```
                                ;***COPYRIGHT 1969, DIGITAL EQUIPMENT CORP., MAYNARD, MASS.***


                                ;THIS SUB-PROGRAM ASSEMBLED WITH SYSTEM PARAMETER FILE - S.MAC(V414)
                                        XLIST
                                        LIST
                                TITLE PLTSER - PLOTTER SERVICE ROUTINE
                                SUBTTL T. EGGERS/GBH/TNM   20 MAY 1969    V012
                                XP      VPLTSR,012              ;PUT VERSION NUMBER IN STORAGE MAP AND GLOB LISTING

                        000140  PLT=140                 ;DEFINE DEVICE CODE
                        200000  PLTUP=200000            ;LIFT PEN WHEN OUTPUT FINISHED

                                ENTRY PLTSER
000000                          PLTSER:

                                ;PLOTTER DEVICE DATA BLOCK
000000  605464  000000  PLTDDB: SIXBIT /PLT/
000001  000012  000044  PLTCHR: XWD HUNGST*12,*D36       ;XWD (HUNG TIMEOUT),(BUFFER SIZE)
000002  000000  000000  PLTIOS: 0
000003  000000  000014'         PLTDSP                  ;DISPATCH TABLE ADDRESS
000004  000001  014403          XWD DVOUT,14403         ;XWD (OUTPUT DEVICE),(BIN,IMAGE,TEXT LEGAL)
000005  000000  000000          0
000006  000000  000000          0
000007  000000  000000  PLTPTR: 0                       ;OUTPUT BYTE POINTER
000010  000037  000000  PLTADR: XWD PROG,0
000011  000000  000000  PLTCTR: 0                       ;OUTPUT BYTE COUNTER

                                EXTERNAL OUT,SETACT,PLTCHN,PLTCHL,IOSET,ADVBFE,ADRERR,CPOPJ1
                                EXTERNAL SETIOD,STOIOS,CLRACT,ILLINP,PLTSAV,IADRCK

                                INTERN PLTDDB,PLTINT,PLTDSP
```

```
                        ;DISPATCH TABLE

000012  254030  000023'          JRST PLTINI             ;INITIALIZE
000013  254040  000023'          JRST PLTHNG             ;HUNG DEVICE ERROR
000014  254040  000023' PLTDSP:  JRST PLTREL             ;RELEAS
000015  254040  000020'          JRST PLTCLS             ;CLOSE
000016  254000  000026'          JRST PLTOUT             ;OUTPUT
000017  254000  000000           JRST ILLINP             ;INPUT

000020  661040  200000  PLTCLS:  TLO IOS,PLTUP           ;PLOTTER END FLAG SET
000021  202000  000002'          MOVEM IOS,PLTIOS
000022  254040  000000           JRST OUT                ;DO AN OUTPUT

000023                   PLTINI:
000023                   PLTHNG:
000023  714200  000000  PLTREL:  CONO PLT,0              ;DEASSIGN PI CHANNEL, CLEAR DONE
000024  513000  000044'          HLLZS PLTINT            ;REMOVE PLOTTER FROM DEVICE CHAIN
000025  263140  000000           POPJ PDP,

                        ;HERE BEGINS THE "OUTPUT" UUO

000026  260140  000075' PLTOUT:  PUSHJ PDP,PLTSET        ;SETUP BYTE POINTER AND COUNTER
000027  254030  000000            JRST ADRERR            ;ADDRESS ERR RETURN FROM PLTSET
000030  260140  000000           PUSHJ PDP,SETACT        ;SET DEVICE ACTIVE BIT
000031  661040  000020           TLO IOS,IO
000032  714200  000000           CONO PLT,PLTCHN         ;ASSIGN PRIORITY CHANNEL
000033  205040  000010           MOVSI TAC,10
000034  546040  000044'          HLRM TAC,PLTINT         ;PUT PLOTTER INTO DEVICE CHAIN
000035  627040  000002           TLZN IOS,IOBEG          ;FIRST OUTPUT UUO?
000036  254040  000041'          JRST .+3                ;NO
000037  201040  000040           MOVEI TAC,40            ;YES, START PLOTTER WITH PEN UP
000040  621000  200000           TLZ IOS,PLTUP           ;INIT "CLOSE" BIT
000041  202000  000002'          MOVEM IOS,PLTIOS
000042  714140  000001           DATAO PLT,TAC           ;START PLOTTER BY SENDING 0 OR 40
000043  263140  000000           POPJ PDP,
```

```
                        ;FROM HERE THROUGH PLTOFF IS INTERRUPT SERVICE

000044  714340  000010  PLTINT: CONSO PLT,10             ;PLOTTER DONE FLAG SET?
000045  254000  000044'         JRST .-1                 ;NO, CHAIN TO NEXT DEVICE
000046  375000  000011'         SOSGE PLTCTR             ;OUTPUT CHARACTERS LEFT?
000047  254000  000055'         JRST PLT1                ;NO
000050  202040  000117'         MOVEM TAC,TACSAV#        ;YES, SAVE TAC
000051  134040  000007'         ILDB TAC,PLTPTR          ;GET NEXT CHARACTER
000052  714140  000001           DATAO PLT,TAC            ;SEND CHARACTER
000053  200040  000117'         MOVE TAC,TACSAV#         ;RESTORE TAC
000054  254520  000000           JEN @PLTCHL              ;DISMISS INTERRUPT

000055  264000  000000  PLT1:   JSR PLTSAV               ;SAVE AC'S, SET UP PUSH DOWN POINTER
000056  201300  000000'         MOVEI DEVDAT,PLTDDB
000057  260140  000000           PUSHJ PDP,IOSET          ;SETS UP PROG AND IOS
000060  260140  000000           PUSHJ PDP,ADVBFE         ;ADVANCE AND LOOK AT NEXT BUFFER
000061  254000  000067'          JRST PLTOFF             ;NO MORE DATA AVAILABLE
000062  260140  000075'         PUSHJ PDP,PLTSET         ;SETUP BYTE POINTER AND COUNTER
000063  254000  000067'          JRST PLTOFF             ;ADDRESS ERR RET FROM PLTSET
000064  623000  000001  PLT2:   TLZE IOS,IOW
000065  260140  000000           PUSHJ PDP,SETIOD         ;LET JOB START AGAIN
000066  254000  000000           JRST STOIOS              ;EVENTUALLY DISMISS INTERRUPT, IF ADVBFE
                                                         ;FOUND MORE DATA (IT SKIPPED), ANOTHER
                                                         ;INTERRUPT WILL IMMEDIATELY OCCUR BUT
                                                         ;IT WILL BE HANDLED WITHOUT GOING TO PLT1

000067  714200  000000  PLTOFF: CONO PLT,0               ;SHUT DOWN PLOTTER
000070  513000  000044'         HLLZS PLTINT             ;REMOVE PLOTTER FROM CHAIN
000071  260140  000000           PUSHJ PDP,CLRACT
000072  623000  200000           TLZE IOS,PLTUP           ;HAS THE "CLOSE" BEEN DONE?
000073  714140  000115'         DATAO PLT,[40]           ;YES, LIFT PEN
000074  254000  000064'         JRST PLT2
```

```
                        ;THIS SUBROUTINE CALCULATES A BYTE POINTER AND A BYTE COUNTER FOR
                        ;THE BUFFER TO BE OUTPUT. THE LAST WORD OF BUFFER IS ADR CHECKED TO BE IN USER AREA
                        ;       PUSHJ PDP,PLTSET
                        ;          RETURN 1      ;ADDRESS ERROR RETURN
                        ;          RETURN 2      ;GOOD RETURN

000075  201062  000010' PLTSET: MOVEI TAC,@PLTADR       ;GET ADDRESS OF CURRENT BUFFER
000076  270040  000116'         ADD TAC,[POINT 6,1,35]  ;CONVERT TO 6 BIT BYTE POINTER WITH
                                                        ;ADDRESS OF BUFFER WORD COUNT
000077  606020  000016          TRNN IOS,16             ;IS THIS A TEXT DATA MODE?
000100  661040  000700          TLO TAC,(POINT 7,0,35)  ;YES, CONVERT TO 7 BIT BYTE POINTER
000101  202040  000007'         MOVEM TAC,PLTPTR        ;SAVE BYTE POINTER
000102  550060  000001          HRRZ TAC,@TAC           ;GET BUFFER WORD COUNT
000103  202040  000011'         MOVEM TAC,PLTCTR        ;SAVE AS POSITIVE WORD COUNT
000104  270040  000010'         ADD TAC,PLTADR          ;CALCULATE (LAST ADR IN BUF)-1 (RELATIVE)
000105  201041  000001          MOVEI TAC,1(TAC)        ;GET LAST ADR IN BUF (RELATIVE)
000106  260140  000000          PUSHJ PDP,IADRCK        ;ADDRESS CHECK, OK?
000107  263140  000000           POPJ PDP,              ;NO, OUTSIDE, RETURN WITH NO SKIP
000110  201040  000006          MOVEI TAC,6             ;IMAGE OR BIN MODES - 6 BYTES/WORD
000111  606020  000016          TRNN IOS,16             ;IS OUTPUT A TEXT MODE (0 OR 1)?
000112  201040  000005          MOVEI TAC,5             ;YES, 5 BYTES/WORD
000113  222040  000011'         IMULM TAC,PLTCTR        ;CHANGE WORD COUNT TO BYTE COUNT
000114  254000  000000          JRST CPOPJ1             ;RETURN WITH A SKIP

000115                          LIT
000115  000000  000040
000116  000600  000001
000117                          VAR
000120                  PLTEND: END
```

NO ERRORS DETECTED

PROGRAM BREAK IS 000120

SYMBOL TABLE

ADRERR	200277'	EXT	ADVSFE	000040'	EXT	CLRACT	000071'	EXT
CPOPJ1	000114'	EXT	DEVDAT	000076	INT	DVOUT	000001	INT
HUNGST	000021	INT	IADBCK	000176'	EXT	ILLINP	000017'	EXT
IO	000020	INT	IOREG	000072	INT	IOS	000000	INT
IOSET	000057'	EXT	IOW	000071	INT	OUT	000022'	EXT
PDP	000003	INT	PLT	000140		PLT1	000055'	
PLT2	000064'		PLTADR	000010'		PLTCHL	000054'	EXT
PLTCHN	000032'	EXT	PLTCHR	000001'		PLTCLS	000020'	
PLTCTR	000011'		PLTDAB	000000'	INT	PLTDSP	000014'	INT
PLTEND	000120'		PLTHNG	000023'		PLTINI	000023'	
PLTINT	000044'	INT	PLTIOS	000002'		PLTOFF	000067'	
PLTOUT	000026'		PLTPTR	000007'		PLTREL	000023'	
PLTSAV	000055'	EXT	PLTSER	000000'	INT	PLTSET	000075'	
PLTUP	200000		PROG	000007	INT	SETACT	000030'	EXT
SETIOD	000065'	EXT	STOIOS	000046'	EXT	TAC	000001	INT
TACSAV	000117'		VPLTSR	000012	INT			

A	6#	6	
AC1	6#	6	
AC2	6#	6	
AC3	6#		
ADRERR	29	56	
ADVBFE	29	84	
AEFERR	6#	6	
AL	6#	6	
ASSCON	6#	6	
ASSPRG	6#	6	
B	6#	6	
BUFPNT	6#	6	
BUFWRD	6#	6	
CLKR	6#	6	
CLRACT	30	97	
CLSIN	6#	6	
CLSOUT	6#	6	
CMWB	6#	6	
CORCNT	6#	6	
CPOPJ1	29	124	
D	6#	6	
DAT	6#	6	
DCL	6#	6	
DCLI	6#	6	
DCLO	6#	6	
DCLR	6#	6	
DDI	6#	6	
DDO	6#	6	
DEN	6#	6	
DEVADR	6#	6	
DEVBUF	6#	6	
DEVCHR	6#	6	
DEVCTR	6#	6	
DEVDAT	6#	6	82
DEVEXT	6#	6	
DEVFIL	6#	6	
DEVIAD	6#	6	
DEVIOS	6#	6	
DEVLOG	6#	6	
DEVMOD	6#	6	
DEVNAM	6#	6	
DEVOAD	6#	6	
DEVPPN	6#	6	
DEVPTR	6#	6	
DEVSER	6#	6	
DGF	6#	6	
DHNG	6#	6	
DIN	6#	6	
DINI	6#	6	
DLK	6#	6	
DMT	6#	6	
DNAERR	6#	6	
DOU	6#	6	

DR	6#	6	
DRL	6#	6	
DRN	6#	6	
DSER	6#	6	
DSI	6#	6	
DSKRLB	6#	6	
DSO	6#	6	
DVAVAL	6#	6	
DVCDR	6#	6	
DVDIR	6#	6	
DVDIRI	6#	6	
DVDIS	6#	6	
DVDSK	6#	6	
DVDTA	6#	6	
DVIN	6#	6	
DVLNG	6#	6	
DVLPT	6#	6	
DVMTA	6#	6	
DVOUT	6#	6	22
DVPTP	6#	6	
DVPTR	6#	6	
DVTTY	6#	6	
ENTRP	6#	6	
FBMERR	6#	6	
FNFERR	6#	6	
FRGSEG	6#	6	
FTDREL	6#		
FTATTA	6#		
FTCHEC	6#		
FTEXAM	6#		
FTFIXI	6#		
FTGETT	6#		
FTHALT	6#		
FTKCT	6#		
FTMOUP	6#		
FTPRV	6#		
FTRA1Ø	6#		
FTRCHK	6#		
FTREAS	6#		
FTSLEE	6#		
FTTALK	6#		
FTTIME	6#		
FTTRAC	6#		
FTTRPS	6#		
FTTTYS	6#		
HSAMSK	6#	6	
HSAPRS	6#	6	
HSASIZ	6#	6	
HUNGCT	6#	6	
HUNGRT	6#	6	19
I	6#	6	
IADRCK	3Ø	118	
IB	6#	6	

STTYRF	6#	6											
SWP	6#	6											
SWPCLR	6#	6											
SYSDEV	6#	6											
TAC	6#	6	60	61	64	67	75	76	77	78	108	109	112	113
	114	115	116	117	120	122	123							
TAC1	6#	6											
TACSAV	75#	75	78#	78									
TEM	6#	6											
TRNERR	6#	6											
TTYATC	6#	6											
TTYBIU	6#	6											
TTYUSE	6#	6											
UCHN	6#	6											
UIOMOD	6#	6											
USRMOD	6#	6											
UUO	6#	6											
UWP	6#	6											
UWPOFF	6#	6											
VPLTSR	10#	10											
WTMASK	6#	6											

CODES	6#		
DISABL	6#		
ENABLE	6#		
NOSCHE	6#		
NOSHUF	6#		
QUEUES	6#		
SCHEDU	6#		
SHUFFL	6#		
STARTD	6#		
XP	6#	6	9