```
MMM     MMM   MMM     MMM   GGGGGGGGGGGG  TTTTTTTTTTTTTTTT      SSSSSSSSSSSS  TTTTTTTTTTTTTTTT
MMM     MMM   MMM     MMM   GGGGGGGGGGGG  TTTTTTTTTTTTTTTT      SSSSSSSSSSSS  TTTTTTTTTTTTTTTT
MMM     MMM   MMM     MMM   GGGGGGGGGGGG  TTTTTTTTTTTTTTTT      SSSSSSSSSSSS  TTTTTTTTTTTTTTTT
MMMMMM  MMMMMM MMMMMM MMMMMM  GGG               TTT            SSS                 TTT
MMMMMM  MMMMMM MMMMMM MMMMMM  GGG               TTT            SSS                 TTT
MMMMMM  MMMMMM MMMMMM MMMMMM  GGG               TTT            SSS                 TTT
MMM MMM MMM MMM MMM MMM MMM   GGG               TTT            SSS                 TTT
MMM MMM MMM MMM MMM MMM MMM   GGG               TTT            SSS                 TTT
MMM MMM MMM MMM MMM MMM MMM   GGG               TTT            SSS                 TTT
MMM     MMM   MMM     MMM   GGG               TTT              SSSSSSSSS           TTT
MMM     MMM   MMM     MMM   GGG               TTT              SSSSSSSSS           TTT
MMM     MMM   MMM     MMM   GGG               TTT              SSSSSSSSS           TTT
MMM     MMM   MMM     MMM   GGG  GGGGGGGGG    TTT                      SSS         TTT
MMM     MMM   MMM     MMM   GGG  GGGGGGGGG    TTT                      SSS         TTT
MMM     MMM   MMM     MMM   GGG       GGG     TTT                      SSS         TTT
MMM     MMM   MMM     MMM   GGG       GGG     TTT                      SSS         TTT
MMM     MMM   MMM     MMM   GGG       GGG     TTT                      SSS         TTT
MMM     MMM   MMM     MMM   GGGGGGGGG         TTT              SSSSSSSSSSSS        TTT
MMM     MMM   MMM     MMM   GGGGGGGGG         TTT              SSSSSSSSSSSS        TTT
MMM     MMM   MMM     MMM   GGGGGGGGG         TTT              SSSSSSSSSSSS        TTT
```

```
MM      MM MM      MM    GGGGGGGG    CCCCCCCC  RRRRRRRR   DDDDDDDD   LL              SSSSSSSS   PPPPPPPP
MM      MM MM      MM    GGGGGGGG    CCCCCCCC  RRRRRRRR   DDDDDDDD   LL              SSSSSSSS   PPPPPPPP
MMMM  MMMM MMMM  MMMM  GG          CC          RR    RR   DD     DD   LL          SS          PP      PP
MMMM  MMMM MMMM  MMMM  GG          CC          RR    RR   DD     DD   LL          SS          PP      PP
MM  MM  MM MM  MM  MM  GG          CC          RR    RR   DD     DD   LL          SS          PP      PP
MM  MM  MM MM  MM  MM  GG          CC          RRRRRRRR   DD     DD   LL                SSSSSS PPPPPPPP
MM      MM MM      MM  GG          CC          RRRRRRRR   DD     DD   LL                SSSSSS PPPPPPPP
MM      MM MM      MM  GG  GGGGGG  CC          RR  RR     DD     DD   LL                    SS PP
MM      MM MM      MM  GG  GGGGGG  CC          RR  RR     DD     DD   LL                    SS PP
MM      MM MM      MM  GG      GG  CC          RR    RR   DD     DD   LL                    SS PP
MM      MM MM      MM  GG      GG  CC          RR    RR   DD     DD   LL                    SS PP
MM      MM MM      MM    GGGGGG    CCCCCCCC    RR    RR   DDDDDDDD   LLLLLLLLLL  SSSSSSSS   PP
MM      MM MM      MM    GGGGGG    CCCCCCCC    RR    RR   DDDDDDDD   LLLLLLLLLL  SSSSSSSS   PP
```

```
LL              IIIIII    SSSSSSSS
LL              IIIIII    SSSSSSSS
LL                II    SS
LL                II    SS
LL                II    SS
LL                II    SS
LL                II      SSSSSS
LL                II      SSSSSS
LL                II          SS
LL                II          SS
LL                II          SS
LL                II          SS
LLLLLLLLLL  IIIIII    SSSSSSSS
LLLLLLLLLL  IIIIII    SSSSSSSS
```

```
0000    1 ;
0000    2 ;                        MEMORY MANAGEMENT SERVICES TEST #1
0000    3 ;
0000    4 ;
0000    5          .TITLE  MMGCRDLSP - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM SERVICES
0000    6          .IDENT  'V04-000'
0000    7 ;
0000    8 ;***************************************************************************
0000    9 ;*                                                                         *
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0000   26 ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                *
0000   27 ;*                                                                         *
0000   28 ;*                                                                         *
0000   29 ;***************************************************************************
0000   30
0000   31 ;++
0000   32 ; FACILITY: USER MODE MEMORY MANAGEMENT SERVICES TEST
0000   33 ;
0000   34 ; ABSTRACT: THIS SET OF ROUTINES TESTS THE MEMORY MANAGEMENT SERVICES
0000   35 ;
0000   36 ; ENVIRONMENT: USER MODE DIAGNOSTIC
0000   37 ;
0000   38 ; AUTHOR: PETER H. LIPMAN        , CREATION DATE: 6-JAN-77
0000   39 ;
0000   40 ; MODIFIED BY:
0000   41 ;
0000   42 ;     V02-012 SHZ0009        Stephen Zalewski        20-Aug-1980
0000   43 ;              Added further tests to system services tested in this
0000   44 ;              program.  Also incorporated program into MMG test
0000   45 ;              package.
0000   46 ;
```

H 1

MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53 VAX/VMS Macro V04-00   Page 2
V04-000   DECLARATIONS   5-SEP-1984 01:57:57 [MMGTST.SRC]MMGCRDLSP.MAR;1   (2)

```
0000     48                .SBTTL  DECLARATIONS
0000     49        ;
0000     50        ; INCLUDE FILES:
0000     51        ;
0000     52                .SBTTL  MACROS
0000     53        ;
0000     54        ; MACROS:
0000     55        ;
0000     56                .MACRO  LIST
0000     57                .LIST   MEB
0000     58                .ENDM   LIST
0000     59
0000     60                .MACRO  NLIST
0000     61                .NLIST  MEB
0000     62                .ENDM   NLIST
0000     63
0000     64                .MACRO  READ SIZ=#1,ADR=(R2),?L1,?L2
0000     65                IFNORD  <SIZ>,<ADR>,L1
0000     66                BRB     L2
0000     67 L1:            MOVAL   W^READERR,R1
0000     68                BSBW    PROBERR
0000     69 L2:
0000     70                .ENDM   READ
0000     71
0000     72                .MACRO  WRITE SIZ=#1,ADR=(R2),?L1,?L2
0000     73                IFNOWRT <SIZ>,<ADR>,L1
0000     74                BRB     L2
0000     75 L1:            MOVAL   W^WRITERR,R1
0000     76                BSBW    PROBERR
0000     77 L2:
0000     78                .ENDM   WRITE
0000     79
0000     80                .MACRO  NOREAD SIZ=#1,ADR=(R2),?L1
0000     81                IFNORD  <SIZ>,<ADR>,L1
0000     82                MOVAL   W^NOREADERR,R1
0000     83                BSBW    PROBERR
0000     84 L1:
0000     85                .ENDM   NOREAD
0000     86
0000     87                .MACRO  NOWRITE SIZ=#1,ADR=(R2),?L1
0000     88                IFNOWRT <SIZ>,<ADR>,L1
0000     89                MOVAL   W^NOWRITERR,R1
0000     90                BSBW    PROBERR
0000     91 L1:
0000     92                .ENDM   NOWRITE
0000     93
0000     94                .MACRO  CRETVA STARTVA,ENDVA,STATUS=S^#SS$_NORMAL,-
0000     95                        INADR=W^INRANGE,RETADR=W^RETRANGE
0000     96                LIST
0000     97                .IF     NB,STARTVA
0000     98                MOVL    STARTVA,W^INRANGE
0000     99                .ENDC
0000    100                .IF     NB,ENDVA
0000    101                MOVL    ENDVA,W^INRANGE+4
0000    102                .ENDC
0000    103                MOVZWL  STATUS,R3
0000    104                MOVAL   INADR,R0
```

MMGCRDLSP
V04-000

I   1

- TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 3
MACROS   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (2)

```
0000   105                    MOVAL     RETADR,R1
0000   106                    BSBW      CRETVASUBR
0000   107          NLIST
0000   108          .ENDM     CRETVA
0000   109
0000   110  ;***********************************************************************************
0000   111  ; THIS MACRO DELETES THE CURRENT VA ADDRESSES.  ALSO HIDDEN IN THIS
0000   112  ; MACRO IS A TEST TO SEE IF A DELETE GLOBAL SECTION MUST ALSO BE
0000   113  ; INVOKED.  THIS OCCURS DURING THE SECOND AND THIRD RUNS OF THE TEST
0000   114  ; PROGRAM WHEN GLOBAL SECTION MAPPING AND PFN MAPPING ARE USED.
0000   115  ;***********************************************************************************
0000   116  ;
0000   117          .MACRO    DELTVA STARTVA,ENDVA,STATUS=S^#SS$_NORMAL,-
0000   118                         INADR=W^INRANGE,RETADR=W^RETRANGE,?L1
0000   119          LIST
0000   120                    CMPW      W^WHICHRUN,#RUN1          ;IF USING MAPPED SECTIONS FOR TESTS,
0000   121                    BLEQ      L1                       ;DELETE SECTION AND THEN DO A DELTVA
0000   122                    $DGBLSC_S -
0000   123                         GSDNAM=<W^GBLSECNAM>
0000   124  L1:
0000   125                    .IF       NB,STARTVA
0000   126                    MOVL      STARTVA,W^INRANGE
0000   127                    .ENDC
0000   128                    .IF       NB,ENDVA
0000   129                    MOVL      ENDVA,W^INRANGE+4
0000   130                    .ENDC
0000   131                    MOVZWL    STATUS,R3
0000   132                    MOVAL     INADR,R0
0000   133                    MOVAL     RETADR,R1
0000   134                    BSBW      DELTVASUBR
0000   135
0000   136          NLIST
0000   137          .ENDM     DELTVA
0000   138
0000   139          .MACRO    EXPREG PAGCNT,REGION=#0,STATUS=S^#SS$_NORMAL,-
0000   140                         RETADR=W^RETRANGE
0000   141          LIST
0000   142                    MOVZWL    STATUS,R3
0000   143                    MOVL      PAGCNT,R4
0000   144                    MOVAL     RETADR,R1
0000   145                    .IF       IDN,<REGION>,<#0>
0000   146                    CLRL      R5
0000   147                    .IFF
0000   148                    MOVL      REGION,R5
0000   149                    .ENDC
0000   150                    BSBW      EXPREGSUBR
0000   151          NLIST
0000   152          .ENDM     EXPREG
0000   153
0000   154          .MACRO    SETPRT ACC,STARTVA,ENDVA,STATUS=S^#SS$_NORMAL,-
0000   155                         INADR=W^INRANGE,RETADR=W^RETRANGE,-
0000   156                         PRVPRT=NONE,PRVPRTADR
0000   157          LIST
0000   158                    .IF       NB,STARTVA
0000   159                    MOVL      STARTVA,W^INRANGE
0000   160                    .ENDC
0000   161                    .IF       NB,ENDVA
```

```
0000   162                    MOVL     ENDVA,W^INRANGE+4
0000   163            .ENDC
0000   164                    MOVZWL   STATUS,R3
0000   165                    MOVAL    INADR,R0
0000   166                    MOVAL    RETADR,R1
0000   167                    MOVZBL   S^#PRT$C_'ACC,R4
0000   168                    MOVZBL   S^#PRT$C_'PRVPRT,R5
0000   169            .IF      B,PRVPRTADR
0000   170            .IF      DIF,<PRVPRT>,<NONE>
0000   171                    MOVAL    W^PREVPROT,R6
0000   172            .IFF
0000   173                    CLRL     R6
0000   174            .ENDC
0000   175            .IFF
0000   176                    MOVAL    PRVPRTADR,R6
0000   177            .ENDC
0000   178                    BSBW     SETPRTSUBR
0000   179    NLIST
0000   180            .ENDM    SETPRT
0000   181
0000   182  ;***********************************************************************************
0000   183  ; THIS MACRO USED TO CREATE PERMANENT GLOBAL SECTIONS.  THE FILE NAME
0000   184  ; AND GBL SECTION DEVICE NAME ARE DECLARED INDEPENDANTLY OF THIS MACRO
0000   185  ; AND ARE PUSHED ONTO THE STACK MANUALY BEFORE THE $CRMPSC SERVICE IS
0000   186  ; CALLED.
0000   187  ;
0000   188  ; ALSO NOTE THE TEMPORARY FIX LOCATED AT THE BOTTOM OF THE MACRO.  THE
0000   189  ; FIX IS NEEDED BECAUSE THE LAST GLOBAL SECTION MAY NOT HAVE BEEN DELETED
0000   190  ; BY THE TIME THE NEXT MAPPED SECTION IS CREATED.  IN THIS CASE THE
0000   191  ; RETURNED ERROR IS TRAPPED AND THE SECTION IS REMAPPED UNTIL THE
0000   192  ; SUCCESS CODE IS RETURNED.  THIS BUG IS SLATED TO BE FIXED.  WHEN THAT
0000   193  ; IS ACCOMPLISHED REFER TO THE COMMENTS ABOVE THE FIX TO DETERMINE WHAT
0000   194  ; LINES SHOULD BE REMOVED TO DELETE THE PATCH.
0000   195  ;***********************************************************************************
0000   196  ;
0000   197            .MACRO   CREMAPSEC -
0000   198                     STARTVA           ,-
0000   199                     ENDVA             ;-
0000   200                     STATUS            ,-
0000   201                     INADR=<W^INRANGE>,-          ;INPUT RANGE
0000   202                     RETADR=<W^RETRANGE>  ,-       ;RETURN RANGE
0000   203                     FLAGS=#0          ,-          ;SECTION FLAGS
0000   204                     GSDNAM=<W^GBLSECNAM>,-        ;GLOBAL SECTION NAME
0000   205                     RELPAG=#0         ,-          ;RELATIVE PAGE
0000   206                     FILNAM=<W^FILENAME>,-         ;FILE NAME
0000   207                     PAGCNT=#0         ;-          ;MAX SIZE OF SECTION
0000   208                     VBN=#0            ,-          ;STARTING WIRT BLK NO. IN FILE
0000   209                     ?L1
0000   210    LIST
0000   211            .IF      NB,STARTVA
0000   212                    MOVL     STARTVA,W^INRANGE
0000   213            .ENDC
0000   214            .IF      NB,ENDVA
0000   215                    MOVL     ENDVA,W^INRANGE+4
0000   216            .ENDC
0000   217                    MOVZWL   STATUS,R3
0000   218  L1:
```

MMGCRDLSP
V04-000

K 1
- TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 5
MACROS   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (2)

```
0000   219                    PUSHL    VBN
0000   220                    PUSHL    PAGCNT
0000   221                    $PUSHADR          FILNAM
0000   222                    PUSHL    RELPAG
0000   223                    $PUSHADR          GSDNAM
0000   224                    PUSHL    FLAGS
0000   225                    $PUSHADR                  RETADR
0000   226                    $PUSHADR                  INADR
0000   227                    CALLS    #8,LIB$_CREMAPSEC
0000   228   ;*******
0000   229   ;IN ORDER TO DELTE THE PATCH MENTIONED ABOVE SIMPLY REMOVE THE LINES FROM
0000   230   ;HERE TO THE NEXT SET OF ASTERICS.
0000   231   ;
0000   232                    CMPL     #^X1828A,R0               ;IF PREVIOUS GBL SECTION HASN'T
0000   233                    BEQL     L1                        ;BEEN DELETED TRY CREMAPSEC AGAIN.
0000   234   ;*******
0000   235                    MOVAL    W^CRMPSCERR,R1
0000   236                    BSBW     CHECK1
0000   237           NLIST
0000   238           .ENDM    CREMAPSEC
0000   239
0000   240   ;****************************************************************************
0000   241   ; THIS MACRO IS USED TO DETERMINE WHETHER THE MAKEVA SHOULD BE
0000   242   ; TRANSLATED INTO A $CRETVA, A $CRMPSC USING GLOBLAL SECTIONS,
0000   243   ; OR A $CRMPSC USING PFN MAPPING.  THE DECISION IS BASED UPON WHICH
0000   244   ; RUN THE PROGRAM IS CURRENTLY IN.
0000   245   ;
0000   246   ; ALSO NOTE THAT THE FIX THAT WAS APPLIED TO $CRMPSC MACRO LOCATED
0000   247   ; ABOVE, WAS ALSO APPLIED TO THE $CRMPSC CALL LOCATED IN THE THIRD
0000   248   ; PART OF THIS MACRO.  UPON THE FIX OF THIS BUG REFER TO THE
0000   249   ; FIXED AREA TO FIND OUT WHAT MUST BE DELETED IN ORDER TO GET RID
0000   250   ; OF THE TEMPORARY PATCH.
0000   251   ;****************************************************************************
0000   252   ;
0000   253           .MACRO MAKEVA    STARTVA,ENDVA,STAT=S^#SS$_NORMAL,?L1,?L2,?L10,?L20,-
0000   254                            ?L30,?L40
0000   255           LIST
0000   256                    CASEL W^WHICHRUN,#1,#RUNMAX
0000   257   L1:
0000   258                    .WORD L10-L1                       ;IF FIRST RUN USE CRETVA.
0000   259                    .WORD L20-L1                       ;IF SECOND USE GBL CREMAPSEC
0000   260                    .WORD L30-L1                       ;IF THIRD USE PFN MAPPING
0000   261   L10:
0000   262                    CRETVA STARTVA,ENDVA,STATUS=STAT
0000   263           LIST
0000   264                    BRW L40
0000   265   L20:
0000   266                    CREMAPSEC STARTVA,ENDVA,STATUS=STAT,-
0000   267                            FLAGS=#<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>,-
0000   268                            PAGCNT=#25
0000   269           LIST
0000   270                    BRW L40
0000   271   L30:
0000   272                    .IF      NB,STARTVA
0000   273                    MOVL     STARTVA,W^INRANGE
0000   274                    .ENDC
0000   275                    .IF      NB,ENDVA
```

```
         0000     276                          MOVL      ENDVA,W^INRANGE+4
         0000     277                          .ENDC
         0000     278                          MOVZWL    STAT,R3
         0000     279    L2:
         0000     280            $CRMPSC_S              -
         0000     281                    INADR=<W^INRANGE>,-
         0000     282                    RETADR=<W^RETRANGE>,-
         0000     283                    GSDNAM=<W^GBLSECNAM>,-
         0000     284                    VBN=#0,-
         0000     285                    FLAGS=#<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>,-
         0000     286                    PAGCNT=#25
         0000     287    ;*****
         0000     288    ;IN ORDER TO REMOVE THE TEMPORARY FIX EXPLAINED ABOVE REMOVE THE LINES
         0000     289    ;STARTING FROM HERE AND EXTENDING THE THE NEXT SET OF ASTERICS.
         0000     290    ;
         0000     291                          CMPL      #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
         0000     292                          BEQL      L2                      ;BEEN DELETED TRY CREMAPSEC AGAIN.
         0000     293    ;*****
         0000     294                          MOVAL     W^CRMPSCERR,R1
         0000     295                          BSBW      CHECK1
         0000     296    L40:
         0000     297            NLIST
         0000     298            .ENDM     MAKEVA
         0000     299
         0000     300            .MACRO    RANGECHK ONOROFF
         0000     301            LIST
         0000     302            .IF       IDN <ONOROFF>,<OFF>
         0000     303                          BICL      #CTL$M_RNGCHK,W^CTLFLG
         0000     304            .IFF
         0000     305                          BISL      #CTL$M_RNGCHK,W^CTLFLG
         0000     306            .ENDC
         0000     307            NLIST
         0000     308            .ENDM     RANGECHK
         0000     309
         0000     310    ; EQUATED SYMBOLS:
         0000     311    ;
         0000     312
         0000     313            $SSDEF                                          ;DEFINE SYSTEM SERVICE CODES
         0000     314            $SECDEF                                         ;DEFINE SECTION CODES
         0000     315            $PRTDEF
         0000     316            $GBLINI
         0000     317            $VIELD    CTL,0,<-                              ;DEFINE CONTROL BITS IN R3
         0000     318                    <MEMLOOP,,MASK>,-                       ;LOOP IN MEMORY WRITE LOOP
         0000     319                    <TSTLOOP,,MASK>,-                       ;REDO ENTIRE TEST FROM TOP
         0000     320                    <PIDMSG,,MASK>,-                        ;PUT PROCESS ID IN EACH TYPEOUT
         0000     321                    <RNGCHK,,MASK>-                         ;ON IF CHECKING RETURN RANGE
         0000     322                    >
00000001 0000     323            RUN1=1
00000002 0000     324            RUN2=2
00000003 0000     325            RUNMAX=3
00000010 0000     326            PRT$C_NONE=1@4
         0000     327    ; OWN STORAGE:
         0000     328    ;
         0000     329    ;
```

```
                    0000        331              .SBTTL   DATA STORAGE AND MESSAGE STRINGS
                00000000        332              .PSECT   DATA0,PAGE,WRT,NOEXE
                    0000        333     INRANGE:
       00000008    0000        334              .BLKL    2
                    0008        335     RETRANGE:
       00000010    0008        336              .BLKL    2
       00000006    0010        337     CTLFLG:  .LONG    CTL$M_TSTLOOP!CTL$M_PIDMSG
       00000018    0014        338     SAVEND:  .BLKL    1
       0000001C    0018        339     PID:     .BLKL    1                                    ;PROCESS ID
                    001C        340     MAXPASSCNT:
       00000003    001C        341              .LONG    3                                   ;NUMBER OF PASSES TO RUN
                    0020        342     PASSCNT:
       00000024    0020        343              .BLKL    1                                   ;PASS COUNTER
                    0024        344     MAXWHICHRUN:
       00000003    0024        345              .LONG    3                                   ;NUMBER OF RUNS
                    0028        346     WHICHRUN:
       0000002C    0028        347              .BLKL    1                                   ;WHICH RUN COUNTER
                    002C        348     PREVPROT:
                    002C        349     FAB:     $FAB     FAC=PUT, FNA=OUTNAMADR, FNS=OUTNAMSIZ ;FAB FOR OUTPUT
                    007C        350     RAB:     $RAB     FAB=FAB                             ;RECORD ACCESS BLOCK FOR OUTPUT
       000000C4    00C0        351     MSGLEN:  .BLKL    1                                   ;RETURN LENGTH FROM FAO
000000E2'000000A0'  00C4        352     MSGBUFD:.LONG    MSGBUFSIZ,MSGBUF                    ;MESSAGE BUFFER DESCRIPTOR
                    00CC        353     PIDMSGD:
000000DE'00000004'  00CC        354              .LONG    MSGBUF-PIDMSG,PIDMSG
                    00D4        355     ;
                    00D4        356     ; ***** DO NOT SEPARATE OR REORDER THE FOLLOWING LINES
                    00D4        357     ;
                    00D4        358     MSGBUFID:
          0A 0D    00D4        359     CRLF:    .BYTE    ^015,^012
20 53 53 45 43 4F 52 50  00D6  360              .ASCII   $PROCESS $
      20 20 20 20  00DE        361     PIDMSG:  .ASCII   $    $
       00000182    00E2        362     MSGBUF:  .BLKB    160                                 ;MESSAGE BUFFER USED BY FAO
       000000A0    0182        363              MSGBUFSIZ=.-MSGBUF
                    0182        364     ;
                    0182        365     ; ***** DO NOT SEPARATE OR REORDER THE PRECEEDING LINES
                    0182        366     ;
                    0182        367
                00000000        368              .PSECT   DATA1,PAGE,WRT,NOEXE
                    0000        369     ;
                    0000        370     WRTPAGES:
       00000800    0000        371              .BLKL    128*4
                    0800        372
                00000000        373              .PSECT   DATA2,PAGE,NOWRT,NOEXE
                    0000        374     RDPAGES:
       00000800    0000        375              .BLKL    128*4
                    0800        376
```

N 1

MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page   8
V04-000   DATA STORAGE AND MESSAGE STRINGS   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (4)

```
                                      00000000      378              .PSECT  CODE,PAGE,NOWRT,EXE
                                      0000          379
                                      0000          380   CODEPAGES:
                                      0000          381
                                      0000          382   OUTNAMADR:
             54 55 50 54 55 4F 24 53 59 53  0000     383              .ASCII  /SYS$OUTPUT/
                                      0000000A 000A  384              OUTNAMSIZ=.-OUTNAMADR
                                      000A          385
                                      000A          386   CRETVAERRADR:
    52 52 45 20 41 56 54 45 52 43 2F 21  000A        387              .ASCII  $!/CRETVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
    58 21 20 3D 20 43 50 20 2D 20 52 4F  0016
    41 57 20 53 55 54 41 54 53 20 2C 4C  0022
    4C 55 4F 48 53 20 2C 4C 58 21 20 53  002E
                4C 58 21 20 45 42 20 44  003A
    21 20 3D 20 52 44 41 4E 49 09 2F 21  0042        388              .ASCII  $!/      INADR = !XL - !XL,  RETADR = !XL - !XL!/$
    52 20 20 2C 4C 58 21 20 2D 20 4C 58  004E
    20 4C 58 21 20 3D 20 52 44 41 54 45  005A
                2F 21 4C 58 21 20 2D    0066
                                      00000063 006D  389              CRETVAERRSIZ=.-CRETVAERRADR
                                      006D          390
                                      006D          391   DELTVAERRADR:
    52 52 45 20 41 56 54 4C 45 44 2F 21  006D        392              .ASCII  $!/DELTVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
    58 21 20 3D 20 43 50 20 2D 20 52 4F  0079
    41 57 20 53 55 54 41 54 53 20 2C 4C  0085
    4C 55 4F 48 53 20 2C 4C 58 21 20 53  0091
                4C 58 21 20 45 42 20 44  009D
    21 20 3D 20 52 44 41 4E 49 09 2F 21  00A5        393              .ASCII  $!/      INADR = !XL - !XL,  RETADR = !XL - !XL!/$
    52 20 20 2C 4C 58 21 20 2D 20 4C 58  00B1
    20 4C 58 21 20 3D 20 52 44 41 54 45  00BD
                2F 21 4C 58 21 20 2D    00C9
                                      00000063 00D0  394              DELTVAERRSIZ=.-DELTVAERRADR
                                      00D0          395
                                      00D0          396   CRMPSCERRADR:
    52 52 45 20 43 53 50 4D 52 43 2F 21  00D0        397              .ASCII  $!/CRMPSC ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
    58 21 20 3D 20 43 50 20 2D 20 52 4F  00DC
    41 57 20 53 55 54 41 54 53 20 2C 4C  00E8
    4C 55 4F 48 53 20 2C 4C 58 21 20 53  00F4
                4C 58 21 20 45 42 20 44  0100
    21 20 3D 20 52 44 41 4E 49 09 2F 21  0108        398              .ASCII  $!/      INADR = !XL - !XL,  RETADR = !XL - !XL!/$
    52 20 20 2C 4C 58 21 20 2D 20 4C 58  0114
    20 4C 58 21 20 3D 20 52 44 41 54 45  0120
                2F 21 4C 58 21 20 2D    012C
                                      00000063 0133  399              CRMPSCERRSIZ=.-CRMPSCERRADR
                                      0133          400
                                      0133          401   EXPREGERRADR:
    52 52 45 20 47 45 52 50 58 45 2F 21  0133        402              .ASCII  $!/EXPREG ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
    58 21 20 3D 20 43 50 20 2D 20 52 4F  013F
    41 57 20 53 55 54 41 54 53 20 2C 4C  014B
    4C 55 4F 48 53 20 2C 4C 58 21 20 53  0157
                4C 58 21 20 45 42 20 44  0163
    20 3D 20 54 4E 43 47 41 50 09 2F 21  016B        403              .ASCII  $!/      PAGCNT = !SL, REGION = P!UB SPACE, $
    20 4E 4F 49 47 45 52 20 2C 4C 53 21  0177
    45 43 41 50 53 20 42 55 21 50 20 3D  0183
                            20 2C    018F
    4C 58 21 20 3D 20 52 44 41 54 45 52  0191        404              .ASCII  $RETADR = !XL - !XL!/$
                2F 21 4C 58 21 20 2D 20  019D
                                      00000072 01A5  405              EXPREGERRSIZ=.-EXPREGERRADR
```

```
                                      01A5    406
52 52 45 20 54 52 50 54 45 53 2F 21   01A5    407  SETPRTERRADR:
58 21 20 3D 20 43 50 20 2D 20 52 4F   01B1    408          .ASCII  $!/SETPRT ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
41 57 20 53 55 54 41 54 53 20 2C 4C   01BD
4C 55 4F 48 53 20 2C 4C 58 21 20 53   01C9
               4C 58 21 20 45 42 20 44   01D5
21 20 3D 20 52 44 41 4E 49 09 2F 21   01DD    409          .ASCII  $!/        INADR = !XL - !XL,  RETADR = !XL - !XL$
52 20 20 2C 4C 58 21 20 2D 20 4C 58   01E9
20 4C 58 21 20 3D 20 52 44 41 54 45   01F5
               4C 58 21 20 2D          0201
20 53 55 4F 49 56 45 52 50 09 2F 21   0206    410          .ASCII  $!/        PREVIOUS PROTECTION WAS !1XB, SHOULD BE !1XB!/$
57 20 4E 4F 49 54 43 45 54 4F 52 50   0212
4F 48 53 20 2C 42 58 31 21 20 53 41   021E
21 42 58 31 21 20 45 42 20 44 4C 55   022A
                              2F       0236
                        00000092       0237    411          SETPRTERRSIZ=.-SETPRTERRADR
                                       0237    412
                                       0237    413  READERRADR:
4F 52 52 45 20 44 41 45 52 20 2F 21   0237    414          .ASCII  $!/ READ ERROR - LOCATION = !XL !/$
4E 4F 49 54 41 43 4F 4C 20 2D 20 52   0243
         2F 21 20 4C 58 21 20 3D 20   024F
                        00000021       0258    415          READERRSIZ=.-READERRADR
                                       0258    416
                                       0258    417  NOREADERRADR:
45 20 44 41 45 52 2D 4F 4E 20 2F 21   0258    418          .ASCII  $!/ NO-READ ERROR - LOCATION = !XL !/$
54 41 43 4F 4C 20 2D 20 52 4F 52 52   0264
2F 21 20 4C 58 21 20 3D 20 4E 4F 49   0270
                        00000024       027C    419          NOREADERRSIZ=.-NOREADERRADR
                                       027C    420
                                       027C    421  WRITERRADR:
52 52 45 20 45 54 49 52 57 20 2F 21   027C    422          .ASCII  $!/ WRITE ERROR - LOCATION = !XL !/$
4F 49 54 41 43 4F 4C 20 2D 20 52 4F   0288
         2F 21 20 4C 58 21 20 3D 20 4E   0294
                        00000022       029E    423          WRITERRSIZ=.-WRITERRADR
                                       029E    424
                                       029E    425  NOWRITERRADR:
20 45 54 49 52 57 2D 4F 4E 20 2F 21   029E    426          .ASCII  $!/ NO-WRITE ERROR - LOCATION = !XL !/$
41 43 4F 4C 20 2D 20 52 4F 52 52 45   02AA
21 20 4C 58 21 20 3D 20 4E 4F 49 54   02B6
                              2F       02C2
                        00000025       02C3    427          NOWRITERRSIZ=.-NOWRITERRADR
                                       02C3    428
                                       02C3    429  RANGERRADR:
4E 41 52 20 4E 52 55 54 45 52 2F 21   02C3    430          .ASCII  $!/RETURN RANGE ERROR - LOCATION = !XL$
4C 20 2D 20 52 4F 52 52 45 20 45 47   02CF
58 21 20 3D 20 4E 4F 49 54 41 43 4F   02DB
                              4C       02E7
21 20 3D 20 52 44 41 4E 49 09 2F 21   02E8    431          .ASCII  $!/        INADR = !XL - !XL, RETADR = !XL - !XL!/$
45 52 20 2C 4C 58 21 20 2D 20 4C 58   02F4
2D 20 4C 58 21 20 3D 20 52 44 41 54   0300
               2F 21 4C 58 21 20      030C
                        0000004F       0312    432          RANGERRSIZ=.-RANGERRADR
                                       0312    433
                                       0312    434  IDMSGADR:
4E 41 4D 20 59 52 4F 4D 45 4D 2F 21   0312    435          .ASCII  $!/MEMORY MANAGEMENT SERVICES TEST #1 (CRDLSP), PASS !UL!/$
56 52 45 53 20 54 4E 45 4D 45 47 41   031E
```

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31 23 20 54 53 45 54 20 53 45 43 49   032A
50 20 2C 29 50 53 4C 44 52 43 28 20   0336
         2F 21 4C 55 21 20 53 53 41   0342
                        00000039      034B    436          IDMSGSIZ=.-IDMSGADR
                                      034B    437
                                      034B    438  RUN1_MSGADR:
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21   034B    439          .ASCII  $!/   *****   TEST WILL NOW BE RUN USING REGULAR VA SPACE    *****$
4E 20 4C 4C 49 57 20 54 53 45 54 20   0357
53 55 20 4E 55 52 20 45 42 20 57 4F   0363
20 52 41 4C 55 47 45 52 20 47 4E 49   036F
2A 20 20 20 45 43 41 50 20 41 56 20   037B
                  2A 2A 2A 2A         0387
                     20 2F 21         038B    440          .ASCII  $!/ $
                        00000043      038E    441          RUN1_MSGSIZ=.-RUN1_MSGADR
                                      038E    442
                                      038E    443  RUN2_MSGADR:
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21   038E    444          .ASCII  $!/   *****   TEST WILL NOW BE RUN USING PERM GBL SECTIONS    *****$
4E 20 4C 4C 49 57 20 54 53 45 54 20   039A
53 55 20 4E 55 52 20 45 42 20 57 4F   03A6
4C 42 47 20 4D 52 45 50 20 47 4E 49   03B2
20 20 20 53 4E 4F 49 54 43 45 53 20   03BE
                  2A 2A 2A 2A 2A      03CA
                     20 2F 21         03CF    445          .ASCII  $!/ $
                        00000044      03D2    446          RUN2_MSGSIZ=.-RUN2_MSGADR
                                      03D2    447
                                      03D2    448  RUN3_MSGADR:
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21   03D2    449          .ASCII  $!/   *****   TEST WILL NOW BE RUN USING PFN MAPPING    *****$
4E 20 4C 4C 49 57 20 54 53 45 54 20   03DE
53 55 20 4E 55 52 20 45 42 20 57 4F   03EA
50 50 41 4D 20 4E 46 50 20 47 4E 49   03F6
2A 2A 2A 2A 2A 20 20 20 47 4E 49      0402
                     20 2F 21         040D    450          .ASCII  $!/ $
                        0000003E      0410    451          RUN3_MSGSIZ=.-RUN3_MSGADR
                                      0410    452
                                      0410    453  PIDCTLADR:
                     4C 55 21         0410    454          .ASCII  $!UL$
                        00000003      0413    455          PIDCTLSIZ=.-PIDCTLADR
                                      0413    456
                                      0413    457  GBLSECNAMADR:
               54 53 54 47 4D 4D      0413    458          .ASCII  $MMGTST$
                        00000006      0419    459          GBLSECNAMSIZ=.-GBLSECNAMADR
                                      0419    460
                                      0419    461  FILENAMEADR:
      54 41 44 2E 54 53 54 47 4D 4D   0419    462          .ASCII  $MMGTST.DAT$
                        0000000A      0423    463          FILENAMESIZ=.-FILENAMEADR
                                      0423    464
```

MMGCRDLSP
V04-000

D 2
- TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 11
DATA STORAGE AND MESSAGE STRINGS   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (5)

```
                         0423   466  ;
                         0423   467  ; STRING DESCRIPTORS
                         0423   468  ;
                         0423   469          .ALIGN  LONG
                         0424   470
                         0424   471  CRETVAERR:
0000000A'00000063        0424   472          .LONG   CRETVAERRSIZ,CRETVAERRADR
                         042C   473  DELTVAERR:
0000006D'00000063        042C   474          .LONG   DELTVAERRSIZ,DELTVAERRADR
                         0434   475  EXPREGERR:
00000133'00000072        0434   476          .LONG   EXPREGERRSIZ,EXPREGERRADR
                         043C   477  CRMPSCERR:
000000D0'00000063        043C   478          .LONG   CRMPSCERRSIZ,CRMPSCERRADR
                         0444   479  SETPRTERR:
000001A5'00000092        0444   480          .LONG   SETPRTERRSIZ,SETPRTERRADR
                         044C   481  READERR:
00000237'00000021        044C   482          .LONG   READERRSIZ,READERRADR
                         0454   483  NOREADERR:
00000258'00000024        0454   484          .LONG   NOREADERRSIZ,NOREADERRADR
                         045C   485  WRITERR:
0000027C'00000022        045C   486          .LONG   WRITERRSIZ,WRITERRADR
                         0464   487  NOWRITERR:
0000029E'00000025        0464   488          .LONG   NOWRITERRSIZ,NOWRITERRADR
                         046C   489  RANGERR:
000002C3'0000004F        046C   490          .LONG   RANGERRSIZ,RANGERRADR
                         0474   491  IDMSG:
00000312'00000039        0474   492          .LONG   IDMSGSIZ,IDMSGADR
                         047C   493  RUN1_MSG:
0000034B'00000043        047C   494          .LONG   RUN1_MSGSIZ,RUN1_MSGADR
                         0484   495  RUN2_MSG:
0000038E'00000044        0484   496          .LONG   RUN2_MSGSIZ,RUN2_MSGADR
                         048C   497  RUN3_MSG:
000003D2'0000003E        048C   498          .LONG   RUN3_MSGSIZ,RUN3_MSGADR
                         0494   499  PIDCTL:
00000410'00000003        0494   500          .LONG   PIDCTLSIZ,PIDCTLADR
                         049C   501  GBLSECNAM:
00000413'00000006        049C   502          .LONG   GBLSECNAMSIZ,GBLSECNAMADR
                         04A4   503  FILENAME:
00000419'0000000A        04A4   504          .LONG   FILENAMESIZ,FILENAMEADR
                         04AC   505
```

```
                    04AC    507          .SBTTL  INITIALIZATION
                    04AC    508  ;********************************************************************
                    04AC    509  ;PROGRAM DESCRIPTION:
                    04AC    510  ;
                    04AC    511  ; THIS PROGRAM TESTS THE FOLLOWING SYSTEM SERVICES:
                    04AC    512  ;       $CRETVA,$DELTVA,$SETPRT
                    04AC    513  ;
                    04AC    514  ; THE SYSTEM SERVICES ARE TESTED IN THE FOLLOWING MANNER. THE PROGRAM
                    04AC    515  ; IS DESIGNED TO MAKE THREE RUNS.  EACH RUN MAKES THREE PASSES.  ON
                    04AC    516  ; THE FIRST RUN WHEN A MAKEVA IS ENCOUNTERED IT IS REPLACED WITH A
                    04AC    517  ; CRETVA. IT THEN MAKES THREE PASSES THROUGH THE PROGRAM DOING
                    04AC    518  ; ALL THE POSSIBLE TESTS.  ON THE SECOND RUN THE MAKEVA IS ENCOUNTERED
                    04AC    519  ; AND IS REPLACED WITH A $CRMPSC THAT MAPS A PERMANENT GLOBAL SECTION.
                    04AC    520  ; FOR THE THIRD RUN, THE MAKVA IS REPLACED WITH A $CRMPSC THAT MAPS
                    04AC    521  ; A PFN GLOBAL SECTION.  USING THIS APPROACH THE $CRMPSC SYSTEM SERVICE
                    04AC    522  ; WAS ALSO ABLE TO BE TESTED AS ALL ERROR PATHS FOLLOWED WHEN USING
                    04AC    523  ; NORMAL VA ARE ALSO APPLICABLE WHEN USING GBL SECTION MAPPING.
                    04AC    524  ;
                    04AC    525  ; FOR EACH OF THESE RUNS A MESSAGE IS SENT TO THE TERMINAL
                    04AC    526  ; INFORMING THE OPERATOR AS TO WHICH OF THESE SUBTITUTE MAKEVA'S WILL
                    04AC    527  ; BE USED FOR THAT SET OF PASSES.
                    04AC    528  ;
                    04AC    529  ; REFER TO MASD$:[MMGTST.COM]MMGTST.RAP FOR FURTHER INFORMATION
                    04AC    530  ; REGARDING JUST HOW COMPLETELY THE ABOVE MENTIONED SYSTEM SERVICES
                    04AC    531  ; ARE TESTED BY THIS PROGRAM.
                    04AC    532  ;
                    04AC    533  ;*NOTE:
                    04AC    534  ; THERE IS A BUG IN $CRMPSC THAT WILL BE FIXED IN THE FUTURE.  UNTIL
                    04AC    535  ; THIS FIX TAKES PLACE THERE AREA TEMPORARY PATCH'S LOCATED AT THE END
                    04AC    536  ; OF THE CREMAPSEC MACRO AND MAKVA MACRO WHICH CIRCUMVENT THIS
                    04AC    537  ; PROBLEM.  UPON CORRECTION OF THIS BUG REFER TO THESE ABOVE MENTIONED
                    04AC    538  ; MACROS TO FIND OUT HOW TO REMOVE THESE TEMPORARY PATCHES.
                    04AC    539  ;
                    04AC    540  ; ALSO, THE FILE MMGTST.DAT, WHICH IS CREATED BY RUNNING MMGCRTFIL.MAR,
                    04AC    541  ; IS NECESSARY TO RUN THIS PROGRAM AS IT IS REFERENCED BY CREMAPSEC.
                    04AC    542  ;
                    04AC    543  ; *PRIVILEGES:
                    04AC    544  ; IN ORDER TO RUN THIS PROGRAM YOU MUST HAVE IN YOUR POSSESION
                    04AC    545  ; THE PRIVILEGES PRMGBL AND PFNMAP.
                    04AC    546  ;********************************************************************
                    04AC    547  ;
                    04AC    548  ; START HERE
                    04AC    549  ;
              0000  04AC    550  START:  .WORD   0                           ;ENTRY MASK
                    04AE    551          $OPEN   W^FAB                       ;OPEN THE FILE "$OUTPUT"
        0E 50  E9   04B9    552          BLBC    R0,10$                      ;BRANCH IF ERROR
                    04BC    553          $CONNECT W^RAB                      ;CONNECT THE RECORD ACCESS BLOCK
        09 50  E8   04C7    554          BLBS    R0,20$
                    04CA    555  10$:    $EXIT_S R0                          ;EXIT WITH STATUS IN R0
                    04D3    556  20$:    $RESUME_S PID                       ;SET UP PROCESS ID
  50  00000018'EF  3C   04E2    557          MOVZWL  PID,R0
                    04E9    558          $FAO_S  PIDCTL,MSGLEN,PIDMSGD,R0    ;INIT THE PROCESS ID STRING
      00000028'EF  D4   0501    559          CLRL    WHICHRUN                    ;INIT THE RUN COUNT TO ZERO
                    0507    560
                    0507    561
                    0507    562  MAIN_PROGRAM:
                    0507    563  ;********************************************************************
```

```
                    0507    564 ; THIS COUNTER IS USED TO DETERMINE WHICH CRMPSC IS TO BE
                    0507    565 ; REFERENCED, OR IF THE CRETVA IS TO BE USED, WHEN A MAKEVA
                    0507    566 ; IS ENCOUNTERED.
                    0507    567 ;********************************************************************
                    0507    568
        0020'CF  01 D0 0507 569          MOVL    #1,W^PASSCNT              ;INITIALIZE THE PASS COUNT
OC 0028'CF  0024'CF F3 050C 570          AOBLEQ  W^MAXWHICHRUN,W^WHICHRUN,PRESTART
                    0514    571
                    0514    572 END:
        50  01  9A 0514 573          MOVZBL  #SS$_NORMAL,R0
                    0517    574          $EXIT_S R0
                    0520    575
                    0520    576 PRESTART:
  03  01  0028'CF CF 0520 577          CASEL   W^WHICHRUN,#1,#RUNMAX
                    0526    578 L50:
            0006' 0526 579          .WORD   CRETVA_MESSAGE-L50       ;FOR EACH RUN PRINT MESSAGE
            0022' 0528 580          .WORD   GBL_SEC_MESSAGE-L50      ;DESCRIBING WHICH VA SPACE
            0044' 052A 581          .WORD   PFNMAP_MESSAGE-L50       ;IS BEING USED.
                    052C    582
                    052C    583 CRETVA_MESSAGE:
                    052C    584          $FAO_S  RUN1_MSG,MSGLEN,MSGBUFD
        ODCA 30 0543 585          BSBW    TYPEMSGBUF
        44   11 0546 586          BRB     INIT_START
                    0548    587
                    0548    588 GBL_SEC_MESSAGE:
    0010'CF 04 C8 0548 589          BISL    #CTL$M_PIDMSG,W^CTLFLG   ;ALLOW PROCESS ID TO PRINT
                    054D    590          $FAO_S  RUN2_MSG,MSGLEN,MSGBUFD
        ODA9 30 0564 591          BSBW    TYPEMSGBUF
        00E6 31 0567 592          BRW     RSTART
                    056A    593
                    056A    594 PFNMAP_MESSAGE:
    0010'CF 04 C8 056A 595          BISL    #CTL$M_PIDMSG,W^CTLFLG   ;ALLOW PROCESS ID TO PRINT
                    056F    596          $FAO_S  RUN3_MSG,MSGLEN,MSGBUFD
        0D87 30 0586 597          BSBW    TYPEMSGBUF
        00C4 31 0589 598          BRW     RSTART
                    058C    599
                    058C    600 INIT_START:
    0010'CF 04 CA 058C 601          BICL    #CTL$M_PIDMSG,W^CTLFLG   ;STOP PROCESS ID FROM PRINTING
                    0591    602          EXPREG  #1
        53  01  3C 0591          MOVZWL  S^#SS$_NORMAL,R3
        54  01  D0 0594          MOVL    #1,R4
  51  0008'CF  DE 0597          MOVAL   W^RETRANGE,R1
        55      D4 059C          CLRL    R5
        0C1C    30 059E          BSBW    EXPREGSUBR
  52  0008'CF  7D 05A1 603          MOVQ    W^RETRANGE,R2
0000'CF 52  7D 05A6 604          MOVQ    R2,W^INRANGE             ;FIND END OF REGION'S VA SPACE
0014'CF 52  D0 05AB 605          MOVL    R2,W^SAVEND             ;AND SAVE FOR FUTURE TESTS.
                    05B0    606
                    05B0    607          READ    #1,RDPAGES              ;CHECK READABILITY AND WRITABILITY
                    05C4    608          READ    #1,CODEPAGES            ;OF PAGES CREATED AT LINK TIME.
                    05D6    609          WRITE   #1,WRTPAGES
                    05EA    610          WRITE   #1,(R2)
                    05FA    611          NOREAD  #2,<^X1FF(R2)>          ;1ST READABLE, 2ND NOT
                    060A    612          READ    #1,<^X1FF(R2)>          ;TEST 1 BYTE AT EDGE
                    061C    613          DELTVA
  01  0028'CF B1 061C          CMPW    W^WHICHRUN,#RUN1         ;IF USING MAPPED SECTIONS FOR TESTS,
        0F   15 0621          BLEQ    30011$                  ;DELETE SECTION AND THEN DO A DELTVA
```

```
                00    DD  0623                        PUSHL    #0
          FE73  CF    7F  0625                        PUSHAQ   W^GBLSECNAM
                00    DD  0629                        PUSHL    #0
     00000000'GF  03  FB  062B                        CALLS    #3,G^SYS$DGBLSC
                          0632           30011$:
          53    01    3C  0632                        MOVZWL   S^#SS$_NORMAL,R3
          50  0000'CF    DE  0635                     MOVAL    W^INRANGE,R0
          51  0008'CF    DE  063A                     MOVAL    W^RETRANGE,R1
                0B08    30  063F                       BSBW    DELTVASUBR
                          0642    614          NOREAD
                          0650    615
                          0650    616  RSTART:
                          0650    617          RANGECHK ON
          0010'CF  08    C8  0650                      BISL    #CTL$M_RNGCHK,W^CTLFLG
          0010'CF  04    CA  0655    618       BICL    #CTL$M_PIDMSG,@^CTLFLG        ;STOP PROCESS ID FROM PRINTING
                0C96    30  065A    619       $FAO_S   IDMSG,MSGLEN,MSGBUFD,PASSCNT
                          0677    620       BSBW     TYPEM$GBUF
                          067A    621       EXPREG   #1
          53    01    3C  067A                        MOVZWL   S^#SS$_NORMAL,R3
          54    01    D0  067D                        MOVL     #1,R4
          51  0008'CF    DE  0680                     MOVAL    W^RETRANGE,R1
                55    D4  0685                        CLRL     R5
                0B33    30  0687                       BSBW    EXPREGSUBR
          52  0008'CF    7D  068A    622       MOVQ   W^RETRANGE,R2
       0000'CF  52    7D  068F    623       MOVQ     R2,W^INRANGE
       0014'CF  52    D0  0694    624       MOVL     R2,W^SAVEND
                          0699    625       DELTVA
          01  0028'CF    B1  0699                     CMPW     W^WHICHRUN,#RUN1         ;IF USING MAPPED SECTIONS FOR TESTS,
                0F    15  069E                        BLEQ     30013$                  ;DELETE SECTION AND THEN DO A DELTVA
                00    DD  06A0                        PUSHL    #0
          FDF6  CF    7F  06A2                        PUSHAQ   W^GBLSECNAM
                00    DD  06A6                        PUSHL    #0
     00000000'GF  03  FB  06A8                        CALLS    #3,G^SYS$DGBLSC
                          06AF           30013$:
          53    01    3C  06AF                        MOVZWL   S^#SS$_NORMAL,R3
          50  0000'CF    DE  06B2                     MOVAL    W^INRANGE,R0
          51  0008'CF    DE  06B7                     MOVAL    W^RETRANGE,R1
                0A8B    30  06BC                       BSBW    DELTVASUBR
                          06BF    626          MAKEVA
     03  01  0028'CF    CF  06BF                       CASEL  W^WHICHRUN,#1,#RUNMAX
                          06C5           30014$:
                0006'  06C5                          .WORD    30016$-30014$           ;IF FIRST RUN USE CRETVA.
                0019'  06C7                          .WORD    30017$-30014$           ;IF SECOND USE GBL CREMAPSEC
                0053'  06C9                          .WORD    30018$-30014$           ;IF THIRD USE PFN MAPPING
                          06CB           30016$:
          53    01    3C  06CB                        MOVZWL   S^#SS$_NORMAL,R3
          50  0000'CF    DE  06CE                     MOVAL    W^INRANGE,R0
          51  0008'CF    DE  06D3                     MOVAL    W^RETRANGE,R1
                0A5B    30  06D8                       BSBW    CRETVASUBR
                0076    31  06DB                       BRW     30019$
                          06DE           30017$:
          53    01    3C  06DE                        MOVZWL   S^#SS$_NORMAL,R3
                          06E1           30020$:
                00    DD  06E1                        PUSHL    #0
                19    DD  06E3                        PUSHL    #25
          FDBB  CF    DF  06E5                        PUSHAL   W^FILENAME
                00    DD  06E9                        PUSHL    #0
```

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H 2
- TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 15
INITIALIZATION   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (6)

```
        FDAD CF   DF  06EB                          PUSHAL    W^GBLSECNAM
   0000400D 8F   DD  06EF                          PUSHL     #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
       0008'CF   DF  06F5                          PUSHAL    W^RETRANGE
       0000'CF   DF  06F9                          PUSHAL    W^INRANGE
  00000000'EF   08  FB  06FD                       CALLS     #8,LIB$_CREMAPSEC
 50    0001828A 8F   D1  0704                       CMPL      #^X1828A,R0         ;IF PREVIOUS GBL SECTION HASN'T
            D4   13  070B                          BEQL      30020$              ;BEEN DELETED TRY CREMAPSEC AGAIN.
 51    FD2B CF   DE  070D                          MOVAL     W^CRMPSCERR,R1
       0A47   30  0712                             BSBW      CHECK1
       003C   31  0715                             BRW       30019$
              0718                      30018$:
 53    01   3C  0718                               MOVZWL    S^#SS$_NORMAL,R3
              071B                      30015$:
       7E   7C  071B                               CLRQ      -(SP)
       00   DD  071D                               PUSHL     #0
       19   DD  071F                               PUSHL     #25
    7E   00   3C  0721                             MOVZWL    #0,-(SP)
       00   DD  0724                               PUSHL     #0
       00   DD  0726                               PUSHL     #0
    FD70 CF   7F  0728                             PUSHAQ    W^GBLSECNAM
  00014009 8F   DD  072C                           PUSHL     #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
       00   DD  0732                               PUSHL     #0
       0008'CF   7F  0734                          PUSHAQ    W^RETRANGE
       0000'CF   7F  0738                          PUSHAQ    W^INRANGE
  00000000'GF   0C  FB  073C                       CALLS     #12,G^SYS$CRMPSC
 50    0001828A 8F   D1  0743                       CMPL      #^X1828A,R0         ;IF PREVIOUS GBL SECTION HASN'T
            CF   13  074A                          BEQL      30015$              ;BEEN DELETED TRY CREMAPSEC AGAIN.
 51    FCEC CF   DE  074C                          MOVAL     W^CRMPSCERR,R1
       0A08   30  0751                             BSBW      CHECK1
              0754                      30019$:
              0754  627                            WRITE
    62   62   90  0764  628                        MOVB      (R2),(R2)
              0767  629                            DELTVA
 01    0028'CF   B1  0767                          CMPW      W^WHICHRUN,#RUN1    ;IF USING MAPPED SECTIONS FOR TESTS,
            0F   15  076C                          BLEQ      30023$              ;DELETE SECTION AND THEN DO A DELTVA
       00   DD  076E                               PUSHL     #0
    FD28 CF   7F  0770                             PUSHAQ    W^GBLSECNAM
       00   DD  0774                               PUSHL     #0
  00000000'GF   03  FB  0776                       CALLS     #3,G^SYS$DGBLSC
              077D                      30023$:
 53    01   3C  077D                               MOVZWL    S^#SS$_NORMAL,R3
 50    0000'CF   DE  0780                          MOVAL     W^INRANGE,R0
 51    0008'CF   DE  0785                          MOVAL     W^RETRANGE,R1
       09BD   30  078A                             BSBW      DELTVASUBR
              078D  630                            NOREAD
              079B  631
              079B  632     ;****************************************************************
              079B  633     ; ALL THE SET PROTECTION TESTS ARE BYPASSED FOR THE SECOND AND THIRD
              079B  634     ; RUNS, WHEN GLOBAL SECTIONS ARE USED, AS IT IS NOT POSSIBLE TO CHANGE
              079B  635     ; THE PROTECTION OF PAGES CREATED IN THIS MANNER.
              079B  636     ;****************************************************************
              079B  637     ;
 02    0028'CF   B1  079B  638                     CMPW      W^WHICHRUN,#RUN2
       03   19  07A0  639                          BLSS      10$
       045A   31  07A2  640                        BRW       BYPASS_SETPRT_TESTS
              07A5  641  10$:
              07A5  642
```

```
03  01  0028'CF  CF  07A5    643       MAKEVA    CASEL  W^WHICHRUN,#1,#RUNMAX
                        07AB            30025$:
                0006'   07AB                      .WORD  30027$-30025$            ;IF FIRST RUN USE CRETVA.
                0019'   07AD                      .WORD  30028$-30025$            ;IF SECOND USE GBL CREMAPSEC
                0053'   07AF                      .WORD  30029$-30025$            ;IF THIRD USE PFN MAPPING
                        07B1            30027$:
         53  01  3C     07B1                      MOVZWL  S^#SS$_NORMAL,R3
     50  0000'CF  DE    07B4                      MOVAL   W^INRANGE,R0
     51  0008'CF  DE    07B9                      MOVAL   W^RETRANGE,R1
         0975    30     07BE                      BSBW    CRETVASUBR
         0076    31     07C1                      BRW     30030$
                        07C4            30028$:
         53  01  3C     07C4                      MOVZWL  S^#SS$_NORMAL,R3
                        07C7            30031$:
             00  DD     07C7                      PUSHL   #0
             19  DD     07C9                      PUSHL   #25
         FCD5 CF  DF    07CB                      PUSHL   W^FILENAME
             00  DD     07CF                      PUSHL   #0
         FCC7 CF  DF    07D1                      PUSHAL  W^GBLSECNAM
     0000400D 8F  DD    07D5                      PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
         0008'CF  DF    07DB                      PUSHAL  W^RETRANGE
         0000'CF  DF    07DF                      PUSHAL  W^INRANGE
   00000000'EF  08  FB  07E3                      CALLS   #8,LIB$_CREMAPSEC
     50  0001828A 8F  D1  07EA                    CMPL    #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
             D4  13     07F1                      BEQL    30031$                 ;BEEN DELETED TRY CREMAPSEC AGAIN.
     51  FC45 CF  DE    07F3                      MOVAL   W^CRMPSCERR,R1
         0961    30     07F8                      BSBW    CHECK1
         003C    31     07FB                      BRW     30030$
                        07FE            30029$:
         53  01  3C     07FE                      MOVZWL  S^#SS$_NORMAL,R3
                        0801            30026$:
             7E  7C     0801                      CLRQ    -(SP)
             00  DD     0803                      PUSHL   #0
             19  DD     0805                      PUSHL   #25
         7E  00  3C     0807                      MOVZWL  #0,-(SP)
             00  DD     080A                      PUSHL   #0
             00  DD     080C                      PUSHL   #0
         FC8A CF  7F    080E                      PUSHAQ  W^GBLSECNAM
     00014009 8F  DD    0812                      PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
             00  DD     0818                      PUSHL   #0
         0008'CF  7F    081A                      PUSHAQ  W^RETRANGE
         0000'CF  7F    081E                      PUSHAQ  W^INRANGE
   00000000'GF  0C  FB  0822                      CALLS   #12,G^SYS$CRMPSC
     50  0001828A 8F  D1  0829                    CMPL    #^X1828A,R0            ;IF PREVIOUS GBL SECTION HASN'T
             CF  13     0830                      BEQL    30026$                ;BEEN DELETED TRY CREMAPSEC AGAIN.
     51  FC06 CF  DE    0832                      MOVAL   W^CRMPSCERR,R1
         0922    30     0837                      BSBW    CHECK1
                        083A            30030$:
                        083A    644       SETPRT  UR,PRVPRT=UW
         53  01  3C     083A                      MOVZWL  S^#SS$_NORMAL,R3
     50  0000'CF  DE    083D                      MOVAL   W^INRANGE,R0
     51  0008'CF  DE    0842                      MOVAL   W^RETRANGE,R1
     54  0F  9A         0847                      MOVZBL  S^#PRT$C_UR,R4
     55  04  9A         084A                      MOVZBL  S^#PRT$C_UW,R5
     56  002C'CF  DE    084D                      MOVAL   W^PREVPROT,R6
         09D1    30     0852                      BSBW    SETPRTSUBR
```

```
                          0855    645          NOWRITE
                          0863    646          READ
                          0873    647
                          0873    648          SETPRT   NA,PRVPRT=UR
        53    01    3C    0873                          MOVZWL   S^#SS$_NORMAL,R3
50    0000'CF    DE       0876                          MOVAL    W^INRANGE,R0
51    0008'CF    DE       087B                          MOVAL    W^RETRANGE,R1
        54    00    9A    0880                          MOVZBL   S^#PRT$C_NA,R4
        55    0F    9A    0883                          MOVZBL   S^#PRT$C_UR,R5
56    002C'CF    DE       0886                          MOVAL    W^PREVPROT,R6
              0998   30   088B                          BSBW     SETPRTSUBR
                          088E    649          NOREAD
                          089C    650
                          089C    651          SETPRT   UW,PRVPRT=KR
        53    01    3C    089C                          MOVZWL   S^#SS$_NORMAL,R3
50    0000'CF    DE       089F                          MOVAL    W^INRANGE,R0
51    0008'CF    DE       08A4                          MOVAL    W^RETRANGE,R1
        54    04    9A    08A9                          MOVZBL   S^#PRT$C_UW,R4
        55    03    9A    08AC                          MOVZBL   S^#PRT$C_KR,R5
56    002C'CF    DE       08AF                          MOVAL    W^PREVPROT,R6
              096F   30   08B4                          BSBW     SETPRTSUBR
                          08B7    652          WRITE
                          08C7    653
        62    62    90    08C7    654          MOVB     (R2),(R2)
                          08CA    655          SETPRT   UR,PRVPRT=UW          ;MAKE READ ONLY
        53    01    3C    08CA                          MOVZWL   S^#SS$_NORMAL,R3
50    0000'CF    DE       08CD                          MOVAL    W^INRANGE,R0
51    0008'CF    DE       08D2                          MOVAL    W^RETRANGE,R1
        54    0F    9A    08D7                          MOVZBL   S^#PRT$C_UR,R4
        55    04    9A    08DA                          MOVZBL   S^#PRT$C_UW,R5
56    002C'CF    DE       08DD                          MOVAL    W^PREVPROT,R6
              0941   30   08E2                          BSBW     SETPRTSUBR
                          08E5    656          NOWRITE
                          08F3    657
                          08F3    658          SETPRT   NA,PRVPRT=UR
        53    01    3C    08F3                          MOVZWL   S^#SS$_NORMAL,R3
50    0000'CF    DE       08F6                          MOVAL    W^INRANGE,R0
51    0008'CF    DE       08FB                          MOVAL    W^RETRANGE,R1
        54    00    9A    0900                          MOVZBL   S^#PRT$C_NA,R4
        55    0F    9A    0903                          MOVZBL   S^#PRT$C_UR,R5
56    002C'CF    DE       0906                          MOVAL    W^PREVPROT,R6
              0918   30   090B                          BSBW     SETPRTSUBR
                          090E    659          NOREAD
                          091C    660
                          091C    661          SETPRT   UW,PRVPRT=KR
        53    01    3C    091C                          MOVZWL   S^#SS$_NORMAL,R3
50    0000'CF    DE       091F                          MOVAL    W^INRANGE,R0
51    0008'CF    DE       0924                          MOVAL    W^RETRANGE,R1
        54    04    9A    0929                          MOVZBL   S^#PRT$C_UW,R4
        55    03    9A    092C                          MOVZBL   S^#PRT$C_KR,R5
56    002C'CF    DE       092F                          MOVAL    W^PREVPROT,R6
              08EF   30   0934                          BSBW     SETPRTSUBR
                          0937    662          WRITE
                          0947    663  ;
                          0947    664  ; MAKE A READ ONLY DEMAND ZERO PAGE AND READ REFERENCE IT
                          0947    665  ;
                          0947    666          DELTVA
```

```
        01   0028'CF   B1  0947                       CMPW     W^WHICHRUN,#RUN1          ;IF USING MAPPED SECTIONS FOR TESTS,
             0F         15  094C                       BLEQ     30042$                   ;DELETE SECTION AND THEN DO A DELTVA
             00         DD  094E                       PUSHL    #0
        FB48 CF         7F  0950                       PUSHAQ   W^GBLSECNAM
             00         DD  0954                       PUSHL    #0
    00000000'GF         03  FB  0956                   CALLS    #3,G^SYS$DGBLSC
                            095D            30042$:
        53   01         3C  095D                       MOVZWL   S^#SS$_NORMAL,R3
        50   0000'CF    DE  0960                       MOVAL    W^INRANGE,R0
        51   0008'CF    DE  0965                       MOVAL    W^RETRANGE,R1
             07DD        30  096A                       BSBW    DELTVASUBR
                            096D
                            096D      667   MAKEVA
        03   01   0028'CF   CF  096D                    CASEL    W^WHICHRUN,#1,#RUNMAX
                            0973            30043$:
             0006'        0973                          .WORD   30045$-30043$            ;IF FIRST RUN USE CRETVA.
             0019'        0975                          .WORD   30046$-30043$            ;IF SECOND USE GBL CREMAPSEC
             0053'        0977                          .WORD   30047$-30043$            ;IF THIRD USE PFN MAPPING
                            0979            30045$:
        53   01         3C  0979                       MOVZWL   S^#SS$_NORMAL,R3
        50   0000'CF    DE  097C                       MOVAL    W^INRANGE,R0
        51   0008'CF    DE  0981                       MOVAL    W^RETRANGE,R1
             07AD        30  0986                       BSBW    CRETVASUBR
             0076        31  0989                       BRW     30048$
                            098C            30046$:
        53   01         3C  098C                       MOVZWL   S^#SS$_NORMAL,R3
                            098F            30049$:
             00         DD  098F                        PUSHL   #0
             19         DD  0991                        PUSHL   #25
        FB0D CF         DF  0993                        PUSHAL  W^FILENAME
             00         DD  0997                        PUSHL   #0
        FAFF CF         DF  0999                        PUSHAL  W^GBLSECNAM
    0000400D 8F         DD  099D                        PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
             0008'CF    DF  09A3                        PUSHAL  W^RETRANGE
             0000'CF    DF  09A7                        PUSHAL  W^INRANGE
    00000000'EF         08  FB  09AB                    CALLS   #8,LIB$_CREMAPSEC
        50   0001828A 8F  D1  09B2                       CMPL   #^X1828A,R0              ;IF PREVIOUS GBL SECTION HASN'T
             D4         13  09B9                         BEQL   30049$                   ;BEEN DELETED TRY CREMAPSEC AGAIN.
        51   FA7D CF    DE  09BB                         MOVAL  W^CRMPSCERR,R1
             0799        30  09C0                        BSBW   CHECK1
             003C        31  09C3                        BRW    30048$
                            09C6            30047$:
        53   01         3C  09C6                       MOVZWL   S^#SS$_NORMAL,R3
                            09C9            30044$:
             7E         7C  09C9                         CLRQ   -(SP)
             00         DD  09CB                         PUSHL  #0
             19         DD  09CD                         PUSHL  #25
        7E   00         3C  09CF                         MOVZWL #0,-(SP)
             00         DD  09D2                         PUSHL  #0
             00         DD  09D4                         PUSHL  #0
        FAC2 CF         7F  09D6                         PUSHAQ W^GBLSECNAM
    00014009 8F         DD  09DA                         PUSHL  #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
             00         DD  09E0                         PUSHL  #0
             0008'CF    7F  09E2                         PUSHAQ W^RETRANGE
             0000'CF    7F  09E6                         PUSHAQ W^INRANGE
    00000000'GF         0C  FB  09EA                     CALLS  #12,G^SYS$CRMPSC
        50   0001828A 8F  D1  09F1                       CMPL   #^X1828A,R0              ;IF PREVIOUS GBL SECTION HASN'T
             CF         13  09F8                         BEQL   30044$                   ;BEEN DELETED TRY CREMAPSEC AGAIN.
```

```
          51  FA3E CF  DE  09FA                         MOVAL      W^CRMPSCERR,R1
                  075A  30  09FF                         BSBW       CHECK1
                            0A02                 30048$:  SETPRT     UR,PRVPRT=UW
                            0A02
          53    01  3C  0A02          668                 MOVZWL     S^#SS$_NORMAL,R3
          50  0000'CF  DE  0A05                         MOVAL      W^INRANGE,R0
          51  0008'CF  DE  0A0A                         MOVAL      W^RETRANGE,R1
              54    0F  9A  0A0F                         MOVZBL     S^#PRT$C_UR,R4
              55    04  9A  0A12                         MOVZBL     S^#PRT$C_UW,R5
          56  002C'CF  DE  0A15                         MOVAL      W^PREVPROT,R6
                  0809  30  0A1A                         BSBW       SETPRTSUBR
              50    62  90  0A1D          669            MOVB       (R2),R0
                            0A20          670            NOWRITE
                            0A2E          671            READ
                            0A3E          672            DELTVA
          01  0028'CF  B1  0A3E                         CMPW       W^WHICHRUN,#RUN1           ;IF USING MAPPED SECTIONS FOR TESTS,
                  0F    15  0A43                         BLEQ       30053$                    ;DELETE SECTION AND THEN DO A DELTVA
                  00    DD  0A45                         PUSHL      #0
          FA51 CF    7F  0A47                         PUSHAQ     W^GBLSECNAM
                  00    DD  0A4B                         PUSHL      #0
  00000000'GF    03  FB  0A4D                         CALLS      #3,G^SYS$DGBLSC
                            0A54                 30053$:
          53    01  3C  0A54                         MOVZWL     S^#SS$_NORMAL,R3
          50  0000'CF  DE  0A57                         MOVAL      W^INRANGE,R0
          51  0008'CF  DE  0A5C                         MOVAL      W^RETRANGE,R1
                  06E6  30  0A61                         BSBW       DELTVASUBR
                            0A64          673  :
                            0A64          674  :*****************************************************************
                            0A64          675  : THE FOLLOWING THREE SECTIONS ARE DONE ONLY ON THE FIRST PASS,
                            0A64          676  : AS THE SECTIONS TEST THE READABILITY AND WRITEABILITY
                            0A64          677  : OF PAGES CREATED AT LINK TIME (DEFINED WITH PSECT
                            0A64          678  : DIRECTIVES). THESE PAGES ARE NOT AFFECTED BY CURRENT VA POINTERS
                            0A64          679  : AND THUS NEED ONLY BE DONE ONCE. PICKING THE FIST PASS AS THE
                            0A64          680  : RECIPIENT OF THIS HONOR WAS AN ARBITRARY DECISION.
                            0A64          681  :*****************************************************************
                            0A64          682  :
                            0A64          683  : PSTX PAGE WRITABLE, CRF, NOT YET REFERENCED
                            0A64          684  :
          52  0000'CF  DE  0A64          685            MOVAL      W^WRTPAGES,R2
  0000'CF    52  D0  0A69          686            MOVL       R2,W^INRANGE
  0004'CF    52  D0  0A6E          687            MOVL       R2,W^INRANGE+4
                            0A73          688
                            0A73          689            WRITE
                            0A83          690            SETPRT     UR,PRVPRT=UW
          53    01  3C  0A83                         MOVZWL     S^#SS$_NORMAL,R3
          50  0000'CF  DE  0A86                         MOVAL      W^INRANGE,R0
          51  0008'CF  DE  0A8B                         MOVAL      W^RETRANGE,R1
              54    0F  9A  0A90                         MOVZBL     S^#PRT$C_UR,R4
              55    04  9A  0A93                         MOVZBL     S^#PRT$C_UW,R5
          56  002C'CF  DE  0A96                         MOVAL      W^PREVPROT,R6
                  0788  30  0A9B                         BSBW       SETPRTSUBR
                            0A9E          691            NOWRITE
                            0AAC          692            READ
                            0ABC          693            SETPRT     NA,PRVPRT=UR
          53    01  3C  0ABC                         MOVZWL     S^#SS$_NORMAL,R3
          50  0000'CF  DE  0ABF                         MOVAL      W^INRANGE,R0
          51  0008'CF  DE  0AC4                         MOVAL      W^RETRANGE,R1
```

```
         54    00    9A   0AC9                        MOVZBL   S^#PRT$C_NA,R4
         55    0F    9A   0ACC                        MOVZBL   S^#PRT$C_UR,R5
   56  002C'CF        DE   0ACF                        MOVAL    W^PREVPROT,R6
              074F    30   0AD4                        BSBW     SETPRTSUBR
                           0AD7   694          NOREAD
                           0AE5   695          SETPRT   UW,PRVPRT=KR
         53    01    3C   0AE5                        MOVZWL   S^#SS$_NORMAL,R3
   50  0000'CF        DE   0AE8                        MOVAL    W^INRANGE,R0
   51  0008'CF        DE   0AED                        MOVAL    W^RETRANGE,R1
         54    04    9A   0AF2                        MOVZBL   S^#PRT$C_UW,R4
         55    03    9A   0AF5                        MOVZBL   S^#PRT$C_KR,R5
   56  002C'CF        DE   0AF8                        MOVAL    W^PREVPROT,R6
              0726    30   0AFD                        BSBW     SETPRTSUBR
                           0B00   696          WRITE
                           0B10   697   ;
                           0B10   698   ; PSTX READ ONLY PAGE, NOT YET REFERENCED
                           0B10   699   ;
   52  0000'CF        DE   0B10   700                 MOVAL    W^RDPAGES,R2
 0000'CF        52    D0   0B15   701                 MOVL     R2,W^INRANGE
 0004'CF        52    D0   0B1A   702                 MOVL     R2,W^INRANGE+4
                           0B1F   703
                           0B1F   704          NOWRITE
                           0B2D   705          READ
                           0B3D   706          SETPRT   UW,PRVPRT=UR
         53    01    3C   0B3D                        MOVZWL   S^#SS$_NORMAL,R3
   50  0000'CF        DE   0B40                        MOVAL    W^INRANGE,R0
   51  0008'CF        DE   0B45                        MOVAL    W^RETRANGE,R1
         54    04    9A   0B4A                        MOVZBL   S^#PRT$C_UW,R4
         55    0F    9A   0B4D                        MOVZBL   S^#PRT$C_UR,R5
   56  002C'CF        DE   0B50                        MOVAL    W^PREVPROT,R6
              06CE    30   0B55                        BSBW     SETPRTSUBR
                           0B58   707          WRITE
         62    62    90   0B68   708                 MOVB     (R2),(R2)
                           0B6B   709          SETPRT   UR,PRVPRT=UW
         53    01    3C   0B6B                        MOVZWL   S^#SS$_NORMAL,R3
   50  0000'CF        DE   0B6E                        MOVAL    W^INRANGE,R0
   51  0008'CF        DE   0B73                        MOVAL    W^RETRANGE,R1
         54    0F    9A   0B78                        MOVZBL   S^#PRT$C_UR,R4
         55    04    9A   0B7B                        MOVZBL   S^#PRT$C_UW,R5
   56  002C'CF        DE   0B7E                        MOVAL    W^PREVPROT,R6
              06A0    30   0B83                        BSBW     SETPRTSUBR
                           0B86   710   ;
                           0B86   711   ; PSTX READ ONLY PAGE - READ REFERENCE IT
                           0B86   712   ;
   52  0200  C2        DE   0B86   713                 MOVAL    ^X200(R2),R2
 0000'CF        52    D0   0B8B   714                 MOVL     R2,W^INRANGE
 0004'CF        52    D0   0B90   715                 MOVL     R2,W^INRANGE+4
                           0B95   716
                           0B95   717          NOWRITE
                           0BA3   718          READ
         50    62    90   0BB3   719          MOVB     (R2),R0
                           0BB6   720          SETPRT   UW,PRVPRT=UR
         53    01    3C   0BB6                        MOVZWL   S^#SS$_NORMAL,R3
   50  0000'CF        DE   0BB9                        MOVAL    W^INRANGE,R0
   51  0008'CF        DE   0BBE                        MOVAL    W^RETRANGE,R1
         54    04    9A   0BC3                        MOVZBL   S^#PRT$C_UW,R4
         55    0F    9A   0BC6                        MOVZBL   S^#PRT$C_UR,R5
```

```
          56    002C'CF   DE   0BC9                      MOVAL    W^PREVPROT,R6
                0655      30   0BCE                      BSBW     SETPRTSUBR
                               0BD1       721            WRITE
          62    62        90   0BE1       722            MOVB     (R2),(R2)
                               0BE4       723            SETPRT   UR,PRVPRT=UW
          53    01        3C   0BE4                      MOVZWL   S^#SS$_NORMAL,R3
          50    0000'CF   DE   0BE7                      MOVAL    W^INRANGE,R0
          51    0008'CF   DE   0BEC                      MOVAL    W^RETRANGE,R1
          54    0F        9A   0BF1                      MOVZBL   S^#PRT$C_UR,R4
          55    04        9A   0BF4                      MOVZBL   S^#PRT$C_UW,R5
          56    002C'CF   DE   0BF7                      MOVAL    W^PREVPROT,R6
                0627      30   0BFC                      BSBW     SETPRTSUBR
                               0BFF       724
                               0BFF       725  BYPASS_PSECT_TESTS:
                               0BFF       726  BYPASS_SETPRT_TESTS:
                               0BFF       727  ;
                               0BFF       728  ;  CHECK CREATING THE LAST 2 PAGES OF P1 SPACE
                               0BFF       729  ;
                               0BFF       730  ;********************************************************************
                               0BFF       731  ;************* THIS TEST MIGHT NOT WORK WITH THE DEBUGGER ***********
                               0BFF       732  ;*********** ON BECAUSE THE LAST TWO PAGES OF P1 SPACE *************
                               0BFF       733  ;*********** NOW CONTAIN THE DEBUGGER CONTEXT AREA.    *************
                               0BFF       734  ;********************************************************************
                               0BFF       735  ;
                               0BFF       736            MAKEVA   #<^X7FFFFC00>,#<^X7FFFFF00>
          03    01    0028'CF  CF   0BFF                 CASEL    W^WHICHRUN,#1,#RUNMAX
                               0C05       30072$:
                0006'          0C05                      .WORD    30074$-30072$      ;IF FIRST RUN USE CRETVA.
                002B'          0C07                      .WORD    30075$-30072$      ;IF SECOND USE GBL CREMAPSEC
                0077'          0C09                      .WORD    30076$-30072$      ;IF THIRD USE PFN MAPPING
                               0C0B       30074$:
   0000'CF   7FFFFC00 8F   D0  0C0B                      MOVL     #<^X7FFFFC00>,W^INRANGE
   0004'CF   7FFFFF00 8F   D0  0C14                      MOVL     #<^X7FFFFF00>,W^INRANGE+4
          53    01        3C   0C1D                      MOVZWL   S^#SS$_NORMAL,R3
          50    0000'CF   DE   0C20                      MOVAL    W^INRANGE,R0
          51    0008'CF   DE   0C25                      MOVAL    W^RETRANGE,R1
                0509      30   0C2A                      BSBW     CRETVASUBR
                009A      31   0C2D                      BRW      30077$
                               0C30       30075$:
   0000'CF   7FFFFC00 8F   D0  0C30                      MOVL     #<^X7FFFFC00>,W^INRANGE
   0004'CF   7FFFFF00 8F   D0  0C39                      MOVL     #<^X7FFFFF00>,W^INRANGE+4
          53    01        3C   0C42                      MOVZWL   S^#SS$_NORMAL,R3
                               0C45       30078$:
                00        DD   0C45                      PUSHL    #0
                19        DD   0C47                      PUSHL    #25
                F857 CF   DF   0C49                      PUSHAL   W^FILENAME
                ...()     DD   0C4D                      PUSHL    #0
                F849 CF   DF   0C4F                      PUSHAL   W^GBLSECNAM
            0000400D 8F   DD   0C53                      PUSHL    #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
                0008'CF   DF   0C59                      PUSHAL   W^RETRANGE
                0000'CF   DF   0C5D                      PUSHAL   W^INRANGE
          00000000'EF  08  FB  0C61                      CALLS    #8,LIB$_CREMAPSEC
          50  0001828A 8F  D1  0C68                      CMPL     #^X1828A,R0        ;IF PREVIOUS GBL SECTION HASN'T
                D4        13   0C6F                      BEQL     30078$             ;BEEN DELETED TRY CREMAPSEC AGAIN.
          51    F7C7 CF   DE   0C71                      MOVAL    W^CRMPSCERR,R1
                04E3      30   0C76                      BSBW     CHECK1
                004E      31   0C79                      BRW      30077$
```

```
                                       0C7C            30076$:
   0000'CF   7FFFFC00 8F   D0  0C7C                    MOVL    #<^X7FFFFC00>,W^INRANGE
   0004'CF   7FFFFF00 8F   D0  0C85                    MOVL    #<^X7FFFFF00>,W^INRANGE+4
             53       01   3C  0C8E                    MOVZWL  S^#SS$_NORMAL,R3
                                       0C91            30073$:
                      7E   7C  0C91                    CLRQ    -(SP)
                      00   DD  0C93                    PUSHL   #0
                      19   DD  0C95                    PUSHL   #25
                 7E   00   3C  0C97                    MOVZWL  #0,-(SP)
                      00   DD  0C9A                    PUSHL   #0
                      00   DD  0C9C                    PUSHL   #0
              F7FA CF 7F  0C9E                    PUSHAQ  W^GBLSECNAM
        00014009 8F   DD  0CA2                    PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
                      00   DD  0CA8                    PUSHL   #0
               0008'CF  7F  0CAA                    PUSHAQ  W^RETRANGE
               0000'CF  7F  0CAE                    PUSHAQ  W^INRANGE
      00000000'GF   0C  FB  0CB2                    CALLS   #12,G^SYS$CRMPSC
   50   0001828A 8F   D1  0CB9                    CMPL    #^X1828A,R0       ;IF PREVIOUS GBL SECTION HASN'T
                 CF   13  0CC0                    BEQL    30073$            ;BEEN DELETED TRY CREMAPSEC AGAIN.
   51   F776 CF      DE  0CC2                    MOVAL   W^CRMPSCERR,R1
             0492      30  0CC7                    BSBW    CHECK1
                                       0CCA            30077$:
                                       0CCA   737      DELTVA
   01   0028'CF      B1  0CCA                    CMPW    W^WHICHRUN,#RUN1   ;IF USING MAPPED SECTIONS FOR TESTS,
                 0F   15  0CCF                    BLEQ    30079$            ;DELETE SECTION AND THEN DO A DELTVA
                      00   DD  0CD1                    PUSHL   #0
             F7C5 CF  7F  0CD3                    PUSHAQ  W^GBLSECNAM
                      00   DD  0CD7                    PUSHL   #0
      00000000'GF   03  FB  0CD9                    CALLS   #3,G^SYS$DGBLSC
                                       0CE0            30079$:
             53   01   3C  0CE0                    MOVZWL  S^#SS$_NORMAL,R3
   50   0000'CF      DE  0CE3                    MOVAL   W^INRANGE,R0
   51   0008'CF      DE  0CE8                    MOVAL   W^RETRANGE,R1
                 045A  30  0CED                    BSBW    DELTVASUBR
   50   0000'CF      7D  0CF0   738      MOVQ    W^INRANGE,R0
                          0CF5   739      MAKEVA  R1,R0             ;REVERSE THE RANGE AND TRY AGAIN
   03   01   0028'CF  CF  0CF5                    CASEL   W^WHICHRUN,#1,#RUNMAX
                                       0CFB            30080$:
                      0006'  0CFB                    .WORD   30082$-30080$     ;IF FIRST RUN USE CRETVA.
                      0023'  0CFD                    .WORD   30083$-30080$     ;IF SECOND USE GBL CREMAPSEC
                      0067'  0CFF                    .WORD   30084$-30080$     ;IF THIRD USE PFN MAPPING
                                       0D01            30082$:
   0000'CF   51       D0  0D01                    MOVL    R1,W^INRANGE
   0004'CF   50       D0  0D06                    MOVL    R0,W^INRANGE+4
             53   01   3C  0D0B                    MOVZWL  S^#SS$_NORMAL,R3
   50   0000'CF      DE  0D0E                    MOVAL   W^INRANGE,R0
   51   0008'CF      DE  0D13                    MOVAL   W^RETRANGE,R1
                 041B  30  0D18                    BSBW    CRETVASUBR
                 008A  31  0D1B                    BRW     30085$
                                       0D1E            30083$:
   0000'CF   51       D0  0D1E                    MOVL    R1,W^INRANGE
   0004'CF   50       D0  0D23                    MOVL    R0,W^INRANGE+4
             53   01   3C  0D28                    MOVZWL  S^#SS$_NORMAL,R3
                                       0D2B            30086$:
                      00   DD  0D2B                    PUSHL   #0
                      19   DD  0D2D                    PUSHL   #25
             F771 CF  DF  0D2F                    PUSHAL  W^FILENAME
```

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MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 23
V04-000   INITIALIZATION   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (6)

```
                    00  DD  0D33                              PUSHL   #0
              F763 CF  DF  0D35                              PUSHAL  W^GBLSECNAM
         0000400D 8F  DD  0D39                              PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
            0008'CF  DF  0D3F                              PUSHAL  W^RETRANGE
            0000'CF  DF  0D43                              PUSHAL  W^INRANGE
      00000000'EF  08  FB  0D47                              CALLS   #8,LIB$_CREMAPSEC
   50   0001828A 8F  D1  0D4E                              CMPL    #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
                    D4  13  0D55                              BEQL    30086$                  ;BEEN DELETED TRY CREMAPSEC AGAIN.
         51  F6E1 CF  DE  0D57                              MOVAL   W^CRMPSCERR,R1
               03FD  30  0D5C                              BSBW    CHECK1
               0046  31  0D5F                              BRW     30085$
                          0D62            30084$:
         0000'CF  51  D0  0D62                              MOVL    R1,W^INRANGE
         0004'CF  50  D0  0D67                              MOVL    R0,W^INRANGE+4
                 53  01  3C  0D6C                              MOVZWL  S^#SS$_NORMAL,R3
                          0D6F            30081$:
                    7E  7C  0D6F                              CLRQ    -(SP)
                    00  DD  0D71                              PUSHL   #0
                    19  DD  0D73                              PUSHL   #25
              7E   00  3C  0D75                              MOVZWL  #0,-(SP)
                    00  DD  0D78                              PUSHL   #0
                    00  DD  0D7A                              PUSHL   #0
              F71C CF  7F  0D7C                              PUSHAQ  W^GBLSECNAM
         00014009 8F  DD  0D80                              PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
                    00  DD  0D86                              PUSHL   #0
            0008'CF  7F  0D88                              PUSHAQ  W^RETRANGE
            0000'CF  7F  0D8C                              PUSHAQ  W^INRANGE
      00000000'GF  0C  FB  0D90                              CALLS   #12,G^SYS$CRMPSC
   50   0001828A 8F  D1  0D97                              CMPL    #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
                    CF  13  0D9E                              BEQL    30081$                  ;BEEN DELETED TRY CREMAPSEC AGAIN.
         51  F698 CF  DE  0DA0                              MOVAL   W^CRMPSCERR,R1
               03B4  30  0DA5                              BSBW    CHECK1
                          0DA8
                          0DA8     740    30085$:  DELTVA
         01   0028'CF  B1  0DA8                              CMPW    W^WHICHRUN,#RUN1        ;IF USING MAPPED SECTIONS FOR TESTS,
                    0F  15  0DAD                              BLEQ    30087$                  ;DELETE SECTION AND THEN DO A DELTVA
                    00  DD  0DAF                              PUSHL   #0
              F6E7 CF  7F  0DB1                              PUSHAQ  W^GBLSECNAM
                    00  DD  0DB5                              PUSHL   #0
      00000000'GF  03  FB  0DB7                              CALLS   #3,G^SYS$DGBLSC
                          0DBE            30087$:
                 53  01  3C  0DBE                              MOVZWL  S^#SS$_NORMAL,R3
         50  0000'CF  DE  0DC1                              MOVAL   W^INRANGE,R0
         51  0008'CF  DE  0DC6                              MOVAL   W^RETRANGE,R1
               037C  30  0DCB                              BSBW    DELTVASUBR
                          0DCE     741  :
                          0DCE     742  : CHECK RETURN RANGE LOGIC.  IF RANGE IS FORWARD, THEN RETURN RANGE IS
                          0DCE     743  : FROM THE FIRST THROUGH THE LAST BYTE OF THE RANGE. IF BACKWARD, THEN
                          0DCE     744  : RETURN RANGE IS FROM LAST THROUGH THE FIRST BYTE IN THE RANGE.  IF
                          0DCE     745  : THE RANGE IS ONE PAGE AND THE INPUT RANGE IS SPECIFIED AS 2 IDENTICAL
                          0DCE     746  : ADDRESSES, THEN THE RETURN RANGE IS FORWARDS FOR P0 SPACE, BACKWARDS FOR P1.
                          0DCE     747  :
   50   0014'CF  04  C1  0DCE     748         ADDL3   #4,W^SAVEND,R0          ;ADR NOT AT BEGIN OF PAGE
                          0DD4     749         MAKEVA  R0,R0                   ;SAME ADDRESS, P0 SPACE
   03   01   0028'CF  CF  0DD4                              CASEL   W^WHICHRUN,#1,#RUNMAX
                          0DDA            30088$:
                    0006'  0DDA                              .WORD   30090$-30088$           ;IF FIRST RUN USE CRETVA.
```

MMGCRDLSP   D 3
V04-000   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 24
                  INITIALIZATION   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (6)

```
                   0023' 0DDC              .WORD   30091$-30088$                 ;IF SECOND USE GBL CREMAPSEC
                   0067' 0DDE              .WORD   30092$-30088$                 ;IF THIRD USE PFN MAPPING
                         0DE0      30090$:
  0000'CF  50   D0 0DE0              MOVL    R0,W^INRANGE
  0004'CF  50   D0 0DE5              MOVL    R0,W^INRANGE+4
        53  01   3C 0DEA              MOVZWL  S^#SS$_NORMAL,R3
  50 0000'CF    DE 0DED              MOVAL   W^INRANGE,R0
  51 0008'CF    DE 0DF2              MOVAL   W^RETRANGE,R1
        033C    30 0DF7              BSBW    CRETVASUBR
        008A    31 0DFA              BRW 30093$
                   0DFD      30091$:
  0000'CF  50   D0 0DFD              MOVL    R0,W^INRANGE
  0004'CF  50   D0 0E02              MOVL    R0,W^INRANGE+4
        53  01   3C 0E07              MOVZWL  S^#SS$_NORMAL,R3
                   0E0A      30094$:
        00      DD 0E0A              PUSHL   #0
        19      DD 0E0C              PUSHL   #25
     F692 CF    DF 0E0E              PUSHAL  W^FILENAME
        00      DD 0E12              PUSHL   #0
     F684 CF    DF 0E14              PUSHAL  W^GBLSECNAM
 0000400D 8F    DD 0E18              PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
     0008'CF    DF 0E1E              PUSHAL  W^RETRANGE
     0000'CF    DF 0E22              PUSHAL  W^INRANGE
 00000000'EF 08 FB 0E26              CALLS   #8,LIB$_CREMAPSEC
  50 0001828A 8F D1 0E2D              CMPL    #^X1828A,R0                        ;IF PREVIOUS GBL SECTION HASN'T
        D4      13 0E34              BEQL    30094$                             ;BEEN DELETED TRY CREMAPSEC AGAIN.
  51 F602 CF    DE 0E36              MOVAL   W^CRMPSCERR,R1
        031E    30 0E3B              BSBW    CHECK1
        0046    31 0E3E              BRW 30093$
                   0E41      30092$:
  0000'CF  50   D0 0E41              MOVL    R0,W^INRANGE
  0004'CF  50   D0 0E46              MOVL    R0,W^INRANGE+4
        53  01   3C 0E4B              MOVZWL  S^#SS$_NORMAL,R3
                   0E4E      30089$:
     7E      7C 0E4E              CLRQ    -(SP)
        00      DD 0E50              PUSHL   #0
        19      DD 0E52              PUSHL   #25
     7E   00   3C 0E54              MOVZWL  #0,-(SP)
        00      DD 0E57              PUSHL   #0
        00      DD 0E59              PUSHL   #0
     F63D CF    7F 0E5B              PUSHAQ  W^GBLSECNAM
 00014009 8F    DD 0E5F              PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
        00      DD 0E65              PUSHL   #0
     0008'CF    7F 0E67              PUSHAQ  W^RETRANGE
     0000'CF    7F 0E6B              PUSHAQ  W^INRANGE
 00000000'GF 0C FB 0E6F              CALLS   #12,G^SYS$CRMPSC
  50 0001828A 8F D1 0E76              CMPL    #^X1828A,R0                        ;IF PREVIOUS GBL SECTION HASN'T
        CF      13 0E7D              BEQL    30089$                             ;BEEN DELETED TRY CREMAPSEC AGAIN.
  51 F5B9 CF    DE 0E7F              MOVAL   W^CRMPSCERR,R1
        02D5    30 0E84              BSBW    CHECK1
                   0E87      30093$:
                   0E87  750   DELTVA                                           ;DELETE SAME ADDRESS P0 SPACE
                                                                               ;IF USING MAPPED SECTIONS FOR TESTS,
  01 0028'CF    B1 0E87              CMPW    W^WHICHRUN,#RUN1                   ;DELETE SECTION AND THEN DO A DELTVA
        0F      15 0E8C              BLEQ    30095$
        00      DD 0E8E              PUSHL   #0
     F608 CF    7F 0E90              PUSHAQ  W^GBLSECNAM
        00      DD 0E94              PUSHL   #0
```

MMGCRDLSP   E 3
V04-000   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 25
                       INITIALIZATION   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (6)

```
         00000000'GF    03   FB   0E96                              CALLS   #3,G^SYS$DGBLSC
                                  0E9D          30095$:
               53    01   3C   0E9D                                 MOVZWL  S^#SS$_NORMAL,R3
         50  0000'CF    DE   0EA0                                   MOVAL   W^INRANGE,R0
         51  0008'CF    DE   0EA5                                   MOVAL   W^RETRANGE,R1
                  029D  30   0EAA                                   BSBW    DELTVASUBR
              0004'CF   D6   0EAD          751         INCL         W^INRANGE+4              ;DIFFERENT ADDRESSES FORWARD
                                  0EB1     752         MAKEVA                               ;P0 SPACE 1 PAGE FORWARD
         03    01  0028'CF   CF   0EB1                              CASEL   W^WHICHRUN,#1,#RUNMAX
                                  0EB7          30096$:
                        0006'  0EB7                                 .WORD   30098$-30096$         ;IF FIRST RUN USE CRETVA.
                        0019'  0EB9                                 .WORD   30099$-30096$         ;IF SECOND USE GBL CREMAPSEC
                        0053'  0EBB                                 .WORD   30100$-30096$         ;IF THIRD USE PFN MAPPING
                                  0EBD          30098$:
               53    01   3C   0EBD                                 MOVZWL  S^#SS$_NORMAL,R3
         50  0000'CF    DE   0EC0                                   MOVAL   W^INRANGE,R0
         51  0008'CF    DE   0EC5                                   MOVAL   W^RETRANGE,R1
                  0269  30   0ECA                                   BSBW    CRETVASUBR
                  0076  31   0ECD                                   BRW     30101$
                                  0ED0          30099$:
               53    01   3C   0ED0                                 MOVZWL  S^#SS$_NORMAL,R3
                                  0ED3          30102$:
                  00   DD   0ED3                                    PUSHL   #0
                  19   DD   0ED5                                    PUSHL   #25
              F5C9 CF    DF   0ED7                                  PUSHAL  W^FILENAME
                  00   DD   0EDB                                    PUSHL   #0
              F5BB CF    DF   0EDD                                  PUSHAL  W^GBLSECNAM
         0000400D 8F    DD   0EE1                                   PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
              0008'CF    DF   0EE7                                  PUSHAL  W^RETRANGE
              0000'CF    DF   0EEB                                  PUSHAL  W^INRANGE
         00000000'EF    08   FB   0EEF                              CALLS   #8,LIB$_CREMAPSEC
         50  0001828A 8F    D1   0EF6                               CMPL    #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
                        D4   13   0EFD                              BEQL    30102$                  ;BEEN DELETED TRY CREMAPSEC AGAIN.
         51    F539 CF    DE   0EFF                                 MOVAL   W^CRMPSCERR,R1
                  0255  30   0F04                                   BSBW    CHECK1
                  003C  31   0F07                                   BRW     30101$
                                  0F0A          30100$:
               53    01   3C   0F0A                                 MOVZWL  S^#SS$_NORMAL,R3
                                  0F0D          30097$:
                  7E   7C   0F0D                                    CLRQ    -(SP)
                  00   DD   0F0F                                    PUSHL   #0
                  19   DD   0F11                                    PUSHL   #25
              7E    00   3C   0F13                                  MOVZWL  #0,-(SP)
                  00   DD   0F16                                    PUSHL   #0
                  00   DD   0F18                                    PUSHL   #0
              F57E CF    7F   0F1A                                  PUSHAQ  W^GBLSECNAM
         00014009 8F    DD   0F1E                                   PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
                  00   DD   0F24                                    PUSHL   #0
              0008'CF    7F   0F26                                  PUSHAQ  W^RETRANGE
              0000'CF    7F   0F2A                                  PUSHAQ  W^INRANGE
         00000000'GF    0C   FB   0F2E                              CALLS   #12,G^SYS$CRMPSC
         50  0001828A 8F    D1   0F35                               CMPL    #^X1828A,R0             ;IF PREVIOUS GBL SECTION HASN'T
                        CF   13   0F3C                              BEQL    30097$                  ;BEEN DELETED TRY CREMAPSEC AGAIN.
         51    F4FA CF    DE   0F3E                                 MOVAL   W^CRMPSCERR,R1
                  0216  30   0F43                                   BSBW    CHECK1
                                  0F46          30101$:
                                  0F46     753         DELTVA                               ;P0 SPACE 1 PAGE FORWARD
```

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MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 26
V04-000   INITIALIZATION   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (6)

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        01   0028'CF   B1  0F46                          CMPW    W^WHICHRUN,#RUN1        ;IF USING MAPPED SECTIONS FOR TESTS,
                  0F   15  0F4B                          BLEQ    30103$                 ;DELETE SECTION AND THEN DO A DELTVA
                  00   DD  0F4D                          PUSHL   #0
             F549 CF   7F  0F4F                          PUSHAQ  W^GBLSECNAM
                  00   DD  0F53                          PUSHL   #0
        00000000'GF    03  FB  0F55                      CALLS   #3,G^SYS$DGBLSC
                           0F5C              30103$:
             53   01   3C  0F5C                          MOVZWL  S^#SS$_NORMAL,R3
        50   0000'CF   DE  0F5F                          MOVAL   W^INRANGE,R0
        51   0008'CF   DE  0F64                          MOVAL   W^RETRANGE,R1
                 01DE  30  0F69                          BSBW    DELTVASUBR
        50   0000'CF   7D  0F6C              754         MOVQ    W^INRANGE,R0           ;REVERSE THE RANGE
                           0F71              755 MAKEVA  R1,R0                          ;1 PAGE BACKWARDS, P0 SPACE
     03 01   0028'CF   CF  0F71                          CASEL   W^WHICHRUN,#1,#RUNMAX
                           0F77              30104$:
                  0006' 0F77                             .WORD   30106$-30104$          ;IF FIRST RUN USE CRETVA.
                  0023' 0F79                             .WORD   30107$-30104$          ;IF SECOND USE GBL CREMAPSEC
                  0067' 0F7B                             .WORD   30108$-30104$          ;IF THIRD USE PFN MAPPING
                           0F7D              30106$:
        0000'CF   51   D0  0F7D                          MOVL    R1,W^INRANGE
        0004'CF   50   D0  0F82                          MOVL    R0,W^INRANGE+4
             53   01   3C  0F87                          MOVZWL  S^#SS$_NORMAL,R3
        50   0000'CF   DE  0F8A                          MOVAL   W^INRANGE,R0
        51   0008'CF   DE  0F8F                          MOVAL   W^RETRANGE,R1
                 019F  30  0F94                          BSBW    CRETVASUBR
                 008A  31  0F97                          BRW     30109$
                           0F9A              30107$:
        0000'CF   51   D0  0F9A                          MOVL    R1,W^INRANGE
        0004'CF   50   D0  0F9F                          MOVL    R0,W^INRANGE+4
             53   01   3C  0FA4                          MOVZWL  S^#SS$_NORMAL,R3
                           0FA7              30110$:
                  00   DD  0FA7                          PUSHL   #0
                  19   DD  0FA9                          PUSHL   #25
             F4F5 CF   DF  0FAB                          PUSHAL  W^FILENAME
                  00   DD  0FAF                          PUSHL   #0
             F4E7 CF   DF  0FB1                          PUSHAL  W^GBLSECNAM
        0000400D 8F    DD  0FB5                          PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
             0008'CF   DF  0FBB                          PUSHAL  W^RETRANGE
             0000'CF   DF  0FBF                          PUSHAL  W^INRANGE
        00000000'EF   08  FB  0FC3                       CALLS   #8,LIB$_CREMAPSEC
        50   0001828A 8F  D1  0FCA                       CMPL    #^X1828A,R0            ;IF PREVIOUS GBL SECTION HASN'T
                  D4   13  0FD1                          BEQL    30110$                 ;BEEN DELETED TRY CREMAPSEC AGAIN.
        51   F465 CF   DE  0FD3                          MOVAL   W^CRMPSCERR,R1
                 0181  30  0FD8                          BSBW    CHECK1
                 0046  31  0FDB                          BRW     30109$
                           0FDE              30108$:
        0000'CF   51   D0  0FDE                          MOVL    R1,W^INRANGE
        0004'CF   50   D0  0FE3                          MOVL    R0,W^INRANGE+4
             53   01   3C  0FE8                          MOVZWL  S^#SS$_NORMAL,R3
                           0FEB              30105$:
             7E   7C  0FEB                               CLRQ    -(SP)
                  00   DD  0FED                          PUSHL   #0
                  19   DD  0FEF                          PUSHL   #25
             7E   00   3C  0FF1                          MOVZWL  #0,-(SP)
                  00   DD  0FF4                          PUSHL   #0
                  00   DD  0FF6                          PUSHL   #0
             F4A0 CF   7F  0FF8                          PUSHAQ  W^GBLSECNAM
```

```
        00014009 8F    DD  0FFC              PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
              00    DD  1002              PUSHL   #0
           0008'CF   7F  1004              PUSHAQ  W^RETRANGE
           0000'CF   7F  1008              PUSHAQ  W^INRANGE
     00000000'GF   0C  FB  100C              CALLS   #12,G^SYS$CRMPSC
     50  0001828A 8F    D1  1013              CMPL    #^X1828A,R0              ;IF PREVIOUS GBL SECTION HASN'T
              CF   13  101A              BEQL    30105$                  ;BEEN DELETED TRY CREMAPSEC AGAIN.
        51  F41C CF   DE  101C              MOVAL   W^CRMPSCERR,R1
              0138   30  1021              BSBW    CHECK1
                          1024
                          1024      30109$:
                          1024  756         DELTVA                                  ;1 PAGE BACKWARDS, P0 SPACE
        01  0028'CF   B1  1024              CMPW    W^WHICHRUN,#RUN1        ;IF USING MAPPED SECTIONS FOR TESTS,
              0F   15  1029              BLEQ    30111$                  ;DELETE SECTION AND THEN DO A DELTVA
              00    DD  102B              PUSHL   #0
           F46B CF   7F  102D              PUSHAQ  W^GBLSECNAM
              00    DD  1031              PUSHL   #0
     00000000'GF   03  FB  1033              CALLS   #3,G^SYS$DGBLSC
                          103A      30111$:
        53    01   3C  103A              MOVZWL  S^#SS$_NORMAL,R3
        50  0000'CF   DE  103D              MOVAL   W^INRANGE,R0
        51  0008'CF   DE  1042              MOVAL   W^RETRANGE,R1
              0100   30  1047              BSBW    DELTVASUBR
        50  000C'CF   D0  104A  757         MOVL    W^RETRANGE+4,R0
                          104F  758  MAKEVA    R0,R0                           ;CREATE 1 PAGE P1 SPACE
     03  01  0028'CF   CF  104F              CASEL   W^WHICHRUN,#1,#RUNMAX
                          1055      30112$:
                  0006'   1055              .WORD 30114$-30112$                ;IF FIRST RUN USE CRETVA.
                  0023'   1057              .WORD 30115$-30112$                ;IF SECOND USE GBL CREMAPSEC
                  0067'   1059              .WORD 30116$-30112$                ;IF THIRD USE PFN MAPPING
                          105B      30114$:
        0000'CF   50   D0  105B              MOVL    R0,W^INRANGE
        0004'CF   50   D0  1060              MOVL    R0,W^INRANGE+4
              53    01   3C  1065              MOVZWL  S^#SS$_NORMAL,R3
        50  0000'CF   DE  1068              MOVAL   W^INRANGE,R0
        51  0008'CF   DE  106D              MOVAL   W^RETRANGE,R1
              00C1   30  1072              BSBW    CRETVASUBR
              008A   31  1075              BRW 30117$
                          1078      30115$:
        0000'CF   50   D0  1078              MOVL    R0,W^INRANGE
        0004'CF   50   D0  107D              MOVL    R0,W^INRANGE+4
              53    01   3C  1082              MOVZWL  S^#SS$_NORMAL,R3
                          1085      30118$:
              00    DD  1085              PUSHL   #0
              19    DD  1087              PUSHL   #25
           F417 CF   DF  1089              PUSHAL  W^FILENAME
              00    DD  108D              PUSHL   #0
           F409 CF   DF  108F              PUSHAL  W^GBLSECNAM
        0000400D 8F    DD  1093              PUSHL   #<SEC$M_GBL!SEC$M_PERM!SEC$M_DZRO!SEC$M_WRT>
           0008'CF   DF  1099              PUSHAL  W^RETRANGE
           0000'CF   DF  109D              PUSHAL  W^INRANGE
     00000000'EF   08  FB  10A1              CALLS   #8,LIB$_CREMAPSEC
        50  0001828A 8F    D1  10A8              CMPL    #^X1828A,R0              ;IF PREVIOUS GBL SECTION HASN'T
              D4   13  10AF              BEQL    30118$                  ;BEEN DELETED TRY CREMAPSEC AGAIN.
        51  F387 CF   DE  10B1              MOVAL   W^CRMPSCERR,R1
              00A3   30  10B6              BSBW    CHECK1
              0046   31  10B9              BRW 30117$
                          10BC      30116$:
```

```
          0000'CF  50   DO   10BC                          MOVL     RO,W^INRANGE
          0004'CF  50   DO   10C1                          MOVL     RO,W^INRANGE+4
                   53   01   3C   10C6                      MOVZWL   S^#SS$_NORMAL,R3
                                  10C9          30113$:
                        7E   7C   10C9                      CLRQ     -(SP)
                        00   DD   10CB                      PUSHL    #0
                        19   DD   10CD                      PUSHL    #25
                   7E   00   3C   10CF                      MOVZWL   #0,-(SP)
                        00   DD   10D2                      PUSHL    #0
                        00   DD   10D4                      PUSHL    #0
                 F3C2 CF   7F   10D6                        PUSHAQ   W^GBLSECNAM
             00014009 8F   DD   10DA                        PUSHL    #<SEC$M_GBL!SEC$M_PERM!SEC$M_PFNMAP!SEC$M_WRT>
                        00   DD   10E0                      PUSHL    #0
                 0008'CF   7F   10E2                        PUSHAQ   W^RETRANGE
                 0000'CF   7F   10E6                        PUSHAQ   W^INRANGE
         00000000'GF  0C   FB   10EA                        CALLS    #12,G^SYS$CRMPSC
         50  0001828A 8F   D1   10F1                        CMPL     #^X1828A,RO           ;IF PREVIOUS GBL SECTION HASN'T
                        CF   13   10F8                      BEQL     30113$                ;BEEN DELETED TRY CREMAPSEC AGAIN.
         51  F33E CF   DE   10FA                            MOVAL    W^CRMPSCERR,R1
                   005A   30   10FF                         BSBW     CHECK1
                              1102          30117$:  DELTVA                               ;DELETE 1 PAGE P1 SPACE
                              1102   759
          01  0028'CF   B1   1102                           CMPW     W^WHICHRUN,#RUN1      ;IF USING MAPPED SECTIONS FOR TESTS,
                        0F   15   1107                       BLEQ     30119$               ;DELETE SECTION AND THEN DO A DELTVA
                        00   DD   1109                       PUSHL    #0
                 F38D CF   7F   110B                         PUSHAQ   W^GBLSECNAM
                        00   DD   110F                       PUSHL    #0
         00000000'GF   03   FB   1111                        CALLS    #3,G^SYS$DGBLSC
                              1118          30119$:
                   53   01   3C   1118                       MOVZWL   S^#SS$_NORMAL,R3
          50  0000'CF   DE   111B                            MOVAL    W^INRANGE,RO
          51  0008'CF   DE   1120                            MOVAL    W^RETRANGE,R1
                   0022   30   1125                          BSBW     DELTVASUBR
                              1128   760
                              1128   761  ;
                              1128   762  ;END OF LOOP
                              1128   763  ;
      03 0020'CF   001C'CF   F3   1128   764          AOBLEQ   W^MAXPASSCNT,W^PASSCNT,160$
                   F3D4   31   1130   765  150$:      BRW      MAIN_PROGRAM
                              1133   766
                   F51A   31   1133   767  160$:      BRW      RSTART
                              1136   768
```

```
                    1136    770             .SBTTL   SUBROUTINES TO CALL THE SERVICES
                    1136    771     ;
                    1136    772     ; INPUT:
                    1136    773     ;
                    1136    774     ;       R0 = INADR
                    1136    775     ;       R1 = RETADR
                    1136    776     ;       R3 = DESIRED STATUS
                    1136    777     ;
                    1136    778     ; OUTPUT:
                    1136    779     ;
                    1136    780     ;       R2 PRESERVED
                    1136    781     ;
                    1136    782     CRETVASUBR:
                    1136    783             $CRETVA_S (R0),(R1)
      51  F2DD CF  DE  1143    784             MOVAL    W^CRETVAERR,R1                    ;ERROR CONTROL STRING
              12  11  1148    785             BRB      CHECK1
                    114A    786     ;
                    114A    787     ; INPUT:
                    114A    788     ;
                    114A    789     ;       R0 = INADR
                    114A    790     ;       R1 = RETADR
                    114A    791     ;       R3 = DESIRED STATUS
                    114A    792     ;
                    114A    793     ; OUTPUT:
                    114A    794     ;
                    114A    795     ;       R2 PRESERVED
                    114A    796     ;
                    114A    797     DELTVASUBR:
                    114A    798             $DELTVA_S (R0),(R1)
      51  F2D1 CF  DE  1157    799             MOVAL    W^DELTVAERR,R1                    ;ERROR CONTROL STRING
                    115C    800     CHECK1:
      53    50  D1  115C    801             CMPL     R0,R3                             ;STATUS AS DESIRED
          59  13  115F    802             BEQL     10$                               ;BRANCH IF YES
      53  0244 8F  B1  1161    803             CMPW     #SS$_VASFULL,R3                   ;IF EXPECTING VIRTUAL ADDRESS
          07  12  1166    804             BNEQ     15$                               ;SPACE FULL THEN EXCEEDS
      50    1C  B1  1168    805             CMPW     #SS$_EXQUOTA,R0                   ;QUOTA MAY ALSO BE RETURNED
          4D  13  116B    806             BEQL     10$
          0C  11  116D    807             BRB      5$
                    116F    808     15$:
      53    01  B1  116F    809             CMPW     #SS$_NORMAL,R3                    ;IF EXPECTING NORMAL
          07  12  1172    810             BNEQ     5$                                ;COMPLETION FOR CRMPSC
      50  0619 8F  B1  1174    811             CMPW     #SS$_CREATED,R0                  ;THEN GLOBAL SECTION CREATED
          3F  13  1179    812             BEQL     10$                               ;MAY BE RETURNED
          54  DD  117B    813     5$:         PUSHL    R4
      54  04 AE  D0  117D    814             MOVL     4(SP),R4                         ;ADDRESS OF ERROR
                    1181    815             $FAO_S   (R1),MSGLEN,MSGBUFD,R4,R0,R3,-
                    1181    816                      INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
          10  BA  11B4    817             POPR     #^M<R4>
        0157  30  11B6    818             BSBW     TYPEMSGBUF
          05  11B9    819             RSB
                    11BA    820     10$:
        00D9  31  11BA    821             BRW      RANGECHK                          ;GO CHECK THE RETURN RANGE
                    11BD    822     ;
                    11BD    823     ; INPUT:
                    11BD    824     ;
                    11BD    825     ;       R1 = RETADR
                    11BD    826     ;       R3 = DESIRED STATUS
```

```
                                    11BD    827  ;         R4 = PAGCNT
                                    11BD    828  ;         R5 = REGION
                                    11BD    829  ;
                                    11BD    830  ; OUTPUT:
                                    11BD    831  ;
                                    11BD    832  ;         R2 PRESERVED
                                    11BD    833  ;
                                    11BD    834  EXPREGSUBR:
                                    11BD    835          $EXPREG_S R4,(R1),,R5
        51   F264 CF    DE          11CC    836          MOVAL     W^EXPREGERR,R1          ;ERROR CONTROL STRING
             53   50    D1          11D1    837  CHECK2:
                                    11D1    838          CMPL      R0,R3                   ;STATUS AS DESIRED?
                  39    13          11D4    839          BEQL      10$                     ;BRANCH IF YES
                  56    DD          11D6    840          PUSHL     R6
        56   04 AE      DO          11D8    841          MOVL      4(SP),R6                ;ADDRESS OF ERROR
                                    11DC    842          $FAO_S    (R1),MSGLEN,MSGBUFD,R6,R0,R3,R4,R5,-
                                    11DC    843                    RETRANGE,RETRANGE+4
        0040 8F         BA          1207    844          POPR      #^M<R6>
             0102       30          120B    845          BSBW      TYPEMSGBUF
                  05                120E    846          RSB
   0000'CF  0008'CF     DO          120F    847  10$:    MOVL      W^RETRANGE,W^INRANGE    ;MAKE INPUT RANGE LOOK
                  54    D7          1216    848          DECL      R4                      ;LIKE CRETVA/DELTVA
             54   09    78          1218    849          ASHL      #9,R4,R4
0004'CF  0000'CF  54    C1          121C    850          ADDL3     R4,W^INRANGE,W^INRANGE+4
                  70    11          1224    851          BRB       RANGECHK                ;AND CHECK THE RETURN RANGE
                                    1226    852  ;
                                    1226    853  ; INPUT:
                                    1226    854  ;
                                    1226    855  ;         R0 = INADR
                                    1226    856  ;         R1 = RETADR
                                    1226    857  ;         R3 = DESIRED STATUS
                                    1226    858  ;         R4 = PROTECTION TO BE SET
                                    1226    859  ;         R5 = DEISRED PREVIOUS PROTECTION (1@4 MEANS NOT SPECIFIED)
                                    1226    860  ;         R6 = ADDRESS TO RETURN PREVIOUS PROTECTION
                                    1226    861  ;
                                    1226    862  ; OUTPUT:
                                    1226    863  ;
                                    1226    864  ;         R2 PRESERVED
                                    1226    865  ;
                                    1226    866  SETPRTSUBR:
                                    1226    867          $SETPRT_S (R0),(R1),,R4,(R6)
                                    1237    868          IFNOWRT   #1,(R6),10$             ;SKIP PREVIOUS PROTECTION CHECK
                                    123D    869                                            ;IF IT WASN'T RETURNED
             55   10    91          123D    870          CMPB      #1@4,R5                 ;OR IF IT WASN'T SPECIFIED
                  05    13          1240    871          BEQL      10$
             66   55    91          1242    872          CMPB      R5,(R6)                 ;OTHERWISE CHECK IT
                  05    12          1245    873          BNEQ      20$                     ;AND BRANCH IF IT'S WRONG
                                    1247    874  10$:
             53   50    D1          1247    875          CMPL      R0,R3                   ;STATUS = DESIRED STATUS?
                  4A    13          124A    876          BEQL      30$                     ;BRANCH IF YES
                                    124C    877  20$:
                  57    DD          124C    878          PUSHL     R7
        57   04 AE      DO          124E    879          MOVL      4(SP),R7                ;ADDRESS OF ERROR
                                    1252    880          $FAO_S    SETPRTERR,MSGLEN,MSGBUFD,R7,R0,R3,-
                                    1252    881                    INRANGE,INRANGE+4,RETRANGE,RETRANGE+4,-
                                    1252    882                    PREVPROT,R5
             57 8EDO               128F    883          POPL      R7
```

K 3

MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53 VAX/VMS Macro V04-00   Page 31
V04-000   SUBROUTINES TO CALL THE SERVICES   5-SEP-1984 01:57:57 [MMGTST.SRC]MMGCRDLSP.MAR;1   (7)

```
                007B      30    1292    884              BSBW      TYPEMSGBUF
                          05    1295    885              RSB
                                1296    886    30$:
                                1296    887    RANGECHK:
        73 0010'CF   03    E1   1296    888              BBC       #CTL$V_RNGCHK,W^CTLFLG,40$      ;BRANCH IF RANGE CHECK DISABLED
                70 50      E9   129C    889              BLBC      R0,40$                          ;IF ERROR IN SERVICE, SKIP RANGE CHK
        50   0000'CF  7D   129F    890              MOVQ      W^INRANGE,R0                    ;R0 = STARVA, R1 = ENDVA
              51    50    D1   12A4    891              CMPL      R0,R1                           ;WHICH DIRECTION?
                    12    1A   12A7    892              BGTRU     10$                             ;BRANCH IF BACKWARDS
                    04    1F   12A9    893              BLSSU     5$                              ;BRANCH IF FORWARDS
        0C 50       1E    E0   12AB    894              BBS       #30,R0,10$                      ;FOR EQUAL, P0 SPACE FORWARDS, P1 BA
                                12AF    895    ;
                                12AF    896    ; REQUESTED RANGE IS FORWARDS
                                12AF    897    ;
        50   01FF 8F  AA   12AF    898    5$:              BICW      #^X1FF,R0                       ;FROM BYTE 0 OF STARTVA
        51   01FF 8F  A8   12B4    899              BISW      #^X1FF,R1                       ;THROUGH LAST BYTE OF ENDVA
                    0A    11   12B9    900              BRB       20$                             ;
                                12BB    901    ;
                                12BB    902    ; GOING BACKWARDS IN VIRTUAL ADDRESS SPACE
                                12BB    903    ;
        50   01FF 8F  A8   12BB    904    10$:             BISW      #^X1FF,R0                       ;LAST BYTE OF STARTVA
        51   01FF 8F  AA   12C0    905              BICW      #^X1FF,R1                       ;THROUGH FIRST BYTE OF ENDVA
        0008'CF   50   D1   12C5    906    20$:             CMPL      R0,W^RETRANGE                   ;IS THIS WHAT WAS RETURNED?
                    07    12   12CA    907              BNEQ      30$                             ;BRANCH IF NOT, ERROR
        000C'CF   51   D1   12CC    908              CMPL      R1,W^RETRANGE+4                 ;THIS ONE OK TOO?
                    3C    13   12D1    909              BEQL      40$                             ;BRANCH IF YES, RANGE OK
                    53    DD   12D3    910    30$:             PUSHL     R3                              ;SAVE REGISTER
        53   04 AE    D0   12D5    911              MOVL      4(SP),R3                        ;TO USE FOR ERROR PC
                                12D9    912              $FAO_S    <W^RANGERR>,MSGLEN,MSGBUFD,R3,-  ;FORMAT THE ERROR MESSAGE
                                12D9    913                        INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
                    08    BA   130A    914              POPR      #^M<R3>                         ;RESTORE SAVE REGISTER
                    0001      30   130C    915              BSBW      TYPEMSGBUF                      ;OUTPUT THE ERROR MESSAGE
                          05   130F    916    40$:             RSB                                       ;AND RETURN
```

```
                              1310   918              .SBTTL   MISCELLANEOUS SUBROUTINES
                              1310   919      ;
                              1310   920      ; TYPE A MESSAGE
                              1310   921      ;        MSGBUF IS THE ADDRESS OF THE BEGINNING OF THE STRING
                              1310   922      ;        MSGLEN CONTAINS THE SIZE (IN BYTES) OF THE STRING
                              1310   923      ;
                              1310   924      TYPEMSGBUF:
     50    00C0'CF   D0       1310   925              MOVL     W^MSGLEN,R0                   ;SIZE TO R0
     51    00E2'CF   DE       1315   926              MOVAL    W^MSGBUF,R1                   ;ADDRESS TO R1
  08 0010'CF   02    E1       131A   927              BBC      #CTL$V_PIDMSG,W^CTLFLG,5$     ;BRANCH IF NO PROCESS ID REQUIRED
     51    00D4'CF   DE       1320   928              MOVAL    W^MSGBUFID,R1                 ;ADDRESS INCLUDING PID MSG
           50    0E'  C0      1325   929              ADDL     S^#<MSGBUF-MSGBUFID>,R0       ;INCLUDE EXTRA BYTES IN COUNT
                              1328   930      5$:
  00A4'CF   51    D0          1328   931              MOVL     R1,W^RAB+RAB$L_RBF            ;SET BUFFER ADDRESS
  009E'CF   50    B0          132D   932              MOVW     R0,W^RAB+RAB$W_RSZ           ;AND SIZE
                              1332   933              $PUT     W^RAB                        ;OUTPUT THE MESSAGE
        01 50    E9           133D   934              BLBC     R0,20$
                 05           1340   935              RSB
                              1341   936      20$:     $EXIT_S R0                            ;EXIT WITH ERROR STATUS
                              134A   937      ;
                              134A   938      ; INPUTS:
                              134A   939      ;
                              134A   940      ;        0(SP) = ADDRESS OF ERROR
                              134A   941      ;        R1 = ADDRESS OF FORMAT CONTROL STRING
                              134A   942      ;
                              134A   943      ; OUTPUTS:
                              134A   944      ;
                              134A   945      ;        R2 PRESERVED
                              134A   946      ;
                              134A   947      PROBERR:
        55    DD              134A   948              PUSHL    R5
     55    04 AE   D0         134C   949              MOVL     4(SP),R5
                              1350   950              $FAO_S   (R1),MSGLEN,MSGBUFD,R5
        20    BA              1367   951              POPR     #^M<R5>
     FFA4    30               1369   952              BSBW     TYPEMSGBUF
           05                 136C   953              RSB
                              136D   954
                              136D   955
                              136D   956              .END     START
```

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MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 33
Symbol table   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (8)

$$.TAB	= 0000007C R	02	GBLSECNAMSIZ	= 00000006			
$$.TABEND	= 000000C0 R	02	GBL_SEC_MESSAGE	00000548 R	05		
$$.TMP	= 00000000		IDMSG	00000474 R	05		
$$.TMP1	= 00000001		IDMSGADR	00000312 R	05		
$$.TMP2	= 000000CF		IDMSGSIZ	= 00000039			
$$T1	= 00000000		INIT_START	0000058C R	05		
$$T2	= 00000004		INRANGE	00000000 R	02		
BIT...	= 00000004		L50	00000526 R	05		
BYPASS_PSECT_TESTS	00000BFF R	05	LIB$_CREMAPSEC	******** X	05		
BYPASS_SETPRT_TESTS	00000BFF R	05	MAIN_PROGRAM	00000507 R	05		
CHECK1	0000115C R	05	MAXPASSCNT	0000001C R	02		
CHECK2	000011D1 R	05	MAXWHICHRUN	00000024 R	02		
CODEPAGES	00000000 R	05	MSGBUF	000000E2 R	02		
CRETVAERR	00000424 R	05	MSGBUFD	000000C4 R	02		
CRETVAERRADR	0000000A R	05	MSGBUFID	000000D4 R	02		
CRETVAERRSIZ	= 00000063		MSGBUFSIZ	= 000000A0			
CRETVASUBR	00001136 R	05	MSGLEN	000000C0 R	02		
CRETVA_MESSAGE	0000052C R	05	NOREADERR	00000454 R	05		
CRLF	000000D4 R	02	NOREADERRADR	00000258 R	05		
CRMPSCERR	0000043C R	05	NOREADERRSIZ	= 00000024			
CRMPSCERRADR	000000D0 R	05	NOWRITERR	00000464 R	05		
CRMPSCERRSIZ	= 00000063		NOWRITERRADR	0000029E R	05		
CTL$M_MEMLOOP	= 00000001		NOWRITERRSIZ	= 00000025			
CTL$M_PIDMSG	= 00000004		OUTNAMADR	00000000 R	05		
CTL$M_RNGCHK	= 00000008		OUTNAMSIZ	= 0000000A			
CTL$M_TSTLOOP	= 00000002		PASSCNT	00000020 R	02		
CTL$V_MEMLOOP	= 00000000		PFNMAP_MESSAGE	0000056A R	05		
CTL$V_PIDMSG	= 00000002		PID	00000018 R	02		
CTL$V_RNGCHK	= 00000003		PIDCTL	00000494 R	05		
CTL$V_TSTLOOP	= 00000001		PIDCTLADR	00000410 R	05		
CTLFLG	00000010 R	02	PIDCTLSIZ	= 00000003			
DELTVAERR	0000042C R	05	PIDMSG	000000DE R	02		
DELTVAERRADR	0000006D R	05	PIDMSGD	000000CC R	02		
DELTVAERRSIZ	= 00000063		PRESTART	00000520 R	05		
DELTVASUBR	0000114A R	05	PREVPROT	0000002C R	02		
END	00000514 R	05	PROBERR	0000134A R	05		
EXPREGERR	00000434 R	05	PRT$C_KR	= 00000003			
EXPREGERRADR	00000133 R	05	PRT$C_NA	= 00000000			
EXPREGERRSIZ	= 00000072		PRT$C_NONE	= 00000010			
EXPREGSUBR	000011BD R	05	PRT$C_UR	= 0000000F			
FAB	0000002C R	02	PRT$C_UW	= 00000004			
FAB$C_BID	= 00000003		RAB	0000007C R	02		
FAB$C_BLN	= 00000050		RAB$B_RAC	= 0000001E			
FAB$C_SEQ	= 00000000		RAB$C_BID	= 00000001			
FAB$C_VAR	= 00000002		RAB$C_BLN	= 00000044			
FAB$L_ALQ	= 00000010		RAB$C_SEQ	= 00000000			
FAB$L_FOP	= 00000004		RAB$L_CTX	= 00000018			
FAB$V_CHAN_MODE	= 00000002		RAB$L_RBF	= 00000028			
FAB$V_FILE_MODE	= 00000004		RAB$L_ROP	= 00000004			
FAB$V_LNM_MODE	= 00000000		RAB$W_RSZ	= 00000022			
FAB$V_PUT	= 00000000		RANGECHK	00001296 R	05		
FAB$W_GBC	= 00000048		RANGERR	0000046C R	05		
FILENAME	000004A4 R	05	RANGERRADR	000002C3 R	05		
FILENAMEADR	00000419 R	05	RANGERRSIZ	= 0000004F			
FILENAMESIZ	= 0000000A		RDPAGES	00000000 R	04		
GBLSECNAM	0000049C R	05	READERR	0000044C R	05		
GBLSECNAMADR	00000413 R	05	READERRADR	00000237 R	05		

N 3

MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 34
Symbol table   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (8)

```
READERRSIZ              = 00000021
RETRANGE                  00000008 R       02
RSTART                    00000650 R       05
RUN1                    = 00000001
RUN1_MSG                  0000047C R       05
RUN1_MSGADR               0000034B R       05
RUN1_MSGSIZ             = 00000043
RUN2                    = 00000002
RUN2_MSG                  00000484 R       05
RUN2_MSGADR               0000038E R       05
RUN2_MSGSIZ             = 00000044
RUN3_MSG                  0000048C R       05
RUN3_MSGADR               000003D2 R       05
RUN3_MSGSIZ             = 0000003E
RUNMAX                  = 00000003
SAVEND                    00000014 R       02
SEC$M_DZRO              = 00000004
SEC$M_GBL               = 00000001
SEC$M_PERM              = 00004000
SEC$M_PFNMAP            = 00010000
SEC$M_WRT               = 00000008
SETPRTERR                 00000444 R       05
SETPRTERRADR              000001A5 R       05
SETPRTERRSIZ           = 00000092
SETPRTSUBR                00001226 R       05
SIZ...                  = 00000001
SS$_CREATED             = 00000619
SS$_EXQUOTA             = 0000001C
SS$_NORMAL              = 00000001
SS$_VASFULL             = 00000244
START                     000004AC R       05
SYS$CONNECT               ******** GX      05
SYS$CRETVA                ******** GX      05
SYS$CRMPSC                ******** GX      05
SYS$DELTVA                ******** GX      05
SYS$DGBLSC                ******** GX      05
SYS$EXIT                  ******** GX      05
SYS$EXPREG                ******** GX      05
SYS$FAO                   ********  X      05
SYS$OPEN                  ******** GX      05
SYS$PUT                   ******** GX      05
SYS$RESUME                ******** GX      05
SYS$SETPRT                ******** GX      05
TYPEMSGBUF                00001310 R       05
WHICHRUN                  00000028 R       02
WRITERR                   0000045C R       05
WRITERRADR                0000027C R       05
WRITERRSIZ             = 00000022
WRTPAGES                  00000000 R       03
```

B 4

MMGCRDLSP   - TEST OF $CRETVA/$DELTVA/$SETPRT SYSTEM 16-SEP-1984 01:57:53   VAX/VMS Macro V04-00   Page 35
Psect synopsis   5-SEP-1984 01:57:57   [MMGTST.SRC]MMGCRDLSP.MAR;1   (8)

```
                              +-----------------+
                              ! Psect synopsis !
                              +-----------------+


PSECT name                  Allocation          PSECT No.  Attributes
----------                  ----------          --------   ----------
.  ABS  .                   00000000 (     0.)  00 (   0.)  NOPIC  USR  CON  ABS  LCL  NOSHR  NOEXE  NORD   NOWRT  NOVEC  BYTE
$ABS$                       00000000 (     0.)  01 (   1.)  NOPIC  USR  CON  ABS  LCL  NOSHR   EXE   RD      WRT   NOVEC  BYTE
DATA0                       00000182 (   386.)  02 (   2.)  NOPIC  USR  CON  REL  LCL  NOSHR  NOEXE  RD      WRT   NOVEC  PAGE
DATA1                       00000800 (  2048.)  03 (   3.)  NOPIC  USR  CON  REL  LCL  NOSHR  NOEXE  RD      WRT   NOVEC  PAGE
DATA2                       00000800 (  2048.)  04 (   4.)  NOPIC  USR  CON  REL  LCL  NOSHR  NOEXE  RD     NOWRT  NOVEC  PAGE
CODE                        0000136D (  4973.)  05 (   5.)  NOPIC  USR  CON  REL  LCL  NOSHR   EXE   RD     NOWRT  NOVEC  PAGE


                         +-----------------------------+
                         ! Performance indicators !
                         +-----------------------------+


Phase                   Page faults    CPU Time       Elapsed Time
-----                   -----------    --------       ------------
Initialization                  16     00:00:00.09    00:00:00.72
Command processing             122     00:00:00.91    00:00:06.54
Pass 1                         522     00:00:18.13    00:00:51.20
Symbol table sort                0     00:00:01.45    00:00:03.52
Pass 2                         284     00:00:05.01    00:00:21.81
Symbol table output             20     00:00:00.17    00:00:00.73
Psect synopsis output            3     00:00:00.04    00:00:00.24
Cross-reference output           0     00:00:00.00    00:00:00.00
Assembler run totals           969     00:00:25.82    00:01:24.78
```

The working set limit was 1950 pages.
149717 bytes (293 pages) of virtual memory were used to buffer the intermediate code.
There were 50 pages of symbol table space allocated to hold 908 non-local and 139 local symbols.
956 source lines were read in Pass 1, producing 33 object records in Pass 2.
59 pages of virtual memory were used to define 47 macros.

```
                         +-----------------------------+
                         ! Macro library statistics !
                         +-----------------------------+


Macro library name                      Macros defined
------------------                      --------------
_$255$DUA28:[SYS.OBJ]LIB.MLB;1                 2
_$255$DUA28:[SYSLIB]STARLET.MLB;2             29
TOTALS (all libraries)                        31
```

1170 GETS were required to define 31 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:MMGCRDLSP/OBJ=OBJ$:MMGCRDLSP MSRC$:MMGCRDLSP/UPDATE=(ENH$:MMGCRDLSP)+EXECML$/LIB

MMGEXPCNT
LIS

MMGNSFWSL
LIS

MOM
MAP

MMGCRTDEL
LIS

MMGCRDLSP
LIS

MMGCRTFIL
LIS

MMGLKWULW
LIS

MMGXQUOTA
LIS

MMGSETPRT
LIS

MOM