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1          ;***COPYRIGHT 1969, DIGITAL EQUIPMENT CORP., MAYNARD, MASS.***
2
3
4          ;THIS SUB-PROGRAM ASSEMBLED WITH SYSTEM PARAMETER FILE - S,MAC(V414)
5          XLIST
6          LIST
7          TITLE PTYSRH - HALF DUPLEX PSEUDO TELETYPE SERVICE ROUTINES
8          SUBTTL D. WITCRAFT/RAP TS3,19 24 SEP 68 V004
9          XF      VPTYSR,024*
10
11          ;PUT VERSION NUMBER IN GLOBR LISTING AND LOADER STORAGE MAP
12
13          ENTRY PTYSRH          ;DUMMY GLOBR FOR HALF DUPLEX PTY
14          PTYSRH:
15
16          ;ACCUMULATOR ASSIGNMENTS
17
18          000006          DDR=DEVDAT
19          000002          LINE=TAC1
20
21          000010          CHREC=TEM
22          000012          SCNMAC=12
23          000013          PIOS=13
24          000014          PDDR=14
25          000040          RPTB=400
26
27          002000          SP=2000          ;SPECIAL TTY CHARACTER
28          010000          T37=10000      ;MODEL 37--FULL CHARACTER SET
29          040000          SYNC=40000     ;BREAK CHARACTER SEEN---FROM SCNSER
30
31          ;PTY DEVICE DEPENDENT IO STATUS BITS (RH DEVIOS)
32
33          004000          IOPTW=4000      ;OUTPUT WAIT (OBJ, JOB HAS DONE INPUT)
34          002000          IOPTRE=2000    ;PTY RESPONSE IS READY
35          001000          MONMOD=1000    ;PTY IS IN MONITOR MODE
36
37          INTERNAL FTCHECK,FTMONP
38          IFN FTCHECK+FTMONP,<
39          EXTERNAL PTYDDR,PTYCSV,PTYSAC,PTYBND,PTYRM1,PTYDDS,PIOSAV,PDDSAV
40          EXTERNAL PTYSAV,PTYSA2,PTYRET,PACSAV
41          INTERNAL PTYSA0,PTYRE0,ACSAV0
42          >
43          IFE FTCHECK+FTMONP,<
44          ;PSEUDO CONSOLE DEVICE DATA BLOCK
45          ;REMAINING PTY DDB'S ARE GENERATED
46          ;OUT OF LINE AT BUILD TIME
47          INTERN PTYDDB
48          ZZ=,
49          000000 606471 203000 PTYDDB: SIXBIT /PTY0/
50          000001 000000 010021 XWD 0,10000+STTYRF+1          ;PTY0 IS UNIT 1, PTY1 IS UNIT 2, ETC.
51          000002 000000 000000 Z
52          000003 000000 000033 EXP PTYDSP
53          000004 000003 000003 XWD 0VIN+0VOUT,3
54          000005 000000 000000 Z
55          000006 000000 000000 Z
56          000007 000007 000000 XWD PROG,0

```

57	000010	000007	000000	XWD	PRG,0
58	000011	000000	000000	Z	
59				XP	PTYCSV,,-ZZ+
60	000012	000000	000000	Z	
61				XP	PTYSAC,,-ZZ+

```
62 000013                    BLOCK    13  
63                    XP        PTYBND,PTYSAC+12+  
64                    XP        PTYBND,PTYBND-1+  
65                    XP        PTYDDB,,-27        ;SIZE OF PTY DDB  
66  
67 000026 251500 000000 PTYSA2: BLT        SCNHAC,0  
68 000027 000000 000000 PIOSAV: 0  
69 000030 000000 000000 PDDSAV: 0  
70                    >
```

```
71
72          INTERNAL PTYDSP
73          EXTERNAL OUT
74 000031 263140 000000          POPJ  PDP,
75 000032 263140 000000          POPJ  PDP,
76 000033 254000 000037' PTYDSP; JRST PTYREL
77 000034 254000 000000          JRST OUT
78 000035 254000 000051'          JRST PTYOUT
79 000036 254000 000161'          JRST PTYIN
;INITIALIZATION
;PRINT ERROR, STOP JOB
```

```
          EXTERNAL PTYTAB, TCONLN, TTYTAB, TTYKIL
R0
R1
R2 000037 135100 000351' PTYREL: LDR LINE, [POINT 6, DEVCHR(ODB), 23]
R3 000040 402002 000000          SETZM PTYTAB(LINE)
R4 000041 271100 000000          ADDI LINE, TCONLN
R5 000042 336002 000000          SKIPN TTYTAB(LINE)
R6 000043 263140 000000          POPJ PDP,
R7 000044 261140 000006          PUSH PDP, ODB
R8 000045 550302 000342'          HRRZ ODB, TTYTAB(LINE)
R9 000046 260140 000000          PUSHJ PDP, TTYKIL
R0 000047 262140 000006          POP PDP, ODB
R1 000050 263140 000000          POPJ PDP,
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92          ;PTY OUTPUT
93          ;IF NO TTYTAB ENTRY EXISTS FOR THIS PTY, A SPACE IS
94          ;SENT TO SCASER (TCOMM) CAUSING AN ENTRY TO BE MADE IF
95          ;A TTY DATA BLOCK IS AVAILABLE. IF NONE IS AVAILABLE,
96          ;AN "X" IS RETURNED IN WHICH CASE IODERR IS SET IN PTY STATUS
97          ;AND OUTPUT IS TERMINATED.
98
99          ;IF A TTY DEVICE DATA BLOCK IS AVAILABLE, CHARACTERS ARE
100         ;TRANSMITTED TO TCOMM. IF A RESPONSE IS RECEIVED AS INDICATED
101         ;BY THE SP BIT IN TTY STATUS, THE PTY OUTPUT BUFFER IS
102         ;ADVANCED, IOPTRE IS SET IN PTY STATUS, AND CONTROL RETURNS
103         ;TO THE OUTPUT UOO AND THENCE TO THE USER.
104         ;IF NO RESPONSE IS ENCOUNTERED, OUTPUT PROCEEDS IN THE
105         ;NORMAL FASHION ADVANCING THE PTY OUTPUT BUFFERS
106         ;UNTIL THEY ARE EMPTY.
107
108         ;IOPTRE IS SET EVERY TIME THE JOB RUNNING ON THE PTY (OBJECT JOB)
109         ;DOES AN "OUTPUT" UOO. IOPTI IS SET WHENEVER THE OBJECT JOB DOES
110         ;AN INPUT, THE OBJECT JOB THEN GOES INTO I/O WAIT UNTIL THE JOB WITH
111         ;THE PTY ASSIGNED (CONTROL JOB) HAS COMPLETED ITS OUTPUT UOO.
112         ;MONMOD INDICATES PTY IS IN MONITOR MODE (ITS LINKED TTYDOB HAS TPMON
113         ;SET IN LH OF IOS)
114
115
116         EXTERNAL TCONLN,TTYTAB,TCOMM,TPYTAB,PTYTAB,ITMCNT,SETIOD
117         EXTERNAL ADVRFE,PUNIT
118
119         000051 135100 000000 PTYOUT: LDR LINE,PUNIT
120         000052 264000 000247' JSR PTYSAV
121         000053 336002 000040' SKIPN PTYTAB(LINE)
122         000054 552302 000053' HRRZM DOB,PTYTAB(LINE)
123         000055 332002 000000 SKIPE TPYTAB(LINE) ;HAS A TTY DOB BEEN ASSIGNED?
124         000056 254000 000072' JRST PTYOU0-1 ;YES
125         000057 271100 000041' ADDI LINE,TCONLN
126         000060 201400 000240 MOVEI CHREC,240 ;NO
127         000061 260140 000000 PUSHJ POP,TCOMM
128         000062 302400 000130 CAIE CHREC,"X" ;ANY AVAILABLE?
129         000063 254000 000070' JRST PTYOU6 ;YES
130         000064 264000 000260' JSR PTYRET
131         000065 660000 200000 TRO IOS,IODERR ;NO
132         000066 202006 000002 MOVEM IOS,DEVIOS(DDB)
133         000067 263140 000000 POPJ PDP,
134
135         000070 661000 010004 PTYOU6: TLO IOS,T37+IOFST ;FORCE BUFFER RESET
136                                     ;T37 SO TABS, ETC NOT TRANSLATED (TIMING ERROR OTHERWI
137                                     )
138         000071 202006 000002 MOVEM IOS,DEVIOS(DDB)
139         000072 264000 000260' JSR PTYRET ;RESTORE ACS
140
141         000073 602000 002000 PTYOU0: TRNE IOS,IOPTRE
142         000074 263140 000000 POPJ PDP,
143         000075 623000 000002 TLZE IOS,IOBEG ;FIRST IO
144         000076 661000 000004 TLO IOS,IOFST ;YES

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145	000077	627000	000014	TLZV IOS,IOFST	IFIRST ITEM IN BUFFER?
146	000100	254000	000112'	JRST PTYOU1	IFNO
147	000101	661000	000000	TLO IOS,IO	IFYES, INITIALIZE POINTER & COUNT
148	000102	550046	000010	HRRZ TAC,DEVOAD(0DB)	
149	000103	270040	000352'	ADD TAC,(XWD 700,1)	
150	000104	271047	000000	ADDI TAC,(PRNG)	
151	000105	202046	000010	MOVEM TAC,DEVOAD(0DB)	
152	000106	550200	000001	HRRZ ITEM,@TAC	
153	000107	322200	000142'	JUMPE ITEM,PTYOU8	IFBUFFER EMPTY?

PTYSRH - HALF DUPLEX PSEUDO TELETYPE SERVICE ROUTINES MACRO,V36 19:10 4-JUN-69 PAGE 18
D. WITCRAFT/RAP TS3,19 24 SEP 68 V004

154	000110	260140	000000	PUSHJ PDP,ITMCNT
155	000111	202206	000011	MOVEM ITEM,DFVCTR(DDR)
156				


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157 000112 660000 010000 PTYOU1: TRO IOS,IOACT
158 000113 620000 002000 TRZ IOS,IOPTRE
159 000114 264000 000247' JSR PTYSAV ISAVE ACS
160 000115 135100 000051' LDB LINE,PUNIT
161 000116 271100 000057' ADDI LINE,TCONLN
162 000117 250000 000013 EXCH IOS,PIOS
163
164 000120 375014 000011 PTYOU2: SOSGF DEVCTR(PDDR) IBUFFER EMPTY?
165 000121 254000 000140' JRST PTYOU3 IYES
166 000122 134414 000010' ILDB CHREC,DEVQAD(PDDB) INO
167 000123 260140 000061' PTYOU7: PUSHJ PDP,TCOMM ISEND NEXT CHARACTER
168 000124 603000 000004 TLNE IOS,IOFST
169 000125 254000 000140' JRST PTYOU3
170 000126 603000 002000 TLNE IOS,SP ISPECIAL CHARACTER ECHO?
171 000127 254000 000133' JRST PTYOU4 IYES, SEE IF CONTROL CHAR ECHO
172 000130 603000 040000 TLNE IOS,SYNC INO, BREAK CHARACTER SEEN IF OBJ. JOB SWAPPED OUT?
173 000131 254000 000140' JRST PTYOU3 IYES, BUFFER NOT MOVED INTO OBJECT
174 IJOB TTY INPUT BUFFER
175 000132 254000 000120' JRST PTYOU2 INO
176 000133 302400 000136 PTYOU4: CAIE CHREC,"+"
177 000134 254000 000123' JRST PTYOU7
178 000135 202414 000012 MOVEM CHREC,PTYCSV(PDDR) IYES, FLUSH OUTPUT
179 000136 202006 000002 MOVEM IOS,DEVIOS(DDB) ISAVE TTY STATE
180 000137 660540 002000 TRO PIOS,IOPTRE ILET USER KNOW
181
182 000140 264000 000260' PTYOU3: JSR PTYRET IRESTORE ACS
183 000141 250000 000013 EXCH IOS,PIOS
184 000142 623000 000001 PTYOU8: TLZE IOS,IOW
185 000143 260140 000000 PUSHJ PDP,SETIOD ISTART PTY JOB
186 000144 505040 000007 HRLI TAC,PROG
187 000145 544046 000006 HLR TAC,DEVBUF(DDB)
188 000146 540060 000001 HRR TAC,@TAC
189 000147 202046 000010 MOVEM TAC,DEVQAD(DDB)
190 000150 260140 000000 PUSHJ PDP,ADVBEF IADVANCE PTY OUTPUT BUFFER
191 000151 254000 000155' JRST PTYOU5 INEXT BUFFER IS EMPTY.
192 000152 606540 002000 TRNN PIOS,IOPTRE IRESPONSE?
193 000153 254000 000073' JRST PTYOU8 INO
194 000154 660000 002000 TRO IOS,IOPTRE IYES, SET RESPONSE FLAG AND RETURN TO USFR
195 000155 620000 014000 PTYOU5: TRZ IOS,IOACT+IOPTW ICONSIDER OUTPUT COMPLETED
196 000156 661000 000004 TLO IOS,IOFST
197 000157 202006 000002 MOVEM IOS,DEVIOS(DDB)
198 000160 263140 000000 POPJ PDP,
    
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199                                     EXTERNAL TCONLN,TTYTAB,SETIOS,STODAT,ADVBFF,STOSQD,ADRERR
200
201 000161 135100 000351' PTYIN: LDR LINE,[POINT 6,DEVCHR(DDB),23]
202 000162 271100 000116' ADDI LINE,TCONLN
203 000163 550600 000045' WRRZ PDDR,TTYTAB(LINE) ;TTY DDB ADDRESS
204 000164 326600 000167' JUMPM PDDR,PTYIN1 ;HAS TTY DDB BEEN LOST?
205 000165 660000 400000' TR0 IOS,IOIMP ;YES, THAT'S ALL.
206 000166 254000 000245' JRST PTYIN8
207
208 000167 261140 000002' PTYIN1: PUSH PDP,LINE
209 000170 661020 000004' TR0 IOS,IOFST
210 000171 630000 000353' TDZ IOS,[XWD IO,IOPTRE]
211 000172 205040 440707' MOVSI TAC,440700+PROG
212 000173 502046 000010' HLLM TAC,DEVPTR(DDB)
213
214 000174 660000 010000' TR0 IOS,IOACT
215 000175 200554 000002' MOVE PIOS,DEVICES(PDDR)
216 000176 607540 002020' TLNN PIOS,IO+SP
217 000177 254000 000241' JRST PTY110
218 000200 402000 000010' SETEM CHREC
219 000201 250406 000012' EXCH CHREC,PTYCSV(DDR) ;HAS FIRST CHAR BEEN REC?
220 000202 322400 000212' JUMPE CHREC,PTYIN5+1 ;NO
221 ;YES,SAVE LINE NO.
222 000203 607540 002020' PTYIN4: TLNN PIOS,IO+SP ;IS TTY DONE?
223 000204 254000 000230' JRST PTY13R ;YES, THATS ALL
224 000205 200240 000010' MOVE DAT,CHREC
225 000206 260140 000000' PUSHJ PDP,STODAT ;STORE CHARACTER
226 000207 254000 000000' JRST ADRERR
227 000210 254000 000233' JRST PTYIN6 ;BUFFER FULL
228
229 000211 322200 000226' PTYIN5: JUMPE ITEM,PTY13A ;IF COUNT RUNS OUT
230 000212 250540 000000' FXCH PIOS,IOS ;NO, GET NEXT CHAR,
231 000213 250600 000006' FXCH PDDR,DDR ;SET IOS AND DDB FOR TTY
232 000214 262140 000002' POP PDP,LINE ;RESTORE LINE NO.
233 000215 261140 000004' PUSH PDP,ITEM ;SAVE ITEM COUNT
234 000216 261140 000007' PUSH PDP,PROG
235 000217 260140 000123' PUSHJ PDP,TCOMM
236 000220 262140 000007' POP PDP,PROG
237 000221 262140 000004' POP PDP,ITEM ;RESTORE ITEM COUNT
238 000222 250540 000000' FXCH PIOS,IOS
239 000223 250620 000006' FXCH PDDR,DDR
240 000224 261140 000002' PUSH PDP,LINE
241 000225 254000 000203' JRST PTYIN4
242

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243
244 000226 620070 240000 PTYI3A: TRZ      IOS,IORCTL
245 000227 660000 002000      TRQ      IOS,IOPTR
246 000230 260140 230200 PTYI3B: PUSHJ PDP,STAS00      ;INPUT READY
247 000231 254000 200207      JRST     ADRERR
248 000232 665000 207004      TLOA   IOS,I0FST
249
250 000233 660000 002400 PTYIN6: TRQ      IOS,IOPTR+RPTB
251 000234 260140 002000      PUSHJ PDP,ADVBF
252 000235 254000 002410      JRST PTYI10      ;ADVANCE PTY BUFFER
253 000236 661000 003004      TLO   IOS,I0FST      ;NEXT BUFFER IS FULL.
254 000237 622000 000400      TRZE  IOS,RPTB
255 000240 254000 000212      JRST PTYIN5+1
256 000241 623000 000001 PTYI10: TLZE  IOS, IOW
257 000242 260140 002143      PUSHJ PDP, SETIOW
258 000243 620000 010400      TRZ   IOS,IOACT+RPTB
259 000244 262140 000002      POP  PDP, LINE
260 000245 202006 000002 PTYIN8: %GVM  IOS, OFVIOS(DD)
261 000246 263140 000000      POPJ PDP,

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262
 263

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264                                     ;SAVE ACCUMULATORS
265                                     ;CALL  MOVEI DDB,ADDRESS OF PTYDB
266                                     ;
267                                     JSR PTYSAV
268
269                                     IFE FICHECK+FTMONP,<
270 000247 000000 000000 PTYSAV: 0
271                                     >
272 000250 202506 000025 PTYSA0: MOVEM SCNHAC,PTYRND(DDR)           ;SAVE HIGH AC
273 000251 550500 000006 HRRZ SCNHAC,DDR
274 000252 271500 000024 ADDI SCNHAC,PTYBM1
275 000253 542500 000026 HRRM SCNHAC,PTYSA2
276 000254 275500 000011 SUBI SCNHAC,SCNHAC-1
277 000255 256000 000026 XCT PTYSA2           ;DO BLT SCNHAC,...
278 000256 200600 000006 MOVE PDDB,DDR
279 000257 254000 000247 JRST @PTYSAV
280
281
282                                     ;RESTORE ACCUMULATORS
283                                     ;CALL  MOVEI PDDB,PTY DATA BLOCK ADDRESS
284                                     ;
285                                     JSR PTYRET
286
287                                     IFE FICHECK+FTMONP,<
288 000260 000000 000000 PTYRET: 0
289                                     >
290 000261 550500 000014 PTYREW: HRRZ SCNHAC,PDDB
291 000262 271500 000013 ADDI SCNHAC,PTYSAC
292 000263 517000 000012 HRLZS SCNHAC
293 000264 251500 000012 RLT SCNHAC,SCNHAC
294 000265 254000 000260 JRST @PTYRET
295
296                                     ;SAVE ONLY PIOS AND PDDB
297
298
299                                     IFE FICHECK+FTMONP,<
300 000266 000000 000000 PACSAV: 0
301                                     >
302 000267 202540 000027 ACSAV0: MOVEM PIOS,PIOSAV
303 000270 202600 000030 MOVFM PDDB,PDDSAV
304 000271 254000 000266 JRST @PACSAV
305
306 000272 200540 000027 ACRET: MOVE PIOS,PIOSAV
307 000273 200600 000030 MOVF PDDB,PDDSAV
308 000274 263140 000000 POPJ PDP,

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309                                     ;INTERCEPT TTY OUTPUT AT UOO LEVEL AND SYNCHRONIZE
310                                     ;TTY OUTPUT WITH PTY INPUT
311
312
313                                     INTERNAL PTYPE
314                                     EXTERNAL TCONLN,PTYTAB,CLOCK,CIPWTM1,WAKE
315
316 000275 200600 000002 PTYPE: MOVE PDDR,LINE
317 000276 275600 000162' SURJ PDDR,TCONLN
318 000277 550614 000054' HRRZ PDDR,PTYTAB(PDDR)
319 000300 660000 010000 TRO IOS,IOACT ;FORCE RESCHED TO CONTROL JOB
320 000301 202006 000002 MOVEM IOS,DEVIOS(DOB)
321 000302 201040 002000 MOVEI TAC,IOPTRE
322 000303 437054 000002 IORB TAC,DEVIOS(PDOB)
323 000304 202414 000012 MOVEM CHREC,PTYCSV(PDDR) ;SAVE CHARACTER
324
325 000305 261140 000010 PTWAKE: PUSH PDP,TEM
326 000306 261140 000002 PUSH PDP,TAC1
327 000307 135040 000354' LDR TAC,[POINT 6,DEVCHR(PDOB),5] ;PTY JOB NR

328 000310 550100 000000 HRRZ TAC1,CLOCK ;LAST JOB IN CLOCK QUEUE
329 000311 306100 000000 PTWAK2: CAIN TAC1,CIPWTM1 ;LOOKED AT ALL JOBS
330 000312 254000 000325' JRST PTWAK1 ;YES, WAS NOT SLEEPING
331 000313 554402 000000 HLRZ TEM,(TAC1) ;SLEEPING JOB?
332 000314 302400 000000 CAIE TEM,WAKE
333 000315 364100 000311' SOJA TAC1,PTWAK2 ;NO, IN QUEUE FOR SOME OTHER REASON
334 000316 135400 000355' LDB TEM,[POINT 6,(TAC1),23] ;JOB NR IN QUEUE
335 000317 312400 000001 CAME TEM,TAC ;IS IT THIS ONE?
336 000320 364100 000311' SOJA TAC1,PTWAK2 ;NO, LOOP TILL DONE
337 000321 200402 000000 MOVE TEM,(TAC1) ;YES, ZERO TIME LEFT TO SLEEP
338 000322 620400 007777 TRZ TEM,7777
339 000323 350000 000010 AOS TEM ;ADD ONE SO NEXT TICK WILL MAKE 2
340 000324 202402 000000 MOVEM TEM,(TAC1)
341 000325 262140 000002 PTWAK1: POP PDP,TAC1
342 000326 262140 000010 POP PDP,TEM
343 000327 263140 000000 POPJ PDP,
    
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344                                     ;ROUTINES TO SET VARIOUS BITS
345                                     ;CALLED FROM SCVSR WITH TTY LINE NUMBER IN LINE
346
347                                     INTERNAL PTYOW,PTMNMZ,PTMNMZ
348
349 000332 264000 000266' PTMNMZ: JSR     PACSAV     ;SAVE 2 AC'S
350 000331 201540 001000'         MOVEI    PIOS,MONMOD ;PTY INTO MONITOR MODE
351 000332 254000 000340'         JRST     PTYSET
352
353 000333 264000 000266' PTMNMZ: JSR     PACSAV     ;SAVE AC'S
354 000334 561540 001000'         HRRPI    PIOS,MONMOD ;PTY OUT OF MONITOR MODE
355 000335 254000 000340'         JRST     PTYSET
356
357 000336 264000 000266' PTYOW:  JSR     PACSAV
358 000337 201540 004000'         MOVEI    PIOS,IOPW   ;PTY IN OUTPUT WAIT
359
360 000340 200600 000002' PTYSET: MOVE    PODB,LIN#
361 000341 275600 000276'         SUI     PODB,TCOMLN ;FIND PTY THAT TTY IS LINKED TO
362 000342 550614 000277'         HRRZ    PODB,PTYTAB(PODB)
363 000343 623540 777777'         TLZE   PIOS,-1   ;BIT TO BE SET OR ZEROED
364 000344 413554 000002'         ANDCAB  PIOS,DEVIOS(PODB) ;ZEROED
365 000345 437554 000002'         IORB   PIOS,DEVIOS(PODB)
366 000346 602540 004000'         TRNE   PIOS,IOPW   ;IS LINKED TTY JOB IN INPUT WAIT?
367 000347 260140 000305'         PUSHJ   PDP,PTAKE   ;YES, WAKE UP CONTROL JOB
368 000350 254000 000272'         JRST   ACRT
369

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370
371 000351 140626 007201 END
372 000352 200700 007201
373 000353 000020 007202
374 000354 360614 007201
375 000355 140602 007200

NO ERRORS DETECTED
PROGRAM BREAK IS 000356

ACRET	000272'	ACSAV0	000267'	ADRERR	000231' FXT
ADVHFE	000150' EXT	ADVBF	000234' EXT	CHREC	000010
CIPWTM	000311' FXT	CLOCK	000310' FXT	DAT	000025 INT
DDP	000026	DEVBUF	000026 INT	DEVCHR	000021 INT
DEVCTR	000011 INT	DEVDAT	000026 INT	DEVIOS	000022 INT
DEVQAD	000010 INT	DEVPTR	000010 INT	DVIN	000022 INT
DVOUT	000271 INT	FTCHEC	000020 INT	FTMONP	000020 INT
IO	000020 INT	IOACT	010020 INT	IOREG	000022 INT
IOBKTL	040020 INT	IOERR	200020 INT	IOFST	000024 INT
IOIMPM	400020 INT	IOPTRE	000020	IOPTW	004020
IOS	000020 INT	IOW	000021 INT	ITEM	000024 INT
ITMCNT	000110' EXT	LINE	000022	MONMOD	001020
OUT	000034' FXT	PACSAV	000266'	PODB	000014
PDDSAV	000030'	PDP	000023 INT	PIOS	000013
PIOSAV	000027'	PRG	000027 INT	PTMNM	000330' INT
PTMNM2	000333' INT	PTWAK1	000325'	PTWAK2	000311'
PTWAKE	000305'	PTYBM1	000024 INT	PTYBND	000025 INT
PTYCSV	000012 INT	PTYDB	000020' INT	PTYDDS	000026 INT
PTYDSP	000033' INT	PTYI10	000241'	PTYI3A	000226'
PTYI3B	000230'	PTYIN	000161'	PTYIN1	000167'
PTYIN4	000223'	PTYIN5	000211'	PTYIN6	000233'
PTYIN8	000245'	PTYO10	000073'	PTYO11	000112'
PTYO12	000120'	PTYO13	000140'	PTYO14	000133'
PTYO15	000155'	PTYO16	000070'	PTYO17	000123'
PTYO18	000142'	PTYOUT	000051'	PTYOW	000336' INT
PTYPF	000275' INT	PTYRE0	000261'	PTYREL	000037'
PTYRFT	000260'	PTYS40	000250'	PTYSA2	000026'
PTYSAC	000013 INT	PTYSAV	000247'	PTYSET	000340'
PTYSRH	000020' INT	PTYTAB	000342' EXT	PUNIT	000115' FXT
RPT3	000400	SCNHAC	000012	SETIOD	000242' FXT
SP	002020	STODAT	000226' EXT	STOSQD	000230' FXT
STYRF	000020 INT	SYNC	040020	T37	010020
TAC	000021 INT	TAC1	000022 INT	TCOMM	000217' FXT
TCONLN	000341' EXT	TEM	000010 INT	TPYTAB	000055' FXT
TTYKIL	000246' FXT	TTYTAB	000163' FXT	VPTYSR	000024 INT
WAKE	000314' FXT	ZZ	000020'		

DI	6#	6					
DI I	6#	6					
DLK	6#	6					
DMT	6#	6					
DNAERR	6#	6					
DOI	6#	6					
DR	6#	6					
DRL	6#	6					
DRN	6#	6					
DSEF	6#	6					
DST	6#	6					
DSKRLB	6#	6					
DSD	6#	6					
DVAVAL	6#	6					
DVCDR	6#	6					
DVDIR	6#	6					
DVDIP1	6#	6					
DVDIS	6#	6					
DVDSK	6#	6					
DVDTA	6#	6					
DVIN	6#	6	53				
DVLNG	6#	6					
DVLP1	6#	6					
DVMTA	6#	6					
DVDUT	6#	6	53				
DVPTP	6#	6					
DVPTR	6#	6					
DVTTY	6#	6					
ENTRH	6#	6					
EBMERR	6#	6					
ENFERR	6#	6					
FRGSEF	6#	6					
FT2RFL	6#	6					
FTATTA	6#	6					
FTCHEC	6#	37	38	43	269	287	299
FTEXAM	6#						
FTFINI	6#						
FTGETT	6#						
FTHALT	6#						
FTKCT	6#						
FTMONP	6#	37	38	43	269	287	299
FTRPV	6#						
FTRA10	6#						
FTRCHK	6#						
FTRFAS	6#						
FTSLEE	6#						
FTTALK	6#						
FTTIME	6#						
FTTRAC	6#						
FTTRPS	6#						
FTTYS	6#						
HSAMSK	6#	6					
HSAPDS	6#	6					

COCES	6#							
DISAPL	6#							
ENABLE	6#							
NOSCHE	6#							
NOSHOF	6#							
QUEJFS	6#							
SCHEDU	6#							
SHUFFL	6#							
STARTD	6#							
XP	6#	6	9	59	61	63	64	65