

./TITLE LP15
./LINE PRINTER SYSTEM EXECISER MODULE,
./REV. DATE -- 3/1/71 -- (1)
/

./EBREL

00000 R 600016 A
00001 R 000000 A
00002 R 000000 A
00003 R 000000 A
00004 R 000070 R
00005 R 000032 R
00006 R 142061 A
00007 R 650640 A
00010 R 000100 A
00011 R A

UODSW 600016
0
0
0
.DSA LPTSER
.DSA LPTINT
.SIXBT "LP15F "
100 /MASK FOR CHAIN MODE
.BLOCK 7

00020 R 000000 A
00021 R 000000 A
00022 R 000000 A
00023 R A

./SYSERR 0
./ERWC 0
./ERCODE 0
./BLOCK 7

./INITIATION ROUTINE, ENTERED FROM MONITOR,
/

00032 R 000000 A
00033 R 707764 A
00034 R 707702 A
00035 R 200032 R
00036 R 040070 R
00037 R 440600 R
00040 R 600556 R
00041 R 777777 A
00042 R 040600 R
00043 R 706621 A
00044 R 706641 A
00045 R 141114 R
00046 R 141115 R
00047 R 140020 R
00050 R 140021 R
00051 R 777770 A
00052 R 041125 R
00053 R 100547 R
00054 R 100276 R
00055 R 100320 R
00056 R 100547 R
00057 R 100522 R
00060 R 100547 R
00061 R 100464 R
00062 R 100547 R
00063 R 100403 R
00064 R 100410 R
00065 R 441125 R
00066 R 600053 R
00067 R 600107 R

LPTINT 0
EBA
EEM
LAC LPTINT
DAC LPTSER
ISZ SWITCH
JMP OUTEX
LAW =1
DAC SWITCH
CLF
CLE
DZM APIFLG#
DZM BRKFLG#
DZM SYSERR
DZM ERWC
LAW -TSTRUN
DAC RUNLEN#
LPTIN1 JMS PRTRF
JMS LFWD
JMS RTWD
JMS PRTRF
JMS BUFSNG
JMS PRTRF
JMS PRTRQI
JMS PRTRF
JMS IOPPR
JMS PLSPR
ISZ RUNLEN
JMP LPTIN1
JMP TERMIN

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,EJECT

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/SERVICE ENTRANCE FROM THE MONITOR,
00070 R 000000 A LPTSER 0 /SERVICE ENTRANCE,
00071 R 707764 A EBA
00072 R 707702 A EEM
00073 R 100157 R JMS FLAG
00074 R 620075 R JMP* EXIT

/
EXIT 0 /ROUTINE FOR EXIT TO THE MONITOR,
00075 R 000000 A LAC APIFLG
00076 R 201114 R SNA
00077 R 741200 A JMP ,+5
00100 R 600105 R DZM APIFLG
00101 R 141114 R LAC ACSAVE#
00102 R 201113 R DBR
00103 R 703344 A JMP* LPTSER
00104 R 620070 R CLA
00105 R 750000 A JMP ,=3
00106 R 600103 R

/
TERMIN LAC SYSERR /TERMINATE ROUTINE,
00110 R 741200 A SNA
00111 R 140021 R DZM ERWC
00112 R 777774 A LAW =4
00113 R 040020 R DAC SYSERR
00114 R 141115 R DZM BRKFLG
00115 R 100075 R JMS EXIT
00116 R 740040 A HLT

/
/MONITOR EXIT ROUTINE - EXPECTS FLAG DRIVEN RETURN,
/
00117 R 000000 A MONEXT 0
00120 R 141115 R DZM BRKFLG
00121 R 100075 R JMS EXIT
00122 R 620117 R JMP* MONEXT

/
/BREAK EXIT TO THE MONITOR,
/
BRKEXT 0
00123 R 000000 A LAC SYSERR
00124 R 200020 R SZA
00125 R 740200 A JMP ,+4
00126 R 600132 R DZM ERWC
00127 R 140021 R LAW =2
00130 R 777773 A SKP
00131 R 741000 A LAW =2
00132 R 777776 A DAC SYSERR
00133 R 040020 R LAW =1
00134 R 777777 A DAC BRKFLG
00135 R 041115 R JMS EXIT
00136 R 100075 R JMP* BRKEXT
00137 R 620123 R ,EJECT

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/HOLD SUBROUTINE, HOLD ON OPTION SWITCH SET,
00140 R 000000 A HOLD 0
00141 R 750004 A LAS
00142 R 500010 R AND UODSW+10
00143 R 741200 A SNA
00144 R 620140 R JMP# HOLD
00145 R 100123 R JMS BRKEXT
00146 R 600141 R JMP ,=5

/PRINT EXIT ROUTINE,
00147 R 000000 A PRT 0
00150 R 201133 R LAC (BUF=1
00151 R 060565 R DAC# SYSCA
00152 R 100140 R JMS HOLD
00153 R 706541 A LPC
00154 R 706544 A PIE
00155 R 100117 R JMS MONEXT
00156 R 620147 R JMP# PRT

/FLAG CHECK ROUTINE USED ON RETURN FROM MONITOR,
/
00157 R 000000 A FLAG 0
00160 R 041113 R DAC ACSAVE
00161 R 201134 R LAC (400000
00162 R 705501 A SPI
00163 R 600201 R JMP APIOFF
00164 R 777777 A LAW =1
00165 R 041114 R DAC APIFLG
00166 R 706501 A LSF
00167 R 600272 R JMP ER1+1

/
00170 R 706561 A FLAG1 PID
00171 R 141115 R DZM BRKFLG
00172 R 750000 A CLA
00173 R 706542 A LSE
00174 R 706621 A CLF
00175 R 706641 A CLE
00176 R 741100 A SPA
00177 R 100216 R JMS ER2
00200 R 620157 R JMP# FLAG

/
00201 R 706501 A APIOFF LSF
00202 R 741000 A SKP
00203 R 600170 R JMP FLAG1
00204 R 201115 R LAC BRKFLG
00205 R 741200 A SNA
00206 R 600214 R JMP ,+6
00207 R 200020 R LAC SYSERR
00210 R 740200 A SZA
00211 R 600214 R JMP ,+3
00212 R 141115 R DZM BRKFLG
00213 R 620157 R JMP# FLAG
00214 R 750001 A CLC
00215 R 620070 R JMP# LPTSER
,EJECT

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/ERROR ROUTINES,
/ERROR 2, FLAG ERROR FROM PRINTER CONTROL,
ER2 0
00216 R 000000 A
00217 R 041117 R DAC ER2TMP#
00220 R 201135 R LAC (2)
00221 R 100231 R JMS RESPUT
00222 R 201117 R LAC ER2TMP
00223 R 100255 R JMS PUT
00224 R 200601 R LAC BUF
00225 R 100255 R JMS PUT
00226 R 100262 R JMS ENDPUT
00227 R 140600 R DZM SWITCH
00230 R 600107 R JMP TERMIN

/RESET ERROR PUT AWAY ROUTINE,
/RESPUT 0
00231 R 000000 A
00232 R 041124 R DAC RESTMP#
00233 R 200020 R LAC SYSERR
00234 R 741200 A SNA
00235 R 600241 R JMP RESP,2
00236 R 541136 R SAD (-1)
00237 R 600247 R JMP RESP,1
00240 R 740040 A HLT

/RESP,2 LAC RESTMP
00241 R 201124 R DAC ERCODE
00242 R 040022 R LAC (ERCODE+1)
00243 R 201137 R DAC PUT,1
00244 R 041122 R DZM PUT,2
00245 R 141123 R JMP* RESPUT
00246 R 620231 R RESP,1 LAW -2
00247 R 777776 A DAC SYSERR
00250 R 040020 R LAW -1
00251 R 777777 A DAC BRKFLG
00252 R 041115 R JMS EXIT
00253 R 100075 R JMP RESP,2
00254 R 600241 R

/PUTAWAY ROUTINE FOR ERROR PRAMETERS,
/PUT 0
00255 R 000000 A DAC* PUT,1#
00256 R 061122 R ISZ PUT,1
00257 R 441122 R ISZ PUT,2#
00260 R 441123 R JMP* PUT
00261 R 620255 R

/END PUT AWAY ROUTINE
/ENDPUT 0
00262 R 000000 A LAC PUT,2
00263 R 201123 R CMA
00264 R 740001 A DAC ERWC
00265 R 040021 R LAW -1
00266 R 777777 A DAC SYSERR
00267 R 040020 R JMP* ENDPUT
00270 R 620262 R ,EJECT

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/ERROR 1 - ERROR ROUTINE FOR API ERROR,

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/
00271 R 000000 A ER1 0
00272 R 201140 R LAC (1
00273 R 100231 R JMS RESPUT
00274 R 100262 R JMS ENDPUT
00275 R 600107 R JMP TERMIN

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/LEFT WEDGE ROUTINE,

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/
00276 R 000000 A LFWD 0
00277 R 100346 R JMS BUFCLR
00300 R 201140 R LAC (1)
00301 R 040601 R DAC BUF
00302 R 201141 R LAC (BUF+121
00303 R 041116 R DAC BUFPTR#

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/
00304 R 100147 R LFWD,1 JMS PRT
00305 R 200570 R LAC LF
00306 R 061116 R DAC* BUFPTR
00307 R 201116 R LAC BUFPTR
00310 R 341136 R TAD (=1)
00311 R 041116 R DAC BUFPTR
00312 R 740001 A CMA
00313 R 341140 R TAD (1)
00314 R 341142 R TAD (BUF+1
00315 R 740200 A SZA
00316 R 600304 R JMP LFWD,1
00317 R 620276 R JMP* LFWD

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/RIGHT WEDGE PRINT ROUTINE,

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/
00320 R 000000 A RTWD 0
00321 R 100346 R JMS BUFCLR
00322 R 201140 R LAC (1)
00323 R 040601 R DAC BUF
00324 R 201143 R LAC (BUF+2)
00325 R 041116 R DAC BUFPTR
00326 R 777660 A LAW =120
00327 R 041126 R DAC TEMP

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/
00330 R 100147 R RTWD,1 JMS PRT
00331 R 200571 R LAC SPC
00332 R 061116 R DAC* BUFPTR
00333 R 441116 R ISZ BUFPTR
00334 R 441126 R ISZ TEMP
00335 R 600330 R JMP RTWD,1
00336 R 620320 R JMP* RTWD
,EJECT

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00337 R 000000 A
00340 R 777742 A
00341 R 041126 R
00342 R 100147 R
00343 R 441126 R
00344 R 600342 R
00345 R 620337 R

PAGPRT 0
LAW =36
DAC TEMP
JMS PRT
ISZ TEMP
JMP =2
JMP* PAGPRT
/CLEAR BUFFER TO A SINGLE CHARACTER,
/

00346 R 000000 A
00347 R 201143 R
00350 R 041126 R
00351 R 777660 A
00352 R 041127 R
00353 R 200566 R
00354 R 061126 R
00355 R 441126 R
00356 R 441127 R
00357 R 600354 R
00360 R 200570 R
00361 R 061126 R
00362 R 620346 R

BUFCLR 0
LAC (BUF+2
DAC TEMP#
LAW =120
DAC TEMP1#
LAC CHAR
DAC* TEMP
ISZ TEMP
ISZ TEMP1
JMP =3
LAC LF
DAC* TEMP
JMP* BUFCLR

00363 R 000000 A
00364 R 201143 R
00365 R 041126 R
00366 R 777760 A
00367 R 041127 R
00370 R 200572 R
00371 R 061126 R
00372 R 441126 R
00373 R 200573 R
00374 R 061126 R
00375 R 441126 R
00376 R 441127 R
00377 R 600370 R
00400 R 200574 R
00401 R 061126 R
00402 R 620363 R

BUFESP 0
LAC (BUF+2
DAC TEMP
LAW =20
DAC TEMP1
LAC ESP1
DAC* TEMP
ISZ TEMP
LAC ESP2
DAC* TEMP
ISZ TEMP
ISZ TEMP1
JMP =7
LAC IOPSLF
DAC* TEMP
JMP* BUFESP
EJECT

/IOPS MODE PRINT == PRINT EES AND SPACES,

00403 R 000000 A
00404 R 140601 R
00405 R 100363 R
00406 R 100337 R
00407 R 620403 R

IOPPRT 0
DZM BUF
JMS BUFESP
JMS PAGPRT
JMP* IOPPRT

/EXCLAMATION POINT FOLLOWED BY PLUS SIGN PRINT,
/THIS PATTERN PRODUCES HIGH SPEED PRINT,

00410 R 000000 A
00411 R 201140 R
00412 R 040601 R
00413 R 100416 R
00414 R 100337 R
00415 R 620410 R

PLSPRT 0
LAC (1)
DAC BUF
JMS BUFPLS
JMS PAGPRT
JMP* PLSPRT

/CLEAR BUFFER FOR EXCLAMATION AND PLUS PRINT,

00416 R 000000 A
00417 R 201143 R
00420 R 041126 R
00421 R 777774 A
00422 R 041130 R
00423 R 200577 R
00424 R 041132 R
00425 R 777754 A
00426 R 041127 R
00427 R 201132 R
00430 R 061126 R
00431 R 441126 R
00432 R 441127 R
00433 R 600430 R
00434 R 201132 R
00435 R 341144 R
00436 R 041132 R
00437 R 441130 R
00440 R 600425 R
00441 R 200570 R
00442 R 061126 R
00443 R 620416 R

BUFPLS 0
LAC (BUF+2)
DAC TEMP
LAW =4
DAC TEMP2#
LAC EXCLM
DAC TEMP4#
BUFPL1 LAW =24
DAC TEMP1
LAC TEMP4
BUFPL4 DAC* TEMP
ISZ TEMP
ISZ TEMP1
JMP BUFPL4
LAC TEMP4
TAD (12)
DAC TEMP4
ISZ TEMP2
JMP BUFPL1
LAC LF
DAC* TEMP
JMP* BUFPLS
EJECT

/PRINT ROTATING PATTERN...

00444	R	000000	A	BUFROT	0
00445	R	777775	A	LAW	=3
00446	R	041126	R	DAC	TEMP
00447	R	201143	R	LAC	(BUF+2
00450	R	041127	R	DAC	TEMP1
00451	R	777700	A	LAW	=100
00452	R	041130	R	DAC	TEMP2#
00453	R	200571	R	LAC	SPC
00454	R	061127	R	DAC*	TEMP1
00455	R	341140	R	TAD	(1)
00456	R	441127	R	ISZ	TEMP1
00457	R	441130	R	ISZ	TEMP2
00460	R	600454	R	JMP	=4
00461	R	441126	R	ISZ	TEMP
00462	R	600451	R	JMP	=11
00463	R	620444	R	JMP*	BUFROT

/ACTUAL PRINT ROTATING PATTERN ROUTINE,

00464	R	000000	A	PRTRT	0
00465	R	100444	R	JMS	BUFROT
00466	R	201145	R	LAC	(BUF
00467	R	041130	R	DAC	TEMP2
00470	R	777660	A	LAW	=120
00471	R	041127	R	DAC	TEMP1
00472	R	201133	R	LAC	(BUF=1
00473	R	041116	R	DAC	BUFPTR
00474	R	201146	R	LAC	(BUF+122
00475	R	041120	R	DAC	LFPTR#
00476	R	221120	R	LAC*	LFPTR
00477	R	041121	R	DAC	LFSAV#
00500	R	200570	R	LAC	LF
00501	R	061120	R	DAC*	LFPTR
00502	R	201140	R	LAC	(1)
00503	R	061130	R	DAC*	TEMP2
00504	R	201116	R	LAC	BUFPTR
00505	R	060565	R	DAC*	SYSCA
00506	R	100140	R	JMS	HOLD
00507	R	706541	A	LPC	
00510	R	706544	A	PIE	
00511	R	100117	R	JMS	MONEXT
00512	R	201121	R	LAC	LFSAV
00513	R	061120	R	DAC*	LFPTR
00514	R	441120	R	ISZ	LFPTR
00515	R	441116	R	ISZ	BUFPTR
00516	R	441130	R	ISZ	TEMP2
00517	R	441127	R	ISZ	TEMP1
00520	R	600476	R	JMP	PRTRT1
00521	R	620464	R	JMP*	PRTRT

.EJECT

/PRINT SINGLE LINES OF ALL THE SAME CHARACTERS,

00522	R	000000	A	BUFSNG	0	
00523	R	201140	R		LAC	(1)
00524	R	040601	R		DAC	BUF
00525	R	777700	A		LAW	=100
00526	R	041126	R		DAC	TEMP
00527	R	200571	R		LAC	SPC
00530	R	041131	R		DAC	TEMP3#
00531	R	201143	R	BUFSN1	LAC	(BUF+2
00532	R	041127	R		DAC	TEMP1
00533	R	777660	A		LAW	=120
00534	R	041130	R		DAC	TEMP2
00535	R	201131	R		LAC	TEMP3
00536	R	061127	R		DAC*	TEMP1
00537	R	441127	R		ISZ	TEMP1
00540	R	441130	R		ISZ	TEMP2
00541	R	600536	R		JMP	,=3
00542	R	100147	R		JMS	PRT
00543	R	441131	R		ISZ	TEMP3
00544	R	441126	R		ISZ	TEMP
00545	R	600531	R		JMP	BUFSN1
00546	R	620522	R		JMP*	BUFSNG

00547	R	000000	A	PRTFF	0	
00550	R	200567	R		LAC	FF
00551	R	040603	R		DAC	BUF+2
00552	R	201140	R		LAC	(1)
00553	R	040601	R		DAC	BUF
00554	R	100147	R		JMS	PRT
00555	R	620547	R		JMP*	PRTFF

00556	R	777700	A	OUTEX	LAW	=100
00557	R	040600	R		DAC	SWITCH
00560	R	777771	A		LAW	=7
00561	R	040020	R		DAC	SYSERR
00562	R	100075	R		JMS	EXIT
00563	R	740040	A		HLT	
					.EJECT	

/CONSTANTS,,

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00564 R 000034 A SYSWC 34
00565 R 000035 A SYSCA 35
00566 R 000315 A CHAR 315
00567 R 000214 A FF 214
00570 R 000212 A LF 212
00571 R 000240 A SPC 240
00572 R 424100 A ESP1 424100
00573 R 402212 A ESP2 402212
00574 R 050000 A IOPSLF 50000
00575 R 000000 A 0
00576 R 000253 A PLUS 253
00577 R 000241 A EXCLM 241
00600 R 777777 A SWITCH 777777
000010 A TSTRUN=10

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/M CHARACTER,

/LINE FEED CHARACTER,

/SPACE CHARACTER,

```

00601 R 000001 A BUF 1
00602 R 000000 A 0
00603 R A ,BLOCK 310

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706621 A CLF=706621
706641 A CLE=706641
706541 A LPC=706541
706542 A LSE=706542
706501 A LSF=706501
706544 A PIE=706544
706561 A PID=706561
707764 A EBA=707764
707702 A EEM=707702

```

/CLEAR DONE FLAG,

/CLEAR STATUS AND ERROR FLAG,

/PRINT ONE LINE,

/READ STATUS,

/SKIP IF DONE OR ERROR FLAG SET,

/ENABLE INTERRUPT SYSTEM,

/DISABLE INTERRUPT SYSTEM,

,END UODSW

```

01133 R 000600 R #L
01134 R 400000 A #L
01135 R 000002 A #L
01136 R 777777 A #L
01137 R 000023 R #L
01140 R 000001 A #L
01141 R 000722 R #L
01142 R 000602 R #L
01143 R 000603 R #L
01144 R 000012 A #L
01145 R 000601 R #L
01146 R 000723 R #L

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SIZE=01155

NO ERROR LINES

