

[illegible]

[illegible]

```

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
LLLLLLLLLLLL            IIIIII                      SSSSSSSS
LLLLLLLLLLLL            IIIIII                      SSSSSSSS

```


(1) 66
177

DECLARATIONS
GENERATE THE CHARACTERS

```
0000 1      .TITLE  BANNER - GENERATE A WIDE LINE ON PRINTER
0000 2      .IDENT  'V04-000'
0000 3
0000 4
0000 5      *****
0000 6      *
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0000 24     *
0000 25     *
0000 26     *****
0000 27
0000 28
0000 29     ++
0000 30     FACILITY:      VAX/VMS PRINT SYMBIONT
0000 31
0000 32     ABSTRACT:      THIS ROUTINE WILL PRINT WIDE LINE OF CARACTERS
0000 33                     ON THE PRINTER FOR FLAG/BURST PAGES
0000 34
0000 35
0000 36     ENVIRONMENT:    NATIVE/USER MODE NON-PRIVILEGED CODE
0000 37
0000 38     AUTHOR:         H.B.BOSWELL, CREATION DATE: 21-APR-77
0000 39
0000 40     MODIFIED BY:
0000 41
0000 42     V03-006 RRB0013      Rowland R. Bradley      22-Mar-1984
0000 43                     Change to force lowercase to uppercae.
0000 44
0000 45     V03-005 GRR0009      Gregory R. Robert      29-Sep-1983
0000 46                     Changed library module name from smbdef to prtmbdef.
0000 47
0000 48     V3B-004 GRR4004      Gregory R. Robert      29-Jul-1983
0000 49                     Changed module name from PSM$BANNER to BANNER and changed
0000 50                     returned size to word context.
0000 51
0000 52     V3B-003 GRR4003      Gregory R. Robert      27-May-1983
0000 53                     Changed entry point from PSM$BANNER to PSM$$BANNER.
0000 54
0000 55     V03-002 GRR0002      GREGORY R BOBERT      19-MAY-1983
0000 56                     HANDLE ZERO LENGTH STRINGS CORRECTLY
0000 57
```


BANNER
V04-000

- GENERATE A WIDE LINE ON PRINTER^{F 7}

16-SEP-1984 02:09:27 VAX/VMS Macro V04-00
5-SEP-1984 02:40:27 [PRTSMB.SRC]BANNER.MAR;1

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0000	58 :	V03-001	GRR0001	GREGORY R ROBERT	07-OCT-1982
0000	59 :			REVISED TO SERVE AS TEMPORARY WIDE/TALL CHARACTER	
0000	60 :			GENERATOR FOR NEW PRINT SYMBIONT FLAG PAGE ROUTINES	
0000	61 :				
0000	62 :				
0000	63 : 01				
0000	64 : --				

: : VERSION

DIS
V04

```
0000 66 .SBTTL DECLARATIONS
0000 67
0000 68 $prtsmbdef
0000 69
0000 70 :
0000 71 : MACROS:
0000 72 :
0000 73 : MACRO TO GENERATE A TABLE FOR CHARACTER DECODING
0000 74 :
0000 75 .MACRO DECTAB HI,LO,TABLE
0000 76 .ASCII \HI'LO\
0000 77 .WORD TABLE-.
0000 78 .ENDM
0000 79
0000 80 :
0000 81 : EQUATED SYMBOLS:
0000 82 :
0000 83 : DEFINE THE OFFSET TO INPUT ARGUMENTS AS THE APPEAR
0000 84 : IN THE ARGUEMENT BLOCK
0000 85 :
00000000 0000 86 ARGCNT = 0 ;ARGUEMENT COUNT
00000004 0000 87 SCB = 4 ;STREAM CONTROL BLOCK
00000008 0000 88 COUNT = 8 ;BYTE COUNT
0000000C 0000 89 ADR = 12 ;BUFFER ADDRESS
00000010 0000 90 SPACOUT = 16 ;PRECEEDING SPACE COUNT
00000014 0000 91 HEIGHT = 20 ;NUMBER OF LINES PER ROW
00000018 0000 92 WIDTH = 24 ;NUMBER OF CHARACTERS PER COLUMN
0000001C 0000 93 SPACING = 28 ;INTER CHARACTER SPACING
00000020 0000 94 CHAR = 32 ;FONT CHARACTER
00000024 0000 95 ADDRESS = 36 ;ADDRESS OF OUTPUT BUFFER
00000028 0000 96 LINENO = 40 ;CURRENT LINE NUMBER
0000002C 0000 97 RETLEN = 44 ;ADDRESS OF WORD FOR RESULTANT LENGTH
0000 98
0000 99 :
0000 100 : OWN STORAGE:
0000 101 :
0000 102 :
0000 103 :
0000 104 : THE FOLLOWING TABLES ARE USED TO GENERATE THE CHARACTERS
0000 105 : EACH ENTRY IS 35 BITS LONG, 1 BIT FOR EACH POSITION IN
0000 106 : A 5X7 MATRIX.
0000 107 :
0000 108 :
0000 109 ALPHA:
8421 0F9F 18BE 317C 63F8 C62E 0000 110 .WORD ^0143056,^0061770,^0030574,^0014276,^0007637,^0102041
C21F FC21 7843 F7C6 318C 5FE0 000C 111 .WORD ^0057740,^0030614,^0173706,^0074103,^0176041,^0141037
8E8C 63F8 C62E 8F42 10F8 210B 0018 112 .WORD ^0020413,^0010370,^0107502,^0143056,^0061770,^0107214
18A4 E98C 5D18 C210 8388 4210 0024 113 .WORD ^0041020,^0101610,^0141020,^0056430,^0164614,^0014244
CD67 18C6 318D 771F 8421 0843 0030 114 .WORD ^0004103,^0102041,^0073437,^0030615,^0014306,^0146547
C62E 0842 F8C5 EE8C 6318 BA31 003C 115 .WORD ^0135061,^0061430,^0167214,^0174305,^0004102,^0143056
3EF8 41C1 0FA2 92BE 317D 9358 0048 116 .WORD ^0111530,^0030575,^0111276,^0007642,^0040701,^0037370
8A8C 6318 FE31 8C63 1210 8421 0054 117 .WORD ^0102041,^0011020,^0106143,^0177061,^0061430,^0105214
422A 318C 5445 4631 DD63 18C4 0060 118 .WORD ^0014304,^0156543,^0043061,^0052105,^0030614,^0041052
0000 3E11 1110 F908 006C 119 .WORD ^0174410,^0010420,^0037021,^00
0074 120
0074 121 :
0074 122 : BIT MASK TABLE FOR NUMBERS 0-9
```



```
0074 123 ;
0074 124 ;
0074 125 NUMERIC:
0074 126 .WORD ^0163056,^0121472,^0103043,^0041020,^0105634
0E1F A108 8B9C 4210 8623 A33A E62E 007E 127 .WORD ^0010420,^0056761,^0004204,^0113506,^0175122,^0120410,^0007037
1746 2E08 8888 41EE 8C5E 10B9 D182 008C 128 .WORD ^0150602,^0010271,^0106136,^0040756,^0104210,^0027010,^0013506
1D08 7A31 73A3 009A 129 .WORD ^0071643,^0075061,^0016410
00A0 130 ;
00A0 131 ;
00A0 132 : BIT MASK FOR UNDER SCORE CHARACTER
00A0 133 ;
00A0 134 UNDERSCORE:
0007 C000 0000 00A0 135 .WORD ^00,^0140000,^07
00A6 136 ;
00A6 137 ;
00A6 138 : THE DOLLAR SIGN
00A6 139 ;
00A6 140 ;
0001 1F47 17C4 00A6 141 DOLLARS:
00A6 142 .WORD ^0013704,^0017507,^01
00AC 143 ;
00AC 144 ;
00AC 145 : BIT MASK TABLE FOR '.'
00AC 146 ;
00AC 147 ;
0003 1800 0000 00AC 148 DOT:
00AC 149 .WORD ^00,^014000,^03
00B2 150 ;
00B2 151 ;
00B2 152 : BIT MASK FOR ':'
00B2 153 ;
0008 8630 0C60 18C0 3180 00B2 154 COLONS: .WORD ^030600,^014300,^0006140,^0103060,^010
00BC 156 ;
00BC 157 ;
00BC 158 : BIT MASK TABLE FOR ' '
00BC 159 ;
00BC 160 ;
0000 0000 0000 00BC 161 BLANK:
00BC 162 .WORD ^00,^00,^00
00C2 163 ;
00C2 164 : THE FOLLOWING TABLE IS USED TO DECODE WHICH BIT TABLE CONTAINS
00C2 165 : THE INFORMATION ABOUT A GIVEN CHARACTER.
00C2 166 ;
00C2 167 DECODE:
00C2 168 DECTAB Z,A,ALPHA :DECODE ALPHAS
00C6 169 DECTAB 9,0,NUMERIC :AND NUMBERS
00CA 170 DECTAB <,>,<:>,COLONS :THE COLONS
00CE 171 DECTAB <,>,<,>,UNDERSCORE :THE UNDERSCORE CHARACTER
00D2 172 DECTAB <$>,<$>,DOLLARS :THE OLD BUCK MARKER
00D6 173 DECTAB <.>,<.>,DOT :THE PERIOD
00FF 00DA 174 .BYTE 255,0 :CATCH ALL
FFEO 00DC 175 .WORD BLANK-. :PRINT A SPACE
```

```
OOOE 177 .SBTTL GENERATE THE CHARACTERS
OOOE 178 :++
OOOE 179 : FUNCTIONAL DESCRIPTION:
OOOE 180 :
OOOE 181 : THIS ROUTINE USES A 5X7 ARRAY OF BITS TO GENERATE
OOOE 182 : CHARACTERS ON THE PRINTER. THE ROUTINE IS USED TO GENERATE
OOOE 183 : THE BANNER CHARACTERS FOR FLAG PAGES
OOOE 184 :
OOOE 185 : CALLING SEQUENCE:
OOOE 186 :
OOOE 187 : CALL PSM$BANNER
OOOE 188 :
OOOE 189 : INPUT PARAMETERS:
OOOE 190 :
OOOE 191 : P01 SCB: ADDRESS OF THE STREAM CONTROL BLOCK
OOOE 192 : P02 COUNT: COUNT OF STRING TO OUTPUT
OOOE 193 : P03 ADR: ADDRESS OF STRING TO OUTPUT
OOOE 194 : P04 SPACOUT: NUMBER OF LEADING SPACES ON EACH LINE
OOOE 195 : P05 WIDTH: NUMBER OF TIMES TO REPEAT A CHARACTER ON A ROW
OOOE 196 : P06 HEIGHT: NUMBER OF TIMES EACH LINE IS PRINTED
OOOE 197 : P07 SPACING: NUMBER OF BLANK CHARACTERS BETWEEN BIG CHARACTERS
OOOE 198 : P08 CHAR: BANNER CONSTRUCTION CHARACTER, IF NOT SELF
OOOE 199 : P09 ADDRESS: ADDRESS OF OUTPUT BUFFER
OOOE 200 : P10 LINENO: CURRENT LINE NUMBER (0 to (6 * HEIGHT))
OOOE 201 : P11 RETLEN: ADDRESS OF WORD TO RECEIVE RESULTANT LENGTH
OOOE 202 :
OOOE 203 : IMPLICIT INPUTS:
OOOE 204 :
OOOE 205 : NONE
OOOE 206 :
OOOE 207 : OUTPUT PARAMETERS:
OOOE 208 :
OOOE 209 : NONE
OOOE 210 :
OOOE 211 : IMPLICIT OUTPUTS:
OOOE 212 :
OOOE 213 : THE WIDE LINE IS PRINTED
OOOE 214 :
OOOE 215 : COMPLETION CODES:
OOOE 216 :
OOOE 217 : ALWAYS SS$_SUCCESS
OOOE 218 :
OOOE 219 : SIDE EFFECTS:
OOOE 220 :
OOOE 221 : NONE
OOOE 222 :
OOOE 223 : --
OOOE 224 :
OOOE 225 PSM$BANNER::
```

```
58 28 50 04 AC 03FC 00E0 226 .WORD ^M<R2,R3,R4,R5,R6,R7,R8,R9>;SAVE NON-VOLATILE REGISTERS
AC 14 AC C7 00E4 227 MOVL SCB(AP),R0 ;FETCH ADDRESS OF SCB
56 08 AC 7D 00EA 228 DIVL3 HEIGHT(AP),LINENO(AP),R8; COMPUTE LINE NUMBER
59 24 AC D0 00EE 229 MOVQ COUNT(AP),R6 ;GET COUNT TO R6, LINE ADDRESS TO R7
52 10 AC D0 00F2 230 MOVL ADDRESS(AP),R9 ;GET ADDRESS OF LOCAL BUFFER
09 13 00F6 231 MOVL SPACOUT(AP),R2 ;COUNT OF LEADING SPACES ON THE LINE
51 20 9A 00F8 232 BEQL 27$ ;BR IF NO LEADING SPACES WANTED
20$: MOVZBL #^A/ /,R1 ;GET A SPACE
```



```
89 51 90 00FB 234 25$: MOV B R1,(R9)+ ;STORE THE CHARACTER
FA 52 F5 00FE 235 SOBGTR R2,25$ ;REPEAT IF NECESSARY
56 D5 0101 236 27$: TSTL R6 ;CHECK FOR ZERO LENGTH STRING
61 13 0103 237 BEQL 90$ ;BRANCH IF NO INPUT
53 53 67 9A 0105 238 30$: MOVZBL (R7),R3 ;GET CHARACTER TO PRINT
53 60 8F 91 0108 239 CMPB #^X60,R3 ;CHECK CHAR FOR LOWERCASE - LOW LIMIT
09 15 010C 240 BLEQ 38$ ;BRANCH IF LESS THAN 'A'
53 7B 8F 91 010E 241 CMPB #^X7B,R3 ;HIGH LIMIT
03 18 0112 242 BGEQ 38$ ;BRANCH IF GREATER THAN 'Z'
53 53 20 82 0114 243 SUBB2 #^X20,R3 ;FORCE UPPERCASE
54 A5 AF DE 0117 244 38$: MOVAL DECODE-3,R4 ;ADDRESS OF DECODE TABLE
04 011B 245 40$: ADDL #3,R4 ;ADVANCE TO NEXT TABLE ENTRY
54 03 C0 011B 246 CMPB R3,(R4)+ ;CHECK AGAINST HIGH LIMIT
84 53 91 011E 247 BGTRU 40$ ;BR IF OUT OF LIMIT
F8 1A 0121 248 CMPB R3,(R4) ;NOW CHECK LOW LIMIT
64 53 91 0123 249 BLSSU 40$ ;BR IF IN RANGE OF TABLE
F3 1F 0126 250 SUBB (R4)+,R3 ;REMOVE TABLE BIAS
53 84 82 0128 251 CVTWL (R4),R1 ;GET OFFSET TO BIT TABLE
51 64 32 012B 252 ADDL R1,R4 ;FIND REAL ADDRESS OF TABLE
54 51 C0 012E 253 MULL #35,R3 ;FIND INDEX TO FIRST BIT IN CHARACTER
53 23 C4 0131 254 MULL3 #5,R8,R1 ;FIND INDEX FOR PROPER ROW
51 58 05 C5 0134 255 ADDL R1,R3 ;FIND FIRST BIT TO TEST FOR THIS ROW
53 51 C0 0138 256 MOVL #5,R5 ;SET NUMBER OF COLUMNS TO OUTPUT
55 05 D0 013B 257 MOVZBL CHAR(AP),R1 ;GET THE FONT CHARACTER
51 20 AC 9A 013E 258 70$: BNEQ 75$ ;BRANCH IF WE GOT ONE
03 64 53 E0 0147 261 75$: MOVZBL (R7),R1 ;USE THE CHARACTER ITSELF
51 20 9A 014B 262 BBS R3,(R4),80$ ;BR IF NO SPACE THIS TIME
52 18 AC 9A 014E 263 80$: MOVZBL #^A/ /,R1 ;PRINT SPACES
89 FA 52 F5 0155 265 MOVZBL WIDTH(AP),R2 ;GET NUMBER OF CHARACTERS PER COLUMN
53 D6 0158 266 MOV B R1,(R9)+ ;STORE THE CHARACTER
E1 55 F5 015A 267 SOBGTR R2,82$ ;REPEAT IF NECESSARY
52 1C AC 9A 015D 268 INCL R3 ;ADJUST BIT NUMBER UP 1
57 D6 0161 269 SOBGTR R5,70$ ;REPEAT FOR 5 TIMES-NUMBER COLUMNS PER
92 56 F5 0163 270 MOVZBL SPACING(AP),R2 ;GET NUMBER OF BLANKS FOR SEPARATION
50 59 24 AC C3 0166 271 90$: INCL R7 ;ADVANCE CHARACTER POINTER
2C BC 50 B0 016B 272 SOBGTR R6,20$ ;LOOP AROUND IF MORE CHARACTERS TO DO
50 00 8F 9A 016F 273 SUBL3 ADDRESS(AP),R9,R0 ;COMPUTE LENGTH
04 0173 274 MOVW R0,@RETLEN(AP) ;STORE COMPUTED LENGTH
0174 275 MOVZBL #SS$_NORMAL,R0 ;RETURN SUCCESS
0174 276 RET
.END
```

BANNER
Symbol table

- GENERATE A WIDE LINE ON PRINTER^{K 7}

16-SEP-1984 02:09:27 VAX/VMS Macro V04-00
5-SEP-1984 02:40:27 [PRTSMB.SRC]BANNER.MAR;1

Page 7
(1)

ADDRESS	= 00000024		
ADR	= 0000000C		
ALPHA	= 00000000	R	01
ARGCNT	= 00000000		
BLANK	= 000000BC	R	01
CHAR	= 00000020		
COLONS	= 000000B2	R	01
COUNT	= 00000008		
DECODE	= 000000C2	R	01
DOLLARS	= 000000A6	R	01
DOT	= 000000AC	R	01
HEIGHT	= 00000014		
LINENO	= 00000028		
NUMERIC	= 00000074	R	01
PSM\$BANNER	= 000000DE	RG	01
RETLEN	= 0000002C		
SCB	= 00000004		
SPACING	= 0000001C		
SPACOUT	= 00000010		
SS\$ NORMAL	*****	X	01
UNDERSCORE	= 000000A0	R	01
WIDTH	= 00000018		

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

PSECT name	Allocation	PSECT No.	Attributes
. ABS :	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
. BLANK :	00000174 (372.)	01 (1.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE
\$ABSS\$	00000000 (0.)	02 (2.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	16	00:00:00.05	00:00:00.26
Command processing	78	00:00:00.50	00:00:03.30
Pass 1	148	00:00:03.75	00:00:13.44
Symbol table sort	0	00:00:00.49	00:00:00.86
Pass 2	51	00:00:00.85	00:00:02.87
Symbol table output	3	00:00:00.03	00:00:00.03
Psect synopsis output	2	00:00:00.02	00:00:00.18
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	298	00:00:05.71	00:00:20.96

The working set limit was 900 pages.
19222 bytes (38 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 347 non-local and 11 local symbols.
276 source lines were read in Pass 1, producing 12 object records in Pass 2.
9 pages of virtual memory were used to define 8 macros.

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

Macro library name	Macros defined
-----	-----
\$255\$DUA28:[PRTSMB.OBJ]SMBDEF.MLB;1	1
\$255\$DUA28:[SYSLIB]STARLET.MLB;2	3
TOTALS (all libraries)	4

384 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:BANNER/OBJ=OBJ\$:BANNER MSRC\$:BANNER/UPDATE=(ENH\$:BANNER)+LIB\$:SMBDEF/LIB

0309 AH-BT13A-SE
VAX/VMS V4.0

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