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

101  1 67          JOB   OBJECT TIME FORMAT
102         *
103         * THIS IS GARY MOKOTOFF'S ORIGINAL LIMITED FORMAT I/O ROUTINE 54B,
104         * MODIFIED ONLY TO USE THE REVISED LOADER AND REVISED 54A, AND TO
105         * REPLACE GENERATED LITERALS WITH EXPLICIT ONES SO WE CAN MAKE ONE
106         * EXTERNAL.
107         *
108         * EXTERNALLY REFERENCED SYMBOLS ARE MARKED WITH ASTERISK IN COLUMN 1.
109         *
110         * SEVERAL PHASES REFER TO ADDRESSES HERE, AND IN OTHER I/O
111         * ROUTINES.
112         *
113         * STUFF IN THE RESIDENT AREA
114         *
115                EXT00   SNAPSH, LOADNX, CDOVLY                                                  MACRO
116         SNAPSH EQU   333                                                   0333              GEN
117         PHASLD EQU   381                                                   0381              GEN
118         SNAPEX EQU   564                                                   0564              GEN
119         LOADNX EQU   700   CARD OVERLAY UNLESS NOP                         0700              GEN
120         CDOVLY EQU   700   1 IF LOADING FROM CARDS, N IF FROM TAPE         0700              GEN
121         TPREAD EQU   704   LOAD OVERLAY FROM TAPE                          0704              GEN
122         TPERR  EQU   728                                                   0728              GEN
123         *
124         X1     EQU   89                                                    0089
125         X2     EQU   94                                                    0094
126         X3     EQU   99                                                    0099
127         *
128         * ADDRESS IN FORMAT LOADER
129         *
130                XT54A                                                                         MACRO
131         LOAD54 EQU   934                                                   0934              GEN
132         SKIPB  EQU   934   SKIP 54B -- LIMITED FORMAT                      0934              GEN
133         SKIPC  EQU   935   SKIP 54C -- NORMAL FORMAT                       0935              GEN
134         SKIPD  EQU   936   SKIP 54D -- A FORMAT                            0936              GEN
135         SKIP54 EQU   995   Q: LOADING FROM AUTOCODER TAPE?                 0995              GEN
136         GMWM54 EQU   1070                                                  1070              GEN
137         *
138         PHS54B LDPH  ,FMTBAS,LD54B,SKIPB,SKIP54,54B                                          MACRO
            * PHAZ   LDPH [PHASID],LOADAD,ENTAD[,SKIPFG,SKIP],[NUMBER][,HALT]                    GEN
            *        XFR  PHASZ     PROHIBITED IN A MACRO                                        GEN
            *                                                                                    GEN
            * LOAD THE BLOCK IF NO WM IN SKIPB, ELSE SKIP IT                                     GEN
            *                                                                                    GEN
139         )6K003 EQU   700  LOAD NEXT PHASE                                  0700              GEN
140         )6L003 EQU   704  TAPE READ INSTRUCTION                            0704              GEN
141         )6M003 EQU   728  TAPE ERROR HANDLER                               0728              GEN
            *                                                                                    GEN
142                ORG   201                                                         0201
143         PHS54B BSS   )8J003,G                                           5  0201  B 265 G     GEN      1   265
144                NOP     TO PATCH IN TRAPS FOR DEBUGGING                  1  0206  N           GEN      1
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SEQ PG LIN  LABEL    OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

145         )0J003   EQU   *&1                                             0207          GEN
146                  BW    )2J003,SKIPB      Q: SKIP THE BLOCK?          8  0207  V 258 934 1 GEN     1   258     934
147                  BCE   )1J003,)6K003,1    Q: LOADING FROM CARDS?      8  0215  B 251 700 1 GEN     1   251     700
148                  BCE   )1J003,)6L003&4,0  Q: LOADING FROM AUTOCODER TAPE? 8 0223  B 251 708 0 GEN     1   251     708
149                  RTW   1,FMTBAS           READ THE BLOCK              8  0231  L %U1 W97 R GEN     1   %U1    1697
150                  BER   )6M003             Q: TAPE ERROR?              5  0239  B 728 L     GEN     2   728
151                  CS    LD54B,)9R003      ENTER THE BLOCK             7  0244  / !22 285   GEN     2  2022     285
152         )1J003   CS    )6K003,)9R003      LOAD CARDS OR AUTOCODER TAPE 7 0251  / 700 285   GEN     2   700     285
            * SKIP THE BLOCK                                                                    GEN
153         )2J003   CS    SKIP54,)9R003                                 7  0258  / 995 285   GEN     2   995     285
154         )8J003   SW    )9R003                                        4  0265  , 285       GEN     2   285
155                  MU    %T0,)8K003,W                                  8  0269  M %T0 281 W GEN     2   %T0     281
156                  H     )0J003                                        4  0277  . 207       GEN     3   207
157         )8K003   EQU   *&1                                             0281          GEN
158                  DCW   #1                                            1  0281          GEN     3
159                  DC    @54B@          PHASE NUMBER                 3  0284          GEN     3
160         )9R003   DCW   @)@                                          1  0285          GEN     3
161                  XFR   PHS54B                                              B 201               4   201
162         *
163  1 68           ORG   1697                                                 1697
164 *1 69   FMTBAS   SBR   X1                                            4  1697  H 089               5   089
165  1 70           SW    GPWDMK                                        4  1701  , !31               5  2031
166  1 71           CW    0&X1                                          4  1705  ) 0|0               5   000+1
167  1 72           MCW   X3,SAVX3           SAVE X3                     7  1709  M 099 Z99           5   099    1999
168  1 73           LCA   K001,X3                                       7  1716  L !02 099           5  2002     099
169  1 74           BWZ   WRTAP,0&X1,S       GO TO WRITE TAPE ON ZONE.   8  1723  V Z17 0|0 S         5  1917     000+1
170  1 75           MCW   KR,IO4&7          SET READ TAPE D MODIFIER    7  1731  M !03 Y55           6  2003    1855
171  1 76   RDTAP    MCW   6&X1,LOC                                      7  1738  M 0|6 !06           6   006+1  2006
172  1 77   IO1      MCW   LOC,IO12&6                                    7  1745  M !06 X58           6  2006    1758
173  1 78   IO12     BCE   RET,000,.          . IS END OF LIST, RETURN    8  1752  B Z02 000 .         6  1902     000
174  1 79           MA    K006,LOC                                      7  1760  # !09 !06           6  2009    2006
175  1 80           MCW   LOC,IO15&3                                    7  1767  M !06 X77           7  2006    1777
176  1 81   IO15     MCW   000,ADDR           ADDR IS LOC OF DATA ADDR    7  1774  M 000 !15           7   000    2015
177  1 82           SW    ADDR-2                                        4  1781  , !13               7  2013
178  1 83           MA    K001,ADDR          ADDR IS NOW LOC OF DATA ADDR &1 7 1785  # !02 !15       7  2002    2015
179  1 84           MCW   ADDR,IO2&3                                    7  1792  M !15 Y02           7  2015    1802
180  1 85   IO2      MCW   000,SAVCH          SAVE CHAR AFTER DATA AREA   7  1799  M 000 !16           7   000    2016
181  1 86           MCW   ADDR,IO3&6                                    7  1806  M !15 Y19           8  2015    1819
182  1 87   IO3      LCA   GPWDMK,000         MOVE GP MK WD MK TO DATA ADDR &1 7 1813  L !31 000       8  2031     000
183  1 88           MCW   ADDR-3,IO4&6       MOVE FIRST CHAR ADDR OF DATA 7  1820  M !12 Y54           8  2012    1854
184  1 89           MN    0&X1,IO4&3         MOVE TAPE NO.               7  1827  D 0|0 Y51           8   000+1  1851
185  1 90           S     COUNT,COUNT        CLEAR READ-ERROR COUNTER    7  1834  S !17 !17           8  2017    2017
186  1 91           MZ    KA,IO4&5                                      7  1841  Y !18 Y53           9  2018    1853
187  1 92   IO4      RTW   1,000                                         8  1848  L %U1 000 R         9   %U1     000
188  1 94           BER   RWT31                                         5  1856  B Z28 L             9  1928
189  1 95           MCW   ADDR,IO5&6                                    7  1861  M !15 Y74           9  2015    1874
190  1 96   IO5      MCW   SAVCH,000          RETURN CHAR AFTER DATA AREA 7 1868  M !16 000           9  2016     000
191  1 97           MA    K001,LOC           STEP TO NEXT VARIABLE IN LIST 7 1875  # !02 !06          10  2002    2006
192  1 98           CW    ADDR-2                                        4  1882  ) !13              10  2013
193  1 981          BEF   RWT78                                  V3M4   5  1886  B Z90 K            10  1990
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR
194  1 982          MA    K001,LOC                                  V3M4  7  1891  # !02 !06          10  2002    2006
195  1 99           B     IO1                                             4  1898  B X45              10  1745
196  2 00   RET     MCW   SAVX3,X3           RESTORE X3                 7  1902  M Z99 099          10  1999     099
197  2 01           SW    0&X1                                            4  1909  , 0|0              10   000+1
198  2 02           B     7&X1                                            4  1913  B 0|7              11   007+1
199  2 03   WRTAP   MCW   KW,IO4&7           SET WRITE TAPE D MODIFIER  7  1917  M !19 Y55          11  2019    1855
200  2 04           B     RDTAP                                           4  1924  B X38              11  1738
201  2 05   RWT31   BCE   RWT77,COUNT,I      TEST READ-ERROR COUNTER    8  1928  B Z83 !17 I        11  1983    2017
202  2 06           MN    IO4&3,*&4                                       7  1936  D Y51 Z46          11  1851    1946
203  2 07              UB %U0               BACKSPACE -- TYPO "%UO" IN ORIG  5  1943  U %U0 B            11   %U0
204  2 08           BCE   RWT41,IO4&7,W                                   8  1948  B Z67 Y55 W        12  1967    1855
205  2 09           A     K1,COUNT           INCREASE READ-ERROR COUNTER  7  1956  A !20 !17          12  2020    2017
206  2 10           B     IO4                                             4  1963  B Y48              12  1848
207  2 11   RWT41   MN    IO4&3,*&4                                       7  1967  D Y51 Z77          12  1851    1977
208  2 12              UE %U0               SKIP AND ERASE -- TYPO %UO AGAIN 5  1974  U %U0 E            12   %U0
209  2 13           B     IO4                                             4  1979  B Y48              12  1848
210  2 14   RWT77   H     *-6,777            TAPE-ERROR                 7  1983  . Z83 777          13  1983     777
211  2 15   RWT78   H     *-6,888            END-OF-FILE                7  1990  . Z90 888          13  1990     888
212            SAVX3   DCW   #03                                        3  1999                     13
213            K001    DCW   001                                       3  2002                     13
214            KR      DCW   @R@                                       1  2003                     13
215            LOC     DCW   #03                                       3  2006                     13
216            K006    DCW   006                                       3  2009                     13
217            ADDR    DCW   #06                                       6  2015                     14
218 *          LIMADR  EQU   ADDR  USED IN DIMENSION PHASE 2              2015
219            SAVCH   DCW   #1                                        1  2016                     14
220            COUNT   DCW   #1                                        1  2017                     14
221            KA      DCW   @A@                                       1  2018                     14
222            KW      DCW   @W@                                       1  2019                     14
223            K1      DCW   1                                         1  2020                     14
224  2 16           LTORG *                                                2021
225  2 17           DCW   @ @                                         1  2021                     14
226            LD54B   CW    LGM                                       4  2022  ) !31              15  2031
227                    BIN   LOADNX,            LOAD OR SKIP PHASE 54C  5  2026  B 700              15   700
228  2 18   GPWDMK  DCW   @}@                GROUP MARK                 1  2031          GMARK   15
229 *          LGM     EQU   GPWDMK                                          2031
230  2 19           XFR   LD54B                                                  B !22              16  2022
```

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J003	0207: 0	)1J003	0251: 0	)2J003	0258: 0	)6K003	0700: 0	)6L003	0704: 0	)6M003	0728: 0
)8J003	0265: 0	)8K003	0281: 0	)9R003	0285: 0	ADDR	2015: 0	CDOVLY	0700: 0	COUNT	2017: 0
FMTBAS	1697: 0	GMWM54	1070: 0	GPWDMK	2031: 0	IO1	1745: 0	IO12	1752: 0	IO15	1774: 0
IO2	1799: 0	IO3	1813: 0	IO4	1848: 0	IO5	1868: 0	K001	2002: 0	K006	2009: 0
K1	2020: 0	KA	2018: 0	KR	2003: 0	KW	2019: 0	LD54B	2022: 0	LGM	2031: 0
LIMADR	2015: 0	LOAD54	0934: 0	LOADNX	0700: 0	LOC	2006: 0	PHASLD	0381: 0	PHS54B	0201: 0
RDTAP	1738: 0	RET	1902: 0	RWT31	1928: 0	RWT41	1967: 0	RWT77	1983: 0	RWT78	1990: 0
SAVCH	2016: 0	SAVX3	1999: 0	SKIP54	0995: 0	SKIPB	0934: 0	SKIPC	0935: 0	SKIPD	0936: 0
SNAPEX	0564: 0	SNAPSH	0333: 0	TPERR	0728: 0	TPREAD	0704: 0	WRTAP	1917: 0	X1	0089: 0
X2	0094: 0	X3	0099: 0								

UNREFERENCED SYMBOLS

CDOVLY GMWM54 LIMADR LOAD54 PHASLD SKIPC SKIPD SNAPEX SNAPSH TPERR TPREAD X2