```
SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

101               JOB   FORTRAN COMPILER -- INSERT GROUP-MARK PHASE -- 07
102               CTL   6611
103         *
104         * REPLACE THE COLON (5-8) THAT SEPARATES EACH STATEMENT FROM
105         * ITS APPENDAGE (PREFIX) BY A GROUP MARK WITH A WORD MARK.
106         * REPLACE INTEGER MODULUS BY 05 IF IT'S ZERO.
107         * REPLACE MANTISSA DIGITS BY 08 IF IT'S ZERO.
108         * 81-83 = START (TOP ADDRESS) OF FIRST (TOP IN MEMORY)
109         * STATEMENT.  REMEMBER, STATEMENTS ARE SORTED BY TYPE NOW.
110         *
111         X1     EQU   89                                                  0089
112         X2     EQU   94                                                  0094
113         X3     EQU   99                                                  0099
114         *
115         * STUFF IN THE RESIDENT AREA
116         *
117         TOPCOR EQU   688  TOP CORE ADDRESS FROM PARAM CARD               0688
118         IMOD   EQU   690  INTEGER MODULUS -- NUMBER OF DIGITS            0690
119         MANTIS EQU   692  FLOATING POINT MANTISSA DIGITS                 0692
120         *
121               EXT00   SNAPSH, LOADNX, CDOVLY                                        MACRO
122         SNAPSH EQU   333                                                 0333       GEN
123         PHASLD EQU   381                                                 0381       GEN
124         SNAPEX EQU   564                                                 0564       GEN
125         LOADNX EQU   700   CARD OVERLAY UNLESS NOP                      0700       GEN
126         CDOVLY EQU   700   1 IF LOADING FROM CARDS, N IF FROM TAPE      0700       GEN
127         TPREAD EQU   704   LOAD OVERLAY FROM TAPE                       0704       GEN
128         TPERR  EQU   728                                                 0728       GEN
129         *
130               EXT03      START, TOP OF PHASE 3                                    MACRO
131         BEGIN3 EQU   838                                                 0838       GEN
132         TOP3   EQU   2600                                                2600       GEN
133         *
134         110    DCW   @GROUP MARK@                                  10  0110                1
135         089    DCW   000                                            3  0089                2
136         091    DC    00                                             2  0091                2
137         094    DCW   000                                            3  0094                2
138         096    DC    00                                             2  0096                2
139         *
140         PHAS7  LDPH  GROUP MARK,LOADAD,BEGIN7,,,7                             MACRO
            * PHAZ   LDPH [PHASID],LOADAD,ENTAD[,SKIPFG,SKIP],[NUMBER][,HALT]     GEN
            *        XFR  PHASZ     PROHIBITED IN A MACRO                        GEN
            *                                                                    GEN
            * LOAD A BLOCK                                                      GEN
            *                                                                    GEN
141         )6J003 EQU   110  PHASE ID                                       0110       GEN
142         )6K003 EQU   700  LOAD NEXT PHASE                                0700       GEN
143         )6L003 EQU   704  TAPE READ INSTRUCTION                          0704       GEN
144         )6M003 EQU   728  TAPE ERROR HANDLER                             0728       GEN
            *                                                                    GEN
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SEQ PG LIN  LABEL   OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

145             ORG   201                                                      0201
146         PHAS7  BSS   )8J003,G                                          5  0201  B 257 G     GEN      3   257
147             NOP     TO PATCH IN TRAPS FOR DEBUGGING                    1  0206  N           GEN      3
148         )0J003 EQU   *&1                                                0207                GEN
149             LCA   )9J003,)6J003                                        7  0207  L 282 110   GEN      3   282     110
150             BCE   )1J003,)6K003,1    Q: LOADING FROM CARDS?           8  0214  B 250 700 1 GEN      3   250     700
151             BCE   )1J003,)6L003&4,0  Q: LOADING FROM AUTOCODER TAPE?   8  0222  B 250 708 0 GEN      3   250     708
152             RTW   1,LOADAD           READ THE BLOCK                   8  0230  L %U1 838 R GEN      3   %U1     838
153             BER   )6M003             Q: TAPE ERROR?                   5  0238  B 728 L     GEN      4   728
154             CS    BEGIN7,)9R003      ENTER THE BLOCK                  7  0243  / 838 285   GEN      4   838     285
155         )1J003 CS    )6K003,)9R003      LOAD CARDS OR AUTOCODER TAPE     7  0250  / 700 285   GEN      4   700     285
156         )8J003 SW    )9R003                                          4  0257  , 285       GEN      4   285
157             MU    %T0,)8K003,W                                       8  0261  M %T0 273 W GEN      4   %T0     273
158             H     )0J003                                             4  0269  . 207       GEN      4   207
159         )8K003 EQU   *&1                                                0273                GEN
160         )9J003 DCW   @GROUP MARK@          PHASE ID                 10  0282                GEN      5
161             DCW   #1                                                 1  0283                GEN      5
162             DC    @7@          PHASE NUMBER                        1  0284                GEN      5
163         )9R003 DCW   @}@                                              1  0285                GEN      5
164             XFR   PHAS7                                                    B 201               5   201
165         *
166             ORG   BEGIN3                                                   0838
167         LOADAD EQU   *&1                                                0838
168     838 BEGIN7 MCW   83,X1                                             7  0838  M 083 089           6   083     089
169     845         SW    GM                                               4  0845  , |68               6  1068
170     849 LOOP   BCE   COLON,0&X1,:                                      8  0849  B 881 0|0 :         6   881     000+1
171     857 SWITCH BCE   DONE,0&X1,  NOP IF WORKING ON FORMAT              8  0857  B 949 0|0           6   949     000+1
172     865         BCE   SEEGM,0&X1,}                                     8  0865  B 904 0|0 } GMARK   6   904     000+1
173     873         SBR   X1                                               4  0873  H 089               6   089
174     877         B     LOOP                                             4  0877  B 849               7   849
175     881 COLON  LCA   GM,0&X1  REPLACE COLON BY GMWM                    7  0881  L |68 0|0           7  1068     000+1
176     888         SBR   X1       GET BELOW COLON                         4  0888  H 089               7   089
177     892         C     0&X1       AND THEN                             4  0892  C 0|0               7   000+1
178     896         SAR   X1           BELOW BOTTOM WORD MARK               4  0896  Q 089               7   089
179     900         B     LOOP     PROCESS NEXT STATEMENT                  4  0900  B 849               7   849
180     904 SEEGM  MCW   0&X1,PREFIX                                       7  0904  M 0|0 |73           7   000+1  1073
181     911         BCE   FORMAT,PREFIX-4,F  FORMAT STATEMENT?             8  0911  B 938 |69 F         8   938    1069
182     919         MCW   BRANCH,SWITCH                                    7  0919  M |74 857           8  1074     857
183     926 NEXT   MN    0&X1     DECREASE X1                             4  0926  D 0|0               8   000+1
184     930         SBR   X1         TO NEXT STATEMENT                    4  0930  H 089               8   089
185     934         B     LOOP                                             4  0934  B 849               8   849
186     938 FORMAT MCW   NOP,SWITCH                                        7  0938  M |75 857           8  1075     857
187     945         B     NEXT                                             4  0945  B 926               8   926
188         *
189         * CLEAR FROM TOP CORE DOWN TO TOP OF STATEMENTS & X00
190         *
191     949 DONE   MCW   TOPCOR,X2                                         7  0949  M 688 094           9   688     094
192     956         MZ    83,K999  COMPUTE TOP                            7  0956  Y 083 |67           9   083    1067
193     963         MZ               OF STATEMENTS                       1  0963  Y                   9
194     964         MCW                & X00                             1  0964  M                   9
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SEQ PG LIN  LABEL   OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

195    965  CLEAR   CS    0&X2                                             4  0965  / 0!0               9   000+2
196    969          SBR   X2                                               4  0969  H 094               9   094
197    973          C     X2,K999                                          7  0973  C 094 |67           9   094    1067
198    980          BU    CLEAR                                            5  0980  B 965 /            10   965
199          *
200          * CLEAR FROM TOP OF STATEMENTS & X00 TO TOP OF STATEMENTS
201          *
202    985  CLEAR2  C     83,X2                                            7  0985  C 083 094          10   083     094
203    992          BE    DONE2                                            5  0992  B |16 S            10  1016
204    997          MCW   BLANK,0&X2                                       7  0997  M |76 0!0          10  1076     000+2
205  1 004          CW    0&X2                                             4  1004  ) 0!0              10   000+2
206  1 008          SBR   X2                                               4  1008  H 094              10   094
207  1 012          B     CLEAR2                                           4  1012  B 985              10   985
208  1 016  DONE2   SW    IMOD-1                                           4  1016  , 689              11   689
209  1 020          A     BLANK,MANTIS                                     7  1020  A |76 692          11  1076     692
210  1 027          C     IMOD,KZ2   INTEGER MODULUS EQUAL ZERO?           7  1027  C 690 |78          11   690    1078
211  1 034          BU    NOTZI      NO                                    5  1034  B |46 /            11  1046
212  1 039          MCW   K05,IMOD   YES, USE 05                          7  1039  M |80 690          11  1080     690
213  1 046  NOTZI   C     MANTIS,KZ2   MANTISSA DIGITS EQUAL ZERO?         7  1046  C 692 |78          11   692    1078
214  1 053          BU    NOTZF        NO                                  5  1053  B 700 /            12   700
215  1 058          MCW   K08,MANTIS   YES, USE 08                        7  1058  M |82 692          12  1082     692
216          *
217          * LOAD NEXT OVERLAY
218          *
219  1 065  NOTZF   EQU   LOADNX     LOAD IT                                  0700
220  1 090  K999    DCW   999                                              3  1067                     12
221  1 091  GM      DC    @}@                                              1  1068             GMARK   12
222  1 096  PREFIX  DCW   #5                                               5  1073                     12
223  1 097  BRANCH  B                                                      1  1074  B                  12
224  1 098  NOP     NOP                                                    1  1075  N                  12
225  1 099  BLANK   DCW   #1                                               1  1076                     12
226  1 101  KZ2     DCW   00                                               2  1078                     13
227  1 103  K05     DCW   05                                               2  1080                     13
228  1 105  K08     DCW   08                                               2  1082                     13
229  1 112  GMWM    DCW   @}@                                              1  1083             GMARK   13
230          *
231                 XFR   BEGIN7                                                  B 838               13   838
232          *
233          CLRME   CLRA  BEGIN7,GMWM,C                                                      MACRO
             *       CLRA  CLRBOT,CLRTOP[,SS,HERE,GWMAD]                                      GEN
             *                                                                                GEN
             * CLEAR CORE AFTER A PHASE USING THE CLRTOP ADDRESS                              GEN
             *                                                                                GEN
234                 ORG   201                                                       0201
             *                                                                                GEN
             * CLEAR DOWN TO CLRBOT & X00 THE EASY WAY                                        GEN
             *                                                                                GEN
235          CLRME   EQU   *&1                                                0201            GEN
236                 BSS   SNAPSH,C                                           5  0201  B 333 C      GEN     14   333
237          )0J004 CS    GMWM         CLEAR FROM CLRTOP                   4  0206  / |83            GEN     14  1083
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SEQ PG LIN  LABEL   OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

238                 SBR   )0J004&3                                      4  0210  H 209       GEN     14   209
239                 SBR   )0L004&6                                      4  0214  H 255       GEN     14   255
240                 C     )0J004&3,)0M004   DOWN TO CLRBOT & X00?       7  0218  C 209 266   GEN     14   209     266
241                 BU    )0J004                                       5  0225  B 206 /     GEN     14   206
            *                                                                                 GEN
            * NOW CLEAR DOWN TO CLRBOT THE HARD WAY                                          GEN
            *                                                                               GEN
242         )0K004  C     )0L004&6,)0N004                              7  0230  C 255 269   GEN     14   255     269
243                 BU    )0L004                                       5  0237  B 249 /     GEN     15   249
244                 CS    LOADNX,)0Q004  LOAD THE NEXT BLOCK AT 1      7  0242  / 700 276   GEN     15   700     276
245         )0L004  LCA   )0P004,0-0     CLEAR WITH BLANK AND WORD MARK 7  0249  L 270 000   GEN     15   270     000
246                 SBR   )0L004&6                                      4  0256  H 255       GEN     15   255
247                 B     )0K004                                       4  0260  B 230       GEN     15   230
248         )0M004  DSA   )0R004         CLRBOT & X00 - 1             3  0266  899         GEN     15   899
249         )0N004  DSA   BEGIN7         CLRBOT                       3  0269  838         GEN     15   838
250         )0P004  DCW   #1                                          1  0270              GEN     16
251                 DC    @CLRA @     IDENTIFY IN A DECK, TAPE, OR DUMP 5  0275              GEN     16
252         )0Q004  DCW   @}@                                         1  0276              GEN     16
253                 ORG   BEGIN7&X00                                                0900
254         )0R004  EQU   *           CLRBOT & X00 - 1                    0899              GEN
255                 XFR   CLRME                                                   B 201               16   201
```

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J003	0207: 0	)0J004	0206: 0	)0K004	0230: 0	)0L004	0249: 0	)0M004	0266: 0	)0N004	0269: 0
)0P004	0270: 0	)0Q004	0276: 0	)0R004	0899: 0	)1J003	0250: 0	)6J003	0110: 0	)6K003	0700: 0
)6L003	0704: 0	)6M003	0728: 0	)8J003	0257: 0	)8K003	0273: 0	)9J003	0282: 0	)9R003	0285: 0
BEGIN3	0838: 0	BEGIN7	0838: 0	BLANK	1076: 0	BRANCH	1074: 0	CDOVLY	0700: 0	CLEAR	0965: 0
CLEAR2	0985: 0	CLRME	0201: 0	COLON	0881: 0	DONE	0949: 0	DONE2	1016: 0	FORMAT	0938: 0
GM	1068: 0	GMWM	1083: 0	IMOD	0690: 0	K05	1080: 0	K08	1082: 0	K999	1067: 0
KZ2	1078: 0	LOADAD	0838: 0	LOADNX	0700: 0	LOOP	0849: 0	MANTIS	0692: 0	NEXT	0926: 0
NOP	1075: 0	NOTZF	0700: 0	NOTZI	1046: 0	PHAS7	0201: 0	PHASLD	0381: 0	PREFIX	1073: 0
SEEGM	0904: 0	SNAPEX	0564: 0	SNAPSH	0333: 0	SWITCH	0857: 0	TOP3	2600: 0	TOPCOR	0688: 0
TPERR	0728: 0	TPREAD	0704: 0	X1	0089: 0	X2	0094: 0	X3	0099: 0		

UNREFERENCED SYMBOLS

CDOVLY PHASLD SNAPEX TOP3 TPERR TPREAD X3