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1       * COMMAND.S -- Runoff Command Module; Nov 29, 1981
2       BEGIN COMMAND;
3       *---------------
4       *    Index  Command       Mnemonic          Label   Case
5       *        0  unknown                                   1
6       *        1  blank         .BL               LBL     2
7       *        2  bottom margin.BM                LBM     2
8       *        3  break         .BR               LBR     2
9       *        4  center        .C,.CE            LCE     3
10      *        5  comment       .CO               LCO     3
11      *        6  fill          .F,.FI            LFI     4
12      *        7  flag          .FL               LFL     4
13      *        8  footer        .FO               LFO     4
14      *        9  header        .H                LHE     5
15      *       10  indent        .I                LIN     6
16      *       11  justify       .J                LJU     7
17      *       12  left margin   .L                LLM     8
18      *       13  nofill        .NF,.NOF          LNF     9
19      *       14  nojustify     .NJ,.NOJ          LNJ     9
20      *       15  number        .NM,.NU           LNM     9
21      *       16  paragraph     .P,.PP            LPP     10
22      *       17  page          .PA,.PG           LPA     10
23      *       18  page length   .PL               LPL     10
24      *       19  right margin  .R                LRM     11
25      *       20  skip          .SK               LSK     12
26      *       21  spacing       .SP               LSP     12
27      *       22  test page     .T,.TE,.TP        LTE     13
28      *       23  top margin    .TM               LTM     13
29      *       24  underline     .U                LUN     14
30      *---------------
31        EXT INBUF;                        * Access to input buffer
32        EXT PROC GETVAL,PROC SETVAL,PROC BRK;
33        EXT PROC SPACE;
34        EXT PROC ERROR;
35        EXT JUSTVAL,INVAL,TIVAL;
36        EXT LSVAL,PLVAL,ULVAL,RMVAL;
37        EXT CEVAL,PPVAL;
38        EXT PSEUDO,FILLVAL;
39        EXT PROC READ,HEAD,FOOT,POS,NEG,NADA;
40        EXT INFILE,M1VAL,M2VAL,M3VAL,M4VAL;
41        EXT CURPAG,NEWPAG,LINENO,BOTTOM;
42        EXT TRUE,FALSE,NULL;
43        ENT COMMAND;
44      *---------------
45      * Case Numbers to Identify Command Type
46        DCL BL=1,BM=2,BR=3,CE=4,CO=5,FI=6,FL=7,FO=8,HE=9,IN=10;
47        DCL JU=11,LM=12,NF=13,NJ=14,NM=15,PP=16,PA=17,PL=18,RM=19,SK=20;
48        DCL SP=21,TE=22,TM=23,UN=24;
49      *---------------
50      * Translation table for converting 1st letter to a case label
51      *           A B C D E F G H I J K L M N O  P Q  R  S  T  U V W X Y Z
52        DCL CTX=(1,2,3,1,1,4,1,5,6,7,1,8,1,9,1,10,1,11,12,13,14,1,1,1,1,1);
53        DCL C2,C3,C4;                     * Characters of the command
54        DCL CT;                           * Command type
55        DCL LOWERA=97;                    * Lower case letter a
56      *---------------
57      PROC COMTYPE(IZ5);                  * Return command type
58    1   C3=' ';
59    1   C4=' ';
60    1   C2=INBUF(IZ5+1);                  * Get 1st letter of command
```

```
61   1    IF C2 GE LOWERA;
62   2      THEN C2=C2-32;                * Convert to upper case
63   2      ENDIF
64   1    IF (INBUF-IZ5) GE 2;
65   2      THEN                          * Command has another char
66   2        C3=INBUF(IZ5+2);
67   2        IF C3 GE LOWERA;
68   3          THEN C3=C3-32;
69   3          ENDIF
70   2      ENDIF
71   1    IF C2 LT 'A';                   * Make sure C2 is between A and Z
72   2      THEN C2=1;                    * Unknown
73   2      ELSE
74   2        IF C2 GT 'Z';
75   3          THEN C2=1;                * Unknown
76   3          ELSE C2=CTX(C2='A');
77   3          ENDIF
78   2      ENDIF
79   1    CASE C2; OF LUNK,LB,LC,LF,LH,LI,LJ,LL,LN,LP,LR,LS,LT,LU;
80   2  LABEL LUNK;                       * Unknown
81   2    CT=NULL;
82   2  LABEL LB;
83   2    IF C3 EQ 'L';
84   3      THEN CT=BL;                   * Blank
85   3      ELSE
86   3        IF C3 EQ 'R';
87   4          THEN CT=BR;               * Break
88   4          ELSE
89   4            IF C3 EQ 'M';
90   5              THEN CT=BM;           * Bottom Margin
91   5              ELSE CT=NULL;         * Unknown
92   5              ENDIF
93   4          ENDIF
94   3      ENDIF
95   2  LABEL LC;
96   2    IF C3 EQ ' ';
97   3      THEN CT=CE;                   * Center
98   3      ELSE
99   3        IF C3 EQ 'E';
100  4          THEN CT=CE;               * Center
101  4          ELSE
102  4            IF C3 EQ 'O';
103  5              THEN CT=CO;           * Comment
104  5              ELSE CT=NULL;         * Unknown
105  5              ENDIF
106  4          ENDIF
107  3      ENDIF
108  2  LABEL LF;
109  2    IF C3 EQ ' ';
110  3      THEN CT=FI;                   * Fill
111  3      ELSE
112  3        IF C3 EQ 'I';
113  4          THEN CT=FI;               * Fill
114  4          ELSE
115  4            IF C3 EQ 'L';
116  5              THEN CT=FL;           * Flag (Pseudo blank character)
117  5              ELSE
118  5                IF C3 EQ 'O';
119  6                  THEN CT=FO;       * Footer
120  6                  ELSE CT=NULL;     * Unknown
```

```
121  6                 ENDIF
122  5               ENDIF
123  4             ENDIF
124  3         ENDIF
125  2   LABEL LH;
126  2     CT=HE;                          * Header
127  2   LABEL LI;
128  2     CT=IN;                          * Indent
129  2   LABEL LJ;
130  2     CT=JU;                          * Justify
131  2   LABEL LL;
132  2     CT=LM;                          * Left Margin
133  2   LABEL LN;
134  2     IF C3 EQ 'F';
135  3       THEN CT=NF;                   * No Fill
136  3       ELSE
137  3         IF C3 EQ 'J';
138  4           THEN CT=NJ;               * No Justify
139  4           ELSE
140  4             IF C3 EQ 'M';
141  5               THEN CT=NM;           * Number
142  5               ELSE
143  5                 IF C3 EQ 'U';
144  6                   THEN CT=NM;       * Number
145  6                   ELSE
146  6                     IF C3 EQ 'O';
147  7                       THEN
148  7                         C4=INBUF(IZ5+3);
149  7                         IF C4 GE LOWERA;
150  8                           THEN C4=C4-32;
151  8                           ENDIF
152  7                         IF C4 EQ 'F';
153  8                           THEN CT=NF;       * No Fill
154  8                           ELSE
155  8                             IF C4 EQ 'J';
156  9                               THEN CT=NJ; * No Justify
157  9                               ELSE CT=NULL;
158  9                               ENDIF
159  8                         ENDIF
160  7                       ELSE CT=NULL;       * Unknown
161  7                       ENDIF
162  6                   ENDIF
163  5               ENDIF
164  4             ENDIF
165  3         ENDIF
166  2   LABEL LP;
167  2     IF C3 EQ ' ';
168  3       THEN CT=PP;                   * Paragraph
169  3       ELSE
170  3         IF C3 EQ 'P';
171  4           THEN CT=PP;               * Paragraph
172  4           ELSE
173  4             IF C3 EQ 'A';
174  5               THEN CT=PA;           * Page
175  5               ELSE
176  5                 IF C3 EQ 'G';
177  6                   THEN CT=PA;       * Page
178  6                   ELSE
179  6                     IF C3 EQ 'L';
180  7                       THEN CT=PL; * Page Length
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```
181  7                    ELSE CT=NULL;
182  7                    ENDIF
183  6                  ENDIF
184  5                ENDIF
185  4              ENDIF
186  3          ENDIF
187  2    LABEL LR;
188  2      CT=RM;                          * Right Margin
189  2    LABEL LS;
190  2      IF C3 EQ 'K';
191  3        THEN CT=SK;                   * Skip
192  3        ELSE
193  3          IF C3 EQ 'P';
194  4            THEN CT=SP;               * Space
195  4            ELSE CT=NULL;             * Unknown
196  4            ENDIF
197  3        ENDIF
198  2    LABEL LT;
199  2      IF C3 EQ ' ';
200  3        THEN CT=TE;                   * Test Page
201  3        ELSE
202  3          IF C3 EQ 'E';
203  4            THEN CT=TE;               * Test Page
204  4            ELSE
205  4              IF C3 EQ 'P';
206  5                THEN CT=TE;           * Test Page
207  5                ELSE
208  5                  IF C3 EQ 'M';
209  6                    THEN CT=TM;       * Top Margin
210  6                    ELSE CT=NULL;
211  6                    ENDIF
212  5                ENDIF
213  4            ENDIF
214  3        ENDIF
215  2    LABEL LU;
216  2      CT=UN;                          * Underline
217  2    ENDCASE
218  1    *---------------
219  1      RETURN CT;
220  1      ENDPROC
221  0    *---------------
222  0      DCL ONE=1,BIG=999;
223  0      DCL COM;                        * Command
224  0      DCL N,IZ7,IX8,IX9,IVAL,TX8,TX9;       * Temporaries
225  0      MSG MUNK='*** UNKNOWN COMMAND: ';
226  0    *---------------
227  0      PROC COMMAND;                   * Carry out the prescribed command
228  1        IZ7=1;                        * Char position in INBUF
229  1        COM=COMTYPE(IZ7);             * Get command type
230  1        IF COM EQ NULL;
231  2          THEN
232  2            CALL ERROR(MUNK);
233  2            CALL ERROR(INBUF);
234  2          ELSE
235  2            IF COM LE LM;
236  3              THEN CASE COM;
237  4                OF LBL,LBM,LBR,LCE,LCO,LFI,LFL,LFO,LHE,LIN,LJU,LLM;
238  4    *
239  4    LABEL LBL;                        * Blank
240  4      CALL GETVAL(IVAL);
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```
241  4    N=1;
242  4    CALL SETVAL(N,IVAL,ONE,BIG);
243  4    CALL SPACE(N);
244  4  *
245  4  LABEL LBM;                          * Bottom Margin
246  4    CALL GETVAL(IVAL);
247  4    N=3;
248  4    IF NOT NADA;
249  5      THEN CALL SETVAL(N,IVAL,NULL,PLVAL);
250  5      ENDIF
251  4    IF N LE M3VAL;
252  5      THEN M3VAL=0;
253  5      ENDIF
254  4    M4VAL=N-M3VAL;
255  4    BOTTOM=PLVAL-M3VAL-M4VAL;
256  4  *
257  4  LABEL LBR;                          * Break
258  4    CALL BRK;
259  4  *
260  4  LABEL LCE;                          * Center
261  4    CALL BRK;
262  4    CALL GETVAL(IVAL);
263  4    CALL SETVAL(CEVAL,IVAL,ONE,BIG);
264  4  *
265  4  LABEL LCO;                          * Comment
266  4  *
267  4  LABEL LFI;                          * Fill
268  4    CALL BRK;
269  4    FILLVAL=TRUE;
270  4  *
271  4  LABEL LFL;                          * Flag, set pseudo blank char
272  4    IF INBUF GT 4;
273  5      THEN PSEUDO=INBUF(5);
274  5      ENDIF
275  4  *
276  4  LABEL LFO;                          * Footer
277  4    CALL GETVAL(IVAL);
278  4    N=2;
279  4    IX8=M3VAL+M4VAL;
280  4    IF NOT NADA;
281  5      THEN CALL SETVAL(N,IVAL,ONE,IX8);
282  5      ENDIF
283  4    IVAL=M3VAL+M4VAL;
284  4    M3VAL=N-1;
285  4    M4VAL=IVAL+M3VAL;
286  4    CALL READ(INFILE,FOOT);
287  4  *
288  4  LABEL LHE;                          * Header
289  4    CALL GETVAL(IVAL);
290  4    N=2;
291  4    IX8=M1VAL+M2VAL;
292  4    IF NOT NADA;
293  5      THEN CALL SETVAL(N,IVAL,ONE,IX8);
294  5      ENDIF
295  4    IVAL=M1VAL+M2VAL;
296  4    M2VAL=IVAL-N;
297  4    M1VAL=N;
298  4    CALL READ(INFILE,HEAD);
299  4  *
300  4  LABEL LIN;                          * Indent
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```
301  4    CALL GETVAL(IVAL);
302  4    CALL BRK;
303  4    CALL SETVAL(TIVAL,IVAL,NULL,RMVAL);
304  4  *
305  4  LABEL LJU;                          * Justify
306  4    CALL BRK;
307  4    JUSTVAL=TRUE;
308  4  *
309  4  LABEL LLM;                          * Left Margin
310  4    CALL BRK;
311  4    CALL GETVAL(IVAL);
312  4    TX8=RMVAL-1;
313  4    CALL SETVAL(INVAL,IVAL,NULL,TX8);
314  4    TIVAL=INVAL;
315  4    ENDCASE
316  3            ELSE CASE COM-LM;
317  4              OF LNF,LNJ,LNM,LPP,LPA,LPL,LRM,LSK,LSP,LIE,LTM,LUN;
318  4  *
319  4  LABEL LNF;                          * No Fill
320  4    CALL BRK;
321  4    FILLVAL=FALSE;
322  4  *
323  4  LABEL LNJ;                          * No Justify
324  4    CALL BRK;
325  4    JUSTVAL=FALSE;
326  4  *
327  4  LABEL LNM;                          * Number
328  4    CALL GETVAL(IVAL);
329  4    IF NOT NADA;
330  5      THEN
331  5        TX8=-BIG;
332  5        CALL SETVAL(CURPAG,IVAL,TX8,BIG);
333  5        NEWPAG=CURPAG;
334  5      ENDIF
335  4  *
336  4  LABEL LPP;                          * Paragraph
337  4    CALL BRK;
338  4    IF LINENO GT M1VAL+M2VAL;
339  5      THEN CALL SPACE(LSVAL);
340  5      ENDIF
341  4    CALL GETVAL(IVAL);
342  4    IF NEG;
343  5      THEN IVAL=-IVAL;
344  5      ENDIF
345  4    NEG=FALSE;
346  4    POS=FALSE;
347  4    IF NOT NADA;
348  5      THEN
349  5        TX8=-INVAL;
350  5        TX9=RMVAL-INVAL;
351  5        CALL SETVAL(PPVAL,IVAL,TX8,TX9);
352  5      ENDIF
353  4    TIVAL=INVAL+PPVAL;
354  4  *
355  4  LABEL LPA;                          * Page
356  4    IF LINENO GT 0;
357  5      THEN CALL SPACE(BIG);
358  5      ENDIF
359  4    CALL GETVAL(IVAL);
360  4    CURPAG=CURPAG+1;
```

```
361  4     IF NOT NADA;
362  5       THEN
363  5         TX8=-BIG;
364  5         CALL SETVAL(CURPAG,IVAL,TX8,BIG);
365  5       ENDIF
366  4     NEWPAG=CURPAG;
367  4   *
368  4   LABEL LPL;                          * Page Length
369  4     CALL GETVAL(IVAL);
370  4     TX8=M1VAL+M2VAL+M3VAL+M4VAL+1;
371  4     CALL SETVAL(PLVAL,IVAL,TX8,BIG);
372  4     BOTTOM=PLVAL-M3VAL-M4VAL;
373  4   *
374  4   LABEL LRM;                          * Right Margin
375  4     CALL BRK;
376  4     CALL GETVAL(IVAL);
377  4     TX8=TIVAL+1;
378  4     CALL SETVAL(RMVAL,IVAL,TX8,BIG);
379  4   *
380  4   LABEL LSK;                          * Skip
381  4     CALL GETVAL(IVAL);
382  4     N=1;
383  4     CALL SETVAL(N,IVAL,ONE,BIG);
384  4     TX8=N*LSVAL;
385  4     CALL SPACE(TX8);
386  4   *
387  4   LABEL LSP;                          * Space
388  4     CALL GETVAL(IVAL);
389  4     CALL SETVAL(LSVAL,IVAL,ONE,PLVAL);
390  4   *
391  4   LABEL LTE;                          * Test
392  4     CALL GETVAL(IVAL);
393  4     IF LINENO GT BOTTOM-IVAL;
394  5       THEN
395  5         CALL SPACE(BIG);
396  5         CURPAG=CURPAG+1;
397  5         NEWPAG=CURPAG;
398  5       ENDIF
399  4   *
400  4   LABEL LTM;                          * Top Margin
401  4     CALL GETVAL(IVAL);
402  4     N=3;
403  4     IF NOT NADA;
404  5       THEN CALL SETVAL(N,IVAL,NULL,PLVAL);
405  5       ENDIF
406  4     IF N LE M1VAL;
407  5       THEN M1VAL=0;
408  5       ENDIF
409  4     M2VAL=N-M1VAL;
410  4   *
411  4   LABEL LUN;                          * Underline
412  4     CALL GETVAL(IVAL);
413  4     CALL SETVAL(ULVAL,IVAL,ONE,BIG);
414  4     IF NADA;
415  5       THEN ULVAL=1;
416  5       ENDIF
417  4     ENDCASE
418  3         ENDIF
419  2     ENDIF
420  1     RETURN
```

```
421   1     ENDPROC
422   0   *---------------
423   0   END
 NO ERRORS DETECTED
```