

LP11

DEVICE ROUTINE (MPG)
MD-11-DTLPA-B

EP-DTLPA-B-DL-A
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FICHE 1 OF 1

NOV 1976
digital
MADE IN U.S.A.

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MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 REVISION HISTORY

MACY11 27(732) 24-SEP-76 13:57 PAGE 2

SEQ 0326

DTLPAB.P11

.SBTTL REVISION HISTORY

APR 76 DTLPA-B RELEASE
DEC 75 ADDED MEMORY MANAGEMENT SUPPORT.
OCT 75 CREATED FULL SUPPORT DEVICE ROUTINE
AUG 75 DTLPA-A INITIAL RELEASE (MINIMUM SUPPORT DEVICE
ROUTINE)

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: DEVICE ROUT SIZE IN BYTES
: DEVICE ROUT FLAGWORD
:   BIT 15 = "NOMAIT" FLAG
:   BIT 14 = "PLOT" FLAG
:   BIT 4  = 'ISSUED TRAILING CR/LF' FLG
:   BIT 3  = "TOF/EOT" CMD FLAG
:   BIT 2  = "SPACE" CMD FLAG
:   BIT 1  = 80 I/O TERMINATION
: INTERFACE WORD 0 1 (NOT USED)
: INTERFACE WORD 0 2 (NOT USED)
: INTERFACE WORD 0 3 (NOT USED)
: INTERFACE WORD 0 4 (NOT USED)
: INTERFACE WORD 0 5 (NOT USED)
: INTERFACE WORD 0 6 (NOT USED)
: 0 OF BYTES TRANSFERRED / UNIMAP FLG
: ERROR ON LAST I/O INDICATOR
: FIRST DEVICE REGISTER ADR
: INTERRUPT VECTOR ADR
: INT PROC STATUS WORD (BR 4)
: NOT USED
: HOUSEKEEPING ROUT REL ADR
: REPORT ROUT REL ADR
: KILL ROUT REL ADR
: DATA ERROR COUNTER REL ADR
: TIME OUT ERROR ROUT REL ADR
: I/O BUSY BRANCH ADR
: DEVICE ERROR BRANCH ADR
: USER MODE PRINT ROUTINE BRANCH ADR
: CMD MODE PRINT ROUTINE BRANCH ADR
: CONVERT BINARY TO ASCII ROUT BR ADR
: CONVERT BINARY TO DECIMAL ASCII BR ADR
: CONVERT PACKED DECIMAL TO ASCII BR ADR
: MPG SYSTEM FLAGWORD ADR
: SET INT VECT ROUT BR ADR
: CLEAR INT VECTOR ROUT BR ADR

```

55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		000000
70		
71		
72		
73		
74		
75		
76		
77	000000'	004120
78	000002'	000000
79		
80		
81		
82		
83		
84		
85	000004'	000000
86	000006'	000000
87	000010'	000000
88	000012'	000000
89	000014'	000000
90	000016'	000000
91	000020'	000000
92	000022'	000000
93	000024'	177514
94	000026'	000200
95	000030'	000200
96	000032'	000000
97	000034'	000566
98	000036'	000620
99	000040'	001172
100	000042'	000534
101	000044'	001106
102	000046'	000000
103	000050'	000000
104	000052'	000000
105	000054'	000000
106	000056'	000000
107	000060'	000000
108	000062'	000000
109	000064'	000000
110	000066'	000000
111	000070'	000000

SIZE:	WORD	0
ERR:	WORD	0
DREGAD:	WORD	177514
IVCTAD:	WORD	200
PSMD:	WORD	200
	WORD	0
	WORD	HSKEEP-
	WORD	REPORT-
	WORD	KILL-
	WORD	DATSER-
	WORD	TOUTER-
CIORSY:	WORD	0
CUPGER:	WORD	0
ULIST:	WORD	0
CLIST:	WORD	0
BINASC:	WORD	0
BTASLZ:	WORD	0
DECASC:	WORD	0
CSYSFW:	WORD	0
SETVEC:	WORD	0
CLRVEC:	WORD	0

E01

MACY11 27(732) 24-SEP-76 13:57 PAGE 3-1

SEQ 0328

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 STANDARD DEVICE ROUTINE TABLE

112	000072	000000		TSTVEC:	.WORD	0	
113	000074	000000		RTNINT:	.WORD	0	
114	000076	000000		GETBYT:	.WORD	0	
115	000100	000000		PUTBYT:	.WORD	0	
116	000102	000014			.WORD	DVREGS-	
117	000104	000072			.WORD	DVCHDS-	
118	000106	000146			.WORD	DVPKTE-	
119	000110	000264			.WORD	DVMVTE-	
120	000112	000332			.WORD	DVCPT-	
121	000114	000432			.WORD	DVINST-	
122							
123							
124	000116	050114	051503	DVREGS:	.ASCII	/LPCS/	
125	000122	000000			.WORD	0	
126	000124	050114	041104		.ASCII	/LPDB/	
127	000130	000002			.WORD	2	
128	000132	051514	051503		.ASCII	/LSCS/	
129	000136	000000			.WORD	0	
130	000140	051514	041104		.ASCII	/LSDB/	
131	000144	000002			.WORD	2	
132	000146	053114	051503		.ASCII	/LVCS/	
133	000152	000000			.WORD	0	
134	000154	053114	041104		.ASCII	/LVDB/	
135	000160	000002			.WORD	2	
136	000162	050114	020123		.ASCII	/LPS /	
137	000166	000000			.WORD	0	
138	000170	050114	020102		.ASCII	/LPB /	
139	000174	000002			.WORD	2	
140		000176		DVREGE=	.		
141							
142	000176	130	001	DVCHDS:	.BYTE	130,1	
143	000200	001170			.WORD	WRITE-	
144	000202	376	000		.BYTE	376,0	
145	000204	001066			.WORD	NOWAIT-	
146	000206	375	000		.BYTE	375,0	
147	000210	001042			.WORD	WAIT-	
148	000212	374	000		.BYTE	374,0	
149	000214	000442			.WORD	REPORT-	
150	000216	373	000		.BYTE	373,0	
151	000220	000436			.WORD	REPORT-	
152	000222	372	000		.BYTE	372,0	
153	000224	001270			.WORD	TOF-	
154	000226	371	000		.BYTE	371,0	
155	000230	001056			.WORD	PLOT-	
156	000232	370	000		.BYTE	370,0	
157	000234	001124			.WORD	NOPLT-	
158	000236	367	000		.BYTE	367,0	
159	000240	001340			.WORD	EOT-	
160	000242	366	000		.BYTE	366,0	
161	000244	001402			.WORD	BUFCLR-	
162	000246	365	000		.BYTE	365,0	
163	000250	001154			.WORD	SPACE-	
164	000252	177777			.WORD	177777	
165							
166	000254	047516	040527	052111	DVPKTE:	.ASCII	/NOWAIT/
167	000262	376	000		.BYTE	376,0	

```

:TEST INT VECTOR ROUT BR ADR
:RETURN FROM INT ROUT BR ADR
:GET DATA BYTE ROUT BR ADR
:PUT DATA BYTE ROUT BR ADR
:ADR OF DEVICE REGISTER NAMES
:ADR OF DEVICE FUNCTIONS
:ADR OF PACK TBL EXTENSION
:ADR OF MODEL VECTOR TBL EXTEN.
:ADR OF COMPILER TBL EXTEN.
:ADR OF DEV INTERFACE MD SYN TBL

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:VALID DEVICE REGISTER NAMES &
:THEIR POSITIONS RELATIVE TO
:THE DEVICE REGISTERS BASE ADDRESS.

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:VALID DEVICE FUNCTIONS
:FLAG BYTE:
:  BIT 7 = NPR DEV
:  BIT 3 = MASSBUS DEV
:  BIT 0 = 2 WORDS FOR ADR
:          (18 BIT ADRS)

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;TABLE TERMINATOR

;PACK TABLE EXTENSION

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 STANDARD DEVICE ROUTINE TABLE

168	000264	020040	040527	052111	.ASCII	/ WAIT/	
169	000272	375	000		.BYTE	375,0	
170	000274	052123	052101	051525	.ASCII	/STATUS/	
171	000302	374	000		.BYTE	374,0	
172	000304	047503	047125	051524	.ASCII	/COUNTS/	
173	000312	373	000		.BYTE	373,0	
174	000314	020040	052040	043117	.ASCII	/ TOF/	
175	000322	372	000		.BYTE	372,0	
176	000324	020040	046120	052117	.ASCII	/ PLOT/	
177	000332	371	000		.BYTE	371,0	
178	000334	047516	046120	052117	.ASCII	/NOPLOT/	
179	000342	370	000		.BYTE	370,0	
180	000344	020040	042440	052117	.ASCII	/ EOT/	
181	000352	367	000		.BYTE	367,0	
182	000354	052502	041506	051114	.ASCII	/BUFCLR/	
183	000362	366	000		.BYTE	366,0	
184	000364	051440	040520	042503	.ASCII	/ SPACE/	
185	000372	365	000		.BYTE	365,0	
186							
187	000374	000376	000550		.WORD	376,LWAIT-LOC2	;MODEL VECTOR TABLE EXTEN.
188	000400	000375	000550		.WORD	375,LWAIT-LOC2	
189	000404	000374	000550		.WORD	374,LSTATS-LOC2	
190	000410	000373	000550		.WORD	373,LCOUNT-LOC2	
191	000414	000372	000550		.WORD	372,LTOF-LOC2	
192	000420	000371	000550		.WORD	371,L PLOT-LOC2	
193	000424	000370	000550		.WORD	370,LNPLOT-LOC2	
194	000430	000367	000550		.WORD	367,LEOT-LOC2	
195	000434	000366	000550		.WORD	366,LBFCLR-LOC2	
196	000440	000365	000551		.WORD	365,LSPACE-LOC2	
197							
198							
199							
200							
201	000444	003	376		.BYTE	3,376	;NO WAIT
202	000446	004537	000012		.WORD	4537,10.	
203	000452	003	375		.BYTE	3,375	;WAIT
204	000454	004537	000012		.WORD	4537,10.	
205	000460	004	374		.BYTE	4,374	;STATUS
206	000462	004537	000012	001002	.WORD	4537,10.,1002	
207	000470	004	373		.BYTE	4,373	;COUNTS
208	000472	004537	000012	001001	.WORD	4537,10.,1001	
209	000500	003	372		.BYTE	3,372	;TOF
210	000502	004537	000012		.WORD	4537,10.	
211	000506	003	371		.BYTE	3,371	;PLOT
212	000510	004537	000012		.WORD	4537,10.	
213	000514	003	370		.BYTE	3,370	;NOPLOT
214	000516	004537	000012		.WORD	4537,10.	
215	000522	003	367		.BYTE	3,367	;EOT
216	000524	004537	000012		.WORD	4537,10.	
217	000530	003	366		.BYTE	3,366	;BUFCLR
218	000532	004537	000012		.WORD	4537,10.	
219	000536	004	365		.BYTE	4,365	;SPACE V
220	000540	004537	000012	000000	.WORD	4537,10.,0	
221							
222							
223							

DEVICE INTERFACE WORD SYMBOL TABLE

261
262
263
264
265
266
267
268
269
270
271

000546' 177777
000550' 000
000551' 377 000
000554' 000554' 000000
000560' 000000 000000
000564' 000000
000566' 000000
000570' 000000
000572' 000000
000574' 000000
000576' 000000
000600' 000000
000602' 000000
000604' 000000
000606' 000000
000610' 000000
000612' 000000
000614' 000000
000616' 000000
000620' 000000
000622' 000000
000000
000001
120000
000002
000010

OVINST: .WORD 177777

;END OF TABLE

MODEL STATEMENT TABLE EXTENSION

LNWAIT:
LWAIT:
LSTATS:
LCOUNT:
LTOF:
LPLOT:
LNPLT:
LEOT:
LBFLR: .BYTE 0
LSPACE: .BYTE 377,0
.EVEN

HSKPST=
ISTAT: .WORD 0,0

;STORAGE FOR DEV REG'S AT INT

CSTAT: .WORD 0,0
COUNTS:
BYMR: .WORD 0

;DEV REG CURRENT VALUES STORAGE

WRCNT: .WORD 0
MISCNT: .WORD 0

;BYTES WRITTEN COUNT (WRITE, SPACE,
AND TOF & EOT IN NOPLT MODE)
;WRITE CHND COUNT (WRITE)
;MISC, CHND COUNT (SPACE, TOF,
EOT, AND BLFLR)

ERRCNT: .WORD 0
DATAER: .WORD 0
INTCNT: .WORD 0
XFCNT: .WORD 0

;DEVICE ERRORS COUNT
;DATA ERRORS COUNT
;INTERRUPTS COUNT
;ADDITIONAL DATA BYTE XFER CNT

ERRADR: .WORD 0
DATAADR: .WORD 0
BYTCNT: .WORD 0
CURCHD: .WORD 0
CURCNT: .WORD 0
SPDATA: .WORD 0
SPCNT: .WORD 0
HSKPEN=

;USER PROG'S CURR STMT ADR
;DATA ADDRESS
;INITIAL BYTE COUNT
;CUR CHND'S C/S REG VALUE
;BYTES TRANSFERRED FOR CURR CHND
;PRINTER DATA FOR "SPACE" CHND
;# OF LINES TO SPACE

XXXX= 0
MMVER= 1
PSCONS= 120000
REGNUM= 2
CNTNUM= 8.

;VALUE TO BE TAILORED BY DEV ROUT
;SYSTEM FLGND BIT DEF.
;INT SERV VIRTUAL PAGE BASE
;# OF DEVICE REGISTERS
;# OF STATISTICAL COUNT WORDS

H01

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 LP11/LS11/LV11 SUPPORT ROUTINES ENTERED FROM MPG

MACY11 27(732) 24-SEP-76 13:57 PAGE 4

SEQ 0331

.SBTTL LP11/LS11/LV11 SUPPORT ROUTINES ENTERED FROM MPG

;DEVICE ROUTINE HOUSEKEEPING

JSR RS,HSKEEP
;WORD 0 OR 1
;R2 = PROG'S OPSW
;DESTROYS RD,R1

S/R CALL
0 = DO HSKP PER OPSW
1 = UNCOND. DO HSKP

000622' 005725
000624' 001003
000626' 032702 000004
000632' 001010
000634' 010700
000636' 062700 177716
000642' 012701 000023
000646' 005020
000650' 005301
000652' 001375
000654' 000205

HSKEEP: TST (RS)+
BNE 10\$
BIT #HSKPEP,R2
BNE 30\$
10\$: MOV PC,RD
ADD #HSKPST-,RD
MOV #HSKPEN-HSKPST/2,R1
20\$: CLR (RD)+
DEC R1
BNE 20\$
30\$: RTS RS

;UNCONDITIONALLY DO HSKP?
;N,Y-10\$
;OPSW SPECIFY EACH PASS HSKP?
;Y,N-30\$
;SET UP FIRST MD ADR
;SET UP # OF WORDS
;HSKP ALL NECESSARY AREAS
;EXIT IN-LINE

;LP11/LS11/LV11 REPORT ROUTINE

JSR RS,REPORT
;WORD FLAGWD
.....

S/R CALL
FLAGWORD
BIT 15 = CMD MODE CALL
BIT 9 = PROG START CALL
BIT 1 = DO STATUS REPORT
BIT 0 = DO COUNTS REPORT

000656' 004067 002206
000662' 004767 002234
000666' 012504
000670' 032704 000002
000674' 001403
000676' 004567 002240
000702' 177656
000704' 032704 177776
000710' 001012
000712' 010700
000714' 062700 177650
000720' 012701 000010
000724' 005720
000726' 001003
000730' 005301
000732' 001374
000734' 000472
000736' 004767 002216
000742' 032704 000002
000746' 001425
000750' 010700
000752' 062700 177602
000756' 005720

REPORT: JSR RD,SAVREG
JSR PC,SUPTAD
MOV (RS)+,R4
BIT #2,R4
BEQ 5\$
JSR RS,STSTAT
;WORD
CSTAT-
5\$: BIT #177776,R4
BNE 15\$
MOV PC,RD
ADD #COUNTS-,RD
MOV #CNTNUM,R1
10\$: TST (RD)+
BNE 15\$
DEC R1
BNE 10\$
BR DVREX
15\$: JSR PC,DEVID
BIT #2,R4
BEQ DISCNT
MOV PC,RD
ADD #ISTAT-,RD
20\$: TST (RD)+

;SAVE REG'S RD - RS
;SET UP PROG TBL ADR IN R3
;GET FLAGWORD
;GOING TO DO STATUS DISPLAY?
;Y,N-5\$
;GO STORE STATUS REG'S
;DISPLAYING CNTS AT END OF
;PROG PASS? (Y,N-15\$)
;SET UP ADR OF CNTS
;GET # OF CNT WORDS
;THIS CNT WORD = 0?
;Y,N-15\$
;DECR WORD CNT
;CK'ED ALL WORDS? (Y,N-10\$)
;GO TO EXIT -- ALL CNTS ARE 0'S
;DISPLAY DEVICE I.D.
;DOING STATUS DISPLAY?
;Y,N-DISCNT
;SET UP ADR OF REG'S AT
;LAST INT
;BOTH REG'S = 0?

329	000760'	001002	BNE	305	;N,Y-405
330	000762'	005710	TST	(R0)	
331	000764'	001407	BEQ	405	
332	000766'	004567	JSR	RS, PRINT	;ISSUE 'AT LAST INT' MSG
333	000772'	002443	.WORD	ATMSG-	
334	000774'	000014	.WORD	12.	
335	000776'	004567	JSR	RS, DISPST	;GO DISPLAY STATUS AT LAST INT
336	001002'	177552	.WORD	15STAT-	
337	001004'	004567	JSR	RS, PRINT	;ISSUE 'CURRENTLY' MSG
338	001010'	002441	.WORD	CURMSG-	
339	001012'	000012	.WORD	10.	
340	001014'	004567	JSR	RS, DISPST	;GO DISPLAY CURRENT STATUS
341	001020'	177540	.WORD	CSTAT-	
342	001022'	032704	DISCNT: BIT	81, R4	;DISPLAY COUNTS?
343	001026'	001431	BEQ	RPTEND	;Y, N-RPTEND
344	001030'	012700	MOV	#CNTNUM, R0	;SET UP # OF WORDS
345	001034'	010701	MOV	PC, R1	;SET UP ADR OF CNTS
346	001036'	062701	ADD	#COUNTS--, R1	
347	001042'	010702	MOV	PC, R2	;SET UP TBL ADR
348	001044'	062702	ADD	#REPTBL-, R2	
349	001050'	012267	RPTLP: MOV	(R2)+, RPTBAS	;MOV MSG ADR TO S/R LINKAGE
350	001054'	004067	JSR	RD, SAVREG	;SAVE ALL REG'S
351	001060'	011100	MOV	(R1), R0	;GET CURRENT COUNT
352	001062'	004577	JSR	RS, #BINASC	;CONVERT IT TO ASCII
353	001066'	000000	RPTBAS: .WORD	XXXX	
354	001070'	004067	JSR	RD, RESREG	;RESTORE REG'S
355	001074'	005721	TST	(R1)+	;POINT AT NXT CNT
356	001076'	005300	DEC	R0	;DONE ALL WORDS?
357	001100'	001363	BNE	RPTLP	;Y, N-RPTLP
358	001102'	004567	JSR	RS, PRINT	;GO ISSUE COUNTS MSG
359	001106'	002442	.WORD	CNTSMG-	
360	001110'	000233	.WORD	CNTSEN-CNTSMG	
361	001112'	004567	RPTEND: JSR	RS, PRINT	;ISSUE "END OF REPORT" MSG
362	001116'	002345	.WORD	RENDMG-	
363	001120'	177763	.WORD	-13.	
364	001122'	004067	DVREX: JSR	RD, RESREG	;RESTORE REGISTERS
365	001126'	005725	TST	(R5)+	;SET UP RETURN POINT
366	001130'	000205	RTS	RS	;EXIT IN-LINE
367					
368					
369	001132'	002476	REPTBL: .WORD	BCNMR-RPTBAS	
370	001134'	002504	.WORD	BCNMR+6-RPTBAS	
371	001136'	002531	.WORD	CHDCMR-RPTBAS	
372	001140'	002546	.WORD	CHDCMS-RPTBAS	
373	001142'	002575	.WORD	CNTERR-RPTBAS	
374	001144'	002612	.WORD	CNTDER-RPTBAS	
375	001146'	002640	.WORD	CNTINT-RPTBAS	
376	001150'	002707	.WORD	CNTXFR-RPTBAS	

J01

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 LP11/LS11/LV11 SUPPORT ROUTINES ENTERED FROM MPG

MACY11 27(732) 24-SEP-76 13:57 PAGE 4-2

SEQ 0333

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;TIMEOUT ERROR ROUTINE

;JSR RS,TOUTER

S/R CALL

TOUTER: JSR RD, SAVREG ;SAVE ALL REGISTERS
JSR PC, SUPTAD ;SET UP C/S REG & PROG TBL ADR'S
JSR RS, STSTAT ;STORE CURRENT STATUS
;WORD CSTAT-
JSR RS, TVECT ;CK IF I HAVE VECTOR CONTROL
BR 10S ;BR IF I DON'T
CLR (R4) ;RESET INT ENABLE
JSR PC, RINTV ;RESET INT VECTOR INFO
10S: BIC #MT4IOT, (R3) ;RESET WAITING FOR I/O FLAG
JSR RS, EARC51 ;ISSUE TIMEOUT ERROR MSG
;WORD IOT0-ERMBAS
;WORD 14
JSR RD, RESREG ;RESTORE REGISTERS
MOV (SP)+, RS ;REMOVE RETURN ADR
JMP @CUPGER ;GO TO ERROR EXIT

;KILL USER PROGRAM ROUTINE

;JSR RS,KILL S/R CALL
;R3 MUST CONTAIN PROG TBL ADR
;DESTROYS RD,R1

KILL: JSR RS, TVECT ;CK IF I HAVE VECTOR CONTROL
BR KILLEX ;BR IF I DON'T
CLR @ORECAD ;RESET INT ENABLE
JSR PC, RINTV ;RESET INT VECTOR INFO
KILLEX: RTS ;EXIT IN-LINE

.SBTTL LP11/LS11/LV11 FUNCTION ROUTINES

;"WAIT" FUNCTION ROUTINE

;JSR RS, WAIT

FUNCTION CALL

411
412
413
414
415
416
417
418 001252' 042767 100000 176522 WAIT:
419 001260' 004767 001114
420 001264' 004767 001524
421 001270' 000205

BIC #100000, DFLGMD
JSR PC, CKDBSY
JSR PC, RINTV
RTS RS

;RESET THE "NOWAIT" FLAG
;WAIT IF BUSY & DO TERMINATION
;RESET THE INTERRUPT VECTOR
;EXIT IN-LINE

;"NOWAIT" FUNCTION ROUTINE

;JSR RS, NOWAIT

FUNCTION CALL

422
423
424
425
426
427
428 001272' 052767 100000 176502 NOWAIT:
429 001300' 005067 176516 NOIOEX:
430 001304' 000205

BIS #100000, DFLGMD
CLR ERR
RTS RS

;SET THE "NOWAIT" FLAG
;RESET THE ERROR INDICATOR
;EXIT IN-LINE

;"PLOT" FUNCTION ROUTINE

;JSR RS, PLOT

FUNCTION CALL

431
432
433
434
435
436
437 001306' 004767 001610
438 001312' 032763 000040 000032 PLOT:
439 001320' 001404
440 001322' 052767 040000 176452
441 001330' 000763
442 001332' 004767 001140 PLTERR:
443 001336' 004567 001156
444 001342' 001271
445 001344' 000030
446 001346' 005267 177224
447 001352' 005367 177216
448 001356' 000567

JSR PC, SUPTAD
BIT #40, PHDLCD(R3)
BEQ PLTERR
BIS #40000, DFLGMD
BR NOIOEX
JSR PC, STSADR
JSR RS, ERRCSI
.WORD INVCHD-ERMBAS
WORD 24
INC DATAER
DEC ERRCNT
BR LPERR

;SET UP PROG TBL & C/S REG ADR
;THIS A LV11?
;Y, N-PLTERR
;SET THE PLOT FLAG
;GO TO EXIT
;STORE THIS STMT'S ADR
;ISSUE INV CHND ERR

;INCREMENT DATA ERROR COUNT
;RE-ADJUST DEV ERROR CNT
;GO TO ERROR EXIT

;"NO PLOT" FUNCTION ROUTINE

;JSR RS, NO PLOT

FUNCTION CALL

449
450
451
452
453
454
455 001360' 042767 040000 176414 NO PLOT:
456 001366' 000744

BIC #40000, DFLGMD
BR NOIOEX

;RESET THE PLOT FLAG
;GO TO EXIT

```

;GO CK IF DEV BUSY
;ADD 1 TO MISC. CMND CNT
;IN "PLOT" MODE?
;N.Y-PLTTF
;SET UP ADR OF FORM FEED CHAR

;STORE CHAR'S ADR
;SET UP BYTE CNT OF 1
;SET THE "TOF/EOT" CMND FLAG
;GO SET UP CMND CODE
;SET UP PLOT FORM FD CMND
;RESET THE BYTE CNT
;GO TO CMND COMMON PROCESSING

```

;"EOT" FUNCTION ROUTINE

;JSR RS,EOT

FUNCTION CALL

```

515
516
517
518
519 001600' 004767 000574 EOT: JSR PC,CKDBSY ;GO CK IF DEV BUSY
520 001604' 005267 176762 INC MISCNT ;ADD 1 TO MISC. CMD CNT
521 001610' 032767 040000 176164 BIT #40000,DFLGND ;IN "PLOT" MODE?
522 001616' 001004 BNE PLTEOT ;N,Y-PLTEOT
523 001620' 010700 MOV PC,RD ;SET UP ADR OF EOT CHAR
524 001622' 062700 000023 ADD #EOTBYT-.,RD
525 001626' 000745 BR TOFEOT ;GO TO TOF/EOT COMMON PROC
526 001630' 012767 000110 176754 PLTEOT: MOV #110,CURCMD ;SET UP PLOT EOT CMD
527 001636' 005067 176746 CLR BYTCNT ;RESET BYTE CNT
528 001642' 000420 BR CHDCOM ;GO RD CMD COMMON PROCESSING
529
530 001644' 014 FORMFD: .BYTE 014
531 001645' 004 EOTBYT: .BYTE 004
532
533
534
535
536
537

```

;"BUFCLR" FUNCTION ROUTINE

;JSR RS,BUFCLR

FUNCTION CALL

```

538 001646' 004767 000526 BUFCLR: JSR PC,CKDBSY ;GO CK IF DEV BUSY
539 001652' 005267 176714 INC MISCNT ;ADD 1 TO MISC. CMD CNT
540 001656' 012700 000020 MOV #20,RD ;SET UP BUFFER CLEAR BIT
541 001662' 032767 040000 176112 BIT #40000,DFLGND ;IN "PLOT" MODE?
542 001670' 001401 BEQ 10S ;Y,N-10S
543 001672' 005200 INC RD ;SET PLOT MODE BIT
544 001674' 010014 10S: MOV RD,(R4) ;ISSUE BUFFER CLEAR
545 001676' 004767 001112 JSR PC,RINTV ;RESET INT VECT INFO
546 001702' 000205 RTS RS ;EXIT TO USER'S PROG

```

;COMMAND COMMON PROCESSING ROUTINE

;R4 = ADR OF C/S REG DEV REG
;R3 = PROG TBL ADR

```

548
549
550
551
552
553 001704' 042767 000020 176070 CMDCOM: BIC      #20,DFLGND      ;RESET "ISSUED TRAILING CR/LF" FLG
554 001712' 005063 000030          CLR      PTOCNT(R3)      ;INITIALIZE TIMEOUT COUNTER
555 001716' 005067 176672          CLR      CURCNT          ;RESET # OF BYTES XFERRED
556 001722' 005714          TST      (R4)          ;IS THE PRINTER ERROR BIT SET?
557 001724' 100011          BPL      CKRDY          ;Y,N-CKRDY
558 001726' 004567 000560          JSR      R5,ERRCS      ;ISSUE STATUS ERROR MSG
559 001732' 001242          .WORD     LPMSG-ERMBAS
560 001734' 000014          .WORD     12.
561 001736' 012767 000001 176056 LPERR: MOV      #1,ERR      ;SET THE ERROR INDICATOR
562 001744' 000177 176100          JMP      @CUPGER      ;GO TO MPG ERR RTN POINT
563 001750' 105714          CKRDY: TSTB      (R4)          ;IS READY SET?
564 001752' 100405          BMI      PRTOK          ;N,Y-PRTOK
565 001754' 004567 000532          JSR      R5,ERRCS      ;ISSUE RDY NOT SET ERROR MSG
566 001760' 001256          .WORD     NRDYNG-ERMBAS
567 001762' 000013          .WORD     11.
568 001764' 000764          BR        LPERR
569 001766' 032767 040000 176006 PRTOK: BIT      #40000,DFLGND ;GO TO ERROR EXIT
570 001774' 001402          BZQ      10$            ;IN "PLOT" MODE?
571 001776' 005267 176610          INC      CURCMD          ;Y,N-10$
572 002002' 052767 000002 175772 10$: BIS      #2,DFLGND      ;SET THE PLOT MODE BIT
573 002010' 052713 000010          BIS      #WT410T,(R3)      ;SET THE "PROCESS TERMINATION" FLAG
574 002014' 016714 176572          MOV      CURCMD,(R4)      ;SET WAITING FOR I/O TERM FLAG
575 002020' 005767 175756          TST      DFLGND          ;ISSUE THE CMD
576 002024' 100405          BMI      WTNOT          ;"NOWAIT" BIT SET?
577 002026' 004577 176014          JSR      R5,@CIOBSY      ;N,Y-WTNOT
578 002032' 004767 000642          JSR      PC,PROCTM      ;WAIT FOR I/O TO COMPLETE
579 002036' 000205          CMDEX: RTS      R5            ;GO PROCESS TERMINATION
580
581 002040' 042713 000010          WTNOT: BIC      #WT410T,(R3)      ;RESET WAITING FOR I/O TERM
582 002044' 000774          BR        CMDEX            ;GO TO EXIT

```

.SBTTL LP11/LS11/LV11 INTERRUPT SERVICE ROUTINE

```

584
585
586
587 002046' 004067 001016      LPINT: JSR    RD, SAVREG      ;SAVE ALL REGISTERS
588 002052' 005267 176522      INC    INT CNT      ;ADD 1 TO INTERRUPT CNT
589 002056' 004767 001040      JSR    PC, SUPTAD    ;SET UP PROG TBL & C/S REG ADR'S
590 002062' 004567 001054      JSR    RS, STSTAT    ;STORE ALL DEV REG'S
591 002066' 176466      .WORD    ISTAT-      ;
592 002070' 016700 176512      MOV    DATADR, R0      ;GET DATA ADDRESS
593 002074' 016702 176510      MOV    BYTCNT, R2      ;GET BYTE COUNT
594 002100' 005714      TST     (R4)      ;PRINTER'S ERROR BIT SET?
595 002102' 100004      BPL     10S      ;Y, N-10S
596 002104' 012767 000001 175710 MOV    #1, ERR      ;SET THE ERROR INDICATOR
597 002112' 000516      BR      INT EX2      ;GO TO INT EXIT
598 002114' 005702      10S:  TST     R2      ;BYTE CNT = 0?
599 002116' 001500      BEQ     INT EX1      ;N, Y-INT EX1
600
601      ;TRANSFER DATA TO PRINTER
602
603 002120' 004777 175752      SNDBYT: JSR    PC, GETBYT    ;HAVE MPG GET DATA BYTE IN R1
604 002124' 110164 000002      MOV    R1, 2(R4)      ;SHIP A BYTE TO THE PRINTER
605 002130' 005267 176460      INC    CURCNT      ;INCR BYTES XFERRED CNT
606 002134' 005302      DEC    R2      ;SUB 1 FROM BYTE COUNT
607 002136' 001405      BEQ     CK4LTH      ;CNT = 0? (N, Y-CK4LTH)
608 002140' 105714      TSTB    (R4)      ;READY SET AGAIN?
609 002142' 100106      BPL     INT EX3      ;Y, N-INT EX3
610 002144' 005267 176432      INC    XFR CNT      ;ADD 1 TO ADDITIONAL XFER CNT
611 002150' 000763      BR      SNDBYT      ;GO ISSUE NXT BYTE
612
613 002152' 032767 000010 175622 CK4LTH: BIT    #10, DFLGND    ;THIS A TOF OR EOT CMND?
614 002160' 001077      BNE     INT EX3      ;N, Y-INT EX3
615 002162' 032714 000001      BIT    #1, (R4)      ;IN "PLOT" MODE?
616 002166' 001421      BEQ     40S      ;Y, N-40S
617
618      ;CHECK FOR ISSUING PLOTTER LINE TERMINATE
619
620 002170' 032767 000004 175604      BIT    #4, DFLGND    ;THIS A "SPACE" CMND?
621 002176' 001012      BNE     30S      ;N, Y-30S
622 002200' 032763 000200 000002      BIT    #SPOPER, POPSW(R3) ;SUPPOSED TO ISSUE LINE TERM?
623 002206' 001064      BNE     INT EX3      ;Y, N-INT EX3
624 002210' 016701 176400      MOV    CURCNT, R1      ;GET BYTES XFERRED CNT
625 002214' 162701 000200      20S:  SUB    #128, R1      ;CNT A MULTIPLE OF 128?
626 002220' 001457      BEQ     INT EX3      ;N, Y-INT EX3
627 002222' 100374      BPL     20S      ;
628 002224' 052714 000002      30S:  BIS    #2, (R4)      ;ISSUE A PLOTTER LINE TERMINATE
629 002230' 000453      BR      INT EX3      ;WAIT FOR LINE TO PRINT
630
631      ;CHECK FOR ISSUING PRINTER CR/LF
632
633 002232' 032767 000004 175542 40S:  BIT    #4, DFLGND    ;THIS A "SPACE" CMND?
634 002240' 001047      BNE     INT EX3      ;N, Y-INT EX3
635 002242' 032763 000200 000002      BIT    #SPOPER, POPSW(R3) ;SUPPOSED TO ISSUE CR/LF?
636 002250' 001043      BNE     INT EX3      ;Y, N-INT EX3
637 002252' 032767 000020 175522      BIT    #20, DFLGND    ;"TRAILING CR/LF" FLG SET?
638 002260' 001037      BNE     INT EX3      ;N, Y-INT EX3
639 002262' 010700      MOV    PC, R0      ;SET UP ADR OF CR/LF DATA

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640 002264' 062700 001314 ADD #CRLF-. ,R0
641 002270' 032777 000001 175566 BIT #NIVER,3CSYSFW ;RUNNING UNDER MEM MGMT?
642 002276' 001402 BEQ SOS ;Y,N-SOS
643 002300' 162700 120000 SUB #PSCONS,R0 ;ADJ ADR TO VIRTUAL SPACE
644 002304' 012702 000002 SOS: MOV #2,R2 ;SET UP BYTE COUNT OF 2
645 002310' 052767 000020 175464 BIS #20,DFLGND ;SET "ISSUED TRAILING CR/LF" FLAG
646 002316' 000420 BR INTEX3 ;GO TO INT EXIT
647
648 ;INTERRUPT SERVICE EXITS
649
650 002320' 032767 000004 175454 INTEX1: BIT #4,DFLGND ;THIS A "SPACE" CMD?
651 002326' 001410 BEQ INTEX2 ;Y,N-INTEX2
652 002330' 005367 176264 DEC SPCNT ;DECR SPACE LINE CNT
653 002334' 001405 BEQ INTEX2 ;DONE ALL LINES? (N,Y-INTEX2)
654 002336' 162700 000002 SUB #2,R0 ;BACK UP DATA ADR
655 002342' 012702 000002 MOV #2,R2 ;RESTORE BYTE CNT
656 002346' 000664 BR SN08YT ;GO ISSUE BYTES AGAIN
657 002350' 042714 000100 INTEX2: BIC #100,(R4) ;RESET INT ENABLE
658 002354' 042713 000010 BIC #MT410T,(R3) ;RESET WAIT FOR I/O TERM FLAG
659 002360' 010067 176222 INTEX3: MOV R0,DATADR ;STORE NEW DATA ADR
660 002364' 010267 176220 MOV R2,BYTCNT ;STORE NEW BYTE CNT
661 002370' 004067 000510 JSR R0,RESREG ;RESTORE ALL REGISTERS
662 002374' 000177 175474 JMP RTNINT ;EXIT FROM INTERRUPT

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.SBTTL SUBROUTINES FOR LP11/LS11/LV11 FUNCTION ROUTINES

;CHECK IF DEVICE IS BUSY AND WAIT IF IT IS

;JSR PC,CKDBSY S/R CALL

;DESTROYS R0,R3,R4
;ON EXIT:
;R3 = PROG TBL ADR
;R4 = C/S REG ADR;SET UP PROG TBL & C/S REG ADR'S
;INT ENABLE ON?
;Y,N-208
;RELEASE CONTROL
;GO CK AGAIN
;HAVE TO PROCESS PREV TERMINATION?
;Y,N-308
;GO PROCESS TERMINATION
;GO RECHECK INT ENABLE
;STORE INT VECTOR ADR
;STORE PROG STATUS WORD
;GO SET UP THE VECTOR
;INT VECTOR ADR
;PSW
;REL INT ROUT ADR
;RESET THE ERROR INDICATOR
;RESET "SPACE" & "TOF/EOT" FLAGS
;SAVE CURR USER STINT ADR
;EXIT IN-LINE

;ERROR INFORMATION DISPLAY S/R

;JSR RS,ERRCS
;JSR RS,ERRIS
;WORD MSGADR-ERRBAS
;WORD MSGCNT
;R3 = PROG TBL ADR
;DESTROYS R0,R1,R2S/R CALL FOR CURR STATUS
S/R CALL FOR INT STATUS
REL ADR OF ERROR MSG
OF BYTES IN ERROR MSGERRCS: JSR RS,STSTAT
;WORD
CSTAT-
ERRCS1: MOV 8CSTAT-ERSTAD,ERSTAD
BR ERRCOM
ERRIS: MOV 8ISTAT-ERSTAD,ERSTAD
ERRCOM: MOV (RS)+,ERRBAS
MOV (RS)+,ERRBAS+2
INC ERRCNT
BIT 8PRONER,POPSM(R3)
BNE ERREX
MOV R4,-(SP)
CLR R4
JSR PC,DEVID;STORE CURR STATUS
;STORE ADR OF CURR STATUS
;GO TO COMMON POINT
;STORE ADR OF LAST INT STATUS
;STORE MSG ADR
;STORE MSG CNT
;ADD 1 TO ERROR CNT
;ERROR PRINTING INHIBITED?
;N,Y-ERREX
;SAVE R4
;SET USER MODE PRINT FLAG
;DISPLAY DEVICE I.D.664
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676 002400' 004767 000516 CKDBSY: JSR PC,SUPTAD
677 002404' 032714 000100 108: BIT 8100,(R4)
678 002410' 001403 BEQ 208
679 002412' 004577 175430 JSR RS,2C10BSY
680 002416' 000772 BR 108
681 002420' 032767 000002 175354 208: BIT 82,DFLGMD
682 002426' 001403 BEQ 308
683 002430' 004767 000244 JSR PC,PROCTH
684 002434' 000763 BR 108
685 002436' 016767 175364 000012 308: MOV IVCTAD,408
686 002444' 016767 175360 000006 MOV PSMD,458
687 002452' 004577 175410 JSR RS,2SETVEC
688 002456' 000000 408: .WORD XXXX
689 002460' 000000 458: .WORD XXXX
690 002462' 177364 .WORD LPINT-
691 002464' 005067 175332 CLR ERR
692 002470' 042767 000014 175304 BIC 814,DFLGMD
693 002476' 010567 176102 STSADR: MOV RS,ERRADR
694 002502' 162767 000004 176074 SUB 84,ERRADR
695 002510' 000207 RTS PC
696
697
698
699
700
701
702
703
704
705
706
707 002512' 004567 000424 ERRCS: JSR RS,STSTAT
708 002516' 176042 .WORD
709 002520' 012767 175742 000070 ERRCS1: MOV 8CSTAT-ERSTAD,ERSTAD
710 002526' 000403 BR ERRCOM
711 002530' 012767 175736 000060 ERRIS: MOV 8ISTAT-ERSTAD,ERSTAD
712 002536' 012567 000034 ERRCOM: MOV (RS)+,ERRBAS
713 002542' 012567 000032 MOV (RS)+,ERRBAS+2
714 002546' 005267 176022 INC ERRCNT
715 002552' 032763 020000 000002 BIT 8PRONER,POPSM(R3)
716 002560' 001046 BNE ERREX
717 002562' 010446 MOV R4,-(SP)
718 002564' 005004 CLR R4
719 002566' 004767 000366 JSR PC,DEVID

E02

 MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
 DTLPA8.P11 SUBROUTINES FOR LP11/LS11/LV11 FUNCTION ROUTINES

MACY11 27(732) 24-SEP-76 13:57 PAGE 7-1

SEQ 0341

```

720 002572' 004567 000516      SS: JSR RS,PRINT      ;PRINT ERROR MSG SPECIFIED
721 002576' 000000      ERMBAS: .WORD XXXX
722 002580' 000000      .WORD XXXX
723 002582' 026727 177770 001271  CMP ERMBAS,8INVCHD-ERMBAS ;INVALID FUNCTION?
724 002510' 103003      BHS ERRSNM      ;N,Y-ERRSNM
725 002512' 004567 000424      JSR RS,DISPST ;DISPLAY STATUS REG'S
726 002516' 000000      ERSTAD: .WORD XXXX
727 002520' 016300 000022      ERRSNM: MOV PSRCST(R3),R0 ;GET ADR OF SRC STMTS
728 002524' 111001      10S: MOV (R0),R1 ;SAVE STMT LENGTH
729 002526' 026067 000004 175750  CMP 4(R0),ERRADR ;ERROR OCCUR ON THIS STMT?
730 002534' 001402      BEQ 20S ;N,Y-20S
731 002536' 060100      ADD R1,R0 ;POINT AT NXT STMT
732 002540' 000771      BR 10S ;GO CK NXT STMT
733 002542' 005720      20S: TST (R0)+ ;SET UP ADR OF STMT & DATA
734 002544' 010701      MOV PC,R1 ;SET UP DATA OUTPUT ADR
735 002546' 062701 001164      ADD 8STNUM-,R1
736 002552' 004577 175204      JSR RS,DECRSC ;CONVERT IT TO ASCII
737 002556' 012767 020040 001152  MOV 820040,STNUM+4 ;SET 2 LOW DIGITS TO SPACES
738 002564' 004567 000424      JSR RS,PRINT ;ISSUE STMT & MSG
739 002570' 001132      .WORD STNUM-
740 002572' 177762      .WORD -14
741 002574' 012604      MOV (SP)+,R4 ;RESTORE R4
742 002576' 000205      ERREX: RTS RS ;EXIT IN-LINE
743
744
745 ;PROCESS TERMINATION OF PREVIOUS I/O FUNCTION
746
747 ;JSR PC,PROCTH S/R CALL
748
749 002700' 004067 000164      PROCTH: JSR R0,SAVREG ;SAVE ALL REG'S
750 002704' 042767 000002 175070  BIC 82,DFLGND ;RESET PROCESS TERMINATION FLAG
751 002712' 016767 175676 175100  MOV CURCNT,SIZE ;STORE # OF BYTES ACTUALLY XFERRED
752 002720' 066767 175670 175640  ADD CURCNT,BYMR+2 ;ADD THEM INTO TOTAL BYTE CNT
753 002726' 005567 175632      ADC BYMR ;UPDATE MOST SIGNIF WORD OF CNT
754 002732' 005767 175064      6S: TST ERR ;WAS THERE AN ERROR?
755 002736' 001421      BEQ 80S ;Y,N-80S
756 002740' 032763 000400 000002  BIT 800ERCK,POPSH(R3) ;SUPPOSED TO DO ERROR CHECKING?
757 002746' 001013      BNE 70S ;Y,N-70S
758 002750' 004567 177554      JSR RS,ERRIS ;GO ISSUE STATUS ERROR MSG
759 002754' 001242      .WORD LPMSG-ERMBAS
760 002756' 000014      .WORD 12
761 002760' 004767 000030      6SS: JSR PC,RINTV ;GO RESET INT VECTOR
762 002764' 004067 000114      JSR R0,RESREG ;RESTORE REG'S
763 002770' 004577 175054      JSR RS,3CUPGER ;GO TO MPG ERR RETN POINT
764 002774' 000207      RTS PC ;EXIT IN-LINE
765 002776' 005267 175572      70S: INC ERRCNT ;ADD 1 TO ERROR CNT
766 003002' 004767 000006      80S: JSR PC,RINTV ;GO RESET INT VECTOR
767 003006' 004067 000072      JSR R0,RESREG ;RESTORE REG'S
768 003012' 000207      RTS PC ;EXIT IN-LINE

```

```

770                                     ;RESET INTERRUPT VECTOR S/R
771
772                                     ;JSR    PC,RINTV      S/R CALL
773                                     ;R3 MUST CONTAIN PROG TBL ADR
774                                     ;DESTROYS R0
775
776 003014' 004567 000020      RINTV: JSR    RS,TVECT      ;GO CK IF I HAVE VECTOR CONTROL
777 003020' 000406              BR      RINTX            ;BR IF I DON'T
778 003022' 016767 175000 000004      MOV    IVCTAD,10$    ;GET CURR INT VECT ADR
779 003030' 004577 175034              JSR    RS,2CLAVEC    ;GO HAVE MPG CLEAR IT
780 003034' 000000              10$: .WORD  XXXX
781 003036' 000207      RINTX: RTS    PC                  ;EXIT IN-LINE
782
783                                     ;TEST INTERRUPT VECTOR S/R
784
785                                     ;JSR    RS,TVECT      S/R CALL
786                                     ;BR      LABEL        EXECUTED IF NOT SAME
787                                     ;R3 MUST CONTAIN PROG TBL ADR
788                                     ;DESTROYS R0
789
790 003040' 016767 174762 000010      TVECT: MOV    IVCTAD,20$    ;GET CURR INT VECT ADR
791 003046' 016346 000004              MOV    PFMADR(R3),-(SP) ;STORE FLGND ADR TO IDENTIFY ME
792 003052' 004577 175014              JSR    RS,2TSTVEC    ;DO I HAVE VECTOR CONTROL?
793 003056' 000000              20$: .WORD  XXXX            ;MPG WILL TELL ME SINCE I CAN'T
794 003060' 176766              .WORD  LPINT-              ;GET AT LOWER MEM IF MEM NGHNT
795 003062' 000401              BR      TVECTX            ;BR IF I DON'T HAVE CNTRL
796 003064' 005725              TST     (RS)+              ;BYPASS BR INST IN S/R CALL
797 003066' 000205      TVECTX: RTS    RS                  ;EXIT IN-LINE

```

```

800      .SBTTL  SUBROUTINES FOR LP11/LS11/LV11 DEVICE ROUTINE
801
802
803
804      ;SAVE REGISTERS R0 THRU R5
805
806      ;JSR    R0,SAVREG      S/R CALL
807
808      SAVREG: MOV    R1,-(SP)      ;SAVE R0 THRU R5
809      MOV    R2,-(SP)
810      MOV    R3,-(SP)
811      MOV    R4,-(SP)
812      MOV    R5,-(SP)
813      MOV    R0,PC              ;EXIT IN-LINE
814
815
816      ;RESTORE REGISTERS R0 THRU R5
817
818      ;JSR    R0,RESREG      S/R CALL
819
820      RESREG: TST    (SP)+        ;RESTORE R5 THRU R0
821      MOV    (SP)+,R5
822      MOV    (SP)+,R4
823      MOV    (SP)+,R3
824      MOV    (SP)+,R2
825      MOV    (SP)+,R1
826      RTS    R0                ;EXIT IN-LINE
827
828
829      ;SET PROGRAM'S PROG TABLE ADR IN R3 & C/S REG ADR IN R4
830
831      ;JSR    PC,SUPTAD      S/R CALL
832
833      SUPTAD: MOV    PC,R3        ;SET UP LOCATION ZERO ADR
834      ADD    @LOCZ-.,R3
835      SUB    -2(R3),R3          ;SUBTRACT PROG TBL LENGTH
836      MOV    DREGAD,R4        ;PUT C/S REG ADR IN R4
837      RTS    PC              ;EXIT IN-LINE
838
839
840      ;STORE DEVICE'S STATUS REGISTERS
841
842      ;JSR    R5,STSTAT      S/R CALL
843      ;WORD  STADR-        REL STORAGE ADR
844      ;DESTROYS R0,R1
845
846      STSTAT: MOV    R5,R1        ;GET REL STORAGE ADR & MAKE
847      ADD    (R5)+,R1          ;IT ABSOLUTE
848      MOV    DREGAD,R0        ;GET ADR OF DEV REG'S
849      MOV    (R0)+,(R1)+      ;STORE BOTH DEV REG'S
850      MOV    (R0),(R1)
851      RTS    R5              ;EXIT IN-LINE

```

003070' 010146
003072' 010246
003074' 010346
003076' 010446
003100' 010546
003102' 010007

003104' 005726
003106' 012605
003110' 012604
003112' 012603
003114' 012602
003116' 012601
003120' 000200

003122' 010703 174654
003124' 062703 177776
003130' 166303 174664
003134' 016704
003140' 000207

003142' 010501
003144' 062501 174652
003146' 016700
003152' 012021
003154' 011011
003156' 000205

```

853                                     ;TAILOR & DISPLAY DEVICE I.D.
854
855                                     ;JSR    PC,DEVID      S/R CALL
856                                     ;R3 MUST CONTAIN PROG TBL ADR
857                                     ;DESTROYS R0,R1,R2
858
859 003160' 012700 050114      DEVID: MOV    8"LP,R0      ;SET UP LP11 I.D.
860 003164' 032763 000060 000032 BIT    860,PMDLCD(R3) ;THIS A LP11?
861 003172' 001410          BEQ    10S      ;N.Y-10S
862 003174' 012700 051514      MOV    8"LS,R0      ;SET UP LS11 I.D.
863 003200' 032763 000020 000032 BIT    820,PMDLCD(R3) ;THIS A LS11?
864 003206' 001002          BNE    10S      ;N.Y-10S
865 003210' 012700 053114      MOV    8"LV,R0      ;SET UP LV11 I.D.
866 003214' 010067 000264      10S: MOV    R0,DVDMG+4 ;TAILOR PRINTER'S MODEL CODE
867 003220' 010067 000274      MOV    R0,DVRGMG      ;TAILOR DEV REG NAMES
868 003224' 010067 000304      MOV    R0,DVRGM2
869 003230' 004567 000060      JSR    R5,PRINT      ;GO ISSUE DEVICE I.D. MSG
870 003234' 000244      .WORD    DVDMG-
871 003236' 000020      .WORD    16.
872 003240' 000207      RTS    PC                  ;EXIT IN-LINE
873
874                                     ;TAILOR STATUS MSG & PRINT IT
875
876
877                                     ;JSR    R5,DISPST    S/R CALL
878                                     ;WORD    STATADR-      REL ADR OF STATUS DATA
879                                     ;DESTROYS R0,R1,R2
880
881 003242' 010502      DISPST: MOV    R5,R2      ;GET REL DATA ADR
882 003244' 062502      ADD    (R5)+,R2      ;MAKE IT ABS
883 003246' 012200      MOV    (R2)+,R0      ;GET REG'S STORED VALUE
884 003250' 010246      MOV    R2,-(SP)      ;SAVE R2
885 003252' 004577 174600      JSR    R5,28INASC      ;CONVERT IT TO ASCII
886 003256' 000250      .WORD    DVRCGT-
887 003260' 012602      MOV    (SP)+,R2      ;RESTORE R2
888 003262' 011200      MOV    (R2),R0      ;GET SECOND REG VALUE
889 003264' 004577 174566      JSR    R5,28INASC      ;CONVERT IT
890 003270' 000252      .WORD    DVRCGT2-
891 003272' 004567 000016      JSR    R5,PRINT      ;PRINT THE STATUS MSG
892 003276' 000222      .WORD    DVRCMG-
893 003300' 000014      .WORD    12.
894 003302' 004567 000006      JSR    R5,PRINT
895 003306' 000226      .WORD    DVRCMG2-
896 003310' 000014      .WORD    12.
897 003312' 000205      RTS    R5                  ;EXIT IN-LINE

```

```

899                                     ;ISSUE MSG TO LIST DEVICE
900
901                                     :JSR    RS,PRINT          S/R CALL
902                                     :WORD    MSGADR-.          REL ADR OF MSG
903                                     :WORD    BYTCNT          MSG BYTE CNT (IF NEGATIVE,
904                                     :                                     RESET PRT DEV DEDICATED.)
905                                     :R3 = PROG TBL ADR
906                                     :R4 = FLAGWORD -- IF NEGATIVE, USE CMND MODE PRINT
907                                     :DESTROYS R0,R1,R2
908
909 003314' 010500          PRINT: MOV    R5,R0          ;GET MSG ADR & MAKE IT ABS
910 003316' 062500          ADD     (R5)+,R0
911 003320' 012501          MOV     (R5)+,R1          ;GET BYTE COUNT
912 003322' 005704          TST     R4              ;USE CMND MODE PRINT?
913 003324' 100030          BPL     40S              Y,N-40S
914 003326' 010702          MOV     PC,R2          ;SET UP LINK INFO ADR
915 003330' 062702 000040  ADD     820S-.,R2
916 003334' 160200          SUB     R2,R0
917 003336' 010022          MOV     R0,(R2)+
918 003340' 010112          MOV     R1,(R2)
919 003342' 100001          BPL     10S
920 003344' 005412          NEG     (R2)
921 003346' 016367 000006 000056 10S: MOV    PASCIN(R3),PROGNUM
922 003354' 004577 174474          JSR    R5,2CLIST
923 003360' 000050          .WORD    PNMMSG-.
924 003362' 000005          .WORD    5
925 003364' 004577 174464          JSR    R5,2CLIST          ;ISSUE MSG SPECIFIED
926 003370' 000000          .WORD    XXXX
927 003372' 000000          .WORD    XXXX
928 003374' 004577 174454          JSR    R5,2CLIST          ;ISSUE A <CR> & <LF>
929 003400' 000200          .WORD    CRLF-.
930 003402' 000002          .WORD    2
931 003404' 000410          BR      PRTEX
932 003406' 010067 000010 40S: MOV     R0,50S
933 003412' 010167 000006          MOV     R1,60S
934 003416' 004577 174430          JSR    R5,2ULIST
935 003422' 000000          50S: .WORD    XXXX
936 003424' 000000          60S: .WORD    XXXX
937 003426' 000205          PRTEX: RTS     R5          ;EXIT IN-LINE

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```

939          .SBTTL LP11/LS11/LV11 MESSAGE STORAGE AREA
940
941          .NLIST BEX
942
943          .EVEN
944          003430' 021520          PNMMSG: .ASCII /P# /
945          003432' 054130          011      PROGMM: .ASCII /XX/ (011)
946          003435' 101 020124 040514 ATMSG: .ASCII 'AT LAST INT:'
947          003451' 103 051125 042522 CURMSG: .ASCII /CURRENTLY:/
948          003463' 105 042116 047440 RENDMG: .ASCII /END OF REPORT/
949
950          .EVEN
951          003500' 025052 025052 054130 DVIDMG: .ASCII /####XX11 PRINTER/
952
953          .EVEN
954          003520' 054130 051503 020075 DVRGMG: .ASCII /XXCS= /
955          003526' 054130 054130 054130 DVRGDT: .ASCII /XXXXXX/
956          003534' 054130 041104 020075 DVRGM2: .ASCII /XODB= /
957          003542' 054130 054130 054130 DVRGD2: .ASCII /XXXXXX/
958
959          003550' 054502 042524 035123 CNTSMG: .ASCII /BYTES: NR= /
960          003564' 054130 054130 054130 BCMNR: .ASCII /XXXXXXXXXXXXX/
961          003600' 005015          CRLF: .ASCII (015) (012)
962
963          003602' 041411 047115 051504          .ASCII (011)/CMDS: NR= /
964          003617' 130 054130 054130 CHDCMR: .ASCII /XXXXXX MISC= /
965          003634' 054130 054130 054130 CHDCMS: .ASCII /XXXXXX/ (015) (012)
966          003644' 042411 051122 051117          .ASCII (011)/ERRORS: DEV= /
967          003663' 130 054130 054130 CNTERR: .ASCII /XXXXXX DATA= /
968          003700' 054130 054130 054130 CNTDER: .ASCII /XXXXXX/ (015) (012)
969          003710' 044411 052116 051105          .ASCII (011)/INTERRUPTS: /
970          003726' 054130 054130 054130 CNTINT: .ASCII /XXXXXX/ (015) (012)
971          003736' 040411 042104 052111          .ASCII (011)/ADDITIONAL XFERS DURING INT: /
972          003775' 130 054130 054130 CNTXFR: .ASCII /XXXXXX/
973          004003' 004003'          CNTSEN= .
974          004022' 124 046511 047505 IOTO: .ASCII 'TIMEOUT ON I/O'
975          004022' 052123 047115 020124 STNMNG: .ASCII /STINT # /
976          004032' 054130 054130 054130 STNMUM: .ASCII /XXXXXX/
977          004040' 052123 052101 051525 LPEMSG: .ASCII /STATUS ERROR/
978          004054' 042122 020131 047516 NRDMG: .ASCII /RDY NOT SET/
979          004067' 042 046120 052117 INVCHD: .ASCII '"PLOT" INV FOR LP11/LS11'
980          004120'          .EVEN
981
982          .LIST BEX
983
984          004120'          DVREND= .

```

.SBTTL FORMATS FOR PROGRAM & DEVICE ROUTINE TABLES

; PROGRAM TABLE FORMAT

PTLGTH= 162. ;PROGRAM TABLE LENGTH - NON MEM MGMT VERSION OF MPG

;(PTLGTH= 212. ;PROGRAM TABLE LENGTH - MEM MGMT VERSION OF MPG)

PFLGND= +0. ;PROGRAM FLAG WORD - 1 WORD

URSTOP= 2	:	1 = USER HAS STOPPED THIS PROGRAM
ERSTOP= 4	:	1 = AN ERROR HAS STOPPED THIS PROGRAM
WT4IOT= 10	:	1 = WAITING FOR I/O TERMINATION
CTPRIO= 20	:	1 = CONSOLE OR PRINTER I/O IN PROGRESS
SETDED= 40	:	1 = THIS PROG SET THE PRT DEV DEDICATED FLAG
OCPRES= 100	:	1 = OBJ CODE IS PRESENT
USEUBM= 200	:	1 = THIS PROG USES THE UNIBUS MAP (MEM MGMT ONLY)
ACTIVE= 100000	:	1 = PROGRAM IS ACTIVE (SPECIFIED FOR EXECUTION)

POPSH= +2. ;PROGRAM'S OPERATION SWITCHES - 1 WORD

STONER= 100000	:	1 = STOP PROG EXECUTION UPON ERROR
CYCPRG= 40000	:	1 = CYCLE PROGRAM (ON CURRENT DEVICE)
PRONER= 20000	:	1 = DO NOT PRINT ON ERROR
BIT12= 10000	:	0 = NOT USED
BIT11= 4000	:	0 = NOT USED
CYCDVL= 2000	:	1 = CYCLE THE DEVICE LIST
GTNXTD= 1000	:	1 = CYCLE ON SAME DEVICE UPON ERROR
DOERCK= 400	:	1 = DON'T DO ERROR CHECKING
SOPER= 200	:	1 = DEVICE SPECIAL OPERATION
BIT6= 100	:	0 = NOT USED
DOIOT= 40	:	1 = DO NOT PERFORM I/O TIMEOUT
AUTORP= 20	:	1 = DO NOT AUTOMATICALLY DISPLAY COUNTS
AURPEP= 10	:	1 = AUTO DISPLAY COUNTS AT END OF FINAL PASS ONLY
HSKPEP= 4	:	1 = HOUSEKEEP COUNTS ONLY AT RUN COMMAND
PFBBOV= 2	:	1 = PRINT FIRST BAD BYTE ONLY ON VERIFY
NOCMP= 1	:	1 = DO NOT PRINT PROG COMPLETED MSG

PFNADR= +4. ;PROGRAM FLAGWORD ADDRESS - 1 WORD

PASCIN= +6. ;PROGRAM'S NUMBER IN ASCII - 1 WORD

PNAME= +8. ;PROGRAM'S NAME IN ASCII - 6 BYTES

PRDIOA= +14. ;ADDRESS OF READ I/O AREA - 1 WORD

PWRIOA= +16. ;ADDRESS OF WRITE I/O AREA - 1 WORD

PSRCST= +18. ;SOURCE STATEMENTS START ADDRESS - 1 WORD

POBJST= +20. ;OBJECT CODE START ADDRESS - 1 WORD

PLNGTH= +22. ;PROG AREA LENGTH (OBJ END MINUS PROG TBL START) - 1 WORD

PTOCNT= +24. ;I/O TIMEOUT COUNT - 1 WORD

1042	000032	PMDLCD= +26.	;DEV ROUT MODEL # CODE - 1 WORD
1043			
1044	000034	PDPNTR= +28.	;CURRENT DEVICE NUMBER POINTER - 1 BYTE
1045			
1046	000035	PCURDV= +29.	;CURRENT DEVICE # - 1 BYTE
1047			
1048	000036	PDNUMS= +30.	;DEVICE NUMBERS - 16 BYTES
1049			
1050	000056	PTEM0= +46.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1051			
1052	000060	PTEM1= +48.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1053			
1054	000062	PTEM2= +50.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1055			
1056	000064	PTEM3= +52.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1057			
1058	000066	PTEM4= +54.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1059			
1060	000070	PTEM5= +56.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1061			
1062	000072	PTEM6= +58.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1063			
1064	000074	PTEM7= +60.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1065			
1066	000076	PTEM8= +62.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1067			
1068	000100	PTEM9= +64.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1069			
1070	000102	PTEM10= +66.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1071			
1072	000104	PTEM11= +68.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1073			
1074	000106	PTEM12= +70.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1075			
1076	000110	PTEM13= +72.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1077			
1078	000112	PTEM14= +74.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1079			
1080	000114	PTEM15= +76.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1081			
1082	000116	7NBR= +78.	;NUMBER OF BYTES TO TRANSFER ON MOVE (NBR) - 1 WORD
1083			
1084	000120	PS7C= +80.	;DATA SOURCE ADDRESS ON MOVE (SRC) - 1 WORD
1085			
1086	000122	PDST= +82.	;DATA DESTINATION ADDRESS ON MOVE (DST) - 1 WORD
1087			
1088	000124	PSTKCT= +84.	;# OF WORDS (X 2) SAVED OFF STACK - 1 WORD
1089			
1090	000126	PSTKSV= +86.	;STACK WORDS STORAGE AREA - 30 WORDS
1091			
1092	000222	PSVREG= +146.	;USER'S R0 THRU R5 REGISTERS STORAGE AREA - 6 WORDS
1093			
1094	000236	PUSRPC= +158.	;USER'S CURRENT PROGRAM COUNTER - 1 WORD
1095			

```

1097          ;FOLLOWING ENTRIES (PRDIOX THRU PUBMAP) ARE ONLY IN MEM MGMT VERSION
1098
1099          ;(PRDIOX= +160. ;18/22 BIT ABSOLUTE ADDRESS OF READ I/O AREA - 2 WORDS)
1100
1101          ;(PRDIOV= +164. ;18 BIT VIRTUAL ADDRESS OF READ I/O AREA - 2 WORDS)
1102
1103          ;(PWRIOX= +168. ;18/22 BIT ABSOLUTE ADDRESS OF WRITE I/O AREA - 2 WORDS)
1104
1105          ;(PWRIOV= +172. ;18 BIT VIRTUAL ADDRESS OF WRITE I/O AREA - 2 WORDS)
1106
1107          ;(PUPARS= +176. ;STORAGE AREA FOR USER'S PAR'S 0 THRU 7 - 8 WORDS)
1108
1109          ;(PUPDRS= +192. ;STORAGE AREA FOR USER'S PDR'S 0 THRU 7 - 8 WORDS)
1110
1111          ;(PUBMAP= +208. ;1ST UNIBUS MAP REG # AND # OF REGS USED - 1 WORD)
1112
1113          ;END OF MEM MGMT ONLY ENTRIES
1114
1115          000240      PTSIZE= +160. ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - NON MEM MGMT
1116
1117          ;(PTSIZE= +210. ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - MEM MGMT VERSION)
1118
1119          000242      PTEND= +162. ;END OF PROGRAM TABLE - NON MEM MGMT VERSION
1120
1121          ;(PTEND= +212. ;END OF PROGRAM TABLE - MEM MGMT VERSION)

```

		;	DEVICE ROUTINE TABLE	
1123				
1124				
1125				
1126	000116	DRTLTH= 78.	;DEVICE ROUTINE TABLE LENGTH	
1127		:		
1128				
1129	000000	DEVRSZ= +0.	;DEVICE ROUTINE SIZE IN BYTES - 1 WORD	
1130				
1131	000002	DEVFWD= +2.	;DEVICE ROUTINE FLAGWORD - 1 WORD	
1132				
1133	000004	DEVIW1= +4.	;DEVICE INTERFACE WORD # 1 - 1 WORD	
1134				
1135	000006	DEVIW2= +6.	;DEVICE INTERFACE WORD # 2 - 1 WORD	
1136				
1137	000010	DEVIW3= +8.	;DEVICE INTERFACE WORD # 3 - 1 WORD	
1138				
1139	000012	DEVIW4= +10.	;DEVICE INTERFACE WORD # 4 - 1 WORD	
1140				
1141	000014	DEVIW5= +12.	;DEVICE INTERFACE WORD # 5 - 1 WORD	
1142				
1143	000016	DEVIW6= +14.	;DEVICE INTERFACE WORD # 6 - 1 WORD	
1144				
1145	000020	DEVIW7= +16.	;DEVICE INTERFACE WORD # 7 - 1 WORD (SIZE)	
1146				
1147	000022	DEVIW8= +18.	;DEVICE INTERFACE WORD # 8 - 1 WORD (ERR)	
1148				
1149	000024	DEVDR= +20.	;DEVICE REGISTERS ADDRESS - 1 WORD	
1150				
1151	000026	DEVIVA= +22.	;DEVICE INTERRUPT VECTOR ADDRESS - 1 WORD	
1152				
1153	000030	DEVRRS= +24.	;DEVICE READ PROCESSOR STATUS WORD (BUS REQ) - 1 WORD	
1154				
1155	000032	DEVWPS= +26.	;DEVICE WRITE PROC STATUS WORD (BUS REQ) - 1 WORD	
1156				
1157	000034	DHKNAD= +28.	;DEVICE ROUT HOUSEKEEPING ROUT REL ENTRY ADR - 1 WORD	
1158				
1159	000036	DERPAD= +30.	;DEVICE ROUT REPORT ROUT REL ENTRY ADR - 1 WORD	
1160				
1161	000040	DKILAD= +32.	;DEVICE ROUT KILL ROUTINE REL ENTRY ADR - 1 WORD	
1162				
1163	000042	DECTAD= +34.	;DEVICE ROUT ERROR COUNTER REL ADR - 1 WORD	
1164				
1165	000044	DTOEAD= +36.	;DEVICE ROUT TIMEOUT ERR ROUT REL ENTRY ADR - 1 WORD	
1166				
1167	000046	DEVI08= +38.	;DEVICE I/O BUSY BRANCH ADDRESS (CIOBSY) - 1 WORD	
1168				
1169	000050	DEVDER= +40.	;DEVICE ERROR BRANCH ADDRESS (CUPGER) - 1 WORD	
1170				
1171	000052	DVUPRT= +42.	;USER MODE PRINT BRANCH ADDRESS (ULIST) - 1 WORD	
1172				
1173	000054	DVCPRT= +44.	;CMND MODE PRINT BRANCH ADDRESS (CLIST) - 1 WORD	
1174				
1175	000056	DEVBT= +46.	;CONVERT BINARY TO ASCII BR ADR (BINASC) - 1 WORD	
1176				
1177	000060	DVBTD= +48.	;CONVERT BINARY TO DECIMAL ASCII BR ADR (BTASLZ) - 1 WORD	
1178				

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 FORMATS FOR PROGRAM & DEVICE ROUTINE TABLES

1179	000062	DVPDTA= +50.	; CONVERT PACKED DECIMAL TO ASCII BR ADR (DECASC) - 1 WORD
1180			
1181	000064	DVSFMD= +52.	; MPG SYSTEM FLAGWORD ADDRESS (CSYSFW) - 1 WORD
1182			
1183	000066	DVSVEC= +54.	; SET INTERRUPT VECTOR BR ADR (SETVEC) - 1 WORD
1184			
1185	000070	DVCVEC= +56.	; CLEAR INTERRUPT VECTOR BR ADR (CLAVEC) - 1 WORD
1186			
1187	000072	DVTVEC= +58.	; TEST INTERRUPT VECTOR BR ADR (TSTVEC) - 1 WORD
1188			
1189	000074	DVRINT= +60.	; RETURN FROM INTERRUPT BR ADR (RTNINT) - 1 WORD
1190			
1191	000076	DVGETB= +62.	; GET DATA BYTE BR ADR (GETBYT) - 1 WORD
1192			
1193	000100	DVPUTB= +64.	; PUT DATA BYTE BR ADR (PUTBYT) - 1 WORD
1194			
1195	000102	DEVSTP= +66.	; DEVICE ROUT REL SYMBOL TABLE POINTER - 1 WORD
1196			
1197	000104	DEVETP= +68.	; DEVICE ROUT REL ENTRY TABLE POINTER - 1 WORD
1198			
1199	000106	DVPTEP= +70.	; PACK TABLE EXTEN. REL POINTER - 1 WORD
1200			
1201	000110	DVVTEP= +72.	; VECTOR TABLE EXTEN. REL POINTER - 1 WORD
1202			
1203	000112	DVCTEP= +74.	; COMPILER TBL EXTEN. REL POINTER - 1 WORD
1204			
1205	000114	DVIMSP= +76.	; DEVICE INTERFACE WORD SYMBOL TBL REL POINTER - 1 WORD
1206			
1207	000116	DRTEND= +78.	; END OF DEVICE ROUTINE TABLE
1208			
1209			
1210			
1211	000001	.END	

ACTIVE=	100000		DEVIVA=	000026		EOT	001600R	002	PASCIN=	000006		PUSAPC=	000236	
ATTMSG	003435R	002	DEVIN1=	000004		EOTBYT	001645R	002	PC	=%000007		PUTBYT	000100R	002
AURPEP=	000010		DEVIN2=	000006		ERRBAS	002576R	002	PCURDV=	000035		PR10R	000020	
AUTOP=	000020		DEVIN3=	000010		ERR	000022R	002	PONUM=	000036		PSCONS=	120000	
BCMR	003554R	002	DEVIN4=	000012		ERRADR	000604R	002	POPNTN=	000034		REGNUM=	000002	
BINASC	000056R	002	DEVIN5=	000014		ERRCNT	000574R	002	POST	= 000122		RENOMG	003463R	002
BIT11 =	004000		DEVIN6=	000016		ERRCOM	002536R	002	PFB90V=	000002		REPORT	000656R	002
BIT12 =	010000		DEVIN7=	000020		ERRCS	002512R	002	PFLGMD=	000000		REPTBL	001132R	002
BIT6 =	000100		DEVIN8=	000022		ERRCS1	002520R	002	PFNADR=	000004		RESREG	003104R	002
BTRSL2	000060R	002	DE/APS=	000030		ERRRX	002576R	002	PLNGTH=	000026		RINTEX	003036R	002
BUFCLR	001646R	002	D.VRS2=	000000		ERRIS	002530R	002	PLOT	001306R	002	RINTV	003014R	002
BYTCNT	000610R	002	DEVSTP=	000102		ERRSNM	002520R	002	PLTEOT	001630R	002	RPTBAS	001066R	002
BYMR	000564R	002	DEVWPS=	000032		ERSTAD	002616R	002	PLTEAR	001332R	002	RPTEND	001112R	002
CIOBSY	000046R	002	DFLGMD	000002R	002	ERSTOP=	000004		PLTTOF	001564R	002	RPTLP	001050R	002
CKOBSY	002400R	002	DHAPAD=	000034	002	FORMFD	001644R	002	PNOLCD=	000032		RTNINT	000074R	002
CKRDY	001750R	002	DISCNT	001022R	002	GETBYT	000076R	002	PNAME =	000010		R0	=%000000	
CK4LTH	002152R	002	DISPST	003242R	002	GTNXTD=	001000		PNR =	000116		R1	=%000001	
CLIST	000054R	002	DKILAD=	000040		HSKEEP	000622R	002	PNMSC	003430R	002	R2	=%000002	
CLAVEC	000070R	002	DOERCK=	000400		HSKPEN=	000622R	002	POBJST=	000024		R3	=%000003	
CHDCMS	003634R	002	DO10T =	000040		HSKPEP=	000004		POPSH =	000002		R4	=%000004	
CHDCOM	001704R	002	DREGAD	000024R	002	HSKPST=	000554R	002	PRD10R=	000016		R5	=%000005	
CHDCMR	003617R	002	DRTEND=	000116		INTCNT	000600R	002	PRINT	003314R	002	SAVREG	003070R	002
CHDEX	002036R	002	DRTLTH=	000116		INTEX1	002320R	002	PROCTH	002700R	002	SETDED=	000040	
CHTDER	003700R	002	DTOEAR=	000044		INTEX2	002350R	002	PROGNM	003432R	002	SETVEC	000066R	002
CNTERR	003663R	002	DVBTD=	000060		INTEX3	002360R	002	PRONER=	020000		SIZE	000020R	002
CNTINT	003726R	002	DVCMS	000176R	002	INVCHD	004067R	002	PRTEX	003426R	002	SNOBYT	002120R	002
CNTNUM=	000010		DVCPR1=	000054		IOT0	004003R	002	PRTOK	001766R	002	SP	=%000006	
CNTSEN=	004003R	002	DVCPT=	000444R	002	ISTAT	000554R	002	PSRC =	000120		SPACE	001424R	002
CNTSHG	003550R	002	DVCTEP=	000112		IVCTAD	000026R	002	PSRCST=	000022		SPCNT	000620R	002
CNTXFR	003775R	002	DVCVEC=	000070		KILL	001232R	002	PSTKCT=	000124		SPDATA	000616R	00

D03

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 SYMBOL TABLE

MACY11 27(732) 24-SEP-76 13:57 PAGE 11-1

SEQ 0353

XXXX = 000000 . = 004120R 002

. ABS.	000000	000
	000000	001
LP11	004120	002

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

*DTLPAB/NL:TOC/DOC=DTLPAB.P11
RUN-TIME: 37.9 SECONDS
RUN-TIME RATIO: 15/11=1.3
CORE USED: 5K (9 PAGES)

DOCUMENT PAGES: 29

Speaker, routine 4 seconds, 21 M2, 112 disk reads, 3 disk writes, 79 pages

[illegible]