in PS
  000000                                 M       KMNBAS  40000    ;KMON base address
  000000                                 M       PSW     177776   ;PS word
  000000                                 M       UMODE   140000   ;User-mode bits in PS
  000000                                 M       UPMODE  30000    ;User-previous-mode bits in PS
  000000                                 M       CTTSR   177564   ;Transmitter status register for console terminal
  000000                                 M       CTTBR   177566   ;Transmitter buffer register for console terminal
  000000                                 M       DMYDEV  126370   ;Dummy device name to reserve patch space ("$$")
  000000                                 M       WLDNAM  132500   ;Wildcard file name (Rad50 /*/)
  000000                                 M       DMPOVL  350      ;Loc overlay name is passed to dump
  000000                                 M       DMPHND  352      ;Loc handler name is passed to dump
  000000                                 M       DMPTXT  354      ;Loc of start of asciz dump message text string
```

```
                                        .SBTTL  User error severity status codes
                               ;-----------------------------------------------------------------------
                               ;  Error severity status code values stored in USERRB (location 53).
                               ;
  000000                       M        SC$SUC  1       ;Success
  000000                       M        SC$WRN  2       ;Warning
  000000                       M        SC$ERR  4       ;Error
  000000                       M        SC$SEV  10      ;Severe
  000000                       M        SC$FTL  10      ;Fatal
  000000                       M        SC$UNC  20      ;Unconditional
  000000                       M        SC$NON  40      ;None
```

```
                                        .SBTTL  ASCII Character codes
                                ;--------------------------------------------------------------------------------
                                ;  Octal values of some ascii characters.
                                ;
  000000                        M       ETX     3       ;ETX (Diablo end-of-buffer command)
  000000                        M       CTRLC   3       ;Ctrl-C
  000000                        M       ACK     6       ;ACK (Diablo restart-output command)
  000000                        M       BELL    7       ;BELL
  000000                        M       CTRLG   7       ;Ctrl-G
  000000                        M       BKSPAC  10      ;Backspace
  000000                        M       TAB     11      ;Horizontal tab
  000000                        M       LF      12      ;Line feed
  000000                        M       FF      14      ;Form feed
  000000                        M       CR      15      ;Carriage return
  000000                        M       CTRLO   17      ;Ctrl-O.  Discard TT output.
  000000                        M       CTRLQ   21      ;Ctrl-Q.  Continue TT output.
  000000                        M       CTRLR   22      ;Ctrl-R.  Retype input line.
  000000                        M       CTRLS   23      ;Ctrl-S.  Suspend TT output.
  000000                        M       CTRLU   25      ;Ctrl-U.  Erase input line.
  000000                        M       CTRLW   27      ;Ctrl-W.  Switch to a virtual line.
  000000                        M       CTRLX   30      ;Ctrl-X.
  000000                        M       CTRLZ   32      ;Ctrl-Z.  TT end of file.
  000000                        M       ESC     33      ;Escape
  000000                        M       SPACE   40      ;Space
  000000                        M       RUBOUT  177     ;Rubout.  Erase last character typed.
  000000                        M       CSICHR  233     ;Control sequence start character for VT200
  000000                        M       SS3CHR  217     ;Control sequence start character for VT200
```

```
     1                                              .SBTTL  Job Context Area
     2                                      ;------------------------------------------------------------------------
     3                                      ;  Job Context Area Definition
     4                                      ;
     5          140000                      $AC     =       CXTBAS          ;Base of Job Context Area
     6                                      ;
     7                                      ;  Job stack used in kernel mode, user state.
     8 000000                               RW      JSTKND  410.
                140000                                                                      JSTKND=$AC
     9 000000                               RW      JSTK    0.
                141464                                                                      JSTK=$AC
    10                                      ;
    11                                      ;  EMT processing temp cells
    12                                      ;
    13                                      ;--------
    14                                      ; -- Cells in this region are pushed on EMT entry.
    15 000000                               RW      EMTCXT  0               ;Start of emt context area that is pushed
                141464                                                                      EMTCXT=$AC
    16 000000                               RW      EMTSP   1               ;EMT processing frame pointer
                141464                                                                      EMTSP=$AC
    17 000000                               RW      UR0     1               ;User's R0
                141466                                                                      UR0=$AC
    18 000000                               RW      CUREMT  1               ;Current EMT instruction
                141470                                                                      CUREMT=$AC
    19 000000                               RW      EMTBLK  8.              ;Local copy of EMT argument block
                141472                                                                      EMTBLK=$AC
    20 000000                               RW      CHNADR  1               ;Address of channel block we are working on
                141512                                                                      CHNADR=$AC
    21 000000                               RW      CHNNUM  1               ;Number of channel we are working on
                141514                                                                      CHNNUM=$AC
    22 000000                               RW      EMTMAP  1               ;Kernel PAR 5 mapping value when EMT executed
                141516                                                                      EMTMAP=$AC
    23 000000                               RB      EMTERR  1               ;EMT error code
                141520                                                                      EMTERR=$AC
    24 000000                               RB      INTERR  1               ;Internal error code
                141521                                                                      INTERR=$AC
    25 000000                               RW      EMTCXN  0               ;End of emt context area that is pushed
                141522                                                                      EMTCXN=$AC
    26 000000                               M       EMTCXW  <<EMTCXN-EMTCXT>/2> ;# of words in area to be pushed
    27                                      ; -- End of region that is pushed.
    28                                      ;--------
    29 000000                               RW      EMTPS   1               ;PS on emt entry
                141522                                                                      EMTPS=$AC
    30 000000                               RW      EMTADR  1               ;PC on emt entry
                141524                                                                      EMTADR=$AC
    31 000000                               RW      EMTLEV  1               ;EMT nesting level
                141526                                                                      EMTLEV=$AC
    32 000000                               RW      EMTASP  1               ;Pointer to arguments on stack
                141530                                                                      EMTASP=$AC
    33 000000                               RW      SPCPS   1               ;Address of user's block assoc with .SPCPS
                141532                                                                      SPCPS=$AC
    34 000000                               RW      EMTCAD  1               ;Pointer to top entry in EMTCAS stack
                141534                                                                      EMTCAD=$AC
    35 000000                               RW      EMTRAD  1               ;In process of exiting from completion routine
                141536                                                                      EMTRAD=$AC
    36                                      ;  Return stack for completion routines.
    37 000000                               RW      EMTCAX  4.              ;Reserve space for stack  / Keep       /
```

```
          141540                                                                         EMTCAX=$AC
    38 000000                     RW      EMTCAS  0.            ; Top of stack            / Together /
          141550                                                                         EMTCAS=$AC
    39                            ;
    40                            ;  CSI temp cells
    41                            ;
    42 000000                     RW      CSIBUF  45.           ;Holds command line       / Keep      /
          141550                                                                         CSIBUF=$AC
    43 000000                     RB      CSIBND  0.            ;  End of CSIBUF buffer /  Together /
          141702                                                                         CSIBND=$AC
    44 000000                     RW      CSIARE  6.            ;Internal emt arg block
          141702                                                                         CSIARE=$AC
    45 000000                     RW      CSIFIL  5.            ;Holds a file spec
          141716                                                                         CSIFIL=$AC
    46 000000                     RW      CSIDEV  1             ;Default device name
          141730                                                                         CSIDEV=$AC
    47 000000                     RW      CSIUSP  1             ;User's stack pointer at start of .CSISPC/GEN
          141732                                                                         CSIUSP=$AC
    48 000000                     RB      SPCFLG  1             ;0==>.CSIGEN      1==>.CSISPC
          141734                                                                         SPCFLG=$AC
    49 000000                     RB      SWTCNT  1             ;Number of switches accrued
          141735                                                                         SWTCNT=$AC
    50 000000                     RB      CSIEQL  1             ;Equal sign seen flag
          141736                                                                         CSIEQL=$AC
    51                            ;
    52                            ;  The following cells contain the current mapping values for the
    53                            ;  user-mode PAR and PDR values for the job.
    54                            ;  The $MAPOK flag in LSW7 indicates if this data is valid.
    55                            ;
    56 000000                     RW      CUPAR0  1             ;User-mode PAR 0
          141740                                                                         CUPAR0=$AC
    57 000000                     RW      CUPAR1  1             ;User-mode PAR 1
          141742                                                                         CUPAR1=$AC
    58 000000                     RW      CUPAR2  1             ;User-mode PAR 2
          141744                                                                         CUPAR2=$AC
    59 000000                     RW      CUPAR3  1             ;User-mode PAR 3
          141746                                                                         CUPAR3=$AC
    60 000000                     RW      CUPAR4  1             ;User-mode PAR 4
          141750                                                                         CUPAR4=$AC
    61 000000                     RW      CUPAR5  1             ;User-mode PAR 5
          141752                                                                         CUPAR5=$AC
    62 000000                     RW      CUPAR6  1             ;User-mode PAR 6
          141754                                                                         CUPAR6=$AC
    63 000000                     RW      CUPAR7  1             ;User-mode PAR 7
          141756                                                                         CUPAR7=$AC
    64 000000                     RW      CUPDR0  1             ;User-mode PDR 0
          141760                                                                         CUPDR0=$AC
    65 000000                     RW      CUPDR1  1             ;User-mode PDR 1
          141762                                                                         CUPDR1=$AC
    66 000000                     RW      CUPDR2  1             ;User-mode PDR 2
          141764                                                                         CUPDR2=$AC
    67 000000                     RW      CUPDR3  1             ;User-mode PDR 3
          141766                                                                         CUPDR3=$AC
    68 000000                     RW      CUPDR4  1             ;User-mode PDR 4
          141770                                                                         CUPDR4=$AC
    69 000000                     RW      CUPDR5  1             ;User-mode PDR 5
          141772                                                                         CUPDR5=$AC
```

```
     70 000000                             RW      CUPDR6  1               ;User-mode PDR 6
                  141774                                                                         CUPDR6=$AC
     71 000000                             RW      CUPDR7  1               ;User-mode PDR 7
                  141776                                                                         CUPDR7=$AC
     72 000000                             RW      CUDAR0  1               ;User-mode PAR 0 -- D space
                  142000                                                                         CUDAR0=$AC
     73 000000                             RW      CUDAR1  1               ;User-mode PAR 1 -- D space
                  142002                                                                         CUDAR1=$AC
     74 000000                             RW      CUDAR2  1               ;User-mode PAR 2 -- D space
                  142004                                                                         CUDAR2=$AC
     75 000000                             RW      CUDAR3  1               ;User-mode PAR 3 -- D space
                  142006                                                                         CUDAR3=$AC
     76 000000                             RW      CUDAR4  1               ;User-mode PAR 4 -- D space
                  142010                                                                         CUDAR4=$AC
     77 000000                             RW      CUDAR5  1               ;User-mode PAR 5 -- D space
                  142012                                                                         CUDAR5=$AC
     78 000000                             RW      CUDAR6  1               ;User-mode PAR 6 -- D space
                  142014                                                                         CUDAR6=$AC
     79 000000                             RW      CUDAR7  1               ;User-mode PAR 7 -- D space
                  142016                                                                         CUDAR7=$AC
     80 000000                             RW      CUDDR0  1               ;User-mode PDR 0 -- D space
                  142020                                                                         CUDDR0=$AC
     81 000000                             RW      CUDDR1  1               ;User-mode PDR 1 -- D space
                  142022                                                                         CUDDR1=$AC
     82 000000                             RW      CUDDR2  1               ;User-mode PDR 2 -- D space
                  142024                                                                         CUDDR2=$AC
     83 000000                             RW      CUDDR3  1               ;User-mode PDR 3 -- D space
                  142026                                                                         CUDDR3=$AC
     84 000000                             RW      CUDDR4  1               ;User-mode PDR 4 -- D space
                  142030                                                                         CUDDR4=$AC
     85 000000                             RW      CUDDR5  1               ;User-mode PDR 5 -- D space
                  142032                                                                         CUDDR5=$AC
     86 000000                             RW      CUDDR6  1               ;User-mode PDR 6 -- D space
                  142034                                                                         CUDDR6=$AC
     87 000000                             RW      CUDDR7  1               ;User-mode PDR 7 -- D space
                  142036                                                                         CUDDR7=$AC
     88                                    ;
     89                                    ;  Data cells related to shared run-time system support.
     90                                    ;
     91 000000                             RW      CURRDB  1               ;Address of current run-time descriptor block
                  142040                                                                         CURRDB=$AC
     92 000000                             RW      RPAR    8.              ;PAR values for job
                  142042                                                                         RPAR=$AC
     93 000000                             RW      RPDR    8.              ;PDR values for job
                  142062                                                                         RPDR=$AC
     94 000000                             RW      RPDRND  0               ;End of RPAR-RPDR tables
                  142102                                                                         RPDRND=$AC
     95 000000                             RW      RDAR    8               ;D-space PAR values for job
                  142102                                                                         RDAR=$AC
     96 000000                             RW      RDDR    8.              ;D-space PDR values for job
                  142122                                                                         RDDR=$AC
     97 000000                             RW      RDDRND  0               ;End of D-space PAR,PDR values
                  142142                                                                         RDDRND=$AC
     98                                    ;
     99                                    ;  PLAS Region Control Blocks and Window Control Blocks
    100                                    ;
    101 000000                             RW      RCBBAS  NUMRCB*<RC$$SZ/2> ;Region control blocks for job
```

```
                142142                                                                                  RCBBAS=$AC
    102 000000                          RW      RCBEND  0                 ;End of RCB area
                142342                                                                                  RCBEND=$AC
    103 000000                          RW      WCBBAS  NUMWCB*<WC$$SZ/2> ;Window control blocks for job
                142342                                                                                  WCBBAS=$AC
    104 000000                          RW      WCBEND  0                 ;End of WCB area
                142542                                                                                  WCBEND=$AC
    105 000000                          M       RUNRDB  CSIBUF          ;Region Descriptor Block used during job start
    106                                 ;
    107                                 ;  Shared run-time region descriptor tables
    108                                 ;
    109 000000                          RW      SR$WCB  MAXSRD          ;Ptr to wcb for PLAS mapping regions
                142542                                                                                  SR$WCB=$AC
    110 000000                          RW      SR$PAR  MAXSRD          ;Value to load into PAR register
                142662                                                                                  SR$PAR=$AC
    111 000000                          RW      SR$PDR  MAXSRD          ;Value to load into PDR register
                143002                                                                                  SR$PDR=$AC
    112 000000                          RB      SR$PX   MAXSRD          ;Index # of which PAR to load
                143122                                                                                  SR$PX=$AC
    113 000000                          RB      SR$FLG  MAXSRD          ;Special mapping flags
                143172                                                                                  SR$FLG=$AC
    114                                 ;
    115                                 ;       Flags in SR$FLG
    116                                 ;
    117 000000                          M       SR.MOR  1               ;More PARs remain to be mapped for this region
    118 000000                          M       SR.DSP  2               ;Map this region through D-space (default I-)
    119                                 ;
    120                                 ;  Assign table
    121                                 ;
    122 000000                          RW      ASNTBL  <MAXASN*<AT$$SZ/2>>     ;ASSIGN information
                143242                                                                                  ASNTBL=$AC
    123 000000                          RW      ASNEND  0               ;End of table
                143716                                                                                  ASNEND=$AC
    124                                 ;
    125                                 ;  Data related to the [NO]ACCESS command
    126                                 ;  (Changes in this area must be updated in the code
    127                                 ;   in TSEM3 which copies file context between jobs.)
    128 000000                          RW      RESDEV  1               ;Non-zero ==> Some ACCESS controls --------]
                143716                                                                                  RESDEV=$AC
    129 000000                          RW      OKFAND  1               ;Ptr to last ACCESS entry --keep together--]
                143720                                                                                  OKFAND=$AC
    130 000000                          RW      OKFNND  1               ;Ptr to first NOACCESS entry --------------]
                143722                                                                                  OKFNND=$AC
    131 000000                          RW      OKFILE  <MAXACC*<OF$$SZ/2>>
                143724                                                                                  OKFILE=$AC
    132 000000                          RW      OKFEND  0
                144400                                                                                  OKFEND=$AC
    133                                 ;
    134                                 ;  Data related to logical disks
    135                                 ;
    136 000000                          RW      LDNAME  4*MAXLD         ;File spec for logical disk file (rad50)
                144400                                                                                  LDNAME=$AC
    137 000000                          RW      LDPDEV  MAXLD           ;Physical device index # and unit #
                144500                                                                                  LDPDEV=$AC
    138 000000                          RW      LDSIZE  MAXLD           ;Number of blocks in logical disk
                144520                                                                                  LDSIZE=$AC
    139 000000                          RW      LDBASE  MAXLD           ;Base block # on real disk of log disk start
```

```
                  144540                                                                             LDBASE=$AC
    140 000000                        RW      LDFLAG  MAXLD           ;LD$xxx status flags
                  144560                                                                             LDFLAG=$AC
    141                               ;
    142                               ;  Data regarding job privileges
    143                               ;
    144 000000                        RW      PRIVA0  1               ;Authorized privileges
                  144600                                                                             PRIVA0=$AC
    145 000000                        RW      PRIVA2  1
                  144602                                                                             PRIVA2=$AC
    146 000000                        RW      PRIVS0  1               ;Privileges as controlled by SET command
                  144604                                                                             PRIVS0=$AC
    147 000000                        RW      PRIVS2  1
                  144606                                                                             PRIVS2=$AC
    148 000000                        RW      PRIVF0  1               ;Privileges for current command file
                  144610                                                                             PRIVF0=$AC
    149 000000                        RW      PRIVF2  1
                  144612                                                                             PRIVF2=$AC
    150 000000                        RW      PRIVC0  1               ;Combined, current privileges for job
                  144614                                                                             PRIVC0=$AC
    151 000000                        RW      PRIVC2  1
                  144616                                                                             PRIVC2=$AC
    152                               ;
    153                               ;  Data regarding command file usage.
    154                               ;
    155 000000                        RW      CFBUF   256.            ;Command file buffer
                  144620                                                                             CFBUF=$AC
    156 000000                        RW      CFEND   0.              ;End of command file buffer
                  145620                                                                             CFEND=$AC
    157 000000                        RW      CFPNT   1               ;Index into command file buffer
                  145620                                                                             CFPNT=$AC
    158 000000                        RW      CFPSAV  1               ;Temp copy of CFPNT (if GTLIN forced to TT)
                  145622                                                                             CFPSAV=$AC
    159 000000                        RW      CFBLK   1               ;Next command file block number
                  145624                                                                             CFBLK=$AC
    160 000000                        RW      CFSPND  1               ;Suspended command file pointer
                  145626                                                                             CFSPND=$AC
    161 000000                        RW      CFIND   1               ;Holds IND status flags
                  145630                                                                             CFIND=$AC
    162 000000                        RW      CURPRM  1               ;Parameter string pointer
                  145632                                                                             CURPRM=$AC
    163 000000                        RW      PRMPNT  MXCPRM          ;Pointers to command parameter strings
                  145634                                                                             PRMPNT=$AC
    164 000000                        RW      LSTPRM  0               ;End of PRMPNT vector
                  145650                                                                             LSTPRM=$AC
    165 000000                        RB      PRMBUF  MXCCHR          ;Buffer to hold command file parameter string
                  145650                                                                             PRMBUF=$AC
    166 000000                        RW      PRMEND  1               ;End of PRMBUF
                  145744                                                                             PRMEND=$AC
    167 000000                        RW      PBFEND  1               ;Pointer to end of parameter string
                  145746                                                                             PBFEND=$AC
    168 000000                        RW      CFARG   5       ;Used for I/O argument block for command file reads
                  145750                                                                             CFARG=$AC
    169                               ;  Command file push stack
    170 000000                        RW      CFSEND  120.            ;End of stack
                  145762                                                                             CFSEND=$AC
    171 000000                        RW      CFSTK   0               ;Start of stack
```

```
              146342                                                                     CFSTK=$AC
    172 000000                  RW      CFSP     1              ;Pointer into stack
              146342                                                                     CFSP=$AC
    173                         ;
    174                         ;  Data cells related to log file
    175                         ;
    176 000000                  RW      LOGBUF   256.           ;Log file buffer          ** Keep     **
              146344                                                                     LOGBUF=$AC
    177 000000                  RW      LOGEND   0              ; End of log file buffer  ** Together **
              147344                                                                     LOGEND=$AC
    178 000000                  RW      LOGPTR   1              ;Current pointer into log file buffer
              147344                                                                     LOGPTR=$AC
    179 000000                  RW      LOGBLK   1              ;Number of next block to be written
              147346                                                                     LOGBLK=$AC
    180 000000                  RW      LOGFLG   1              ;Log file control flags (see LF$xxx flags)
              147350                                                                     LOGFLG=$AC
    181 000000                  RW      LOGDVU   1              ;Physical dev # and unit # of logging device
              147352                                                                     LOGDVU=$AC
    182 000000                  RW      LOGBAS   1              ;Base block # of log file subdevice
              147354                                                                     LOGBAS=$AC
    183                         ;
    184                         ;  Data cells related to Single Line Editor
    185                         ;
    186 000000                  RW      SLCX     1              ;Pointer to character in SLEBUF under cursor
              147356                                                                     SLCX=$AC
    187 000000                  RW      SLCCOL   1              ;Display column position of cursor
              147360                                                                     SLCCOL=$AC
    188 000000                  RW      SLECOL   1              ;Display column position of end of line
              147362                                                                     SLECOL=$AC
    189 000000                  RW      SLSCOL   1              ;Display column position of start of line
              147364                                                                     SLSCOL=$AC
    190 000000                  RW      SLOPTR   1              ;Pointer to next char to return to program
              147366                                                                     SLOPTR=$AC
    191 000000                  RW      SLSPTR   1              ;Pointer to most recently saved line
              147370                                                                     SLSPTR=$AC
    192 000000                  RW      SLLPTR   1              ;Pointer to next saved line to recall
              147372                                                                     SLLPTR=$AC
    193 000000                  RW      SLCYC1   1              ;Pointer to 1st command in cycle
              147374                                                                     SLCYC1=$AC
    194 000000                  RW      SLCYC2   1              ;Pointer to last command in cycle
              147376                                                                     SLCYC2=$AC
    195 000000                  RW      SLRPTR   1              ;Pointer to pending recall line
              147400                                                                     SLRPTR=$AC
    196 000000                  RW      SLCSPT   1              ;Pointer to next char position in SLCSBF
              147402                                                                     SLCSPT=$AC
    197 000000                  RW      SLCSR    1              ;Address of routine to process next char
              147404                                                                     SLCSR=$AC
    198 000000                  RB      SLEBUF   SLMXLN+1       ;Line currently being edited
              147406                                                                     SLEBUF=$AC
    199 000000                  RB      SLLBUF   SLBFSZ         ;Previous lines (recalled by use of up-arrow)
              147527                                                                     SLLBUF=$AC
    200 000000                  RB      SLLEND   0              ;End of SLLBUF -must immediately follow SLLBUF
              150203                                                                     SLLEND=$AC
    201 000000                  RB      SLDBUF   SLMXLN+1       ;Last deleted word or portion of line
              150203                                                                     SLDBUF=$AC
    202 000000                  RB      SLSBUF   SLMXLN+1       ;Line saved with gold-down-arrow key
              150324                                                                     SLSBUF=$AC
    203 000000                      RB      SLCBUF  2               ;Last deleted character
                 150445                                                                     SLCBUF=$AC
    204 000000                      RB      SLCSBF  6               ;Buffer used to accrue terminal control seq
                 150447                                                                     SLCSBF=$AC
    205 000000                      RB      SLCSBX  0               ;End of SLCSBF -must immediately follow SLCSBF
                 150455                                                                     SLCSBX=$AC
    206 000000                      RB      SLGOLD  1               ;Non-zero==>Gold key (PF1) was pressed
                 150455                                                                     SLGOLD=$AC
    207 000000                      RB      SLCR    1               ;Carriage-return was last character, need LF
                 150456                                                                     SLCR=$AC
    208 000000                      RB      SLBACK  1               ;Non-zero==>In reverse direction mode
                 150457                                                                     SLBACK=$AC
    209 000000                      RB      SLDOWN  1               ;Non-zero==>Last recall was in down direction
                 150460                                                                     SLDOWN=$AC
    210 000000                      RB      SLOVER  1               ;Non-zero==>Overstrike mode
                 150461                                                                     SLOVER=$AC
    211 000000                      RB      RCLREV  1               ;Non-zero==>Display recall/all reverse order
                 150462                                                                     RCLREV=$AC
    212                             ;
    213                             ;  Data cells related to user-defined keys
    214                             ;
    215 000000                      RW      KEYRCB  1               ;Address of region control block for key defs
                 150464                                                                     KEYRCB=$AC
    216 000000                      RW      KEYPAR  1               ;Address to use to map a PAR to key region
                 150466                                                                     KEYPAR=$AC
    217                             ;
    218                             ;  Data cells related to spooling.
    219                             ;
    220 000000                      RW      SXSFCB  1               ;SFCB that is using spool buffer
                 150470                                                                     SXSFCB=$AC
    221 000000                      RW      SXBUF1  1
                 150472                                                                     SXBUF1=$AC
    222 000000                      RW      SPUBUF  256.            ;COOP buffer
                 150474                                                                     SPUBUF=$AC
    223 000000                      RW      SPUBND  0               ;End of COOP buffer
                 151474                                                                     SPUBND=$AC
    224 000000                      RW      SXBPNT  1               ;Pointer into spool buffer
                 151474                                                                     SXBPNT=$AC
    225 000000                      RW      SPLARG  5               ;Used for spool EMT arg block
                 151476                                                                     SPLARG=$AC
    226 000000                      RW      SPDLBF  1               ;Used when deleting a spool file
                 151510                                                                     SPDLBF=$AC
    227 000000                      RW      UFORM   3               ;Current spool form name
                 151512                                                                     UFORM=$AC
    228                             ;
    229                             ;  Data cells for TSDBUG debugging system
    230                             ;
    231 000000                      RW      D.START 0               ;Start of debugging data area
                 151520                                                                     D.START=$AC
    232 000000                      RW      D.R0    1               ;User's R0
                 151520                                                                     D.R0=$AC
    233 000000                      RW      D.R1    1               ;User's R1
                 151522                                                                     D.R1=$AC
    234 000000                      RW      D.R2    1               ;User's R2
                 151524                                                                     D.R2=$AC
    235 000000                      RW      D.R3    1               ;User's R3
                 151526                                                                     D.R3=$AC
    236 000000                      RW      D.R4    1               ;User's R4
               151530                                                                     D.R4=$AC
    237 000000                      RW      D.R5    1               ;User's R5
               151532                                                                     D.R5=$AC
    238 000000                      RW      D.R6    1               ;User's R6 (SP)
               151534                                                                     D.R6=$AC
    239 000000                      RW      D.R7    1               ;User's R7 (PC)
               151536                                                                     D.R7=$AC
    240 000000                      RW      D.PS    1               ;User's PSW
               151540                                                                     D.PS=$AC
    241 000000                      RW      D.SPSV  1               ;Saved initial stack pointer
               151542                                                                     D.SPSV=$AC
    242 000000                      RW      D.LOC   1               ;Address of currently open location
               151544                                                                     D.LOC=$AC
    243 000000                      RW      D.DADR  1               ;Address of monitored data word
               151546                                                                     D.DADR=$AC
    244 000000                      RW      D.DOLD  1               ;Old value of monitored data word
               151550                                                                     D.DOLD=$AC
    245 000000                      RW      D.DTRG  1               ;Target value for monitored data word
               151552                                                                     D.DTRG=$AC
    246 000000                      RW      D.MASK  1               ;Mask used for data monitoring ($M register)
               151554                                                                     D.MASK=$AC
    247 000000                      RW      D.PFMT  1               ;Printout format ($F register)
               151556                                                                     D.PFMT=$AC
    248 000000                      RW      D.LVAL  1               ;Last displayed value
               151560                                                                     D.LVAL=$AC
    249 000000                      RW      D.VAL1  1               ;Command argument value 1
               151562                                                                     D.VAL1=$AC
    250 000000                      RW      D.VAL2  1               ;Command argument value 2
               151564                                                                     D.VAL2=$AC
    251 000000                      RW      D.FLAG  1               ;D$xxxx flags (see below)
               151566                                                                     D.FLAG=$AC
    252 000000                      RW      D.PCNT  1               ;Proceed repeat count
               151570                                                                     D.PCNT=$AC
    253 000000                      RW      D.PCOL  1               ;Current print column counter
               151572                                                                     D.PCOL=$AC
    254 000000                      RW      D.ILEN  1               ;Number of bytes used by current instruction
               151574                                                                     D.ILEN=$AC
    255 000000                      RW      D.RLBS  8.              ;Relocation base offsets
               151576                                                                     D.RLBS=$AC
    256 000000                      RW      D.BKAD  9.              ;Breakpoint addresses
               151616                                                                     D.BKAD=$AC
    257 000000                      M       D.CBRK  D.BKAD+16.      ;Address of temp breakpoint following a CALL
    258 000000                      RW      D.BKSV  9.              ;Instruction saved from breakpoint location
               151640                                                                     D.BKSV=$AC
    259 000000                      RB      D.BKNM  1               ;Current breakpoint number
               151662                                                                     D.BKNM=$AC
    260 000000                      RB      D.V1FL  1               ;Flag indicating if arg value 1 specified
               151663                                                                     D.V1FL=$AC
    261 000000                      RB      D.V2FL  1               ;Flag indicating if arg value 2 specified
               151664                                                                     D.V2FL=$AC
    262 000000                      RB      D.LOCM  1               ;Mode of currently open location
               151665                                                                     D.LOCM=$AC
    263 000000                      RB      D.SVCH  1               ;"Pushed" input character
               151666                                                                     D.SVCH=$AC
    264 000000                      RB      D.BYTM  1               ;Word/Byte mode indicator
               151667                                                                     D.BYTM=$AC
    265 000000                          RB      D.NMBF  8.              ;Buffer used to hold numeric values
                151670                                                                          D.NMBF=$AC
    266 000000                          RB      D.NMBE  0               ;End of D.NMBF
                151700                                                                          D.NMBE=$AC
    267 000000                          RW      D.END   0               ;End of debugging data area
                151700                                                                          D.END=$AC
    268                                 ;
    269                                 ;  Debugger control flags stored in D.FLAG word
    270                                 ;
    271 000000                          M       D$SSTP  1               ;Doing single stepping
    272 000000                          M       D$IBRK  2               ;An instruction breakpoint occurred
    273 000000                          M       D$DBRK  4               ;A data breakpoint occurred
    274 000000                          M       D$DMON  10              ;Data cell monitoring in effect
    275 000000                          M       D$DVAL  20              ;Target value specified for monitored data
    276 000000                          M       D$IPND  40              ;Replaced breakpoint instruction pending
    277 000000                          M       D$SBRK  100             ;Single step breakpoint occurred
    278 000000                          M       D$FBRK  200             ;Forced breakpoint (user typed ctrl-B)
    279 000000                          M       D$BKST  400             ;Breakpoints are in place in program
    280 000000                          M       D$CKBK  1000            ;Some instruction breakpoints are specified
    281 000000                          M       D$INIT  2000            ;Debugger initialization has been done
    282 000000                          M       D$TSTP  4000            ;Single step one instruction
    283 000000                          M       D$ISPC  10000           ;Read I-space with / and \
    284 000000                          M       D$RUN   100000          ;Debugger program is executing now
    285                                 ;
    286                                 ;  Print format control flags stored in the D.PFMT register
    287                                 ;
    288 000000                          M       DP$DAA  1               ;Print absolute addresses for decoded instruct
    289 000000                          M       DP$LAA  2               ;Print abs addresses for locations
    290                                 ;
    291                                 ;  Misc. parameters
    292                                 ;
    293 000000                          RW      UPPN    2               ;Project - Programmer number
                151700                                                                          UPPN=$AC
    294 000000                          RW      RUNDEV  4         ;Name of device and program that is currently running
                151704                                                                          RUNDEV=$AC
    295 000000                          RW      RUNFLG  1               ;AF$xxx flags for program currently running
                151714                                                                          RUNFLG=$AC
    296 000000                          RW      AFCF    1               ;AF$xxx flags for current command file
                151716                                                                          AFCF=$AC
    297 000000                          RW      JCDB    2               ;Point to 1st shared file CDB block for job
                151720                                                                          JCDB=$AC
    298 000000                          RW      ERRSPC  4               ;Name of file to print with KMON err message
                151724                                                                          ERRSPC=$AC
    299 000000                          RW      DEVLS   1               ;Address of non-linked .DEVICE reset list
                151734                                                                          DEVLS=$AC
    300 000000                          RW      DEVLL   1               ;Address of linked .DEVICE reset list
                151736                                                                          DEVLL=$AC
    301 000000                          RW      UHIMEM  1               ;Max virtual address assigned to job
                151740                                                                          UHIMEM=$AC
    302 000000                          RW      USRSTK  1               ;Initial user stack pointer
                151742                                                                          USRSTK=$AC
    303 000000                          RW      SPSAVE  1
                151744                                                                          SPSAVE=$AC
    304 000000                          RW      USTART  1
                151746                                                                          USTART=$AC
    305 000000                          RW      ODTBAS  1               ;Addr of top of memory available to job
                151750                                                                          ODTBAS=$AC
    306 000000                      RW      NEWJSW  1                 ;JSW for SAV file being started
           151752                                                                 NEWJSW=$AC
    307 000000                      RW      UMSPSV  1                 ;User-mode SP saved by PKSTAT (0==>SP active)
           151754                                                                 UMSPSV=$AC
    308 000000                      RW      MAXMEM  1
           151756                                                                 MAXMEM=$AC
    309 000000                      RW      PRGTOP  1                 ;Top address of program about to be started
           151760                                                                 PRGTOP=$AC
    310 000000                      RW      PRGSIZ  1                 ;Address above top of total area for program
           151762                                                                 PRGSIZ=$AC
    311 000000                      RW      UTRPAD  1
           151764                                                                 UTRPAD=$AC
    312 000000                      RW      UFPTRP  1
           151766                                                                 UFPTRP=$AC
    313 000000                      RW      LSTFDT  1                 ;File directory time entry from last .LOOKUP
           151770                                                                 LSTFDT=$AC
    314 000000                      RW      LSTFDD  1                 ;File directory date entry from last .LOOKUP
           151772                                                                 LSTFDD=$AC
    315 000000                      RW      JOBCCB  1                 ;Active cache control blocks for job
           151774                                                                 JOBCCB=$AC
    316 000000                      RW      NPCCB   1                 ;Number of pending cache control blocks
           151776                                                                 NPCCB=$AC
    317 000000                      RW      UCHAN   1                 ;CDFN channel space
           152000                                                                 UCHAN=$AC
    318 000000                      RW      CINDAT  <<1000-500>/2>    ;Save area for .chain data
           152002                                                                 CINDAT=$AC
    319 000000                      RW      ABRTAD  1
           152302                                                                 ABRTAD=$AC
    320 000000                      RW      UCISPC  4                 ;User Command Interface (UCI) file spec
           152304                                                                 UCISPC=$AC
    321 000000                      RW      LOFSPC  4                 ;Logoff command file spec
           152314                                                                 LOFSPC=$AC
    322 000000                      RW      MXJPRI  1                 ;Max priority allowed for this job
           152324                                                                 MXJPRI=$AC
    323 000000                      RW      JPWDEV  1                 ;Device to use for print-window function
           152326                                                                 JPWDEV=$AC
    324 000000                      RW      JPWTYP  1                 ;Print-window device type
           152330                                                                 JPWTYP=$AC
    325 000000                      RW      JPWFLG  1                 ;Print-window control flags (PA$xxx)
           152332                                                                 JPWFLG=$AC
    326 000000                      RW      KMPRMT  <<MXPRMT+2>/2>    ;String to use for KMON command prompt
           152334                                                                 KMPRMT=$AC
    327 000000                      RW      SBPSUF  8.                ;Start-up command file name for subprocesses
           152346                                                                 SBPSUF=$AC
    328                             ;
    329                             ;  Misc. byte data cells
    330                             ;
    331 000000                      RB      CINFLG  1                 ;Chain in progress
           152366                                                                 CINFLG=$AC
    332 000000                      RB      RUNARG  1                 ;RUN command arg string pending for chain data
           152367                                                                 RUNARG=$AC
    333 000000                      RB      LSTCHR  1
           152370                                                                 LSTCHR=$AC
    334 000000                      RB      ABRTCD  1
           152371                                                                 ABRTCD=$AC
    335 000000                      RB      SERFLG  1
           152372                                                                 SERFLG=$AC
    336 000000                          RB      CLZERR  1                ;Pending .CLOSZ error
               152373                                                                          CLZERR=$AC
    337 000000                          RB      CFNEST  1                ;Command file nesting level
               152374                                                                          CFNEST=$AC
    338 000000                          RB      ERRSEV  1
               152375                                                                          ERRSEV=$AC
    339 000000                          RB      UERSEV  1                ;User specified error severity level (from 53)
               152376                                                                          UERSEV=$AC
    340 000000                          RB      CURCP   1                ;Non-zero ==> executing a completion routine
               152377                                                                          CURCP=$AC
    341 000000                          RB      CFHOLD  1                ;Look-ahead command file char being held
               152400                                                                          CFHOLD=$AC
    342 000000                          RB      SPIJ    1                ;Index of job that initiated subprocess
               152401                                                                          SPIJ=$AC
    343 000000                          RB      SUCF2   SF2LEN           ;Name of secondary start-up command file
               152402                                                                          SUCF2=$AC
    344 000000                          RB      DOTRMP  1                ;Non-zero ==> use TRAP for mapping
               152422                                                                          DOTRMP=$AC
    345                                 ;
    346                                 ;   End of Job Context Area
    347 000000                          RW      CXTEND  0                ;End of Job Context Area
               152424                                                                          CXTEND=$AC
    348
    349 000000                          M       CXTSIZ  <CXTEND-CXTBAS> ;Size of job context area
    350        000001                           .END
Errors detected:  0

*** Assembler statistics


Work  file  reads: 0
Work  file writes: 0
Size of work file: 8325 Words  ( 33 Pages)
Size of core pool: 17920 Words  ( 70 Pages)
Operating  system: RT-11

Elapsed time: 00:01:53.34
DK:TSDEFS,LP:TSDEFS=DK:TSDEFS/C/N:SYM
```

```
Cross reference table (CREF V05.05)


$1CTLC  6-9#
$1ESC   2-15#
$1STCH  4-13#
$1STLG  7-5#
$8BIT   3-7#    3-31    3-34    3-36
$AC     14-7#   14-8    14-12   14-13   14-17   14-18   14-19   14-20   14-21   14-22   14-23   14-24
        14-28   14-29   14-30   14-34   14-35   14-36   14-37   14-38   14-39   14-40   14-41   14-42
        14-43   14-44   14-45   14-46   14-47   14-48   14-49   14-50   15-5#   15-6    15-7    15-8
        15-9    15-10   17-5#   17-6    17-7    17-8    17-9    18-5#   18-6    18-7    18-8    18-9
        18-10   18-11   18-12   19-5#   19-6    19-7    19-8    19-9    19-10   19-12   19-13   19-14
        19-15   19-16   19-17   19-18   19-19   19-20   19-21   19-22   19-23   19-24   19-25   19-26
        19-27   19-28   21-6#   21-7    21-8    21-9    21-10   21-11   21-12   21-13   22-6#   22-7
        22-8    22-9    22-10   22-11   23-8#   23-9    23-10   23-12   24-6#   24-7    24-8    24-9
        24-10   25-7#   25-8    25-9    25-10   25-11   25-12   25-13   25-14   25-15   25-16   25-17
        25-18   25-19   25-20   25-21   25-22   25-23   25-24   25-25   25-26   25-27   25-28   25-29
        25-30   25-31   25-32   25-33   25-34   25-35   25-36   25-38   28-11#  28-12   28-13   28-14
        28-15   28-16   29-5#   29-6    29-7    29-8    29-9    29-10   29-11   29-12   29-21#  29-22
        29-23   29-24   29-25   29-26   29-27   29-28   30-10#  30-11   30-12   30-13   30-17#  30-18
        30-19   30-20   30-24#  30-25   30-26   31-5#   31-6    31-7    31-8    31-9    31-10   31-11
        31-12   31-13   31-14   31-36#  31-37   31-38   31-39   31-40   32-4#   32-5    32-6    32-7
        32-8    32-9    32-10   32-11   32-12   32-13   32-14   32-15   32-25#  32-26   32-27   32-28
        32-29   32-30   32-31   32-32   32-33   32-34   33-8#   33-9    33-10   33-11   33-12   33-13
        34-11#  34-12   34-13   34-14   34-15   34-16   34-17   34-18   34-19   34-20   34-21   34-27#
        34-28   34-29   34-30   35-6#   35-7    35-8    35-9    35-10   35-11   35-12   35-13   35-14
        35-15   35-17   36-7#   36-8    36-9    36-10   36-11   36-12   36-13   36-14   36-15   39-33#
        39-34   39-35   39-36   39-37   39-38   40-5#   40-6    40-7    40-8    40-9    40-10   40-12
        40-13   40-14   40-21   40-22   40-24   41-4#   41-5    41-6    41-7    41-8    41-9    41-10
        41-29#  41-30   41-31   41-32   41-33   41-34   41-35   42-6#   42-7    42-8    42-9    42-10
        42-11   42-12   42-19#  42-20   42-21   42-22   42-23   42-24   42-36#  42-37   42-38   42-39
        42-40   43-8#   43-9    43-10   43-11   43-12   43-13   43-14   43-15   43-16   43-17   43-18
        43-19   43-20   44-5#   44-6    44-7    44-8    44-9    44-10   47-8#   47-9    47-10   47-11
        47-12   47-13   47-14   47-15   47-16   47-17   47-18   47-19   47-20   48-7#   48-8    48-9
        48-10   48-11   48-12   48-13   48-14   48-15   48-16   48-17   48-18   48-19   48-20   48-21
        48-22   48-23   48-24   49-5#   49-6    49-7    49-8    49-9    49-10   49-11   49-12   49-13
        49-14   49-15   49-16   49-17   49-18   51-7#   51-8    51-9    51-10   51-11   51-12   51-13
        51-14   51-15   51-16   51-18   52-6#   52-7    52-8    52-9    52-10   52-11   52-12   52-13
        52-14   52-25#  52-26   52-27   52-28   52-29   53-6#   53-7    53-8    53-9    53-10   53-11
        53-12   53-13   54-5#   54-6    54-7    54-8    54-9    54-10   54-14#  54-15   54-16   54-17
        54-18   54-19   54-23#  54-24   54-25   54-26   54-27   54-28   54-29   54-30   54-34#  54-35
        54-36   54-37   54-38   67-5#   67-8    67-9    67-15   67-16   67-17   67-18   67-19   67-20
        67-21   67-22   67-23   67-24   67-25   67-29   67-30   67-31   67-32   67-33   67-34   67-35
        67-37   67-38   67-42   67-43   67-44   67-45   67-46   67-47   67-48   67-49   67-50   67-56
        67-57   67-58   67-59   67-60   67-61   67-62   67-63   67-64   67-65   67-66   67-67   67-68
        67-69   67-70   67-71   67-72   67-73   67-74   67-75   67-76   67-77   67-78   67-79   67-80
        67-81   67-82   67-83   67-84   67-85   67-86   67-87   67-91   67-92   67-93   67-94   67-95
        67-96   67-97   67-101  67-102  67-103  67-104  67-109  67-110  67-111  67-112  67-113  67-122
        67-123  67-128  67-129  67-130  67-131  67-132  67-136  67-137  67-138  67-139  67-140  67-144
        67-145  67-146  67-147  67-148  67-149  67-150  67-151  67-155  67-156  67-157  67-158  67-159
        67-160  67-161  67-162  67-163  67-164  67-165  67-166  67-167  67-168  67-170  67-171  67-172
        67-176  67-177  67-178  67-179  67-180  67-181  67-182  67-186  67-187  67-188  67-189  67-190
        67-191  67-192  67-193  67-194  67-195  67-196  67-197  67-198  67-199  67-200  67-201  67-202
        67-203  67-204  67-205  67-206  67-207  67-208  67-209  67-210  67-211  67-215  67-216  67-220
        67-221  67-222  67-223  67-224  67-225  67-226  67-227  67-231  67-232  67-233  67-234  67-235
        67-236  67-237  67-238  67-239  67-240  67-241  67-242  67-243  67-244  67-245  67-246  67-247
        67-248  67-249  67-250  67-251  67-252  67-253  67-254  67-255  67-256  67-258  67-259  67-260
        67-261  67-262  67-263  67-264  67-265  67-266  67-267  67-293  67-294  67-295  67-296  67-297
```

```
           67-298    67-299    67-300    67-301    67-302    67-303    67-304    67-305    67-306    67-307    67-308    67-309
           67-310    67-311    67-312    67-313    67-314    67-315    67-316    67-317    67-318    67-319    67-320    67-321
           67-322    67-323    67-324    67-325    67-326    67-327    67-331    67-332    67-333    67-334    67-335    67-336
           67-337    67-338    67-339    67-340    67-341    67-342    67-343    67-344    67-347
$ALTER      3-9#
$AUTO       3-12#
$CARMN      6-19#
$CARUP      4-5#
$CCLRN      6-4#
$CFABT      7-10#
$CFALL      5-12#     5-22
$CFCCL      5-5#
$CFDCC      5-14#
$CFKIL      7-13#
$CFOPN      5-11#
$CFSOT      5-17#     5-22
$CHACT      6-14#
$CLTST      6-10#
$CTRLC      2-17#
$CTRLD     10-10#    10-23
$CTRLO      4-10#     4-21
$CTRLS      4-15#
$CTRLW      4-14#
$DBGBK     10-8#
$DBGMD      7-11#
$DBKMN     10-9#
$DEAD       4-7#
$DEBUG     10-7#
$DEFER      3-16#
$DETCH      2-14#     2-18
$DHBF1     11-13#
$DHBF2     11-14#
$DHCDO     11-15#
$DHXOF     11-11#
$DHXON     11-12#
$DIBOL      7-18#     7-23
$DILUP      2-5#
$DISCN      2-11#
$DNICP     11-8#
$DODFR      4-16#
$DOOFF      2-9#
$DUPRN      7-16#
$ECHO       3-5#
$EMTTR      7-14#
$FLAGC      5-19#
$FORM       3-11#     3-25      3-27      3-31      3-34      3-37      3-39      3-42      3-46      3-49
$FORMO      5-15#
$FPUEX      2-16#
$GCECO      4-17#
$GCESC      4-18#
$GEMAR     12-8#
$GTLIN      5-13#     5-21
$HARD       4-6#
$HISTP     11-6#
$HITTY      5-18#     5-21
$ICPFK     11-9#
```

```
$IITIM   6-12#
$INCOR   2-7#
$INDAB   8-4#      8-23
$INDDF   6-17#     6-23
$INDDW   7-15#
$INDRN   6-18#
$INIT    2-10#
$INKMN   5-7#
$IOMAP   7-6#
$KED     6-16#     6-23
$KINIT   2-6#
$LC      3-14#
$LOFCF  10-5#
$MAPOK   8-6#
$MLOCK   7-8#
$NABRS  10-12#
$NDICP  11-7#
$NDMEM   2-8#
$NLOCK   7-9#
$NOABT  10-16#
$NOIN    4-4#
$NOINT   8-19#
$NOLF    7-12#
$NOOUT   4-12#
$NOUCR  10-15#
$NOVLN   3-15#
$NOWIN  12-5#
$NOWTT   6-15#
$NTGCC  10-13#
$ODTMD   5-10#     5-21
$OITIM   6-11#
$PAGE    3-13#     3-27      3-30      3-33      3-36      3-39      3-42
$PHONE   3-19#
$PRGLK   6-7#
$PWKEY  12-4#     12-15
$QTSET   3-17#
$QUIET   5-6#      5-22
$RBOUT   4-11#
$RBRK   11-10#
$RCLRV  12-9#     12-15
$RDSAV  12-11#
$RFRSH   5-4#
$RNIOP  10-11#
$RNMLK  10-17#
$RTCS   10-14#
$SCCA    6-8#
$SCOPE   3-4#      3-25      3-28      3-30      3-33      3-36      3-40      3-43      3-45      3-48
$SETCC   5-9#      5-21
$SETRN  10-18#
$SGALL   9-16#
$SGHIO   9-12#     9-16
$SGIIO   9-11#     9-16
$SGQ0    9-4#      9-16
$SGQ1    9-5#      9-16
$SGQ1A   9-6#      9-16
$SGQ1B   9-7#      9-16
```

```
$SGQ1C   9-8#       9-16
$SGQ2    9-9#       9-16
$SGQ3    9-10#      9-16
$SLINI   8-17#
$SLKED   8-16#      8-23
$SLLET   8-15#      8-23
$SLON    8-13#      8-23
$SLTTY   8-14#      8-23
$SNWTT   7-4#       7-23
$SOTFN   8-7#
$SPLJB   2-18#
$START   3-8#
$STSNG   7-19#      7-23
$SUCF   10-4#
$SUSPN   2-12#
$SXOFF  11-4#
$SXON   11-5#
$SYSPS   3-18#
$TAB     3-10#      3-25      3-27      3-30      3-33      3-36      3-40      3-43      3-46      3-49
$TAPE    3-6#
$TDEAD  12-7#
$TECO    6-5#       6-23
$TRCHR   4-19#      4-21
$TRNSP   4-8#       4-21
$TTERR   5-16#      5-21
$TTGAG   8-5#       8-23
$UCLCF   8-10#      8-23
$UCLCL   8-12#      8-23
$UCLCM   8-11#      8-23
$UCLRN   8-9#
$UCTLC   5-8#       5-21
$UDSPC  12-10#
$UKMON   8-18#      8-24
$UKMRN   8-8#
$V52EM  12-6#
$VBELL  10-19#
$VIRJB  10-6#
$VNOTT   2-13#      2-18
$VTESC   6-13#
$WDISP   7-17#
$WILD    6-6#       6-23
$XCHAR   4-9#
$XSTOP   7-7#
ABRTAD  67-319#
ABRTCD  67-334#
AC$BLD  26-11#
AC$BLK  26-12#
AC$REV  26-13#
AC$SET  26-10#
AC$ULN  26-14#
ACFLAG  64-32#
ACK     66-7#
AD$$SZ  42-40#
AD$DVU  42-37#
AD$FLG  42-39#
AD$JOB  42-38#
```

```
ADM3A   62-11#
ADM3FL   3-45#
ADM3NO   3-46#
AF$BYA  44-22#
AF$CCA  44-28#
AF$DBG  44-21#
AF$DUP  44-24#
AF$HIE  44-15#
AF$IND  44-25#
AF$IOP  44-17#
AF$MEM  44-19#
AF$NOI  44-16#
AF$NOW  44-14#
AF$NPW  44-29#
AF$PLK  44-20#
AF$SCA  44-18#
AF$SET  44-27#
AF$TPO  44-23#
AF$UCL  44-26#
AFCF    67-296#
AL$DHB  26-4#
AL$DHT  26-5#
AL$DWD  26-6#
AR$$SZ  49-18#    49-20
AR$CNT  49-12#
AR$CON  49-11#
AR$CPH  49-13#
AR$CPL  49-14#
AR$DMY  49-17#
AR$PRG  49-7#
AR$PRI  49-16#
AR$PRJ  49-6#
AR$PRV  49-9#
AR$PWD  49-8#
AR$SUF  49-10#
AR$UNM  49-15#
ARNRPB  49-20#
ASNEND  67-123#
ASNTBL  67-122#
AT$$SZ  42-12#
AT$DEV  42-9#
AT$EXT  42-11#
AT$FIL  42-10#
AT$LOG  42-7#
AT$SIZ  42-8#
AW$132  26-20#
AW$200  26-19#
AW$52   26-18#
AW$ACK  26-22#
AW$AKM  26-25#
AW$DDC  26-32#
AW$INS  26-21#
AW$ORS  26-24#
AW$PRM  26-33#
AW$PRT  26-30#
AW$REV  26-23#
```

```
AW$RPT  26-29#
AW$S52  26-28#
AW$SPN  26-31#
AW$SS   26-27#
AW$VCR  26-26#
BELL    66-8#
BKSPAC  66-10#
BLKWDS  64-31#
C.CSW   18-6#
C.DEVQ  18-11#
C.LENG  18-8#
C.NUMQ  18-10#
C.SBLK  18-7#
C.USED  18-9#
CARDET  55-21#
CC$$SZ  35-17#
CC$BLK  35-8#
CC$CBP  35-14#
CC$DVU  35-9#
CC$LNK  35-7#
CC$OQE  35-11#
CC$UBO  35-13#
CC$UBP  35-12#
CC$WCT  35-10#
CC$WFL  35-15#
CCFLG   64-35#
CD$$SZ  41-35#
CD$$UB  41-27#
CD$BAS  41-31#
CD$DVU  41-30#
CD$JOB  41-34#
CD$NAM  41-33#
CD$TOP  41-32#
CF$IND  16-72#
CF$QUT  16-73#
CFACFL  16-61#
CFARG   67-168#
CFBLK   67-159#
CFBUF   67-155#
CFEND   67-156#
CFHOLD  67-341#
CFIND   67-161#
CFLAG   64-40#
CFLFL4   5-22#
CFNEST  67-337#
CFPNT   67-157#
CFPSAV  67-158#
CFSEND  67-170#
CFSP    67-172#
CFSPND  67-160#
CFSTK   67-171#
CHAIN   63-12#
CHNADR  67-20#
CHNNUM  67-21#
CHNSIZ  18-12#
CINDAT  67-318#
```

```
CINFLG  67-331#
CLSFAB  60-60#
CLSFBC  60-49#
CLSFCH  60-48#
CLSFCO  60-54#
CLSFDL  60-52#
CLSFEP  60-65#
CLSFGO  60-67#
CLSFHS  60-51#
CLSFIC  60-62#
CLSFMS  60-58#
CLSFOC  60-63#
CLSFRB  60-50#
CLSFRL  60-61#
CLSFRS  60-66#
CLSFSL  60-55#
CLSFSO  60-53#
CLSFSP  60-59#
CLSFSS  60-56#
CLSFSW  60-57#
CLSFWB  60-64#
CLZERR  67-336#
CM$BRK  60-30#
CM$CRL  60-26#
CM$DTR  60-34#
CM$EFP  60-25#
CM$EOF  60-28#
CM$FFI  60-36#
CM$FFS  60-31#
CM$IRG  60-32#
CM$MCC  60-35#
CM$ON   60-29#
CM$ORP  60-33#
CM$TBS  60-27#
CM$WRT  60-24#
CO$8BT  60-18#
CO$BNI  60-14#
CO$BNO  60-13#
CO$CR   60-15#    60-20
CO$CTL  60-16#    60-20
CO$DEF  60-20#
CO$DTR  60-17#
CO$FF   60-7#
CO$FFO  60-12#
CO$LC   60-9#     60-20
CO$LFI  60-11#    60-20
CO$LFO  60-10#    60-20
CO$TAB  60-8#
CPLEMT  64-23#
CQ$CP   20-19#
CQ$FLG  20-17#
CQ$HOT  20-9#
CQ$JOB  20-11#
CQ$LNK  20-8#
CQ$LOT  20-10#
CQ$PA5  20-16#
```

```
CQ$PRI  20-18#
CQ$R0   20-13#
CQ$R1   20-14#
CQ$RNS  20-12#
CQ$RTN  20-15#
CR      66-14#
CS$ENT  18-20#
CS$EOF  18-18#
CS$ERR  18-23#
CS$NMX  18-22#
CS$OPN  18-16#
CS$RON  18-17#
CS$SEQ  18-19#
CS$SPL  18-21#
CSIARE  67-44#
CSIBND  67-43#
CSIBUF  67-42#    67-105
CSICHR  66-26#
CSIDEV  67-46#
CSIEQL  67-50#
CSIFIL  67-45#
CSIUSP  67-47#
CTRLC   66-6#
CTRLG   66-9#
CTRLO   66-15#
CTRLQ   66-16#
CTRLR   66-17#
CTRLS   66-18#
CTRLU   66-19#
CTRLW   66-20#
CTRLX   66-21#
CTRLZ   66-22#
CTTBR   64-46#
CTTSR   64-45#
CUDAR0  67-72#
CUDAR1  67-73#
CUDAR2  67-74#
CUDAR3  67-75#
CUDAR4  67-76#
CUDAR5  67-77#
CUDAR6  67-78#
CUDAR7  67-79#
CUDDR0  67-80#
CUDDR1  67-81#
CUDDR2  67-82#
CUDDR3  67-83#
CUDDR4  67-84#
CUDDR5  67-85#
CUDDR6  67-86#
CUDDR7  67-87#
CUPAR0  67-56#
CUPAR1  67-57#
CUPAR2  67-58#
CUPAR3  67-59#
CUPAR4  67-60#
CUPAR5  67-61#
```

```
CUPAR6  67-62#
CUPAR7  67-63#
CUPDR0  67-64#
CUPDR1  67-65#
CUPDR2  67-66#
CUPDR3  67-67#
CUPDR4  67-68#
CUPDR5  67-69#
CUPDR6  67-70#
CUPDR7  67-71#
CURCP   67-340#
CUREMT  67-18#
CURPRM  67-162#
CURRDB  67-91#
CW$50H  16-9#
CW$60   16-34#
CW$70   16-33#
CW$BTH  16-7#
CW$CIS  16-29#
CW$CSH  16-22#
CW$CSR  16-16#
CW$EIS  16-30#
CW$ESP  16-27#
CW$FB   16-5#
CW$FGJ  16-11#
CW$FPU  16-10#
CW$GDH  16-6#
CW$KWP  16-17#
CW$LGS  16-12#
CW$LPC  16-18#
CW$LSI  16-14#
CW$PAR  16-23#
CW$PRO  16-32#
CW$QBS  16-28#
CW$RLH  16-26#
CW$RSR  16-24#
CW$SLE  16-8#
CW$USR  16-13#
CW$V60  16-31#
CW$WCD  16-25#
CW$XM   16-15#
CXTBAS  64-20#    67-5      67-349
CXTEND  67-347#   67-349
CXTSIZ  67-349#
D$BKST  67-279#
D$CKBK  67-280#
D$DBRK  67-273#
D$DMON  67-274#
D$DVAL  67-275#
D$FBRK  67-278#
D$IBRK  67-272#
D$INIT  67-281#
D$IPND  67-276#
D$ISPC  67-283#
D$RUN   67-284#
D$SBRK  67-277#
```

```
D$SSTP  67-271#
D$TSTP  67-282#
D.BKAD  67-256#    67-257
D.BKNM  67-259#
D.BKSV  67-258#
D.BYTM  67-264#
D.CBRK  67-257#
D.DADR  67-243#
D.DOLD  67-244#
D.DTRG  67-245#
D.END   67-267#
D.FLAG  67-251#
D.ILEN  67-254#
D.LOC   67-242#
D.LOCM  67-262#
D.LVAL  67-248#
D.MASK  67-246#
D.NMBE  67-266#
D.NMBF  67-265#
D.PCNT  67-252#
D.PCOL  67-253#
D.PFMT  67-247#
D.PS    67-240#
D.RO    67-232#
D.R1    67-233#
D.R2    67-234#
D.R3    67-235#
D.R4    67-236#
D.R5    67-237#
D.R6    67-238#
D.R7    67-239#
D.RLBS  67-255#
D.SPSV  67-241#
D.STAR  67-231#
D.SVCH  67-263#
D.V1FL  67-260#
D.V2FL  67-261#
D.VAL1  67-249#
D.VAL2  67-250#
DATVAL  56-19#
DC$$SZ  53-13#
DC$BLK  53-9#
DC$FDB  53-8#
DC$LNK  53-11#
DC$NXT  53-7#
DC$PAR  53-12#
DC$USE  53-10#
DEVLL   67-300#
DEVLS   67-299#
DF$CLS  39-52#
DF$DEL  39-53#
DF$ENT  39-55#
DF$LOK  39-54#
DF$REN  39-56#
DH$$BS  41-12#     41-14
DH$$LB  41-14#
```

```
DH$$MS  41-13#    41-14
DH$$SZ  41-10#
DH$BLK  41-9#
DH$HIS  41-7#
DH$NEB  41-8#
DH$NSG  41-5#
DH$NXT  41-6#
DI$CL   37-47#
DI$CR   37-28#
DI$CT   37-27#
DI$DD   37-35#
DI$DL   37-22#
DI$DM   37-33#
DI$DP   37-31#
DI$DR   37-40#
DI$DS   37-29#
DI$DT   37-18#
DI$DU   37-43#
DI$DX   37-32#
DI$DY   37-23#
DI$EL   37-19#
DI$LD   37-41#
DI$LP   37-20#
DI$LS   37-38#
DI$MM   37-30#
DI$MQ   37-39#
DI$MS   37-36#
DI$MT   37-25#
DI$MU   37-48#
DI$NC   37-49#
DI$NL   37-34#
DI$PC   37-24#
DI$PD   37-37#
DI$PI   37-45#
DI$RF   37-26#
DI$RK   37-17#
DI$SL   37-44#
DI$TT   37-21#
DI$VM   37-42#
DI$XL   37-46#    37-47
DIABFL   3-39#
DIABLO  62-13#
DIABNO   3-40#
DIBFSZ  64-36#
DISSLE  63-16#
DMPHND  64-50#
DMPOVL  64-49#
DMPTXT  64-51#
DMYDEV  64-47#
DOTRMP  67-344#
DP$DAA  67-288#
DP$LAA  67-289#
DS$ABT  37-9#
DS$AJT  37-11#
DS$DIR  37-5#
DS$ID   37-13#
```

```
DS$NRD  37-8#
DS$RON  37-6#
DS$SFN  37-10#
DS$VSZ  37-12#
DS$WON  37-7#
DSINT   55-25#
DW$$SZ  25-38#
DW$AW   25-17#
DW$CCA  25-28#
DW$COL  25-11#
DW$CPL  25-13#
DW$CSB  25-36#
DW$CSP  25-18#
DW$CSR  25-19#
DW$G0M  25-29#
DW$G1M  25-30#
DW$G2M  25-31#
DW$G3M  25-32#
DW$GLM  25-33#
DW$GLS  25-35#
DW$GRM  25-34#
DW$ID   25-9#
DW$JOB  25-8#
DW$LIN  25-10#
DW$LPP  25-12#
DW$LPT  25-20#
DW$MAP  25-22#
DW$MSL  25-26#
DW$NSL  25-27#
DW$RID  25-21#
DW$SCA  25-25#
DW$SCL  25-24#
DW$SLN  25-23#
DW$SRB  25-16#
DW$SRT  25-15#
DW$TLN  25-14#
DX$DMA  38-4#
DX$EBA  38-6#
DX$IBH  38-12#
DX$MAP  38-5#
DX$MPH  38-10#
DX$NCA  38-7#
DX$NHM  38-11#
DX$NMT  38-8#
DX$NRD  38-13#
DX$NST  38-14#
DX$RAL  38-9#
DZ$7BT  56-29#
DZ$8BT  56-30#
DZ$LEN  56-28#
DZ$ODD  56-27#
DZ$PAR  56-26#
DZERR   56-21#
EB$BUF  54-8#
EB$NAM  54-7#
EB$RTN  54-10#
```

```
EB$SIZ  54-9#
EB$XX   54-6#
EDIT    62-24#
EMMAP   61-81#
EMTADR  67-30#
EMTASP  67-32#
EMTBLK  67-19#
EMTCAD  67-34#
EMTCAS  67-38#
EMTCAX  67-37#
EMTCXN  67-25#     67-26
EMTCXT  67-15#     67-26
EMTCXW  67-26#
EMTERR  67-23#
EMTLEV  67-31#
EMTMAP  67-22#
EMTPS   67-29#
EMTRAD  67-35#
EMTSP   67-16#
ERRHLT  63-13#
ERRLOC  64-28#
ERRSEV  67-338#
ERRSPC  67-298#
ESC     66-23#
ESCFLG  64-33#
ETX     66-5#
FC$$SS  51-18#
FC$$SZ  40-24#
FC$ACC  51-12#
FC$CDX  40-21#
FC$CHN  51-8#
FC$CLK  51-15#
FC$FDB  51-13#
FC$FLG  51-10#
FC$FLK  51-14#
FC$LBN  51-16#
FC$LNK  40-22#
FC$NLB  51-11#
FC$SBL  40-23#
FC$UN   51-9#
FD$$SZ  40-14#
FD$CHN  40-10#
FD$DAT  40-12#
FD$JOB  40-9#      40-11      40-23
FD$LEN  40-8#
FD$NAM  40-7#
FD$OPT  40-13#
FD$STA  40-6#
FD$TIM  40-11#
FF      66-13#
FF$$SZ  52-14#
FF$CDB  52-8#
FF$DCD  52-9#
FF$FID  52-7#
FF$FLG  52-12#
FF$FLK  52-13#
```

```
FF$FWD  52-10#
FF$NLB  52-11#
FL$ACT  51-22#
FL$EFL  51-23#
FL$NDC  51-24#
FL$SPN  51-25#
FQ$$SZ  43-20#
FQ$LNK  43-9#
FQ$PA5  43-17#
FQ$PA6  43-18#
FQ$PRI  43-19#
FQ$R1   43-15#
FQ$R2   43-14#
FQ$R3   43-13#
FQ$R4   43-12#
FQ$R5   43-11#
FQ$RTN  43-10#
FQ$UFB  43-16#
FRMERR  55-34#
FS$EMP  40-31#
FS$EOS  40-29#
FS$PRM  40-30#
FS$PRO  40-28#
FS$TEN  40-32#
FT$EFL  52-18#
FW$$SZ  52-29#
FW$DBN  52-26#
FW$UN   52-27#
FW$WLK  52-28#
GTLTTY  63-17#
H.CQE   39-18#
H.CSR   39-12#
H.DSTS  39-10#
H.DVSZ  39-9#
H.ENT   39-19#
H.FET   39-6#
H.GEN   39-11#
H.INS   39-13#
H.INT   39-15#
H.LOAD  39-7#
H.LQE   39-17#
H.PRI   39-16#
H.SIZ   39-8#
H.VEC   39-14#
HAZEL   62-12#
HAZLFL   3-48#
HAZLNO   3-49#
HF$7BT  57-34#
HF$8BT  57-35#
HF$AEE  57-28#
HF$CNI  57-14#
HF$DO   57-22#
HF$FE   57-23#
HF$HD   57-29#
HF$LEN  57-33#
HF$LIN  57-17#
```

```
HF$MC    57-11#
HF$MM    57-13#
HF$NXM   57-12#
HF$ODD   57-30#
HF$PAR   57-31#
HF$PE    57-24#
HF$RI    57-15#
HF$RIE   57-16#
HF$SI    57-8#
HF$SIE   57-10#
HF$TI    57-7#
HF$TIE   57-9#
HF$TSB   57-32#
HF$VDP   57-21#
HIMLOC   64-27#
HSR$FE   39-25#
HSR$LO   39-27#
HSR$RE   39-26#
HSR$UN   39-28#
IB$$SZ   23-12#
IB$IJ    23-10#
IB$SF2   23-9#
II$$SZ   44-10#
II$FLG   44-7#
II$NAM   44-6#
II$NPV   44-9#
II$PRV   44-8#
IN$ACT   16-55#
IN$CMD   16-57#
IN$CNT   16-56#
INDERR   63-43#
INDSTA   63-44#
INTERR   67-24#
INTMX1   56-15#
IOMAP    61-82#
IOPAGE   64-22#
IOQSIZ   19-28#
ISPF11   12-15#
ISPF5     6-23#
ISPF6     7-23#
ISPF7     8-23#      8-24       8-24#
ISPF9    10-23#
IT$HOT   21-7#
IT$JOB   21-10#
IT$LNK   21-9#
IT$LOT   21-8#
IT$RTN   21-13#
IT$SEQ   21-11#
IT$SYS   21-12#
JCDB     67-297#
JIDLN    63-33#
JIMLOK   63-34#
JIPRIV   63-35#
JIVLN    63-32#
JM$$SZ   24-10#
JM$JOB   24-9#
```

```
JM$LNK  24-7#
JM$RTN  24-8#
JOBCCB  67-315#
JPWDEV  67-323#
JPWFLG  67-325#
JPWTYP  67-324#
JS$KMN  24-17#
JS$LOG  24-15#
JS$OFF  24-18#
JS$ON   24-14#
JS$RUN  24-16#
JSTK    67-9#
JSTKND  67-8#
JSWLOC  64-26#
K52     62-27#
KC$COM  28-47#
KC$DOT  28-46#
KC$DWN  28-51#
KC$E1   28-54#
KC$E2   28-55#
KC$E3   28-56#
KC$E4   28-57#
KC$E5   28-58#
KC$E6   28-59#
KC$ENT  28-49#
KC$F10  28-64#
KC$F11  28-65#
KC$F12  28-66#
KC$F13  28-67#
KC$F14  28-68#
KC$F15  28-69#
KC$F16  28-70#
KC$F17  28-71#
KC$F18  28-72#
KC$F19  28-73#
KC$F20  28-74#
KC$F6   28-60#
KC$F7   28-61#
KC$F8   28-62#
KC$F9   28-63#
KC$KP0  28-36#
KC$KP1  28-37#
KC$KP2  28-38#
KC$KP3  28-39#
KC$KP4  28-40#
KC$KP5  28-41#
KC$KP6  28-42#
KC$KP7  28-43#
KC$KP8  28-44#
KC$KP9  28-45#
KC$LFT  28-52#
KC$MIN  28-48#
KC$PF1  28-32#
KC$PF2  28-33#
KC$PF3  28-34#
KC$PF4  28-35#
```

```
KC$RIT  28-53#
KC$UP   28-50#
KD$$SZ  28-16#
KD$COD  28-12#
KD$FLG  28-14#
KD$TXT  28-15#
KD$TYP  28-13#
KED     62-26#
KEYMXT  28-7#
KEYPAR  67-216#
KEYRCB  67-215#
KF$ECO  28-20#
KF$TRM  28-21#
KL3CLR   4-21#
KL4CLR   5-21#
KMNBAS  64-41#
KMPRMT  67-326#
KPAR0   61-9#     61-10     61-11     61-12     61-13     61-14     61-15     61-16
KPAR1   61-10#
KPAR2   61-11#
KPAR3   61-12#
KPAR4   61-13#
KPAR5   61-14#
KPAR6   61-15#
KPAR7   61-16#
KPDR0   61-20#    61-21     61-22     61-23     61-24     61-25     61-26     61-27
KPDR1   61-21#
KPDR2   61-22#
KPDR3   61-23#
KPDR4   61-24#
KPDR5   61-25#
KPDR6   61-26#
KPDR7   61-27#
KT$GLD  28-26#
KT$GLT  28-28#
KT$LET  28-27#
KT$NRM  28-25#
LA120   62-8#
LA12FL   3-27#
LA12NO   3-28#
LA36    62-7#
LA36FL   3-24#
LA36NO   3-25#
LCBIT   63-6#
LD$RON  38-20#
LDBASE  67-139#
LDFLAG  67-140#
LDNAME  67-136#
LDPDEV  67-137#
LDSIZE  67-138#
LF      66-12#
LF$IN   50-8#
LF$OPN  50-6#
LF$OUT  50-9#
LF$WRT  50-7#
LOFSPC  67-321#
```

```
LOGBAS  67-182#
LOGBLK  67-179#
LOGBUF  67-176#
LOGDVU  67-181#
LOGEND  67-177#
LOGFLG  67-180#
LOGPTR  67-178#
LP$7BT  59-26#
LP$ODD  59-28#
LP$PAR  59-27#
LP$SPD  59-25#
LSTCHR  67-333#
LSTFDD  67-314#
LSTFDT  67-313#
LSTPRM  67-164#
MA$RGN  45-12#
MA$SRT  45-11#
MA$SYS  45-10#
MAXACC  64-7#
MAXASN  64-6#
MAXLD   64-10#
MAXMEM  67-308#
MAXPRI  64-17#
MAXSLO  64-5#
MAXSRD  64-16#
MB$$SZ  54-19#
MB$BUF  54-17#
MB$FLK  54-15#
MB$NAM  54-16#
MB$REQ  54-18#
MF$BSY  57-45#
MF$CAR  57-51#
MF$CM   57-40#
MF$CS   57-39#
MF$CTS  57-52#
MF$DON  57-42#
MF$DTR  57-56#
MF$IE   57-43#
MF$LE   57-57#
MF$LIN  57-46#
MF$RNG  57-50#
MF$RTS  57-55#
MF$SE   57-44#
MF$SR   57-53#
MF$ST   57-54#
MF$STP  57-41#
MI$$SZ  34-21#
MI$CWC  34-15#
MI$JOB  34-20#
MI$LNK  34-12#
MI$OQE  34-13#
MI$RWF  34-19#
MI$SBP  34-18#
MI$TRW  34-14#
MI$UBO  34-17#
MI$UBP  34-16#
```

```
MMENBL  61-76#
MPAR0   61-90#
MPAR16  61-91#
MR$$SZ  54-30#
MR$BUF  54-28#
MR$JOB  54-29#
MR$LNK  54-24#
MR$RTN  54-27#
MR$UBA  54-25#
MR$UBS  54-26#
MS$BRK  55-9#
MS$CAR  55-7#
MS$DTR  55-8#
MS$RNG  55-6#
MSE     56-13#    56-15
MU$FLK  54-35#
MU$JOB  54-37#
MU$SIZ  54-36#
MU$TXT  54-38#
MW$$SZ  34-30#
MW$IOQ  34-29#
MW$LNK  34-28#
MXCCHR  64-9#
MXCPRM  64-8#
MXJPRI  67-322#
MXPRMT  64-13#
NEWJSW  67-306#
NOUSWP  63-5#
NOWAIT  63-14#
NPCCB   67-316#
NUMRCB  64-11#
NUMWCB  64-12#
O.ADR   17-6#
O.BLK   17-8#
O.PAR   17-7#
O.SIZ   17-9#
ODTBAS  67-305#
OF$$SZ  42-24#
OF$DEV  42-21#
OF$FIL  42-20#
OF$FLG  42-23#
OF$UNT  42-22#
OKFAND  67-129#
OKFEND  67-132#
OKFILE  67-131#
OKFNND  67-130#
OT$RON  42-28#
OVLBIT  63-11#
OVRRUN  55-33#
PO$$NP  13-52#
PO$ALC  13-14#    13-52
PO$BYP  13-19#
PO$DBG  13-15#    13-52
PO$DET  13-16#    13-52
PO$LOK  13-21#
PO$MEM  13-18#
```

```
PO$NAM  13-24#    13-52
PO$NEW  13-13#    13-52
PO$NFR  13-26#    13-52
PO$NFW  13-27#    13-52
PO$OPR  13-20#
PO$RT   13-22#
PO$SND  13-23#    13-52
PO$SPF  13-17#    13-52
PO$SPV  13-25#
PO$SYS  13-28#
P2$$NP  13-53#
P2$CGR  13-39#
P2$CXT  13-40#
P2$GRP  13-34#
P2$MSG  13-37#    13-53
P2$RLK  13-38#    13-53
P2$SAM  13-35#    13-53
P2$TRM  13-32#
P2$UP1  13-44#
P2$UP2  13-43#
P2$UP3  13-42#
P2$UP4  13-41#
P2$VIR  13-36#    13-53
P2$WRL  13-33#
PA$BEL  27-14#
PA$BLD  27-9#
PA$DSC  27-8#
PA$DTS  27-16#
PA$DWD  27-11#
PA$FLG  27-17#
PA$GRC  27-6#
PA$HQL  27-12#
PA$LET  27-13#
PA$NWD  27-15#
PA$UKC  27-7#
PA$ULN  27-10#
PARENL  61-92#
PASLIN  63-9#
PBFEND  67-167#
PC$AF   46-27#
PC$IRQ  46-29#
PC$PF   46-28#
PC$UF   46-26#
PCCCR0  46-17#
PCCCR1  46-18#
PCCCR2  46-19#
PCCCR3  46-20#
PCCDAT  46-14#
PCCDAY  46-13#
PCCHAL  46-12#
PCCHRS  46-11#
PCCMAL  46-10#
PCCMIN  46-9#
PCCMON  46-15#
PCCSAL  46-8#
PCCSEC  46-7#
```

```
PCCVEC   46-22#
PCCYR    46-16#
PF$IOW   63-24#
PF$OVF   63-26#
PF$SYS   63-25#
PR7      64-39#
PRGSIZ   67-310#
PRGTOP   67-309#
PRIVA0   67-144#
PRIVA2   67-145#
PRIVC0   67-150#
PRIVC2   67-151#
PRIVF0   67-148#
PRIVF2   67-149#
PRIVS0   67-146#
PRIVS2   67-147#
PRMBUF   67-165#
PRMEND   67-166#
PRMPNT   67-163#
PSW      64-42#
PVNPW    13-48#
Q.BLKN   19-8#     20-10
Q.BUFF   19-12#    20-13
Q.CHAN   19-18#
Q.COMP   19-14#    20-15
Q.CSW    19-7#     20-9
Q.DEVX   19-19#    20-18
Q.FLAG   19-20#    20-17
Q.FUNC   19-9#     20-11
Q.ICSW   19-27#
Q.JNUM   19-11#
Q.JOB    19-21#
Q.LINK   19-6#     20-8
Q.PA5    19-16#    20-16
Q.PA6    19-25#
Q.PAR    19-15#
Q.UCSW   19-26#
Q.UMPB   19-23#
Q.UMPP   19-24#
Q.UMRX   19-17#    20-19
Q.UMVB   19-22#
Q.UNIT   19-10#    19-11     20-12
Q.WCNT   19-13#    20-14
QF$CIO   20-27#
QF$IOT   20-29#
QF$MIO   20-26#
QF$OWC   20-28#
QF$SCR   20-25#
QF$SYN   20-30#
QUME     62-14#
QUMEFL    3-42#
QUMENO    3-43#
R.GID    31-37#
R.GSIZ   31-38#
R.GSTS   31-39#
R.NAME   31-40#
```

```
RBERR    55-32#
RC$$SZ   31-14#
RC$AEP   31-27#
RC$AGE   31-24#
RC$BAS   31-8#
RC$BLK   31-9#
RC$CNT   31-12#
RC$DSP   31-29#
RC$EXC   31-23#
RC$EXI   31-25#
RC$FLG   31-10#
RC$GBL   31-20#
RC$INM   31-18#
RC$LCG   31-22#
RC$LEN   31-6#
RC$NAM   31-11#
RC$OFF   31-26#
RC$OWN   31-13#
RC$PAG   31-7#
RC$PRM   31-28#
RC$PVT   31-21#
RC$SFA   31-19#
RC$UNM   31-30#
RC$USE   31-31#
RCBBAS   67-101#
RCBEND   67-102#
RCLREV   67-211#
RCVACT   55-22#
RCVDON   55-23#
RCVINT   55-24#    55-28
RCVPAR   55-35#
RDAR     67-95#
RDDR     67-96#
RDDRND   67-97#
RDINT    55-28#
RDONE    56-11#
REENT    63-7#
REQSND   55-26#
RESDEV   67-128#
RF$WRT   36-19#
RIE      56-12#    56-15
RING     55-19#
RLINE    56-22#
RMNBAS   63-42#    63-43     63-44
RMON     64-30#
RPAR     67-92#
RPDR     67-93#
RPDRND   67-94#
RS.AGE   31-50#
RS.CGR   31-49#
RS.CRR   31-44#
RS.DSP   31-53#
RS.EGR   31-51#
RS.EXI   31-52#
RS.GBL   31-48#
RS.NAL   31-46#
RS.NEW   31-47#
RS.PVT   31-54#
RS.UNM   31-45#
RT$$SZ   36-15#
RT$BAS   36-11#
RT$DEV   36-8#
RT$EXT   36-10#
RT$FLG   36-13#
RT$NAM   36-9#
RT$SKP   36-14#
RT$TOP   36-12#
RUBOUT   66-25#
RUNARG   67-332#
RUNDEV   67-294#
RUNFLG   67-295#
RUNRDB   67-105#
S$$HIP   14-24#
S$$RT    14-13#
S$$RUN   14-30#
S$CPU    14-28#
S$DUMY   14-8#
S$HICP   14-20#
S$INWT   14-44#
S$IOFN   14-23#
S$IOWT   14-39#
S$LOW    14-29#
S$MSWT   14-47#
S$NEDQ   14-34#
S$OTFN   14-19#
S$OTLO   14-22#
S$OTWT   14-40#
S$QCCB   14-36#
S$QCXB   14-37#
S$QMIO   14-35#
S$QSPD   14-45#
S$QUSR   14-38#
S$RT     14-12#
S$SFWT   14-41#
S$SPCB   14-46#
S$SPDB   14-43#
S$SPND   14-48#
S$TMWT   14-49#
S$TTFN   14-18#
S$TTSC   14-17#
S$TWFN   14-21#
S$WFM    14-50#
S$WSMB   14-42#
S110     59-7#
S1200    59-12#
S134.5   59-8#
S150     59-9#
S1800    59-13#
S19200   59-20#
S2000    59-14#
S2400    59-15#
S300     59-10#
```

```
S3600   59-16#
S4800   59-17#
S50     59-5#
S600    59-11#
S7200   59-18#
S75     59-6#
S9600   59-19#
SA$LOK  22-15#
SA$RGN  22-16#
SB$$SZ  15-10#
SB$END  15-9#
SB$LNK  15-6#
SB$PNT  15-7#
SB$TXT  15-8#
SBPSUF  67-327#
SBUFSZ  64-37#
SBUFWD  64-38#
SC$ERR  65-7#
SC$FTL  65-9#
SC$NON  65-11#
SC$SEV  65-8#
SC$SUC  65-5#
SC$UNC  65-10#
SC$WRN  65-6#
SCHAIN  63-15#
SD$BAK  48-36#    48-40
SD$BWT  48-29#
SD$CLR  48-40#
SD$DEL  48-30#    48-40
SD$FLG  48-37#
SD$FLK  48-32#
SD$HLD  48-33#
SD$INR  48-28#
SD$RSV  48-39#
SD$SMS  48-35#    48-40
SD$SNG  48-34#
SD$WFM  48-31#    48-40
SD$WID  48-38#
SDANAM  48-20#
SDBLK   48-17#
SDBU    48-24#
SDBUF1  48-11#
SDBUF2  48-12#
SDCHAN  48-8#
SDDVU   48-15#
SDFHD   48-18#
SDFLAG  48-21#
SDFLNK  48-10#
SDFORM  48-19#
SDFRBL  48-23#
SDNAME  48-14#
SDSFCB  48-9#
SDSKIP  48-22#
SDUSER  48-13#
SDWLST  48-16#
SERFLG  67-335#
```

```
SF$1ST  47-26#
SF$BN1  47-25#
SF$BSY  47-24#
SF$DEL  47-28#
SF$HLD  47-27#
SF2LEN  23-6#
SFCBSZ  47-20#
SFCHAN  47-11#
SFFILE  47-17#
SFFLAG  47-10#
SFFLNK  47-15#
SFFORM  47-16#
SFID    47-18#
SFNMBL  47-13#
SFQLNK  47-19#
SFSDCB  47-12#
SFSTRT  47-14#
SFUSER  47-9#
SG$ELG  16-38#
SG$EMT  16-41#
SG$IOT  16-40#
SG$MMU  16-39#
SG$MTM  16-43#
SG$MTS  16-44#
SG$PAR  16-42#
SG$SYJ  16-45#
SG$TSX  16-46#
SH$$SZ  39-38#
SH$FLG  39-37#
SH$NAM  39-35#
SH$RTN  39-36#
SH$VAL  39-34#
SLBACK  67-208#
SLBFSZ  64-15#
SLCBUF  67-203#
SLCCOL  67-187#
SLCR    67-207#
SLCSBF  67-204#
SLCSBX  67-205#
SLCSPT  67-196#
SLCSR   67-197#
SLCX    67-186#
SLCYC1  67-193#
SLCYC2  67-194#
SLDBUF  67-201#
SLDOWN  67-209#
SLEBUF  67-198#
SLECOL  67-188#
SLGOLD  67-206#
SLLBUF  67-199#
SLLEND  67-200#
SLLPTR  67-192#
SLMXLN  64-14#
SLOPTR  67-190#
SLOVER  67-210#
SLRPTR  67-195#
```

```
SLSBUF  67-202#
SLSCOL  67-189#
SLSPTR  67-191#
SN$ID   29-10#
SN$JOB  29-7#
SN$LNK  29-6#
SN$RTN  29-12#
SN$XX1  29-8#
SN$XX2  29-9#
SN$XX3  29-11#
SNDCLR  55-20#
SO$NO   39-42#
SO$NVL  39-43#
SO$OCT  39-44#
SP$$SZ  22-11#
SP$CMD  22-8#
SP$DW1  22-10#
SP$JOB  22-9#
SP$LNK  22-7#
SPACE   66-24#
SPCFLG  67-48#
SPCPS   67-33#
SPCTTY  63-8#
SPDLBF  67-226#
SPIJ    67-342#
SPLARG  67-225#
SPSAVE  67-303#
SPUBND  67-223#
SPUBUF  67-222#
SR$FLG  67-113#
SR$PAR  67-110#
SR$PDR  67-111#
SR$PX   67-112#
SR$WCB  67-109#
SR.DSP  67-118#
SR.MOR  67-117#
SR0MMR  61-75#
SR1MMR  61-77#
SR2MMR  61-78#
SR3MMR  61-79#
SS$PRT  16-51#
SS$RUN  16-50#
SS3CHR  66-27#
STATCH  55-18#
SUCF2   67-343#
SUPRTN  64-24#
SWTCNT  67-49#
SXBPNT  67-224#
SXBUF1  67-221#
SXSFCB  67-220#
TAB     66-11#
TCSBSZ  25-5#
TECO    62-25#
TIE     56-9#      56-15
TLINE   56-10#
TO$FF   16-66#
```

```
TO$LC   16-67#
TO$SCP  16-68#
TO$TAB  16-65#
TRBRK   55-41#
TRDY    56-8#
TRINT   55-40#
TRMRDY  55-27#
TRNSFL  64-34#
TRRDY   55-39#
TSDEFS   1-5        1-6#
UC$$SZ  30-13#
UC$MDC  30-12#
UC$NDC  30-11#
UCHAN   67-317#
UCISPC  67-320#
UCLMCL  30-6#
UCLMKL  30-5#
UDAR0   61-53#    61-54     61-55     61-56     61-57     61-58     61-59     61-60
UDAR1   61-54#
UDAR2   61-55#
UDAR3   61-56#
UDAR4   61-57#
UDAR5   61-58#
UDAR6   61-59#
UDAR7   61-60#
UDDR0   61-64#    61-65     61-66     61-67     61-68     61-69     61-70     61-71
UDDR1   61-65#
UDDR2   61-66#
UDDR3   61-67#
UDDR4   61-68#
UDDR5   61-69#
UDDR6   61-70#
UDDR7   61-71#
UERSEV  67-339#
UFORM   67-227#
UFPTRP  67-312#
UHIMEM  67-301#
UK$$SZ  30-20#
UK$NAM  30-18#
UK$PTR  30-19#
UM$$SZ  33-13#
UM$IOQ  33-12#
UM$NMR  33-10#
UM$UMR  33-9#
UM$WDS  33-11#
UMODE   64-43#
UMRADR  61-86#
UMSPSV  67-307#
UPAR0   61-31#    61-32     61-33     61-34     61-35     61-36     61-37     61-38
UPAR1   61-32#
UPAR2   61-33#
UPAR3   61-34#
UPAR4   61-35#
UPAR5   61-36#
UPAR6   61-37#
UPAR7   61-38#
```

```
UPDR0   61-42#   61-43     61-44     61-45     61-46     61-47     61-48     61-49
UPDR1   61-43#
UPDR2   61-44#
UPDR3   61-45#
UPDR4   61-46#
UPDR5   61-47#
UPDR6   61-48#
UPDR7   61-49#
UPMODE  64-44#
UPPN    67-293#
UR0     67-17#
US$$SZ  30-26#
US$TXT  30-25#
USDSPC  61-80#
USERRB  64-29#
USRLOC  64-25#
USRSTK  67-302#
USTART  67-304#
UTRPAD  67-311#
VC$$SZ  29-28#
VC$FLG  29-27#
VC$JOB  29-25#
VC$JSR  29-22#
VC$PRI  29-26#
VC$RTN  29-23#
VC$VEC  29-24#
VF$7BT  58-34#
VF$8BT  58-35#
VF$ABT  58-57#
VF$BC   58-54#
VF$CTS  58-45#
VF$DCD  58-44#
VF$DET  29-33#
VF$DF   58-9#
VF$DIR  29-32#
VF$DSR  58-42#
VF$DTR  58-50#
VF$DV   58-21#
VF$EVN  58-37#
VF$FE   58-23#
VF$IFC  58-56#
VF$LEN  58-33#
VF$LIN  58-15#
VF$LT   58-51#
VF$MR   58-14#
VF$OE   58-22#
VF$OFC  58-53#
VF$PAR  58-36#
VF$PER  58-24#
VF$RDA  58-12#
VF$RE   58-55#
VF$RIE  58-13#
VF$RNG  58-43#
VF$RTS  58-49#
VF$SC   58-38#
VF$TDE  58-10#
```

```
VF$TDV   58-29#
VF$TEN   58-61#
VF$TGO   58-62#
VF$TIE   58-8#
VF$TR    58-7#
VF$XLN   58-11#
VF$XOF   58-52#
VIMAGE   63-10#
VO$HIO   17-20#
VO$HIR   17-19#
VO$RDB   17-18#
VO$WDB   17-17#
VO$WDE   17-16#
VPAR1    64-18#
VPAR5    64-19#
VPAR6    64-21#
VT100    62-10#
VT10FL    3-33#
VT10NO    3-34#
VT200    62-17#
VT2007   62-15#     62-17
VT2008   62-16#
VT20FL    3-36#
VT20NO    3-37#
VT52     62-9#
VT52FL    3-30#
VT52NO    3-31#
W.NAPR   32-27#
W.NBAS   32-28#
W.NID    32-26#
W.NLEN   32-32#
W.NOFF   32-31#
W.NRID   32-30#
W.NSIZ   32-29#
W.NSTS   32-33#
W.SIZE   32-34#
WC$$SZ   32-15#
WC$LEN   32-9#
WC$MAP   32-13#
WC$NPR   32-12#
WC$OFF   32-10#
WC$PAR   32-11#
WC$RCB   32-5#
WC$SIZ   32-6#
WC$TRP   32-14#
WC$VHI   32-8#
WC$VLO   32-7#
WC.FST   32-20#
WC.MAP   32-19#
WCBBAS   67-103#
WCBEND   67-104#
WLDNAM   64-48#
WS.CRW   32-42#
WS.ELW   32-40#
WS.MAP   32-38#
WS.OVR   32-39#
WS.UNM   32-41#
XL$CD    60-43#
XL$CTS   60-42#
XL$RI    60-44#
XL$XFR   60-41#
XL$XFX   60-40#
ZCLR     56-14#
ZFRMER   56-20#
```

```
M        1-56#    2-5      2-6      2-7      2-8      2-9      2-10     2-11     2-12     2-13     2-14     2-15
         2-16     2-17     2-18     3-4      3-5      3-6      3-7      3-8      3-9      3-10     3-11     3-12
         3-13     3-14     3-15     3-16     3-17     3-18     3-19     3-24     3-25     3-27     3-28     3-30
         3-31     3-33     3-34     3-36     3-37     3-39     3-40     3-42     3-43     3-45     3-46     3-48
         3-49     4-4      4-5      4-6      4-7      4-8      4-9      4-10     4-11     4-12     4-13     4-14
         4-15     4-16     4-17     4-18     4-19     4-21     5-4      5-5      5-6      5-7      5-8      5-9
         5-10     5-11     5-12     5-13     5-14     5-15     5-16     5-17     5-18     5-19     5-21     5-22
         6-4      6-5      6-6      6-7      6-8      6-9      6-10     6-11     6-12     6-13     6-14     6-15
         6-16     6-17     6-18     6-19     6-23     7-4      7-5      7-6      7-7      7-8      7-9      7-10
         7-11     7-12     7-13     7-14     7-15     7-16     7-17     7-18     7-19     7-23     8-4      8-5
         8-6      8-7      8-8      8-9      8-10     8-11     8-12     8-13     8-14     8-15     8-16     8-17
         8-18     8-19     8-23     8-24     9-4      9-5      9-6      9-7      9-8      9-9      9-10     9-11
         9-12     9-16     10-4     10-5     10-6     10-7     10-8     10-9     10-10    10-11    10-12    10-13
         10-14    10-15    10-16    10-17    10-18    10-19    10-23    11-4     11-5     11-6     11-7     11-8
         11-9     11-10    11-11    11-12    11-13    11-14    11-15    12-4     12-5     12-6     12-7     12-8
         12-9     12-10    12-11    12-15    13-13    13-14    13-15    13-16    13-17    13-18    13-19    13-20
         13-21    13-22    13-23    13-24    13-25    13-26    13-27    13-28    13-32    13-33    13-34    13-35
         13-36    13-37    13-38    13-39    13-40    13-41    13-42    13-43    13-44    13-48    13-52    13-53
         16-5     16-6     16-7     16-8     16-9     16-10    16-11    16-12    16-13    16-14    16-15    16-16
         16-17    16-18    16-22    16-23    16-24    16-25    16-26    16-27    16-28    16-29    16-30    16-31
         16-32    16-33    16-34    16-38    16-39    16-40    16-41    16-42    16-43    16-44    16-45    16-46
         16-50    16-51    16-55    16-56    16-57    16-61    16-65    16-66    16-67    16-68    16-72    16-73
         17-16    17-17    17-18    17-19    17-20    18-16    18-17    18-18    18-19    18-20    18-21    18-22
         18-23    19-11    20-8     20-9     20-10    20-11    20-12    20-13    20-14    20-15    20-16    20-17
         20-18    20-19    20-25    20-26    20-27    20-28    20-29    20-30    22-15    22-16    23-6     24-14
         24-15    24-16    24-17    24-18    25-5     26-4     26-5     26-6     26-10    26-11    26-12    26-13
         26-14    26-18    26-19    26-20    26-21    26-22    26-23    26-24    26-25    26-26    26-27    26-28
         26-29    26-30    26-31    26-32    26-33    27-6     27-7     27-8     27-9     27-10    27-11    27-12
         27-13    27-14    27-15    27-16    27-17    28-7     28-20    28-21    28-25    28-26    28-27    28-28
         28-32    28-33    28-34    28-35    28-36    28-37    28-38    28-39    28-40    28-41    28-42    28-43
         28-44    28-45    28-46    28-47    28-48    28-49    28-50    28-51    28-52    28-53    28-54    28-55
         28-56    28-57    28-58    28-59    28-60    28-61    28-62    28-63    28-64    28-65    28-66    28-67
         28-68    28-69    28-70    28-71    28-72    28-73    28-74    29-32    29-33    30-5     30-6     31-18
         31-19    31-20    31-21    31-22    31-23    31-24    31-25    31-26    31-27    31-28    31-29    31-30
         31-31    31-44    31-45    31-46    31-47    31-48    31-49    31-50    31-51    31-52    31-53    31-54
         32-19    32-20    32-38    32-39    32-40    32-41    32-42    36-19    37-5     37-6     37-7     37-8
         37-9     37-10    37-11    37-12    37-13    37-17    37-18    37-19    37-20    37-21    37-22    37-23
         37-24    37-25    37-26    37-27    37-28    37-29    37-30    37-31    37-32    37-33    37-34    37-35
         37-36    37-37    37-38    37-39    37-40    37-41    37-42    37-43    37-44    37-45    37-46    37-47
         37-48    37-49    38-4     38-5     38-6     38-7     38-8     38-9     38-10    38-11    38-12    38-13
         38-14    38-20    39-6     39-7     39-8     39-9     39-10    39-11    39-12    39-13    39-14    39-15
         39-16    39-17    39-18    39-19    39-25    39-26    39-27    39-28    39-42    39-43    39-44    39-52
         39-53    39-54    39-55    39-56    40-11    40-23    40-28    40-29    40-30    40-31    40-32    41-12
         41-13    41-14    41-27    42-28    44-14    44-15    44-16    44-17    44-18    44-19    44-20    44-21
         44-22    44-23    44-24    44-25    44-26    44-27    44-28    44-29    45-10    45-11    45-12    46-7
         46-8     46-9     46-10    46-11    46-12    46-13    46-14    46-15    46-16    46-17    46-18    46-19
         46-20    46-22    46-26    46-27    46-28    46-29    47-24    47-25    47-26    47-27    47-28    48-28
         48-29    48-30    48-31    48-32    48-33    48-34    48-35    48-36    48-37    48-38    48-39    48-40
         49-20    50-6     50-7     50-8     50-9     51-22    51-23    51-24    51-25    52-18    55-6     55-7
         55-8     55-9     55-18    55-19    55-20    55-21    55-22    55-23    55-24    55-25    55-26    55-27
         55-28    55-32    55-33    55-34    55-35    55-39    55-40    55-41    56-8     56-9     56-10    56-11
         56-12    56-13    56-14    56-15    56-19    56-20    56-21    56-22    56-26    56-27    56-28    56-29
         56-30    57-7     57-8     57-9     57-10    57-11    57-12    57-13    57-14    57-15    57-16    57-17
         57-21    57-22    57-23    57-24    57-28    57-29    57-30    57-31    57-32    57-33    57-34    57-35
         57-39    57-40    57-41    57-42    57-43    57-44    57-45    57-46    57-50    57-51    57-52    57-53
         57-54    57-55    57-56    57-57    58-7     58-8     58-9     58-10    58-11    58-12    58-13    58-14
```

```
          58-15     58-21     58-22     58-23     58-24     58-29     58-33     58-34     58-35     58-36     58-37     58-38
          58-42     58-43     58-44     58-45     58-49     58-50     58-51     58-52     58-53     58-54     58-55     58-56
          58-57     58-61     58-62     59-5      59-6      59-7      59-8      59-9      59-10     59-11     59-12     59-13
          59-14     59-15     59-16     59-17     59-18     59-19     59-20     59-25     59-26     59-27     59-28     60-7
          60-8      60-9      60-10     60-11     60-12     60-13     60-14     60-15     60-16     60-17     60-18     60-20
          60-24     60-25     60-26     60-27     60-28     60-29     60-30     60-31     60-32     60-33     60-34     60-35
          60-36     60-40     60-41     60-42     60-43     60-44     60-48     60-49     60-50     60-51     60-52     60-53
          60-54     60-55     60-56     60-57     60-58     60-59     60-60     60-61     60-62     60-63     60-64     60-65
          60-66     60-67     61-9      61-10     61-11     61-12     61-13     61-14     61-15     61-16     61-20     61-21
          61-22     61-23     61-24     61-25     61-26     61-27     61-31     61-32     61-33     61-34     61-35     61-36
          61-37     61-38     61-42     61-43     61-44     61-45     61-46     61-47     61-48     61-49     61-53     61-54
          61-55     61-56     61-57     61-58     61-59     61-60     61-64     61-65     61-66     61-67     61-68     61-69
          61-70     61-71     61-75     61-76     61-77     61-78     61-79     61-80     61-81     61-82     61-86     61-90
          61-91     61-92     62-7      62-8      62-9      62-10     62-11     62-12     62-13     62-14     62-15     62-16
          62-17     62-24     62-25     62-26     62-27     63-5      63-6      63-7      63-8      63-9      63-10     63-11
          63-12     63-13     63-14     63-15     63-16     63-17     63-24     63-25     63-26     63-32     63-33     63-34
          63-35     63-42     63-43     63-44     64-5      64-6      64-7      64-8      64-9      64-10     64-11     64-12
          64-13     64-14     64-15     64-16     64-17     64-18     64-19     64-20     64-21     64-22     64-23     64-24
          64-25     64-26     64-27     64-28     64-29     64-30     64-31     64-32     64-33     64-34     64-35     64-36
          64-37     64-38     64-39     64-40     64-41     64-42     64-43     64-44     64-45     64-46     64-47     64-48
          64-49     64-50     64-51     65-5      65-6      65-7      65-8      65-9      65-10     65-11     66-5      66-6
          66-7      66-8      66-9      66-10     66-11     66-12     66-13     66-14     66-15     66-16     66-17     66-18
          66-19     66-20     66-21     66-22     66-23     66-24     66-25     66-26     66-27     67-26     67-105    67-117
          67-118    67-257    67-271    67-272    67-273    67-274    67-275    67-276    67-277    67-278    67-279    67-280
          67-281    67-282    67-283    67-284    67-288    67-289    67-349
RB         1-42#    14-8      14-12     14-13     14-17     14-18     14-19     14-20     14-21     14-22     14-23     14-24
          14-28     14-29     14-30     14-34     14-35     14-36     14-37     14-38     14-39     14-40     14-41     14-42
          14-43     14-44     14-45     14-46     14-47     14-48     14-49     14-50     18-10     18-11     19-9      19-10
          19-19     19-20     19-21     19-22     22-8      22-9      23-9      23-10     24-9      25-8      25-9      25-23
          25-24     25-25     25-26     25-27     25-28     25-29     25-30     25-31     25-32     25-33     25-34     25-35
          25-36     28-12     28-13     28-14     28-15     29-24     29-25     29-26     29-27     30-18     30-25     31-12
          31-13     32-11     32-12     32-13     32-14     32-26     32-27     33-9      33-10     34-19     34-20     35-15
          36-13     36-14     39-36     39-37     40-9      40-10     41-34     42-21     42-22     42-23     42-38     42-39
          43-19     47-9      47-10     48-20     49-6      49-7      49-8      49-9      49-10     49-11     49-12     49-13
          49-14     49-15     49-16     49-17     51-8      51-9      51-10     51-11     52-12     54-29     54-37     67-23
          67-24     67-43     67-48     67-49     67-50     67-112    67-113    67-165    67-198    67-199    67-200    67-201
          67-202    67-203    67-204    67-205    67-206    67-207    67-208    67-209    67-210    67-211    67-259    67-260
          67-261    67-262    67-263    67-264    67-265    67-266    67-331    67-332    67-333    67-334    67-335    67-336
          67-337    67-338    67-339    67-340    67-341    67-342    67-343    67-344
RW         1-25#    15-6      15-7      15-8      15-9      15-10     17-6      17-7      17-8      17-9      18-6      18-7
          18-8      18-9      18-12     19-6      19-7      19-8      19-12     19-13     19-14     19-15     19-16     19-17
          19-18     19-23     19-24     19-25     19-26     19-27     19-28     21-7      21-8      21-9      21-10     21-11
          21-12     21-13     22-7      22-10     22-11     23-12     24-7      24-8      24-10     25-10     25-11     25-12
          25-13     25-14     25-15     25-16     25-17     25-18     25-19     25-20     25-21     25-22     25-38     28-16
          29-6      29-7      29-8      29-9      29-10     29-11     29-12     29-22     29-23     29-28     30-11     30-12
          30-13     30-19     30-20     30-26     31-6      31-7      31-8      31-9      31-10     31-11     31-14     31-37
          31-38     31-39     31-40     32-5      32-6      32-7      32-8      32-9      32-10     32-15     32-28     32-29
          32-30     32-31     32-32     32-33     32-34     33-11     33-12     33-13     34-12     34-13     34-14     34-15
          34-16     34-17     34-18     34-21     34-28     34-29     34-30     35-7      35-8      35-9      35-10     35-11
          35-12     35-13     35-14     35-17     36-8      36-9      36-10     36-11     36-12     36-15     39-34     39-35
          39-38     40-6      40-7      40-8      40-12     40-13     40-14     40-21     40-22     40-24     41-5      41-6
          41-7      41-8      41-9      41-10     41-30     41-31     41-32     41-33     41-35     42-7      42-8      42-9
          42-10     42-11     42-12     42-20     42-24     42-37     42-40     43-9      43-10     43-11     43-12     43-13
          43-14     43-15     43-16     43-17     43-18     43-20     44-6      44-7      44-8      44-9      44-10     47-11
          47-12     47-13     47-14     47-15     47-16     47-17     47-18     47-19     47-20     48-8      48-9      48-10
          48-11     48-12     48-13     48-14     48-15     48-16     48-17     48-18     48-19     48-21     48-22     48-23
```

```
         48-24    49-18    51-12    51-13    51-14    51-15    51-16    51-18    52-7     52-8     52-9     52-10
         52-11    52-13    52-14    52-26    52-27    52-28    52-29    53-7     53-8     53-9     53-10    53-11
         53-12    53-13    54-6     54-7     54-8     54-9     54-10    54-15    54-16    54-17    54-18    54-19
         54-24    54-25    54-26    54-27    54-28    54-30    54-35    54-36    54-38    67-8     67-9     67-15
         67-16    67-17    67-18    67-19    67-20    67-21    67-22    67-25    67-29    67-30    67-31    67-32
         67-33    67-34    67-35    67-37    67-38    67-42    67-44    67-45    67-46    67-47    67-56    67-57
         67-58    67-59    67-60    67-61    67-62    67-63    67-64    67-65    67-66    67-67    67-68    67-69
         67-70    67-71    67-72    67-73    67-74    67-75    67-76    67-77    67-78    67-79    67-80    67-81
         67-82    67-83    67-84    67-85    67-86    67-87    67-91    67-92    67-93    67-94    67-95    67-96
         67-97    67-101   67-102   67-103   67-104   67-109   67-110   67-111   67-122   67-123   67-128   67-129
         67-130   67-131   67-132   67-136   67-137   67-138   67-139   67-140   67-144   67-145   67-146   67-147
         67-148   67-149   67-150   67-151   67-155   67-156   67-157   67-158   67-159   67-160   67-161   67-162
         67-163   67-164   67-166   67-167   67-168   67-170   67-171   67-172   67-176   67-177   67-178   67-179
         67-180   67-181   67-182   67-186   67-187   67-188   67-189   67-190   67-191   67-192   67-193   67-194
         67-195   67-196   67-197   67-215   67-216   67-220   67-221   67-222   67-223   67-224   67-225   67-226
         67-227   67-231   67-232   67-233   67-234   67-235   67-236   67-237   67-238   67-239   67-240   67-241
         67-242   67-243   67-244   67-245   67-246   67-247   67-248   67-249   67-250   67-251   67-252   67-253
         67-254   67-255   67-256   67-258   67-267   67-293   67-294   67-295   67-296   67-297   67-298   67-299
         67-300   67-301   67-302   67-303   67-304   67-305   67-306   67-307   67-308   67-309   67-310   67-311
         67-312   67-313   67-314   67-315   67-316   67-317   67-318   67-319   67-320   67-321   67-322   67-323
         67-324   67-325   67-326   67-327   67-347
RZ        1-19#   14-7     15-5     17-5     18-5     19-5     21-6     22-6     23-8     24-6     25-7     28-11
         29-5     29-21    30-10    30-17    30-24    31-5     31-36    32-4     32-25    33-8     34-11    34-27
         35-6     36-7     39-33    40-5     41-4     41-29    42-6     42-19    42-36    43-8     44-5     47-8
         48-7     49-5     51-7     52-6     52-25    53-6     54-5     54-14    54-23    54-34
```