```
CLEAR STORAGE 1     ,008015,022026,030037,044,049,053053N000000N00001026                                 1
CLEAR STORAGE 2     L068116,105106,110117B101/I9I#071029C029056B026/B001/0991,001/001117I0?              2
BOOTSTRAP           ,008015,022029,036040,047054,061068,072/061039              ,0010011040              3

                          ** IBM 1401 SORT 7 VERSION 2 ASSIGNMENT PHASE             60  2             PAGE    1

 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

 101 00 01          JOB   ** IBM 1401 SORT 7 VERSION 2 ASSIGNMENT PHASE
 102 00 02          CTL   641111
 103 00 03          ORG   087                 DEFINE INDEX REGISTERS                     0087
 104 00 04   INDEX1 DCW   @000@                                                 3  0089                        4
 105 00 05          ORG   092                                                            0092
 106 00 06   INDEX2 DCW   @000@                                                 3  0094                        5
 107 00 07          ORG   097                                                            0097
 108 00 08   INDEX3 DCW   @000@                                                 3  0099                        6
 109 00 09          ORG   83                                                             0083
 110 00 10   BL     DCW   @   @               BLOCK LENGTH                          3  0085                        7
 111 00 11   CNOP   DCW   @ @                 NUMBER OF MOVES TO OUTPUT AREA        1  0086                        7
 112 00 12   *                                   NEEDED IN ADDITION TO NCF
 113 00 13          ORG   90                                                             0090
 114 00 14   DESCND DCW   @ @                 COLLATING SEQUENCE OF OUTPUT          1  0090                        8
 115 00 15   FLR          @ @                 RECORD FORMAT INDICATOR               1  0091                        8
 116 00 16          ORG   95                                                             0095
 117 00 17   NCF    DCW   @  @                NUMBER OF CONTROL FIELDS              2  0096                        9
 118 00 18          ORG   183                                                            0183
 119 00 19   BO     DCW   @   @               OUTPUT BLOCKING FACTOR                3  0185                       10
 120 00 20   URPI   DCW   @ @                 UNREADABLE RECORD PROCEDURE           1  0186                       10
 121 00 21   LDI          @ @                 DENSITY INDICATOR                     1  0187                       10
 122 00 22   ITLI         @ @                 INPUT TAPE LABEL INDICATOR            1  0188                       10
 123 00 23   OTLI   DCW   @ @                 OUTPUT TAPE LABEL INDICATOR           1  0189                       10
 124 00 24   HTMO   DCW   @ @                 TAPE MARK AFTER OUTPT HDR LBL         1  0190                       10
 125 00 25   TL           @ @                 INPUT TRAILER LABEL INDICATOR         1  0191                       10
 126 00 26   TLO          @ @                 TRAILER LABEL OPTION                  1  0192                       10
 127 00 27   PI     DCW   @ @                 PADDING INDICATOR                     1  0193                       10
 128 00 28   RCDIST DCW   @000@               3 DIGIT POS OF RCC                    3  0196                       10
 129 00 29   B            @   @               SORT BLOCKING FACTOR                  3  0199                       10
 130 00 30          ORG   335                                                            0335
 131 00 31   CFIRE  DCW   @001@               RIGHT EDGE OF CF1                     3  0337                       11
 132 00 32   I1TUN  DCW   @ @                 WORK TAPE UNIT NUMBERS                1  0338                       11
 133 00 33   I2TUN        @ @                 2ND INPUT TAPE UNIT                   1  0339                       11
 134 00 34   I3TUN        @ @                 3RD INPUT TAPE UNIT                   1  0340                       11
 135 00 35   MI1TUN       @ @                 1ST WORK TAPE UNIT                    1  0341                       11
 136 00 36   MI2TUN       @ @                 2ND WORK TAPE UNIT                    1  0342                       11
 137 00 37   MI3TUN       @ @                 3RD WORK TAPE UNIT                    1  0343                       11
 138 00 38   MS           @ @                 MACHINE SIZE                          1  0344                       11
 139 00 39   L            @   @               RECORD LENGTH                         3  0347                       11
 140 00 40   GPMARK       @I9Y@               GROUPMARK-WORDMARK LOCATION           3  0350                       11
 141 00 41   CF1SL        @   @               CONTROL FIELD STARTING LOCNS          3  0353                       11
 142 00 42   CF2SL        @   @               3 CHAR HIGH ORDER POSITIONS           3  0356                       11
 143 00 43   CF3SL        @   @               TAKEN FROM CONTROL CARDS              3  0359                       11
 144 00 44   CF4SL        @   @                                                     3  0362                       11
 145 00 45   CF5SL        @   @                                                     3  0365                       11
 146 00 46   CF6SL        @   @                                                     3  0368                       11
 147 00 47   CF7SL        @   @                                                     3  0371                       11
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

148 00 48   CF8SL        @   @                                                  3  0374                     12
149 00 49   CF9SL        @   @                                                  3  0377                     12
150 00 50   CF0SL        @   @                                                  3  0380                     12
151 00 51   IF1F2        @   @             DISTANCE BETWEEN CONTROL FIELDS      3  0383                     12
152 00 52   IF2F3        @   @                                                  3  0386                     12
153 00 53   IF3F4        @   @                                                  3  0389                     12
154 00 54   IF4F5        @   @                                                  3  0392                     12
155 00 55   IF5F6        @   @                                                  3  0395                     12
156 00 56   IF6F7        @   @                                                  3  0398                     12
157 00 57   IF7F8        @   @                                                  3  0401                     12
158 00 58   IF8F9        @   @                                                  3  0404                     12
159 00 59   IF9F0        @   @                                                  3  0407                     12
160 00 60   TPAVLM       @     @           USER AREA ADDRESS PHASE 2            5  0412                     13
161 00 61   LABELS DCW   @ @               WORKTAPE LABEL INDICATOR             1  0413                     13
162 00 62   LBBUCK DCW   @ @                                                    1  0414                     13
163 00 63   CENSIG DCW   @ @                                                    1  0415                     13
164 00 64   UNLOAD DCW   @ @               REWIND AND UNLOAD OPTION             1  0416                     13
165 00 65   WLBKT  DCW   @ @               WORK TAPE HEADER LABEL INDICATOR     1  0417                     14
166 00 66   THLTMO DCW   @ @               TAPEMARK INDICATOR -WORK TAPES       1  0418                     14
167 00 67   OHLOP  DCW   @ @               OUTPUT HEADER CHECKING INDICATOR     1  0419                     14
168 00 68   FLSROP DCW   @ @               FILE SERIAL INDICATOR                1  0420                     14
169 00 69   RLSQOP DCW   @ @               REEL SEQUENCE UPDATE INDICATOR       1  0421                     14
170 00 70   TPSROP DCW   @ @               TAPE SERIAL ASSGMNT INDICATOR        1  0422                     14
171 00 71   HDRTAG DCW   @1HDR @           HEADER TAG OF OUTPUT HDR CARD        5  0427                     14
172 00 72   TPSERL DCW   #5                NEW TAPE SERIAL NO.                  5  0432                     15
173 00 73   FLSERL DCW   #5                OUTPUT HEADER FILE SERIAL NO.        5  0437                     15
174 00 74          DC    @-@                                                    1  0438                     15
175 00 75   REELSQ DCW   #3                OUTPUT HDR REEL SEQUENCE NO.         3  0441                     15
176 00 76          DC    @ @                                                    1  0442                     15
177 00 77   FLNAME DC    #10               OUTPUT HEADER FILE NAME             10  0452                     15
178 00 78   OHDATE DC    @     @           OUTPUT HEADER DATE                   5  0457                     15
179 00 79          DC    @-@                                                    1  0458                     15
180 00 80   RTCYCL DC    #3                RETENTION CYCLE BUCKET               3  0461                     15
181 00 81          DC    @ @                                                    1  0462                     15
182 00 82          DCW   #1                                                     1  0463                     15
183 00 83   LBLBKT DCW   #33               INPUT HEADER LABEL BUCKET           33  0496                     16
184 00 84   DATE   DCW   #5                CURRENT DATE- YEAR AND DAY           5  0501                     16
185 00 85          DCW   #25                                                   25  0526                     17
186 00 86   RCMKPI DCW   @ @               RECORD MARK IN PADDING RECORDS       1  0527                     17
187 00 87   CNSQ         @      @          SEQUENCE COUNT                       6  0533                     17
188 00 88   CTNR   DCW   @      @          RECORD COUNT                         6  0539                     17
189 00 89   CNOS1        @      @          TAPE SWITCH COUNT                    6  0545                     18
190 00 90   PDCPUT DCW   000               PAD COUNT                            3  0548                     18
191 00 91   OUTMOD DCW   @M@               OUTPUT MODE                          1  0549                     18
192 00 92   CSTCNS DCW   @I7V@             PH2 3 POS. USER AREA                 3  0552                     18
193 00 93   STRTMP ORG   *                                                         0553   0553
194 00 94   RTAIN  DCW   @ @               RETAIN RCC OPTION                    1  0553                     18
195 00 95   COMET  DCW   @   @                                                  3  0556                     19
196 00 96   COMETF DCW   #3                                                     3  0559                     19
197 00 97   RLIIND DCW   @ @                                                    1  0560                     19
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                         ** IBM 1401 SORT 7 VERSION 2 ASSIGNMENT PHASE              60  2               PAGE    3

SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

198 00 98   KRUNCH DCW   @ @                VLR LOAD MODE INPUT IND IF RLI        1  0561                      19
199 00 99   *                               NOT IN FIRST RCD POS AND NOT CF
200 01 00   STPH2  ORG   *                                                           0562   0562
201 01 01   INMODE DCW   @M@                INPUT MODE-M- UNLESS SPECIFIED        1  0562                      19
202 01 02   LRG2G1 DCW   @   @                                                    3  0565                      19
203 01 03   TPV1   DCW   #3                 PH1 3 POS USER AREA                   3  0568                      19
204 01 04   INTOUT DCW   000                                                      3  0571                      20
205 01 05   LBLSAM DCW   @ @                IF 1 - INP HDR IS OPT HDR             1  0572                      20
206 01 06   CCB    DCW   @   @              16K COMPLEMENT OF SORT BL FAC         3  0575                      20
207 01 07   C16000       16000                                                    5  0580                      20
208 01 08   K16000       16000                                                    5  0585                      20
209 01 09   TCOMET DCW   @12100@                                                  5  0590                      20
210 01 10   TCOMTF DCW   @12100@                                                  5  0595                      20
211 01 11   KLTD         5520000                                                  7  0602                      20
212 01 12   KTD          15350000                                                 8  0610                      21
213 01 13   KHTD   DCW   @22080000@                                               8  0618                      21
214 01 14   KKK3   DCW   #1                                                       1  0619                      21
215 01 15   EXPAND SBR   CZONE&10            CONVERT THREE DIGIT ADDRESS          4  0620  H 657               21
216 01 16          MLC   CONVRT,CONSTX       TO FIVE DIGIT NUMBER                 7  0624  M 698 679           21
217 01 17          MLC   @00   @,HOLD                                             7  0631  M 684 693           22
218 01 18          MLNS  CONVRT,HOLD                                              7  0638  D 698 693           22
219 01 19          MLNS                                                           1  0645  D                   22
220 01 20          MLNS                                                           1  0646  D                   22
221 01 21   CZONE  C     HOLD,CONSTX                                              7  0647  C 693 679           22
222 01 22          BE    0                                                        5  0654  B 000 S             22
223 01 23          MA    @?0?@,CONSTX                                             7  0659  # 687 679           22
224 01 24          A     @1@,HOLD-3                                               7  0666  A 688 690           23
225 01 25          B     CZONE                                                    4  0673  B 647               23
226 01 26   CONSTX DCW   #3                                                       3  0679                      23
227 01 27          LTORG *                                                                  0680
                   DCW   @00   @                                                  5  0684              LIT     23
                   DCW   @?0?@                                                    3  0687              LIT     23
                   DCW   @1@                                                      1  0688              LIT     23
228 01 28   HOLD   DCW   #5                                                       5  0693                      23
229 01 29   CONVRT DCW   #5                                                       5  0698                      24
230 01 30          ORG   3975                                                               3975
231 01 31   MFS    DCW   @       @          MAXIMUM FILE SIZE                     7  3981                      25
232 01 32   NOINTP DCW   @  @               NUMBER OF INPUT TAPES                 2  3983                      25
233 01 33   BI           @   @              INPUT BLOCKING FACTOR                 3  3986                      25
234 01 34   TLCF         #3                 TOTAL LENGTH OF ALL CONTROL FLDS      3  3989                      25
235 01 35   MINREC       @   @              MINIMUM RECORD LENGTH                 3  3992                      25
236 01 36   MAXBLK       @   @              MAXIMUM BLOCKING FACTOR               3  3995                      25
237 01 37   EFS          @       @          ESTIMATED FILE SIZE                   7  4002                      25
238 01 38   COMPL        @   @              COMP OF L                             3  4005                      25
239 01 39   CMNREC       @   @              COMP OF MIN RECORD                    3  4008                      25
240 01 40   CMXBLK       @   @              COMP OF MX BLK SIZE                   3  4011                      25
241 01 41   CF1RE        @   @              UNITS LOCATION OF CONTROL FIELD       3  4014                      26
242 01 42   CF2RE        @   @                                                    3  4017                      26
243 01 43   CF3RE        @   @                                                    3  4020                      26
244 01 44   CF4RE  DCW   @   @                                                    3  4023                      26
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SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

245 01 45   CF5RE        @   @                                                    3  4026                     26
246 01 46   CF6RE        @   @                                                    3  4029                     26
247 01 47   CF7RE        @   @                                                    3  4032                     26
248 01 48   CF8RE        @   @                                                    3  4035                     26
249 01 49   CF9RE        @   @                                                    3  4038                     26
250 01 50   CF0RE        @   @                                                    3  4041                     26
251 01 51   CCCFRE       @   @                                                    3  4044                     26
252 01 52   FSLST  DCW   CF2SL               ADD 3 TO THIS FOR EACH CTL FIELD     3  4047  356                26
253 01 53   K5TOK3 SBR   CMBCK&3             CONVERT FIVE DIGIT NUMBER            4  4048  H 06Z              27
254 01 54          MLZS  @1@,CONVRT          TO THREE DIGIT ADDRESS               7  4052  Y 12X 698          27
255 01 55   SUBBB  S     @1@,CONVRT-3                                             7  4059  S 12X 695          27
256 01 56   CMBCK  BM    0,CONVRT-3                                               8  4066  V 000 695 K        27
257 01 57          MA    @|00@,CONVRT                                             7  4074  # 13| 698          27
258 01 58          B     SUBBB                                                    4  4081  B 05Z              27
259 01 59   PRMSX  DCW   @OVERSIZE INPUT BLOCKING-RESTART@                       31  4115                     28
260 01 60   DELEXC DCW   @ @                                                      1  4116                     28
261 01 61   PRMDIN DCW   @ @                INPUT MODE                            1  4117                     28
262 01 62   PRMDOT DCW   @ @                OUTPUT MODE                           1  4118                     28
263 01 63   SLRCC  DCW   #3                                                       3  4121                     28
264 01 64   UAPHZ1 DCW   #5                 USER AREA PHASE 1                     5  4126                     29
265 01 65          LTORG *                                                              4127
                   DCW   @1@                                                      1  4127             LIT     29
                   DCW   @|00@                                                    3  4130             LIT     29
266 01 66          ORG   700                                                            0700
267 01 67   READCC CS    80                                                       4  0700  / 080              30
268 01 68          R                        READ CONTROL CARD #1                  1  0704  1                  30
269 01 69          CS    332                                                      4  0705  / 332              30
270 01 70          CS                                                             1  0709  /                  30
271 01 71          SW    201                                                      4  0710  , 201              30
272 01 72          MLC   080,280                                                  7  0714  M 080 280          30
273 01 73          W                        PRINT CONTENTS OF CONTROL CARD        1  0721  2                  30
274 01 74          CC    K                                                        2  0722  F K                31
275 01 75          BCE   NEXTST,027,4       CLEAR STORAGE ABOVE 8K                8  0724  B 779 027 4        31
276 01 76          BCE   NEXTST,27,                                               8  0732  B 779 027          31
277 01 77          BCE   CLR12,027,5                                              8  0740  B 768 027 5        31
278 01 78   CLR    CS    15999                                                    4  0748  / I9I              31
279 01 79          SBR   CLR&3                                                    4  0752  H 751              31
280 01 80          BWZ   NEXTST,CLR&3,S                                           8  0756  V 779 751 S        32
281 01 81          B     CLR                                                      4  0764  B 748              32
282 01 82   CLR12  SBR   CLR&3,11999                                              7  0768  H 751 I9R          32
283 01 83          B     CLR                                                      4  0775  B 748              32
284 01 84   *                                 PLACE CONTROL CARD CONSTANTS
285 01 85   *                                 IN DEFINED AREAS
286 01 86   NEXTST MLC   57,FLR             FIXED OR VARIABLE LENGTH RECORDS      7  0779  M 057 091          32
287 01 87          MLC   75                 COLLATING SEQUENCE                    4  0786  M 075              32
288 01 88          MLC   29,NCF             TOTAL NUMBER OF CONTROL FIELDS        7  0790  M 029 096          33
289 01 89          MLC   26,PI              PADDING INDICATOR CHARACTER           7  0797  M 026 193          33
290 01 90          MLC                      OUTPUT TR LAB INDICATOR               1  0804  M                  33
291 01 91          MLC                      INPUT TRAILER LABEL BUCKET            1  0805  M                  33
292 01 92          MLC                      TAPEMARK ON OUTPUT HDR LAB            1  0806  M                  33
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SEQ PG LIN  LABEL  OP    OPERANDS                                                 SFX CT  LOCN  INSTRUCTION TYPE  CARD

293 01 93          MLC                         OUTPUT HEADER LAB INDICATOR            1  0807  M                   33
294 01 94          MLC                         INPUT TAPE HEADER LABEL INDICATOR      1  0808  M                   33
295 01 95          MLC                         DENSITY INDICATOR                      1  0809  M                   34
296 01 96          MLC                         UNREADABLE RECORD PROCEDURE            1  0810  M                   34
297 01 97          MLC                         OUTPUT BLOCKING FACTOR                 1  0811  M                   34
298 01 98          SW    58,30                                                        7  0812  , 058 030           34
299 01 99          MLC   61,CONVRT             CONVERT RCC TO 3 DIGIT                 7  0819  M 061 698           34
300 02 00          B     K5TOK3                                                       4  0826  B 04Y               34
301 02 01   IRENE  MLC   CONVRT,RCDIST                                                7  0830  M 698 196           34
302 02 02          MLC   27,MS                 MACHINE SIZE                           7  0837  M 027 344           35
303 02 03          MLC   6                     INITIALIZE TAPE BUCKETS                4  0844  M 006               35
304 02 04          MLC                         6 TO MI3TUN,5 TO MI2TUN                1  0848  M                   35
305 02 05          MLC                         4 TO MI1TUN, 3 TO I3TUN                1  0849  M                   35
306 02 06          MLC                         2 TO I2TUN, 1 TO I1TUN                 1  0850  M                   35
307 02 07          MLC                                                                1  0851  M                   35
308 02 08          MLC                                                                1  0852  M                   35
309 02 09          MLC   12,L4                 RECORD LENGTH                          7  0853  M 012 W4W           36
310 02 10          MLC   32,TLCF               TOTAL LENGTH OF CONTROL FIELDS         7  0860  M 032 I89           36
311 02 11          MLC   15                    INPUT BLOCKING FACTOR                  4  0867  M 015               36
312 02 12          MLC   8                     NUMBER OF INPUT TAPES                  4  0871  M 008               36
313 02 13          CW    58,30                                                        7  0875  ) 058 030           36
314 02 14          MLC   69,MXBLK4             LARGEST INPUT BLOCK-VARIABLE           7  0882  M 069 W5U           36
315 02 15          MLC                         SMALLEST INPUT RECORD                  1  0889  M                   36
316 02 16          MLC   46,EFS                ESTIMATED FILE SIZE                    7  0890  M 046 00S           37
317 02 17          MLC   51,UAPHZ1             USER AREA PH1 STARTING ADDRESS         7  0897  M 051 12W           37
318 02 18          BCE   *&30,UAPHZ1,                                                 8  0904  B 941 12W           37
319 02 19          B     *&8                   THIS ROUTINE IS INITIALIZED FOR        4  0912  B 923               37
320 02 20          NOP   0,0                   THE TAPE LOADABLE VERSION              7  0916  N 000 000           37
321 02 21          MLC   UAPHZ1,CONVRT                                                7  0923  M 12W 698           38
322 02 22          B     K5TOK3                                                       4  0930  B 04Y               38
323 02 23          MLC   CONVRT,TPV1                                                  7  0934  M 698 568           38
324 02 24          MLC   56,TPAVLM             STARTING ADDR USER AREA PH2            7  0941  M 056 412           38
325 02 25          MLC   39,NC1CF              FIRST CONTROL FIELD SPECIFIC.          7  0948  M 039 W1V           38
326 02 26          MLC                         STARTING LOCATION OF CF1               1  0955  M                   38
327 02 27          MLC   74,RCMKPI             RECORD MARK IN PADDING RECORDS         7  0956  M 074 527           39
328 02 28          MLC   73,MAXBLO             LARGEST OUTPUT BLOCK                   7  0963  M 073 W7T           39
329 02 29          MLC   61,RCC4#4             RECORD COUNT LOW ORDER                 7  0970  M 061 D1W           39
330 02 30          BCE   NXTINA,FLR,           BLANK-FIXED  1-VARIABLE                8  0977  B |47 091           39
331 02 31          C     015,@001@             001 IF UNBLOCKED VARIABLE INPUT        7  0985  C 015 D1Z           39
332 02 32          BU    SPCRLI                IF BLOCKED CHECK FOR RCC               5  0992  B R5T /             40
333 02 33          BCE   *&5,MXBLK4,           IF 66-69 BLANK  L4 LOADED              8  0997  B |09 W5U           40
334 02 34          B     *&8                   INTO MXBLK4                            4  1005  B |16               40
335 02 35          MLC   L4,MXBLK4                                                    7  1009  M W4W W5U           40
336 02 36   CKOT   C     018,@001@             001 IF UNBLOCKED OUTPUT                7  1016  C 018 D1Z           40
337 02 37          BU    NXTINA                                                       5  1023  B |47 /             40
338 02 38          BCE   *&5,MAXBLO,           IF 70-73 BLANK   L4 LOADED             8  1028  B |40 W7T           41
339 02 39          B     *&8                   INTO MAXBLO                            4  1036  B |47               41
340 02 40          MLC   L4,MAXBLO                                                    7  1040  M W4W W7T           41
341 02 41   NXTINA C     25,BLNK5              BLANK IF NO HEADER OR TRAILER          7  1047  C 025 C5V           41
342 02 42          BE    *&8                   LABELS SPECIFIED ON CC1                5  1054  B |66 S             41
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SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

343 02 43          MLC   @1@,LABELS         SET LABEL INDICATOR                    7  1059  M D2| 413            41
344 02 44          BCE   WDMKST,24,4                                               8  1066  B /04 024 4          42
345 02 45          BCE   WDMKST,24,3        CHECK FOR 120 CHARAC                   8  1074  B /04 024 3          42
346 02 46          BCE   WDMKST,22,4                                               8  1082  B /04 022 4          42
347 02 47          BCE                                                             1  1090  B                    42
348 02 48          BCE   WDMKST,22,3                                               8  1091  B /04 022 3          42
349 02 49          BCE                                                             1  1099  B                    42
350 02 50          B     *&30                                                      4  1100  B /33                42
351 02 51   WDMKST CW    REELSQ-2,FLSERL-4                                         7  1104  ) 439 433            43
352 02 52          CW    HDRTAG&1                                                  4  1111  ) 428                43
353 02 53          MLC   @1@,LBBUCK                                                7  1115  M D2| 414            43
354 02 54          SW    FILNAM&1,FILESE&1                                         7  1122  , 448 453            43
355 02 55          SW    SYSCRE&1                                                  4  1129  , 458                43
356 02 56          SW    6,3                                                       7  1133  , 006 003            43
357 02 57          SW                                                              1  1140  ,                    43
358 02 58          SW                                                              1  1141  ,                    44
359 02 59   *                               SCAN CONTROL CARD ONE FOR INVALID
360 02 60   *                               CHARACTERS
361 02 61          C     36,@0000@          CHECK COLUMNS 33-36                    7  1142  C 036 D2U            44
362 02 62          BL    *&5                CF1 LOCATION CANNOT BE ZERO OR AN      5  1149  B /58 T              44
363 02 63          B     ERMCD              ALPHABETICAL CHARACTER                 4  1154  B N6/                44
364 02 64          SBR   INDEX1,0                                                  7  1158  H 089 000            44
365 02 65          SBR   INDEX2,1                                                  7  1165  H 094 001            44
366 02 66          SBR   INDEX3,12                                                 7  1172  H 099 012            44
367 02 67          MLC   @13-18@,ZQST                                              7  1179  M D2Z C3Z            45
368 02 68          C     BI,@000@           CHECK COLUMNS 13-18                    7  1186  C I86 D3S            45
369 02 69          BE    ERMCD                                                     5  1193  B N6/ S              45
370 02 70          C     BO,@000@                                                  7  1198  C 185 D3S            45
371 02 71          BE    ERMCD                                                     5  1205  B N6/ S              45
372 02 72          BCE   RTOUR,FLR,                                                8  1210  B S73 091            45
373 02 73          C     15,@   @           BLANK IF BLOCKED VARIABLE INPUT        7  1218  C 015 D3V            46
374 02 74          BE    CM18TB                                                    5  1225  B S42 S              46
375 02 75          C     15,@001@           UNBLOCKED VARIABLE RECORDS             7  1230  C 015 D1Z            46
376 02 76          BU    ERMCD                                                     5  1237  B N6/ /              46
377 02 77   CM18TB MLC   @000@,215                                                 7  1242  M D3S 215            46
378 02 78          C     18,@   @           BLANK IF BLOCKED VARIABLE OUTPUT       7  1249  C 018 D3V            46
379 02 79          BE    RTOUR                                                     5  1256  B S73 S              47
380 02 80          C     18,@001@           UNBLOCKED VARIABLE OUTPUT              7  1261  C 018 D1Z            47
381 02 81          BU    ERMCD                                                     5  1268  B N6/ /              47
382 02 82   RTOUR  MLC   @000@,218                                                 7  1273  M D3S 218            47
383 02 83          MLC   @0@,203                                                   7  1280  M D3W 203            47
384 02 84          MLC   @0@,206                                                   7  1287  M D3W 206            47
385 02 85          MLC   @0@,27                                                    7  1294  M D3W 027            48
386 02 86          MLC   @01-06@,ZQST                                              7  1301  M D4/ C3Z            48
387 02 87          BCE   ERMTP,2,           CHECK COLUMNS 1-6                      8  1308  B P7/ 002            48
388 02 88          BCE                      COL 1,2,4,5 MUST BE SPECIFIED          1  1316  B                    48
389 02 89          BCE   ERMTP,5,           COL 3 MUST BE SPECIFIED IF 6           8  1317  B P7/ 005            48
390 02 90          BCE                      IS SPECIFIED.6 IS SPECIFIED FOR        1  1325  B                    48
391 02 91          BCE   ABZX,6,            3-WAY MERGE                            8  1326  B T46 006            49
392 02 92          BCE   ERMTP,3,                                                  8  1334  B P7/ 003            49
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SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

393 02 93          B     BRXQ                                                    4  1342  B T72               49
394 02 94   ABZX   BCE   *&5,3,                                                  8  1346  B T58 003           49
395 02 95          B     ERMTP                                                   4  1354  B P7/               49
396 02 96          MLC   @8@,3                                                   7  1358  M D4S 003           49
397 02 97          MLC   @9@,6                                                   7  1365  M D4T 006           50
398 02 98   BRXQ   C     1&X1,1&X2          CHECK FOR MULTIPLE USE               7  1372  C 0|1 0!1           50
399 02 99          BE    ERMTP              OF A TAPE DRIVE                      5  1379  B P7/ S             50
400 03 00          C     1&X1,2&X2                                               7  1384  C 0|1 0!2           50
401 03 01          BE    ERMTP                                                   5  1391  B P7/ S             50
402 03 02          C     1&X1,3&X2                                               7  1396  C 0|1 0!3           50
403 03 03          BE    ERMTP                                                   5  1403  B P7/ S             51
404 03 04          C     1&X1,4&X2                                               7  1408  C 0|1 0!4           51
405 03 05          BE    ERMTP                                                   5  1415  B P7/ S             51
406 03 06   CBC    C     1&X1,5&X2                                               7  1420  C 0|1 0!5           51
407 03 07          BE    ERMTP                                                   5  1427  B P7/ S             51
408 03 08          MA    @001@,INDEX1                                            7  1432  # D1Z 089           51
409 03 09          MA    @001@,INDEX2                                            7  1439  # D1Z 094           52
410 03 10          MA    @I8H@,INDEX3                                            7  1446  # D4W 099           52
411 03 11          MLC   @N@,CBC&X3                                              7  1453  M D4X UB0           52
412 03 12          A     @1@,CNTER1#1                                            7  1460  A D2| D4Y           52
413 03 13          C     CNTER1,@5@                                              7  1467  C D4Y D4Z           52
414 03 14          BH    BRXQ                                                    5  1474  B T72 U             53
415 03 15          MLC   @000@,INDEX1                                            7  1479  M D3S 089           53
416 03 16          MLC   I3TUN,3                                                 7  1486  M 340 003           53
417 03 17          MLC   MI3TUN,6                                                7  1493  M 343 006           53
418 03 18   RRDC   C     1&X1,@6@           CHECK FOR ANY DRIVE NUMBER           7  1500  C 0|1 D5|           53
419 03 19          BL    ERMTP              HIGHER THAN 6                        5  1507  B P7/ T             53
420 03 20          MA    @001@,INDEX1                                            7  1512  # D1Z 089           54
421 03 21          C     INDEX1,@6@                                              7  1519  C 089 D5|           54
422 03 22          BH    RRDC                                                    5  1526  B V00 U             54
423 03 23          MLC   @ 19  @,ZQST                                            7  1531  M D5V C3Z           54
424 03 24          BCE   CQZ,19,C           CHECK COLUMN 19                      8  1538  B W45 019 C         54
425 03 25          BCE   CQZ,19,P                                                8  1546  B W45 019 P         55
426 03 26          C     19,@0@                                                  7  1554  C 019 D3W           55
427 03 27          BL    *&8                                                     5  1561  B V73 T             55
428 03 28          MLC   @1@,SWP#1                                               7  1566  M D2| D5W           55
429 03 29          C     19,@7@                                                  7  1573  C 019 D5X           55
430 03 30          BH    *&8                                                     5  1580  B V92 U             55
431 03 31          MLC   @1@,SWP                                                 7  1585  M D2| D5W           56
432 03 32          BCE   CQZ,URPI,                                               8  1592  B W45 186           56
433 03 33          SBR   INDEX1,0                                                7  1600  H 089 000           56
434 03 34   INDXUR C     URPI,1&X1                                               7  1607  C 186 0|1           56
435 03 35          BU    ZZRQ               CK URPI WITH I/O TP UNITS            5  1614  B W26 /             56
436 03 36          MLC   @1@,ERM6SW#1                                            7  1619  M D2| D5Y           57
437 03 37   ZZRQ   MA    @001@,INDEX1                                            7  1626  # D1Z 089           57
438 03 38          C     INDEX1,@6@                                              7  1633  C 089 D5|           57
439 03 39          BH    INDXUR                                                  5  1640  B W07 U             57
440 03 40   CQZ    MLC   @0@,219                                                 7  1645  M D3W 219           57
441 03 41          MLC   @58-73@,ZQST                                            7  1652  M D6T C3Z           58
442 03 42          MLC   @000@,INDEX1       CHECK COLUMNS 58-73                  7  1659  M D3S 089           58
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

443 03 43          MLC   @0@,227                                                7  1666  M D3W 227           58
444 03 44          SW    BLNK5-3                                                4  1673  , C5S               58
445 03 45   CMBLN  C     61&X1,BLNK5                                            7  1677  C 0W1 C5V           58
446 03 46          BU    *&8                                                    5  1684  B W96 /             58
447 03 47          MLC   TSERO,261&X1                                           7  1689  M C5| 2W1           59
448 03 48          MA    @004@,INDEX1                                           7  1696  # D6W 089           59
449 03 49          C     INDEX1,@16@                                            7  1703  C 089 D6Y           59
450 03 50          BH    CMBLN                                                  5  1710  B W77 U             59
451 03 51          CW    BLNK5-3                                                4  1715  ) C5S               59
452 03 52          MLC   @001@,INDEX1                                           7  1719  M D1Z 089           59
453 03 53          MLC   @ 21  @,ZQST                                           7  1726  M D7T C3Z           60
454 03 54          B     OKIND                  CHECK COLUMNS 21-25             4  1733  B P0V               60
455 03 55          MLC   @22@,ZQST-2                                            7  1737  M D7V C3X           60
456 03 56          B     OKIND                                                  4  1744  B P0V               60
457 03 57          MLC   @23@,ZQST-2                                            7  1748  M D7X C3X           60
458 03 58          MLC   @N@,BRNON4                                             7  1755  M D4X P4/           60
459 03 59          MLC   @N@,BRNON3                                             7  1762  M D4X P3T           61
460 03 60          MLC   @N@,BRNON2                                             7  1769  M D4X P2V           61
461 03 61          B     OKIND                                                  4  1776  B P0V               61
462 03 62          MLC   @24@,ZQST-2                                            7  1780  M D7Z C3X           61
463 03 63          MLC   @B@,BRNON2                                             7  1787  M D8| P2V           61
464 03 64          MLC   @B@,BRNON3                                             7  1794  M D8| P3T           61
465 03 65          MLC   @B@,BRNON4                                             7  1801  M D8| P4/           62
466 03 66          B     OKIND                                                  4  1808  B P0V               62
467 03 67          MLC   @25@,ZQST-2                                            7  1812  M D8S C3X           62
468 03 68          MLC   @N@,BRNON3                                             7  1819  M D4X P3T           62
469 03 69          MLC   @N@,BRNON4                                             7  1826  M D4X P4/           62
470 03 70          B     OKIND                                                  4  1833  B P0V               62
471 03 71          MLC   @26@,ZQST-2                                            7  1837  M D8U C3X           63
472 03 72          MLC   @9@,BRNON2&7           CHECK COLUMN 26                 7  1844  M D4T P3S           63
473 03 73          MLC   @N@,BRNON1                                             7  1851  M D4X P1X           63
474 03 74          B     OKIND                                                  4  1858  B P0V               63
475 03 75          MLC   @57@,ZQST-2                                            7  1862  M D8W C3X           63
476 03 76          MLC   @B@,BRNON1             CHECK COLUMN 57                 7  1869  M D8| P1X           63
477 03 77          MLC   @N@,BRNON2                                             7  1876  M D4X P2V           64
478 03 78          MA    @030@,INDEX1                                           7  1883  # D8Z 089           64
479 03 79          B     OKIND                                                  4  1890  B P0V               64
480 03 80          MLC   @74@,ZQST-2                                            7  1894  M D9/ C3X           64
481 03 81          MA    @016@,INDEX1                                           7  1901  # D9U 089           64
482 03 82          B     OKIND                  CHECK COLUMNS 74,75, AND 20     4  1908  B P0V               64
483 03 83          MLC   @75@,ZQST-2                                            7  1912  M D9W C3X           65
484 03 84          B     OKIND                                                  4  1919  B P0V               65
485 03 85          MLC   @20@,ZQST-2                                            7  1923  M D9Y C3X           65
486 03 86          MA    @I4D@,INDEX1                                           7  1930  # E0/ 089           65
487 03 87          MLC   @0@,BRNON&7                                            7  1937  M D3W P1W           65
488 03 88          MLC   @2@,BRNON2&7                                           7  1944  M E0S P3S           65
489 03 89          MLC   @B@,BRNON2                                             7  1951  M D8| P2V           66
490 03 90          B     OKIND                                                  4  1958  B P0V               66
491 03 91          MLC   @28-29@,ZQST                                           7  1962  M E0X C3Z           66
492 03 92          C     NCF,@10@               CHECK COLUMNS 28-29             7  1969  C 096 E0Z           66
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SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

493 03 93          BL    ERMCF                                                    5  1976  B Q1U T             66
494 03 94          C     NCF,@00@                                                 7  1981  C 096 E1/           66
495 03 95          BE    ERMCF                                                    5  1988  B Q1U S             67
496 03 96          BCE   ERMCF,NCF,                                               8  1993  B Q1U 096           67
497 03 97          BCE   ERMCF,NCF-1,                                             8  2001  B Q1U 095           67
498 03 98          MLC   @07-08@,ZQST                                             7  2009  M E1W C3Z           67
499 03 99          C     NOINTP,@00@       CHECK COLUMNS 7-8                      7  2016  C I83 E1/           67
500 04 00          BE    ERMRL                                                    5  2023  B Q2Z S             68
501 04 01          BCE   ERMRL,NOINTP,                                            8  2028  B Q2Z I83           68
502 04 02          BCE   ERMRL,NOINTP-1,                                          8  2036  B Q2Z I82           68
503 04 03          C     46,@       @      IS EXPECTED FL SZ KNOWN                7  2044  C 046 E2T           68
504 04 04          BU    *&8                                                      5  2051  B !63 /             68
505 04 05          MLC   @0000000@,246                                            7  2056  M E3| 246           69
506 04 06          MLC   @000@,INDEX1                                             7  2063  M D3S 089           69
507 04 07   CMUSAR C     51&X1,BLNK5                                              7  2070  C 0V1 C5V           69
508 04 08          BU    *&8                                                      5  2077  B !89 /             69
509 04 09          MLC   TSERO,251&X1                                             7  2082  M C5| 2V1           69
510 04 10          MA    @005@,INDEX1                                             7  2089  # E3T 089           70
511 04 11          C     INDEX1,@2@                                               7  2096  C 089 E0S           70
512 04 12          BL    CMUSAR                                                   5  2103  B !70 T             70
513 04 13          MLC   @000@,INDEX1                                             7  2108  M D3S 089           70
514 04 14          MLC   @N@,QZWRT                                                7  2115  M D4X N8U           70
515 04 15          B     CSCAN                                                    4  2122  B O5S               70
516 04 16          BCE   ERMDP,SWP,1                                              8  2126  B P8Z D5W 1         71
517 04 17   ZZGX   BCE   ERMS6,ERM6SW,1                                           8  2134  B R2| D5Y 1         71
518 04 18   *                              ESTABLISH AVAILABLE PHASE 2 AREA
519 04 19   BTPVLM BCE   DUMMY,TPAVLM,     BRANCH IF NO PH2 USER AREA             8  2142  B J79 412           71
520 04 20          MLC   TPAVLM,CONVRT                                            7  2150  M 412 698           71
521 04 21          B     K5TOK3                                                   4  2157  B 04Y               71
522 04 22          MLC   CONVRT,CSTCNS                                            7  2161  M 698 552           72
523 04 23          MA    @I9I@,CSTCNS                                             7  2168  # E3W 552           72
524 04 24          B     REWND1                                                   4  2175  B K17               72
525 04 25   DUMMY  BCE   REWND1,MS,                                               8  2179  B K17 344           72
526 04 26          BCE   REWND1,MS,4                                              8  2187  B K17 344 4         72
527 04 27          MA    @00|@,CSTCNS                                             7  2195  # E3Z 552           73
528 04 28          BCE   REWND1,MS,5                                              8  2202  B K17 344 5         73
529 04 29          MA    @00|@,CSTCNS                                             7  2210  # E3Z 552           73
530 04 30   REWND1 MLC   I1TUN,*&4         REWIND TAPES                           7  2217  M 338 K27           73
531 04 31          RWD   0                                                        5  2224  U %U0 R             73
532 04 32          MLC   I2TUN,*&4                                                7  2229  M 339 K39           74
533 04 33          RWD   0                                                        5  2236  U %U0 R             74
534 04 34          BSS   PLYIN1,C                                                 5  2241  B K3W C             74
535 04 35          BCE   RWD2WY,MI3TUN,                                           8  2246  B K78 343           74
536 04 36          MLC   I3TUN,*&4                                                7  2254  M 340 K64           74
537 04 37          RWD   0                                                        5  2261  U %U0 R             74
538 04 38          MLC   MI3TUN,*&4                                               7  2266  M 343 K76           75
539 04 39          RWD   0                                                        5  2273  U %U0 R             75
540 04 40   RWD2WY MLC   MI1TUN,*&4                                               7  2278  M 341 K88           75
541 04 41          RWD   0                                                        5  2285  U %U0 R             75
542 04 42          MLC   MI2TUN,*&4                                               7  2290  M 342 L00           75
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SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

543 04 43          RWD   0                                                         5  2297  U %U0 R             75
544 04 44          BCE   ONECF,NCF,1        BRANCH IF ONE CONTROL FIELD            8  2302  B N57 096 1         76
545 04 45   *
546 04 46   *               READ THE SECOND CONTROL CARD
547 04 47   *
548 04 48          CS    80                 ONLY READ IF MORE THAN 1 CF            4  2310  / 080               76
549 04 49          R                                                               1  2314  1                   76
550 04 50          SW    1                                                         4  2315  , 001               76
551 04 51          CS    332                                                       4  2319  / 332               76
552 04 52          CS                                                              1  2323  /                   76
553 04 53          MLC   080,280                                                   7  2324  M 080 280           76
554 04 54          W                                                               1  2331  2                   77
555 04 55          CC    K                                                         2  2332  F K                 77
556 04 56          MLC   63,70              SHIFT CONTROL CARD 7 POSITIONS         7  2334  M 063 070           77
557 04 57          MLC   NC1CF,7            MOVE FIRST CONTROL FIELD               7  2341  M W1V 007           77
558 04 58          MLC                      CONSTANTS TO READ AREA                 1  2348  M                   77
559 04 59          SW    5                  WORD MARKS SET FOR CONTROL             4  2349  , 005               77
560 04 60          SW    8,12               FIELD POSITIONS AND LENGTHS            7  2353  , 008 012           77
561 04 61          SW    15,19                                                     7  2360  , 015 019           78
562 04 62          SW    22,26                                                     7  2367  , 022 026           78
563 04 63          SW    29,33                                                     7  2374  , 029 033           78
564 04 64          SW    36,40                                                     7  2381  , 036 040           78
565 04 65          SW    43,47                                                     7  2388  , 043 047           78
566 04 66          SW    50,54                                                     7  2395  , 050 054           79
567 04 67          SW    57,61                                                     7  2402  , 057 061           79
568 04 68          SW    64,68                                                     7  2409  , 064 068           79
569 04 69          SBR   INDEX1,0                                                  7  2416  H 089 000           79
570 04 70          MLC   @2@,QRS                                                   7  2423  M E0S B4S           79
571 04 71   ADDNCF A     @1@,NCFCT          TEST FOR VALID NUMBER OF CFS           7  2430  A D2| C4/           80
572 04 72          A     @7@,CDLNG                                                 7  2437  A D5X C4T           80
573 04 73          C     NCF,NCFCT                                                 7  2444  C 096 C4/           80
574 04 74          BL    ADDNCF                                                    5  2451  B M30 T             80
575 04 75          MLC   @NCF INVALIDLY SPECIFIED@,PRMCD                           7  2456  M E6S C2/           80
576 04 76          B     CSCAN                                                     4  2463  B O5S               80
577 04 77          MLC   @OUT OF SEQUENCE        @,PRMCD                           7  2467  M E8V C2/           81
578 04 78   CHKCFL C     NCF,CNTNCF         COMPUTE TOTAL LENGTH OF CON FIELD      7  2474  C 096 W2|           81
579 04 79          BE    CCTLCF                                                    5  2481  B N11 S             81
580 04 80   ANCCF  A     7,CTLCF                                                   7  2486  A 007 W1Y           81
581 04 81          MA    @007@,ANCCF&3                                             7  2493  # E8Y M89           81
582 04 82          A     @1@,CNTNCF                                                7  2500  A D2| W2|           82
583 04 83          B     CHKCFL                                                    4  2507  B M74               82
584 04 84   CCTLCF C     TLCF,CTLCF          COMPARE TOT LNGH OF CON FIELD         7  2511  C I89 W1Y           82
585 04 85          BE    CLTLCF              WITH COMPUTED VALUE                   5  2518  B N69 S             82
586 04 86   ERRMS4 CS    332                                                       4  2523  / 332               82
587 04 87          CS                                                              1  2527  /                   82
588 04 88          MLC   PRMS4,244                                                 7  2528  M Y2/ 244           82
589 04 89          W                                                               1  2535  2                   83
590 04 90          CC    1                                                         2  2536  F 1                 83
591 04 91          H     *&1                PRESS START TO ACCEPT COMPUTED         4  2538  . N42               83
592 04 92          B     CLTLCF             VALUE                                  4  2542  B N69               83
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SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

593 04 93   CNOP1  MLC   @1@,CNOP                                                   7  2546  M D2| 086            83
594 04 94          B     CRE                                                        4  2553  B O47                83
595 04 95   ONECF  C     TLCF,NC1CF                                                 7  2557  C I89 W1V            83
596 04 96          BU    ERRMS4                                                     5  2564  B N23 /              84
597 04 97   CLTLCF MLC   CTLCF,CTLCF4                                               7  2569  M W1Y A75            84
598 04 98          C     CTLCF4,L4                                                  7  2576  C A75 W4W            84
599 04 99          BL    ERRMS5                                                     5  2583  B Z6/ T              84
600 05 00          MLC   @  @,COUNT2                                                7  2588  M E9| W2S            84
601 05 01   CKURPI BCE   SNGLCF,NCF,1                                               8  2595  B J0T 096 1          84
602 05 02          SBR   INDEX1,0                                                   7  2603  H 089 000            85
603 05 03          SBR   INDEX2,0                                                   7  2610  H 094 000            85
604 05 04   CCFXSL ZA    4&X2,CONVRT         CONVERT STARTING LOCATION OF           7  2617  ? 0!4 698            85
605 05 05          B     K5TOK3              CONTROL FIELDS TO 3 DIGITS             4  2624  B 04Y                85
606 05 06          MLC   CONVRT,CF1SL&X1                                            7  2628  M 698 3V3            85
607 05 07          C     CONVRT,@001@        SEE IF A CTL FLD STARTS IN COL 1       7  2635  C 698 D1Z            85
608 05 08          BE    CNOP1                                                      5  2642  B N46 S              86
609 05 09   CRE    MLC   CONVRT,CF1RE&X1     COMPUTE RIGHT EDGE                     7  2647  M 698 0/U            86
610 05 10          MA    7&X2,CF1RE&X1       OF CONTROL FIELDS                      7  2654  # 0!7 0/U            86
611 05 11          MA    @I9H@,CF1RE&X1                                             7  2661  # E9T 0/U            86
612 05 12          MLC   CF1RE&X1,CONVRT     EXPAND RIGHT EDGE TO 4 DIGITS          7  2668  M 0/U 698            86
613 05 13          B     EXPAND                                                     4  2675  B 620                86
614 05 14          MLC   HOLD,CF1REX                                                7  2679  M 693 V6X            87
615 05 15          MA    @004@,*-7                                                  7  2686  # D6W O85            87
616 05 16          MA    @003@,FSLST                                                7  2693  # E9W 04X            87
617 05 17          MA    @007@,INDEX2                                               7  2700  # E8Y 094            87
618 05 18          MA    @003@,INDEX1                                               7  2707  # E9W 089            87
619 05 19          A     @1@,COUNT2                                                 7  2714  A D2| W2S            88
620 05 20          C     NCF,COUNT2                                                 7  2721  C 096 W2S            88
621 05 21          BL    CCFXSL                                                     5  2728  B O17 T              88
622 05 22          MA    CF1RE,CFIRE                                                7  2733  # 01U 337            88
623 05 23          MLC   C16000,CONVRT                                              7  2740  M 580 698            88
624 05 24          S     CF1REX,CONVRT                                              7  2747  S V6X 698            89
625 05 25          B     K5TOK3                                                     4  2754  B 04Y                89
626 05 26          MLC   CONVRT,CCCFRE                                              7  2758  M 698 04U            89
627 05 27          SW    LBLBKT-32,LBLBKT-30                                        7  2765  , 464 466            89
628 05 28          SW                                                               1  2772  ,                    89
629 05 29   *
630 05 30   *                 READ THIRD CONTROL CARD
631 05 31   *
632 05 32          B     *&8               CC3 MAY BE OMITTED IF BLANK              4  2773  B P84                89
633 05 33   READC3 MLC   @1@,SW13                                                   7  2777  M D2| C5Z            89
634 05 34          CS    080                                                        4  2784  / 080                90
635 05 35          R                                                                1  2788  1                    90
636 05 36          SBR   INDEX1,0                                                   7  2789  H 089 000            90
637 05 37   VRE    BCE   RUTN,1,,          BRANCH IF BOOTSTRAP CARD READ            8  2796  B B47 001 ,          90
638 05 38          SW    1                                                          4  2804  , 001                90
639 05 39          MLCWA 80,280                                                     7  2808  L 080 280            90
640 05 40          W                                                                1  2815  2                    90
641 05 41          CC    K                                                          2  2816  F K                  91
642 05 42          BCE   BRZAQ,SW13,1      TEST TO DETERMINE IF CONTROL             8  2818  B Q78 C5Z 1          91
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SEQ PG LIN  LABEL  OP    OPERANDS                                                   SFX CT  LOCN  INSTRUCTION TYPE  CARD

643 05 43          C     TSINK,223          CARD IS 3,4, OR 5                              7  2826  C D1/ 223            91
644 05 44          BU    CARYON                                                            5  2833  B Q58 /              91
645 05 45          SW    221                                                               4  2838  , 221                91
646 05 46          C     TSINK,250                                                         7  2842  C D1/ 250            91
647 05 47          CW    221                                                               4  2849  ) 221                91
648 05 48          BE    READC3                                                            5  2853  B P77 S              92
649 05 49   CARYON SW    224                                                               4  2858  , 224                92
650 05 50          C     TSINK,250                                                         7  2862  C D1/ 250            92
651 05 51          CW    224                                                               4  2869  ) 224                92
652 05 52          BE    LBBQ               BRANCH IF CC3                                  5  2873  B R42 S              92
653 05 53   BRZAQ  C     TSINK,250                                                         7  2878  C D1/ 250            92
654 05 54          BE    ERRCC                                                             5  2885  B Q4U S              92
655 05 55          BCE   *&17,SW14,1                                                       8  2890  B R14 C6| 1          93
656 05 56          BCE   RDIH,ITLI,2        BRANCH IF CONTROL CARD                         8  2898  B /7T 188 2          93
657 05 57          BCE   RDIH,ITLI,4        #4 IS TO BE READ                               8  2906  B /7T 188 4          93
658 05 58          BCE   *&17,SW15,1                                                       8  2914  B R38 C6/ 1          93
659 05 59          BCE   RDOH,OTLI,2        BRANCH IF CONTROL CARD                         8  2922  B S2W 189 2          94
660 05 60          BCE   RDOH,OTLI,4        #5 SHOULD BE PRESENT                           8  2930  B S2W 189 4          94
661 05 61          B     ERRCC                                                             4  2938  B Q4U                94
662 05 62   LBBQ   MLC   @3@,QRS            BEGIN CC3 ROUTINE HERE                         7  2942  M E9X B4S            94
663 05 63          MLC   @23@,CDLNG                                                        7  2949  M D7X C4T            94
664 05 64   LBBWZ  BWZ   *&5,201&X1,2                                                      8  2956  V R68 2|1 2          95
665 05 65          B     ERMCD                                                             4  2964  B N6/                95
666 05 66          MA    @001@,INDEX1                                                      7  2968  # D1Z 089            95
667 05 67          C     INDEX1,CDLNG                                                      7  2975  C 089 C4T            95
668 05 68          BH    LBBWZ                                                             5  2982  B R56 U              95
669 05 69          BCE   *&23,4,            BRANCH IF WORK TAPES DO NOT                    8  2987  B ?17 004            95
670 05 70          MLC   @1@,LABELS         CONTAIN HEADER LABELS                          7  2995  M D2| 413            96
671 05 71          BCE   *&8,4,1            CHECK FOR 120 CHARACTER LABELS                 8  3002  B ?17 004 1          96
672 05 72          MLC   @1@,LBBUCK         ON INPUT TAPE                                  7  3010  M D2| 414            96
673 05 73          MLC   3,PRMDOT           MOVE CONSTANTS FROM CC#3                       7  3017  M 003 11Y            96
674 05 74          MLC                      TO RESPECTIVE BUCKETS                          1  3024  M                    96
675 05 75          BCE   MVCN2,PRMDIN,      BRANCH IF INPUT IN MOVE MODE                   8  3025  B ?83 11X            96
676 05 76          MLC   @L@,INMODE                                                        7  3033  M E9Y 562            97
677 05 77          BCE   MVCN2,FLR,         BRANCH IF FLR                                  8  3040  B ?83 091            97
678 05 78          BCE   MVCN2,RCC4,        BRANCH IF NO RLI                               8  3048  B ?83 D1W            97
679 05 79          MLC   1,KKK3                                                            7  3056  M 001 619            97
680 05 80          BCE   MVCN2,KKK3,3       RECORD CHARACTER COUNT MUST BE                 8  3063  B ?83 619 3          97
681 05 81          BCE   MVCN2,KKK3,4       EITHER 3 OR 4 CHARACTERS                       8  3071  B ?83 619 4          98
682 05 82          B     ERRLI                                                             4  3079  B R9/                98
683 05 83   MVCN2  BCE   *&8,PRMDOT,        BRANCH OUTPUT IN MOVE MODE                     8  3083  B ?98 11Y            98
684 05 84          MLC   @L@,OUTMOD                                                        7  3091  M E9Y 549            98
685 05 85   TCD3   MLC   18,TPSROP          OUTPUT TAPE SERIAL OPTION                      7  3098  M 018 422            98
686 05 86          MLC                      OUTPT HEADER REEL INCREMENT                    1  3105  M                    98
687 05 87          MLC                      OUTPT HEADER FILE SERIAL                       1  3106  M                    98
688 05 88          MLC                      OUTPT HEADER CHECKING                          1  3107  M                    99
689 05 89          MLC   5                  WK TAPE HEADER LABEL TAPEMARK                  4  3108  M 005                99
690 05 90          MLC   4                  WORK TAPE HEADER LABEL                         4  3112  M 004                99
691 05 91          MLC   11                 UNLOAD OPTION                                  4  3116  M 011                99
692 05 92          MLC   10,DATE            RUN DATE INDICATED IN CC3                      7  3120  M 010 501            99
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SEQ PG LIN  LABEL  OP    OPERANDS                                                       SFX CT  LOCN  INSTRUCTION TYPE  CARD

693 05 93          MLC   12,RTAIN          RETENTION CYCLE FROM CC                            7  3127  M 012 553            99
694 05 94          MLC   14,LBLBKT-30      REEL SEQUENCE INCREMENT OPTION                     7  3134  M 014 466            99
695 05 95          MLC                     HEADER CHECK-ALL OPTION                            1  3141  M                   100
696 05 96          BCE   *&12,LBBUCK,                                                         8  3142  B A61 414           100
697 05 97          MLC   22,SYSCRE                                                            7  3150  M 022 457           100
698 05 98          B     READC3                                                               4  3157  B P77               100
699 05 99          MLC   23,TPSERL         NEW TAPE SERIAL NUMBERS                            7  3161  M 023 432           100
700 06 00          B     READC3            READ NEXT CARD                                     4  3168  B P77               100
701 06 01   CTLCF4 DCW   @0000@                                                               4  3175                      100
702 06 02   TEMP   DCW   @                    @                                              21  3196                      101
703 06 03                0                                                                    1  3197                      101
704 06 04   DVR          @                   @                                               20  3217                      102
705 06 05   DVD          @                    @                                              21  3238                      103
706 06 06   QUOT   EQU   DVD                                                                      3238
707 06 07   NEW    DCW   @0@                                                                  1  3239                      103
708 06 08   QSS          @ @                                                                  1  3240                      103
709 06 09   RMDRSN       1                                                                    1  3241                      103
710 06 10   INDEX        0?                                                                   2  3243                      103
711 06 11   LOC    DSA   DVD-31                                                               3  3246  B07                 103
712 06 12   RUTN   BCE   *&17,SW11,1       CHECK TO SEE IF ALL CONTROL CARDS                  8  3247  B B71 C5X 1         103
713 06 13          BCE   ERRLBL,ITLI,2     NEEDED HAVE BEEN READ PRIOR TO                     8  3255  B Q6W 188 2         104
714 06 14          BCE   ERRLBL,ITLI,4     BOOTSTRAP CARD                                     8  3263  B Q6W 188 4         104
715 06 15          BCE   *&17,SW12,1                                                          8  3271  B B95 C5Y 1         104
716 06 16          BCE   ERRLBL,OTLI,2                                                        8  3279  B Q6W 189 2         104
717 06 17          BCE   ERRLBL,OTLI,4                                                        8  3287  B Q6W 189 4         105
718 06 18          MLC   @B@,LDXQ                                                             7  3295  M D8| K3S           105
719 06 19          MLC   @N@,SETWM                                                            7  3302  M D4X K0Z           105
720 06 20          BCE   LAB120,LBBUCK,1                                                      8  3309  B T6S 414 1         105
721 06 21          BCE   *&8,DATE,         BRANCH IF NO DATE SPEC ON CC3                      8  3317  B C32 501           105
722 06 22   DATE80 MLC   DATE,OHDATE                                                          7  3325  M 501 457           106
723 06 23          BCE   MVOHDT,ITLI,                                                         8  3332  B C78 188           106
724 06 24          C     OTLI,@1@                                                             7  3340  C 189 D2|           106
725 06 25          BU    *&8                                                                  5  3347  B C59 /             106
726 06 26          MLC   @1@,LBLSAM                                                           7  3352  M D2| 572           106
727 06 27          C     OTLI,@3@          CONTROL PORTION OF 120 CHAR LABEL                  7  3359  C 189 E9X           107
728 06 28          BU    *&8                                                                  5  3366  B C78 /             107
729 06 29          MLC   @1@,LBLSAM                                                           7  3371  M D2| 572           107
730 06 30   MVOHDT MLC   @-@,OHDATE&1                                                         7  3378  M E9Z 458           107
731 06 31          MLC   @-@,LBLBKT-24                                                        7  3385  M E9Z 472           107
732 06 32          MLC   @-@,LBLBKT-4                                                         7  3392  M E9Z 492           108
733 06 33          BCE   ADD4,FLR,                                                            8  3399  B D15 091           108
734 06 34          BCE   AD4RLI,RCDIST,                                                       8  3407  B E67 196           108
735 06 35   ADD4   ZA    L4,CONVRT         CONVERT L, MAXBLK, MINREC TO                       7  3415  ? W4W 698           108
736 06 36          B     K5TOK3            THREE DIGIT NUMBER                                 4  3422  B 04Y               108
737 06 37          MLC   CONVRT,L                                                             7  3426  M 698 347           109
738 06 38          BCE   CMPLMT,FLR,       BRANCH IF FIXED LENGTH RECORDS                     8  3433  B D93 091           109
739 06 39          BCE   TESTMX,MNREC4,                                                       8  3441  B D67 W5|           109
740 06 40          MLC   MNREC4,CONVRT                                                        7  3449  M W5| 698           109
741 06 41          B     K5TOK3                                                               4  3456  B 04Y               109
742 06 42          MLC   CONVRT,MINREC                                                        7  3460  M 698 I92           110
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SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

743 06 43   TESTMX BCE   CMPLMT,MXBLK4,                                             8  3467  B D93 W5U          110
744 06 44          MLC   MXBLK4,CONVRT                                              7  3475  M W5U 698          110
745 06 45          B     K5TOK3                                                     4  3482  B 04Y              110
746 06 46          MLC   CONVRT,MAXBLK                                              7  3486  M 698 I95          110
747 06 47   CMPLMT MLC   C16000,CONVRT        COMPUTE THREE DIGIT COMPLEMENT        7  3493  M 580 698          111
748 06 48          S     L4,CONVRT            OF L, MAXBLK, MINREC                  7  3500  S W4W 698          111
749 06 49          B     K5TOK3                                                     4  3507  B 04Y              111
750 06 50   ADD    MLC   CONVRT,COMPL                                               7  3511  M 698 00V          111
751 06 51          BCE   CMPTUP,FLR,         BRANCH IF FIXED LENGTH RECORDS         8  3518  B E89 091          111
752 06 52   MODAD  MA    @004@,CMPLMT&10                                            7  3526  # D6W E03          112
753 06 53          MA    @003@,ADD&6                                                7  3533  # E9W E17          112
754 06 54          A     @1@,COUNT                                                  7  3540  A D2| W2T          112
755 06 55   PAIN   BCE   NOPPN,MNREC4,                                              8  3547  B E78 W5|          112
756 06 56          BCE   CMPTUP,COUNT,3                                             8  3555  B E89 W2T 3        112
757 06 57          B     CMPLMT                                                     4  3563  B D93              113
758 06 58   AD4RLI A     @4@,L4                                                     7  3567  A F0| W4W          113
759 06 59          B     ADD4                                                       4  3574  B D15              113
760 06 60   NOPPN  MLC   @N@,PAIN                                                   7  3578  M D4X E47          113
761 06 61          B     MODAD                                                      4  3585  B E26              113
762 06 62   CMPTUP BCE   MS4,MS,4            DETERMINE MACHINE SIZE                 8  3589  B F36 344 4        113
763 06 63          BCE   MS5,MS,5                                                   8  3597  B F54 344 5        114
764 06 64          BCE   MS6,MS,6                                                   8  3605  B F79 344 6        114
765 06 65          CS    332                                                        4  3613  / 332              114
766 06 66          CS                                                               1  3617  /                  114
767 06 67          MLC   PRMS1,238                                                  7  3618  M X1Z 238          114
768 06 68          W                                                                1  3625  2                  114
769 06 69          CC    1                                                          2  3626  F 1                114
770 06 70          MLC   @4@,MS                                                     7  3628  M F0| 344          115
771 06 71          H                         MACHINE SIZE ERROR                     1  3635  .                  115
772 06 72   MS4    ZA    @8000@,WKAREA                                              7  3636  ? F0U W0Y          115
773 06 73          ZA    @4775@,DVD                                                 7  3643  ? F0Y B38          115
774 06 74          B     NUMRTR-8                                                   4  3650  B G00              115
775 06 75   MS5    ZA    @12000@,WKAREA                                             7  3654  ? F1T W0Y          115
776 06 76          ZA    @8775@,DVD                                                 7  3661  ? F1X B38          116
777 06 77          MLC   @I9Q@,GPMARK                                               7  3668  M F2| 350          116
778 06 78          B     NUMRTR-8                                                   4  3675  B G00              116
779 06 79   MS6    ZA    C16000,WKAREA                                              7  3679  ? 580 W0Y          116
780 06 80          ZA    @12775@,DVD                                                7  3686  ? F2V B38          116
781 06 81          MLC   @I9H@,GPMARK                                               7  3693  M E9T 350          116
782 06 82          BCE   *&27,TPAVLM,        COMPUTE THE UPPER LIMIT                8  3700  B G34 412          117
783 06 83   NUMRTR C     TPAVLM,WKAREA                                              7  3708  C 412 W0Y          117
784 06 84          BL    ERRTPV                                                     5  3715  B O3U T            117
785 06 85          S     TPAVLM,WKAREA                                              7  3720  S 412 W0Y          117
786 06 86          S     WKAREA,DVD                                                 7  3727  S W0Y B38          117
787 06 87          BCE   *&8,LABELS,                                                8  3734  B G49 413          118
788 06 88          S     @700@,DVD                                                  7  3742  S F2Y B38          118
789 06 89          C     I3TUN,@0@                                                  7  3749  C 340 D3W          118
790 06 90          BU    XYZ                                                        5  3756  B G83 /            118
791 06 91          A     @410@,DVD                                                  7  3761  A F3/ B38          118
792 06 92          BCE   *&8,LABELS,                                                8  3768  B G83 413          119
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SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

793 06 93          A     @300@,DVD                                                7  3776  A F3U B38           119
794 06 94   XYZ    MLC   @3@,DVR                                                  7  3783  M E9X B17           119
795 06 95          MZ    @0@,DVD                                                  7  3790  Y D3W B38           119
796 06 96          BCE   INIT,I3TUN,        BRANCH IF NOT 3-WAY MERGE             8  3797  B H12 340           119
797 06 97          MLC   @4@,DVR                                                  7  3805  M F0| B17           120
798 06 98   INIT   ZA    @03@,INDEX                                               7  3812  ? F3W B43           120
799 06 99          S     @12@,DVD                                                 7  3819  S F3Y B38           120
800 07 00          B     ED OP              BRANCH TO DIVISION SUBROUTINE         4  3826  B T8/               120
801 07 01          MLC   QUOT,UPLMT                                               7  3830  M B38 W5Y           120
802 07 02          BCE   CHECKQ,FLR,1       BRANCH IF VARIABLE LENGTH REC         8  3837  B H49 091 1         121
803 07 03          B     CNITQ                                                    4  3845  B H88               121
804 07 04   CHECKQ BCE   K3400,DESCND,1     BRANCH IF DESCENDING SEQUENCE         8  3849  B H65 090 1         121
805 07 05          BCE   CNITQ,NCF,1                                              8  3857  B H88 096 1         121
806 07 06   K3400  C     @3401@,UPLMT                                             7  3865  C F4S W5Y           121
807 07 07          BL    CMPRLL-8                                                 5  3872  B I07 T             122
808 07 08          MLC   @3400@,UPLMT                                             7  3877  M F4W W5Y           122
809 07 09          B     CMPRLL-8                                                 4  3884  B I07               122
810 07 10   CNITQ  C     @4000@,UPLMT                                             7  3888  C F5| W5Y           122
811 07 11          BL    CMPRLL-8                                                 5  3895  B I07 T             122
812 07 12          MLC   @3999@,UPLMT                                             7  3900  M F5U W5Y           122
813 07 13          BCE   LFTOUT,FLR,1                                             8  3907  B 15/ 091 1         123
814 07 14   CMPRLL C     BI,@001@           CHECK RECORD LENGTH SPEC FOR          7  3915  C I86 D1Z           123
815 07 15          BU    CRLBCK             FIXED LENGTH RECORDS                  5  3922  B 13V /             123
816 07 16          C     L4,@0013@                                                7  3927  C W4W F5Y           123
817 07 17          BH    ERRMS3             RECORD SIZE TOO SMALL                 5  3934  B 22Z U             123
818 07 18          B     CMPRLU                                                   4  3939  B 24Y               123
819 07 19          ORG   4135                                                            4135
820 07 20   CRLBCK C     L4,@0010@                                                7  4135  C W4W F6S           124
821 07 21          BH    ERRMS3                                                   5  4142  B 22Z U             124
822 07 22          B     CMPRLU                                                   4  4147  B 24Y               124
823 07 23   LFTOUT C     MXBLK4,UPLMT       CHECK RECORD LENGTH SPEC FOR          7  4151  C W5U W5Y           124
824 07 24          BL    NOSOAP             VARIABLE LENGTH RECORDS               5  4158  B 19/ T             124
825 07 25          C     MNREC4,@    @                                            7  4163  C W5| F6W           124
826 07 26          BE    CMPRLL                                                   5  4170  B I15 S             125
827 07 27          C     MNREC4,@0013@                                            7  4175  C W5| F5Y           125
828 07 28          BH    ERRMS3                                                   5  4182  B 22Z U             125
829 07 29          B     CMPRLL                                                   4  4187  B I15               125
830 07 30   NOSOAP CS    332                                                      4  4191  / 332               125
831 07 31          CS                                                             1  4195  /                   125
832 07 32          MLC   PRMS2A-1,223                                             7  4196  M M3Y 223           125
833 07 33          W                                                              1  4203  2                   126
834 07 34          CC    1                                                        2  4204  F 1                 126
835 07 35          H     *-3                OVERSIZE INPUT BLOCK-VLR              4  4206  . 20W               126
836 07 36   ERRMS2 CS    332                                                      4  4210  / 332               126
837 07 37          CS                                                             1  4214  /                   126
838 07 38          MLC   PRMS2,0230                                               7  4215  M X4Z 230           126
839 07 39          W                                                              1  4222  2                   126
840 07 40          CC    1                                                        2  4223  F 1                 127
841 07 41          H     *-3                OVERSIZED RECORD LENGTH               4  4225  . 22V               127
842 07 42   ERRMS3 CS    332                                                      4  4229  / 332               127
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SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

843 07 43          CS                                                          1  4233  /                  127
844 07 44          MLC   PRMS3,0229                                            7  4234  M X7Y 229          127
845 07 45          W                                                           1  4241  2                  127
846 07 46          CC    1                                                     2  4242  F 1                127
847 07 47          H     *-3                UNDERSIZED RECORD LENGTH           4  4244  . 24U              128
848 07 48   CMPRLU C     L4,UPLMT                                              7  4248  C W4W W5Y          128
849 07 49          BL    ERRMS2                                                5  4255  B 21| T            128
850 07 50   CMPTBT ZA    UPLMT,DVD          COMPUTE THEORETICAL B              7  4260  ? W5Y B38          128
851 07 51          ZA    L4,DVR                                                7  4267  ? W4W B17          128
852 07 52          ZA    @02@,INDEX                                            7  4274  ? F6Y B43          128
853 07 53          B     ED OP                                                 4  4281  B T8/              129
854 07 54          MZ    @0@,QUOT                                              7  4285  Y D3W B38          129
855 07 55          MLC   QUOT,BT                                               7  4292  M B38 W2Y          129
856 07 56          BCE   VARBL,FLR,1                                           8  4299  B 47Z 091 1        129
857 07 57   CBIBT  C     BI,BT              TEST FOR OVERSIZE BI               7  4307  C I86 W2Y          129
858 07 58          BL    ERRMSX                                                5  4314  B 38W T            129
859 07 59   ADDBI  A     BI,B               COMPUTE B                          7  4319  A I86 199          130
860 07 60          C     B,BT                                                  7  4326  C 199 W2Y          130
861 07 61          BH    ADDBI                                                 5  4333  B 31Z U            130
862 07 62          BE    *&8                                                   5  4338  B 35| S            130
863 07 63          S     BI,B                                                  7  4343  S I86 199          130
864 07 64          MZ    @0@,B                                                 7  4350  Y D3W 199          130
865 07 65          MLC   C16000,CONVRT                                         7  4357  M 580 698          131
866 07 66          S     B,CONVRT                                              7  4364  S 199 698          131
867 07 67          B     K5TOK3                                                4  4371  B 04Y              131
868 07 68          MLC   CONVRT,CCB                                            7  4375  M 698 575          131
869 07 69          B     CMPTBL                                                4  4382  B 43/              131
870 07 70   ERRMSX CS    332                                                   4  4386  / 332              131
871 07 71          CS                                                          1  4390  /                  131
872 07 72          MLC   BT,PRMSX1-8                                           7  4391  M W2Y M6U          132
873 07 73          MLC   PRMSX1,258                                            7  4398  M M7S 258          132
874 07 74          W                                                           1  4405  2                  132
875 07 75          CC    1                                                     2  4406  F 1                132
876 07 76          H     *-3                OVERSIZE INPUT BLOCKING-FLR        4  4408  . 40Y              132
877 07 77   ERRMSQ CS    332                                                   4  4412  / 332              132
878 07 78          CS                                                          1  4416  /                  132
879 07 79          MLC   PRMSQ,0220                                            7  4417  M M1V 220          133
880 07 80          W                                                           1  4424  2                  133
881 07 81          CC    1                                                     2  4425  F 1                133
882 07 82          H     *-3                OVERSIZE OUTPUT BLOCK-VLR          4  4427  . 42X              133
883 07 83   CMPTBL A     L4,BL4             COMPUTE BLOCK LENGTH               7  4431  A W4W W4S          133
884 07 84          A     @1@,COUNT3                                            7  4438  A D2| W3/          133
885 07 85          C     COUNT3,B                                              7  4445  C W3/ 199          133
886 07 86          BH    CMPTBL                                                5  4452  B 43/ U            134
887 07 87          ZA    BL4,CONVRT                                            7  4457  ? W4S 698          134
888 07 88          B     K5TOK3                                                4  4464  B 04Y              134
889 07 89          MLC   CONVRT,BL                                             7  4468  M 698 085          134
890 07 90          B     DNSTY                                                 4  4475  B 82Y              134
891 07 91   VARBL  ZA    UPLMT,CONVRT                                          7  4479  ? W5Y 698          134
892 07 92          B     K5TOK3                                                4  4486  B 04Y              134
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SEQ PG LIN  LABEL  OP    OPERANDS                                                 SFX CT  LOCN  INSTRUCTION TYPE  CARD

893 07 93          MLC   CONVRT,BL                                                     7  4490  M 698 085           135
894 07 94   ART    MLC   UPLMT,BL4                                                     7  4497  M W5Y W4S           135
895 07 95          BCE   *&22,LABELS,1                                                 8  4504  B 53T 413 1         135
896 07 96          A     @700@,TCOMET                                                  7  4512  A F2Y 590           135
897 07 97          MLZS  @ @,TCOMET                                                    7  4519  Y F6Z 590           135
898 07 98          MLC   TCOMET,TCOMTF                                                 7  4526  M 590 595           136
899 07 99          A     @100@,TCOMET                                                  7  4533  A F7S 590           136
900 08 00          MZ    BLNK1,TCOMET                                                  7  4540  Y D1S 590           136
901 08 01          S     UPLMT,TCOMET                                                  7  4547  S W5Y 590           136
902 08 02          A     L4,TCOMET                                                     7  4554  A W4W 590           136
903 08 03          MZ    BLNK1,TCOMET                                                  7  4561  Y D1S 590           137
904 08 04          MLC   TCOMET,CONVRT                                                 7  4568  M 590 698           137
905 08 05          B     K5TOK3                                                        4  4575  B 04Y               137
906 08 06          MLC   CONVRT,COMET                                                  7  4579  M 698 556           137
907 08 07          MLC   COMET,COMETF                                                  7  4586  M 556 559           137
908 08 08          BCE   XXX,MAXBLO,                                                   8  4593  B 63T W7T           138
909 08 09          S     MAXBLO,TCOMTF                                                 7  4601  S W7T 595           138
910 08 10          A     L4,TCOMTF                                                     7  4608  A W4W 595           138
911 08 11          MLC   TCOMTF,CONVRT                                                 7  4615  M 595 698           138
912 08 12          B     K5TOK3                                                        4  4622  B 04Y               138
913 08 13          MLC   CONVRT,COMETF                                                 7  4626  M 698 559           139
914 08 14   XXX    C     BI,@ @                                                        7  4633  C I86 F6Z           139
915 08 15          BU    CCC3BI                                                        5  4640  B 71/ /             139
916 08 16          MLC   @10@,THIRTN                                                   7  4645  M E0Z Q6V           139
917 08 17          BCE   DVD10,MNREC4,                                                 8  4652  B 69X W5|           139
918 08 18          ZA    MXBLK4,DVD                                                    7  4660  ? W5U B38           140
919 08 19          ZA    MNREC4,DVR                                                    7  4667  ? W5| B17           140
920 08 20          ZA    @02@,INDEX                                                    7  4674  ? F6Y B43           140
921 08 21          B     ED OP                                                         4  4681  B T8/               140
922 08 22          MLNS  QUOT,BI                                                       7  4685  D B38 I86           140
923 08 23          MLC                                                                 1  4692  M                   140
924 08 24          B     CCC3BI                                                        4  4693  B 71/               140
925 08 25   DVD10  A     @9@,MXBLK4                                                    7  4697  A D4T W5U           141
926 08 26          MLC   MXBLK4-1,BI                                                   7  4704  M W5T I86           141
927 08 27   CCC3BI S     BI,K16000                                                     7  4711  S I86 585           141
928 08 28          S     BI,K16000                                                     7  4718  S I86 585           141
929 08 29          S     BI,K16000                                                     7  4725  S I86 585           141
930 08 30          MLC   K16000,CONVRT                                                 7  4732  M 585 698           142
931 08 31          B     K5TOK3                                                        4  4739  B 04Y               142
932 08 32          MLC   CONVRT,LRG2G1                                                 7  4743  M 698 565           142
933 08 33          BCE   VARMFS,BO,                                                    8  4750  B 80T 185           142
934 08 34          SBR   COUNT3,0                                                      7  4758  H W3/ 000           142
935 08 35   CBOL   A     L4,BOLMAX           DETERMINE OUTPUT BLOCK LENGTH-VLR         7  4765  A W4W W3Y           143
936 08 36          A     @1@,COUNT3                                                    7  4772  A D2| W3/           143
937 08 37          C     BO,COUNT3                                                     7  4779  C 185 W3/           143
938 08 38          BL    CBOL                                                          5  4786  B 76V T             143
939 08 39          C     UPLMT,BOLMAX                                                  7  4791  C W5Y W3Y           143
940 08 40          BH    ERRMSQ                                                        5  4798  B 41S U             143
941 08 41   VARMFS SBR   CMPMFS&27,BT                                                  7  4803  H 90T W2Y           144
942 08 42          ZA    NCF,DVR                                                       7  4810  ? 096 B17           144
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

943 08 43          A     DVR                                                   4  4817  A B17              144
944 08 44          MLC   @A@,CHNGOP                                            7  4821  M F7T 91W          144
945 08 45   DNSTY  BCE   CMPMFS,LDI,1                                          8  4828  B 87W 187 1        144
946 08 46          BCE   HIDNSY,LDI,2                                          8  4836  B 86S 187 2        145
947 08 47          MLC   KLTD,KTD                                              7  4844  M 602 610          145
948 08 48          MLC   LDIRG,KIRG                                            7  4851  M W7W W7Z          145
949 08 49          B     CMPMFS                                                4  4858  B 87W              145
950 08 50   HIDNSY MLC   KHTD,KTD                                              7  4862  M 618 610          145
951 08 51          MLC   HDIRG,KIRG                                            7  4869  M W8S W7Z          146
952 08 52   CMPMFS MLC   @000@,COUNT3       COMPUTE MAXIMUM FILE SIZE          7  4876  M D3S W3/          146
953 08 53          A     KTD,MFSDVD                                            7  4883  A 610 W6Z          146
954 08 54          A     @1@,COUNT3                                            7  4890  A D2| W3/          146
955 08 55          C     COUNT3,B                                              7  4897  C W3/ 199          146
956 08 56          BH    CMPMFS&7                                              5  4904  B 88T U            147
957 08 57          ZA    MFSDVD,DVD                                            7  4909  ? W6Z B38          147
958 08 58   CHNGOP ZA    BL4,DVR                                               7  4916  ? W4S B17          147
959 08 59          A     KIRG,DVR                                              7  4923  A W7Z B17          147
960 08 60          ZA    @07@,INDEX                                            7  4930  ? F7V B43          147
961 08 61          B     ED OP                                                 4  4937  B T8/              147
962 08 62          MLNS  QUOT,MFS                                              7  4941  D B38 I81          148
963 08 63          MLC                                                         1  4948  M                  148
964 08 64          BCE   *&5,I3TUN,                                            8  4949  B 96/ 340          148
965 08 65   PLY111 A     MFS                                                   4  4957  A I81              148
966 08 66          C     EFS,MFS                                               7  4961  C 00S I81          148
967 08 67          BL    MFSEXH                                                5  4968  B Y6V T            148
968 08 68          BCE   HUH,FLR,1                                             8  4973  B Z9U 091 1        149
969 08 69          C     BO,B               CHECK BO SPECIFIED                 7  4981  C 185 199          149
970 08 70          BL    ERRMSY                                                5  4988  B /4X T            149
971 08 71          BE    HUH                                                   5  4993  B Z9U S            149
972 08 72          MLC   BO,BOSUBB                                             7  4998  M 185 W3U          149
973 08 73   TM SHK A     BO,BOSUBB                                             7  5005  A 185 W3U          149
974 08 74          C     BOSUBB,B                                              7  5012  C W3U 199          150
975 08 75          BH    TM SHK                                                5  5019  B |0V U            150
976 08 76          BE    HUH                                                   5  5024  B Z9U S            150
977 08 77          CS    332                                                   4  5029  / 332              150
978 08 78          CS                                                          1  5033  /                  150
979 08 79          MLC   B,HLMN&4                                              7  5034  M 199 L2V          150
980 08 80          S     BO,BOSUBB                                             7  5041  S 185 W3U          150
981 08 81          MLZS  @ @,BOSUBB                                            7  5048  Y F6Z W3U          151
982 08 82   AUGBI  A     BI,BISUBB#3                                           7  5055  A I86 F7Y          151
983 08 83          C     BISUBB,BOSUBB                                         7  5062  C F7Y W3U          151
984 08 84          BH    AUGBI                                                 5  5069  B |5V U            151
985 08 85          MLC   @000@,BISUBB                                          7  5074  M D3S F7Y          151
986 08 86          BE    WRITEA-7                                              5  5081  B |9X S            151
987 08 87          MLC   PRMSZ1,302                                            7  5086  M L3Z 302          152
988 08 88          B     WRITEA                                                4  5093  B /0U              152
989 08 89          MLC   PRMSZ,332                                             7  5097  M L9U 332          152
990 08 90   WRITEA W                        BO NOT SUBMULTIPLE OF B            1  5104  2                  152
991 08 91          CC    1                                                     2  5105  F 1                152
992 08 92          H     HUH-14                                                4  5107  . Z8|              152
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

 993 08 93          MLC   BOSUBB,B            MAKE B A MULTIPLE OF BO                   7  5111  M W3U 199           152
 994 08 94          MLC   @000@,COUNT3        RECOMPUTE SORT BLOCK LENGTH AND           7  5118  M D3S W3/           153
 995 08 95          MLC   @0000@,BL4          MAXIMUM FILE SIZE                         7  5125  M D2U W4S           153
 996 08 96          S     MFSDVD                                                        4  5132  S W6Z               153
 997 08 97          MLZS  @ @,MFSDVD                                                    7  5136  Y F6Z W6Z           153
 998 08 98          B     CMPTBL                                                        4  5143  B 43/               153
 999 08 99   ERRMSY CS    332                                                           4  5147  / 332               153
1000 09 00          CS                                                                  1  5151  /                   153
1001 09 01          MLC   B,PRMSY-53                                                    7  5152  M 199 N0X           154
1002 09 02          MLC   PRMSY,288                                                     7  5159  M N6| 288           154
1003 09 03          W                         BO GREATER THAN B                         1  5166  2                   154
1004 09 04          CC    1                                                             2  5167  F 1                 154
1005 09 05          H     HUH-14                                                        4  5169  . Z8|               154
1006 09 06   *
1007 09 07   *                READ THE INPUT HEADER CARD
1008 09 08   *
1009 09 09   RDIH   MLC   50,LBLBKT                                                     7  5173  M 050 496           154
1010 09 10          MLC   @1@,SW11                                                      7  5180  M D2| C5X           154
1011 09 11          MLC   @1@,SW14                                                      7  5187  M D2| C6|           155
1012 09 12          SW    LBLBKT-4,LBLBKT-9                                             7  5194  , 492 487           155
1013 09 13          SW    LBLBKT-19,LBLBKT-23                                           7  5201  , 477 473           155
1014 09 14          MLC   @1@,LBLBKT-32                                                 7  5208  M D2| 464           155
1015 09 15          MLC   @1@,ITLI                                                      7  5215  M D2| 188           155
1016 09 16          B     READC3                                                        4  5222  B P77               155
1017 09 17   *
1018 09 18   *                READ THE OUTPUT HEADER CARD
1019 09 19   *
1020 09 20   RDOH   BCE   RDO120,LBBUCK,1                                               8  5226  B S6W 414 1         156
1021 09 21          MLC   50,REELSQ&21                                                  7  5234  M 050 462           156
1022 09 22          MLC   @1@,SW12                                                      7  5241  M D2| C5Y           156
1023 09 23          MLC   @1@,SW15                                                      7  5248  M D2| C6/           156
1024 09 24          MLC   25,FLSERL                                                     7  5255  M 025 437           156
1025 09 25          B     READC3                                                        4  5262  B P77               157
1026 09 26   RDO120 MLC   25,FILESE                                                     7  5266  M 025 452           157
1027 09 27          SW    31,41                                                         7  5273  , 031 041           157
1028 09 28          SW    47                                                            4  5280  , 047               157
1029 09 29          MLC   49,RETPER                                                     7  5284  M 049 432           157
1030 09 30          MLC   45,CREATD                                                     7  5291  M 045 437           157
1031 09 31          MLC   29,RESEQE                                                     7  5298  M 029 461           158
1032 09 32          MLC   40,FILNAM                                                     7  5305  M 040 447           158
1033 09 33          CW    31,41                                                         7  5312  ) 031 041           158
1034 09 34          CW    47                                                            4  5319  ) 047               158
1035 09 35          MLC   @1@,SW12                                                      7  5323  M D2| C5Y           158
1036 09 36          MLC   @1@,SW15                                                      7  5330  M D2| C6/           158
1037 09 37          MLC   @N@,MVOHDT                                                    7  5337  M D4X C78           159
1038 09 38          MLC   @N@,MVOHDT&7                                                  7  5344  M D4X C85           159
1039 09 39          MLC   @N@,MVOHDT&14                                                 7  5351  M D4X C92           159
1040 09 40          B     READC3                                                        4  5358  B P77               159
1041 09 41   LAB120 BCE   *&8,DATE,                                                     8  5362  B T7X 501           159
1042 09 42          MLC   DATE,CREATD                                                   7  5370  M 501 437           160
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

1043 09 43          B     DATE80&7                                               4  5377  B C32              160
1044 09 44   ED OP  SBR   RETADD&3           DIVISION ROUTINE                    4  5381  H V5V              160
1045 09 45          S     TEMP                                                   4  5385  S A96              160
1046 09 46          MLC   @3@,TEMP-19                                            7  5389  M E9X A77          160
1047 09 47          S     INDEX,TEMP-18                                          7  5396  S B43 A78          160
1048 09 48          A     LOC,TEMP-18                                            7  5403  A B46 A78          161
1049 09 49          MLNS  TEMP-18,SIGN&6                                         7  5410  D A78 V5/          161
1050 09 50          MLC                                                          1  5417  M                  161
1051 09 51          A     @1@,TEMP-18                                            7  5418  A D2| A78          161
1052 09 52          MLNS  TEMP-18,SUBTCT&6                                       7  5425  D A78 U5V          161
1053 09 53          MLC                                                          1  5432  M                  161
1054 09 54          MLNS  TEMP-18,OUT&6                                          7  5433  D A78 U6S          161
1055 09 55          MLC                                                          1  5440  M                  162
1056 09 56          MLNS  TEMP-18,GOPOS&6                                        7  5441  D A78 V0W          162
1057 09 57          MLC                                                          1  5448  M                  162
1058 09 58   SUBTCT S     DVR,000                                                7  5449  S B17 000          162
1059 09 59   OUT    BWZ   GOPOS,000,K                                            8  5456  V V0| 000 K        162
1060 09 60          BAV   *&1                                                    5  5464  B U6Z Z            162
1061 09 61          A     @1@,NEW                                                7  5469  A D2| B39          162
1062 09 62          BAV   OVER                                                   5  5476  B U8V Z            163
1063 09 63          B     SUBTCT                                                 4  5481  B U4Z              163
1064 09 64   OVER   MLC   @9@,QSS                                                7  5485  M D4T B40          163
1065 09 65          A     QSS                                                    4  5492  A B40              163
1066 09 66          B     RETADD                                                 4  5496  B V5S              163
1067 09 67   GOPOS  A     DVR,000                                                7  5500  A B17 000          163
1068 09 68          MLC   NEW,TEMP                                               7  5507  M B39 A96          163
1069 09 69          ZA                                                           1  5514  ?                  164
1070 09 70          MLC   TEMP&1,NEW                                             7  5515  M A97 B39          164
1071 09 71          ZA                                                           1  5522  ?                  164
1072 09 72          S     @1@,INDEX                                              7  5523  S D2| B43          164
1073 09 73          BWZ   SUBTCT,INDEX,B                                         8  5530  V U4Z B43 B        164
1074 09 74          MLZS  QSS,DVD                                                7  5538  Y B40 B38          164
1075 09 75   SIGN   MLZS  RMDRSN,0                                               7  5545  Y B41 000          164
1076 09 76   RETADD B     000                                                    4  5552  B 000              165
1077 09 77   ONETWO BIN   SHINE,                                                 5  5556  B J5T              165
1078 09 78   ADDRSS DSA   MAXBLK-3                                               3  5563  I92                165
1079 09 79   CF1REX DCW   @    @                                                 4  5567                     165
1080 09 80   CF2REX       @    @                                                 4  5571                     165
1081 09 81   CF3REX       @    @                                                 4  5575                     165
1082 09 82   CF4REX       @    @                                                 4  5579                     165
1083 09 83   CF5REX       @    @                                                 4  5583                     165
1084 09 84   CF6REX       @    @                                                 4  5587                     165
1085 09 85   CF7REX       @    @                                                 4  5591                     166
1086 09 86   CF8REX       @    @                                                 4  5595                     166
1087 09 87   CF9REX       @    @                                                 4  5599                     166
1088 09 88   CF0REX       @    @                                                 4  5603                     166
1089 09 89   WKAREA       @08000@                                                5  5608                     166
1090 09 90   CF1SLX       @    @                                                 4  5612                     166
1091 09 91   NC1CF        @   @                                                  3  5615                     166
1092 09 92   CTLCF        @   @                                                  3  5618                     166
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

1093 09 93   CNTNCF       @  @                                                     2  5620                     166
1094 09 94   COUNT2       @  @                                                     2  5622                     166
1095 09 95   COUNT        @ @                                                      1  5623                     166
1096 09 96   NOOFCF       00                                                       2  5625                     166
1097 09 97   BT           @000@               THEORETICAL SORT BLOCKING FACTOR     3  5628                     167
1098 09 98   COUNT3       @000@                                                    3  5631                     167
1099 09 99   BOSUBB       000                                                      3  5634                     167
1100 10 00   BOLMAX       0000                                                     4  5638                     167
1101 10 01   BL4          0000                BLOCK LENGTH                         4  5642                     167
1102 10 02   L4           @0000@                                                   4  5646                     167
1103 10 03   MNREC4       0000                                                     4  5650                     167
1104 10 04   MXBLK4       0000                                                     4  5654                     167
1105 10 05   UPLMT        0000                                                     4  5658                     167
1106 10 06   MFSDVD       00000000000                                             11  5669                     168
1107 10 07   MAXBLO DCW   @    @                                                   4  5673                     168
1108 10 08   LDIRG        150                                                      3  5676                     168
1109 10 09   KIRG         417                                                      3  5679                     168
1110 10 10   HDIRG  DCW   @600@                                                    3  5682                     168
1111 10 11   PRMS1  DCW   @MACHINE SIZE ERROR-FOR 8K,PRESS START@                 37  5719                     169
1112 10 12   PRMS2        @OVERSIZE RECORD LENGTH-RESTART@                        30  5749                     170
1113 10 13   PRMS3        @RECORD SIZE TOO SMALL-RESTART@                         29  5778                     171
1114 10 14   PRMS4  DCW   @CF LNGH ERROR-FOR COMPUTED TLCF,PRESS START@           43  5821                     173
1115 10 15   PRMS5        @TLCF GREATER THAN L@                                   19  5840                     173
1116 10 16   PRMS6  DCW   @TAPE UNIT NOT AVAILABLE-@                              24  5864                     174
1117 10 17   MFSEXH CS    332                                                      4  5865  / 332              174
1118 10 18          CS                                                             1  5869  /                  174
1119 10 19          MLC   EFSMES,277                                               7  5870  M Z6| 277          174
1120 10 20          W                                                              1  5877  2                  174
1121 10 21          CC    1                                                        2  5878  F 1                174
1122 10 22          H     PLY111&16                                                4  5880  . 97T              175
1123 10 23          DCW   @EFFECTIVE FILE SIZE GREATER THAN @                     33  5916                     175
1124 10 24          DC    @MAXIMUM FILE SIZE.  PRESS START TO @                   35  5951                     176
1125 10 25   EFSMES DC    @CONTINUE.@                                              9  5960                     177
1126 10 26   ERRMS5 CS    0332                                                     4  5961  / 332              177
1127 10 27          CS                                                             1  5965  /                  177
1128 10 28          MLC   PRMS5,0219                                               7  5966  M Y4| 219          177
1129 10 29          W                                                              1  5973  2                  177
1130 10 30          CC    1                                                        2  5974  F 1                178
1131 10 31          H     *-3                 CF LENGTH GREATER THAN RECORD        4  5976  . Z7W              178
1132 10 32          MLC   B,BO                                                     7  5980  M 199 185          178
1133 10 33          MLC   BL4,BOLMAX                                               7  5987  M W4S W3Y          178
1134 10 34   HUH    MLC   @01@,COUNT2                                              7  5994  M F8| W2S          178
1135 10 35   CIFXFY ZA    CF2REX,CONVRT        COMPUTE DISTANCE BETWEEN            7  6001  ? V7/ 698          178
1136 10 36          S     CF1REX,CONVRT       CONTROL FIELDS                       7  6008  S V6X 698          179
1137 10 37          BWZ   NEGIFD,CONVRT,K                                          8  6015  V !8V 698 K        179
1138 10 38          MZ    @ @,CONVRT                                               7  6023  Y F6Z 698          179
1139 10 39   BRANCH B     K5TOK3                                                   4  6030  B 04Y              179
1140 10 40          MLC   CONVRT,IF1F2                                             7  6034  M 698 383          179
1141 10 41          A     @1@,COUNT2                                               7  6041  A D2| W2S          180
1142 10 42          MA    @004@,CIFXFY&3                                           7  6048  # D6W !0U          180
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

1143 10 43          MA    @004@,CIFXFY&10                                         7  6055  # D6W !1/           180
1144 10 44          MA    @003@,BRANCH&10                                         7  6062  # E9W !4|           180
1145 10 45          C     NCF,COUNT2                                              7  6069  C 096 W2S           180
1146 10 46          BL    CIFXFY                                                  5  6076  B !0/ T             181
1147 10 47          B     DECBY1                                                  4  6081  B J7S               181
1148 10 48   NEGIFD A     C16000,CONVRT                                           7  6085  A 580 698           181
1149 10 49          MZ    @ @,CONVRT                                              7  6092  Y F6Z 698           181
1150 10 50          B     BRANCH                                                  4  6099  B !3|               181
1151 10 51   SNGLCF ZA    CF1SLX,CONVRT       ROUTN FOR 1 CONTROL FIELD           7  6103  ? W1S 698           181
1152 10 52          B     K5TOK3                                                  4  6110  B 04Y               181
1153 10 53          MLC   CONVRT,CF1SL                                            7  6114  M 698 353           182
1154 10 54          A     CF1SL,CF1RE                                             7  6121  A 353 01U           182
1155 10 55          MA    NC1CF,CF1RE                                             7  6128  # W1V 01U           182
1156 10 56          MLCWA ONETWO&4,HUH&4                                          7  6135  L V6| Z9Y           182
1157 10 57          SBR   INDEX1,0                                                7  6142  H 089 000           182
1158 10 58          B     CRE&14                                                  4  6149  B O61               182
1159 10 59   SHINE  C     CF1SLX,@0001@                                           7  6153  C W1S F8U           183
1160 10 60          BU    DECBY1                                                  5  6160  B J7S /             183
1161 10 61          MLC   @1@,CNOP                                                7  6165  M D2| 086           183
1162 10 62   DECBY1 MA    @I9I@,CF1SL                                             7  6172  # E3W 353           183
1163 10 63          A     @1@,NOOFCF                                              7  6179  A D2| W2V           183
1164 10 64          C     NCF,NOOFCF                                              7  6186  C 096 W2V           184
1165 10 65          BE    *&12                                                    5  6193  B K0Z S             184
1166 10 66          MA    @003@,DECBY1&6                                          7  6198  # E9W J7Y           184
1167 10 67          B     DECBY1                                                  4  6205  B J7S               184
1168 10 68   SETWM  CS    80                                                      4  6209  / 080               184
1169 10 69          BSS   PLYIN2,C                                                5  6213  B K6/ C             184
1170 10 70          SW    24,56                                                   7  6218  , 024 056           184
1171 10 71          SW    63,67                                                   7  6225  , 063 067           185
1172 10 72   LDXQ   R     56                                                      4  6232  1 056               185
1173 10 73   PLYIN1 MLC   @0@,MI3TUN         MULTIPHASE INITIALIZATION            7  6236  M D3W 343           185
1174 10 74          MLC   @0@,I3TUN                                               7  6243  M D3W 340           185
1175 10 75          MLC   @N@,PLY111                                              7  6250  M D4X 95X           185
1176 10 76          B     RWD2WY                                                  4  6257  B K78               185
1177 10 77   PLYIN2 MLC   @ @,MI3TUN                                              7  6261  M F6Z 343           186
1178 10 78          MLC   @ @,I3TUN                                               7  6268  M F6Z 340           186
1179 10 79          B     SETWM&9                                                 4  6275  B K1Y               186
1180 10 80   *
1181 10 81   *                   PROCESS THE INPUT HEADER CARD
1182 10 82   *
1183 10 83   HLMN   DCW   @BO NOT SUBMULTIPLE OF B, TO SET BO EQUAL TO@          43  6321                      188
1184 10 84   PRMSZ1 DC    @     PRESS START. @                                   18  6339                      188
1185 10 85          DC    @TO MAKE B A MULTIPLE OF BO, PRESS START/RESET @       46  6385                      190
1186 10 86   PRMSZ  DC    @AND START@                                             9  6394                      190
1187 10 87   PRMSQ  DCW   @BOL TOO LARGE-RESTART@                                21  6415                      190
1188 10 88   PRMS2A DCW   @OVERSIZE INPUT BLOCKING,@                             24  6439                      191
1189 10 89   PRMSX1 DC    @ GREATEST POSSIBLE B     -RESTART@                    33  6472                      192
1190 10 90          DCW   @BO GREATER THAN B, BO MAY EQUAL @                     32  6504                      193
1191 10 91          DC    @    OR ANY SUBMULTIPLE OF IT.@                        29  6533                      194
1192 10 92   PRMSY  DC    @ PRESS START FOR BO EQUAL B@                          27  6560                      195
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

1193 10 93  ERMCD  CS    299                                                    4  6561  / 299              195
1194 10 94         MLC   PRMCD,299                                              7  6565  M C2/ 299          195
1195 10 95         W                                                            1  6572  2                  195
1196 10 96         CS    299                                                    4  6573  / 299              196
1197 10 97         MLC   PRMZQ,270                                              7  6577  M C3Z 270          196
1198 10 98  QZWRT  W                                                            1  6584  2                  196
1199 10 99         CC    1                                                      2  6585  F 1                196
1200 11 00         H     *-3                                                    4  6587  . N8X              196
1201 11 01  PRMTPV DCW   @USER AREA SPECIFIED ABOVE CORE SIZE-RESTART@         43  6633                     198
1202 11 02  ERRTPV CS    299                                                    4  6634  / 299              198
1203 11 03         MLC   PRMTPV,299                                             7  6638  M O3T 299          198
1204 11 04         W                                                            1  6645  2                  198
1205 11 05         CC    1                                                      2  6646  F 1                198
1206 11 06         H     *-3                USER AREA ABOVE CORE SIZE           4  6648  . O4Y              199
1207 11 07  CSCAN  SBR   RTEND&3            CONTROL CARD SCAN ROUTINE           4  6652  H P0U              199
1208 11 08         MLC   @000@,INDEX1                                           7  6656  M D3S 089          199
1209 11 09  CM201  C     201&X1,@0@                                             7  6663  C 2|1 D3W          199
1210 11 10         BH    ERMCD                                                  5  6670  B N6/ U            199
1211 11 11         MA    @001@,INDEX1                                           7  6675  # D1Z 089          199
1212 11 12         C     INDEX1,CDLNG                                           7  6682  C 089 C4T          200
1213 11 13         BH    CM201                                                  5  6689  B O6T U            200
1214 11 14         MLC   @00@,CDLNG                                             7  6694  M E1/ C4T          200
1215 11 15  RTEND  B     000                                                    4  6701  B 000              200
1216 11 16  OKIND  SBR   RTFINI&3                                               4  6705  H P7|              200
1217 11 17  BRNON  BCE   RTOK,20&X1,                                            8  6709  B P5T 0S0          200
1218 11 18  BRNON1 BCE   RTOK,20&X1,1       CHECK FOR PROPER INFORMATION        8  6717  B P5T 0S0 1        201
1219 11 19  BRNON2 BCE   RTOK,20&X1,2       1,2,3,4, OR BLANK IN CC             8  6725  B P5T 0S0 2        201
1220 11 20  BRNON3 BCE   RTOK,20&X1,3                                           8  6733  B P5T 0S0 3        201
1221 11 21  BRNON4 BCE   RTOK,20&X1,4                                           8  6741  B P5T 0S0 4        201
1222 11 22         B     ERMCD                                                  4  6749  B N6/              201
1223 11 23  RTOK   MLC   TSERO-4,220&X1                                         7  6753  M C4W 2S0          202
1224 11 24         MA    @001@,INDEX1                                           7  6760  # D1Z 089          202
1225 11 25  RTFINI B     000                                                    4  6767  B 000              202
1226 11 26  ERMTP  CS    299                                                    4  6771  / 299              202
1227 11 27         MLC   PRMTP,299                                              7  6775  M ?4| 299          202
1228 11 28  QZWRIT W                        TAPE UNIT INVALIDLY SPECIFIED       1  6782  2                  202
1229 11 29         CC    L                                                      2  6783  F L                202
1230 11 30         B     ERMCD                                                  4  6785  B N6/              203
1231 11 31  ERMDP  CS    299                                                    4  6789  / 299              203
1232 11 32         MLC   PRMDP,299                                              7  6793  M ?9W 299          203
1233 11 33         W                                                            1  6800  2                  203
1234 11 34         CC    1                                                      2  6801  F 1                203
1235 11 35         MLC   @P@,URPI                                               7  6803  M F8V 186          203
1236 11 36         H     ZZGX               UNREADABLE RECORD PROCEDURE ERROR   4  6810  . J34              203
1237 11 37  ERMCF  CS    299                                                    4  6814  / 299              204
1238 11 38         MLC   PRMCF,299                                              7  6818  M A4| 299          204
1239 11 39         B     QZWRIT                                                 4  6825  B P8S              204
1240 11 40  ERMRL  CS    299                                                    4  6829  / 299              204
1241 11 41         MLC   PRMRL,299                                              7  6833  M A8/ 299          204
1242 11 42         B     QZWRIT                                                 4  6840  B P8S              204
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

1243 11 43   ERRCC  CS    299                                                          4  6844  / 299              204
1244 11 44          MLC   PRMCDX,299                                                   7  6848  M B9U 299          205
1245 11 45          W                                                                  1  6855  2                  205
1246 11 46          CC    1                                                            2  6856  F 1                205
1247 11 47          H     *-3                 INVALID CONTROL CARD                     4  6858  . Q5Y              205
1248 11 48   THIRTN DCW   0013                                                         4  6865                     205
1249 11 49   ERRLBL CS    299                                                          4  6866  / 299              205
1250 11 50          MLC   PRMLBL,299                                                   7  6870  M R1Z 299          205
1251 11 51          W                                                                  1  6877  2                  206
1252 11 52          CC    1                                                            2  6878  F 1                206
1253 11 53          H     *-3                 CONTROL CARD 4 AND/OR 5 MISSING          4  6880  . Q8|              206
1254 11 54   PRMLBL DCW   @CONTROL CARD#4 AND/OR #5 ARE MISSING@                      36  6919                     207
1255 11 55   ERMS6  CS    299                                                          4  6920  / 299              208
1256 11 56          SW    225                                                          4  6924  , 225              208
1257 11 57          MLC   PRMDP,252                                                    7  6928  M ?9W 252          208
1258 11 58          MLC   PRMS6                                                        4  6935  M Y6U              208
1259 11 59          W                                                                  1  6939  2                  208
1260 11 60          CC    1                                                            2  6940  F 1                208
1261 11 61          MLC   @P@,URPI                                                     7  6942  M F8V 186          208
1262 11 62          H     BTPVLM              DUMP TAPE NOT AVAILABLE                  4  6949  . J42              209
1263 11 63   SPCRLI BCE   *&5,RCC4,           DETERMINE IF RLI IS SPECIFIED FOR        8  6953  B R6V D1W          209
1264 11 64          B     CKOT                VLR BLOCKED INPUT                        4  6961  B |16              209
1265 11 65          CS    299                                                          4  6965  / 299              209
1266 11 66          MLC   @58-61@,ZQST                                                 7  6969  M F9| C3Z          209
1267 11 67          SW    201                                                          4  6976  , 201              209
1268 11 68          MLC   PRMRLI,233                                                   7  6980  M B2Y 233          209
1269 11 69          B     QZWRT-7                                                      4  6987  B N7X              210
1270 11 70   ERRLI  CS    299                                                          4  6991  / 299              210
1271 11 71          MLC   PRMRLI,280                                                   7  6995  M B2Y 280          210
1272 11 72          W                                                                  1  7002  2                  210
1273 11 73          CC    1                   RLI LENGTH NOT SPECIFIED FOR             2  7003  F 1                210
1274 11 74          H     *-3                 VLR LOAD MODE INPUT                      4  7005  . ?0V              210
1275 11 75   PRMTP  DCW   @TAPE UNIT IS INVALIDLY SPECIFIED@                          32  7040                     211
1276 11 76          DCW   @URPI IS INVALIDLY SPECIFIED-@                              28  7068                     212
1277 11 77   PRMDP  DC    @PRESS START FOR PUNCH OPTION@                              28  7096                     213
1278 11 78   PRMCF  DCW   @NO. OF CONTROL FIELDS IS INVALIDLY SPECIFIED@              44  7140                     215
1279 11 79   PRMRL  DCW   @NO. OF INPUT REELS IS INVALIDLY SPECIFIED@                 41  7181                     217
1280 11 80   PRMRLI DCW   @THE LENGTH OF RCC IS NOT SPECIFIED FOR VARIABLE@           47  7228                     219
1281 11 81   QRS    EQU   *&14                                                            7242
1282 11 82          DCW   @CONTROL CARD#1 INVALIDLY PUNCHED@                          32  7260                     220
1283 11 83   PRMCDX DCW   @AN INVALID CONTROL CARD IS PRESENT@                        34  7294                     221
1284 11 84   PRMCD  DC    @ OR OUT OF SEQUENCE        @                               27  7321                     222
1285 11 85   ZQST   EQU   *&18                                                            7339
1286 11 86   PRMZQ  DCW   @CHECK COLUMN 33-36@                                        18  7339                     223
1287 11 87   NCFCT  DCW   @01@                CONTROL FIELD COUNTER                    2  7341                     223
1288 11 88   CDLNG  DCW   @75@                                                         2  7343                     223
1289 11 89   CSCNT  DCW   @00@                                                         2  7345                     223
1290 11 90   TSERO  DCW   @00000@                                                      5  7350                     223
1291 11 91   BLNK5  DCW   @     @                                                      5  7355                     223
1292 11 92   QZSW1  DCW   @ @                                                          1  7356                     223
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

1293 11 93   SW11   DCW   #1                                                           1  7357                     224
1294 11 94   SW12   DCW   #1                                                           1  7358                     224
1295 11 95   SW13   DCW   #1                                                           1  7359                     224
1296 11 96   SW14   DCW   #1                                                           1  7360                     224
1297 11 97   SW15   DCW   #1                                                           1  7361                     224
1298 11 98   TSINK  DCW   #50                                                         50  7411                     226
1299 11 99   BLNK1  DCW   @ @                                                          1  7412                     226
1300 12 00   HERTAG EQU   HDRTAG                                                          0427
1301 12 01   RETPER EQU   TPSERL              RETENTION PERIOD                            0432
1302 12 02   CREATD EQU   FLSERL              CREATION DATE                               0437
1303 12 03   FILNAM EQU   FLNAME-5            FILE NAME BUCKET                            0447
1304 12 04   FILESE EQU   FLNAME               FILE SERIAL NUMBER                         0452
1305 12 05   SYSCRE EQU   OHDATE              CREATING SUSTEMS                            0457
1306 12 06   RESEQE EQU   RTCYCL              REEL SEQUENCE NUMBER                        0461
             RCC4   DCW   #04                                                          4  7416              AREA   226
                    DCW   @001@                                                        3  7419              LIT    226
                    DCW   @1@                                                          1  7420              LIT    226
                    DCW   @0000@                                                       4  7424              LIT    227
                    DCW   @13-18@                                                      5  7429              LIT    227
                    DCW   @000@                                                        3  7432              LIT    227
                    DCW   @   @                                                        3  7435              LIT    227
                    DCW   @0@                                                          1  7436              LIT    227
                    DCW   @01-06@                                                      5  7441              LIT    227
                    DCW   @8@                                                          1  7442              LIT    227
                    DCW   @9@                                                          1  7443              LIT    228
                    DCW   @I8H@                                                        3  7446              LIT    228
                    DCW   @N@                                                          1  7447              LIT    228
             CNTER1 DCW   #01                                                          1  7448              AREA   228
                    DCW   @5@                                                          1  7449              LIT    228
                    DCW   @6@                                                          1  7450              LIT    228
                    DCW   @ 19  @                                                      5  7455              LIT    228
             SWP    DCW   #01                                                          1  7456              AREA   229
                    DCW   @7@                                                          1  7457              LIT    229
             ERM6SW DCW   #01                                                          1  7458              AREA   229
                    DCW   @58-73@                                                      5  7463              LIT    229
                    DCW   @004@                                                        3  7466              LIT    229
                    DCW   @16@                                                         2  7468              LIT    229
                    DCW   @ 21  @                                                      5  7473              LIT    229
                    DCW   @22@                                                         2  7475              LIT    230
                    DCW   @23@                                                         2  7477              LIT    230
                    DCW   @24@                                                         2  7479              LIT    230
                    DCW   @B@                                                          1  7480              LIT    230
                    DCW   @25@                                                         2  7482              LIT    230
                    DCW   @26@                                                         2  7484              LIT    230
                    DCW   @57@                                                         2  7486              LIT    230
                    DCW   @030@                                                        3  7489              LIT    231
                    DCW   @74@                                                         2  7491              LIT    231
                    DCW   @016@                                                        3  7494              LIT    231
                    DCW   @75@                                                         2  7496              LIT    231
                    DCW   @20@                                                         2  7498              LIT    231
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

                    DCW   @I4D@                                                        3  7501              LIT    231
                    DCW   @2@                                                          1  7502              LIT    231
                    DCW   @28-29@                                                      5  7507              LIT    232
                    DCW   @10@                                                         2  7509              LIT    232
                    DCW   @00@                                                         2  7511              LIT    232
                    DCW   @07-08@                                                      5  7516              LIT    232
                    DCW   @       @                                                    7  7523              LIT    232
                    DCW   @0000000@                                                    7  7530              LIT    232
                    DCW   @005@                                                        3  7533              LIT    232
                    DCW   @I9I@                                                        3  7536              LIT    233
                    DCW   @00|@                                                        3  7539              LIT    233
                    DCW   @NCF INVALIDLY SPECIFIED@                                   23  7562              LIT    233
                    DCW   @OUT OF SEQUENCE        @                                   23  7585              LIT    234
                    DCW   @007@                                                        3  7588              LIT    234
                    DCW   @  @                                                         2  7590              LIT    234
                    DCW   @I9H@                                                        3  7593              LIT    234
                    DCW   @003@                                                        3  7596              LIT    234
                    DCW   @3@                                                          1  7597              LIT    234
                    DCW   @L@                                                          1  7598              LIT    234
                    DCW   @-@                                                          1  7599              LIT    235
                    DCW   @4@                                                          1  7600              LIT    235
                    DCW   @8000@                                                       4  7604              LIT    235
                    DCW   @4775@                                                       4  7608              LIT    235
                    DCW   @12000@                                                      5  7613              LIT    235
                    DCW   @8775@                                                       4  7617              LIT    235
                    DCW   @I9Q@                                                        3  7620              LIT    235
                    DCW   @12775@                                                      5  7625              LIT    236
                    DCW   @700@                                                        3  7628              LIT    236
                    DCW   @410@                                                        3  7631              LIT    236
                    DCW   @300@                                                        3  7634              LIT    236
                    DCW   @03@                                                         2  7636              LIT    236
                    DCW   @12@                                                         2  7638              LIT    236
                    DCW   @3401@                                                       4  7642              LIT    236
                    DCW   @3400@                                                       4  7646              LIT    237
                    DCW   @4000@                                                       4  7650              LIT    237
                    DCW   @3999@                                                       4  7654              LIT    237
                    DCW   @0013@                                                       4  7658              LIT    237
                    DCW   @0010@                                                       4  7662              LIT    237
                    DCW   @    @                                                       4  7666              LIT    237
                    DCW   @02@                                                         2  7668              LIT    237
                    DCW   @ @                                                          1  7669              LIT    238
                    DCW   @100@                                                        3  7672              LIT    238
                    DCW   @A@                                                          1  7673              LIT    238
                    DCW   @07@                                                         2  7675              LIT    238
             BISUBB DCW   #03                                                          3  7678              AREA   238
                    DCW   @01@                                                         2  7680              LIT    238
                    DCW   @0001@                                                       4  7684              LIT    238
                    DCW   @P@                                                          1  7685              LIT    239
                    DCW   @58-61@                                                      5  7690              LIT    239
1307 12 07          EX    READCC                                                             B 700                 240
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

1308 12 08          JOB   ** IBM 1401 SORT 7 VERSION 2  ASSIGNMENT PHASE
1309 12 09          ORG   700                                                          0700
1310 12 10   ENDAPH BCE   CHECLA,LBBUCK,1                                        8  0700  B /55 414 1         243
1311 12 11          BCE   ENDMSG,FLR,1                                           8  0708  B 775 091 1         243
1312 12 12          MLC   L4,PRMS8-27         PRINT VALUES TO BE USED FOR        7  0716  M W4W T99           243
1313 12 13          MLC   B,PRMS8-19          FIXED LENGTH RECORD SORT           7  0723  M 199 U07           243
1314 12 14          MLC   BI,PRMS8-10                                            7  0730  M I86 U16           243
1315 12 15          MLC   BO,PRMS8-1                                             7  0737  M 185 U25           244
1316 12 16          MLC   BL4,PRMS8&9                                            7  0744  M W4S U35           244
1317 12 17          MLC   MFS,PRMS8&23                                           7  0751  M I81 U49           244
1318 12 18          CS    332                                                    4  0758  / 332               244
1319 12 19          CS                                                           1  0762  /                   244
1320 12 20          MLC   PRMS8&23,0256                                          7  0763  M U49 256           244
1321 12 21          W                                                            1  0770  2                   244
1322 12 22          B     MESS9                                                  4  0771  B 933               245
1323 12 23   ENDMSG C     MNREC4,L4                                              7  0775  C W5| W4W           245
1324 12 24          BL    VLRER                                                  5  0782  B |15 T             245
1325 12 25          BCE   AINT,RCDIST,                                           8  0787  B |34 196           245
1326 12 26          BCE   CST322,INMODE,M                                        8  0795  B 899 562 M         245
1327 12 27          MLC   @000@,INDEX1                                           7  0803  M V13 089           245
1328 12 28   TSARNA C     RCC4,CF1REX&X1                                         7  0810  C D1W VWX           246
1329 12 29          BE    CST322                                                 5  0817  B 899 S             246
1330 12 30          MA    @004@,INDEX1                                           7  0822  # V16 089           246
1331 12 31          A     @1@,KRCNT#2                                            7  0829  A V17 V19           246
1332 12 32          C     KRCNT,NCF                                              7  0836  C V19 096           246
1333 12 33          BH    TSARNA                                                 5  0843  B 810 U             246
1334 12 34          S     KKK3,RCC4                                              7  0848  S 619 D1W           247
1335 12 35          MLZS  @ @,RCC4                                               7  0855  Y V20 D1W           247
1336 12 36          C     RCC4,@0000@                                            7  0862  C D1W V24           247
1337 12 37          BE    CST322                                                 5  0869  B 899 S             247
1338 12 38          MLC   @1@,KRUNCH                                             7  0874  M V17 561           247
1339 12 39          ZA    RCC4,CONVRT                                            7  0881  ? D1W 698           248
1340 12 40          B     K5TOK3                                                 4  0888  B 04Y               248
1341 12 41          MLC   CONVRT,SLRCC                                           7  0892  M 698 12/           248
1342 12 42   CST322 CS    332                 PRINT VALUES TO BE USED FOR        4  0899  / 332               248
1343 12 43          CS                        VARIABLE LENGTH RECORD SORT        1  0903  /                   248
1344 12 44          MLC   L4,PRMSU-28                                            7  0904  M W4W U82           248
1345 12 45          MLC   BL4,PRMSU-14                                           7  0911  M W4S U96           248
1346 12 46          MLC   MFS,PRMSU                                              7  0918  M I81 V10           249
1347 12 47          MLC   PRMSU,0238                                             7  0925  M V10 238           249
1348 12 48          W                                                            1  0932  2                   249
1349 12 49   MESS9  CS    322                                                    4  0933  / 322               249
1350 12 50          CS                                                           1  0937  /                   249
1351 12 51          MLC   PRMS9,0223                                             7  0938  M U72 223           249
1352 12 52          CC    L                                                      2  0945  F L                 249
1353 12 53          W                         PRINT END OF ASSIGNMENT PHASE      1  0947  2                   250
1354 12 54          CC    1                                                      2  0948  F 1                 250
1355 12 55          SW    OHDATE-4                                               4  0950  , 453               250
1356 12 56          BCE   EXITAP,URPI,P                                          8  0954  B 982 186 P         250
1357 12 57          BCE   EXITAP,URPI,C                                          8  0962  B 982 186 C         250
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

1358 12 58          MLC   URPI,*&4                                               7  0970  M 186 980          250
1359 12 59          RWD   0                                                      5  0977  U %U0 R            250
1360 12 60   EXITAP NOP   0                   USERS EXIT                         4  0982  N 000              251
1361 12 61          MLZS  *-6,CENSIG                                             7  0986  Y 986 415          251
1362 12 62          CS    80                                                     4  0993  / 080              251
1363 12 63          SW    24,56                                                  7  0997  , 024 056          251
1364 12 64          SW    63,67                                                  7  1004  , 063 067          251
1365 12 65          R     56                  LOAD PHASE ONE                     4  1011  1 056              251
1366 12 66   VLRER  CS    332                                                    4  1015  / 332              251
1367 12 67          CS                                                           1  1019  /                  252
1368 12 68          MLC   VLRERM,253                                             7  1020  M T93 253          252
1369 12 69          W                                                            1  1027  2                  252
1370 12 70          CC    1                                                      2  1028  F 1                252
1371 12 71          H     *-3                                                    4  1030  . |30              252
1372 12 72   AINT   MLC   @1@,RLIIND                                             7  1034  M V17 560          252
1373 12 73          MLC   @ @,CNOP                                               7  1041  M V20 086          252
1374 12 74          MLC   @004@,RCDIST                                           7  1048  M V16 196          253
1375 12 75          MA    @004@,CFIRE                                            7  1055  # V16 337          253
1376 12 76          MLC   @  @,COUNT2                                            7  1062  M V26 W2S          253
1377 12 77   ISSO   MA    @004@,CF1RE                                            7  1069  # V16 01U          253
1378 12 78          A     @1@,COUNT2                                             7  1076  A V17 W2S          253
1379 12 79          C     COUNT2,NCF                                             7  1083  C W2S 096          254
1380 12 80   NOMO   BE    SOS                                                    5  1090  B /06 S            254
1381 12 81          MA    @003@,ISSO&6                                           7  1095  # V29 |75          254
1382 12 82          B     ISSO                                                   4  1102  B |69              254
1383 12 83   SOS    SBR   ISSO&6,CF1SL                                           7  1106  H |75 353          254
1384 12 84          SBR   NOMO&3,UPDT                                            7  1113  H |93 /24          254
1385 12 85          B     ISSO-7                                                 4  1120  B |62              255
1386 12 86   UPDT   MA    @I9F@,CCCFRE                                           7  1124  # V32 04U          255
1387 12 87          B     CST322                                                 4  1131  B 899              255
1388 12 88          DCW   @RECORD LENGTH ERROR-@                                20  1154                     255
1389 12 89   CHECLA BCE   ERLAEL,TL,2                                            8  1155  B S07 191 2        256
1390 12 90          BCE   ERLAEL,TL,1                                            8  1163  B S07 191 1        256
1391 12 91          BCE   ERLAEL,OTLI,2                                          8  1171  B S07 189 2        256
1392 12 92          BCE                                                          1  1179  B                  256
1393 12 93          BCE   ERLAEL,OTLI,1                                          8  1180  B S07 189 1        256
1394 12 94          BCE   *&8,ITLI,                                              8  1188  B S03 188          257
1395 12 95          MLC   @1@,ITLI                                               7  1196  M V17 188          257
1396 12 96          B     ENDAPH&8                                               4  1203  B 708              257
1397 12 97   ERLAEL CS    332                                                    4  1207  / 332              257
1398 12 98          CS                                                           1  1211  /                  257
1399 12 99          MLC   @INVALID LABEL SPECIFICATION@,228                      7  1212  M V59 228          257
1400 13 00          W                                                            1  1219  2                  257
1401 13 01          CC    1                                                      2  1220  F 1                258
1402 13 02          H     HTMGHT                                                 4  1222  . S83              258
1403 13 03          C     TL,@3@                                                 7  1226  C 191 V60          258
1404 13 04          BL    *&8                                                    5  1233  B S45 T            258
1405 13 05          MLC   @3@,TL                                                 7  1238  M V60 191          258
1406 13 06          C     OTLI,@3@                                               7  1245  C 189 V60          258
1407 13 07          BL    *&8                                                    5  1252  B S64 T            258
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 SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

1408 13 08          MLC   @3@,OTLI                                       7  1257  M V60 189           259
1409 13 09          BCE   *&8,ITLI,                                      8  1264  B S79 188           259
1410 13 10          MLC   @1@,ITLI                                       7  1272  M V17 188           259
1411 13 11          B     ENDAPH&8                                       4  1279  B 708               259
1412 13 12   HTMGHT C     TL,@2@                                         7  1283  C 191 V61           259
1413 13 13          BH    OTLGHT                                         5  1290  B T07 U             259
1414 13 14          BE    OTLGHT                                         5  1295  B T07 S             260
1415 13 15          MLC   @1@,TL                                         7  1300  M V17 191           260
1416 13 16   OTLGHT C     OTLI,@2@                                       7  1307  C 189 V61           260
1417 13 17          BH    ITLGHT                                         5  1314  B T31 U             260
1418 13 18          BE    ITLGHT                                         5  1319  B T31 S             260
1419 13 19          MLC   @1@,OTLI                                       7  1324  M V17 189           260
1420 13 20   ITLGHT C     ITLI,@2@                                       7  1331  C 188 V61           261
1421 13 21          BH    LBBGHT                                         5  1338  B T50 U             261
1422 13 22          MLC   @1@,ITLI                                       7  1343  M V17 188           261
1423 13 23   LBBGHT MLC   @ @,LBBUCK                                     7  1350  M V20 414           261
1424 13 24          B     ENDAPH&8                                       4  1357  B 708               261
1425 13 25   VLRERM DC    @MAXIMUM LESS THAN MINIMUM-RESTART@           33  1393                      262
1426 13 26   PRMS8  DCW   @L        B       BI       BO     @           33  1426                      263
1427 13 27          DC    @  BL        MFS        @                     23  1449                      264
1428 13 28   PRMS9  DCW   @END OF ASSIGNMENT PHASE@                     23  1472                      265
1429 13 29   PRMSU  DCW   @L MAX        BL MAX        MFS        @      38  1510                      266
                    DCW   @000@                                          3  1513              LIT     267
                    DCW   @004@                                          3  1516              LIT     267
                    DCW   @1@                                            1  1517              LIT     267
             KRCNT  DCW   #02                                            2  1519              AREA    267
                    DCW   @ @                                            1  1520              LIT     267
                    DCW   @0000@                                         4  1524              LIT     267
                    DCW   @  @                                           2  1526              LIT     267
                    DCW   @003@                                          3  1529              LIT     268
                    DCW   @I9F@                                          3  1532              LIT     268
                    DCW   @INVALID LABEL SPECIFICATION@                 27  1559              LIT     268
                    DCW   @3@                                            1  1560              LIT     268
                    DCW   @2@                                            1  1561              LIT     268
1430 13 30          EX    ENDAPH                                              B 700               269
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 SEQ PG LIN  LABEL  OP    OPERANDS                                      SFX CT  LOCN  INSTRUCTION TYPE  CARD

1431 13 31          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
1432 13 32          ORG   87                                                          0087
1433 13 33   X1     DCW   @000@                                               3  0089                    272
1434 13 34          ORG   92                                                          0092
1435 13 35   X2     DCW   @000@                                               3  0094                    273
1436 13 36          ORG   97                                                          0097
1437 13 37   X3     DCW   @000@                                               3  0099                    274
1438 13 38          ORG   7998                                                        7998
1439 13 39   GM     DCW   @}@                                                 1  7998              GMARK  275
1440 13 40          ORG   CCB&1                                                       0576
1441 13 41          ORG   *&124                                                       0700
1442 13 42   HERE   ORG   *                 BEGINNING OF REDUNDANT REC RTN       0700   0700
1443 13 43          ORG   *&135                                                       0835
1444 13 44   *
1445 13 45   PLYIN3 MLC   @|@,000                                             7  0835  M Q13 000         276
1446 13 46          B     NOSWCH                                              4  0842  B T41             276
1447 13 47   K2FLD  DCW   00                                                  2  0847                    276
1448 13 48   BFRST3 DCW   @0|0@                                               3  0850                    276
1449 13 49   PCOMPL DCW   000                                                 3  0853                    276
1450 13 50   K1BLNK DCW   @ @               BLANK TO REMOVE GM AFTER READ     1  0854                    276
1451 13 51   G      DCW   000                                                 3  0857                    276
1452 13 52          DC    0                                                   1  0858                    276
1453 13 53   P15999 DCW   @I9I@                                               3  0861                    277
1454 13 54   LBMI3T DSA   MI3TUN                                              3  0864  343               277
1455 13 55   LBI3T  DSA   I3TUN                                               3  0867  340               277
1456 13 56   CPLITP DCW   @99@                                                2  0869                    277
1457 13 57   THREEB DCW   0                                                   1  0870                    277
1458 13 58   NINE   DCW   @9@                                                 1  0871                    277
1459 13 59   NINTNN DCW   @99@                                                2  0873                    277
1460 13 60   TWO    DCW   @002@                                               3  0876                    278
1461 13 61   K2BLNK       @00@                                                2  0878                    278
1462 13 62   MFSIZE DCW   0000000           MAXIMUM FILE SIZE                 7  0885                    278
1463 13 63   NOTAPS DCW   @4@                                                 1  0886                    278
1464 13 64   THREE  DCW   @003@                                               3  0889                    278
1465 13 65   O1     DCW   000                                                 3  0892                    278
1466 13 66   G1     DCW   000                                                 3  0895                    278
1467 13 67   ONE    DCW   @001@                                               3  0898                    278
1468 13 68   BLKCT1 DCW   @00000@                                             5  0903                    279
1469 13 69   ONERM  DCW   @|@                                                 1  0904                    279
1470 13 70   *
1471 13 71   CLRTN  SW    000               CLEAR WORDMARK ROUTINE            4  0905  , 000             279
1472 13 72          MLC   CDTO,X3                                             7  0909  M 953 099         279
1473 13 73   CLR1   S     0&X3              SUBTRACT TO WORDMARK              4  0916  S 0?0             279
1474 13 74          SBR   X3                SAVE ADDRESS                      4  0920  H 099             279
1475 13 75          MA    ONE,X3                                              7  0924  # 898 099         279
1476 13 76          CW    0&X3              CLEAR WORDMARK                    4  0931  ) 0?0             280
1477 13 77          C     ONPTAR,X3         INPUT AREA ALL CLEARED            7  0935  C P41 099         280
1478 13 78          BU    CLR1                                                5  0942  B 916 /           280
1479 13 79          B     VLRGET            YES                               4  0947  B Y13             280
1480 13 80   CDTO   DCW   #3                                                  3  0953                    280
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                   SFX CT  LOCN  INSTRUCTION TYPE  CARD

1481 13 81          ORG   *&34                                                                 0988
1482 13 82   *                  SET WORDMARK ROUTINE FOR VARIABLE
1483 13 83   *                  LENGTH RECORDS
1484 13 84   VARLNT SW    0&X2                                                            4  0988  , 0!0               281
1485 13 85          SW    0&X2,0&X2                                                       7  0992  , 0!0 0!0           281
1486 13 86          SW    0&X2,0&X2                                                       7  0999  , 0!0 0!0           281
1487 13 87          SW    0&X2,0&X2                                                       7  1006  , 0!0 0!0           281
1488 13 88          SW    0&X2,0&X2                                                       7  1013  , 0!0 0!0           281
1489 13 89   STWMVL SW    0&X2,0&X2                                                       7  1020  , 0!0 0!0           281
1490 13 90          SW    0&X2                                                            4  1027  , 0!0               282
1491 13 91   CNVRSN ZA    15998&X2,X3                                                     7  1031  ? IRH 099           282
1492 13 92          ZA    X3-2,X3                                                         7  1038  ? 097 099           282
1493 13 93          MLZS  K1BLNK,X3                                                       7  1045  Y 854 099           282
1494 13 94   CNVRS1 MLZS  TBLE&X3,15997&X2                                                7  1052  Y /I5 IRG           282
1495 13 95   B011TA A     ONE,CTNR                                                        7  1059  A 898 539           282
1496 13 96          S     ONE,MFSIZE                                                      7  1066  S 898 885           283
1497 13 97   B011T  MLC   X2,0                                                            7  1073  M 094 000           283
1498 13 98   B011TH NOP   0,0                                                             7  1080  N 000 000           283
1499 13 99   B011TB MA    15999&X2,X2                                                     7  1087  # IRI 094           283
1500 14 00          MLC   LRG2G1,CMPLRG                                                   7  1094  M 565 /88           283
1501 14 01          MA    B011T&6,CMPLRG                                                  7  1101  # |79 /88           284
1502 14 02          BWZ   SETG1H,CMPLRG,2                                                 8  1108  V /64 /88 2         284
1503 14 03   STMRWM MA    THREE,B011T&6                                                   7  1116  # 889 |79           284
1504 14 04   STG1J  C     X2,X1                                                           7  1123  C 094 089           284
1505 14 05   SETG1J BU    STWMVL                                                          5  1130  B |20 /             284
1506 14 06   CLWMVL B     B013R                                                           4  1135  B Y48               284
1507 14 07   SETG12 MA    @I9G@,B011T&6                                                   7  1139  # Q16 |79           285
1508 14 08   SETG1  MLC   B011T&6,G1                                                      7  1146  M |79 895           285
1509 14 09          MLC   K1BLNK,0&X1                                                     7  1153  M 854 0|0           285
1510 14 10          B     B4SS5                                                           4  1160  B R66               285
1511 14 11   SETG1H MLC   @N@,CLWMVL                                                      7  1164  M Q17 /35           285
1512 14 12          B     STMRWM                                                          4  1171  B /16               285
1513 14 13   LSTBLK MLC   @N@,CLWMVL                                                      7  1175  M Q17 /35           286
1514 14 14   LSTBK1 B     STWMVL                                                          4  1182  B |20               286
1515 14 15   CMPLRG DCW   000                                                             3  1188                      286
1516 14 16   CMPCOW DCW   000                                                             3  1191                      286
1517 14 17   CMPCOU DCW   000                                                             3  1194                      286
1518 14 18   TBLE   DC    @9@                                                             1  1195                      286
1519 14 19          DC    @Z@                                                             1  1196                      286
1520 14 20          DC    @R@                                                             1  1197                      286
1521 14 21          DC    @I@                                                             1  1198                      286
1522 14 22          DC    @9@                                                             1  1199                      286
1523 14 23   *
1524 14 24   *    S T E P   D O W N   R O U T I N E                                     B1401
1525 14 25   *
1526 14 26   *
1527 14 27   STPDNR MLC   O1FA-3,X1                                                       7  1200  M P64 089           286
1528 14 28   LOADGM MLCWA GM,0                                                            7  1207  L I9Y 000           286
1529 14 29          MLC   HOLDND,X3                                                       7  1214  M T47 099           287
1530 14 30          A     ONE,CNSQ            SEQUENCE COUNT                              7  1221  A 898 533           287
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

1531 14 31   *                  COMPARE LOWEST RECORD IN NEW G TO HIGHEST
1532 14 32   *                  RECORD IN PREVIOUS G
1533 14 33   STPCMP C     0,0                                                   7  1228  C 000 000           287
1534 14 34   STPCM1 BL    NEXTTP              IF LOW-SWITCH OUTPUT TAPES        5  1235  B S71 T             287
1535 14 35   STPCM2 BE    EQUALS              IF EQUAL-TEST SECONDARY CFS       5  1240  B S49 S             287
1536 14 36   *                  IF ALL CONTROL FIELDS ARE EQUAL OR IF
1537 14 37   *                  RECORD IS HIGH-KEEP OUTPUT BLOCKS OF NEW G ON
1538 14 38   *                  SAME OUTPUT TAPE UNIT AS WAS USED FOR
1539 14 39   *                  PREVIOUS G
1540 14 40          B     NOSWCH                                                4  1245  B T41               287
1541 14 41   EQUALS MA    ONE,X3                                                7  1249  # 898 099           288
1542 14 42          SBR   B04EQ&3,STPCM2&5                                      7  1256  H V33 S45           288
1543 14 43          SBR   B03EQ&3                                               4  1263  H V28               288
1544 14 44          B     EQLRTN                                                4  1267  B U92               288
1545 14 45   NEXTTP MLC   MI2TUN,TPBKT                                          7  1271  M 342 T48           288
1546 14 46   NXTTP1 C     NEXTTP&3,&MI2TUN                                      7  1278  C S74 Q20           288
1547 14 47          BE    CYCLE                                                 5  1285  B T01 S             289
1548 14 48          MA    ONE,NEXTTP&3                                          7  1290  # 898 S74           289
1549 14 49          B     CYCLE1                                                4  1297  B T08               289
1550 14 50   CYCLE  SBR   NEXTTP&3,MI1TUN                                       7  1301  H S74 341           289
1551 14 51   CYCLE1 MLC   TPBKT,B201W&3                                         7  1308  M T48 W64           289
1552 14 52          MLC   TPBKT,TAPERW&3                                        7  1315  M T48 X54           289
1553 14 53          MLC   TPBKT,B203W&3                                         7  1322  M T48 X86           290
1554 14 54          A     ONE,CNOS1           SWITCH TAPE COUNT                 7  1329  A 898 545           290
1555 14 55          BSS   PLYIN3,C                                              5  1336  B 835 C             290
1556 14 56   NOSWCH B     BP000                                                 4  1341  B T49               290
1557 14 57   HOLDND DCW   000                                                   3  1347                      290
1558 14 58   TPBKT  DCW   0                   OUTPUT TAPE NUMBER                1  1348                      290
1559 14 59   *
1560 14 60   *                  PUT ROUTINE
1561 14 61   *
1562 14 62   BP000  SBR   B212W&3,BP2200                                        7  1349  H W94 T63           290
1563 14 63   B2200  MLC   O1FA-3,B2000&3      GET ADDR OF 1ST REC FROM ADDR     7  1356  M P64 U01           291
1564 14 64   BP2200 MLC   0,B2001&6           TABLE                             7  1363  M 000 U15           291
1565 14 65   B2201V B     B2000                                                 4  1370  B T98               291
1566 14 66          DC    @   @                                                 3  1376                      291
1567 14 67   B220VL MLC   0,X1                                                  7  1377  M 000 089           291
1568 14 68          MA    P15999,X1                                             7  1384  # 861 089           291
1569 14 69   B2201  MA    L,B2001&6                                             7  1391  # 347 U15           292
1570 14 70   B2000  MLC   0,X1                ADDR OF RECORD TO BE MOVED TO X1  7  1398  M 000 089           292
1571 14 71   PUTEXT NOP   0                   USERS EXIT                        4  1405  N 000               292
1572 14 72   B2001  MLCWA 15999&X1,0          CHAIN MOVE RECORD TO OUTPUT AREA  7  1409  L IZI 000           292
1573 14 73          NOP                       THESE NOPS ARE CHANGED TO L       1  1416  N                   292
1574 14 74          NOP                       ACCORDING TO THE NUMBER OF        1  1417  N                   292
1575 14 75          NOP                       CONTROL FIELDS SPECIFIED BY THE   1  1418  N                   292
1576 14 76          NOP                       USER IN CC1 &2                    1  1419  N                   293
1577 14 77          NOP                                                         1  1420  N                   293
1578 14 78          NOP                                                         1  1421  N                   293
1579 14 79          NOP                                                         1  1422  N                   293
1580 14 80          NOP                                                         1  1423  N                   293
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

1581 14 81          NOP                                                         1  1424  N                  293
1582 14 82          NOP                                                         1  1425  N                  293
1583 14 83          NOP                                                         1  1426  N                  294
1584 14 84   B2211D NOP   0,0                                                   7  1427  N 000 000          294
1585 14 85   B2211B C     B2000&3,G1         HAVE G RECORDS BEEN MOVED TO       7  1434  C U01 895          294
1586 14 86   B2202  MA    THREE,B2000&3      OUTPUT AREA                        7  1441  # 889 U01          294
1587 14 87   B2202A BU    B2211              NO-IS WRITE REQUIRED               5  1448  B U57 /            294
1588 14 88   B2211C B     BP001              YES-WRITE FINAL BLK OF G RECS      4  1453  B W14              294
1589 14 89   B2211  C     B2001&6,COUNTR     TEST-IS WRITE REQUIRED             7  1457  C U15 Y12          294
1590 14 90   B2212  BU    B2201              NO-BR TO MOVE NEXT REC TO OUTPUT   5  1464  B T91 /            295
1591 14 91          B     BP002                                                 4  1469  B W21              295
1592 14 92          DC    @     @                                               6  1478                     295
1593 14 93          B     B2201V                                                4  1479  B T70              295
1594 14 94   N      DCW   @N@                                                   1  1483                     295
1595 14 95   *      E Q   U  A  L       R  O  U  T  I  N  E
1596 14 96   EQUAL  SBR   B04EQ&3            STORE THE B REGISTER TO RETURN     4  1484  H V33              295
1597 14 97          SBR   B03EQ&3            TO THE COMPARE LOOP MAINLINE       4  1488  H V28              295
1598 14 98   EQLRTN SBR   B00EQ&3,BSCBSC     MOVE ADDRESS OF 2ND-3RD-ETC CF     7  1492  H V02 V62          295
1599 14 99   B00EQ  MLC   0,B01EQ&6          TO COMPARE INSTRUCTION             7  1499  M 000 V12          296
1600 15 00   B01EQ  C     0,0                COMPARE SECONDARY CONT FLDS        7  1506  C 000 000          296
1601 15 01          BE    B07EQ              BRANCH TO ALTER COMPARE            5  1513  B V34 S            296
1602 15 02          MA    @I9?@,B03EQ&3                                         7  1518  # Q23 V28          296
1603 15 03   B03EQ  BL    0                  BR LOW TO MAINLINE BR LOW INSTR    5  1525  B 000 T            296
1604 15 04   B04EQ  B     0000               BR HI TO MAINLINE BR HI INSTR      4  1530  B 000              296
1605 15 05   B07EQ  C     B00EQ&3,LAST       TEST FOR OTHER CF IF EQ COMPARE    7  1534  C V02 W13          297
1606 15 06          BE    B04EQ              ALL CF HAVE BEEN COMPARED          5  1541  B V30 S            297
1607 15 07          MA    @006@,B00EQ&3      ALTER COMPARE INSTRUCTION          7  1546  # Q26 V02          297
1608 15 08          B     B00EQ              BR TO COMPARE NEXT CF              4  1553  B U99              297
1609 15 09   BSCBSC DCW   000000             THESE 6 CHARACTER BUCKETS          6  1562                     297
1610 15 10          DCW   000000             CONTAIN THE POSITION WITHIN        6  1568                     297
1611 15 11          DCW   000000             THE RECORD OF THE SECOND THRU      6  1574                     298
1612 15 12          DCW   000000             TENTH CONTROL FIELD IF MULTIPLE    6  1580                     298
1613 15 13          DCW   000000             CONTROL FIELDS ARE PRESENT         6  1586                     298
1614 15 14          DCW   000000                                                6  1592                     298
1615 15 15          DCW   000000                                                6  1598                     298
1616 15 16          DCW   000000                                                6  1604                     298
1617 15 17          DCW   000000                                                6  1610                     299
1618 15 18   LAST   DCW   000                ADDR OF LAST 6 CHAR DCW            3  1613                     299
1619 15 19   *
1620 15 20   *              WRITE ROUTINE
1621 15 21   *
1622 15 22   BP001  SBR   B212W&3,B010R                                         7  1614  H W94 Y41          299
1623 15 23   BP002  S     B,MFSIZE                                              7  1621  S 199 885          299
1624 15 24          BWZ   MAXFS,MFSIZE,K                                        8  1628  V X96 885 K        299
1625 15 25   WRTFL1 A     B,CTNR                                                7  1636  A 199 539          299
1626 15 26   WRITFL MLC   @80@,CNTR50                                           7  1643  M Q28 Y09          300
1627 15 27   B211W  MLC   @N@,B202W                                             7  1650  M Q17 X56          300
1628 15 28   RITEXT NOP   0                  USERS EXIT                         4  1657  N 000              300
1629 15 29   B201W  WT    %U4,0                                                 8  1661  M %U4 000 W        300
1630 15 30          BAV   *&1                                                   5  1669  B W74 Z            300
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

1631 15 31          BER   TAPERW                                                         5  1674  B X51 L             300
1632 15 32          BEF   EOFW                                                           5  1679  B W95 K             301
1633 15 33   PLYIN4 NOP   K1BLNK,000                                                     7  1684  N 854 000           301
1634 15 34   B212W  B     B2201                                                          4  1691  B T91               301
1635 15 35   EOFW   SBR   OLGA&3                                                         4  1695  H X50               301
1636 15 36   EOFW2  NOP   EOFWND                                                         4  1699  N X21               301
1637 15 37          MLC   @B@,EOFW2                                                      7  1703  M Q29 W99           301
1638 15 38          SBR   NOSWCH&3,NORSIF                                                7  1710  H T44 X32           301
1639 15 39          B     NEXTTP                                                         4  1717  B S71               302
1640 15 40   EOFWND MLC   @B@,CNTR                                                       7  1721  M Q29 P43           302
1641 15 41          B     TSTFPD                                                         4  1728  B P88               302
1642 15 42   NORSIF MLC   @ @,STPCMP&4                                                   7  1732  M Q30 S32           302
1643 15 43          MLC   &BP000                                                         4  1739  M Q33               302
1644 15 44          MLC   @B@                                                            4  1743  M Q29               302
1645 15 45   OLGA   B     0                                                              4  1747  B 000               302
1646 15 46   TAPERW BSP   %U4                                                            5  1751  U %U4 B             303
1647 15 47   B202W  B     ERSRTN                                                         4  1756  B X71               303
1648 15 48          MLC   @B@,B202W                                                      7  1760  M Q29 X56           303
1649 15 49          B     B201W                                                          4  1767  B W61               303
1650 15 50   ERSRTN A     ONE,CNTR50                                                     7  1771  A 898 Y09           303
1651 15 51          BAV   HLTWTR                                                         5  1778  B X92 Z             303
1652 15 52   B203W  SKP   %U4                                                            5  1783  U %U4 E             303
1653 15 53          B     B211W                                                          4  1788  B W50               304
1654 15 54   HLTWTR H     WRITFL                                                         4  1792  . W43               304
1655 15 55   MAXFS  MLC   NOP,BP002&7                                                    7  1796  M Y07 W28           304
1656 15 56          H     WRTFL1                                                         4  1803  . W36               304
1657 15 57   NOP    DCW   @N@                                                            1  1807                      304
1658 15 58   CNTR50 DCW   00                                                             2  1809                      304
1659 15 59   COUNTR DCW   000                                                            3  1812                      304
1660 15 60   *                                   16000 - SIZE OF B - 1  IF VLR
1661 15 61   *
1662 15 62   *                   GET ROUTINE
1663 15 63   *
1664 15 64   VLRGET MLC   @B@,CLWMVL                                                     7  1813  M Q29 /35           305
1665 15 65          MLC   O1FA-3,B011T&6                                                 7  1820  M P64 |79           305
1666 15 66          MLC   ONPTAR,X2                                                      7  1827  M P41 094           305
1667 15 67   B010RI NOP   K4,X1                                                          7  1834  N P50 089           305
1668 15 68   B010R  MLC   ONPTAR,X1           MOVE BEGINNING OF INPUT TO X1              7  1841  M P41 089           305
1669 15 69   B013R  MLC   X1,X3                                                          7  1848  M 089 099           306
1670 15 70   B000R  MLC   ONE,CNTR            INITIALIZE ERROR COUNTER                   7  1855  M 898 P43           306
1671 15 71          A     ONE,BLKCT1          ADD 1 TO # OF BLOCKS READ                  7  1862  A 898 903           306
1672 15 72          MLC   CENSIG,13&X1        MOVE CENT SIGN TO 14TH POSITION            7  1869  M 415 0/3           306
1673 15 73   *                                  OF INPUT AREA FOR NOISE TEST
1674 15 74   B011R  MLC   K1BLNK,0&X1         BLANK GROUPMARK AT END OF RECORD           7  1876  M 854 0|0           306
1675 15 75   B001R  RT    %U1,0&X1            READ INPUT BLOCK                           8  1883  M %U1 0|0 R         307
1676 15 76          SBR   X1                                                             4  1891  H 089               307
1677 15 77          MA    P15999,X1                                                      7  1895  # 861 089           307
1678 15 78          BEF   EOFRD               TEST-END OF FILE ON READ                   5  1902  B !74 K             307
1679 15 79   CKNOIS BCE   NOISRT,13&X3,       BRANCH IF CENT SIGN STILL PRESENT          8  1907  B !43 0A3           307
1680 15 80          BER   TAPERD              TEST-TAPE TRANSMISSION ERROR               5  1915  B K35 L             307
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

1681 15 81   GETEXT NOP   0                 USERS EXIT                              4  1920  N 000              308
1682 15 82   *              AT THIS POINT USER MAY BRANCH TO HIS OWN ROUTINE
1683 15 83   *              IF ADDITIONAL MANIPULATION OF RECORDS IS
1684 15 84   *              DESIRED--CONTENTS OF INDEX REGISTERS MUST BE SAVED
1685 15 85   *              AND RESTORED BEFORE RETURNING TO SORT PROGRAM.
1686 15 86   ***
1687 15 87   RNGLNQ BCE   ACCEPT-7,0&X3,}     CHECK RECORD LENGTH OF FIXED           8  1924  B Z37 0?0 } GMARK  308
1688 15 88   *                                    LENGTH RECORDS
1689 15 89   RNGL1Q H                                                              1  1932  .                  308
1690 15 90   RNGL2Q B     HERE                                                      4  1933  B 700              308
1691 15 91          MLC   K1BLNK,0&X1       THE GROUPMARK IS REMOVED FROM THE       7  1937  M 854 0|0          308
1692 15 92   ACCEPT C     X1,COWNTR         IS INPUT AREA FILLED                    7  1944  C 089 P46          308
1693 15 93          BU    B013R             RETURN TO READ ANOTHER BLOCK            5  1951  B Y48 /            308
1694 15 94   B002R  B     B4SS5             BRANCH TO SEQUENCE RECORDS              4  1956  B R66              309
1695 15 95          DC    @     @                                                   5  1964                     309
1696 15 96   RLINO  B     RLIYES                                                    4  1965  B !26              309
1697 15 97          DC    @   @                                                     3  1971                     309
1698 15 98          MLC   X1,CONVRT         DETERMINE LENGTH OF VARIABLE LNG        7  1972  M 089 698          309
1699 15 99          B     EXPAND            RECORDS WITH NO RLI SPECIFIED           4  1979  B 620              309
1700 16 00          MLCWA HOLD,RLI                                                  7  1983  L 693 !42          309
1701 16 01          MLC   X3,CONVRT                                                 7  1990  M 099 698          310
1702 16 02          B     EXPAND                                                    4  1997  B 620              310
1703 16 03          S     HOLD,RLI                                                  7  2001  S 693 !42          310
1704 16 04          MLZS  K1BLNK,RLI                                                7  2008  Y 854 !42          310
1705 16 05          SW    RLI-3                                                     4  2015  , !39              310
1706 16 06          MLCWA RLI,3&X2                                                  7  2019  L !42 0!3          310
1707 16 07   RLIYES BWZ   LSTBLK,CMPCOW,2                                           8  2026  V /75 /91 2        311
1708 16 08   B002RA B     STWMVL                                                    4  2034  B |20              311
1709 16 09   RLI    DCW   00000                                                     5  2042                     311
1710 16 10   NOISRT MLC   K1BLNK,13&X3      CLEAR NOISE RECORD                      7  2043  M 854 0A3          311
1711 16 11          MLC                                                             1  2050  M                  311
1712 16 12          MLC                                                             1  2051  M                  311
1713 16 13          MLC                                                             1  2052  M                  311
1714 16 14          MLC                                                             1  2053  M                  312
1715 16 15          MLC                                                             1  2054  M                  312
1716 16 16          MLC                                                             1  2055  M                  312
1717 16 17          MLC                                                             1  2056  M                  312
1718 16 18          MLC                                                             1  2057  M                  312
1719 16 19          MLC                                                             1  2058  M                  312
1720 16 20          MLC                                                             1  2059  M                  312
1721 16 21          MLC                                                             1  2060  M                  313
1722 16 22          MLC                                                             1  2061  M                  313
1723 16 23          MLC                                                             1  2062  M                  313
1724 16 24          MLC   X3,X1             RESTORE INDEX REGISTERS                 7  2063  M 099 089          313
1725 16 25          B     B011R-7                                                   4  2070  B Y69              313
1726 16 26   EOFRD  BAV   *&1                                                       5  2074  B !79 Z            313
1727 16 27          S     ONE,BLKCT1                                                7  2079  S 898 903          313
1728 16 28          MLZS  K2BLNK,BLKCT1                                             7  2086  Y 878 903          314
1729 16 29          BCE   *&5,TL,           TEST FOR TRAILER LABEL                  8  2093  B J05 191          314
1730 16 30   LSTCHK B     TRLENT            BR TO PROC TRAILER LABEL                4  2101  B N84              314
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

1731 16 31          S     BLKCT1             ZERO BLOCK COUNT                         4  2105  S 903               314
1732 16 32          MLZS  K2BLNK,BLKCT1                                               7  2109  Y 878 903           314
1733 16 33          BSS   EOFRWD,D                                                    5  2116  B J28 D             314
1734 16 34          MLC   @R@,EOFRWD&4                                                7  2121  M Q34 J32           315
1735 16 35   EOFRWD RWU   0                                                           5  2128  U %U0 U             315
1736 16 36          A     ONE,CPLITP         ADD 1 TO NO OF REELS PROC                7  2133  A 898 869           315
1737 16 37          BAV   TSTFPD             TEST-MORE REELS TO PROC                  5  2140  B P88 Z             315
1738 16 38   SWCTAP MLC   K1BLNK,0&X1                                                 7  2145  M 854 0|0           315
1739 16 39          SBR   X1                                                          4  2152  H 089               315
1740 16 40          BSS   TAPRD1,B                                                    5  2156  B K31 B             316
1741 16 41   SWCHTP MLC   I1TUN,ITPBKT     SWITCH TAPES                               7  2161  M 338 P47           316
1742 16 42   SCHTP1 C     SWCHTP&3,&I2TUN                                             7  2168  C J64 Q37           316
1743 16 43          BE    CICLE                                                       5  2175  B J91 S             316
1744 16 44          MA    ONE,SWCHTP&3                                                7  2180  # 898 J64           316
1745 16 45          B     CICLE1                                                      4  2187  B J98               316
1746 16 46   CICLE  SBR   SWCHTP&3,I1TUN                                              7  2191  H J64 338           317
1747 16 47   CICLE1 MLC   ITPBKT,B001R&3                                              7  2198  M P47 Y86           317
1748 16 48          MLC   ITPBKT,EOFRWD&3                                             7  2205  M P47 J31           317
1749 16 49          MLC   ITPBKT,TAPRD2&3                                             7  2212  M P47 K55           317
1750 16 50   TSTLBL BCE   HDRENT,ITLI,1      TEST FOR HEADER LABEL                    8  2219  B K68 188 1         317
1751 16 51          B     CHKPNT                                                      4  2227  B V8S               318
1752 16 52   TAPRD1 H     SWCHTP             HALT BEFORE SWITCHING INPUT TPS          4  2231  . J61               318
1753 16 53   TAPERD BAV   *&1                                                         5  2235  B K40 Z             318
1754 16 54          A     ONE,CNTR                                                    7  2240  A 898 P43           318
1755 16 55          BAV   HERE                                                        5  2247  B 700 Z             318
1756 16 56   TAPRD2 BSP   1                                                           5  2252  U %U1 B             318
1757 16 57          MLC   X3,X1                                                       7  2257  M 099 089           318
1758 16 58          B     B001R-14                                                    4  2264  B Y69               319
1759 16 59   *                       80 CHARACTER HEADER-TRAILER ROUTINE
1760 16 60   *
1761 16 61   HDRENT SBR   HDREXT&3           INITIALIZE LABEL ROUTINE                 4  2268  H N10               319
1762 16 62          MLC   ITPBKT,RDHDRL&3                                             7  2272  M P47 L29           319
1763 16 63          MLC   ITPBKT,RDTPMK&3                                             7  2279  M P47 M88           319
1764 16 64          MLC   ITPBKT,BGET1&3                                              7  2286  M P47 N05           319
1765 16 65          MLC   K2BLNK-1,CNTR                                               7  2293  M 877 P43           319
1766 16 66          MLC   ITPBKT,*&4                                                  7  2300  M P47 L10           320
1767 16 67   BCKHDR RWD   %U0                REWIND UNIT                              5  2307  U %U0 R             320
1768 16 68   RDHD1  MLCWA GM,281             LOAD GROUPMARK                           7  2312  L I9Y 281           320
1769 16 69          MLC   CENSIG,214                                                  7  2319  M 415 214           320
1770 16 70   RDHDRL RTW   0,201              READ HEADER LABEL IN LOAD MODE           8  2326  L %U0 201 R         320
1771 16 71          SW    201                                                         4  2334  , 201               320
1772 16 72   LABNOS BCE   NOISEL,214,        CHECK FOR NOISE RECORD                   8  2338  B N27 214           321
1773 16 73          BER   REREAD             TAPE ERROR CHECK                         5  2346  B N11 L             321
1774 16 74          BCE   *&8,LBLSAM,                                                 8  2351  B L66 572           321
1775 16 75          MLCWA 240,RTCYCL&1       SAVE FIRST 40 POSITIONS OF LABEL         7  2359  L 240 462           321
1776 16 76          MLC   @N@,*-13                                                    7  2366  M Q17 L59           321
1777 16 77          NOP   000,000                                                     7  2373  N 000 000           322
1778 16 78          NOP   000,000                                                     7  2380  N 000 000           322
1779 16 79          BEF   *&1                RESET INDICATOR                          5  2387  B L92 K             322
1780 16 80          W                                                                 1  2392  2                   322
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                 SFX CT  LOCN  INSTRUCTION TYPE  CARD

1781 16 81          CC    L                                                             2  2393  F L                322
1782 16 82          BCE   EXIT7,LBLBKT-32,   IS LABEL TO BE CHECKED                     8  2395  B M81 464          322
1783 16 83          BCE   FNAME,LBLBKT-31,   YES-ALL VALUES OR FILE NAME ONLY           8  2403  B M47 465          322
1784 16 84          C     215,LBLBKT-25      COMPARE FILE SERIAL NUMBER                 7  2411  C 215 471          323
1785 16 85          BU    ERRHDR                                                        5  2418  B N35 /            323
1786 16 86          C     235,LBLBKT-5       COMPARE CREATION DATE                      7  2423  C 235 491          323
1787 16 87          BU    ERRHDR                                                        5  2430  B N35 /            323
1788 16 88          C     210,LBLBKT-20      COMPARE REEL SEQUENCE NUMBER               7  2435  C 210 476          323
1789 16 89          BU    ERRHDR                                                        5  2442  B N35 /            323
1790 16 90   FNAME  C     230,LBLBKT-10      COMPARE FILE NAMES                         7  2447  C 230 486          324
1791 16 91          BU    ERRHDR                                                        5  2454  B N35 /            324
1792 16 92          BCE   EXIT7-7,LBLBKT-30,                                            8  2459  B M74 466          324
1793 16 93          A     ONE,LBLBKT-21      UPDATE REEL SEQ NO                         7  2467  A 898 475          324
1794 16 94          MLCWA GM,281                                                        7  2474  L I9Y 281          324
1795 16 95   EXIT7  NOP   000                USERS EXIT                                 4  2481  N 000              324
1796 16 96   RDTPMK RTW   0,240              READ TAPEMARK                              8  2485  L %U0 240 R        325
1797 16 97          CS    299                                                           4  2493  / 299              325
1798 16 98          BEF   HDREXT                                                        5  2497  B N07 K            325
1799 16 99   BGET1  BSP   %U0                NO TAPE MARK PRESENT                       5  2502  U %U0 B            325
1800 17 00   HDREXT B     000                                                           4  2507  B 000              325
1801 17 01   REREAD A     ONE,CNTR                                                      7  2511  A 898 P43          325
1802 17 02          BAV   STOPH                                                         5  2518  B N61 Z            325
1803 17 03          B     BCKHDR                                                        4  2523  B L07              326
1804 17 04   NOISEL CS    220                                                           4  2527  / 220              326
1805 17 05          B     RDHDRL-7                                                      4  2531  B L19              326
1806 17 06   ERRHDR CS    332                                                           4  2535  / 332              326
1807 17 07          CS                                                                  1  2539  /                  326
1808 17 08          MLC   UCMSG,215                                                     7  2540  M N83 215          326
1809 17 09          MLC   LBLBKT,255         MOVE CONTROL CARD CONSTANTS TO             7  2547  M 496 255          326
1810 17 10          MLC                      PRINT AREA                                 1  2554  M                  327
1811 17 11          MLC                                                                 1  2555  M                  327
1812 17 12          MLC                                                                 1  2556  M                  327
1813 17 13          MLC                                                                 1  2557  M                  327
1814 17 14          W                                                                   1  2558  2                  327
1815 17 15          CC    1                                                             2  2559  F 1                327
1816 17 16   STOPH  H     EXIT7-22                                                      4  2561  . M59              327
1817 17 17          B     BCKHDR-14                                                     4  2565  B K93              328
1818 17 18   UCMSG  DCW   @ERROR-SHOULD BE@                                            15  2583                     328
1819 17 19   TRLENT SBR   TRLEXT&3                                                      4  2584  H O87              328
1820 17 20          MLC   ITPBKT,RDTRLL&3                                               7  2588  M P47 O19          328
1821 17 21          MLC   ITPBKT,BCKTRL&3                                               7  2595  M P47 P03          328
1822 17 22          MLC   K2BLNK-1,CNTR                                                 7  2602  M 877 P43          329
1823 17 23   RDTL1  MLCWA GM,281             LOAD GROUPMARK                             7  2609  L I9Y 281          329
1824 17 24   RDTRLL RTW   0,201              READ TRAILER LABEL                         8  2616  L %U0 201 R        329
1825 17 25          BEF   *&1                RESET INDICATOR                            5  2624  B O29 K            329
1826 17 26          BER   RERD               TAPE ERROR CHECK                           5  2629  B O88 L            329
1827 17 27          W                                                                   1  2634  2                  329
1828 17 28          CC    L                                                             2  2635  F L                329
1829 17 29          BCE   EXIT6,TL,1         IS LABEL TO BE CHECKED                     8  2637  B O80 191 1        330
1830 17 30          C     210,BLKCT1                                                    7  2645  C 210 903          330
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

1831 17 31          BU    ERRTRL                                                   5  2652  B P09 /            330
1832 17 32          C     220,CNTR                                                 7  2657  C 220 P43          330
1833 17 33          BE    EXIT6                                                    5  2664  B O80 S            330
1834 17 34          SBR   EREINE&3,CNTR      PLACE RECORD COUNT IN MESSAGE         7  2669  H P24 P43          330
1835 17 35          B     ERRTRL                                                   4  2676  B P09              331
1836 17 36   EXIT6  NOP   000                USERS EXIT                            4  2680  N 000              331
1837 17 37   TRLEXT B     000                                                      4  2684  B 000              331
1838 17 38   RERD   A     ONE,CNTR                                                 7  2688  A 898 P43          331
1839 17 39          BAV   STOPT                                                    5  2695  B P35 Z            331
1840 17 40   BCKTRL BSP   %U0                                                      5  2700  U %U0 B            331
1841 17 41          B     RDTRLL                                                   4  2705  B O16              331
1842 17 42   ERRTRL CS    332                PRINT UNEQUAL COMPARE MESSAGE         4  2709  / 332              332
1843 17 43          CS                                                             1  2713  /                  332
1844 17 44          MLC   UCMSG,215                                                7  2714  M N83 215          332
1845 17 45   EREINE MLC   BLKCT1,230                                               7  2721  M 903 230          332
1846 17 46          W                                                              1  2728  2                  332
1847 17 47          CC    1                                                        2  2729  F 1                332
1848 17 48          H     EXIT6                                                    4  2731  . O80              332
1849 17 49   STOPT  H     TRLEXT                                                   4  2735  . O84              333
1850 17 50   ONPTAR DCW   000                FIRST POSITION OF G AREA              3  2741                     333
1851 17 51   CNTR   DCW   00                                                       2  2743                     333
1852 17 52   COWNTR DCW   000                                                      3  2746                     333
1853 17 53   *                                  16K - LAST POS G & MXBLKSIZ--VLR
1854 17 54   ITPBKT DCW   0                                                        1  2747                     333
1855 17 55   K4     DCW   @004@                                                    3  2750                     333
1856 17 56   *
1857 17 57   *      B I N A R Y     S E A R C H
1858 17 58   *
1859 17 59   ZERO   DCW   &000                                                     3  2753                     333
1860 17 60   HALF   DCW   &5                                                       1  2754                     334
1861 17 61   D      DCW   000                                                      3  2757                     334
1862 17 62   E      DCW   0000                                                     4  2761                     334
1863 17 63   O1FA   DCW   000000                                                   6  2767                     334
1864 17 64   G/4    DCW   000                                                      3  2770                     334
1865 17 65          DC    00                                                       2  2772                     334
1866 17 66   LORCRD DCW   @ @                                                      1  2773                     334
1867 17 67   SONED  DCW   @SXXXXXX@                                                7  2780                     334
1868 17 68   *
1869 17 69   HLTMFS MLC   @N@,CNTR                                                 7  2781  M Q17 P43          335
1870 17 70   TSTFPD CS    080                                                      4  2788  / 080              335
1871 17 71          SW    24,56                                                    7  2792  , 024 056          335
1872 17 72          SW    63,67                                                    7  2799  , 063 067          335
1873 17 73          R     056                                                      4  2806  1 056              335
1874 17 74   Z      DCW   000                                                      3  2812                     335
1875 17 75          LTORG *                                                               2813
                    DCW   @|@                                                      1  2813             LIT     335
                    DCW   @I9G@                                                    3  2816             LIT     336
                    DCW   @N@                                                      1  2817             LIT     336
                    DCW   &MI2TUN                                                  3  2820  342        ADCON   336
                    DCW   @I9?@                                                    3  2823             LIT     336
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

                    DCW   @006@                                               3  2826              LIT    336
                    DCW   @80@                                                2  2828              LIT    336
                    DCW   @B@                                                 1  2829              LIT    336
                    DCW   @ @                                                 1  2830              LIT    337
                    DCW   &BP000                                              3  2833  T49         ADCON  337
                    DCW   @R@                                                 1  2834              LIT    337
                    DCW   &I2TUN                                              3  2837  339         ADCON  337
1876 17 76   *
1877 17 77   HPNDPM DCW   000                                                 3  2840                     337
1878 17 78   TPCNPM DCW   @D99@                                               3  2843                     337
1879 17 79   CLEARS NOP   0,0                                                 7  2844  N 000 000          337
1880 17 80   STRTCL CS    15999               CLEAR CORE                      4  2851  / I9I              338
1881 17 81          SBR   STRTCL&3                                            4  2855  H Q54              338
1882 17 82          C     STRTCL&3,TPCNPM                                     7  2859  C Q54 Q43          338
1883 17 83          BU    STRTCL                                              5  2866  B Q51 /            338
1884 17 84   LOADTB SW    0                                                   4  2871  , 000              338
1885 17 85   LODTB1 MLC   ADRLRD,0                                            7  2875  M A05 000          338
1886 17 86   LODTB2 MLC   0,0                                                 7  2882  M 000 000          338
1887 17 87   LODTB3 CW    0                                                   4  2889  ) 000              339
1888 17 88          NOP   @|@,000                                             7  2893  N A15 000          339
1889 17 89   MAX    MLC   GM,0                                                7  2900  M I9Y 000          339
1890 17 90          BCE   NITTAP,FLR,1                                        8  2907  B ?99 091 1        339
1891 17 91          MLC   TPCNPM,X1                                           7  2915  M Q43 089          339
1892 17 92          MLC   K1BLNK,1&X1                                         7  2922  M 854 0|1          340
1893 17 93   LDBKPM MLC   K1BLNK,0&X1         CLEAR BY MOVING BLANKS          7  2929  M 854 0|0          340
1894 17 94          SBR   X1                                                  4  2936  H 089              340
1895 17 95          CW    1&X1                                                4  2940  ) 0|1              340
1896 17 96          C     X1,HPNDPM           IS THE INPUT AREA CLEARED       7  2944  C 089 Q40          340
1897 17 97          BU    LDBKPM                                              5  2951  B R29 /            340
1898 17 98          MA    ONPTAR,SETWMK&3     SET WORD MARKS                  7  2956  # P41 R80          341
1899 17 99   STWMK1 MLC   NCF,K2FLD                                           7  2963  M 096 847          341
1900 18 00          MLC   @000@,X3                                            7  2970  M A18 099          341
1901 18 01   SETWMK SW    0&X3                                                4  2977  , 0?0              341
1902 18 02   INSWIN MLC   CF1SL,X3                                            7  2981  M 353 099          341
1903 18 03          MA    THREE,INSWIN&3                                      7  2988  # 889 R84          341
1904 18 04          A     NINTNN,K2FLD                                        7  2995  A 873 847          342
1905 18 05          BAV   SETWMK                                              5  3002  B R77 Z            342
1906 18 06          SBR   INSWIN&3,CF1SL                                      7  3007  H R84 353          342
1907 18 07          MA    L,SETWMK&3                                          7  3014  # 347 R80          342
1908 18 08          A     K999,GCNTR                                          7  3021  A A14 A11          342
1909 18 09          BAV   STWMK1                                              5  3028  B R63 Z            342
1910 18 10          C     G,ONE                 G EQUALS ONE                  7  3033  C 857 898          343
1911 18 11          BU    SETWM1                                              5  3040  B ?52 /            343
1912 18 12          SBR   B002R&3,STPDNR                                      7  3045  H Z59 S00          343
1913 18 13   SETWM1 MLC   O1,X3                                               7  3052  M 892 099          343
1914 18 14          MLC   ONPTAR,ONPTRI                                       7  3059  M P41 A08          343
1915 18 15   ADRTBL MLC   ONPTRI,0&X3    SET UP TABLE OF ADDRESSES            7  3066  M A08 0?0          344
1916 18 16          MA    L,ONPTRI                                            7  3073  # 347 A08          344
1917 18 17          C     X3,G1                                               7  3080  C 099 895          344
1918 18 18          MA    THREE,X3                                            7  3087  # 889 099          344
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

1919 18 19          BU    ADRTBL                                                   5  3094  B ?66 /            344
1920 18 20   NITTAP B     056                                                      4  3099  B 056              344
1921 18 21   ADRLRD DSA   LORCRD                                                   3  3105  P73                345
1922 18 22   ONPTRI DCW   000                                                      3  3108                     345
1923 18 23   GCNTR  DCW   000                                                      3  3111                     345
1924 18 24   K999   DCW   @999@                                                    3  3114                     345
1925 18 25          LTORG *                                                              3115
                    DCW   @|@                                                      1  3115              LIT    345
                    DCW   @000@                                                    3  3118              LIT    345
1926 18 26          ORG   *&1                                                            3120
1927 18 27   B002B  MLC   3&X2,X3            ENTER SORT LOOP HERE WHEN             7  3120  M 0!3 099          346
1928 18 28          C     0&X3,0&X1          SORTING 2ND RECORD                    7  3127  C 0?0 0|0          346
1929 18 29          BL    B4S07                                                    5  3134  B ?13 T            346
1930 18 30          BE    EQUAL                                                    5  3139  B U84 S            346
1931 18 31   B700B  MA    B002B&3,X2                                               7  3144  # A23 094          346
1932 18 32   P003   B     B4S07                                                    4  3151  B ?13              346
1933 18 33   B004B  MLC   6&X2,X3            ENTER SORT LOOP HERE WHEN             7  3155  M 0!6 099          347
1934 18 34          C     0&X3,0&X1          SORTING 3RD OR 4TH RECORD             7  3162  C 0?0 0|0          347
1935 18 35          BL    B002B                                                    5  3169  B A20 T            347
1936 18 36          BE    EQUAL                                                    5  3174  B U84 S            347
1937 18 37   B701B  MLC   9&X2,X3                                                  7  3179  M 0!9 099          347
1938 18 38          C     0&X3,0&X1                                                7  3186  C 0?0 0|0          347
1939 18 39          BL    B712B                                                    5  3193  B B14 T            348
1940 18 40          BE    EQUAL                                                    5  3198  B U84 S            348
1941 18 41   B702B  MA    B701B&3,X2                                               7  3203  # A82 094          348
1942 18 42          B     B4S07                                                    4  3210  B ?13              348
1943 18 43   B712B  MA    B004B&3,X2                                               7  3214  # A58 094          348
1944 18 44   P009   B     B4S07                                                    4  3221  B ?13              348
1945 18 45   B008B  MLC   12&X2,X3           ENTER SORT LOOP HERE WHEN             7  3225  M 0J2 099          348
1946 18 46          C     0&X3,0&X1          SORTING RECORDS 5 THRU 8              7  3232  C 0?0 0|0          349
1947 18 47          BL    B004B                                                    5  3239  B A55 T            349
1948 18 48          BE    EQUAL                                                    5  3244  B U84 S            349
1949 18 49   B703B  MLC   18&X2,X3                                                 7  3249  M 0J8 099          349
1950 18 50          C     0&X3,0&X1                                                7  3256  C 0?0 0|0          349
1951 18 51          BL    B715B                                                    5  3263  B C19 T            349
1952 18 52          BE    EQUAL                                                    5  3268  B U84 S            350
1953 18 53   B705B  MLC   21&X2,X3                                                 7  3273  M 0K1 099          350
1954 18 54          C     0&X3,0&X1                                                7  3280  C 0?0 0|0          350
1955 18 55          BL    B716B                                                    5  3287  B C08 T            350
1956 18 56          BE    EQUAL                                                    5  3292  B U84 S            350
1957 18 57   B706B  MA    B705B&3,X2                                               7  3297  # B76 094          350
1958 18 58          B     B4S07                                                    4  3304  B ?13              351
1959 18 59   B716B  MA    B703B&3,X2                                               7  3308  # B52 094          351
1960 18 60          B     B4S07                                                    4  3315  B ?13              351
1961 18 61   B715B  MLC   15&X2,X3                                                 7  3319  M 0J5 099          351
1962 18 62          C     0&X3,0&X1                                                7  3326  C 0?0 0|0          351
1963 18 63          BL    B714B                                                    5  3333  B C54 T            351
1964 18 64          BE    EQUAL                                                    5  3338  B U84 S            351
1965 18 65   B704B  MA    B715B&3,X2                                               7  3343  # C22 094          352
1966 18 66          B     B4S07                                                    4  3350  B ?13              352
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

1967 18 67   B714B  MA    B008B&3,X2                                                7  3354  # B28 094           352
1968 18 68   P021   B     B4S07                                                     4  3361  B ?13               352
1969 18 69   B016B  MLC   24&X2,X3             ENTER SORT LOOP HERE WHEN            7  3365  M 0K4 099           352
1970 18 70          C     0&X3,0&X1            SORTING RECORDS 9 THRU 16            7  3372  C 0?0 0|0           352
1971 18 71          BL    B008B                                                     5  3379  B B25 T             353
1972 18 72          BE    EQUAL                                                     5  3384  B U84 S             353
1973 18 73   B600B  MA    B016B&3,X2                                                7  3389  # C68 094           353
1974 18 74   P024   B     B008B                                                     4  3396  B B25               353
1975 18 75   B032B  MLC   48&X2,X3             ENTER SORT LOOP HERE WHEN            7  3400  M 0M8 099           353
1976 18 76          C     0&X3,0&X1            SORTING RECORDS 17 THRU 32           7  3407  C 0?0 0|0           353
1977 18 77          BL    B016B                                                     5  3414  B C65 T             354
1978 18 78          BE    EQUAL                                                     5  3419  B U84 S             354
1979 18 79   B601B  MLC   72&X2,X3                                                  7  3424  M 0P2 099           354
1980 18 80          C     0&X3,0&X1                                                 7  3431  C 0?0 0|0           354
1981 18 81          BL    B612B                                                     5  3438  B D59 T             354
1982 18 82          BE    EQUAL                                                     5  3443  B U84 S             354
1983 18 83   B602B  MA    B601B&3,X2                                                7  3448  # D27 094           355
1984 18 84          B     B008B                                                     4  3455  B B25               355
1985 18 85   B612B  MA    B032B&3,X2                                                7  3459  # D03 094           355
1986 18 86   P072   B     B008B                                                     4  3466  B B25               355
1987 18 87   B064B  MLC   96&X2,X3             ENTER SORT LOOP HERE WHEN            7  3470  M 0R6 099           355
1988 18 88          C     0&X3,0&X1            SORTING RECORDS 33 THRU 64           7  3477  C 0?0 0|0           355
1989 18 89          BL    B032B                                                     5  3484  B D00 T             356
1990 18 90          BE    EQUAL                                                     5  3489  B U84 S             356
1991 18 91   B603B  MLC   144&X2,X3                                                 7  3494  M 1M4 099           356
1992 18 92          C     0&X3,0&X1                                                 7  3501  C 0?0 0|0           356
1993 18 93          BL    B615B                                                     5  3508  B E64 T             356
1994 18 94          BE    EQUAL                                                     5  3513  B U84 S             356
1995 18 95   B605B  MLC   168&X2,X3                                                 7  3518  M 1O8 099           357
1996 18 96          C     0&X3,0&X1                                                 7  3525  C 0?0 0|0           357
1997 18 97          BL    B616B                                                     5  3532  B E53 T             357
1998 18 98          BE    EQUAL                                                     5  3537  B U84 S             357
1999 18 99   B606B  MA    B605B&3,X2                                                7  3542  # E21 094           357
2000 19 00          B     B008B                                                     4  3549  B B25               357
2001 19 01   B616B  MA    B603B&3,X2                                                7  3553  # D97 094           358
2002 19 02          B     B008B                                                     4  3560  B B25               358
2003 19 03   B615B  MLC   120&X2,X3                                                 7  3564  M 1K0 099           358
2004 19 04          C     0&X3,0&X1                                                 7  3571  C 0?0 0|0           358
2005 19 05          BL    B614B                                                     5  3578  B E99 T             358
2006 19 06          BE    EQUAL                                                     5  3583  B U84 S             358
2007 19 07   B604B  MA    B615B&3,X2                                                7  3588  # E67 094           359
2008 19 08          B     B008B                                                     4  3595  B B25               359
2009 19 09   B614B  MA    B064B&3,X2                                                7  3599  # D73 094           359
2010 19 10   P144   B     B008B                                                     4  3606  B B25               359
2011 19 11   B128B  MLC   192&X2,X3            ENTER SORT LOOP HERE WHEN            7  3610  M 1R2 099           359
2012 19 12          C     0&X3,0&X1            SORTING RECORDS 65 THRU 128          7  3617  C 0?0 0|0           359
2013 19 13          BL    B064B                                                     5  3624  B D70 T             360
2014 19 14          BE    EQUAL                                                     5  3629  B U84 S             360
2015 19 15   B500B  MA    B128B&3,X2                                                7  3634  # F13 094           360
2016 19 16   P192   B     B064B                                                     4  3641  B D70               360
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

2017 19 17   B256B  MLC   384&X2,X3           ENTER SORT LOOP HERE WHEN             7  3645  M 3Q4 099           360
2018 19 18          C     0&X3,0&X1           SORTING RECORDS 129 THRU 256          7  3652  C 0?0 0|0           360
2019 19 19          BL    B128B                                                     5  3659  B F10 T             361
2020 19 20          BE    EQUAL                                                     5  3664  B U84 S             361
2021 19 21   B501B  MLC   576&X2,X3                                                 7  3669  M 5P6 099           361
2022 19 22          C     0&X3,0&X1                                                 7  3676  C 0?0 0|0           361
2023 19 23          BL    B522B                                                     5  3683  B G04 T             361
2024 19 24          BE    EQUAL                                                     5  3688  B U84 S             361
2025 19 25   B502B  MA    B501B&3,X2                                                7  3693  # F72 094           362
2026 19 26          B     B064B                                                     4  3700  B D70               362
2027 19 27   B522B  MA    B256B&3,X2                                                7  3704  # F48 094           362
2028 19 28   P576   B     B064B                                                     4  3711  B D70               362
2029 19 29   B512B  MLC   768&X2,X3           ENTER SORT LOOP HERE WHEN             7  3715  M 7O8 099           362
2030 19 30          C     0&X3,0&X1           SORTING RECORDS 257 THRU 512          7  3722  C 0?0 0|0           362
2031 19 31          BL    B256B                                                     5  3729  B F45 T             363
2032 19 32          BE    EQUAL                                                     5  3734  B U84 S             363
2033 19 33   B503B  MLC   1152&X2,X3                                                7  3739  M /N2 099           363
2034 19 34          C     0&X3,0&X1                                                 7  3746  C 0?0 0|0           363
2035 19 35          BL    B515B                                                     5  3753  B H09 T             363
2036 19 36          BE    EQUAL                                                     5  3758  B U84 S             363
2037 19 37   B505B  MLC   1344&X2,X3                                                7  3763  M TM4 099           364
2038 19 38          C     0&X3,0&X1                                                 7  3770  C 0?0 0|0           364
2039 19 39          BL    B516B                                                     5  3777  B G98 T             364
2040 19 40          BE    EQUAL                                                     5  3782  B U84 S             364
2041 19 41   B506B  MA    B505B&3,X2                                                7  3787  # G66 094           364
2042 19 42          B     B064B                                                     4  3794  B D70               364
2043 19 43   B516B  MA    B503B&3,X2                                                7  3798  # G42 094           365
2044 19 44          B     B064B                                                     4  3805  B D70               365
2045 19 45   B515B  MLC   960&X2,X3                                                 7  3809  M 9O0 099           365
2046 19 46          C     0&X3,0&X1                                                 7  3816  C 0?0 0|0           365
2047 19 47          BL    B514B                                                     5  3823  B H44 T             365
2048 19 48          BE    EQUAL                                                     5  3828  B U84 S             365
2049 19 49   B504B  MA    B515B&3,X2                                                7  3833  # H12 094           366
2050 19 50          B     B064B                                                     4  3840  B D70               366
2051 19 51   B514B  MA    B512B&3,X2                                                7  3844  # G18 094           366
2052 19 52   P1344  B     B064B                                                     4  3851  B D70               366
2053 19 53          DCW   @ @                                                       1  3855                      366
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

2054 19 54          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
2055 19 55   *
2056 19 56   *
2057 19 57   *
2058 19 58          LTORG *                                                                  3856
2059 19 59   *
2060 19 60   *
2061 19 61   *                80 CHARACTER WORK LABEL ROUTINE
2062 19 62   *
2063 19 63          ORG   4175                                                               4175
2064 19 64   WLAREA DCW   @1HDR 00000SORT7LABEL          @                        30  4204                     367
2065 19 65          DC    #50                                                    50  4254                     369
2066 19 66   WLGM   DCW   @  @                                                    2  4256                     369
2067 19 67   INTIAL BCE   TWLABL,MS,4                                             8  4257  B 31/ 344 4         369
2068 19 68          MLC   GPMARK,INTAL1&6                                         7  4265  M 350 27Y           369
2069 19 69   INTAL1 MLCWA GM,0                                                    7  4272  L I9Y 000           369
2070 19 70          CW    GM                                                      4  4279  ) I9Y               370
2071 19 71          MLC   GPMARK,RDHD1&3                                          7  4283  M 350 L15           370
2072 19 72          MLC   GPMARK,RDTL1&3                                          7  4290  M 350 O12           370
2073 19 73          MLC   GPMARK,EXIT7-4                                          7  4297  M 350 M77           370
2074 19 74          MLC   GPMARK,LOADGM&3                                         7  4304  M 350 S10           370
2075 19 75   TWLABL BCE   NXTINT,LBBUCK,1    CHECK FOR 120 CHARACTER LABELS       8  4311  B 79X 414 1         371
2076 19 76          MLC   CENSIG,LABNOS&7    PRIME NOISE TEST WITH CENT SIGN      7  4319  M 415 L45           371
2077 19 77          BCE   NXBYPS,LABELS,                                          8  4326  B 78U 413           371
2078 19 78   EXIT0  NOP   0                  USER EXIT BEFORE READING WORK LBL    4  4334  N 000               371
2079 19 79   SWKLB  MLC   MI1TUN,TPWKBK      MOVE 1ST WORK TP NO TO BUCKET        7  4338  M 341 98X           371
2080 19 80          MLC   TPWKBK,WLAREA-20                                        7  4345  M 98X 18U           372
2081 19 81          MLC   CENSIG,WKENOI&7    PRIME NOISE RECORD TEST              7  4352  M 415 44X           372
2082 19 82          MLC   @00@,CRYBU1                                             7  4359  M 99V 61S           372
2083 19 83          MA    ONE,SWKLB&3                                             7  4366  # 898 34/           372
2084 19 84          MLC   GPMARK,*&4                                              7  4373  M 350 38T           372
2085 19 85          MLCWA GM,WLGM-1                                               7  4380  L I9Y 25V           373
2086 19 86          BCE   NOWL,WLBKT,        NO LABEL-CREATE TEMP LABEL           8  4387  B 88Z 417           373
2087 19 87          MLC   K1BLNK,CNTR        RESET COUNTER                        7  4395  M 854 P43           373
2088 19 88          MLC   TPWKBK,*&4         INITIALIZE REWIND INSTRUCTION        7  4402  M 98X 41S           373
2089 19 89          RWD   %U0                REWIND UNIT                          5  4409  U %U0 R             373
2090 19 90   RDWL   MLC   CENSIG,WLAREA-16   LOAD CENT SIGN FOR NOISE TEST        7  4414  M 415 18Y           374
2091 19 91          MLC   TPWKBK,*&4                                              7  4421  M 98X 43/           374
2092 19 92          RTW   %U0,WLAREA-29      READ WORK LABEL                      8  4428  L %U0 17V R         374
2093 19 93          SBR   HDRBKT                                                  4  4436  H 99T               374
2094 19 94   WKENOI BCE   NOISEW,WLAREA-16,    IS CENT SIGN STILL PRESENT         8  4440  B 81Z 18Y           374
2095 19 95          BER   RERDWL             CHECK TAPE TRANS ERROR               5  4448  B 84Z L             374
2096 19 96          BEF   *&1                RESET INDICATOR                      5  4453  B 45Y K             375
2097 19 97          A     ONE,TBC                                                 7  4458  A 898 98Y           375
2098 19 98          BCE   EXIT5-12,WLBKT,0   0 IF HDR BUT NO CHK CC3COL4          8  4465  B 64Z 417 0         375
2099 19 99   *                  RETENTION CYCLE CHECK
2100 20 00          ZA    WLAREA&9,CRTCYL    MOVE TAPE INFORMATION TO CHECK       7  4473  ? 21T 64Y           375
2101 20 01          MLC                      BUCKET                               1  4480  M                   375
2102 20 02          MLC                                                           1  4481  M                   375
2103 20 03          SW    OHDATE-2                                                4  4482  , 455               375
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

2104 20 04  CLWL   C     OHDATE-3,CRTCYL-7  COMPARE YEAR                              7  4486  C 454 64/           376
2105 20 05         BU    MODYR                                                    5  4493  B 56Y /             376
2106 20 06         A     CRTCYL-4,CRTCYL    ADD TAPE DAYS TO RT CYL                   7  4498  A 64U 64Y           376
2107 20 07         S     OHDATE,CRTCYL      SUB CONT DAYS FROM RT CYL                 7  4505  S 457 64Y           376
2108 20 08         CW    OHDATE-2                                                 4  4512  ) 455               376
2109 20 09         BWZ   EXIT5-12,CRTCYL,K  CAN WE WRITE ON TAPE                      8  4516  V 64Z 64Y K         376
2110 20 10         CS    332                NO-PRINT MESSAGE INDICATING               4  4524  / 332               377
2111 20 11         CS                       DAYS TAPE IS TO BE RETAINED               1  4528  /                   377
2112 20 12         MLC   SAVMSG,226                                               7  4529  M 63Z 226           377
2113 20 13         MLNS  CRTCYL,221                                               7  4536  D 64Y 221           377
2114 20 14         MLNS                                                           1  4543  D                   377
2115 20 15         MLNS                                                           1  4544  D                   377
2116 20 16         MLC   SAVMS1                                                   4  4545  M 63U               377
2117 20 17         MLC   TPWKBK                                                   4  4549  M 98X               378
2118 20 18         MLC   SAVMS2                                                   4  4553  M 62Z               378
2119 20 19         W                                                              1  4557  2                   378
2120 20 20         CC    1                                                        2  4558  F 1                 378
2121 20 21         H     EXIT5-12           HIT START TO ACCEPT TAPE                  4  4560  . 64Z               378
2122 20 22         B     RDWL-5             START RESET-START TO RECHECK              4  4564  B 40Z               378
2123 20 23  MODYR  S     TSF,CRTCYL         SUBTRACT 365 FROM RT CYL                  7  4568  S 61X 64Y           378
2124 20 24         A                        AND ADD 1 TO TAPE YEARS                   1  4575  A                   379
2125 20 25         A                                                              1  4576  A                   379
2126 20 26         A     @1@,CRYBU1                                               7  4577  A 99W 61S           379
2127 20 27         BCE   HLCRY1,CRYBU1-1,3                                        8  4584  B 59W 61/ 3         379
2128 20 28         B     CLWL                                                     4  4592  B 48W               379
2129 20 29  HLCRY1 H     EXIT5-12                                                 4  4596  . 64Z               379
2130 20 30         MLC   @00@,CRYBU1                                              7  4600  M 99V 61S           379
2131 20 31         B     CLWL                                                     4  4607  B 48W               380
2132 20 32  CRYBU1 DCW   @  @                                                     2  4612                      380
2133 20 33         DCW   @1@                                                      1  4613                      380
2134 20 34         DCW   @0@                                                      1  4614                      380
2135 20 35  TSF    DCW   @365@                                                    3  4617                      380
2136 20 36  SAVMS2 DCW   @RETAIN TAPE @                                          12  4629                      380
2137 20 37  SAVMS1 DCW   @ FOR @                                                  5  4634                      380
2138 20 38  SAVMSG DCW   @ DAYS@                                                  5  4639                      381
2139 20 39         DCW   #2                                                       2  4641                      381
2140 20 40         DCW   #3                                                       3  4644                      381
2141 20 41  CRTCYL DCW   #4                                                       4  4648                      381
2142 20 42         MLC   TPWKBK,*&4                                               7  4649  M 98X 65Z           381
2143 20 43         RWD   %U0                REWIND UNIT                               5  4656  U %U0 R             381
2144 20 44  EXIT5  NOP   000                USER EXIT AFTER READING LABEL             4  4661  N 000               381
2145 20 45  *                                 OR BEFORE WRITING NEW WORK TAPE
2146 20 46  *                                 LABEL
2147 20 47         MLC   TPWKBK,*&4                                               7  4665  M 98X 67V           382
2148 20 48  WTWL   WT    %U0,WLAREA-29      WRITE WORK HEADER LABEL                   8  4672  M %U0 17V W         382
2149 20 49         BER   EWWKL                                                    5  4680  B 90| L             382
2150 20 50         BEF   *&1                                                      5  4685  B 69| K             382
2151 20 51         BCE   EXIT9,THLTMO,      TP MARK AFTER HEADER LABEL                8  4690  B 71| 418           382
2152 20 52         MLC   TPWKBK,*&4         YES                                       7  4698  M 98X 70Y           383
2153 20 53         WTM   %U0                WRITE TAPE MARK                           5  4705  U %U0 M             383
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

2154 20 54  EXIT9  NOP   000                 USER EXIT AFT WRITING WKLBL             4  4710  N 000               383
2155 20 55         BCE   TOOWA,MI3TUN,       3 WAY MERGE                             8  4714  B 73Y 343           383
2156 20 56         C     TBC,@3@             YES                                     7  4722  C 98Y 99X           383
2157 20 57         BU    SWKLB                                                       5  4729  B 33Y /             383
2158 20 58         B     NXBYPS                                                      4  4734  B 78U               384
2159 20 59  TOOWA  C     TBC,@2@             2 WAY MERGE                             7  4738  C 98Y 99Y           384
2160 20 60         BU    SWKLB                                                       5  4745  B 33Y /             384
2161 20 61         BCE   NXBYPS,URPI,P                                               8  4750  B 78U 186 P         384
2162 20 62         BCE   NXBYPS,URPI,C                                               8  4758  B 78U 186 C         384
2163 20 63         SBR   EXIT9&7,NXBYPS                                              7  4766  H 71X 78U           384
2164 20 64         MLC   URPI,TPWKBK                                                 7  4773  M 186 98X           385
2165 20 65         B     SWKLB&7                                                     4  4780  B 34V               385
2166 20 66  NXBYPS R                                                                 1  4784  1                   385
2167 20 67         BCE   NXTINT,68,B                                                 8  4785  B 79X 068 B         385
2168 20 68         B     NXBYPS                                                      4  4793  B 78U               385
2169 20 69  NXTINT CS    080                                                         4  4797  / 080               385
2170 20 70         SW    24,56                                                       7  4801  , 024 056           385
2171 20 71         SW    63,67                                                       7  4808  , 063 067           386
2172 20 72         R     056                                                         4  4815  1 056               386
2173 20 73  NOISEW MLC   HDRBKT,X3                                                   7  4819  M 99T 099           386
2174 20 74         MLC   K2BLNK,0&X3                                                 7  4826  M 878 0?0           386
2175 20 75         CHAIN 12                                                                              MACRO
2176               MLC                                                               1  4833  M          GEN      386
2177               MLC                                                               1  4834  M          GEN      386
2178               MLC                                                               1  4835  M          GEN      386
2179               MLC                                                               1  4836  M          GEN      387
2180               MLC                                                               1  4837  M          GEN      387
2181               MLC                                                               1  4838  M          GEN      387
2182               MLC                                                               1  4839  M          GEN      387
2183               MLC                                                               1  4840  M          GEN      387
2184               MLC                                                               1  4841  M          GEN      387
2185               MLC                                                               1  4842  M          GEN      387
2186               MLC                                                               1  4843  M          GEN      388
2187               MLC                                                               1  4844  M          GEN      388
2188 20 76         B     RDWL                                                        4  4845  B 41U               388
2189 20 77  RERDWL A     ONE,CNTR                                                    7  4849  A 898 P43           388
2190 20 78         BAV   STOPW                                                       5  4856  B 86V Z             388
2191 20 79         B     RDWL-5                                                      4  4861  B 40Z               388
2192 20 80  STOPW  H     ACPLB               ERR ON READING WK LABEL                 4  4865  . 87T               388
2193 20 81         B     RDWL-5              HIT START TO ACCEPT AS READ             4  4869  B 40Z               389
2194 20 82  *                                  HIT START RESET-START-TO REREAD
2195 20 83  ACPLB  BEF   *&1                                                         5  4873  B 87Y K             389
2196 20 84         A     ONE,TBC                                                     7  4878  A 898 98Y           389
2197 20 85         B     EXIT5-12                                                    4  4885  B 64Z               389
2198 20 86  NOWL   A     ONE,TBC             NO WORK LABEL-CREATE TEMP               7  4889  A 898 98Y           389
2199 20 87         B     EXIT5                                                       4  4896  B 66/               389
2200 20 88  EWWKL  A     ONE,CFIFTY          WRITE ERROR ROUTINE                     7  4900  A 898 99|           389
2201 20 89         MLC   TPWKBK,*&4                                                  7  4907  M 98X 91X           390
2202 20 90         BSP   %U0                                                         5  4914  U %U0 B             390
2203 20 91         BAV   H50                                                         5  4919  B 97W Z             390
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 SEQ PG LIN  LABEL  OP     OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

2204 20 92          MLC    TPWKBK,*&4                                                   7  4924  M 98X 93U          390
2205 20 93          WT     %U0,WLAREA-29                                                8  4931  M %U0 17V W        390
2206 20 94          BER    *&5                                                          5  4939  B 94Y L            390
2207 20 95          B      WTWL&13                                                      4  4944  B 68V              391
2208 20 96          MLC    TPWKBK,*&4                                                   7  4948  M 98X 95Y          391
2209 20 97          BSP    %U0                                                          5  4955  U %U0 B            391
2210 20 98          MLC    TPWKBK,*&4                                                   7  4960  M 98X 97|          391
2211 20 99          SKP    %U0                                                          5  4967  U %U0 E            391
2212 21 00          B      WTWL                                                         4  4972  B 67S              391
2213 21 01   H50    MLC    @80@,CFIFTY                                                  7  4976  M |0| 99|          391
2214 21 02          H      WTWL-7              TRIED TO WRITE WORK LABEL 20             4  4983  . 66V              392
2215 21 03   *                                   TIMES-HIT START TO TRY AGAIN
2216 21 04   TPWKBK DCW    @ @                                                          1  4987                     392
2217 21 05   TBC    DCW    @0@                                                          1  4988                     392
2218 21 06   CFIFTY DCW    @80@                                                         2  4990                     392
2219 21 07   HDRBKT DCW    @000@                                                        3  4993                     392
2220 21 08          LTORG  *                                                                      4994
                    DCW    @00@                                                         2  4995              LIT    392
                    DCW    @1@                                                          1  4996              LIT    392
                    DCW    @3@                                                          1  4997              LIT    393
                    DCW    @2@                                                          1  4998              LIT    393
                    DCW    @80@                                                         2  5000              LIT    393
2221 21 09          EX     INITIAL                                                           B 25X              394
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

2222 21 10          JOB   ** IBM 1401 SORT 7 VERSION 2 PHASE 1
2223 21 11   *
2224 21 12   *
2225 21 13   *
2226 21 14   *              120 CHARACTER HEADER TRAILER ROUTINE                61  2
2227 21 15   *                                                                  61  2
2228 21 16          ORG   HDRENT                                                          2268
2229 21 17   HDRANT SBR   HDRAXT&3            INITIALIZE LABEL ROUTINE           4  2268  H N10              397
2230 21 18          MLC   ITPBKT,REHDRL&3    PRIME TAPE READ INSTRUCTION         7  2272  M P47 L29          397
2231 21 19          MLC   ITPBKT,RETPMK&3    PRIME READ TAPEMARK ROUTINE         7  2279  M P47 M88          397
2232 21 20          MLC   ITPBKT,CGET1&3     PRIME BACKSPACE COMMAND             7  2286  M P47 N05          397
2233 21 21          MLC   ITPBKT,*&4         PRIME REWIND INSTRUCTION            7  2293  M P47 L03          397
2234 21 22   BCKHER RWD   0                  REWIND TAPE UNIT PRIOR TO READ      5  2300  U %U0 R            397
2235 21 23          MLC   K1BLNK,CNTR        PRIME ERROR COUNTER                 7  2305  M 854 P43          398
2236 21 24   REHD2  MLCWA GM,321             LOAD GROUPMARK INTO LABEL AREA      7  2312  L I9Y 321          398
2237 21 25          MLC   CENSIG,214         PRIME NOISE RECORD TEST             7  2319  M 415 214          398
2238 21 26   REHDRL RTW   0,201              READ HEADER LABEL IN LOAD MODE      8  2326  L %U0 201 R        398
2239 21 27          SW    201                SET A WODRMARK TO LOAD RECORD       4  2334  , 201              398
2240 21 28   ANOSCK BCE   NOISBL,214,        CHECK FOR NOISE RECORD              8  2338  B N27 214          399
2241 21 29          BER   REDOLB             REDUNDANT RECORD ON TAPE READ       5  2346  B N11 L            399
2242 21 30          BCE   *&29,LBLSAM,       BRANCH IF LABEL IS NOT TO BE        8  2351  B L87 572          399
2243 21 31   *                                 SAVED
2244 21 32          MLC   240,RESEQE&1       ONLY THE LABEL IS SAVED             7  2359  M 240 462          399
2245 21 33          MLCWA 230,FILESE                                             7  2366  L 230 452          399
2246 21 34          SBR   *-18,2500                                              7  2373  H L61 N00          400
2247 21 35          SBR   *-18,2500                                              7  2380  H L68 N00          400
2248 21 36          BEF   *&1                RESET END OF FILE INDICATOR         5  2387  B L92 K            400
2249 21 37          W                                                            1  2392  2                  400
2250 21 38          CC    L                                                      2  2393  F L                400
2251 21 39          BCE   USEXT7,LBLBKT-32,     IS LABEL TO BE CHECKED           8  2395  B M81 464          400
2252 21 40          BCE   NAMFIL,LBLBKT-31,   ALL VALUES OR FILE NAME ONLY       8  2403  B M47 465          400
2253 21 41          C     230,LBLBKT-25      COMPARE FILE SERIAL NUMBER          7  2411  C 230 471          401
2254 21 42          BU    FRRHDR             UNEQUAL-BRANCH TO ERROR MESSAGE     5  2418  B N35 /            401
2255 21 43          C     215,LBLBKT-5       COMPARE CREATION DATE               7  2423  C 215 491          401
2256 21 44          BU    FRRHDR             UNEQUAL-BRANCH TO ERROR ROUTINE     5  2430  B N35 /            401
2257 21 45          C     240,LBLBKT-20      COMPARE REEL SEQUENCE NUMBER        7  2435  C 240 476          401
2258 21 46          BU    FRRHDR             UNEQUAL-BRANCH TO ERROR ROUTINE     5  2442  B N35 /            401
2259 21 47   NAMFIL C     225,LBLBKT-10      COMPARE RREL NAMES                  7  2447  C 225 486          402
2260 21 48          BU    FRRHDR                                                 5  2454  B N35 /            402
2261 21 49          BCE   USEXT7-7,LBLBKT-30,                                    8  2459  B M74 466          402
2262 21 50          A     ONE,LBLBKT-21                                          7  2467  A 898 475          402
2263 21 51          MLCWA GM,321                                                 7  2474  L I9Y 321          402
2264 21 52   USEXT7 NOP   000                USER EXIT FOR FURTHER CHECKING      4  2481  N 000              402
2265 21 53   *                                 OF INPUT HEADER LABELS.LABEL WILL
2266 21 54   *                                 BE NOW FOUND IN RLAREA&80
2267 21 55   RETPMK RTW   0,319              READ TAPEMARK                       8  2485  L %U0 319 R        403
2268 21 56          CS    332                                                    4  2493  / 332              403
2269 21 57          BEF   HDRAXT                                                 5  2497  B N07 K            403
2270 21 58   CGET1  BSP   0                  NO TAPE MARK IS PRESENT             5  2502  U %U0 B            403
2271 21 59   HDRAXT B     0                                                      4  2507  B 000              403
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

2272 21 60   REDOLB A     ONE,CNTR            REDUNDANT LABEL DETECTED                   7  2511  A 898 P43           403
2273 21 61          BAV   STOPIH                                                         5  2518  B N62 Z             403
2274 21 62          B     BCKHER              REATTEMPT READ OPERATION                   4  2523  B L00               404
2275 21 63   NOISBL CS    220                 CLEAR NOISE RECORD                         4  2527  / 220               404
2276 21 64          B     REHDRL-7                                                       4  2531  B L19               404
2277 21 65   FRRHDR CS    332                                                            4  2535  / 332               404
2278 21 66          CS                                                                   1  2539  /                   404
2279 21 67          MLC   UCMESG,215                                                     7  2540  M N84 215           404
2280 21 68          MLC   LBLBKT,255          MOVE CONSTANTS FROM CONTROL CARD           7  2547  M 496 255           404
2281 21 69          MLC                       TO PRINT AREA                              1  2554  M                   405
2282 21 70          MLC                                                                  1  2555  M                   405
2283 21 71          MLC                                                                  1  2556  M                   405
2284 21 72          MLC                                                                  1  2557  M                   405
2285 21 73          MLC                                                                  1  2558  M                   405
2286 21 74          W                                                                    1  2559  2                   405
2287 21 75          CC    1                                                              2  2560  F 1                 405
2288 21 76   STOPIH H     USEXT7-22                                                      4  2562  . M59               406
2289 21 77          B     BCKHER-14                                                      4  2566  B K86               406
2290 21 78   UCMESG DCW   @ERROR-SHOULD BE@                                             15  2584                      406
2291 21 79   *                                  TRAILER LABEL ROUTINE
2292 21 80   TRLANT SBR   TRLAXT&3                                                       4  2585  H O65               406
2293 21 81          MLC   ITPBKT,RDTRAL&3                                                7  2589  M P47 O20           406
2294 21 82          MLC   ITPBKT,BAKTRL&3                                                7  2596  M P47 O81           407
2295 21 83          MLC   K2BLNK-1,CNTR                                                  7  2603  M 877 P43           407
2296 21 84   RDTL2  MLCWA GM,321              LOAD GROUPMARK                             7  2610  L I9Y 321           407
2297 21 85   RDTRAL RTW   0,201               READ TRAILER INTO LABEL AREA               8  2617  L %U0 201 R         407
2298 21 86          BEF   *&1                                                            5  2625  B O30 K             407
2299 21 87          BER   RAREAT                                                         5  2630  B O66 L             407
2300 21 88          W                                                                    1  2635  2                   408
2301 21 89          CC    L                                                              2  2636  F L                 408
2302 21 90          BCE   USEXT6,TL,3                                                    8  2638  B O58 191 3         408
2303 21 91          C     272,BLKCT1          CHECK BLOCK COUNT                          7  2646  C 272 903           408
2304 21 92          BU    ERETRL                                                         5  2653  B O87 /             408
2305 21 93   USEXT6 NOP   0         USER EXIT AFTER TRAILER READ                         4  2658  N 000               408
2306 21 94   TRLAXT B     000                                                            4  2662  B 000               408
2307 21 95   RAREAT A     ONE,CNTR                                                       7  2666  A 898 P43           409
2308 21 96          BAV   STOPIT                                                         5  2673  B P13 Z             409
2309 21 97   BAKTRL BSP   0                                                              5  2678  U %U0 B             409
2310 21 98          B     RDTRAL              TRY TO REREAD LABEL                        4  2683  B O17               409
2311 21 99   ERETRL CS    332                 PRINT UNEQUAL BLOCK COUNT MESSAGE          4  2687  / 332               409
2312 22 00          CS                                                                   1  2691  /                   409
2313 22 01          MLC   UCMESG,215                                                     7  2692  M N84 215           409
2314 22 02          MLC   BLKCT1,230                                                     7  2699  M 903 230           410
2315 22 03          W                                                                    1  2706  2                   410
2316 22 04          CC    1                                                              2  2707  F 1                 410
2317 22 05          H     USEXT6                                                         4  2709  . O58               410
2318 22 06   STOPIT H     TRLAXT              BYPASS TRAILER READ                        4  2713  . O62               410
2319 22 07   *
2320 22 08   *                120 CHARACTER WORK LABEL ROUTINE
2321 22 09          ORG   4175                                                                  4175
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

2322 22 10          DCW   @1HDR           SORT7LABEL     @                             30  4204                     411
2323 22 11          DC    @00000@                                                       5  4209                     411
2324 22 12          DC    #45                                                          45  4254                     413
2325 22 13          DC    #40                                                          40  4294                     415
2326 22 14   MAGMWL DCW   @  @                                                          2  4296                     415
2327 22 15   WORTEN MLC   MI1TUN,TPWRBK                                                 7  4297  M 341 97S          415
2328 22 16          MLC   CENSIG,ANOSCK&7                                               7  4304  M 415 L45          415
2329 22 17          MLC   GPMARK,USEXT7-4                                               7  4311  M 350 M77          415
2330 22 18          MLC   CENSIG,OTWNOI&7                                               7  4318  M 415 44V          416
2331 22 19          MLC   GPMARK,REHD2&3                                                7  4325  M 350 L15          416
2332 22 20          SBR   LSTCHK&3,TRLANT                                               7  4332  H J04 N85          416
2333 22 21          MLC   GPMARK,RDTL2&3                                                7  4339  M 350 O13          416
2334 22 22          MLC   @00@,CRYBU2                                                   7  4346  M 98| 61|          416
2335 22 23          MLC   TPWRBK,WLAREA&5                                               7  4353  M 97S 20Z          417
2336 22 24          MA    ONE,WORTEN&3                                                  7  4360  # 898 30|          417
2337 22 25          MLC   GPMARK,*&4                                                    7  4367  M 350 37X          417
2338 22 26          MLCWA GM,MAGMWL-1         LOAD GROUPMARK FOR TAPE OPERATION         7  4374  L I9Y 29V          417
2339 22 27   USEXT0 NOP   000      USERS EXIT PRIOR TO READ LABEL                       4  4381  N 000              417
2340 22 28          BCE   NYETWL,WLBKT,       NO LABEL CREAT TEMP LABEL                 8  4385  B 87U 417          418
2341 22 29          MLC   TPWRBK,DARAWL&3                                               7  4393  M 97S 42Z          418
2342 22 30          MLC   K1BLNK,CNTR         RESET COUNTER                             7  4400  M 854 P43          418
2343 22 31          MLC   TPWRBK,*&4                                                    7  4407  M 97S 41X          418
2344 22 32          RWD   0                   REWIND TAPE UNIT                          5  4414  U %U0 R            418
2345 22 33          MLC   CENSIG,WLAREA-16    PRIME NOISE ROUTINE TEST                  7  4419  M 415 18Y          419
2346 22 34   DARAWL RTW   0,WLAREA-29         READ WORK TAPE LABEL                      8  4426  L %U0 17V R        419
2347 22 35          SBR   HERBKT                                                        4  4434  H 97V              419
2348 22 36   OTWNOI BCE   NOISOW,WLAREA-16,     CHECK NOISE RECORD                      8  4438  B 80U 18Y          419
2349 22 37          BER   OERDWL                                                        5  4446  B 83U L            419
2350 22 38          BEF   *&1                                                           5  4451  B 45W K            419
2351 22 39          A     ONE,OTW0BC                                                    7  4456  A 898 97W          420
2352 22 40          BCE   USEXT5-12,WLBKT,0  00 IF HEADER BUT NO CHECK CC3COL4          8  4463  B 64X 417 0        420
2353 22 41   *                  RETENTION CYCLE CHECKING
2354 22 42          MLC   WLAREA-15,YEACHK                                              7  4471  M 18Z 64W          420
2355 22 43          MLC                                                                 1  4478  M                  420
2356 22 44          MLC                                                                 1  4479  M                  420
2357 22 45          SW    CREATD-2                                                      4  4480  , 435              420
2358 22 46   CULLES C     CREATD-3,YEACHK-3  COMPARE YEAR                               7  4484  C 434 64T          420
2359 22 47          BU    CHNGYR                                                        5  4491  B 56W /            421
2360 22 48          A     YEACHK,YEACHK-5     ADD TAPE DAYS TO RETENTION CYCLE          7  4496  A 64W 64/          421
2361 22 49          S     CREATD,YEACHK-5     SUBTRACT CONT DAS FROM RET CYL            7  4503  S 437 64/          421
2362 22 50          CW    CREATD-2                                                      4  4510  ) 435              421
2363 22 51          BWZ   USEXT5-12,YEACHK-5,K  CAN WE WRITE ON TAPE                    8  4514  V 64X 64/ K        421
2364 22 52          CS    332                 N/ PRINT MESSAGE INDICATING NUM           4  4522  / 332              421
2365 22 53          CS                        OF DAYS TAPE IS TO BE RETAINED            1  4526  /                  421
2366 22 54          MLC   SAVMES,226                                                    7  4527  M 63X 226          422
2367 22 55          MLNS  YEACHK-5,221                                                  7  4534  D 64/ 221          422
2368 22 56          MLNS                                                                1  4541  D                  422
2369 22 57          MLNS                                                                1  4542  D                  422
2370 22 58          MLC   SVMES1                                                        4  4543  M 63S              422
2371 22 59          MLC   TPWRBK                                                        4  4547  M 97S              422
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

2372 22 60          MLC   SVMES2                                                  4  4551  M 62X              422
2373 22 61          W                                                             1  4555  2                  423
2374 22 62          CC    1                                                       2  4556  F 1                423
2375 22 63          H     USEXT5-12          HIT START TO ACCEPT TAPE             4  4558  . 64X              423
2376 22 64          B     USEXT0-7                                                4  4562  B 37U              423
2377 22 65   CHNGYR A     REOYRE,YEACHK-5    SUBTRACT 365 FROM RETENTION CYL      7  4566  A 61V 64/          423
2378 22 66          A                        AND ADD 1 TO TAPE YEARS              1  4573  A                  423
2379 22 67          S                                                             1  4574  S                  423
2380 22 68          A     @1@,CRYBU2                                              7  4575  A 98/ 61|          424
2381 22 69          BCE   HLCRY2,CRYBU2-1,3                                       8  4582  B 59U 60Z 3        424
2382 22 70          B     CULLES                                                  4  4590  B 48U              424
2383 22 71   HLCRY2 H     USEXT5-12                                               4  4594  . 64X              424
2384 22 72          MLC   @00@,CRYBU2                                             7  4598  M 98| 61|          424
2385 22 73          B     CULLES                                                  4  4605  B 48U              424
2386 22 74   CRYBU2 DCW   @  @                                                    2  4610                     424
2387 22 75          DCW   @365@                                                   3  4613                     425
2388 22 76          DCW   @1@                                                     1  4614                     425
2389 22 77   REOYRE DCW   @0@                                                     1  4615                     425
2390 22 78   SVMES2 DCW   @RETAIN TAPE @                                         12  4627                     425
2391 22 79   SVMES1 DCW   @ FOR @                                                 5  4632                     425
2392 22 80   SAVMES DCW   @ DAYS@                                                 5  4637                     425
2393 22 81          DCW   #4                 RETENTION CYCLE BUCKET               4  4641                     425
2394 22 82          DCW   #2                 YEAR                                 2  4643                     426
2395 22 83   YEACHK DCW   #3                 DAY                                  3  4646                     426
2396 22 84          MLC   TPWRBK,*&4                                              7  4647  M 97S 65X          426
2397 22 85          RWD   0                  REWIND UNIT                          5  4654  U %U0 R            426
2398 22 86   USEXT5 NOP   0                  USER EXIT PRIOR TO WRITING           4  4659  N 000              426
2399 22 87   *                                 HEADER LABEL ON WORK TAPE
2400 22 88          MLC   TPWRBK,*&4                                              7  4663  M 97S 67T          426
2401 22 89   WETWIL WT    0,WLAREA-29        WRITE WORK HEADER LABEL              8  4670  M %U0 17V W        426
2402 22 90          BER   EEWWKL                                                  5  4678  B 88V L            427
2403 22 91          BEF   *&1                                                     5  4683  B 68Y K            427
2404 22 92          BCE   USEXT9,THLTMO,     TAPEMARK AFTER HDR LABEL CHECK       8  4688  B 70Y 418          427
2405 22 93          MLC   TPWRBK,*&4         YES                                  7  4696  M 97S 70W          427
2406 22 94          WTM   0                  WRITE TAPEMARK                       5  4703  U %U0 M            427
2407 22 95   USEXT9 NOP   0                  USER EXIT AFTER WRITNIG HEADER       4  4708  N 000              427
2408 22 96   *                                 LABEL ON WORK TAPE
2409 22 97          BCE   ZWEWAY,MI3TUN,      THREEWAY MERGE                      8  4712  B 73W 343          428
2410 22 98          C     OTW0BC,@3@         YES                                  7  4720  C 97W 98S          428
2411 22 99          BU    WORTEN                                                  5  4727  B 29X /            428
2412 23 00          B     LEVWLR                                                  4  4732  B 78S              428
2413 23 01   ZWEWAY C     OTW0BC,@2@         TWOWAY MERGE                         7  4736  C 97W 98T          428
2414 23 02          BU    WORTEN                                                  5  4743  B 29X /            428
2415 23 03          BCE   LEVWLR,URPI,P                                           8  4748  B 78S 186 P        429
2416 23 04          BCE   LEVWLR,URPI,C                                           8  4756  B 78S 186 C        429
2417 23 05          SBR   USEXT9&7,LEVWLR                                         7  4764  H 71V 78S          429
2418 23 06          MLC   URPI,TPWRBK                                             7  4771  M 186 97S          429
2419 23 07          B     WORTEN&7                                                4  4778  B 30U              429
2420 23 08   LEVWLR CS    80                                                      4  4782  / 080              429
2421 23 09          SW    24,56                                                   7  4786  , 024 056          430
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

2422 23 10          SW    63,67                                                     7  4793  , 063 067          430
2423 23 11          R     56                                                        4  4800  1 056              430
2424 23 12   NOISOW MLC   HERBKT,X3                                                 7  4804  M 97V 099          430
2425 23 13          MLC   K2BLNK,0&X3                                               7  4811  M 878 0?0          430
2426 23 14          CHAIN 12                                                                           MACRO
2427                MLC                                                             1  4818  M            GEN   430
2428                MLC                                                             1  4819  M            GEN   430
2429                MLC                                                             1  4820  M            GEN   431
2430                MLC                                                             1  4821  M            GEN   431
2431                MLC                                                             1  4822  M            GEN   431
2432                MLC                                                             1  4823  M            GEN   431
2433                MLC                                                             1  4824  M            GEN   431
2434                MLC                                                             1  4825  M            GEN   431
2435                MLC                                                             1  4826  M            GEN   431
2436                MLC                                                             1  4827  M            GEN   432
2437                MLC                                                             1  4828  M            GEN   432
2438                MLC                                                             1  4829  M            GEN   432
2439 23 15          B     DARAWL                                                    4  4830  B 42W              432
2440 23 16   OERDWL A     ONE,CNTR                                                  7  4834  A 898 P43          432
2441 23 17          BAV   OSTOPW                                                    5  4841  B 85| Z            432
2442 23 18          B     DARAWL-12                                                 4  4846  B 41U              432
2443 23 19   OSTOPW H     OACPLB              ERROR ON READING WORK LABEL           4  4850  . 85Y              433
2444 23 20          B     DARAWL-12           HIT START TO ACCEPT AS READ           4  4854  B 41U              433
2445 23 21   *                                  HIT START RESET&START TO REREAD
2446 23 22   OACPLB BEF   *&1                                                       5  4858  B 86T K            433
2447 23 23          A     ONE,OTW0BC                                                7  4863  A 898 97W          433
2448 23 24          B     USEXT5-12                                                 4  4870  B 64X              433
2449 23 25   NYETWL A     ONE,OTW0BC          NO WORK LABEL CREATE TEMPORARY        7  4874  A 898 97W          433
2450 23 26          B     USEXT5                                                    4  4881  B 65Z              433
2451 23 27   EEWWKL A     ONE,YFIFTY          WRITE ERROR ROUTINE                   7  4885  A 898 97Y          434
2452 23 28          MLC   TPWRBK,*&4                                                7  4892  M 97S 90S          434
2453 23 29          BSP   0                                                         5  4899  U %U0 B            434
2454 23 30          BAV   OTW050                                                    5  4904  B 96/ Z            434
2455 23 31          MLC   TPWRBK,*&4                                                7  4909  M 97S 91Z          434
2456 23 32          WT    0,WLAREA-29                                               8  4916  M %U0 17V W        434
2457 23 33          BER   *&5                                                       5  4924  B 93T L            435
2458 23 34          B     WETWIL&13           RETURN TO NORMAL ROUTINE              4  4929  B 68T              435
2459 23 35          MLC   TPWRBK,*&4                                                7  4933  M 97S 94T          435
2460 23 36          BSP   0                                                         5  4940  U %U0 B            435
2461 23 37          MLC   TPWRBK,*&4                                                7  4945  M 97S 95V          435
2462 23 38          SKP   0                                                         5  4952  U %U0 E            435
2463 23 39          B     WETWIL                                                    4  4957  B 67|              435
2464 23 40   OTW050 MLC   @80@,YFIFTY         TRIED TO WRITE WORK LABEL 20          7  4961  M 98V 97Y          436
2465 23 41          H     WETWIL-7            TIMES HIT START TO TRY AGAIN          4  4968  . 66T              436
2466 23 42   TPWRBK DCW   @ @                                                       1  4972                     436
2467 23 43   HERBKT DCW   @000@                                                     3  4975                     436
2468 23 44   OTW0BC DCW   @ @                                                       1  4976                     436
2469 23 45   YFIFTY DCW   @  @                                                      2  4978                     436
2470 23 46          LTORG *                                                                  4979
                    DCW   @00@                                                      2  4980               LIT   436
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| SEQ | PG | LIN | LABEL | OP | OPERANDS | SFX | CT | LOCN | INSTRUCTION | TYPE | CARD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DCW | @1@ | | 1 | 4981 | | LIT | 437 |
| | | | | DCW | @3@ | | 1 | 4982 | | LIT | 437 |
| | | | | DCW | @2@ | | 1 | 4983 | | LIT | 437 |
| | | | | DCW | @80@ | | 2 | 4985 | | LIT | 437 |
| 2471 | 23 | 47 | | DCW | @3@ | | 1 | 4986 | | | 437 |
| 2472 | 23 | 48 | | EX | WORTEN | | | | B 29X | | 438 |

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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

2473 23 49          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
2474 23 50   *
2475 23 51   *           I N I T I A L I Z A T I O N   P H A S E               B1401
2476 23 52   *
2477 23 53          ORG   4175                                                           4175
2478 23 54   *                                  MULTIPHASE INITIALIZATION
2479 23 55   PLYIN5 MLC   ONPTAR,B201W&6                                           7  4175  M P41 W67            441
2480 23 56          MA    @001@,ONPTAR                                             7  4182  # L9| P41            441
2481 23 57          MLC   ONPTAR,INTOUT                                            7  4189  M P41 571            441
2482 23 58          SW    B201W&4                                                  4  4196  , W65                441
2483 23 59          MLC   B201W&6,PLYIN4&6                                         7  4200  M W67 W90            441
2484 23 60          MLC   PLYIN5,PLYIN4                                            7  4207  M 17V W84            441
2485 23 61          MLC   B201W&6,PLYIN3&6                                         7  4214  M W67 841            442
2486 23 62          MLC   B201W&6,LODTB3&10                                        7  4221  M W67 Q99            442
2487 23 63          MLC   @M@,LODTB3&4                                             7  4228  M L9/ Q93            442
2488 23 64          CW    B201W&4                                                  4  4235  ) W65                442
2489 23 65          B     INSRT5&19                                                4  4239  B 99T                442
2490 23 66   ATEK   MLC   &INTOUT,BP2200&3                                         7  4243  M L9U T66            442
2491 23 67          MLC   CENSIG,CKNOIS&7    INITIALIZE NOISE ROUTINE              7  4250  M 415 Z14            443
2492 23 68          MLC   GPMARK,LDGM&3                                            7  4257  M 350 |3Y            443
2493 23 69          MA    CF1RE,BFRST3                                             7  4264  # 01U 850            443
2494 23 70          BCE   *&15,UNLOAD,                                             8  4271  B 29T 416            443
2495 23 71          MLC   @N@,EOFRWD-7                                             7  4279  M L9V J21            443
2496 23 72          MLC   @U@,EOFRWD&4                                             7  4286  M L9W J32            444
2497 23 73          BCE   PTCHB1,MI3TUN,                                           8  4293  B 32S 343            444
2498 23 74          MLC   &LBMI3T,NXTTP1&6                                         7  4301  M L9Z S84            444
2499 23 75          MLC   &LBI3T,SCHTP1&6                                          7  4308  M M0S J74            444
2500 23 76          MLC   @6@,NOTAPS                                               7  4315  M M0T 886            444
2501 23 77   PTCHB1 MLC   NOTAPS,NOTAPG                                            7  4322  M 886 W3T            445
2502 23 78   PTCHBR BCE   VLTHRU,FLR,1                                             8  4329  B 39| 091 1          445
2503 23 79   *                                  DETERMINE G BASED ON B FOR FLR
2504 23 80          MLC   @B@,L10                                                  7  4337  M M0U 38W            445
2505 23 81          MLC   @B@,L102                                                 7  4344  M M0U 58U            445
2506 23 82          A     B,G                                                      7  4351  A 199 857            445
2507 23 83   G2TMS  A     G                                                        4  4358  A 857                446
2508 23 84   SETMXG C     G,@512@                                                  7  4362  C 857 M0X            446
2509 23 85          BH    SETG                                                     5  4369  B 53Y U              446
2510 23 86          BE    SETG                                                     5  4374  B 53Y S              446
2511 23 87          MLC   @N@,DUBLGL                                               7  4379  M L9V /6V            446
2512 23 88   L10    B     L103                                                     4  4386  B 51T                446
2513 23 89   VLTHRU BCE   VLTHR2,MINREC,                                           8  4390  B 48X I92            447
2514 23 90          MLC   BL,CONVRT                                                7  4398  M 085 698            447
2515 23 91          B     EXPAND                                                   4  4405  B 620                447
2516 23 92          MLC   HOLD,HOLDGL                                              7  4409  M 693 50S            447
2517 23 93   DBLVLG A     HOLDGL                                                   4  4416  A 50S                447
2518 23 94          BCE   VLTHR3,MI3TUN,                                           8  4420  B 43V 343            447
2519 23 95   GL3VL  A     HOLD,HOLDGL                                              7  4428  A 693 50S            448
2520 23 96   VLTHR3 MLC   MINREC,CONVRT                                            7  4435  M I92 698            448
2521 23 97          B     EXPAND                                                   4  4442  B 620                448
2522 23 98   VLTHR1 S     HOLD,HOLDGL                                              7  4446  S 693 50S            448
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                      SFX CT  LOCN  INSTRUCTION TYPE  CARD

2523 23 99          A     ONE,G                                                              7  4453  A 898 857           448
2524 24 00          BWZ   VLTHR1,HOLDGL,B                                                    8  4460  V 44W 50S B         449
2525 24 01          MA    @I9I@,G                                                            7  4468  # M1| 857           449
2526 24 02          C     G,@512@                                                            7  4475  C 857 M0X           449
2527 24 03          BH    THRU                                                               5  4482  B 78W U             449
2528 24 04   VLTHR2 MLC   @512@,G                                                            7  4487  M M0X 857           449
2529 24 05          B     THRU                                                               4  4494  B 78W               449
2530 24 06   HOLDGL DCW   00000                                                              5  4502                      450
2531 24 07   VLBL   DCW   000                                                                3  4505                      450
2532 24 08          MLC   @N@,GL3NXT                                                         7  4506  M L9V /8U           450
2533 24 09   L103   MLC   @N@,L10                                                            7  4513  M L9V 38W           450
2534 24 10          S     B,G                                                                7  4520  S 199 857           450
2535 24 11          MLZS  K1BLNK,G                                                           7  4527  Y 854 857           450
2536 24 12          B     SETMXG                                                             4  4534  B 36S               451
2537 24 13   SETG   MLC   G,FIRSTG                                                           7  4538  M 857 K3U           451
2538 24 14          BCE   THRU,NOTAPS,4                                                      8  4545  B 78W 886 4         451
2539 24 15   G3TMS  A     B,G                                                                7  4553  A 199 857           451
2540 24 16   SETMG2 C     G,@512@                                                            7  4560  C 857 M0X           451
2541 24 17          BH    SETGFR                                                             5  4567  B 62| U             451
2542 24 18          BE    SETGFR                                                             5  4572  B 62| S             452
2543 24 19          MLC   @N@,GL3NXT                                                         7  4577  M L9V /8U           452
2544 24 20   L102   B     L104                                                               4  4584  B 59V               452
2545 24 21          MLC   @N@,DUBLGL                                                         7  4588  M L9V /6V           452
2546 24 22   L104   MLC   @N@,L102                                                           7  4595  M L9V 58U           452
2547 24 23          S     B,G                                                                7  4602  S 199 857           452
2548 24 24          MLZS  K1BLNK,G                                                           7  4609  Y 854 857           453
2549 24 25          B     SETMG2                                                             4  4616  B 56|               453
2550 24 26   SETGFR MLC   G,FIRSTG                                                           7  4620  M 857 K3U           453
2551 24 27          BCE   THRU,EFS,         DETERMINE G FOR EXPECTED FILE SIZE               8  4627  B 78W 00S           453
2552 24 28          MLC   EFS,EFSTRT                                                         7  4635  M 00S K4S           453
2553 24 29   LOG3   MLC   EFSTRT,EFSCPT                                                      7  4642  M K4S K6S           454
2554 24 30          A     EFSCPT                                                             4  4649  A K6S               454
2555 24 31          A     EFSTRT,EFSCPT                                                      7  4653  A K4S K6S           454
2556 24 32          MLC   @6@,BUCKET                                                         7  4660  M M0T K6T           454
2557 24 33   DIVTHR A     EFSCPT,EFSTPT                                                      7  4667  A K6S K7X           454
2558 24 34          MA    P15999,DIVTHR&6                                                    7  4674  # 861 67T           454
2559 24 35          A     NINE,BUCKET                                                        7  4681  A 871 K6T           455
2560 24 36          BAV   DIVTHR                                                             5  4688  B 66X Z             455
2561 24 37          ZA    EFSTPT-7,EFSTRT                                                    7  4693  ? K7| K4S           455
2562 24 38          MLZS  K1BLNK,EFSTRT                                                      7  4700  Y 854 K4S           455
2563 24 39          A     ONE,EFSTRT                                                         7  4707  A 898 K4S           455
2564 24 40          C     EFSTRT,G                                                           7  4714  C K4S 857           456
2565 24 41          S     EFSTPT                                                             4  4721  S K7X               456
2566 24 42          MA    @007@,DIVTHR&6                                                     7  4725  # M1T 67T           456
2567 24 43          BL    LOG3                                                               5  4732  B 64S T             456
2568 24 44          S     B,G                                                                7  4737  S 199 857           456
2569 24 45          MLZS  K1BLNK,G                                                           7  4744  Y 854 857           456
2570 24 46          C     EFSTRT,G                                                           7  4751  C K4S 857           457
2571 24 47          BL    ADDBLF                                                             5  4758  B 77Z T             457
2572 24 48          BE    ADDBLF                                                             5  4763  B 77Z S             457
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

2573 24 49          MLC   @N@,GL3NXT                                               7  4768  M L9V /8U           457
2574 24 50          B     THRU                                                     4  4775  B 78W               457
2575 24 51   ADDBLF A     B,G                                                      7  4779  A 199 857           457
2576 24 52   THRU   A     INTGLG                                                   4  4786  A K8/               457
2577 24 53   CMTGLG C     INTGLG,G                                                 7  4790  C K8/ 857           458
2578 24 54          BH    THRU                                                     5  4797  B 78W U             458
2579 24 55          MLC   MFS,MFSIZE                                               7  4802  M I81 885           458
2580 24 56   DETPRM MA    @I9C@,DTPRM1&3                                           7  4809  # M1W 81Z           458
2581 24 57   DTPRM1 C     PRGMSZ&7,INTGLG                                          7  4816  C V5| K8/           458
2582 24 58          SAR   MVNDPM&3                                                 4  4823  Q 83V               458
2583 24 59          BU    DETPRM                                                   5  4827  B 80Z /             459
2584 24 60   MVNDPM MLC   0,NDFPGM                                                 7  4832  M 000 L1U           459
2585 24 61          MLC   NDFPGM,HPNDPM                                            7  4839  M L1U Q40           459
2586 24 62          BCE   CMPT52,DESCND,1                                          8  4846  B 86Z 090 1         459
2587 24 63          MA    @I9I@,HPNDPM                                             7  4854  # M1| Q40           459
2588 24 64          BCE   CMPT5G,NCF,1                                             8  4861  B 87W 096 1         460
2589 24 65   CMPT52 MA    L,HPNDPM                                                 7  4869  # 347 Q40           460
2590 24 66   CMPT5G A     INTGLG,HLD3G                                             7  4876  A K8/ K8Z           460
2591 24 67          MA    G,THREEG                                                 7  4883  # 857 K8V           460
2592 24 68          A     NINE,HOLD2                                               7  4890  A 871 L1/           460
2593 24 69          BAV   CMPT5G                                                   5  4897  B 87W Z             461
2594 24 70          MLC   HLD3G,HLD34G                                             7  4902  M K8Z L0U           461
2595 24 71          A     HLD34G                                                   4  4909  A L0U               461
2596 24 72          A     HLD34G                                                   4  4913  A L0U               461
2597 24 73          A     HLD3G,HLD34G                                             7  4917  A K8Z L0U           461
2598 24 74          MLC   HLD34G-1,TREQRG&1                                        7  4924  M L0T L1|           461
2599 24 75          A     TREQRG&1                                                 4  4931  A L1|               461
2600 24 76          A     TREQRG&1                                                 4  4935  A L1|               462
2601 24 77          A     HLD34G-1,TREQRG&1                                        7  4939  A L0T L1|           462
2602 24 78          MLC   INTGLG,G/4INT                                            7  4946  M K8/ V5W           462
2603 24 79          MA    ONE,HPNDPM                                               7  4953  # 898 Q40           462
2604 24 80          MLC   HPNDPM,ONPTAR                                            7  4960  M Q40 P41           462
2605 24 81          MA    ONE,ONPTAR                                               7  4967  # 898 P41           462
2606 24 82   INSRT5 BSS   PLYIN5,C                                                 5  4974  B 17V C             463
2607 24 83   *                                  DETERMINE ADDRESSES OF I/O AREAS
2608 24 84          MLC   ONPTAR,INTOUT                                            7  4979  M P41 571           463
2609 24 85          MLC   ONPTAR,B201W&6                                           7  4986  M P41 W67           463
2610 24 86          MA    BL,ONPTAR                                                7  4993  # 085 P41           463
2611 24 87          MLC   ONPTAR,HOLDND                                            7  5000  M P41 T47           463
2612 24 88          MA    COMPL,HOLDND                                             7  5007  # 00V T47           464
2613 24 89          MLC   ONPTAR,LOADGM&6                                          7  5014  M P41 S13           464
2614 24 90          MLC   ONPTAR,COUNTR                                            7  5021  M P41 Y12           464
2615 24 91          MA    @I9I@,COUNTR                                             7  5028  # M1| Y12           464
2616 24 92   LDGM   MLCWA GM,333                                                   7  5035  L I9Y 333           464
2617 24 93          MLC   ONPTAR,X                                                 7  5042  M P41 L1X           465
2618 24 94          MA    ONE,X                                                    7  5049  # 898 L1X           465
2619 24 95          MLC   X,Y                                                      7  5056  M L1X L2|           465
2620 24 96          MA    TREQRG,Y                                                 7  5063  # L0Z L2|           465
2621 24 97          MA    @I9I@,Y                                                  7  5070  # M1| L2|           465
2622 24 98          MLC   Y,O1                                                     7  5077  M L2| 892           466
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

2623 24 99          MA    THREE,O1                                                  7  5084  # 889 892            466
2624 25 00          MLC   O1,G1                                                     7  5091  M 892 895            466
2625 25 01          MA    THREEG,G1                                                 7  5098  # K8V 895            466
2626 25 02          MA    @I9G@,G1                                                  7  5105  # M1Z 895            466
2627 25 03          MLC   O1,O1FA                                                   7  5112  M 892 P67            467
2628 25 04          MLC   O1                                                        4  5119  M 892                467
2629 25 05          MA    @003@,O1FA                                                7  5123  # M2S P67            467
2630 25 06          MLC   O1,STPDNR&3                                               7  5130  M 892 S03            467
2631 25 07          MLC   G1,ONPTAR                                                 7  5137  M 895 P41            467
2632 25 08          MA    ONE,ONPTAR                                                7  5144  # 898 P41            467
2633 25 09          MLC   ONPTAR,Z                                                  7  5151  M P41 Q12            468
2634 25 10          MLC   BL,GL                                                     7  5158  M 085 L3/            468
2635 25 11   DUBLGL MA    GL                                                        4  5165  # L3/                468
2636 25 12          MA    GL,Z                                                      7  5169  # L3/ Q12            468
2637 25 13   GL3    BCE   *&8,NOTAPS,4                                              8  5176  B /9/ 886 4          468
2638 25 14   GL3NXT MA    BL,Z                                                      7  5184  # 085 Q12            469
2639 25 15   GL1111 BWZ   SBTRCB,Z,2         DETERMINE IF INPUT AREA                8  5191  V S3X Q12 2          469
2640 25 16   GL1112 MLC   Z,CONVRT           ALLOCATED IS SUFFICIENT                7  5199  M Q12 698            469
2641 25 17          B     EXPAND                                                    4  5206  B 620                469
2642 25 18          MLC   HOLD,Z5DIGT                                               7  5210  M 693 W3Y            469
2643 25 19          BCE   TPPSBL,UAPHZ1,                                            8  5217  B T5T 12W            470
2644 25 20   CTPAVL C     Z5DIGT,UAPHZ1                                             7  5225  C W3Y 12W            470
2645 25 21          BH    DUBLG                                                     5  5232  B W8Y U              470
2646 25 22   SBTRCB A     @7@,NOTAPG                                                7  5237  A M2T W3T            470
2647 25 23          MLC   @16000@,SXTNTH                                            7  5244  M M2Y K5/            470
2648 25 24          BAV   RPCHBR                                                    5  5251  B T7V Z              470
2649 25 25          CS    332                                                       4  5256  / 332                471
2650 25 26          CS                                                              1  5260  /                    471
2651 25 27          MLC   PRMSG7,250                                                7  5261  M W2Z 250            471
2652 25 28          W                                                               1  5268  2                    471
2653 25 29          CC    1                                                         2  5269  F 1                  471
2654 25 30          H     *&1                                                       4  5271  . S7V                471
2655 25 31          MLC   GPMARK,TPV1                                               7  5275  M 350 568            471
2656 25 32          MLC   @#@,GL3NXT                                                7  5282  M M2Z /8U            472
2657 25 33          MLC   @#@,DUBLGL                                                7  5289  M M2Z /6V            472
2658 25 34          MLC   @A@,DBLVLG                                                7  5296  M M3| 41W            472
2659 25 35          MLC   @A@,GL3VL                                                 7  5303  M M3| 42Y            472
2660 25 36          MLC   @#@,G3TMS                                                 7  5310  M M2Z 55T            472
2661 25 37          MLC   @#@,G2TMS                                                 7  5317  M M2Z 35Y            473
2662 25 38          MLC   GPMARK,CONVRT                                             7  5324  M 350 698            473
2663 25 39          B     EXPAND                                                    4  5331  B 620                473
2664 25 40          MLC   HOLD,UAPHZ1                                               7  5335  M 693 12W            473
2665 25 41          MLC   FIRSTG,G                                                  7  5342  M K3U 857            473
2666 25 42          B     INRPCH                                                    4  5349  B U2W                473
2667 25 43   TPPSBL MLC   GPMARK,CONVRT                                             7  5353  M 350 698            474
2668 25 44          B     EXPAND                                                    4  5360  B 620                474
2669 25 45          MLC   HOLD,UAPHZ1                                               7  5364  M 693 12W            474
2670 25 46          B     CTPAVL                                                    4  5371  B S2V                474
2671 25 47   RPCHBR MLC   @N@,DUBLGL                                                7  5375  M L9V /6V            474
2672 25 48          MLC   @N@,DBLVLG                                                7  5382  M L9V 41W            474
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

2673 25 49          MLC   @N@,G2TMS                                               7  5389  M L9V 35Y            475
2674 25 50          NOP                                                           1  5396  N                    475
2675 25 51   BCLWMK B     CLWMK                                                   4  5397  B U2S                475
2676 25 52          MLC   @N@,GL3NXT                                              7  5401  M L9V /8U            475
2677 25 53          MLC   @N@,GL3VL                                               7  5408  M L9V 42Y            475
2678 25 54          MLC   @N@,G3TMS                                               7  5415  M L9V 55T            475
2679 25 55   CLWMK  CW    BCLWMK                                                  4  5422  ) T9X                475
2680 25 56   INRPCH MLC   @0002@,INTGLG                                           7  5426  M M3U K8/            476
2681 25 57          S     EFSTRT                                                  4  5433  S K4S                476
2682 25 58          MLC   @0000@,G&1                                              7  5437  M M3Y 858            476
2683 25 59          MLC   &PRGMSZ&7,DTPRM1&3                                      7  5444  M M4/ 81Z            476
2684 25 60          S     HLD3G                                                   4  5451  S K8Z                476
2685 25 61          MLC   @000@,THREEG                                            7  5455  M M4U K8V            476
2686 25 62          MLC   TWO,HOLD2                                               7  5462  M 876 L1/            477
2687 25 63          S     HLD34G                                                  4  5469  S L0U                477
2688 25 64          S     TREQRG&1                                                4  5473  S L1|                477
2689 25 65          B     PTCHBR                                                  4  5477  B 32Z                477
2690 25 66          DCW   &P1344&4                                                3  5483  H55                  477
2691 25 67          DC    0512                                                    4  5487                       477
2692 25 68          DCW   &P576&4                                                 3  5490  G15                  477
2693 25 69          DC    0256                                                    4  5494                       477
2694 25 70          DCW   &P192&4                                                 3  5497  F45                  477
2695 25 71          DC    0128                                                    4  5501                       478
2696 25 72          DCW   &P144&4                                                 3  5504  F10                  478
2697 25 73          DC    0064                                                    4  5508                       478
2698 25 74          DCW   &P072&4                                                 3  5511  D70                  478
2699 25 75          DC    0032                                                    4  5515                       478
2700 25 76          DCW   &P024&4                                                 3  5518  D00                  478
2701 25 77          DC    0016                                                    4  5522                       478
2702 25 78          DCW   &P021&4                                                 3  5525  C65                  478
2703 25 79          DC    0008                                                    4  5529                       478
2704 25 80          DCW   &P009&4                                                 3  5532  B25                  479
2705 25 81          DC    0004                                                    4  5536                       479
2706 25 82          DCW   &P003&4                                                 3  5539  A55                  479
2707 25 83   PRGMSZ DC    0002                                                    4  5543                       479
2708 25 84   KTWO   DCW   @ @                                                     1  5544                       479
2709 25 85   TWO2   DCW   @002@                                                   3  5547                       479
2710 25 86   CMPRNS DCW   000000                                                  6  5553                       479
2711 25 87   G/4INT DCW   000                                                     3  5556                       479
2712 25 88   SEVEN  DCW   @7@                                                     1  5557                       479
2713 25 89   ISONED S     ONE,D                                                   7  5558  S 898 P57            480
2714 25 90   THRWSZ DCW   @109@                                                   3  5567                       480
2715 25 91   BTRUTN DCW   @998@                                                   3  5570                       480
2716 25 92   TPRUTN DCW   @|98@                                                   3  5573                       480
2717 25 93   EQRTSZ DCW   @127@                                                   3  5576                       480
2718 25 94   MODADR DSA   15001                                                   3  5579  ?0A                  480
2719 25 95   PRMSG7 DCW   @PATCH PROGRAM TOO LARGE PRESS START - IGNORE PATCH@   50  5629                       482
2720 25 96   CMPLBL DCW   000                                                     3  5632                       482
2721 25 97   NOTAPG DCW   0                                                       1  5633                       482
2722 25 98   Z5DIGT DCW   00000                                                   5  5638                       482
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

2723 25 99  NOEQL  MLC   @N@,STPCM2                                           7  5639  M L9V S40           482
2724 26 00         B     STCMP4                                               4  5646  B Z3Y               483
2725 26 01  BILRGM CS    332                                                  4  5650  / 332               483
2726 26 02         CS                                                         1  5654  /                   483
2727 26 03         MLC   PRMSX,231                                            7  5655  M 11V 231           483
2728 26 04         W                                                          1  5662  2                   483
2729 26 05         CS    231                                                  4  5663  / 231               483
2730 26 06         MLC   @G@,201                                              7  5667  M M4V 201           483
2731 26 07         MLC   G,205                                                7  5674  M 857 205           484
2732 26 08         W                                                          1  5681  2                   484
2733 26 09         CC    1                                                    2  5682  F 1                 484
2734 26 10         H     *-3                                                  4  5684  . W8U               484
2735 26 11  DUBLG  MLC   Z,COWNTR                                             7  5688  M Q12 P46           484
2736 26 12         C     G,BI                                                 7  5695  C 857 I86           484
2737 26 13         BH    BILRGM                                               5  5702  B W5| U             484
2738 26 14  DUBLG2 MLC   Y,H13H10-3                                           7  5707  M L2| L3X           485
2739 26 15         MA    @I9G@,Y                                              7  5714  # M1Z L2|           485
2740 26 16         MLC   Y,H13H10                                             7  5721  M L2| L4|           485
2741 26 17         MLC   X,LOADTB&3                                           7  5728  M L1X Q74           485
2742 26 18         MLC   Y,LODTB3&3                                           7  5735  M L2| Q92           485
2743 26 19         MLC   H13H10,LODTB2&6                                      7  5742  M L4| Q88           486
2744 26 20         MLC   H13H10-3,LODTB1&6                                    7  5749  M L3X Q81           486
2745 26 21  DUBLG1 MA    CCCFRE,ADRLRD                                        7  5756  # 04U A05           486
2746 26 22         BCE   DUBLG3,DESCND,     DESCENDING                        8  5763  B X9S 090           486
2747 26 23         MLC   @5@,ASCNDN&6       YES-INITIALIZE COMPARE BUCKETS    7  5771  M M4W Y5Z           486
2748 26 24         MLC   @2@,ASCNDN&13      FOR DESCENDING                    7  5778  M M4X Y6W           487
2749 26 25         MA    @003@,ASCNDG&6                                       7  5785  # M2S Z5V           487
2750 26 26  DUBLG3 BCE   NOEQL,NCF,1        TEST FOR NUM OF CONTROL FIELDS    8  5792  B W3Z 096 1         487
2751 26 27         MLC   NDFPGM,ADRLRD                                        7  5800  M L1U A05           487
2752 26 28         MA    ONE,ADRLRD                                           7  5807  # 898 A05           487
2753 26 29         MLC   NCF,POT                                              7  5814  M 096 K3/           488
2754 26 30         S     TWO,POT                                              7  5821  S 876 K3/           488
2755 26 31         MLC   &CF2RE,X1          INITIALIZE EQUAL ROUTINE          7  5828  M M5| 089           488
2756 26 32         MLC   &BSCBSC-6,X2       CONSTANTS IF SECONDARY CONTROL    7  5835  M M5T 094           488
2757 26 33  STNEQL MLC   0&X1,6&X2          FIELDS ARE PRESENT                7  5842  M 0|0 0!6           488
2758 26 34         MLC   0&X1                                                 4  5849  M 0|0               488
2759 26 35  ASCNDN MLZS  @A@,2&X2                                             7  5853  Y M3| 0!2           489
2760 26 36         MLZS  @Z@,5&X2                                             7  5860  Y M5U 0!5           489
2761 26 37         MA    @006@,X2                                             7  5867  # M5X 094           489
2762 26 38         MA    @003@,X1                                             7  5874  # M2S 089           489
2763 26 39         BAV   *&1                                                  5  5881  B Y8W Z             489
2764 26 40         A     NINTNN,POT                                           7  5886  A 873 K3/           490
2765 26 41         BAV   STNEQL                                               5  5893  B Y4S Z             490
2766 26 42         MA    X2,LAST                                              7  5898  # 094 W13           490
2767 26 43         MLC   @6@,BKET                                             7  5905  M M0T K4W           490
2768 26 44  MVNEQL MLC   @N@,STCMPR&7                                         7  5912  M L9V Z7|           490
2769 26 45         MA    @014@,MVNEQL&6                                       7  5919  # M6| Z1Y           491
2770 26 46         A     NINE,BKET                                            7  5926  A 871 K4W           491
2771 26 47         BAV   MVNEQL                                               5  5933  B Z1S Z             491
2772 26 48  STCMP4 MLC   BFRST3,CMPRNS                                        7  5938  M 850 V5T           491
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

2773 26 49          MLC   BFRST3                                                    4  5945  M 850                491
2774 26 50   ASCNDG MLZS  @A@,CMPRNS-4                                              7  5949  Y M3| V4Z            491
2775 26 51          MLC   @013@,X1                                                  7  5956  M M6T 089            492
2776 26 52   STCMPR MLC   CMPRNS,B002B&X1    INITIALIZE COMPARE INSTRUCTIONS        7  5963  M V5T AS0            492
2777 26 53          MLC   @N@,B002B&6&X1     IN MAINLINE WITH RIGHT EDGE OF         7  5970  M L9V AS6            492
2778 26 54          MLC   CMPRNS,B004B&X1    MAJOR CONTROL FIELD                    7  5977  M V5T AV5            492
2779 26 55          MLC   @N@,B004B&6&X1                                            7  5984  M L9V AW1            492
2780 26 56          MLC   CMPRNS,B701B&X1                                           7  5991  M V5T AX9            493
2781 26 57          MLC   @N@,B701B&6&X1                                            7  5998  M L9V AY5            493
2782 26 58          MLC   CMPRNS,B008B&X1                                           7  6005  M V5T BS5            493
2783 26 59          MLC   @N@,B008B&6&X1                                            7  6012  M L9V BT1            493
2784 26 60          MLC   CMPRNS,B703B&X1                                           7  6019  M V5T BU9            493
2785 26 61          MLC   @N@,B703B&6&X1                                            7  6026  M L9V BV5            494
2786 26 62          MLC   CMPRNS,B705B&X1                                           7  6033  M V5T BX3            494
2787 26 63          MLC   @N@,B705B&6&X1                                            7  6040  M L9V BX9            494
2788 26 64          MLC   CMPRNS,B715B&X1                                           7  6047  M V5T C/9            494
2789 26 65          MLC   @N@,B715B&6&X1                                            7  6054  M L9V CS5            494
2790 26 66   STCMP5 MA    @245@,X1                                                  7  6061  # M6W 089            495
2791 26 67          C     KTWO,@2@                                                  7  6068  C V4U M4X            495
2792 26 68          A     ONE,KTWO                                                  7  6075  A 898 V4U            495
2793 26 69          BU    STCMPR                                                    5  6082  B Z6T /              495
2794 26 70   CMPTGC MLC   G,GCNTR                                                   7  6087  M 857 A11            495
2795 26 71          S     ONE,GCNTR                                                 7  6094  S 898 A11            496
2796 26 72          S     NOINTP,CPLITP                                             7  6101  S I83 869            496
2797 26 73          A     ONE,CPLITP                                                7  6108  A 898 869            496
2798 26 74   CMPTG4 MLC   G/4INT,G/4&2                                              7  6115  M V5W P72            496
2799 26 75          A     G/4&2                                                     4  6122  A P72                496
2800 26 76          A     G/4INT,G/4&1                                              7  6126  A V5W P71            496
2801 26 77          A     G/4&2                                                     4  6133  A P72                497
2802 26 78          A     G/4INT,G/4&2                                              7  6137  A V5W P72            497
2803 26 79          MLC   B008B&13,STPCMP&6                                         7  6144  M B38 S34            497
2804 26 80          MLC   ISONED&6,SONED                                            7  6151  M V6U P80            497
2805 26 81          CS    80                                                        4  6158  / 080                497
2806 26 82          SW    24,56                                                     7  6162  , 024 056            497
2807 26 83          SW    63,67                                                     7  6169  , 063 067            498
2808 26 84          R     56                                                        4  6176  1 056                498
2809 26 85          DCW   @ @                                                       1  6180                       498
2810 26 86          ORG   6200                                                              6200
2811 26 87   PRMSG9 DCW   @PHASE 1 INP       OUT      @                            27  6226                       499
2812 26 88   GCMPLT DCW   @999@                                                     3  6229                       499
2813 26 89   POT    DCW   00                                                        2  6231                       499
2814 26 90   FIRSTG DCW   000                                                       3  6234                       499
2815 26 91   EFSTRT DCW   00000000                                                  8  6242                       500
2816 26 92   BLCMPT DCW   000                                                       3  6245                       500
2817 26 93   BKET   DCW   0                                                         1  6246                       500
2818 26 94   SXTNTH DCW   @16000@                                                   5  6251                       500
2819 26 95   VLRRTN DCW   000                                                       3  6254                       500
2820 26 96   EFSCPT DCW   00000000                                                  8  6262                       500
2821 26 97   BUCKET DCW   0                                                         1  6263                       500
2822 26 98   EFSTPT DCW   00000000000000                                           14  6277                       501
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

2823 26 99   INTGLG DCW   @0002@                                                  4  6281                      501
2824 27 00   THREEG DCW   0000                                                    4  6285                      501
2825 27 01   HLD3G  DCW   0000                                                    4  6289                      501
2826 27 02   HOLDG  DCW   000                                                     3  6292                      501
2827 27 03   MOVPUT MLC   X2,HOLDND                                               7  6293  M 094 T47           501
2828 27 04   HLD34G DCW   00000                                                   5  6304                      502
2829 27 05   TREQRG DCW   00000                                                   5  6309                      502
2830 27 06          DC    0                                                       1  6310                      502
2831 27 07   HOLD2  DCW   @2@                                                     1  6311                      502
2832 27 08   NDFPGM DCW   @?00@                                                   3  6314                      502
2833 27 09   X      DCW   000                                                     3  6317                      502
2834 27 10   Y      DCW   000                                                     3  6320                      502
2835 27 11   NINEG  DCW   @009@                                                   3  6323                      502
2836 27 12   CMPGLG DCW   @XXX@                                                   3  6326                      503
2837 27 13   GL     DCW   00000                                                   5  6331                      503
2838 27 14   NTOTVL DCW   000                                                     3  6334                      503
2839 27 15   H13H10 DCW   000000                                                  6  6340                      503
2840 27 16   PHZ1MG DCW   @PHASE 1  INTERNAL SORT@                               22  6362                      503
2841 27 17   CHKPRT DCW   @CHECKPOINT ON TAPE UNIT #@                            25  6387                      504
2842 27 18          LTORG *                                                             6388
                    DCW   @001@                                                   3  6390              LIT     504
                    DCW   @M@                                                     1  6391              LIT     504
                    DCW   &INTOUT                                                 3  6394  571         ADCON   504
                    DCW   @N@                                                     1  6395              LIT     504
                    DCW   @U@                                                     1  6396              LIT     504
                    DCW   &LBMI3T                                                 3  6399  864         ADCON   504
                    DCW   &LBI3T                                                  3  6402  867         ADCON   505
                    DCW   @6@                                                     1  6403              LIT     505
                    DCW   @B@                                                     1  6404              LIT     505
                    DCW   @512@                                                   3  6407              LIT     505
                    DCW   @I9I@                                                   3  6410              LIT     505
                    DCW   @007@                                                   3  6413              LIT     505
                    DCW   @I9C@                                                   3  6416              LIT     505
                    DCW   @I9G@                                                   3  6419              LIT     506
                    DCW   @003@                                                   3  6422              LIT     506
                    DCW   @7@                                                     1  6423              LIT     506
                    DCW   @16000@                                                 5  6428              LIT     506
                    DCW   @#@                                                     1  6429              LIT     506
                    DCW   @A@                                                     1  6430              LIT     506
                    DCW   @0002@                                                  4  6434              LIT     506
                    DCW   @0000@                                                  4  6438              LIT     507
                    DCW   &PRGMSZ&7                                               3  6441  V5|         ADCON   507
                    DCW   @000@                                                   3  6444              LIT     507
                    DCW   @G@                                                     1  6445              LIT     507
                    DCW   @5@                                                     1  6446              LIT     507
                    DCW   @2@                                                     1  6447              LIT     507
                    DCW   &CF2RE                                                  3  6450  01X         ADCON   507
                    DCW   &BSCBSC-6                                               3  6453  V56         ADCON   508
                    DCW   @Z@                                                     1  6454              LIT     508
                    DCW   @006@                                                   3  6457              LIT     508
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

                    DCW   @014@                                                  3  6460              LIT    508
                    DCW   @013@                                                  3  6463              LIT    508
                    DCW   @245@                                                  3  6466              LIT    508
2843 27 19          EX    ATEK                                                         B 24T                 509
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

2844 27 20          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
2845 27 21          ORG   4175                                                                  4175
2846 27 22   FXCHEK BCE   FLRRTN,FLR,        FIXED LENGTH RECORDS BRANCH                 8  4175  B |1U 091          512
2847 27 23          MLC   @ @,RNGLNQ&4       INITIALIZE MAINLINE ROUTINES FOR            7  4183  M W0U Z28          512
2848 27 24          MLC   &B2211B,BTOHAS&3   VARIABLE LENGTH RECORDS                     7  4190  M W0X |1T          512
2849 27 25          MA    BFRST3,B011TH&3                                                7  4197  # 850 |83          512
2850 27 26          MA    RCDIST,CNVRSN&3                                                7  4204  # 196 |34          512
2851 27 27          MA    RCDIST,CNVRS1&6                                                7  4211  # 196 |58          513
2852 27 28          MA    RCDIST,B011TB&3                                                7  4218  # 196 |90          513
2853 27 29          MLC   @N@,BP002                                                      7  4225  M W0Y W21          513
2854 27 30          MLC   @N@,B2211D                                                     7  4232  M W0Y U27          513
2855 27 31          MLC   &VLRGET,BP001&6                                                7  4239  M W1/ W20          513
2856 27 32          BCE   CNTVL1,DESCND,1                                                8  4246  B 34/ 090 1        514
2857 27 33          MA    ONE,STPCMP&3                                                   7  4254  # 898 S31          514
2858 27 34          B     CNTVLR                                                         4  4261  B 34Y              514
2859 27 35   NORLIN MLC   @M@,B010RI                                                     7  4265  M W1S Y34          514
2860 27 36          MLC   @#@,B010R                                                      7  4272  M W1T Y41          514
2861 27 37          MLC   @N@,STG1J                                                      7  4279  M W0Y /23          515
2862 27 38          MLC   @N@,SETG1J                                                     7  4286  M W0Y /30          515
2863 27 39          MLC   @N@,SETG1&7                                                    7  4293  M W0Y /53          515
2864 27 40          MLCWA RLINO2&6,RLINO&6                                               7  4300  L 32W Z71          515
2865 27 41          MLCWA RLINO1&6                                                       4  4307  L 33T              515
2866 27 42          B     CNTVL3                                                         4  4311  B 47S              515
2867 27 43   CON16T DCW   @16000@                                                        5  4319                     516
2868 27 44   RLINO2 MA    K4,X1                                                          7  4320  # P50 089          516
2869 27 45   RLINO1 MLC   K1BLNK,0&X1                                                    7  4327  M 854 0|0          516
2870 27 46   MLTIBL MA    K4,X2                                                          7  4334  # P50 094          516
2871 27 47   CNTVL1 MA    ONE,STPCMP&6                                                   7  4341  # 898 S34          516
2872 27 48   CNTVLR CW    B2212&5                                                        4  4348  ) U69              516
2873 27 49          CW    B002R                                                          4  4352  ) Z56              517
2874 27 50          MLCWA MLTIBL&6,B002R&8                                               7  4356  L 34| Z64          517
2875 27 51          MLC   &CMPCOW                                                        4  4363  M W1W              517
2876 27 52          MLC   @089@                                                          4  4367  M W1Z              517
2877 27 53          MLC   @#@                                                            4  4371  M W1T              517
2878 27 54          MLC   &CMPCOW                                                        4  4375  M W1W              517
2879 27 55          MLC   &COWNTR                                                        4  4379  M W2S              517
2880 27 56          MLC   @M@                                                            4  4383  M W1S              518
2881 27 57          MLC   @0!1@,WRTFL1&6                                                 7  4387  M W2V W42          518
2882 27 58          MLC   GPMARK                                                         4  4394  M 350              518
2883 27 59          MLC   @L@                                                            4  4398  M W2W              518
2884 27 60          MLC   @2@,B2212&14                                                   7  4402  M W2X U78          518
2885 27 61          MLC   &CMPCOU                                                        4  4409  M W3|              518
2886 27 62          MLC   &BP002                                                         4  4413  M W3T              518
2887 27 63          MLCWA @V@                                                            4  4417  L W3U              519
2888 27 64          MLC   &CMPCOU                                                        4  4421  M W3|              519
2889 27 65          MLC   @094@                                                          4  4425  M W3X              519
2890 27 66          MLC   @#@                                                            4  4429  M W1T              519
2891 27 67          MLC   &CMPCOU                                                        4  4433  M W3|              519
2892 27 68          MLC   &COUNTR                                                        4  4437  M W4|              519
2893 27 69          MLC   @M@                                                            4  4441  M W1S              519
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

2894 27 70          C     BI,@001@           CHECK FOR UNBLOCKED INPUT               7  4445  C I86 W4T           520
2895 27 71          BU    CNTVL3                                                     5  4452  B 47S /             520
2896 27 72          BCE   NORLIN,RLIIND,1                                            8  4457  B 26V 560 1         520
2897 27 73          MLCWA RLINO&6,RLINO-1                                            7  4465  L Z71 Z64           520
2898 27 74   CNTVL3 MLC   &B220VL&3,B2200&6                                          7  4472  M W4W T62           520
2899 27 75          MLC   &B220VL&3,B2202&6                                          7  4479  M W4W U47           521
2900 27 76          MLC   &B220VL&3,B2211B&3                                         7  4486  M W4W U37           521
2901 27 77          MLC   @0!0@,B2001&6                                              7  4493  M W4Z U15           521
2902 27 78          MLC   @0|0@                                                      4  4500  M W5S               521
2903 27 79          MLC   RCDIST,B2000&3                                             7  4504  M 196 U01           521
2904 27 80          MLCWA @#@                                                        4  4511  L W1T               521
2905 27 81          MLZS  @S@,B2000&2                                                7  4515  Y W5T U00           522
2906 27 82          MLC   @094@,B2201&6                                              7  4522  M W3X T97           522
2907 27 83          MLC   RCDIST                                                     4  4529  M 196               522
2908 27 84          MLC   @#@                                                        4  4533  M W1T               522
2909 27 85          MLZS  @S@,B2201&2                                                7  4537  Y W5T T93           522
2910 27 86          MLCWA MOVPUT&6,B2201V&6                                          7  4544  L K9Z T76           522
2911 27 87          MLC   @094@                                                      4  4551  M W3X               523
2912 27 88          MLC   @L@,B201W                                                  7  4555  M W2W W61           523
2913 27 89          MLC   @L@,B001R                                                  7  4562  M W2W Y83           523
2914 27 90          MLC   L,CONVRT                                                   7  4569  M 347 698           523
2915 27 91          B     EXPAND                                                     4  4576  B 620               523
2916 27 92          C     @00999@,HOLD       CHECK RECORD LENGTH                     7  4580  C W5Y 693           523
2917 27 93          BH    BRMAX                                                      5  4587  B 59Z U             524
2918 27 94          MLCWA BRMAXL&4,CNVRSN&4                                          7  4592  L 96V |35           524
2919 27 95   BRMAX  MA    G1,LRG2G1                                                  7  4599  # 895 565           524
2920 27 96          MLC   LRG2G1,CONVRT                                              7  4606  M 565 698           524
2921 27 97          B     EXPAND                                                     4  4613  B 620               524
2922 27 98          MLC   CON16T,CONVRT                                              7  4617  M 31Z 698           524
2923 27 99          S     HOLD,CONVRT                                                7  4624  S 693 698           525
2924 28 00          MLZS  K1BLNK,CONVRT                                              7  4631  Y 854 698           525
2925 28 01          B     K5TOK3                                                     4  4638  B 04Y               525
2926 28 02          MLC   CONVRT,LRG2G1                                              7  4642  M 698 565           525
2927 28 03          MLC   UAPHZ1,CONVRT                                              7  4649  M 12W 698           525
2928 28 04          S     @004@,CONVRT                                               7  4656  S W6/ 698           525
2929 28 05          MLZS  K1BLNK,CONVRT                                              7  4663  Y 854 698           526
2930 28 06          B     K5TOK3                                                     4  4670  B 04Y               526
2931 28 07          MLC   CONVRT,COWNTR                                              7  4674  M 698 P46           526
2932 28 08          MA    CMXBLK,COWNTR                                              7  4681  # 01/ P46           526
2933 28 09          MLC   COWNTR,CONVRT                                              7  4688  M P46 698           526
2934 28 10          B     EXPAND                                                     4  4695  B 620               526
2935 28 11          MLC   CON16T,CONVRT                                              7  4699  M 31Z 698           527
2936 28 12          S     HOLD,CONVRT                                                7  4706  S 693 698           527
2937 28 13          MLZS  K1BLNK,CONVRT                                              7  4713  Y 854 698           527
2938 28 14          B     K5TOK3                                                     4  4720  B 04Y               527
2939 28 15          MLC   CONVRT,COWNTR                                              7  4724  M 698 P46           527
2940 28 16          MA    COMPL,COUNTR                                               7  4731  # 00V Y12           527
2941 28 17          MA    ONE,COUNTR                                                 7  4738  # 898 Y12           528
2942 28 18          MLC   COUNTR,CONVRT                                              7  4745  M Y12 698           528
2943 28 19          B     EXPAND                                                     4  4752  B 620               528
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

2944 28 20          MLC   CON16T,CONVRT                                                7  4756  M 31Z 698            528
2945 28 21          S     HOLD,CONVRT                                                  7  4763  S 693 698            528
2946 28 22          MLZS  K1BLNK,CONVRT                                                7  4770  Y 854 698            528
2947 28 23          B     K5TOK3                                                       4  4777  B 04Y                529
2948 28 24          MLC   CONVRT,COUNTR                                                7  4781  M 698 Y12            529
2949 28 25          BCE   *&8,KRUNCH,         DETERMINE IF RLI REQUIRES THE            8  4788  B 80T 561            529
2950 28 26          MA    SLRCC,STWMVL&10     SETTING OF A WORDMARK                    7  4796  # 12/ |30            529
2951 28 27          MLC   @000@,X1                                                     7  4803  M W6U 089            529
2952 28 28          BCE   INVLWM,CNOP,1                                                8  4810  B 82V 086 1          530
2953 28 29          MA    @003@,INVLWM&3                                               7  4818  # W6X 82Y            530
2954 28 30   INVLWM MLC   INVLST&X1,X3        INITIALIZE SET WORDMARK ROUTINE          7  4825  M 9X| 099            530
2955 28 31          MA    CF1SL&X1,0&X3       FOR VARIABLE LENGTH RECORDS              7  4832  # 3V3 0?0            530
2956 28 32          MA    @003@,X1                                                     7  4839  # W6X 089            530
2957 28 33          C     X1,@030@                                                     7  4846  C 089 W7|            531
2958 28 34          BU    INVLWM                                                       5  4853  B 82V /              531
2959 28 35          MLC   NCF,NCFTOP                                                   7  4858  M 096 |0T            531
2960 28 36          MLC   &STWMVL,X2                                                   7  4865  M W7T 094            531
2961 28 37          BCE   INVLW1,CNOP,1                                                8  4872  B 88X 086 1          531
2962 28 38          A     ONE,NCFTOP                                                   7  4880  A 898 |0T            532
2963 28 39   INVLW1 C     NCFTOP,KTHREE                                                7  4887  C |0T 96X            532
2964 28 40          BH    INVLW2                                                       5  4894  B 91X U              532
2965 28 41          MA    @I9C@,X2                                                     7  4899  # W7W 094            532
2966 28 42          A     @02@,KTHREE                                                  7  4906  A W7Y 96X            532
2967 28 43          B     INVLW1                                                       4  4913  B 88X                532
2968 28 44   INVLW2 C     NCFTOP,@11@                                                  7  4917  C |0T W8|            533
2969 28 45          BU    INVLW3                                                       5  4924  B 93W /              533
2970 28 46          MLC   &STWMVL-32,X2                                                7  4929  M W8T 094            533
2971 28 47   INVLW3 MLC   X2,SETG1J&3                                                  7  4936  M 094 /33            533
2972 28 48          MLC   X2,B002RA&3                                                  7  4943  M 094 !37            533
2973 28 49          MLC   X2,LSTBK1&3                                                  7  4950  M 094 /85            534
2974 28 50          B     INSTP                                                        4  4957  B |9W                534
2975 28 51   BRMAXL B     B011TA                                                       4  4961  B |59                534
2976 28 52          DC    @ @                                                          1  4965                       534
2977 28 53   KTHREE DCW   @03@                                                         2  4967                       534
2978 28 54   INVLST DC    &STWMVL&3                                                    3  4970   |23                 534
2979 28 55                &STWMVL&6                                                    3  4973   |26                 534
2980 28 56                &STWMVL-1                                                    3  4976   |19                 534
2981 28 57                &STWMVL-4                                                    3  4979   |16                 534
2982 28 58                &STWMVL-8                                                    3  4982   |12                 534
2983 28 59                &STWMVL-11                                                   3  4985   |09                 534
2984 28 60                &STWMVL-15                                                   3  4988   |05                 534
2985 28 61                &STWMVL-18                                                   3  4991   |02                 535
2986 28 62                &STWMVL-22                                                   3  4994  998                  535
2987 28 63                &STWMVL-25                                                   3  4997  995                  535
2988 28 64                &STWMVL-29                                                   3  5000  991                  535
2989 28 65   NCFTOP DCW   @   @                                                        3  5003                       535
2990 28 66   NCFPUT DCW   00                                                           2  5005                       535
2991 28 67   EMM    DCW   @L@                                                          1  5006                       535
2992 28 68   QOUNTR DCW   000                                                          3  5009                       535
2993 28 69   BTOHAS B     B2211D                                                       4  5010  B U27                536
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

2994 28 70   FLRRTN MA    L,INTOUT                                                      7  5014  # 347 571            536
2995 28 71          MA    L,B2001&3                                                     7  5021  # 347 U12            536
2996 28 72          MLC   &EQUAL,STPCM2&3                                               7  5028  M W8W S43            536
2997 28 73   QBACK  MA    L,RNGLNQ&6                                                    7  5035  # 347 Z30            536
2998 28 74          A     @1@,QOUNTR                                                    7  5042  A W8X |0Z            536
2999 28 75          C     QOUNTR,BI                                                     7  5049  C |0Z I86            537
3000 28 76          BU    QBACK                                                         5  5056  B |3V /              537
3001 28 77          MLC   @N@,VLRGET                                                    7  5061  M W0Y Y13            537
3002 28 78          MLC   @N@,VLRGET&7                                                  7  5068  M W0Y Y20            537
3003 28 79          MLC   @N@,VLRGET&14                                                 7  5075  M W0Y Y27            537
3004 28 80          MLC   &B4SS5,B002R&3                                                7  5082  M W9| Z59            538
3005 28 81          MLC   BFRST3,B2211D&3                                               7  5089  M 850 U30            538
3006 28 82   INSTP  MA    @I9I@,INTOUT                                                  7  5096  # W9T 571            538
3007 28 83          MLC   MI1TUN,B201W&3                                                7  5103  M 341 W64            538
3008 28 84          MLC   MI1TUN,B203W&3                                                7  5110  M 341 X86            538
3009 28 85          MLC   MI1TUN,TAPERW&3                                               7  5117  M 341 X54            539
3010 28 86          BCE   ANNENC,CNOP,1                                                 8  5124  B V3T 086 1          539
3011 28 87   CTOL   S     CNOP,NCF                                                      7  5132  S 086 096            539
3012 28 88          S     ONE,NCF                                                       7  5139  S 898 096            539
3013 28 89          MLZS  K1BLNK,NCF                                                    7  5146  Y 854 096            539
3014 28 90          MLC   NCF,NCFPUT                                                    7  5153  M 096 |0V            540
3015 28 91          BCE   *&8,KRUNCH,                                                   8  5160  B /7V 561            540
3016 28 92          A     @1@,NCFPUT                                                    7  5168  A W8X |0V            540
3017 28 93          MLC   @001@,X1                                                      7  5175  M W4T 089            540
3018 28 94   SETPUT MLCWA EMM,B2001&6&X1     INITIALIZE CHAINED MOVE IN                 7  5182  L |0W U/5            540
3019 28 95          A     @1@,X1             PUT ROUTINE BASED ON THE NUMBER            7  5189  A W8X 089            541
3020 28 96          A     NINTNN,NCFPUT      OF CONTROL FIELDS                          7  5196  A 873 |0V            541
3021 28 97          BAV   SETPUT                                                        5  5203  B /8S Z              541
3022 28 98          C     NCF,@05@                                                      7  5208  C 096 W9V            541
3023 28 99          BL    SBCNOP                                                        5  5215  B S2X T              541
3024 29 00          MLCWA BTOHAS&3,B2001&9&X1                                           7  5220  L |1T U/8            541
3025 29 01   SBCNOP A     CNOP,NCF                                                      7  5227  A 086 096            542
3026 29 02          A     ONE,NCF                                                       7  5234  A 898 096            542
3027 29 03   CTLAGN MLC   COMPL,PCOMPL                                                  7  5241  M 00V 853            542
3028 29 04          MA    @I9I@,HPNDPM                                                  7  5248  # W9T Q40            542
3029 29 05          MA    @I9I@,NDFPGM                                                  7  5255  # W9T L1U            542
3030 29 06          MLC   HPNDPM-2,TPCNPM-2                                             7  5262  M Q38 Q41            543
3031 29 07          MLZS  HPNDPM,TPCNPM                                                 7  5269  Y Q40 Q43            543
3032 29 08          MLC   G,HOLDG                                                       7  5276  M 857 K9S            543
3033 29 09          C     HPNDPM,TPCNPM                                                 7  5283  C Q40 Q43            543
3034 29 10          BU    *&8                                                           5  5290  B T0S /              543
3035 29 11          MLC   BR&4,MAX&19                                                   7  5295  M T7/ R19            544
3036 29 12   CKPTCR BCE   GPMRK,UAPHZ1,                                                 8  5302  B T3S 12W            544
3037 29 13          MLC   UAPHZ1,CONVRT                                                 7  5310  M 12W 698            544
3038 29 14          B     K5TOK3                                                        4  5317  B 04Y                544
3039 29 15          MA    CONVRT,STRTCL&3                                               7  5321  # 698 Q54            544
3040 29 16          B     CHECK                                                         4  5328  B T3Z                544
3041 29 17   GPMRK  MA    GPMARK,STRTCL&3                                               7  5332  # 350 Q54            545
3042 29 18   CHECK  CS    332                                                           4  5339  / 332                545
3043 29 19          CS                                                                  1  5343  /                    545
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3044 29 20          C     HPNDPM,TPCNPM                                        7  5344  C Q40 Q43           545
3045 29 21          BU    DETS                                                 5  5351  B T7S /             545
3046 29 22          MLC   BR&4,MAX&19                                          7  5356  M T7/ R19           545
3047 29 23          B     DETS                                                 4  5363  B T7S               545
3048 29 24   BR     BIN   STWMK1-7,                                            5  5367  B R56               546
3049 29 25   DETS   BCE   REVRS5,DESCND,1                                      8  5372  B T9S 090 1         546
3050 29 26          BCE   SWCHTP,NCF,1                                         8  5380  B J61 096 1         546
3051 29 27          B     CMPTNC                                               4  5388  B U6Z               546
3052 29 28   REVRS5 MA    NDFPGM,REVRS3&3                                      7  5392  # L1U U0S           546
3053 29 29   REVRS3 SW    1                                                    4  5399  , 001               546
3054 29 30          MLC   HPNDPM,X1                                            7  5403  M Q40 089           547
3055 29 31          MLCWA NINE,1&X1                                            7  5410  L 871 0|1           547
3056 29 32   REVRS4 MLC   1&X1,0&X1                                            7  5417  M 0|1 0|0           547
3057 29 33          SBR   X1                                                   4  5424  H 089               547
3058 29 34          CW    1&X1                                                 4  5428  ) 0|1               547
3059 29 35          C     X1,NDFPGM                                            7  5432  C 089 L1U           547
3060 29 36          BU    REVRS4                                               5  5439  B U1X /             548
3061 29 37          MLC   K1BLNK,1&X1                                          7  5444  M 854 0|1           548
3062 29 38          MLC   NDFPGM,ADRLRD                                        7  5451  M L1U A05           548
3063 29 39          MA    TWO,ADRLRD                                           7  5458  # 876 A05           548
3064 29 40          B     SWCHTP                                               4  5465  B J61               548
3065 29 41   CMPTNC MA    NDFPGM,*&4                                           7  5469  # L1U U7Z           548
3066 29 42          SW    1                                                    4  5476  , 001               549
3067 29 43          MLC   HPNDPM,X1                                            7  5480  M Q40 089           549
3068 29 44   LDNINE MLCWA K1BLNK,1&X1                                          7  5487  L 854 0|1           549
3069 29 45   LDBLNK MLCWA 1&X1,0&X1                                            7  5494  L 0|1 0|0           549
3070 29 46          SBR   X1                                                   4  5501  H 089               549
3071 29 47          BCE   *&5,DESCND,                                          8  5505  B V1X 090           549
3072 29 48          CW    3&X1                                                 4  5513  ) 0|3               550
3073 29 49          C     X1,NDFPGM                                            7  5517  C 089 L1U           550
3074 29 50          BU    LDBLNK                                               5  5524  B U9U /             550
3075 29 51          B     SWCHTP                                               4  5529  B J61               550
3076 29 52   ANNENC BCE   *&5,NCF,1                                            8  5533  B V4V 096 1         550
3077 29 53          B     CTOL                                                 4  5541  B /3S               550
3078 29 54          BCE   CTLAG6,KRUNCH,                                       8  5545  B V7/ 561           551
3079 29 55          MLC   EMM,B2001&7                                          7  5553  M |0W U16           551
3080 29 56          MLCWA BTOHAS&3,B2001&11                                    7  5560  L |1T U20           551
3081 29 57          B     CTLAG6&7                                             4  5567  B V7Y               551
3082 29 58   CTLAG6 MLCWA BTOHAS&3,B2001&10                                    7  5571  L |1T U19           551
3083 29 59          B     CTLAGN                                               4  5578  B S4/               551
3084 29 60   CHKPNT CS    80                                                   4  5582  / 080               552
3085 29 61          SW    24,56                                                7  5586  , 024 056           552
3086 29 62          SW    63,67                                                7  5593  , 063 067           552
3087 29 63          R     056                                                  4  5600  1 056               552
                    DCW   @ @                                                  1  5604             LIT      552
                    DCW   &B2211B                                              3  5607  U34        ADCON    552
                    DCW   @N@                                                  1  5608             LIT      552
                    DCW   &VLRGET                                              3  5611  Y13        ADCON    553
                    DCW   @M@                                                  1  5612             LIT      553
                    DCW   @#@                                                  1  5613             LIT      553
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

                    DCW   &CMPCOW                                                3  5616  /91         ADCON  553
                    DCW   @089@                                                  3  5619              LIT    553
                    DCW   &COWNTR                                                3  5622  P46         ADCON  553
                    DCW   @0!1@                                                  3  5625              LIT    553
                    DCW   @L@                                                    1  5626              LIT    554
                    DCW   @2@                                                    1  5627              LIT    554
                    DCW   &CMPCOU                                                3  5630  /94         ADCON  554
                    DCW   &BP002                                                 3  5633  W21         ADCON  554
                    DCW   @V@                                                    1  5634              LIT    554
                    DCW   @094@                                                  3  5637              LIT    554
                    DCW   &COUNTR                                                3  5640  Y12         ADCON  554
                    DCW   @001@                                                  3  5643              LIT    555
                    DCW   &B220VL&3                                              3  5646  T80         ADCON  555
                    DCW   @0!0@                                                  3  5649              LIT    555
                    DCW   @0|0@                                                  3  5652              LIT    555
                    DCW   @S@                                                    1  5653              LIT    555
                    DCW   @00999@                                                5  5658              LIT    555
                    DCW   @004@                                                  3  5661              LIT    555
                    DCW   @000@                                                  3  5664              LIT    556
                    DCW   @003@                                                  3  5667              LIT    556
                    DCW   @030@                                                  3  5670              LIT    556
                    DCW   &STWMVL                                                3  5673  |20         ADCON  556
                    DCW   @I9C@                                                  3  5676              LIT    556
                    DCW   @02@                                                   2  5678              LIT    556
                    DCW   @11@                                                   2  5680              LIT    556
                    DCW   &STWMVL-32                                             3  5683  988         ADCON  557
                    DCW   &EQUAL                                                 3  5686  U84         ADCON  557
                    DCW   @1@                                                    1  5687              LIT    557
                    DCW   &B4SS5                                                 3  5690  R66         ADCON  557
                    DCW   @I9I@                                                  3  5693              LIT    557
                    DCW   @05@                                                   2  5695              LIT    557
3088 29 64          EX    FXCHEK                                                          B 17V              558
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

3089 29 65          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
3090 29 66   *
3091 29 67   *                  BYPASS OR LOAD IN ROUTINE TO HANDLE FIXED
3092 29 68   *                  LENGTH RECORDS READ IN THE LOAD MODE
3093 29 69   *
3094 29 70          ORG   5000                                                            5000
3095 29 71   TESTML BCE   TML,FLR,1                                              8  5000  B |5Y 091 1         561
3096 29 72          BCE   BPSS,INMODE,M                                          8  5008  B |4V 562 M         561
3097 29 73   LCRD   CS    80                                                     4  5016  / 080               561
3098 29 74          SW    24,56                                                  7  5020  , 024 056           561
3099 29 75          SW    63,67                                                  7  5027  , 063 067           561
3100 29 76          R     056                                                    4  5034  1 056               561
3101 29 77          MLC   @L@,B001R                                              7  5038  M /2V Y83           562
3102 29 78   BPSS   R                                                            1  5045  1                   562
3103 29 79          BCE   LCRD,68,B                                              8  5046  B |1W 068 B         562
3104 29 80          B     BPSS                                                   4  5054  B |4V               562
3105 29 81   TML    BCE   BPSS-7,INMODE,L                                        8  5058  B |3Y 562 L         562
3106 29 82          BCE   *&12,TPV1,                                             8  5066  B |8V 568           562
3107 29 83          MLC   TPV1,CDTO                                              7  5074  M 568 953           563
3108 29 84          B     *&8                                                    4  5081  B |9S               563
3109 29 85          MLC   GPMARK,CDTO                                            7  5085  M 350 953           563
3110 29 86          MA    @I9I@,CDTO                                             7  5092  # /2Y 953           563
3111 29 87          MLC   ONPTAR,CLRTN&3                                         7  5099  M P41 908           563
3112 29 88          MLC   @M@,B001R                                              7  5106  M /2Z Y83           563
3113 29 89          MLC   &CLRTN,BP001&6                                         7  5113  M /3S W20           564
3114 29 90          B     BPSS                                                   4  5120  B |4V               564
3115 29 91          DCW   #1                                                     1  5124                      564
                    DCW   @L@                                                    1  5125             LIT      564
                    DCW   @I9I@                                                  3  5128             LIT      564
                    DCW   @M@                                                    1  5129             LIT      564
                    DCW   &CLRTN                                                 3  5132  905        ADCON    564
3116 29 92          EX    TESTML                                                          B |0|               565
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

3117 29 93          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
3118 29 94   *
3119 29 95   *              SET WORD MARK ROUTINE FOR FIXED LENGTH
3120 29 96   *                  RECORDS READ IN THE LOAD MODE
3121 29 97   *
3122 29 98          ORG   VARLNT                                                         0988
3123 29 99          MLC   G,GCNT7                                               7  0988  M 857 /33            568
3124 30 00          MA    P15999,GCNT7                                          7  0995  # 861 /33            568
3125 30 01          MLC   @0?0@,SET7&3                                          7  1002  M /38 |33            568
3126 30 02          MA    ONPTAR,SET7&3                                         7  1009  # P41 |33            568
3127 30 03   SET71  MLC   NCF,NCF7                                              7  1016  M 096 /35            568
3128 30 04          MLC   @000@,X3                                              7  1023  M /41 099            569
3129 30 05   SET7   SW    0&X3                                                  4  1030  , 0?0                569
3130 30 06   INSWN7 MLC   CF1SL,X3                                              7  1034  M 353 099            569
3131 30 07          MA    THREE,INSWN7&3                                        7  1041  # 889 |37            569
3132 30 08          BAV   *&1                                                   5  1048  B |53 Z              569
3133 30 09          A     NINTNN,NCF7                                           7  1053  A 873 /35            569
3134 30 10          BAV   SET7                                                  5  1060  B |30 Z              570
3135 30 11          SBR   INSWN7&3,CF1SL                                        7  1065  H |37 353            570
3136 30 12          MA    L,SET7&3                                              7  1072  # 347 |33            570
3137 30 13          A     @999@,GCNT7                                           7  1079  A /44 /33            570
3138 30 14          BAV   SET71                                                 5  1086  B |16 Z              570
3139 30 15          B     B4SS5                                                 4  1091  B R66                570
3140 30 16   INSWF  MLC   @L@,B001R                                             7  1095  M /45 Y83            571
3141 30 17          MLC   &VARLNT,B002R&3                                       7  1102  M /48 Z59            571
3142 30 18          CS    80                                                    4  1109  / 080                571
3143 30 19          SW    24,56                                                 7  1113  , 024 056            571
3144 30 20          SW    63,67                                                 7  1120  , 063 067            571
3145 30 21          R     056                                                   4  1127  1 056                571
3146 30 22   GCNT7  DCW   #3                                                    3  1133                       571
3147 30 23   NCF7   DCW   #2                                                    2  1135                       572
3148 30 24          LTORG *                                                              1136
                    DCW   @0?0@                                                 3  1138             LIT       572
                    DCW   @000@                                                 3  1141             LIT       572
                    DCW   @999@                                                 3  1144             LIT       572
                    DCW   @L@                                                   1  1145             LIT       572
                    DCW   &VARLNT                                               3  1148  988        ADCON     572
3149 30 25          EX    INSWF                                                          B |95                573
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3150 30 26          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
3151 30 27   *
3152 30 28   *                  WRITE CHECKPOINT ROUTINE
3153 30 29   *
3154 30 30          ORG   5000                                                        5000
3155 30 31   CHKPT1 CW    333                 WRITE CHECKPOINT                4  5000  ) 333              576
3156 30 32          SW    1,5                                                 7  5004  , 001 005          576
3157 30 33          MLC   &RESTRT                                             4  5011  M U4Y              576
3158 30 34          MLC   @B@                                                 4  5015  M U4Z              576
3159 30 35          MLC   MI1TUN,WRTCHK&3                                     7  5019  M 341 |4T          576
3160 30 36          MLC   @80@,CNTR50                                         7  5026  M U5/ Y09          576
3161 30 37   RTCHK1 MLC   @N@,BRNCHK                                          7  5033  M U5S /0W          577
3162 30 38   WRTCHK WTW   0,1                                                 8  5040  L %U0 001 W        577
3163 30 39          BER   ERRCHK                                              5  5048  B |9U L            577
3164 30 40          BEF   EOFCHK                                              5  5053  B /5T K            577
3165 30 41   RTCHK2 MLC   Z,MAX&6                                             7  5058  M Q12 R06          577
3166 30 42          MLC   GPMARK                                              4  5065  M 350              577
3167 30 43          MLC   GPMARK,LDG333&3                                     7  5069  M 350 |7Z          578
3168 30 44   LDG333 MLCWA GM,333                                              7  5076  L I9Y 333          578
3169 30 45          MLC   &B013R,TSTLBL&11                                    7  5083  M U5V K30          578
3170 30 46          B     MPZ1                                                4  5090  B S6U              578
3171 30 47   ERRCHK MN    WRTCHK&3,ERCHK1&3                                   7  5094  D |4T /0U          578
3172 30 48   ERCHK1 BSP   0                                                   5  5101  U %U0 B            578
3173 30 49   BRNCHK B     ERSCHK                                              4  5106  B /2/              579
3174 30 50          MLC   @B@,BRNCHK                                          7  5110  M U4Z /0W          579
3175 30 51          B     WRTCHK                                              4  5117  B |4|              579
3176 30 52   ERSCHK A     ONE,CNTR50                                          7  5121  A 898 Y09          579
3177 30 53          BAV   HLTCHK                                              5  5128  B /4Z Z            579
3178 30 54          MLNS  WRTCHK&3,ERSHK1&3                                   7  5133  D |4T /4T          579
3179 30 55   ERSHK1 SKP   0                                                   5  5140  U %U0 E            579
3180 30 56          B     RTCHK1                                              4  5145  B |3T              580
3181 30 57   HLTCHK H     CHKPNT                                              4  5149  . V8S              580
3182 30 58   EOFCHK H     RTCHK2                                              4  5153  . |5Y              580
3183 30 59   RESTRT MLC   GPMARK,X1            RESTART                        7  5157  M 350 089          580
3184 30 60          RWD   1                                                   5  5164  U %U1 R            580
3185 30 61          CS    332                                                 4  5169  / 332              580
3186 30 62          CS                                                        1  5173  /                  580
3187 30 63          SW    0&X1                                                4  5174  , 0|0              581
3188 30 64          MLC   @,@,PRMSG9-1                                        7  5178  M U5W K2V          581
3189 30 65          MLC   MI2TUN                                              4  5185  M 342              581
3190 30 66          MLC   @,@                                                 4  5189  M U5W              581
3191 30 67          MLC   MI1TUN                                              4  5193  M 341              581
3192 30 68          BCE   TOWYMG,NOTAPS,4                                     8  5197  B S2W 886 4        581
3193 30 69          MLC   MI3TUN,PRMSG9                                       7  5205  M 343 K2W          581
3194 30 70          MLC   I3TUN,PRMSG9-10                                     7  5212  M 340 K1W          582
3195 30 71          MLZS  *-6,CENSIG                                          7  5219  Y S1Z 415          582
3196 30 72   TOWYMG MLC   @,@,PRMSG9-11                                       7  5226  M U5W K1V          582
3197 30 73          MLC   I2TUN                                               4  5233  M 339              582
3198 30 74          MLC   @,@                                                 4  5237  M U5W              582
3199 30 75          MLC   I1TUN                                               4  5241  M 338              582
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD

3200 30 76          RWD   1                                                                5  5245  U %U1 R            582
3201 30 77          MLC   PRMSG9,227                                                       7  5250  M K2W 227          583
3202 30 78          W                                                                      1  5257  2                  583
3203 30 79          CC    1                                                                2  5258  F 1                583
3204 30 80   NDRSTT H     CHKPT1                                                           4  5260  . |0|              583
3205 30 81   MPZ1   CS    299                                                              4  5264  / 299              583
3206 30 82          MLC   PHZ1MG,222                                                       7  5268  M L6S 222          583
3207 30 83          W                                                                      1  5275  2                  583
3208 30 84          CS    299                                                              4  5276  / 299              584
3209 30 85          MLC   MI1TUN,226                                                       7  5280  M 341 226          584
3210 30 86          MLC   CHKPRT                                                           4  5287  M L8X              584
3211 30 87          W                                                                      1  5291  2                  584
3212 30 88          BCE   ENDPRT,FLR,1                                                     8  5292  B T4Y 091 1        584
3213 30 89   CMPT3B A     ONE,THREEB                                                       7  5300  A 898 870          584
3214 30 90          S     B,HOLDG                                                          7  5307  S 199 K9S          584
3215 30 91          BWZ   CMPT3B,HOLDG,B                                                   8  5314  V T0| K9S B        585
3216 30 92          S     ONE,THREEB                                                       7  5322  S 898 870          585
3217 30 93          CS    226                                                              4  5329  / 226              585
3218 30 94          MLC   @G@,201                                                          7  5333  M U5X 201          585
3219 30 95          MLC   G,205                                                            7  5340  M 857 205          585
3220 30 96          W                                                                      1  5347  2                  585
3221 30 97   ENDPRT CC    1                                                                2  5348  F 1                585
3222 30 98   RDURLD CS    080                                                              4  5350  / 080              586
3223 30 99          SW    24,56                                                            7  5354  , 024 056          586
3224 31 00          SW    63,67                                                            7  5361  , 063 067          586
3225 31 01   WHICH  BCE   STURPI,URPI,P                                                    8  5368  B T9V 186 P        586
3226 31 02          BCE   STURPI,URPI,C                                                    8  5376  B T9V 186 C        586
3227 31 03          MLC   @T@,DECIDE&7                                                     7  5384  M U5Y U1|          587
3228 31 04          B     DECIDE-1                                                         4  5391  B U0S              587
3229 31 05   STURPI MLC   URPI,DECIDE&7       DETERMINE REDUNDANCY ROUTINE                 7  5395  M 186 U1|          587
3230 31 06          R                         REQUESTED BY USER                            1  5402  1                  587
3231 31 07   DECIDE BCE   056,079,            LOAD IT AND BYPASS OTHERS                    8  5403  B 056 079          587
3232 31 08          R     DECIDE                                                           4  5411  1 U0T              587
3233 31 09   FRED   CS    080                                                              4  5415  / 080              587
3234 31 10          SW    24,56                                                            7  5419  , 024 056          588
3235 31 11          SW    63,67                                                            7  5426  , 063 067          588
3236 31 12          R                                                                      1  5433  1                  588
3237 31 13          BCE   CLEARS,079,                                                      8  5434  B Q44 079          588
3238 31 14          R     *-11                                                             4  5442  1 U3U              588
                    DCW   &RESTRT                                                          3  5448  /5X         ADCON  588
                    DCW   @B@                                                              1  5449              LIT    588
                    DCW   @80@                                                             2  5451              LIT    589
                    DCW   @N@                                                              1  5452              LIT    589
                    DCW   &B013R                                                           3  5455  Y48         ADCON  589
                    DCW   @,@                                                              1  5456              LIT    589
                    DCW   @G@                                                              1  5457              LIT    589
                    DCW   @T@                                                              1  5458              LIT    589
3239 31 15          EX    CHKPT1                                                                    B |0|              590
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

3240 31 16          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1  CORRECT URPI
3241 31 17          ORG   HERE                                                          0700
3242 31 18          SBR   MOVUR&3,0&X3                                            7  0700  H 722 0?0          593
3243 31 19          CS    332                                                     4  0707  / 332              593
3244 31 20          CS                                                            1  0711  /                  593
3245 31 21          SBR   MOVUR&13,201                                            7  0712  H 732 201          593
3246 31 22   MOVUR  MLC   0,CNTR1                                                 7  0719  M 000 791          593
3247 31 23          MLC   CNTR1,201                                               7  0726  M 791 201          593
3248 31 24          MA    ONE,MOVUR&3                                             7  0733  # 898 722          594
3249 31 25          MA    ONE,MOVUR&13                                            7  0740  # 898 732          594
3250 31 26          C     MOVUR&3,X1                                              7  0747  C 722 089          594
3251 31 27          BE    CRLNLR                                                  5  0754  B 775 S            594
3252 31 28          BCE   JDYLNR,MOVUR&11,3                                       8  0759  B 771 730 3        594
3253 31 29          B     MOVUR                                                   4  0767  B 719              594
3254 31 30   JDYLNR W     MOVUR-12          PRINT UNREADABLE INPUT BLOCK          4  0771  2 707              595
3255 31 31   CRLNLR W                                                             1  0775  2                  595
3256 31 32          CC    1                                                       2  0776  F 1                595
3257 31 33   TSTSSG H     WRLERT                                                  4  0778  . 792              595
3258 31 34          BSS   TAPRD2,G                                                5  0782  B K52 G            595
3259 31 35          B     ACCEPT                                                  4  0787  B Z44              595
3260 31 36   CNTR1  DCW   @ @                                                     1  0791                     595
3261 31 37   WRLERT MLC   K1BLNK,0&X1                                             7  0792  M 854 0|0          596
3262 31 38          MLC   X3,X1                                                   7  0799  M 099 089          596
3263 31 39   WRGSET MLCWA GM,0                                                    7  0806  L I9Y 000          596
3264 31 40          B     B000R                                                   4  0813  B Y55              596
3265 31 41          DCW   @ @                                                     1  0817                     596
3266 31 42          ORG   5000                                                          5000
3267 31 43   CORINI MLC   GPMARK,WRGSET&3                                         7  5000  M 350 809          597
3268 31 44          MLC   Z,WRGSET&6                                              7  5007  M Q12 812          597
3269 31 45          B     FRED                                                    4  5014  B U1V              597
3270 31 46          DCW   @ @                                                     1  5018                     597
3271 31 47          EX    CORINI                                                       B |0|              598
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

3272 31 48          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1  TAPE URPI
3273 31 49          ORG   HERE                                                          0700
3274 31 50          BWZ   NOLNZG,0&X1,1                                         8  0700  V 719 0|0 1         601
3275 31 51          MLC   CLR1&15,CLWMGM                                        7  0708  M 931 748           601
3276 31 52          B     WTWTT-4                                               4  0715  B 726               601
3277 31 53   NOLNZG MLC   @N@,CLWMGM                                            7  0719  M 829 748           601
3278 31 54          SW    0&X1                                                  4  0726  , 0|0               601
3279 31 55   WTWTT  WT    0,0&X3             WRITE UNREADABLE INPUT BLOCK ON    8  0730  M %U0 0?0 W         601
3280 31 56          BEF   HOUT               DUMP TAPE                          5  0738  B 799 K             602
3281 31 57          BER   ETND                                                  5  0743  B 785 L             602
3282 31 58   CLWMGM CW    0&X1                                                  4  0748  ) 0|0               602
3283 31 59          MLC   *-6,0&X1                                              7  0752  M 752 0|0           602
3284 31 60          CS    332                                                   4  0759  / 332               602
3285 31 61          CS                                                          1  0763  /                   602
3286 31 62          MLC   TURMSG,226                                            7  0764  M 828 226           602
3287 31 63          W                                                           1  0771  2                   603
3288 31 64          CC    1                                                     2  0772  F 1                 603
3289 31 65          MLC   X3,X1                                                 7  0774  M 099 089           603
3290 31 66          B     B011R                                                 4  0781  B Y76               603
3291 31 67   ETND   BSP   %U0                                                   5  0785  U %U0 B             603
3292 31 68          SKP   %U0                                                   5  0790  U %U0 E             603
3293 31 69          B     WTWTT                                                 4  0795  B 730               603
3294 31 70   HOUT   H     WTWTT                                                 4  0799  . 730               604
3295 31 71   TURMSG DCW   @UNREAD BLK WRITTEN ON TU  @                         26  0828                      604
3296 31 72          LTORG *                                                             0829
                    DCW   @N@                                                   1  0829                LIT    604
3297 31 73          ORG   5000                                                          5000
3298 31 74   INTTER MLC   URPI,WTWTT&3       SET DUMP TAPE UNIT NUM             7  5000  M 186 733           605
3299 31 75          MLC   URPI,ETND&3                                           7  5007  M 186 788           605
3300 31 76          MLC   URPI,ETND&8                                           7  5014  M 186 793           605
3301 31 77          MLC   URPI,TURMSG                                           7  5021  M 186 828           605
3302 31 78          B     FRED                                                  4  5028  B U1V               605
3303 31 79          DCW   @ @                                                   1  5032                      605
3304 31 80          EX    INTTER                                                         B |0|               606
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3305 31 81          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1  PUNCH URPI
3306 31 82          ORG   HERE                                                         0700
3307 31 83          MLC   X3,CTBL                                             7  0700  M 099 815          609
3308 31 84          MLC   @0?0@,PBDBK3&3                                      7  0707  M 819 735          609
3309 31 85   PBDBK1 SBR   PBDBK3&13,100                                       7  0714  H 745 100          609
3310 31 86          CS    180                                                 4  0721  / 180              609
3311 31 87   PBDBK2 MA    ONE,PBDBK3&13                                       7  0725  # 898 745          609
3312 31 88   PBDBK3 MLC   0&X3,CNTR2                                          7  0732  M 0?0 816          609
3313 31 89          MLC   CNTR2,0                                             7  0739  M 816 000          610
3314 31 90          MA    ONE,CTBL                                            7  0746  # 898 815          610
3315 31 91          MA    ONE,PBDBK3&3                                        7  0753  # 898 735          610
3316 31 92          C     CTBL,X1                                             7  0760  C 815 089          610
3317 31 93          BE    PBDBK4                                              5  0767  B 784 S            610
3318 31 94          BCE   PBDBK5,PBDBK3&12,8                                  8  0772  B 809 744 8        611
3319 31 95          B     PBDBK2                                              4  0780  B 725              611
3320 31 96   PBDBK4 MLCWA GM,0                                                7  0784  L I9Y 000          611
3321 31 97          MLC   K1BLNK,0&X1                                         7  0791  M 854 0|0          611
3322 31 98          MLC   X3,X1                                               7  0798  M 099 089          611
3323 31 99          P     B011R              PUNCH UNREADABLE INPUT BLOCK     4  0805  4 Y76              611
3324 32 00   PBDBK5 P     PBDBK1                                              4  0809  4 714              612
3325 32 01   CTBL   DCW   @000@                                               3  0815                     612
3326 32 02   CNTR2  DCW   @ @                                                 1  0816                     612
3327 32 03          LTORG *                                                                0817
                    DCW   @0?0@                                               3  0819             LIT     612
3328 32 04          ORG   5000                                                         5000
3329 32 05   PUNINI MLC   GPMARK,PBDBK4&3                                     7  5000  M 350 787          613
3330 32 06          MLC   Z,PBDBK4&6                                          7  5007  M Q12 790          613
3331 32 07          B     FRED                                                4  5014  B U1V              613
3332 32 08          DCW   @ @                                                 1  5018                     613
3333 32 09          EX    PUNINI                                                       B |0|              614
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3334 32 10          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
3335 32 11          ORG   HPNDPM-2                                                  2838
3336 32 12   B4S10  C     E-1,G/4                                             7  2838  C P60 P70           617
3337 32 13          MA    THREE,PLC1&3                                        7  2845  # 889 ?76           617
3338 32 14          BH    B4S10A                                              5  2852  B Q86 U             617
3339 32 15          MLC   B4S10A&3,*&11                                       7  2857  M Q89 Q74           617
3340 32 16          MLCWA N,B4S18A&4                                          7  2864  L U83 ?84           617
3341 32 17          MLC   0                                                   4  2871  M 000               617
3342 32 18          MLC   @B@,B4S18A                                          7  2875  M ?99 ?80           618
3343 32 19          B     B4S21                                               4  2882  B ?59               618
3344 32 20   B4S10A MLC   BRNCH,BBS10&3                                       7  2886  M R65 ?90           618
3345 32 21          SAR   B4S10A&3                                            4  2893  Q Q89               618
3346 32 22          A     E                                                   4  2897  A P61               618
3347 32 23          ZA    E-1,D                                               7  2901  ? P60 P57           618
3348 32 24          B     B4S21                                               4  2908  B ?59               618
3349 32 25   PLCFRF DSA   15994                                               3  2914  I9D                 619
3350 32 26          DSA   15988                                               3  2917  I8H                 619
3351 32 27          DSA   15976                                               3  2920  I7F                 619
3352 32 28          DSA   15952                                               3  2923  I5B                 619
3353 32 29          DSA   15904                                               3  2926  I0D                 619
3354 32 30          DSA   15808                                               3  2929  H0H                 619
3355 32 31          DSA   15616                                               3  2932  F1F                 619
3356 32 32          DSA   15232                                               3  2935  B3B                 620
3357 32 33          DSA   14464                                               3  2938  M6D                 620
3358 32 34          DCW   &B512B                                              3  2941  G15                 620
3359 32 35                &B256B                                              3  2944  F45                 620
3360 32 36                &B128B                                              3  2947  F10                 620
3361 32 37                &B064B                                              3  2950  D70                 620
3362 32 38                &B032B                                              3  2953  D00                 620
3363 32 39                &B016B                                              3  2956  C65                 620
3364 32 40                &B008B                                              3  2959  B25                 620
3365 32 41                &B004B                                              3  2962  A55                 620
3366 32 42   BRNCH  DCW   &B002B                                              3  2965  A20                 620
3367 32 43   *
3368 32 44   *                  THIS ROUTINE DETERMINES WHICH RECORD OF G
3369 32 45   *                  RECORDS IS BEING SORTED AND AT WHICH LOCATION
3370 32 46   *                  TO ENTER THE COMPARE LOOP
3371 32 47   *                  HAVING DETERMINED WHERE LAST RECORD SORTED
3372 32 48   *                  IS TO BE PLACED-INSERT ITS ADDRESS IN THE
3373 32 49   *                  TABLE OF ADDRESSES
3374 32 50   B4SS5  MLC   O1FA-3,O1                                           7  2966  M P64 892           621
3375 32 51          MLC   O1FA,B4S08&6                                        7  2973  M P67 ?23           621
3376 32 52          ZA    HALF,E                                              7  2980  ? P54 P61           621
3377 32 53          MLC                                                       1  2987  M                   621
3378 32 54          SBR   B4S10A&3,BRNCH                                      7  2988  H Q89 R65           621
3379 32 55          SBR   PLC1&3,PLCFRF-3                                     7  2995  H ?76 R11           621
3380 32 56          MLCWA SONED,B4S18A&6                                      7  3002  L P80 ?86           622
3381 32 57          B     B4S19                                               4  3009  B ?46               622
3382 32 58   B4S07  SW    0&X2                                                4  3013  , 0!0               622
3383 32 59   B4S08  MLC   0,0                                                 7  3017  M 000 000           622
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3384 32 60          MA    THREE,B4S08&6                                         7  3024  # 889 ?23          622
3385 32 61          MA    THREE,B4S08&3                                         7  3031  # 889 ?20          622
3386 32 62          MLC   X1,3&X2                                               7  3038  M 089 0!3          623
3387 32 63          CW                                                          1  3045  )                  623
3388 32 64   B4S19  C     O1,G1                                                 7  3046  C 892 895          623
3389 32 65   B4S18  MA                                                          1  3053  #                  623
3390 32 66   B4S20  BE    STPDNR                                                5  3054  B S00 S            623
3391 32 67   B4S21  MLC   O1,X2                                                 7  3059  M 892 094          623
3392 32 68          MLC   0&X2,X1                                               7  3066  M 0!0 089          623
3393 32 69   PLC1   MA    PLCFRF-3,X2                                           7  3073  # R11 094          624
3394 32 70   B4S18A S     ONE,D                                                 7  3080  S 898 P57          624
3395 32 71   BBS10  BWZ   0000,D,B                                              8  3087  V 000 P57 B        624
3396 32 72   BBS100 B     B4S10                                                 4  3095  B Q38              624
3397 32 73   *
                    DCW   @B@                                                   1  3099             LIT     624
3398 32 74          EX    VLRGET                                                         B Y13              625
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

3399 32 75          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 1
3400 32 76          ORG   VLRGET                                                          1813
3401 32 77   EOFMFS BWZ   NOPMFS,CNTR,2                                              8  1813  V Y69 P43 2         628
3402 32 78          BCE   EOFRIT,CNTR,B                                              8  1821  B Y29 P43 B         628
3403 32 79   EOFRIT CS    332                                                        4  1829  / 332               628
3404 32 80          CS                                                               1  1833  /                   628
3405 32 81          MLC   EOFPNT,221                                                 7  1834  M Y68 221           628
3406 32 82          W                                                                1  1841  2                   628
3407 32 83          CC    1                                                          2  1842  F 1                 628
3408 32 84          H     *-3                                                        4  1844  . Y44               629
3409 32 85   EOFPNT DCW   @EOR ON 2 OUTPUT TAPES@                                   21  1868                      629
3410 32 86   NOPMFS MLC   @N@,BP002&7                                                7  1869  M M21 W28           629
3411 32 87   PADVLR MA    X1,PDCHCK          PADDING ROUTINE                         7  1876  # 089 K21           629
3412 32 88          BCE   CPDON,FLR,                                                 8  1883  B Z10 091           630
3413 32 89          BCE   *&5,RLIIND,1                                               8  1891  B Z03 560 1         630
3414 32 90          B     *&8                                                        4  1899  B Z10               630
3415 32 91          MA    @I9F@,PDCHCK                                               7  1903  # M24 K21           630
3416 32 92   CPDON  C     PDCHCK,ONPTAR                                              7  1910  C K21 P41           630
3417 32 93          BE    OPNGRT                                                     5  1917  B K42 S             630
3418 32 94          BCE   VLRPAD,FLR,1                                               8  1922  B J79 091 1         631
3419 32 95          SW    0&X3                                                       4  1930  , 0?0               631
3420 32 96          MA    @I9H@,Z                                                    7  1934  # M27 Q12           631
3421 32 97          MA    @I9I@,PDCHCK                                               7  1941  # M30 K21           631
3422 32 98          MLC   Z,X2                                                       7  1948  M Q12 094           631
3423 32 99          MLC   PI,1&X2                                                    7  1955  M 193 0!1           632
3424 33 00   PDEXIT NOP   0                                                          4  1962  N 000               632
3425 33 01   MVPADG MLC   1&X2,0&X2                                                  7  1966  M 0!1 0!0           632
3426 33 02          SBR   X2                                                         4  1973  H 094               632
3427 33 03          C     X2,PDCHCK                                                  7  1977  C 094 K21           632
3428 33 04          BU    PDEXIT                                                     5  1984  B Z62 /             632
3429 33 05          MA    ONE,Z                                                      7  1989  # 898 Q12           633
3430 33 06   PADRTN MA    PCOMPL,Z                                                   7  1996  # 853 Q12           633
3431 33 07          BCE   QNRCMK,RCMKPI,                                             8  2003  B !25 527           633
3432 33 08          MA    L,X2                                                       7  2011  # 347 094           633
3433 33 09          MLC   ONERM,0&X2                                                 7  2018  M 904 0!0           633
3434 33 10   QNRCMK A     ONE,PDCPUT                                                 7  2025  A 898 548           634
3435 33 11          C     Z,PDCHCK                                                   7  2032  C Q12 K21           634
3436 33 12          BU    PADRTN                                                     5  2039  B Z96 /             634
3437 33 13          MLC   &NSHKFZ,B212W&3                                            7  2044  M M33 W94           634
3438 33 14          MLC   @N@,BP000                                                  7  2051  M M21 T49           634
3439 33 15          MLC   @N@,BP001                                                  7  2058  M M21 W14           635
3440 33 16          MLC   &PADBO1,B2200&3                                            7  2065  M M36 T59           635
3441 33 17          MLC   O1FA-3,PADBO1                                              7  2072  M P64 K18           635
3442 33 18          BCE   SHKFZ,DESCND,                                              8  2079  B !94 090           635
3443 33 19          MLC   @ @,SHKFZD&7                                               7  2087  M M37 J23           635
3444 33 20   SHKFZ  S     B,PDCPUT                                                   7  2094  S 199 548           636
3445 33 21          BWZ   ADDB,PDCPUT,K                                              8  2101  V J49 548 K         636
3446 33 22          S     ONE,THREEB                                                 7  2109  S 898 870           636
3447 33 23   SHKFZD BCE   SHKFZ,PI,9                                                 8  2116  B !94 193 9         636
3448 33 24          MA    B,PADBO1                                                   7  2124  # 199 K18           636
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

3449 33 25          MA    B,PADBO1                                                7  2131  # 199 K18           637
3450 33 26          MA    B,PADBO1                                                7  2138  # 199 K18           637
3451 33 27          B     SHKFZ                                                   4  2145  B !94               637
3452 33 28   ADDB   A     B,PDCPUT                                                7  2149  A 199 548           637
3453 33 29          MLZS  K1BLNK,PDCPUT                                           7  2156  Y 854 548           637
3454 33 30          BCE   ENDPAD,INMODE,M                                         8  2163  B J75 562 M         638
3455 33 31          B     VARLNT                                                  4  2171  B 988               638
3456 33 32   ENDPAD B     B4SS5                                                   4  2175  B R66               638
3457 33 33   VLRPAD MLC   EOPNGT,BP001&6                                          7  2179  M J95 W20           638
3458 33 34          B     SETG12                                                  4  2186  B /39               638
3459 33 35   COPNGT DCW   &EOPNGT                                                 3  2192  J95                 638
3460 33 36   EOPNGT DCW   &OPNGRT                                                 3  2195  K42                 638
3461 33 37   NDFZ1  DCW   @END OF INTERNAL SORT@                                 20  2215                      639
3462 33 38   PADBO1 DCW   000                                                     3  2218                      639
3463 33 39   PDCHCK DCW   @I9I@                                                   3  2221                      639
3464 33 40   PLZERO DCW   &0                                                      1  2222                      639
3465 33 41   NSHKFZ S     ONE,THREEB                                              7  2223  S 898 870           639
3466 33 42          C     PLZERO,THREEB                                           7  2230  C K22 870           640
3467 33 43          BU    BP2200                                                  5  2237  B T63 /             640
3468 33 44   OPNGRT MLC   MI1TUN,*&4                                              7  2242  M 341 K52           640
3469 33 45          WTM   1                                                       5  2249  U %U1 M             640
3470 33 46          CW    333                                                     4  2254  ) 333               640
3471 33 47          BCE   *&22,UNLOAD,                                            8  2258  B K87 416           640
3472 33 48          MLC   @U@,URTAPE-24                                           7  2266  M M38 591           641
3473 33 49          MLC   @U@,URTAPE-48                                           7  2273  M M38 567           641
3474 33 50          MLC   @U@,URTAPE&36                                           7  2280  M M38 651           641
3475 33 51   *                                 REWIND OUTPUT TAPES
3476 33 52          MLC   MI1TUN,*&4                                              7  2287  M 341 K97           641
3477 33 53          RWD   1                                                       5  2294  U %U1 R             641
3478 33 54          MLC   MI2TUN,*&4                                              7  2299  M 342 L09           642
3479 33 55          WTM   1                                                       5  2306  U %U1 M             642
3480 33 56          MLC   MI2TUN,*&4                                              7  2311  M 342 L21           642
3481 33 57          RWD   1                                                       5  2318  U %U1 R             642
3482 33 58          BCE   ENDE,URPI,P                                             8  2323  B L31 186 P         642
3483 33 62   ENDE   BCE   RDCARD,NOTAPS,4                                         8  2331  B L63 886 4         643
3484 33 63          MLC   MI3TUN,*&4                                              7  2339  M 343 L49           643
3485 33 64          WTM   1                                                       5  2346  U %U1 M             643
3486 33 65          MLC   MI3TUN,*&4                                              7  2351  M 343 L61           643
3487 33 66          RWD   1                                                       5  2358  U %U1 R             643
3488 33 67   RDCARD CS    332                                                     4  2363  / 332               643
3489 33 68          CS                                                            1  2367  /                   643
3490 33 69          MLC   NDFZ1,220                                               7  2368  M K15 220           644
3491 33 70          W                          PRINT END OF INTERNAL SORT         1  2375  2                   644
3492 33 71          CC    1                                                       2  2376  F 1                 644
3493 33 72          BCE   SKEIGT,LBBUCK,1   120 CHARACTER LABEL BYPASS            8  2378  B M08 414 1         644
3494 33 73   TWNEXT CS    80                READ NEXT OVERLAY                     4  2386  / 080               644
3495 33 74          SW    24,56                                                   7  2390  , 024 056           644
3496 33 75          SW    63,67                                                   7  2397  , 063 067           644
3497 33 76          R     056                                                     4  2404  1 056               645
3498 33 77   SKEIGT R                           BYPASS 80 CHARACTER ROUTINE       1  2408  1                   645
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

3499 33 78          BCE   TWNEXT,68,B         CHECK FOR EX CARD                            8  2409  B L86 068 B         645
3500 33 79          B     SKEIGT                                                       4  2417  B M08               645
                    DCW   @N@                                                          1  2421              LIT     645
                    DCW   @I9F@                                                        3  2424              LIT     645
                    DCW   @I9H@                                                        3  2427              LIT     645
                    DCW   @I9I@                                                        3  2430              LIT     646
                    DCW   &NSHKFZ                                                      3  2433  K23         ADCON   646
                    DCW   &PADBO1                                                      3  2436  K18         ADCON   646
                    DCW   @ @                                                          1  2437              LIT     646
                    DCW   @U@                                                          1  2438              LIT     646
3501 33 80          EX    EOFMFS                                                                B Y13               647
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

3502 33 81          JOB   ** IBM 1401 SORT 7 VERSION 2 WORK LABEL ROUTINE,80
3503 33 82   *
3504 33 83   *                  PROCESS HEADER LABELS ON ALL PHASE I WORK TAPES
3505 33 84   *                  PRIOR TO INITIATING PASS
3506 33 85   *                  THIS ROUTINE INCLUDES THE SENSE SWITCH D HALT
3507 33 86   *                  OPTION WHICH ALLOWS THE USER TO MOUNT WORK
3508 33 87   *                  TAPES ON THE PHASE 1 INPUT DRIVES
3509 33 88   *
3510 33 89   SWKLBA EQU   700               RT-WT H.L.AREA                             0700
3511 33 90          ORG   780                                                                 0780
3512 33 91          DCW   @}@                                                       1  0780                GMARK  650
3513 33 92          ORG   600                                                                 0600
3514 33 59          BCE   ENDE,URPI,C                                               8  0600  B L31 186 C         651
3515 33 60          MLC   URPI,URTAPE&3                                             7  0608  M 186 618           651
3516 33 61   URTAPE WTM   1                 TAPE MARK DUMP TAPE                     5  0615  U %U1 M             651
3517 33 93   *
3518 33 94   PREPH1 MLC   @99@,PREPC3                                               7  0620  M W74 W94           651
3519 33 95          H     PREOTX            BRANCH TO ACCEPT                        4  0627  . T08               651
3520 33 96          B     PREST2            BRANCH TO RETRY                         4  0631  B |15               651
3521 33 97   *                  READ REDUNDANCY WHILE READING LABEL ON PASS 1
3522 33 98   *                  OUTPUT TAPES  %SPECIFIED IN COL 1-3 CTL CD 1)
3523 33 99   *                 DEPRESS  - START -  TO ACCEPT THE LABEL AS READ
3524 34 00   *                            -BYPASS RETENTION CYCLE CHECK
3525 34 01   *                  DEPRESS  - START RESET -  THEN  - START -
3526 34 02   *                  TO REREAD 99 MORE TIMES . TO OPEN A NEW TAPE
3527 34 03   *                  LOAD IT IN PLACE OF THE ONE IN ERROR AND
3528 34 04   *                  DEPRESS  - START RESET -  AND  - START -
3529 34 05   *
3530 34 06   PREPH2 H     PREST2            BRANCH TO OPEN A NEW TAPE               4  0635  . |15               651
3531 34 07          MLC   @10@,PREPC4       RESET ERROR COUNTER                     7  0639  M W76 W97           652
3532 34 08          B     PAREXT-5          BRANCH TO RETRY WRITE                   4  0646  B W46               652
3533 34 09   *
3534 34 10   *                  A WRITE REDUNDANCY HAS OCCURRED WHILE TRYING
3535 34 11   *                  TO WRITE THE HEADER LABEL ON THE PASS 1 OUTPUT
3536 34 12   *                  TAPE.  9 SKIP CYCLES HAVE BEEN MADE .
3537 34 13   *                  DEPRESS  - START - TO OPEN NEW TAPE
3538 34 14   *                  DEPRESS START RESET THEN START TO RETRY
3539 34 15   *
3540 34 16   PREPH3 H     PREOTX            BRANCH TO ACCEPT                        4  0650  . T08               652
3541 34 17          B     PREST2            BRANCH TO OPEN NEW REEL                 4  0654  B |15               652
3542 34 18   *
3543 34 19   *                  RETENTION CYCLE ON OUTPUT TAPE INDICATES
3544 34 20   *                  TAPE SHOULD BE RETAINED
3545 34 21   *                  DEPRESS - START- TO ACCEPT TAPE AS WORK TAPE
3546 34 22   *                  DEPRESS -START RESET- THEN -START- IF A NEW
3547 34 23   *                  TAPE HAS BEEN MOUNTED
3548 34 24   *
3549 34 25   PREPH4 H     *-3               NO T/M AFTER H.L.-WITH                  4  0658  . 658               652
3550 34 26   *                                A 1 IN COL.5 CC3
3551 34 27   *                                RESTART PROG.
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

3552 34 28   *
3553 34 29   PREPH5 H     PREIPX             PRESS START TO BY PASS               4  0662  . |90              652
3554 34 30   *                            UNREADABLE H.L.-INPUT
3555 34 31          B     PREST2             PRESS RESET START AND START          4  0666  B |15              652
3556 34 32   *                          TO TRY READING UP TO 99 MORE TIMES
3557 34 33   *
3558 34 34          DCW   @ @                                                     1  0670                    653
3559 34 35          ORG   800                                                             0800
3560 34 36   PREPC1 DCW   @B@                2-WAY CONST                          1  0800                    654
3561 34 37   PREPC2 DCW   @B@                2-WAY CONST                          1  0801                    654
3562 34 38   PREST0 BCE   *&15,I3TUN,        IF 2 WAY                             8  0802  B 824 340         654
3563 34 39          MLC   @C@,PREPC1         ALTER CONST.S FOR 3-WAY              7  0810  M W77 800         654
3564 34 40          MLC   @C@,PREPC2                                              7  0817  M W77 801         654
3565 34 41          MLC   &I1TUN,X1          ADDR OF PH2 OUTP TAPE NO.S           7  0824  M W80 089         654
3566 34 42   EXDTAP NOP   0                  DUMP TAPE H.L.EXIT                   4  0831  N 000             654
3567 34 43          BSS   *&5,D                                                   5  0835  B 844 D           655
3568 34 44          B     RWDINP                                                  4  0840  B 863             655
3569 34 45          CS    332                                                     4  0844  / 332             655
3570 34 46          CS                                                            1  0848  /                 655
3571 34 47          MLC   PRMSF,228          TAPE SAVE MESSAGE                    7  0849  M V73 228         655
3572 34 48          W                                                             1  0856  2                 655
3573 34 49          CC    1                                                       2  0857  F 1               655
3574 34 50          H     *&1                                                     4  0859  . 863             656
3575 34 51   RWDINP MLNS  MI1TUN,*&4          REWIND PH2 INPUT TAPES              7  0863  D 341 873         656
3576 34 52          RWD   0                                                       5  0870  U %U0 R           656
3577 34 53          MLNS  MI2TUN,*&4                                              7  0875  D 342 885         656
3578 34 54          RWD   0                                                       5  0882  U %U0 R           656
3579 34 55          BCE   PREST1-16,MI3TUN,                                       8  0887  B 907 343         656
3580 34 56          MLNS  MI3TUN,*&4                                              7  0895  D 343 905         657
3581 34 57          RWD   0                                                       5  0902  U %U0 R           657
3582 34 58          BCE   PRERDR,LABELS,     NO LABELS BRANCH                     8  0907  B U01 413         657
3583 34 59          BCE   RETNOP,LBBUCK,1                                         8  0915  B U28 414 1       657
3584 34 60   PREST1 S     &1,PREPC1                                               7  0923  S W81 800         657
3585 34 61          BM    PREIRT,PREPC1      INIT FOR PH2 INPUT TAPES             8  0930  V T47 800 K       658
3586 34 62          MLNS  0&X1,PREST2&21                                          7  0938  D 0|0 |36         658
3587 34 63          MN    0&X1,PRERTI&3                                           7  0945  D 0|0 |63         658
3588 34 64          MN    0&X1,PREOTX&7                                           7  0952  D 0|0 T15         658
3589 34 65          MN    0&X1,PREOTX&12                                          7  0959  D 0|0 T20         658
3590 34 66          MN    0&X1,PREPSW-2                                           7  0966  D 0|0 W06         659
3591 34 67          MN    0&X1,PAREXT-2                                           7  0973  D 0|0 W49         659
3592 34 68          MN    0&X1,PREIPX&15                                          7  0980  D 0|0 /05         659
3593 34 69          MN    0&X1,PREOTX&33                                          7  0987  D 0|0 T41         659
3594 34 70          MN    0&X1,SAVM2                                              7  0994  D 0|0 S97         659
3595 34 71          MA    @001@,X1           UP DATE FOR NEXT TAPE NO             7  1001  # W84 089         660
3596 34 72          MLC   @00@,CRYBU4                                             7  1008  M W86 S79         660
3597 34 73   PREST2 MLC   @99@,PREPC3                                             7  1015  M W74 W94         660
3598 34 74          MLC   @10@,PREPC4                                             7  1022  M W76 W97         660
3599 34 75          CS    779                                                     4  1029  / 779             660
3600 34 76          RWD   0                                                       5  1033  U %U0 R           660
3601 34 77          BCE   SORTWL,WLBKT,      IF FIRST PASS-PH2 OUTP               8  1038  B U51 417         661
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

3602 34 78   *                                    TAPES HAVE SORT 7
3603 34 79   *                                    H.LABELS-COL.4 CC.3 IS
3604 34 80   *                                    A BLANK
3605 34 81          MLC   CENSIG,SWKLBA&13        MOVE CENT SIGN FOR NOISE TEST       7  1046  M 415 713           661
3606 34 82          MLC   CENSIG,WLANOI&7                                              7  1053  M 415 |75           661
3607 34 83   PRERTI RTW   0,SWKLBA                                                     8  1060  L %U0 700 R         661
3608 34 84   WLANOI BCE   PRENOS,SWKLBA&13,       CHECK FOR CENT SIGN                  8  1068  B /19 713           661
3609 34 85          BEF   *&1                                                          5  1076  B |81 K             662
3610 34 86          BER   PREPRT                                                       5  1081  B V74 L             662
3611 34 87          B     PRERCT                                                       4  1086  B /27               662
3612 34 88   PREIPX NOP   0                     PH2 INPUT H.L. EXIT                    4  1090  N 000               662
3613 34 89          BCE   PREST1,THLTMO,        IF NO T/M AFTER H.L.                   8  1094  B 923 418           662
3614 34 90          RT    0,SWKLBA              READ T/M                               8  1102  M %U0 700 R         662
3615 34 91          BEF   PREST1                IF SENSED A T/M                        5  1110  B 923 K             662
3616 34 92          B     PREPH4                T/M WAS NOT SENSED-ERROR               4  1115  B 658               663
3617 34 93   PRENOS CS    730                                                          4  1119  / 730               663
3618 34 94          B     PRERTI-14                                                    4  1123  B |46               663
3619 34 95   PRERCT BCE   PRECT1,WLBKT,1                                               8  1127  B /48 417 1         663
3620 34 96          B     PREOTX                                                       4  1135  B T08               663
3621 34 97          DCW   #2                                                           2  1140                      663
3622 34 98          DCW   #3                                                           3  1143                      663
3623 34 99   CRTCY  DCW   #4                                                           4  1147                      664
3624 35 00   PRECT1 ZA    SWKLBA&39,CRTCY       MOVE TAPE INFO TO CHECK BUCKET         7  1148  ? 739 /47           664
3625 35 01          MLC                                                                1  1155  M                   664
3626 35 02          MLC                                                                1  1156  M                   664
3627 35 03          SW    OHDATE-2                                                     4  1157  , 455               664
3628 35 04   CLW    C     OHDATE-3,CRTCY-7      COMPARE YEAR                           7  1161  C 454 /40           664
3629 35 05          BU    MODY                                                         5  1168  B S35 /             664
3630 35 06          A     CRTCY-4,CRTCY         ADD TAPE DAYS TO RT CYCLE              7  1173  A /43 /47           665
3631 35 07          S     OHDATE,CRTCY          SUB CONT DAYS FROM RT CYCLE            7  1180  S 457 /47           665
3632 35 08          CW    OHDATE-2                                                     4  1187  ) 455               665
3633 35 09          BWZ   PREOTX,CRTCY,K        CAN WE WRITE ON TAPE                   8  1191  V T08 /47 K         665
3634 35 10          CS    332                   NO-PRINT MESSAGE                       4  1199  / 332               665
3635 35 11          CS                          INDICATING DAYS TAPE                   1  1203  /                   665
3636 35 12          MLC   SAVMS,227             IS TO BE RETAINED                      7  1204  M T07 227           665
3637 35 13          MLNS  CRTCY,222                                                    7  1211  D /47 222           666
3638 35 14          MLNS                                                               1  1218  D                   666
3639 35 15          MLNS                                                               1  1219  D                   666
3640 35 16          MLC   SAVM1                                                        4  1220  M T02               666
3641 35 17          MLC   SAVM2                                                        4  1224  M S97               666
3642 35 18          W                                                                  1  1228  2                   666
3643 35 19          CC    1                                                            2  1229  F 1                 666
3644 35 20          B     PREPH3                                                       4  1231  B 650               667
3645 35 21   MODY   S     TSF1,CRTCY            SUBTRACT 365 FROM                      7  1235  S S84 /47           667
3646 35 22          A                           RT CYCLE AND ADD 1 TO                  1  1242  A                   667
3647 35 23          A                           TAPE YEARS                             1  1243  A                   667
3648 35 24          A     @1@,CRYBU4                                                   7  1244  A W87 S79           667
3649 35 25          BCE   HLCRY4,CRYBU4-1,3                                            8  1251  B S63 S78 3         667
3650 35 26          B     CLW                                                          4  1259  B /61               667
3651 35 27   HLCRY4 H     PREOTX                                                       4  1263  . T08               668
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3652 35 28          MLC   @00@,CRYBU4                                          7  1267  M W86 S79          668
3653 35 29          B     CLW                                                  4  1274  B /61              668
3654 35 30   CRYBU4 DCW   @  @                                                 2  1279                     668
3655 35 31          DCW   @1@                                                  1  1280                     668
3656 35 32          DCW   @0@                                                  1  1281                     668
3657 35 33   TSF1   DCW   @365@                                                3  1284                     668
3658 35 34   SAVM2  DCW   @RETAIN TAPE  @                                     13  1297                     669
3659 35 35   SAVM1  DCW   @ FOR @                                              5  1302                     669
3660 35 36   SAVMS  DCW   @ DAYS@                                              5  1307                     669
3661 35 37   PREOTX NOP   0                   WT. H.L.EXIT FOR OUTPUT          4  1308  N 000              669
3662 35 38          RWD   0                                                    5  1312  U %U0 R            669
3663 35 39          WT    0,SWKLBA                                             8  1317  M %U0 700 W        670
3664 35 40          BER   PREPWT                                               5  1325  B W55 L            670
3665 35 41          BCE   PREST1,THLTMO,      IF T/M IS NOT TO BE WRITTEN      8  1330  B 923 418          670
3666 35 42          WTM   0                                                    5  1338  U %U0 M            670
3667 35 43          B     PREST1                                               4  1343  B 923              670
3668 35 44   PREIRT SBR   PREST1&10,PRERDR                                     7  1347  H 933 U01          670
3669 35 45          SBR   PREST1&13,PREPC2                                     7  1354  H 936 801          671
3670 35 46          SBR   PREST1&6,PREPC2                                      7  1361  H 929 801          671
3671 35 47          MLC   @N@,PRERTI-22                                        7  1368  M W88 |38          671
3672 35 48          MLC   @N@,PREIPX-4                                         7  1375  M W88 |86          671
3673 35 49          SBR   PREPRT&24,PREPH5                                     7  1382  H V98 662          671
3674 35 50          MLC   &MI1TUN,X1                                           7  1389  M W91 089          672
3675 35 51          B     PREST1                                               4  1396  B 923              672
3676 35 52          DCW   @ @                                                  1  1400                     672
3677 35 53   PRERDR CS    1599                                                 4  1401  / V99              672
3678 35 54          CS    1299                                                 4  1405  / S99              672
3679 35 55          CS                                                         1  1409  /                  672
3680 35 56          CS                                                         1  1410  /                  672
3681 35 57          CS                                                         1  1411  /                  673
3682 35 58          CS                                                         1  1412  /                  673
3683 35 59          CS                                                         1  1413  /                  673
3684 35 60          CS                                                         1  1414  /                  673
3685 35 61   BYLAPS R                                                          1  1415  1                  673
3686 35 62          BCE   RETNOP,68,B                                          8  1416  B U28 068 B        673
3687 35 63          B     BYLAPS                                               4  1424  B U15              673
3688 35 64   RETNOP CS    80                                                   4  1428  / 080              674
3689 35 65          SW    24,56                                                7  1432  , 024 056          674
3690 35 66          SW    63,67                                                7  1439  , 063 067          674
3691 35 67          R     056                                                  4  1446  1 056              674
3692 35 68          DCW   @ @                                                  1  1450                     674
3693 35 69   SORTWL MN    PRERTI&3,SORTRP&10  TAPE # INTO TAPE SERIAL #        7  1451  D |63 U79          674
3694 35 70          MLC   SORTLB,779                                           7  1458  M V49 779          674
3695 35 71          B     PREOTX                                               4  1465  B T08              675
3696 35 72   SORTRP DCW   @ @                                                  1  1469                     675
3697 35 73          DCW   @1HDR 00000SORT7LABEL          @                    30  1499                     675
3698 35 74   SORTLB DC    #50                                                 50  1549                     677
3699 35 75   PRMSF  DCW   @INPUT TAPES MAY BE SAVED@                          24  1573                     677
3700 35 76   *
3701 35 77   *    HEADER LABEL ERROR ROUTINE
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

3702 35 78   *
3703 35 79   PREPRT SBR   PAREXT&3,PRERTI-14        READ ENTRANCE                 7  1574  H W54 |46          678
3704 35 80          MLC   @B@,PREPSW                                              7  1581  M W92 W08          678
3705 35 81          S     &1,PREPC3#2                                             7  1588  S W81 W94          678
3706 35 82          BM    PREPH1,PREPC3      UNREADABLE BLK                       8  1595  V 620 W94 K        678
3707 35 83          BSP   0                                                       5  1603  U %U0 B            678
3708 35 84   PREPSW B     PAREXT             NOP IF WRITE                         4  1608  B W51              678
3709 35 85          BCE   *&5,PREPC3,G       IF TIME TO SKIP                      8  1612  B W24 W94 G        679
3710 35 86          B     PAREXT                                                  4  1620  B W51              679
3711 35 87          MLC   @9@,PREPC3                                              7  1624  M W95 W94          679
3712 35 88          S     &1,PREPC4#2                                             7  1631  S W81 W97          679
3713 35 89          BM    PREPH2,PREPC4      BAD TAPE                             8  1638  V 635 W97 K        679
3714 35 90          SKP   0                                                       5  1646  U %U0 E            679
3715 35 91   PAREXT B     0                                                       4  1651  B 000              680
3716 35 92   PREPWT SBR   PAREXT&3,PREOTX&9                                       7  1655  H W54 T17          680
3717 35 93          MLC   @N@,PREPSW                                              7  1662  M W88 W08          680
3718 35 94          B     PREPRT&14                                               4  1669  B V88              680
3719 35 95          LTORG *                                                               1673
                    DCW   @99@                                                    2  1674              LIT    680
                    DCW   @10@                                                    2  1676              LIT    680
                    DCW   @C@                                                     1  1677              LIT    680
                    DCW   &I1TUN                                                  3  1680  338         ADCON  681
                    DCW   &1                                                      1  1681              LIT    681
                    DCW   @001@                                                   3  1684              LIT    681
                    DCW   @00@                                                    2  1686              LIT    681
                    DCW   @1@                                                     1  1687              LIT    681
                    DCW   @N@                                                     1  1688              LIT    681
                    DCW   &MI1TUN                                                 3  1691  341         ADCON  681
                    DCW   @B@                                                     1  1692              LIT    682
             PREPC3 DCW   #02                                                     2  1694              AREA   682
                    DCW   @9@                                                     1  1695              LIT    682
             PREPC4 DCW   #02                                                     2  1697              AREA   682
3720 35 96          EX    PREST0                                                       B 802              683
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3721 35 97          JOB   ** IBM 1401 SORT 7 VERSION 2 WORK LABEL ROUTINE 120
3722 35 98   *              PROCESS HEADER LABELS ON ALL PHASE I WORK TAPES        60  2
3723 35 99   *              PRIOR TO INITIALIZATION PASS                           60  2
3724 36 00   *              THIS ROUTINE INCLUDES THE SSW D HALT                   60  2
3725 36 01   *              OPTION WHICH ALLOWS THE USER TO MOUNT WORK             60  2
3726 36 02   *              TAPES ON PHASE 1 INPUT DRIVES                          60  2
3727 36 03   SWKLBB EQU   700                 RT-WT HL AREA                          0700
3728 36 04          ORG   820                                                               0820
3729 36 05          DCW   @}@                                                  1  0820                GMARK  686
3730 36 06          ORG   600                                                               0600
3731 36 07   PRAPH1 MLC   @99@,PREPC3                                          7  0600  M X11 W94            687
3732 36 08          H     PRAOTX              BRANCH TO ACCEPT                 4  0607  . T19                687
3733 36 09          B     PRAST2              BRANCH TO RETRY                  4  0611  B |28                687
3734 36 10   *                                                                 60  2
3735 36 11   *              READ REDUNDANCY WHILE READING LABEL ON PASS 1      60  2
3736 36 12   *              OUTPUT TAPES SPECIFIED IN COL 1-3 CTL CD 1         60  2
3737 36 13   *              PRESS-START-TO ACCEPT THE LABEL AS READ            60  2
3738 36 14   *                         -BYPASS RETENTION CYCLE CHECK           60  2
3739 36 15   *              PRESS START RESET-THEN START-TO REREAD 99 MORE     60  2
3740 36 16   *              TIMES.TO OPEN A NEW TAPE LOAD IT IN PLACE OF THE   60  2
3741 36 17   *              ONE IN ERROR AND PRESS START RESET AND START
3742 36 18   PRAPH2 H     PRAST2              BRANCH TO OPEN A NEW TAPE        4  0615  . |28                687
3743 36 19          MLC   @10@,PRAPC4         RESET ERROR COUNTER              7  0619  M X13 X34            687
3744 36 20          B     PARAXT-5            BRANCH TO RETRY WRITE            4  0626  B W83                687
3745 36 21   *                                                                 60  2
3746 36 22   *              A WRITE REDUNDANCY HAS OCCURRED WHILE TRYING       60  2
3747 36 23   *              TO WRITE THE HEADER LABEL ON THE PASS 1 OUTPUT     60  2
3748 36 24   *              TAPE. 9 SKIP CYCLES HAVE BEEN MADE.PRESS START TO  60  2
3749 36 25   *              OPEN NEW TAPE PRESS START RESET & START TO RETRY   60  2
3750 36 26   PRAPH3 H     PRAOTX              BRANCH TO ACCEPT                 4  0630  . T19                687
3751 36 27          B     PRAST2              BRANCH TO OPEN NEW REEL          4  0634  B |28                688
3752 36 28   *
3753 36 29   *              RETENTION CYCLE ON OUTPUT TAPE INDICATES TAPE SHOULD
3754 36 30   *              BE RETAINED.PRESS START TO ACCEPT TAPE AS WORK TAPE
3755 36 31   *              PRESS START RESET THEN START IF A NEW TAPE HAS BEEN
3756 36 32   *              MOUNTED
3757 36 33   *
3758 36 34   PRAPH4 H     *-3                 NO TAPEMARK AFTER HEADER LABEL   4  0638  . 638                688
3759 36 35   *                                  WITH A -1- IN COLUMN 5 OF CC3
3760 36 36   *                                  RESTART THE PROGRAM
3761 36 37   *
3762 36 38   PRAPH5 H     PRAIPX              PRESS START TO BYPASS            4  0642  . /04                688
3763 36 39   *                                  UNREADABLE HEADER LABEL-INPUT
3764 36 40          B     PRAST2              PRESS START RESET AND START      4  0646  B |28                688
3765 36 41   *                             TO TRY READING UP TO 99 MORE TIMES
3766 36 42   *
3767 36 43          DCW   @ @                                                  1  0650                       688
3768 36 44          ORG   821                                                               0821
3769 36 45   PRAPC1 DCW   @B@                 TWO WAY CONST                    1  0821                       689
3770 36 46   PRAPC2 DCW   @B@                 TWO WAY CONST                    1  0822                       689
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

3771 36 47   PRASTO BCE   *&15,I3TUN,         BRANCH IF TWO WAY                    8  0823  B 845 340          689
3772 36 48          MLC   @C@,PRAPC1          ALTER CONST.S FOR 3-WAY              7  0831  M X14 821          689
3773 36 49          MLC   @C@,PRAPC2                                               7  0838  M X14 822          689
3774 36 50          MLC   &I1TUN,X1                                                7  0845  M X17 089          689
3775 36 51   EXETAP NOP   0                   DUMP TAPE HEADER LABEL EXIT          4  0852  N 000              689
3776 36 52          BSS   *&5,D                                                    5  0856  B 865 D            690
3777 36 53          B     RWDJNP                                                   4  0861  B 884              690
3778 36 54          CS    332                                                      4  0865  / 332              690
3779 36 55          CS                                                             1  0869  /                  690
3780 36 56          MLC   PRMSEF,228          TAPE SAVE MESSAGE                    7  0870  M W10 228          690
3781 36 57          W                                                              1  0877  2                  690
3782 36 58          CC    1                                                        2  0878  F 1                690
3783 36 59          H     *&1                                                      4  0880  . 884              691
3784 36 60   RWDJNP MLNS  MI1TUN,*&4                                               7  0884  D 341 894          691
3785 36 61          RWD   0                                                        5  0891  U %U0 R            691
3786 36 62          MLNS  MI2TUN,*&4                                               7  0896  D 342 906          691
3787 36 63          RWD   0                                                        5  0903  U %U0 R            691
3788 36 64          BCE   PRAST1-8,MI3TUN,                                         8  0908  B 928 343          691
3789 36 65          MLNS  MI3TUN,*&4                                               7  0916  D 343 926          692
3790 36 66          RWD   0                                                        5  0923  U %U0 R            692
3791 36 67          BCE   PRARDR,LABELS,      NO LABELS BRANCH                     8  0928  B U12 413          692
3792 36 68   PRAST1 S     &1,PRAPC1                                                7  0936  S X18 821          692
3793 36 69          BM    PRAIRT,PRAPC1       INIT FOR PH2 INPUT TAPES             8  0943  V T58 821 K        692
3794 36 70          MLNS  0&X1,PRARTI-24                                           7  0951  D 0|0 |50          693
3795 36 71          MLNS  0&X1,PRARTI&3                                            7  0958  D 0|0 |77          693
3796 36 72          MLNS  0&X1,PRAOTX&7                                            7  0965  D 0|0 T26          693
3797 36 73          MLNS  0&X1,PRAOTX&12                                           7  0972  D 0|0 T31          693
3798 36 74          MLNS  0&X1,PRAPSW-2                                            7  0979  D 0|0 W43          693
3799 36 75          MLNS  0&X1,PARAXT-2                                            7  0986  D 0|0 W86          694
3800 36 76          MLNS  0&X1,PRAIPX&15                                           7  0993  D 0|0 /19          694
3801 36 77          MLNS  0&X1,PRAOTX&33                                           7  1000  D 0|0 T52          694
3802 36 78          MLNS  0&X1,SAVMB2                                              7  1007  D 0|0 T08          694
3803 36 79          MA    @001@,X1          UPDATE FOR NEXT TAPE NO.               7  1014  # X21 089          694
3804 36 80          MLC   @00@,CRYBU3                                              7  1021  M X23 S91          695
3805 36 81   PRAST2 MLC   @99@,PRAPC3                                              7  1028  M X11 X31          695
3806 36 82          MLC   @10@,PRAPC4                                              7  1035  M X13 X34          695
3807 36 83          CS    819                                                      4  1042  / 819              695
3808 36 84          CS                                                             1  1046  /                  695
3809 36 85          RWD   0                                                        5  1047  U %U0 R            695
3810 36 86          BCE   SRTWLB,WLBKT,       IF FIRST PASS PH2 OUTPUT TAPES       8  1052  B U49 417          695
3811 36 87   *                                  HAVE SORT 7 120 CHARACTER HEADER
3812 36 88   *                                  LABELS-COLUMN 4 CC3 IS BLANK
3813 36 89          MLC   CENSIG,SWKLBB&13                                         7  1060  M 415 713          696
3814 36 90          MLC   CENSIG,WLBNOI&7                                          7  1067  M 415 |89          696
3815 36 91   PRARTI RTW   0,SWKLBB                                                 8  1074  L %U0 700 R        696
3816 36 92   WLBNOI BCE   PRANOS,SWKLBB&13,                                        8  1082  B /33 713          696
3817 36 93          BEF   *&1                                                      5  1090  B |95 K            696
3818 36 94          BER   PRAPRT                                                   5  1095  B W11 L            697
3819 36 95          B     PRARCT                                                   4  1100  B /41              697
3820 36 96   PRAIPX NOP   0                   PHASE 2 INPUT HEADER LABEL EXIT      4  1104  N 000              697
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

3821 36 97          BCE   PRAST1,THLTMO,                                               8  1108  B 936 418          697
3822 36 98          RT    0,SWKLBB            READ TAPEMARK                            8  1116  M %U0 700 R        697
3823 36 99          BEF   PRAST1              BRANCH IF TAPEMARK IS SENSED             5  1124  B 936 K            697
3824 37 00          B     PRAPH4              NO TM SENSED - ERROR                     4  1129  B 638              697
3825 37 01   PRANOS CS    730                                                          4  1133  / 730              698
3826 37 02          B     PRARTI-14                                                    4  1137  B |60              698
3827 37 03   PRARCT BCE   PRACT1,WLBKT,1                                               8  1141  B /62 417 1        698
3828 37 04          B     PRAOTX                                                       4  1149  B T19              698
3829 37 05          DCW   #4                                                           4  1156                     698
3830 37 06          DCW   #2                                                           2  1158                     698
3831 37 07   CRTCYB DCW   #3                                                           3  1161                     698
3832 37 08   PRACT1 ZA    SWKLBB&14,CRTCYB    MOVE TAPE INFORMATION INTO               7  1162  ? 714 /61          699
3833 37 09          MLC                       CHECK BUCKET                             1  1169  M                  699
3834 37 10          MLC                                                                1  1170  M                  699
3835 37 11          SW    CREATD-2                                                     4  1171  , 435              699
3836 37 12   CLWOTW C     CREATD-3,CRTCYB-3    COMPARE YEAR                            7  1175  C 434 /58          699
3837 37 13          BU    MODIFY                                                       5  1182  B S42 /            699
3838 37 14          S     CREATD,CRTCYB-5                                              7  1187  S 437 /56          699
3839 37 15          CW    CREATD-2                                                     4  1194  ) 435              700
3840 37 16          BWZ   PRAOTX,CRTCYB-5,K   CAN WE WRITE ON TAPE                     8  1198  V T19 /56 K        700
3841 37 17          CS    332                 NO-PRINT MESSAGE INDICATING DAYS         4  1206  / 332              700
3842 37 18          CS                        TAPE IS TO BE RETAINED                   1  1210  /                  700
3843 37 19          MLC   SAVMBS,227                                                   7  1211  M T18 227          700
3844 37 20          MLNS  CRTCYB-5,222                                                 7  1218  D /56 222          700
3845 37 21          MLNS                                                               1  1225  D                  700
3846 37 22          MLNS                                                               1  1226  D                  701
3847 37 23          MLC   SAVMB1                                                       4  1227  M T13              701
3848 37 24          MLC   SAVMB2                                                       4  1231  M T08              701
3849 37 25          W                                                                  1  1235  2                  701
3850 37 26          CC    1                                                            2  1236  F 1                701
3851 37 27          B     PRAPH3                                                       4  1238  B 630              701
3852 37 28   MODIFY S     TESFB1,CRTCYB-5   SUBTRACT 365 FROM RETENTION CYCLE          7  1242  S S95 /56          701
3853 37 29          A     TESFB1-3,CRTCYB-3    AND ADDD 1 TO TAPE YEARS                7  1249  A S92 /58          702
3854 37 30          A     @1@,CRYBU3                                                   7  1256  A X24 S91          702
3855 37 31          BCE   HLCRY3,CRYBU3-1,3                                            8  1263  B S75 S90 3        702
3856 37 32          B     CLWOTW                                                       4  1271  B /75              702
3857 37 33   HLCRY3 H     PRAOTX                                                       4  1275  . T19              702
3858 37 34          MLC   @00@,CRYBU3                                                  7  1279  M X23 S91          702
3859 37 35          B     CLWOTW                                                       4  1286  B /75              703
3860 37 36   CRYBU3 DCW   @  @                                                         2  1291                     703
3861 37 37          DCW   @1@                                                          1  1292                     703
3862 37 38   TESFB1 DCW   @365@                                                        3  1295                     703
3863 37 39   SAVMB2 DCW   @RETAIN TAPE  @                                             13  1308                     703
3864 37 40   SAVMB1 DCW   @ FOR @                                                      5  1313                     703
3865 37 41   SAVMBS DCW   @ DAYS@                                                      5  1318                     703
3866 37 42   PRAOTX NOP   0                   WT HDR LBL EXIT FOR OUTPUT               4  1319  N 000              704
3867 37 43          RWD   0                                                            5  1323  U %U0 R            704
3868 37 44          WT    0,SWKLBB                                                     8  1328  M %U0 700 W        704
3869 37 45          BER   PRAPWT                                                       5  1336  B W92 L            704
3870 37 46          BCE   PRAST1,THLTMO,      BRANCH IF NO TM IS TO BE WRITTEN         8  1341  B 936 418          704
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3871 37 47          WTM   0                                                   5  1349  U %U0 M             704
3872 37 48          B     PRAST1                                              4  1354  B 936               704
3873 37 49   PRAIRT SBR   PRAST1&10,PRARDR                                    7  1358  H 946 U12           705
3874 37 50          SBR   PRAST1&13,PRAPC2                                    7  1365  H 949 822           705
3875 37 51          SBR   PRAST1&6,PRAPC2                                     7  1372  H 942 822           705
3876 37 52          MLC   @N@,PRARTI-22                                       7  1379  M X25 |52           705
3877 37 53          MLC   @N@,PRAIPX-4                                        7  1386  M X25 /00           705
3878 37 54          SBR   PRAPRT&24,PRAPH5                                    7  1393  H W35 642           706
3879 37 55          MLC   &MI1TUN,X1                                          7  1400  M X28 089           706
3880 37 56          B     PRAST1                                              4  1407  B 936               706
3881 37 57          DCW   @ @                                                 1  1411                      706
3882 37 58   PRARDR CS    1599                                                4  1412  / V99               706
3883 37 59          CS    1299                                                4  1416  / S99               706
3884 37 60          CS                                                        1  1420  /                   706
3885 37 61          CS                                                        1  1421  /                   707
3886 37 62          CS                                                        1  1422  /                   707
3887 37 63          CS                                                        1  1423  /                   707
3888 37 64          CS                                                        1  1424  /                   707
3889 37 65          CS                                                        1  1425  /                   707
3890 37 66          CS    080                                                 4  1426  / 080               707
3891 37 67          SW    24,56                                               7  1430  , 024 056           707
3892 37 68          SW    63,67                                               7  1437  , 063 067           708
3893 37 69          R     56                                                  4  1444  1 056               708
3894 37 70          DCW   @ @                                                 1  1448                      708
3895 37 71   SRTWLB MLNS  PRARTI&3,SBRTRP                                     7  1449  D |77 V01           708
3896 37 72          MLC   SBRTLB,819                                          7  1456  M V86 819           708
3897 37 73          B     PRAOTX                                              4  1463  B T19               708
3898 37 74          DCW   @1HDR           SORT7LABEL     @                   30  1496                      709
3899 37 75   SBRTRP DC    @00000@                                             5  1501                      709
3900 37 76          DC    #45                                                45  1546                      711
3901 37 77   SBRTLB DC    #40                                                40  1586                      713
3902 37 78   PRMSEF DCW   @INPUT TAPES MAY BE SAVED@                         24  1610                      713
3903 37 79   *
3904 37 80   *              HEADER LABEL ERROR ROUTINE
3905 37 81   *
3906 37 82   PRAPRT SBR   PARAXT&3,PRARTI-14     READ ENTRANCE                7  1611  H W91 |60           713
3907 37 83          MLC   @B@,PRAPSW                                          7  1618  M X29 W45           713
3908 37 84          S     &1,PRAPC3#2                                         7  1625  S X18 X31           714
3909 37 85          BM    PRAPH1,PRAPC3       UNREADABLE BLOCK                8  1632  V 600 X31 K         714
3910 37 86          BSP   0                                                   5  1640  U %U0 B             714
3911 37 87   PRAPSW B     PARAXT              NOP IF WRITE                    4  1645  B W88               714
3912 37 88          BCE   *&5,PRAPC3,G        IS IT TIME TO SKIP              8  1649  B W61 X31 G         714
3913 37 89          B     PARAXT                                              4  1657  B W88               714
3914 37 90          MLC   @9@,PRAPC3                                          7  1661  M X32 X31           715
3915 37 91          S     &1,PRAPC4#2                                         7  1668  S X18 X34           715
3916 37 92          BM    PRAPH2,PRAPC4       BAD TAPE                        8  1675  V 615 X34 K         715
3917 37 93          SKP   0                                                   5  1683  U %U0 E             715
3918 37 94   PARAXT B     0                                                   4  1688  B 000               715
3919 37 95   PRAPWT SBR   PARAXT&3,PRAOTX&9                                   7  1692  H W91 T28           715
3920 37 96          MLC   @N@,PRAPSW                                          7  1699  M X25 W45           716
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

3921 37 97          B     PRAPRT&14                                                      4  1706  B W25              716
3922 37 98          LTORG *                                                                        1710
                    DCW   @99@                                                           2  1711              LIT    716
                    DCW   @10@                                                           2  1713              LIT    716
                    DCW   @C@                                                            1  1714              LIT    716
                    DCW   &I1TUN                                                         3  1717  338         ADCON  716
                    DCW   &1                                                             1  1718              LIT    716
                    DCW   @001@                                                          3  1721              LIT    717
                    DCW   @00@                                                           2  1723              LIT    717
                    DCW   @1@                                                            1  1724              LIT    717
                    DCW   @N@                                                            1  1725              LIT    717
                    DCW   &MI1TUN                                                        3  1728  341         ADCON  717
                    DCW   @B@                                                            1  1729              LIT    717
             PRAPC3 DCW   #02                                                            2  1731              AREA   717
                    DCW   @9@                                                            1  1732              LIT    718
             PRAPC4 DCW   #02                                                            2  1734              AREA   718
3923 37 99          EX    PRASTO                                                                  B 823              719
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

3924 38 00          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2 ENTRY
3925 38 01          ORG   575                                                              0575
3926 38 02   TEST C BSS   ENTMLT,C           TEST SENSE SWITCH C                     5  0575  B 602 C             722
3927 38 03          CS    80                 NOT ON  LOAD BALANCED MERGE             4  0580  / 080               722
3928 38 04          SW    24,56                                                      7  0584  , 024 056           722
3929 38 05          SW    63,67                                                      7  0591  , 063 067           722
3930 38 06          R     56                                                         4  0598  1 056               722
3931 38 07   ENTMLT R                        ON  BYPASS BALANCED MERGE AND           1  0602  1                   722
3932 38 08          C     10,CONMLT          LOAD MULTIPHASE MERGE                   7  0603  C 010 628           722
3933 38 09          BE    040                                                        5  0610  B 040 S             723
3934 38 10          B     ENTMLT                                                     4  0615  B 602               723
3935 38 11   CONMLT DCW   @MULTIPHASE@                                              10  0628                      723
3936 38 12          EX    TEST C                                                          B 575               724
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

3937 38 13          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2
3938 38 14          ORG   STPH2                                                           0562
3939 38 15   REMTS  MLC   CSTCNS,CLPH1&3     CLEAR PHASE ONE                      7  0562  M 552 576         727
3940 38 16          CS    180                                                  4  0569  / 180             727
3941 38 17   CLPH1  CS    0                                                    4  0573  / 000             727
3942 38 18          SBR   CLPH1&3                                              4  0577  H 576             727
3943 38 19          C     CLPH1&3,@699@                                        7  0581  C 576 617         727
3944 38 20          BU    CLPH1                                                5  0588  B 573 /           727
3945 38 21          CS    080                                                  4  0593  / 080             727
3946 38 22          SW    24,56                                                7  0597  , 024 056         728
3947 38 23          SW    63,67                                                7  0604  , 063 067         728
3948 38 24          R     056                                                  4  0611  1 056             728
                    DCW   @699@                                                3  0617             LIT    728
3949 38 25          EX    REMTS                                                         B 562             729
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

3950 38 26          JOB   ** IBM 1401 SORT 7 VERSION 2 PHASE 2
3951 38 27          ORG   STPH2                                                        0562
3952 38 28   I1TUHA DCW   @ @                                                  1  0562                     732
3953 38 29   I2TUHA       @ @                                                  1  0563                     732
3954 38 30   I3TUHA       @ @                                                  1  0564                     732
3955 38 31   O1TUHA       @ @                                                  1  0565                     732
3956 38 32   O2TUHA       @ @                                                  1  0566                     732
3957 38 33   O3TUHA       @ @                                                  1  0567                     732
3958 38 34   CNMP         @00@                                                 2  0569                     732
3959 38 35   NMPL         @  @                                                 2  0571                     732
3960 38 36   CNTRA        @ @                                                  1  0572                     732
3961 38 37   CNTRB        @ @                                                  1  0573                     732
3962 38 38   STREND DCW   @000@             END OF CURRENT INPUT BLOCK         3  0576                     732
3963 38 39   PTCHP2 DA    1X100,C                                                 0577  0676               732
3964 38 40   NXTPS  EQU   GMSET                                                   0677
3965 38 41   GMSET  LCA   0,0               SET GM FOR CHECK POINT             7  0677  L 000 000          735
3966 38 42   RDCPT  RTW   0,1               READ CHECKPOINT                    8  0684  L %U0 001 R        735
3967 38 43          BER   RREDCP-4                                             5  0692  B 706 L            735
3968 38 44          BEF   EOFCP                                                5  0697  B L1V K            736
3969 38 45          B     STPASS                                               4  0702  B 37Z              736
3970 38 46          H     STPASS                                               4  0706  . 37Z              736
3971 38 47   RREDCP BSP   0                                                    5  0710  U %U0 B            736
3972 38 48          B     RDCPT                                                4  0715  B 684              736
3973 38 49   LGMEOA LCA   0,0               SET GMKS IN I/O AREAS              7  0719  L 000 000          736
3974 38 50          LCA   0,0                                                  7  0726  L 000 000          736
3975 38 51          LCA   0,0                                                  7  0733  L 000 000          737
3976 38 52          LCA   0,0                                                  7  0740  L 000 000          737
3977 38 53   READTP B     READ1-14                                             4  0747  B S55              737
3978 38 54   GO     SBR   READ1&15,EORA                                        7  0751  H S84 !27          737
3979 38 55          SBR   READ2&15,EORB                                        7  0758  H T94 !38          737
3980 38 56          SBR   READTP&2,2500                                        7  0765  H 749 N00          737
3981 38 57          SBR   FSTRD1&2                                             4  0772  H T16              738
3982 38 58          SBR   FSTRD2&2                                             4  0776  H U26              738
3983 38 59          SBR   FSTRD3&2                                             4  0780  H V36              738
3984 38 60   RUNOUT B     SKIP1             RUNOUT SWITCH                      4  0784  B 788              738
3985 38 61   SKIP1  B     COMPAB            BYPASS SWITCH                      4  0788  B 792              738
3986 38 62   COMPAB C     0,0               COMPARE A&B                        7  0792  C 000 000          738
3987 38 63          BL    SKIP2             B LT A                             5  0799  B 813 T            738
3988 38 64          BH    SKIP3             A LT B                             5  0804  B 838 U            739
3989 38 65          B     EQU                                                  4  0809  B P42              739
3990 38 66   SKIP2  B     COMPBC            BYPASS SWITCH                      4  0813  B 817              739
3991 38 67   COMPBC C     0,0               COMPARE B&C                        7  0817  C 000 000          739
3992 38 68          BL    CLOW-7                                               5  0824  B 963 T            739
3993 38 69          BH    BLOW-7                                               5  0829  B 913 U            739
3994 38 70          B     EQU                                                  4  0834  B P42              739
3995 38 71   SKIP3  B     COMPAC            BYPASS SWITCH                      4  0838  B 842              740
3996 38 72   COMPAC C     0,0               COMPARE A&C                        7  0842  C 000 000          740
3997 38 73          BL    CLOW-7                                               5  0849  B 963 T            740
3998 38 74          BH    ALOW-7                                               5  0854  B 863 U            740
3999 38 75          B     EQU                                                  4  0859  B P42              740
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

4000 38 76          NOP   0,L                                                        7  0863  N 000 347           740
4001 38 77   ALOW   MZ    *-6,MTOA&2                                                 7  0870  Y 870 |19           740
4002 38 78          MA    L,MTOA&6                                                   7  0877  # 347 |23           741
4003 38 79          NOP   0,0                 REM ZONE IN VARY                       7  0884  N 000 000           741
4004 38 80          NOP   0&X1,BLKCT          GENERATE BLK COUNT                     7  0891  N 0|0 P29           741
4005 38 81   INCR1  MA    L,IREG1                                                    7  0898  # 347 089           741
4006 38 82          B     IMOVE                                                      4  0905  B |13               741
4007 38 83          B     ISAMT                                                      4  0909  B S36               741
4008 38 84          NOP   0,L                                                        7  0913  N 000 347           742
4009 38 85   BLOW   MZ    WRITE,MTOA&2                                               7  0920  Y /03 |19           742
4010 38 86          MA    L,MTOA&6                                                   7  0927  # 347 |23           742
4011 38 87          NOP   0,0                 REM ZONE IN VARY                       7  0934  N 000 000           742
4012 38 88          NOP   0&X2,BLKCT          GENERATE BLK COUNT                     7  0941  N 0!0 P29           742
4013 38 89   INCR2  MA    L,IREG2                                                    7  0948  # 347 094           743
4014 38 90          B     IMOVE                                                      4  0955  B |13               743
4015 38 91          B     ISBMT                                                      4  0959  B T46               743
4016 38 92          NOP   0,L                                                        7  0963  N 000 347           743
4017 38 93   CLOW   MZ    RUNOUT,MTOA&2                                              7  0970  Y 784 |19           743
4018 38 94          MA    L,MTOA&6                                                   7  0977  # 347 |23           743
4019 38 95          NOP   0,0                 REM ZONE IN VARY                       7  0984  N 000 000           744
4020 38 96          NOP   0&X3,BLKCT          GENERATE BLK COUNT                     7  0991  N 0?0 P29           744
4021 38 97   INCR3  MA    L,IREG3                                                    7  0998  # 347 099           744
4022 38 98          B     IMOVE                                                      4  1005  B |13               744
4023 38 99          B     ISCMT                                                      4  1009  B U56               744
4024 39 00   IMOVE  SBR   RETURN#3            MOVE RECORD TO OUTPUT                  4  1013  H Q78               744
4025 39 01   MTOA   MLC   0,0                 MOVE TO OUTPUT ROUTINE                 7  1017  M 000 000           745
4026 39 02          MLC                                                              1  1024  M                   745
4027 39 03          MLC                                                              1  1025  M                   745
4028 39 04          MLC                                                              1  1026  M                   745
4029 39 05          MLC                                                              1  1027  M                   745
4030 39 06          MLC                                                              1  1028  M                   745
4031 39 07          MLC                                                              1  1029  M                   745
4032 39 08          MLC                                                              1  1030  M                   746
4033 39 09          MLC                                                              1  1031  M                   746
4034 39 10          MLC                                                              1  1032  M                   746
4035 39 11   LMV    MLC                                                              1  1033  M                   746
4036 39 12          NOP                                                              1  1034  N                   746
4037 39 13          MZ    *-6,SJA                                                    7  1035  Y |35 P18           746
4038 39 14   ADDTO  NOP   BLKCT,0             MOVE BLOCK COUNT TO OUTPUT AREA        7  1042  N P29 000           746
4039 39 15   VARYCT NOP   @1@,0                                                      7  1049  N Q79 000           747
4040 39 16          MLC   SDCMPV,LSTSD        INCR STEPDOWN CHECK                    7  1056  M P06 P09           747
4041 39 17          MA    L,SDCMPV                                                   7  1063  # 347 P06           747
4042 39 18   CKOUT  C     0,ARELO                                                    7  1070  C 000 O85           747
4043 39 19          BE    WRITE                                                      5  1077  B /03 S             747
4044 39 20   VARYSD B     RTRN1-7                                                    4  1082  B |92               747
4045 39 21          DC    @      @                                                   6  1091                      748
4046 39 22          MLC   RETURN,RTRN1&3                                             7  1092  M Q78 /02           748
4047 39 23   RTRN1  B     0                                                          4  1099  B 000               748
4048 39 24   WRITE  MLC   AREFO,MTOA&6        RESET MOVE TO OUTPUT                   7  1103  M P15 |23           748
4049 39 25          MLC   SDCOMP,SDCMPV       RESET SD COMPARE                       7  1110  M P03 P06           748
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

4050 39 26          MZ    BLANK,SJA                                                   7  1117  Y N70 P18           749
4051 39 27          NOP   0                   SWITCH- WRITE TAPE                      4  1124  N 000               749
4052 39 28   KOWNT  A     B,0                                                         7  1128  A 199 000           749
4053 39 29   PDSW   B     WOBR-11                                                     4  1135  B /71               749
4054 39 30   BPADQ8 BCE   WOBR-11,0,1                                                 8  1139  B /71 000 1         749
4055 39 31   AWAY   C     0,PADCT#6                                                   7  1147  C 000 Q85           749
4056 39 32          BL    RTRN2-7                                                     5  1154  B S25 T             750
4057 39 33   REPL   BE    RTRN2-7                                                     5  1159  B S25 S             750
4058 39 34   BPADQ7 MLC   @N@,SPADQ6                                                  7  1164  M Q86 R34           750
4059 39 35   EXIT1  NOP   0                   USERS EXIT                              4  1171  N 000               750
4060 39 36          MLC   BLANK2,CNRR                                                 7  1175  M N72 N69           750
4061 39 37   WOBR   WT    0,0                 WRITE OUTPUT BLOCK                      8  1182  M %U0 000 W         750
4062 39 38          SBR   RMVRGM&6                                                    4  1190  H S19               751
4063 39 39          BER   WORED                                                       5  1194  B N73 L             751
4064 39 40          NOP   @1@,TAPBLC#5                                                7  1199  N Q79 Q91           751
4065 39 41   SETBAK NOP   @4@,0               RESET BLOCK COUNT                       7  1206  N Q92 000           751
4066 39 42   RMVRGM NOP   REKMKS,0                                                    7  1213  N P17 000           751
4067 39 43          BEF   EOFW1                                                       5  1220  B N49 K             751
4068 39 44          MLC   RETURN,RTRN2&3                                              7  1225  M Q78 S35           752
4069 39 45   RTRN2  B     0                                                           4  1232  B 000               752
4070 39 46   ISAMT  C     IREG1,ENDRA1        ARE WE READY TO READ A                  7  1236  C 089 O76           752
4071 39 47          BU    RUNOUT                                                      5  1243  B 784 /             752
4072 39 48   OKRD1  MLC   INPUT1,IREG1                                                7  1248  M O67 089           752
4073 39 49          MLC   BLANK2,CNRR                                                 7  1255  M N72 N69           752
4074 39 50          MLC   CENSIG,13&X1                                                7  1262  M 415 0/3           753
4075 39 51   READ1  RT    0,0                 READ NEXT A BLOCK                       8  1269  M %U0 000 R         753
4076 39 52          SBR   STREND                                                      4  1277  H 576               753
4077 39 53          BEF   EOF1                                                        5  1281  B N45 K             753
4078 39 54          MZ    *-6,SJA                                                     7  1286  Y S86 P18           753
4079 39 55          B     NOISE                                                       4  1293  B V95               753
4080 39 56          B     RIDGM1                                                      4  1297  B W29               753
4081 39 57          B     CLRGMP                                                      4  1301  B V66               754
4082 39 58          BER   RED                                                         5  1305  B M75 L             754
4083 39 59   EXIT2  NOP   0                   USERS EXIT                              4  1310  N 000               754
4084 39 60   FSTRD1 B     READ2-14                                                    4  1314  B T65               754
4085 39 61   *              STEPDOWN TEST FOR TAPE A
4086 39 62          MLC   LSTSD,STEPA&3                                               7  1318  M P09 T28           754
4087 39 63   STEPA  C     0,0                 TEST SD OF A                            7  1325  C 000 000           754
4088 39 64          BL    EOSA                STEPDOWN EXISTS                         5  1332  B W88 T             754
4089 39 65          BH    RUNOUT              NO STEPDOWN                             5  1337  B 784 U             755
4090 39 66          B     EQU                                                         4  1342  B P42               755
4091 39 67   ISBMT  C     IREG2,ENDRA2        ARE WE READY TO READ B                  7  1346  C 094 O79           755
4092 39 68          BU    RUNOUT                                                      5  1353  B 784 /             755
4093 39 69   OKRD2  MLC   INPUT2,IREG2                                                7  1358  M O70 094           755
4094 39 70          MLC   BLANK2,CNRR                                                 7  1365  M N72 N69           755
4095 39 71          MLC   CENSIG,13&X2                                                7  1372  M 415 0J3           756
4096 39 72   READ2  RT    0,0                 READ NEXT B BLOCK                       8  1379  M %U0 000 R         756
4097 39 73          SBR   STREND                                                      4  1387  H 576               756
4098 39 74          BEF   EOF2                                                        5  1391  B N34 K             756
4099 39 75          MZ    @N@,SJA                                                     7  1396  Y Q86 P18           756
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 SEQ PG LIN  LABEL  OP    OPERANDS                                     SFX CT  LOCN  INSTRUCTION TYPE  CARD

4100 39 76          B     NOISE                                             4  1403  B V95              756
4101 39 77          B     RIDGM2                                            4  1407  B W40              756
4102 39 78          B     CLRGMP                                            4  1411  B V66              757
4103 39 79          BER   RED                                               5  1415  B M75 L            757
4104 39 80   EXIT3  NOP   0                   USERS EXIT                    4  1420  N 000              757
4105 39 81   FSTRD2 B     READ3-14                                          4  1424  B U75              757
4106 39 82   *              STEPDOWN CHECK FOR TAPE B
4107 39 83          MLC   LSTSD,STEPB&3                                     7  1428  M P09 U38          757
4108 39 84   STEPB  C     0,0                 TEST SD OF B                  7  1435  C 000 000          757
4109 39 85          BL    EOSB                STEPDOWN EXISTS               5  1442  B W99 T            757
4110 39 86          BH    RUNOUT              NO STEPDOWN                   5  1447  B 784 U            758
4111 39 87          B     EQU                                               4  1452  B P42              758
4112 39 88   ISCMT  C     IREG3,ENDRA3        ARE WE READY TO READ C        7  1456  C 099 O82          758
4113 39 89          BU    RUNOUT                                            5  1463  B 784 /            758
4114 39 90   OKRD3  MLC   INPUT3,IREG3                                      7  1468  M O73 099          758
4115 39 91          MLC   BLANK2,CNRR                                       7  1475  M N72 N69          758
4116 39 92          MLC   CENSIG,13&X3                                      7  1482  M 415 0A3          759
4117 39 93   READ3  RT    0,0                 READ NEXT C BLOCK             8  1489  M %U0 000 R        759
4118 39 94          SBR   STREND                                            4  1497  H 576              759
4119 39 95          BEF   EORC                                              5  1501  B !49 K            759
4120 39 96          MZ    COMPAB,SJA                                        7  1506  Y 792 P18          759
4121 39 97          B     NOISE                                             4  1513  B V95              759
4122 39 98          B     RIDGM3                                            4  1517  B W51              759
4123 39 99          B     CLRGMP                                            4  1521  B V66              760
4124 40 00          BER   RED                                               5  1525  B M75 L            760
4125 40 01   EXIT4  NOP   0                   USERS EXIT                    4  1530  N 000              760
4126 40 02   FSTRD3 B     GO                  BR ON 1ST RD                  4  1534  B 751              760
4127 40 03   *              STEPDOWN CHECK FOR TAPE C
4128 40 04          MLC   LSTSD,STEPC&3                                     7  1538  M P09 V48          760
4129 40 05   STEPC  C     0,0                 TEST SD OF C                  7  1545  C 000 000          760
4130 40 06          BL    EOSC                STEPDOWN EXISTS               5  1552  B X10 T            760
4131 40 07          BH    RUNOUT              NO STEPDOWN                   5  1557  B 784 U            761
4132 40 08          B     EQU                                               4  1562  B P42              761
4133 40 09   CLRGMP SBR   RTN1&3                                            4  1566  H V94              761
4134 40 10          MA    I99,STREND                                        7  1570  # O49 576          761
4135 40 11          MLC   STREND,*&7                                        7  1577  M 576 V90          761
4136 40 12          MLC   REKMKS-1,0                                        7  1584  M P16 000          761
4137 40 13   RTN1   B     0                                                 4  1591  B 000              761
4138 40 14   NOISE  SBR   NSE&3               CHECK FOR NOISE RECORDS       4  1595  H W13              762
4139 40 15          SBR   NSERTN&3                                          4  1599  H W28              762
4140 40 16          MZ    SJA,NSE&5                                         7  1603  Y P18 W15          762
4141 40 17   NSE    BCE   0,13,}              BRANCH FOR NOISE RECORD       8  1610  B 000 013 } GMARK  762
4142 40 18          MA    @004@,NSERTN&3                                    7  1618  # Q95 W28          762
4143 40 19   NSERTN B     0                   RETURN TO CLEAR GPMK          4  1625  B 000              762
4144 40 20   RIDGM1 SBR   RTREAD&3,READ1-7      INITIALIZE RETURN           7  1629  H W87 S62          763
4145 40 21          B     RIDGM                                             4  1636  B W58              763
4146 40 22   RIDGM2 SBR   RTREAD&3,READ2-7                                  7  1640  H W87 T72          763
4147 40 23          B     RIDGM                                             4  1647  B W58              763
4148 40 24   RIDGM3 SBR   RTREAD&3,READ3-7                                  7  1651  H W87 U82          763
4149 40 25   RIDGM  MZ    SJA,*&6             MOVE IN ZONE FOR INDEXING     7  1658  Y P18 W70          763
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

4150 40 26          MN    *,13              START CLEARING 13 POSITIONS          7  1665  D W71 013            764
4151 40 27          MN                                                           1  1672  D                    764
4152 40 28          MN                                                           1  1673  D                    764
4153 40 29          MN                                                           1  1674  D                    764
4154 40 30          MN                                                           1  1675  D                    764
4155 40 31          MN                                                           1  1676  D                    764
4156 40 32          MN                                                           1  1677  D                    764
4157 40 33          MN                                                           1  1678  D                    765
4158 40 34          MN                                                           1  1679  D                    765
4159 40 35          MN                                                           1  1680  D                    765
4160 40 36          MN                                                           1  1681  D                    765
4161 40 37          MN                                                           1  1682  D                    765
4162 40 38          MN                                                           1  1683  D                    765
4163 40 39   RTREAD B     0                                                      4  1684  B 000                765
4164 40 40   EOSA   A     @1@,CNTRB         END OF SEQ A                         7  1688  A Q79 573            766
4165 40 41          B     EOSTST                                                 4  1695  B X17                766
4166 40 42   EOSB   A     @2@,CNTRB         END OF SEQ B                         7  1699  A Q96 573            766
4167 40 43          B     EOSTST                                                 4  1706  B X17                766
4168 40 44   EOSC   A     @4@,CNTRB         END OF SEQ C                         7  1710  A Q92 573            766
4169 40 45   EOSTST BCE   GO,READTP,B                                            8  1717  B 751 747 B          766
4170 40 46          BCE   SDALL,CNTRB,7     TEST EOS ON ALL TAPES                8  1725  B X85 573 7          767
4171 40 47          BCE   SDAC,CNTRB,5      TEST EOS ON A&C                      8  1733  B Y25 573 5          767
4172 40 48          BCE   SDAB,CNTRB,3      TEST EOS ON A&B                      8  1741  B Y44 573 3          767
4173 40 49          BCE   SDBC,CNTRB,6      TEST EOS ON B&C                      8  1749  B Y63 573 6          767
4174 40 50          BCE   SDA,CNTRB,1       TEST EOS ON A ALONE                  8  1757  B Y82 573 1          768
4175 40 51          BCE   SDB,CNTRB,2       TEST EOS ON B ALONE                  8  1765  B Z17 573 2          768
4176 40 52          BCE   SDC,CNTRB,4       TEST EOS ON C ALONE                  8  1773  B Z52 573 4          768
4177 40 53          B     RUNOUT                                                 4  1781  B 784                768
4178 40 54   SDALL  SBR   RUNOUT&3,SKIP1                                         7  1785  H 787 788            768
4179 40 55          MLC   BLANK,CNTRB                                            7  1792  M N70 573            769
4180 40 56          BCE   SWOT,I3TUN,                                            8  1799  B L73 340            769
4181 40 57          SBR   COMPAB&10,SKIP2                                        7  1807  H 802 813            769
4182 40 58          SBR   COMPAB&15,SKIP3                                        7  1814  H 807 838            769
4183 40 59          B     SWOT                                                   4  1821  B L73                769
4184 40 60   SDAC   BCE   SDALL,CNTRA,2          STEPDOWN ON A&C                 8  1825  B X85 572 2          770
4185 40 61          SBR   RUNOUT&3,BLOW-7                                        7  1833  H 787 913            770
4186 40 62          B     RUNOUT                                                 4  1840  B 784                770
4187 40 63   SDAB   BCE   SDALL,CNTRA,4          STEPDOWN ON A&B                 8  1844  B X85 572 4          770
4188 40 64          SBR   RUNOUT&3,CLOW-7                                        7  1852  H 787 963            770
4189 40 65          B     RUNOUT                                                 4  1859  B 784                770
4190 40 66   SDBC   BCE   SDALL,CNTRA,1          STEPDOWN ON B&C                 8  1863  B X85 572 1          771
4191 40 67          SBR   RUNOUT&3,ALOW-7                                        7  1871  H 787 863            771
4192 40 68          B     RUNOUT                                                 4  1878  B 784                771
4193 40 69   SDA    BCE   SDALL,CNTRA,6          STEPDOWN ON A                   8  1882  B X85 572 6          771
4194 40 70          BCE   RNOUTB,CNTRA,4                                         8  1890  B Z94 572 4          771
4195 40 71          BCE   RNOUTC,CNTRA,2                                         8  1898  B !16 572 2          772
4196 40 72          SBR   RUNOUT&3,SKIP2                                         7  1906  H 787 813            772
4197 40 73          B     RUNOUT                                                 4  1913  B 784                772
4198 40 74   SDB    BCE   SDALL,CNTRA,5          STEPDOWN ON B                   8  1917  B X85 572 5          772
4199 40 75          BCE   RNOUTA,CNTRA,4                                         8  1925  B !05 572 4          772
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

4200 40 76          BCE   RNOUTC,CNTRA,1                                       8  1933  B !16 572 1         773
4201 40 77          SBR   RUNOUT&3,COMPAC                                      7  1941  H 787 842           773
4202 40 78          B     RUNOUT                                               4  1948  B 784               773
4203 40 79   SDC    BCE   SDALL,CNTRA,3           STEPDOWN ON C                8  1952  B X85 572 3         773
4204 40 80          BCE   RNOUTA,CNTRA,2                                       8  1960  B !05 572 2         773
4205 40 81          BCE   RNOUTB,CNTRA,1                                       8  1968  B Z94 572 1         774
4206 40 82          SBR   COMPAB&15,ALOW-7                                     7  1976  H 807 863           774
4207 40 83          SBR   COMPAB&10,BLOW-7                                     7  1983  H 802 913           774
4208 40 84          B     RUNOUT                                               4  1990  B 784               774
4209 40 85   RNOUTB SBR   RUNOUT&3,BLOW-7                                      7  1994  H 787 913           774
4210 40 86          B     RUNOUT                                               4  2001  B 784               774
4211 40 87   RNOUTA SBR   RUNOUT&3,ALOW-7                                      7  2005  H 787 863           775
4212 40 88          B     RUNOUT                                               4  2012  B 784               775
4213 40 89   RNOUTC SBR   RUNOUT&3,CLOW-7                                      7  2016  H 787 963           775
4214 40 90          B     RUNOUT                                               4  2023  B 784               775
4215 40 91   EORA   A     @1@,CNTRA          END OF FILE A                     7  2027  A Q79 572           775
4216 40 92          B     EOFTST                                               4  2034  B !56               775
4217 40 93   EORB   A     @2@,CNTRA          END OF FILE B                     7  2038  A Q96 572           776
4218 40 94          B     EOFTST                                               4  2045  B !56               776
4219 40 95   EORC   A     @4@,CNTRA          END OF FILE C                     7  2049  A Q92 572           776
4220 40 96   EOFTST BCE   EOFBC,CNTRA,6      TEST EOF ON B&C                   8  2056  B K93 572 6         776
4221 40 97          BCE   EOFAC,CNTRA,5      TEST EOF ON A&C                   8  2064  B L04 572 5         776
4222 40 98          BCE   EOFC,CNTRA,4       TEST EOF ON C                     8  2072  B L15 572 4         777
4223 40 99          BCE   EOFAB,CNTRA,3      TEST EOF ON A&B                   8  2080  B L33 572 3         777
4224 41 00          BCE   EOFB,CNTRA,2       TEST EOF ON B                     8  2088  B L44 572 2         777
4225 41 01          BCE   EOFA,CNTRA,1       TEST EOF ON A                     8  2096  B L62 572 1         777
4226 41 02   ENDPAS NOP   QTRL,SJA,2         EOF ON ALL                        8  2104  N J16 P18 2         778
4227 41 03          NOP   LASTWT                                               4  2112  N K22               778
4228 41 04   QTRL   NOP   LPTRS1                                               4  2116  N G13               778
4229 41 05   OUTTM  WTM   0                                                    5  2120  U %U0 M             778
4230 41 06          WTM   0                                                    5  2125  U %U0 M             778
4231 41 07   REWIND RWD   0                                                    5  2130  U %U0 R             778
4232 41 08          RWD   0                                                    5  2135  U %U0 R             778
4233 41 09          RWD   0                                                    5  2140  U %U0 R             779
4234 41 10          RWD   0                                                    5  2145  U %U0 R             779
4235 41 11          BCE   *&16,I3TUN,                                          8  2150  B J73 340           779
4236 41 12   THDTP  WTM   0                                                    5  2158  U %U0 M             779
4237 41 13          RWD   0                                                    5  2163  U %U0 R             779
4238 41 14          RWD   0                                                    5  2168  U %U0 R             779
4239 41 15          SBR   CLINP2&3,HDTRS0&4   ENTER FROM MAIN LINE             7  2173  H K21 A34           780
4240 41 16          B     *&8                                                  4  2180  B J91               780
4241 41 17          SBR   CLINP2&3,INWM12-15                                   7  2184  H K21 I30           780
4242 41 18   CLSTX1 SW    4300                                                 4  2191  , 30|               780
4243 41 19          CS    0                                                    4  2195  / 000               780
4244 41 20          SBR   CLSTX1&7                                             4  2199  H J98               780
4245 41 21          BWZ   CLSTX1&4,4300,1                                      8  2203  V J95 30| 1         780
4246 41 22          MLC   CSTCNS,CLSTX1&7                                      7  2211  M 552 J98           781
4247 41 23   CLINP2 B     0                                                    4  2218  B 000               781
4248 41 24   LASTWT SBR   RETURN,QTRL                                          7  2222  H Q78 J16           781
4249 41 25          B     SETGM                                                4  2229  B K60               781
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

4250 41 26   LSTOUT A     @1@,CNTBO1                                                  7  2233  A Q79 P41           781
4251 41 27          C     CNTBO1,BO                                                   7  2240  C P41 185           781
4252 41 28          BU    RTRN1-7                                                     5  2247  B |92 /             782
4253 41 29          MLC   BLANK2,CNTBO1                                               7  2252  M N72 P41           782
4254 41 30          MLC                                                               1  2259  M                   782
4255 41 31   SETGM  SW    GPMK&4                                                      4  2260  , K86               782
4256 41 32          MLC   MTOA&6,GPMK&6                                               7  2264  M |23 K88           782
4257 41 33          CW    GPMK&4                                                      4  2271  ) K86               782
4258 41 34          MA    @001@,GPMK&6                                                7  2275  # Q99 K88           782
4259 41 35   GPMK   LCA   7998,0              LOAD GROUPMARK AT END OF OUTPUT         7  2282  L I9Y 000           783
4260 41 36          B     WRITE                                                       4  2289  B /03               783
4261 41 37   EOFBC  SBR   SKIP1&3,ALOW-7                                              7  2293  H 791 863           783
4262 41 38          B     EOSTST                                                      4  2300  B X17               783
4263 41 39   EOFAC  SBR   SKIP1&3,BLOW-7                                              7  2304  H 791 913           783
4264 41 40          B     EOSTST                                                      4  2311  B X17               783
4265 41 41   EOFC   SBR   SKIP3&3,ALOW-7                                              7  2315  H 841 863           784
4266 41 42          SBR   SKIP2&3,BLOW-7                                              7  2322  H 816 913           784
4267 41 43          B     EOSTST                                                      4  2329  B X17               784
4268 41 44   EOFAB  SBR   SKIP1&3,CLOW-7                                              7  2333  H 791 963           784
4269 41 45          B     EOSTST                                                      4  2340  B X17               784
4270 41 46   EOFB   SBR   SKIP1&3,SKIP3                                               7  2344  H 791 838           784
4271 41 47          SBR   SKIP2&3,CLOW-7                                              7  2351  H 816 963           785
4272 41 48          B     EOSTST                                                      4  2358  B X17               785
4273 41 49   EOFA   SBR   SKIP1&3,SKIP2       END OF FILE ON A                        7  2362  H 791 813           785
4274 41 50          B     EOSTST                                                      4  2369  B X17               785
4275 41 51   *              SWITCH OUTPUT TAPES
4276 41 52   SWOT   MLC   O2TUHA,SLOT1#1                                              7  2373  M 566 R00           785
4277 41 53   CNTSW  A     @1@,0               INCREMENT COUNTER                       7  2380  A Q79 000           785
4278 41 54          NOP   RUNOUT                                                      4  2387  N 784               786
4279 41 55   NOSW   NOP   @B@,CNTSW&7                                                 7  2391  N R01 L87           786
4280 41 56          C     SWOT&3,&O3TUHA      READY TO CYCLE                          7  2398  C L76 R04           786
4281 41 57          BU    SETNOS              NO                                      5  2405  B M21 /             786
4282 41 58          SBR   SWOT&3,O1TUHA       REINITIALIZE FOR FIRST TAPE             7  2410  H L76 565           786
4283 41 59          B     MNO                                                         4  2417  B M28               786
4284 41 60   SETNOS MA    @001@,SWOT&3        UPDATE WRITE ROUTINES FOR               7  2421  # Q99 L76           787
4285 41 61   MNO    MLC   SLOT1,WOBR&3        NEXT OUTPUT TAPE UNIT                   7  2428  M R00 /85           787
4286 41 62          MLC   SLOT1,WORED&3                                               7  2435  M R00 N76           787
4287 41 63          MLC   SLOT1,ERTAPE&3                                              7  2442  M R00 O15           787
4288 41 64   EOFRTN NOP   FRAN                                                        4  2449  N M57               787
4289 41 65          B     RUNOUT                                                      4  2453  B 784               787
4290 41 66   FRAN   MLC   @M@,NOSW                                                    7  2457  M R05 L91           788
4291 41 67          MLC   @N@,EOFRTN                                                  7  2464  M Q86 M49           788
4292 41 68          B     RTRN2-7                                                     4  2471  B S25               788
4293 41 69   *              REDUNDANCY SUB-ROUTINE
4294 41 70   RED    SBR   RETN&3              STORE RETURN TO MAINLINE                4  2475  H N33               788
4295 41 71          SBR   TUNOS&3                                                     4  2479  H N21               788
4296 41 72          SBR   SOMORE&3                                                    4  2483  H ?39               788
4297 41 73          MA    @I5B@,RETN&3                                                7  2487  # R08 N33           788
4298 41 74          MA    @I6B@,TUNOS&3                                               7  2494  # R11 N21           789
4299 41 75          BAV   *&1                                                         5  2501  B N06 Z             789
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

4300 41 76          A     @1@,CNRR                                                 7  2506  A Q79 N69           789
4301 41 77          BAV   BBP2                DUMP TAPE RCD IF 100 TRIAL READS     5  2513  B R26 Z             789
4302 41 78   TUNOS  MN    0,BACKSP&3                                               7  2518  D 000 N28           789
4303 41 79   BACKSP BSP   0                   BACKSPACE TAPE                       5  2525  U %U0 B             789
4304 41 80   RETN   B     0                   RETURN TO REREAD RECORD              4  2530  B 000               790
4305 41 81   EOF2   A     @2@,CNTRA           EOF ON SECOND INPUT TAPE             7  2534  A Q96 572           790
4306 41 82          B     READ3-14                                                 4  2541  B U75               790
4307 41 83   EOF1   H     *-3                 EOF ON FIRST INPUT TAPE              4  2545  . N45               790
4308 41 84   EOFW1  BCE   LPTRS1,QTRL,B       END OF REEL ON WRITE                 8  2549  B G13 J16 B         790
4309 41 85          MLC   @B@,EOFRTN                                               7  2557  M R01 M49           790
4310 41 86          B     SWOT                                                     4  2564  B L73               790
4311 41 87   CNRR   DCW   @00@                                                     2  2569                      791
4312 41 88   BLANK  DCW   @ @                                                      1  2570                      791
4313 41 89   BLANK2 DCW   @00@                                                     2  2572                      791
4314 41 90   *              WRITE REDUNDANCY ROUTINE
4315 41 91   WORED  BSP   0                   BACKSPACE TAPE                       5  2573  U %U0 B             791
4316 41 92          BCE   ERASE,CNRR,1        SECOND TRY                           8  2578  B N97 N69 1         791
4317 41 93          A     @1@,CNRR                                                 7  2586  A Q79 N69           791
4318 41 94          B     WOBR                BRANCH TO WRITE SECOND TIME          4  2593  B /82               791
4319 41 95   ERASE  A     @1@,CNEOR           INCREMENT COUNTER                    7  2597  A Q79 O34           792
4320 41 96          BCE   HWRED,CNEOR-1,1     TWENTY TRIES ON THIS TAPE            8  2604  B O21 O33 1         792
4321 41 97   ERTAPE SKP   0                   NO-ERASE FORWARD                     5  2612  U %U0 E             792
4322 41 98          B     WOBR-7              BRANCH TO WRITE                      4  2617  B /75               792
4323 41 99   ***            USER MAY LOAD ANOTHER TAPE OR PRESS START
4324 42 00   ***            TO TRY WRITING 20 MORE TIMES
4325 42 01   HWRED  H                                                              1  2621  .                   792
4326 42 02          MLC   BLANK2,CNEOR        BLANK COUNTER                        7  2622  M N72 O34           792
4327 42 03          B     ERTAPE                                                   4  2629  B O12               792
4328 42 04   CNEOR  DCW   @  @                                                     2  2634                      793
4329 42 05   ARELBO DCW   @   @                                                    3  2637                      793
4330 42 06   AGMEOA DCW   #3                                                       3  2640                      793
4331 42 07   AGMEBO DCW   @   @                                                    3  2643                      793
4332 42 08   AO2THA DSA   O2TUHA                                                   3  2646  566                 793
4333 42 09   I99    DSA   16000-1                                                  3  2649  I9I                 793
4334 42 10   AOWA   DSA   3900                                                     3  2652  I00                 793
4335 42 11   NOZNE  DCW   @   @                                                    3  2655                      794
4336 42 12   AIRA1  DCW   @   @                                                    3  2658                      794
4337 42 13   AIRA2  DCW   @   @                                                    3  2661                      794
4338 42 14   AIRA3  DCW   @   @                                                    3  2664                      794
4339 42 15   INPUT1 DCW   @   @                                                    3  2667                      794
4340 42 16   INPUT2 DCW   @   @                                                    3  2670                      794
4341 42 17   INPUT3 DCW   @   @                                                    3  2673                      794
4342 42 18   ENDRA1 DCW   @   @                                                    3  2676                      795
4343 42 19   ENDRA2       @   @                                                    3  2679                      795
4344 42 20   ENDRA3       @   @                                                    3  2682                      795
4345 42 21   ARELO        @   @                                                    3  2685                      795
4346 42 22   COMP11       @   @                                                    3  2688                      795
4347 42 23   COMP12       @   @                                                    3  2691                      795
4348 42 24   COMP13       @   @                                                    3  2694                      795
4349 42 25   ACNT   DCW   @   @                                                    3  2697                      795
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 SEQ PG LIN  LABEL  OP    OPERANDS                                      SFX CT  LOCN  INSTRUCTION TYPE  CARD

4350 42 26   ACTNR        @   @                                               3  2700                    795
4351 42 27   SDCOMP       @   @                                               3  2703                    795
4352 42 28   SDCMPV       @   @                                               3  2706                    795
4353 42 29   LSTSD        @   @                                               3  2709                    795
4354 42 30   BOL    DCW   @   @                                               3  2712                    795
4355 42 31   AREFO        @   @                                               3  2715                    796
4356 42 32   VARY   EQU   FLR                                                    0091
4357 42 33   REKMKS DCW   @||@                                                2  2717                    796
4358 42 34   SJA    DCW   @ @                                                 1  2718                    796
4359 42 35   CLEPS        @   @                                               3  2721                    796
4360 42 36   N99P2  DCW   @99@                                                2  2723                    796
4361 42 37   TWOBL  DCW   @  @                                                2  2725                    796
4362 42 38   BLKCT  DCW   @0000@                                              4  2729                    797
4363 42 39   SET1MV DCW   @   @                                               3  2732                    797
4364 42 40   REMOVE DCW   @   @                                               3  2735                    797
4365 42 41   TRIHLD DCW   @   @                                               3  2738                    797
4366 42 42   CNTBO1 DCW   @   @                                               3  2741                    797
4367 42 43   ***            EQUAL ROUTINE
4368 42 44   EQU    SBR   EQHLD#3                                             4  2742  H R14             797
4369 42 45          MLC   IREG1,HOLDX1#3     SAVE INDEX REGISTER ONE          7  2746  M 089 R17         797
4370 42 46          MLC   EQHLD,IREG1                                         7  2753  M R14 089         798
4371 42 47          MA    @I8E@,IREG1                                         7  2760  # R20 089         798
4372 42 48          MLC   10&X1,CMNCF&16     INITIALIZE THE EQUAL ROUTINE     7  2767  M 0/0 Q57         798
4373 42 49          MLC                                                       1  2774  M                 798
4374 42 50          MLC                                                       1  2775  M                 798
4375 42 51          MLC   9&X1,NEXTCF&17                                      7  2776  M 0|9 Q25         798
4376 42 52          MLC   HOLDX1,IREG1                                        7  2783  M R17 089         798
4377 42 53          MLC   BLANK2,CNCF2#2                                      7  2790  M N72 R22         799
4378 42 54          SBR   ICFL&3,IF1F2                                        7  2797  H Q30 383         799
4379 42 55          SBR   ICFL2&3                                             4  2804  H Q37             799
4380 42 56   NEXTCF A     @1@,CNCF2                                           7  2808  A Q79 R22         799
4381 42 57          C     CNCF2,NCF          LAST CONTROL FIELD               7  2815  C R22 096         799
4382 42 58          BE    0                  EXIT                             5  2822  B 000 S           799
4383 42 59   ICFL   MA    0,CMNCF&3          UPDATE COMPARE FOR NEXT          7  2827  # 000 Q44         800
4384 42 60   ICFL2  MA    0,CMNCF&6          CONTROL FIELD                    7  2834  # 000 Q47         800
4385 42 61   CMNCF  C     0,0                COMPARE                          7  2841  C 000 000         800
4386 42 62          BL    0                  LOW                              5  2848  B 000 T           800
4387 42 63          BH    0                  HIGH                             5  2853  B 000 U           800
4388 42 64          MA    @003@,ICFL&3       GET NEXT CONTROL FIELD           7  2858  # R25 Q30         800
4389 42 65          MA    @003@,ICFL2&3                                       7  2865  # R25 Q37         801
4390 42 66          B     NEXTCF                                              4  2872  B Q08             801
4391 42 67          LTORG *                                                          2876
             RETURN DCW   #03                                                 3  2878              AREA  801
                    DCW   @1@                                                 1  2879              LIT   801
             PADCT  DCW   #06                                                 6  2885              AREA  801
                    DCW   @N@                                                 1  2886              LIT   801
             TAPBLC DCW   #05                                                 5  2891              AREA  801
                    DCW   @4@                                                 1  2892              LIT   802
                    DCW   @004@                                               3  2895              LIT   802
                    DCW   @2@                                                 1  2896              LIT   802
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

                    DCW   @001@                                                3  2899              LIT    802
             SLOT1  DCW   #01                                                  1  2900              AREA   802
                    DCW   @B@                                                  1  2901              LIT    802
                    DCW   &O3TUHA                                              3  2904  567         ADCON  802
                    DCW   @M@                                                  1  2905              LIT    803
                    DCW   @I5B@                                                3  2908              LIT    803
                    DCW   @I6B@                                                3  2911              LIT    803
             EQHLD  DCW   #03                                                  3  2914              AREA   803
             HOLDX1 DCW   #03                                                  3  2917              AREA   803
                    DCW   @I8E@                                                3  2920              LIT    803
             CNCF2  DCW   #02                                                  2  2922              AREA   803
                    DCW   @003@                                                3  2925              LIT    804
4392 42 68   SAVE   ORG   *                                                       2926   2926
4393 42 69   *
4394 42 70          ORG   *&154                                                          3080
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

4395 42 71          JOB   ** IBM 1401 SORT 7 VERSION 2 PHASE 2
4396 42 72   *              TAPES ARE REFERRED TO AS OUTPUT OR INPUT DEPENDING
4397 42 73   *              UPON WHETHER THEY ARE OUTPUT OR INPUT REELS
4398 42 74   *              TO THE NEXT PASS-WE OPEN OUTPUT TAPES FIRST
4399 42 75   *
4400 42 76   HTHAL1 MLC   @99@,HDTRC3                                             7  3080  M E37 E44            805
4401 42 77          H     HTEXWT-7           PRESS START TO ACCEPT LABELS AS      4  3087  . C19                805
4402 42 78   *                                 READ.  THE REDUNDANT RECORD WILL
4403 42 79   *                                 BE WRITTEN AS THE HL-OUTPUT TAPE
4404 42 80   *                               PRESS START/RESET AND START
4405 42 81          B     HTPRSW-5           TO RETRY UP TO 99 TIMES              4  3091  B D20                805
4406 42 82   *
4407 42 83   HTHAL2 H                        PRESS START TO TRY TO                1  3095  .                    805
4408 42 84          MLC   @9@,HDTRC4         WRITE H.L. AGAIN-UP TO               7  3096  M E38 E45            805
4409 42 85          B     HTEXWT&9           9 SKIPS.                             4  3103  B C35                805
4410 42 86   *
4411 42 87   HTHAL3 H     HTEXRT             PRESS START TO ACCEPT                4  3107  . B90                805
4412 42 88   *                            H.L.AS READ
4413 42 89          MLC   @99@,HDTRC3        PRESS RESET START AND START          7  3111  M E37 E44            806
4414 42 90          B     HTPRSW-5           TO RETRY UP TO 99 TIMES              4  3118  B D20                806
4415 42 91   *
4416 42 92   HTHAL4 H     *-3                NO T/M AFTER H.L.-THERE IS A         4  3122  . A22                806
4417 42 93   *                            1 IN COL.5 CC3. RESTART PROG
4418 42 94   *
4419 42 95   HDTRC1 DCW   @C@                B FOR 2-WAY                          1  3126                       806
4420 42 96   HDTRC2 DCW   @C@                B FOR 2-WAY                          1  3127                       806
4421 42 97   HDTRC8 DCW   @C@                                                     1  3128                       806
4422 42 98          DCW   #1                                                      1  3129                       806
4423 42 99   HDTRS0 SBR   HDTREX&3                                                4  3130  H E29                807
4424 43 00          CS    181                                                     4  3134  / 181                807
4425 43 01          MLC   GPMARK,*&4                                              7  3138  M 350 A48            807
4426 43 02          MLCWA 0,181              SET GM/WM                            7  3145  L 000 181            807
4427 43 03          MLC   HDTRC6,IREG1       ADDR TAPE # BUCKET-OUTPUT            7  3152  M E32 089            807
4428 43 04   HDTRS1 S     &1,HDTRC1                                               7  3159  S E39 A26            807
4429 43 05          BM    HDTRRI,HDTRC1                                           8  3166  V D72 A26 K          808
4430 43 06          MLNS  0&X1,HDTRS2&26                                          7  3174  D 0|0 B63            808
4431 43 07          MLNS  0&X1,HDTRS2&21                                          7  3181  D 0|0 B58            808
4432 43 08          MN    0&X1,HTEXWT&7                                           7  3188  D 0|0 C33            808
4433 43 09          MN    0&X1,HTEXWT&12                                          7  3195  D 0|0 C38            808
4434 43 10          MN    0&X1,HTPRSW-2                                           7  3202  D 0|0 D23            809
4435 43 11          MN    0&X1,HTPEX-10                                           7  3209  D 0|0 D58            809
4436 43 12          MN    0&X1,HTEXRT&15                                          7  3216  D 0|0 C05            809
4437 43 13          MN    0&X1,HTNOSR-6                                           7  3223  D 0|0 C59            809
4438 43 14          MA    @001@,IREG1                                             7  3230  # E42 089            809
4439 43 15   HDTRS2 MLC   @99@,HDTRC3#2      INIT PARITY RD BUCKET                7  3237  M E37 E44            810
4440 43 16          CS    180                                                     4  3244  / 180                810
4441 43 17          MLC   CENSIG,113                                              7  3248  M 415 113            810
4442 43 18          RWD   0                                                       5  3255  U %U0 R              810
4443 43 19          RT    0,101              READ HEADER LABEL                    8  3260  M %U0 101 R          810
4444 43 20   NSYHDR BCE   HTNOSR,113,                                             8  3268  B C65 113            810
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

4445 43 21          BEF   *&1                                                   5  3276  B B81 K             811
4446 43 22          BER   HDTRPR              IF PARITY ERROR                   5  3281  B C91 L             811
4447 43 23          B     HTEXWT-7            NOP FOR INPUT                     4  3286  B C19               811
4448 43 24   HTEXRT NOP   0                   CUSTOMER EXIT-ACCESS              4  3290  N 000               811
4449 43 25   *                                  TO H.L. OF INPUT TAPE
4450 43 26          BCE   HDTRS1,THLTMO,      IF NO T/M AFTER HEADER            8  3294  B A59 418           811
4451 43 27          RT    0,101                                                 8  3302  M %U0 101 R         811
4452 43 28          BEF   HDTRS1                                                5  3310  B A59 K             811
4453 43 29          B     HTHAL4                                                4  3315  B A22               812
4454 43 30          MLC   @9@,HDTRC4#1                                          7  3319  M E38 E45           812
4455 43 31   HTEXWT NOP   0                   CUSTOMER EXIT-ACCESS TO           4  3326  N 000               812
4456 43 32   *                                  H.L.OF OUTPUT TAPE
4457 43 33          BSP   0                                                     5  3330  U %U0 B             812
4458 43 34          WT    0,101               WRITE HEADER LABEL                8  3335  M %U0 101 W         812
4459 43 35          BER   HDTRPW                                                5  3343  B C73 L             812
4460 43 36          BCE   HDTRS1,THLTMO,      IF T/M IS NOT TO BE WRITTEN       8  3348  B A59 418           813
4461 43 37          WTM   0                                                     5  3356  U %U0 M             813
4462 43 38          B     HDTRS1                                                4  3361  B A59               813
4463 43 39   HTNOSR CS    120                 NOISE RECORD CLEAR                4  3365  / 120               813
4464 43 40          B     HDTRS2&16                                             4  3369  B B53               813
4465 43 41   HDTRPW SBR   HTPEX&3,HTEXWT&9    RETURN TO WRITE INST              7  3373  H D71 C35           813
4466 43 42          MLC   @N@,HTPRSW          BYPASS SKIP ROUTINE               7  3380  M E46 D25           813
4467 43 43          B     *&15                                                  4  3387  B D05               814
4468 43 44   HDTRPR SBR   HTPEX&3,HDTRS2&16   RETURN TO READ INST               7  3391  H D71 B53           814
4469 43 45          MLC   @B@,HTPRSW          ACTIVATE SKIP ROUTINE             7  3398  M E47 D25           814
4470 43 46          S     &1,HDTRC3                                             7  3405  S E39 E44           814
4471 43 47          BM    HTHAL1,HDTRC3                                         8  3412  V ?80 E44 K         814
4472 43 48          BSP   0                                                     5  3420  U %U0 B             814
4473 43 49   HTPRSW B     HTPEX               BR IF READ I/O                    4  3425  B D68               815
4474 43 50          BCE   *&5,HDTRC3,G                                          8  3429  B D41 E44 G         815
4475 43 51          B     HTPEX                                                 4  3437  B D68               815
4476 43 52          MLC   @9@,HDTRC3                                            7  3441  M E38 E44           815
4477 43 53          S     &1,HDTRC4                                             7  3448  S E39 E45           815
4478 43 54          SKP   0                                                     5  3455  U %U0 E             815
4479 43 55          BM    HTHAL2,HDTRC4                                         8  3460  V ?95 E45 K         816
4480 43 56   HTPEX  B     0                   EX PARITY ERROR ROUTINE           4  3468  B 000               816
4481 43 57   HDTRRI SBR   HDTRS1&6,HDTRC2     INIT ROUT.TO PROC.INPUT           7  3472  H A65 A27           816
4482 43 58          SBR   HDTRS1&13,HDTRC2                                      7  3479  H A72 A27           816
4483 43 59          SBR   HDTRS1&10,HDTREX-8                                    7  3486  H A69 E18           816
4484 43 60          SBR   HTPRSW-10,HTHAL3                                      7  3493  H D15 A07           817
4485 43 61          MLC   @N@,HTEXRT-4                                          7  3500  M E46 B86           817
4486 43 62          MLC   HDTRC7,IREG1        ADDR TAPE # BUCKET-INPUT          7  3507  M E35 089           817
4487 43 63          B     HDTRS1                                                4  3514  B A59               817
4488 43 64          CS    080                                                   4  3518  / 080               817
4489 43 65          CS    181                 CLEAR GM/WM                       4  3522  / 181               817
4490 43 66   HDTREX B     NXTPS               GENERAL EXIT                      4  3526  B 677               817
4491 43 67   HDTRC6 DSA   I1TUHA                                                3  3532  562                 818
4492 43 68   HDTRC7 DSA   O1TUHA                                                3  3535  565                 818
4493 43 69          LTORG *                                                            3536
                    DCW   @99@                                                  2  3537            LIT      818
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SEQ PG LIN  LABEL  OP    OPERANDS                                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

                   DCW   @9@                                                            1  3538              LIT    818
                   DCW   &1                                                             1  3539              LIT    818
                   DCW   @001@                                                          3  3542              LIT    818
            HDTRC3 DCW   #02                                                            2  3544              AREA   818
            HDTRC4 DCW   #01                                                            1  3545              AREA   819
                   DCW   @N@                                                            1  3546              LIT    819
                   DCW   @B@                                                            1  3547              LIT    819
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

4494 43 70          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2
4495 43 71          ORG   087                                                           0087
4496 43 72  IREG1   DCW   000                                                     3  0089                   820
4497 43 73          ORG   092                                                           0092
4498 43 74  IREG2   DCW   000                                                     3  0094                   821
4499 43 75          ORG   097                                                           0097
4500 43 76  IREG3   DCW   000                                                     3  0099                   822
4501 43 77          ORG   4200                                                          4200
4502 43 78  LAYCHK BCE    PLEPAS,LBBUCK,1                                         8  4200  B 21Z 414 1        823
4503 43 79          MLC   CENSIG,NSYHDR&7                                         7  4208  M 415 B75          823
4504 43 80          B     SKIPPS                                                  4  4215  B 24/              823
4505 43 81  PLEPAS CS     80          LOAD 120 CHARACTER LABEL ROUTINE            4  4219  / 080              823
4506 43 82          SW    24,56                                                   7  4223  , 024 056          823
4507 43 83          SW    63,67                                                   7  4230  , 063 067          823
4508 43 84          R     56                                                      4  4237  1 056              824
4509 43 85  SKIPPS R                                                              1  4241  1                  824
4510 43 86          BCE   OVLAP1,68,B                                             8  4242  B 25U 068 B        824
4511 43 87          B     SKIPPS                                                  4  4250  B 24/              824
4512 43 88  OVLAP1 BCE    STRTN,VARY,        BRANCH IF FIXED LENGTH RECORDS       8  4254  B 32U 091          824
4513 43 89          MLC   @L@,MTOA            INITIALIZATION OF MOVE ROUTINE      7  4262  M V0S |17          824
4514 43 90          MLC   @L@,SBR-6           FOR VARIABLE LENGTH RECORDS         7  4269  M V0S U4X          824
4515 43 91  MODMV   MLC   @L@,LMV                                                 7  4276  M V0S |33          825
4516 43 92          BCE   *&8,KRUNCH,                                             8  4283  B 29Y 561          825
4517 43 93          MLC   @L@,LMV&1                                               7  4291  M V0S |34          825
4518 43 94          BCE   STRTN,CTMV-1,1                                          8  4298  B 32U V0U 1        825
4519 43 95          A     @1@,CTMV#2                                              7  4306  A V0T V0V          825
4520 43 96          MA    I99,MODMV&6                                             7  4313  # O49 28S          826
4521 43 97          B     MODMV                                                   4  4320  B 27W              826
4522 43 98  STRTN   MLC   &RETURN,ARTRN                                           7  4324  M V0Y U4W          826
4523 43 99          MLC   @H@                                                     4  4331  M V0Z              826
4524 44 00          MLC   &MTOA,IREG1                                             7  4335  M V1S 089          826
4525 44 01          MLC   NCF,NCFHLD#2                                            7  4342  M 096 V1U          826
4526 44 02          MLC   GPMARK,*&4                                              7  4349  M 350 35Z          827
4527 44 03          LCA   0,ITLI             LOAD GROUPMARK IN ITLI               7  4356  L 000 188          827
4528 44 04          MLC   @N@,AWAY&12                                             7  4363  M V1V /59          827
4529 44 05          SBR   AOWA,3900                                               7  4370  H O52 I00          827
4530 44 06          SBR   SETBAK&6                                                4  4377  H S12              827
4531 44 07          SBR   ADDTO&6                                                 4  4381  H |48              827
4532 44 08          MA    I99,SETBAK&6                                            7  4385  # O49 S12          828
4533 44 09          MA    I99,ADDTO&6                                             7  4392  # O49 |48          828
4534 44 10          BCE   MAOWA,LABELS,1                                          8  4399  B 43W 413 1        828
4535 44 11          SBR   AOWA,3200          INITIALIZE FOR NO LABELS             7  4407  H O52 B00          828
4536 44 12          SBR   SETBAK&6                                                4  4414  H S12              828
4537 44 13          SBR   ADDTO&6                                                 4  4418  H |48              828
4538 44 14          MA    I99,SETBAK&6                                            7  4422  # O49 S12          829
4539 44 15          MA    I99,ADDTO&6                                             7  4429  # O49 |48          829
4540 44 16  MAOWA   MLC   AOWA,AIRA1                                              7  4436  M O52 O58          829
4541 44 17          MA    BL,AIRA1           I/O AREA                             7  4443  # 085 O58          829
4542 44 18          MLC   AIRA1,AGMEOA                                            7  4450  M O58 O40          829
4543 44 19          MA    @002@,AIRA1                                             7  4457  # V1Y O58          830
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

4544 44 20          MLC   AIRA1,AIRA2                                              7  4464  M O58 O61             830
4545 44 21          MA    BL,AIRA2                                                 7  4471  # 085 O61             830
4546 44 22          MLC   AIRA2,LGMEOA&13                                          7  4478  M O61 732             830
4547 44 23          MA    @002@,AIRA2                                              7  4485  # V1Y O61             830
4548 44 24          MLC   AIRA2,AIRA3                                              7  4492  M O61 O64             831
4549 44 25          MA    BL,AIRA3                                                 7  4499  # 085 O64             831
4550 44 26          MLC   AIRA3,LGMEOA&20                                          7  4506  M O64 739             831
4551 44 27          BCE   ONLY2,I3TUN,                                             8  4513  B 57| 340             831
4552 44 28          MA    @002@,AIRA3                                              7  4521  # V1Y O64             831
4553 44 29          MLC   AIRA3,AIRA4#3                                            7  4528  M O64 V2/             832
4554 44 30          MA    BL,AIRA4                                                 7  4535  # 085 V2/             832
4555 44 31          MLC   AIRA4,LGMEOA&27                                          7  4542  M V2/ 746             832
4556 44 32          MLC   AIRA3,READ3&6                                            7  4549  M O64 U95             832
4557 44 33          MLC   AIRA3,INPUT3                                             7  4556  M O64 O73             832
4558 44 34          MA    I99,INPUT3                                               7  4563  # O49 O73             833
4559 44 35   ONLY2  MLC   AIRA1,READ1&6                                            7  4570  M O58 S75             833
4560 44 36          MLC   AIRA2,READ2&6                                            7  4577  M O61 T85             833
4561 44 37          MLC   AOWA,WOBR&6                                              7  4584  M O52 /88             833
4562 44 38          MLC   AOWA,AREFO         INIT MOVE TO OUTPUT                   7  4591  M O52 P15             833
4563 44 39          MA    I99,AREFO                                                7  4598  # O49 P15             834
4564 44 40          MLC   AIRA1,INPUT1                                             7  4605  M O58 O67             834
4565 44 41          MA    I99,INPUT1                                               7  4612  # O49 O67             834
4566 44 42          MLC   AIRA2,INPUT2                                             7  4619  M O61 O70             834
4567 44 43          MA    I99,INPUT2                                               7  4626  # O49 O70             834
4568 44 44          MLC   GPMARK,GPMK&3      INIT INSTRUCTIONS TO LOAD             7  4633  M 350 K85             835
4569 44 45          MLC   GPMARK,GMSET&3     GROUPMARKS AT THE END OF I/O          7  4640  M 350 680             835
4570 44 46          MLC   GPMARK,LGMEOA&3                                          7  4647  M 350 722             835
4571 44 47          MLC   GPMARK,LGMEOA&10                                         7  4654  M 350 729             835
4572 44 48          MLC   GPMARK,LGMEOA&17                                         7  4661  M 350 736             835
4573 44 49          MLC   GPMARK,LGMEOA&24                                         7  4668  M 350 743             836
4574 44 50          MZ    *-6,INCR1-5                                              7  4675  Y 67V 893             836
4575 44 51          MZ    MSBR,INCR2-5                                             7  4682  Y 73T 943             836
4576 44 52          MZ    CMTOA,INCR3-5                                            7  4689  Y 70T 993             836
4577 44 53          MLC   CENSIG,NSE&7                                             7  4696  M 415 W17             836
4578 44 54   CMTOA  C     NCFHLD,@10@        INITIALIZE MTOA ROUTINE ACCORDING     7  4703  C V1U V2T             837
4579 44 55          BE    MSBR               TO NUMBER OF CONTROL FIELDS           5  4710  B 73T S               837
4580 44 56          MA    @001@,IREG1                                              7  4715  # V2W 089             837
4581 44 57          A     @1@,NCFHLD                                               7  4722  A V0T V1U             837
4582 44 58          B     CMTOA                                                    4  4729  B 70T                 837
4583 44 59   MSBR   LCA   SBR,6&X1                                                 7  4733  L U5T 0|6             837
4584 44 60          LCA                                                            1  4740  L                     837
4585 44 61          MLC   IREG1,SET1MV                                             7  4741  M 089 P32             838
4586 44 62          MA    @006@,SET1MV                                             7  4748  # V2Z P32             838
4587 44 63          MLC   SET1MV,WRITE&6                                           7  4755  M P32 /09             838
4588 44 64          MLC   SET1MV,ALOW&13                                           7  4762  M P32 883             838
4589 44 65          MLC   SET1MV,BLOW&13                                           7  4769  M P32 933             838
4590 44 66          MLC   SET1MV,CLOW&13                                           7  4776  M P32 983             839
4591 44 67          MLC   SET1MV,CKOUT&3                                           7  4783  M P32 |73             839
4592 44 68          MLC   SET1MV,SETGM&7                                           7  4790  M P32 K67             839
4593 44 69          MLC   IREG1,IREG2                                              7  4797  M 089 094             839
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

4594 44 70          MA    @I9F@,IREG2                                              7  4804  # V3S 094             839
4595 44 71          MLC   IREG2,INCR1&10                                           7  4811  M 094 908             840
4596 44 72          MLC   IREG2,INCR2&10                                           7  4818  M 094 958             840
4597 44 73          MLC   IREG2,INCR3&10                                           7  4825  M 094 |08             840
4598 44 74          MLC   IREG1,IREG3                                              7  4832  M 089 099             840
4599 44 75          MA    @002@,IREG3                                              7  4839  # V1Y 099             840
4600 44 76          MLC   IREG3,ALOW&6                                             7  4846  M 099 876             841
4601 44 77          MLC   IREG3,BLOW&6                                             7  4853  M 099 926             841
4602 44 78          MLC   IREG3,CLOW&6                                             7  4860  M 099 976             841
4603 44 79          MLC   @I9W@,IREG1                                              7  4867  M V3V 089             841
4604 44 80          BCE   LD12K,MS,5                                               8  4874  B T7/ 344 5           841
4605 44 81          BCE   LD16K,MS,6                                               8  4882  B T8S 344 6           842
4606 44 82   LDCST  LCA   CNOS1,0&X1          MOVE COUNTERS INTO UPPER CORE        7  4890  L 545 0|0             842
4607 44 83          LCA                                                            1  4897  L                     842
4608 44 84          LCA                                                            1  4898  L                     842
4609 44 85          MLC   IREG1,ACNT                                               7  4899  M 089 O97             842
4610 44 86          MLC   ACNT,CNTSW&6                                             7  4906  M O97 L86             842
4611 44 87          MA    @I9D@,IREG1                                              7  4913  # V3Y 089             842
4612 44 88          MLC   IREG1,ACTNR                                              7  4920  M 089 P00             843
4613 44 89          MLC   ACTNR,KOWNT&6                                            7  4927  M P00 /34             843
4614 44 90          MLC   ACTNR,AWAY&3                                             7  4934  M P00 /50             843
4615 44 91          MA    @I9D@,IREG1                                              7  4941  # V3Y 089             843
4616 44 92          MA    @I9D@,IREG1                                              7  4948  # V3Y 089             843
4617 44 93          MLC   IREG1,CLEPS                                              7  4955  M 089 P21             844
4618 44 94          MLC   IREG1,GMSET&6                                            7  4962  M 089 683             844
4619 44 95   TSTVRY BCE   RDCRD,VARY,                                              8  4969  B S5Y 091             844
4620 44 96          MA    RCDIST,INCR1-4      INIT MAINLINE FOR VARIABLE           7  4977  # 196 894             844
4621 44 97          MA    RCDIST,INCR2-4      LENGTH RECORDS                       7  4984  # 196 944             844
4622 44 98          MA    RCDIST,INCR3-4                                           7  4991  # 196 994             845
4623 44 99          MLC   RCDIST,ALOW-4                                            7  4998  M 196 866             845
4624 45 00          SBR   SDAC-1,BPADQ8&1                                          7  5005  H Y24 /40             845
4625 45 01          SBR   SDALL&17                                                 4  5012  H Y02                 845
4626 45 02          MLC   @L@,RMVRGM                                               7  5016  M V0S S13             845
4627 45 03          MLC   RCDIST,BLOW-4                                            7  5023  M 196 916             845
4628 45 04          MLC   RCDIST,CLOW-4                                            7  5030  M 196 966             846
4629 45 05          MZ    *-6,ALOW-5                                               7  5037  Y |3X 865             846
4630 45 06          MZ    @L@,BLOW-5                                               7  5044  Y V0S 915             846
4631 45 07          MZ    TSTVRY,CLOW-5                                            7  5051  Y 96Z 965             846
4632 45 08          MLC   @M@,ALOW-7                                               7  5058  M V3Z 863             846
4633 45 09          MLC   @M@,BLOW-7                                               7  5065  M V3Z 913             847
4634 45 10          MLC   @M@,CLOW-7                                               7  5072  M V3Z 963             847
4635 45 11          MLC   ACTNR,VARYCT&6                                           7  5079  M P00 |55             847
4636 45 12          C     L-2,@0@                                                  7  5086  C 345 V4|             847
4637 45 13          BH    *&5                                                      5  5093  B /0S U               847
4638 45 14          SW    BLKCT-2                                                  4  5098  , P27                 847
4639 45 15   MOADD  MLC   @L@,WOBR                                                 7  5102  M V0S /82             848
4640 45 16          MLC   @L@,READ1                                                7  5109  M V0S S69             848
4641 45 17          MLC   @L@,READ2                                                7  5116  M V0S T79             848
4642 45 18          MLC   @L@,READ3                                                7  5123  M V0S U89             848
4643 45 19          MLC   @N@,LGMEOA                                               7  5130  M V1V 719             848
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

4644 45 20          MLC   @N@,KOWNT                                                   7  5137  M V1V /28           849
4645 45 21          MLC   @A@,VARYCT                                                  7  5144  M V4/ |49           849
4646 45 22          MLC   @V@,ENDPAS                                                  7  5151  M V4S J04           849
4647 45 23          MLC   @B@,ENDPAS&8                                                7  5158  M V4T J12           849
4648 45 24          MZ    *-6,CONST1-3                                                7  5165  Y /6V U5Z           849
4649 45 25          MZ    @L@,CONST2-3                                                7  5172  Y V0S U7/           850
4650 45 26          MZ    TSTVRY,CONST3-3                                             7  5179  Y 96Z U8T           850
4651 45 27          MLC   REKMKS,TWOBL                                                7  5186  M P17 P25           850
4652 45 28          LCA   CONST1&3,ISAMT&11                                           7  5193  L U6V S47           850
4653 45 29          LCA                                                               1  5200  L                   850
4654 45 30          LCA   CONST2&3,ISBMT&11                                           7  5201  L U7X T57           850
4655 45 31          LCA                                                               1  5208  L                   850
4656 45 32          LCA   CONST3&3,ISCMT&11                                           7  5209  L U8Z U67           851
4657 45 33          LCA                                                               1  5216  L                   851
4658 45 34          MLC   SET1MV,VRBSD&3                                              7  5217  M P32 T9W           851
4659 45 35          LCA   FAKE&7,VARYSD&9    INIT FOR CHECK IF OUTPUT                 7  5224  L U1U |91           851
4660 45 36          LCA                      IS FULL                                  1  5231  L                   851
4661 45 37          LCA                                                               1  5232  L                   851
4662 45 38          MLC   SET1MV,WTNOW&3                                              7  5233  M P32 U2S           851
4663 45 39          LCA   LOU&4,REPL&4       INIT TAPE SWITCHING TO FORCE             7  5240  L U4S /63           852
4664 45 40          LCA                      WRITE ON LAST BLOCK IN SEQ.              1  5247  L                   852
4665 45 41          LCA                                                               1  5248  L                   852
4666 45 42          LCA                                                               1  5249  L                   852
4667 45 43          LCA                                                               1  5250  L                   852
4668 45 44          MLC   @N@,PDSW                                                    7  5251  M V1V /35           852
4669 45 45   RDCRD  CS    080                                                         4  5258  / 080               852
4670 45 46          SW    24,56                                                       7  5262  , 024 056           853
4671 45 47          SW    63,67                                                       7  5269  , 063 067           853
4672 45 48   CHOOSE BCE   SETURQ,URPI,P      DECIDE WHICH BAD BLOCK                   8  5276  B T1| 186 P         853
4673 45 49          BCE   SETURP,URPI,C      PROCEDURE TO LOAD                        8  5284  B T1X 186 C         853
4674 45 50          MLC   @T@,IDENT&7                                                 7  5292  M V4U T3S           853
4675 45 51          MLC   @N@,RED&8                                                   7  5299  M V1V M83           854
4676 45 52          B     IDENT-1                                                     4  5306  B T2U               854
4677 45 53   SETURQ MLC   @N@,RED&8                                                   7  5310  M V1V M83           854
4678 45 54   SETURP MLC   URPI,IDENT&7                                                7  5317  M 186 T3S           854
4679 45 55          R                        LOAD BAD BLOCK PROCEDURE                 1  5324  1                   854
4680 45 56   IDENT  BCE   056,079,                                                    8  5325  B 056 079           854
4681 45 57          R     IDENT                                                       4  5333  1 T2V               854
4682 45 58   RANOUT CS    080                                                         4  5337  / 080               855
4683 45 59          SW    24,56                                                       7  5341  , 024 056           855
4684 45 60          SW    63,67                                                       7  5348  , 063 067           855
4685 45 61          R     FORGET                                                      4  5355  1 T5Z               855
4686 45 62   FORGET BCE   056,079,                                                    8  5359  B 056 079           855
4687 45 63          R     FORGET                                                      4  5367  1 T5Z               855
4688 45 64   LD12K  MA    @00|@,IREG1                                                 7  5371  # V4X 089           856
4689 45 65          B     LDCST                                                       4  5378  B 89|               856
4690 45 66   LD16K  MA    @00!@,IREG1        INITIALIZE FOR 16K                       7  5382  # V5| 089           856
4691 45 67          B     LDCST                                                       4  5389  B 89|               856
4692 45 68   VRBSD  MLC   0,TRIHLD           CHECK TO SEE IF OUTPUT IS FULL           7  5393  M 000 P38           856
4693 45 69          MA    COMET,TRIHLD                                                7  5400  # 556 P38           856
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

4694 45 70   FAKE   BWZ   SETGM,TRIHLD,2                                           8  5407  V K60 P38 2        857
4695 45 71          B     WOBR-11                                                  4  5415  B /71              857
4696 45 72   WTNOW  C     0,AREFO            FORCE LAST BLOCK PER SEQUENCE         7  5419  C 000 P15          857
4697 45 73          BE    SWOT                                                     5  5426  B L73 S            857
4698 45 74          SBR   RETURN,SWOT                                              7  5431  H Q78 L73          857
4699 45 75   LOU    BIN   SETGM,                                                   5  5438  B K60              857
4700 45 76   ARTRN  DCW   @    @                                                   4  5446                     858
4701 45 77   SBR    DCW   @M000000@          MOVE TO OUTPUT CONSTANT               7  5453                     858
4702 45 78          BCE   OKRD1,1,|                                                8  5454  B S48 001 |        858
4703 45 79   CONST1 B     RUNOUT                                                   4  5462  B 784              858
4704 45 80          BCE   OKRD2,1,|                                                8  5466  B T58 001 |        858
4705 45 81   CONST2 B     RUNOUT                                                   4  5474  B 784              858
4706 45 82          BCE   OKRD3,1,|                                                8  5478  B U68 001 |        859
4707 45 83   CONST3 B     RUNOUT                                                   4  5486  B 784              859
4708 45 84   ARNOUT DSA   RUNOUT                                                   3  5492  784                859
4709 45 85   NG1    DCW   @   @                                                    3  5495                     859
4710 45 86   NG2    DCW   @   @                                                    3  5498                     859
4711 45 87   NG3    DCW   @   @                                                    3  5501                     859
                    DCW   @L@                                                      1  5502              LIT    859
                    DCW   @1@                                                      1  5503              LIT    860
             CTMV   DCW   #02                                                      2  5505              AREA   860
                    DCW   &RETURN                                                  3  5508  Q78         ADCON  860
                    DCW   @H@                                                      1  5509              LIT    860
                    DCW   &MTOA                                                    3  5512  |17         ADCON  860
             NCFHLD DCW   #02                                                      2  5514              AREA   860
                    DCW   @N@                                                      1  5515              LIT    860
                    DCW   @002@                                                    3  5518              LIT    861
             AIRA4  DCW   #03                                                      3  5521              AREA   861
                    DCW   @10@                                                     2  5523              LIT    861
                    DCW   @001@                                                    3  5526              LIT    861
                    DCW   @006@                                                    3  5529              LIT    861
                    DCW   @I9F@                                                    3  5532              LIT    861
                    DCW   @I9W@                                                    3  5535              LIT    861
                    DCW   @I9D@                                                    3  5538              LIT    862
                    DCW   @M@                                                      1  5539              LIT    862
                    DCW   @0@                                                      1  5540              LIT    862
                    DCW   @A@                                                      1  5541              LIT    862
                    DCW   @V@                                                      1  5542              LIT    862
                    DCW   @B@                                                      1  5543              LIT    862
                    DCW   @T@                                                      1  5544              LIT    862
                    DCW   @00|@                                                    3  5547              LIT    863
                    DCW   @00!@                                                    3  5550              LIT    863
4712 45 88          EX    LAYCHK                                                        B 20|              864
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

4713 45 89          JOB   ** IBM 1401 SORT 7 VERSION 2 PHASE 2
4714 45 90          ORG   HTHAL1                                                           3080
4715 45 91   HTHEL1 MLC   @99@,HDTSC3                                                 7  3080  M E46 E53          867
4716 45 92          H     HTAXWT-7            PRESS START TO ACCEPT LABELS AS         4  3087  . C27              867
4717 45 93   *                                 READ.THE REDUNDANT RECORD WILL BE
4718 45 94   *                                  WRITTEN AS THE HL-OUTPUT TAPE
4719 45 95   *                                  PRESS START/RESET AND START TO
4720 45 96          B     HTPSSW-5            RETRY UP TO 99 TIMES                    4  3091  B D28              867
4721 45 97   HTHEL2 H                         PRESS START TO RETRY TO WRITE HL        1  3095  .                  867
4722 45 98          MLC   @9@,HDTSC4          UP TO 9 SKIPS                           7  3096  M E47 E54          867
4723 45 99          B     HTAXWT&9                                                    4  3103  B C43              867
4724 46 00   HTHEL3 H     HTAXRT              PRESS START TO ACCEPT HL AS READ        4  3107  . B98              867
4725 46 01          MLC   @99@,HDTSC3         PRESS START RESET AND START TO          7  3111  M E46 E53          868
4726 46 02          B     HTPSSW-5            RETRY UP TO 99 TIMES                    4  3118  B D28              868
4727 46 03   HTHEL4 H     *-3                 NO TAPEMARK AFTER HEADER LABEL          4  3122  . A22              868
4728 46 04   *                                 THERE IS A 1 IN COL.5 CC3-RESTART
4729 46 05   HDTSC1 DCW   @C@                 B FOR 2-WAY                             1  3126                     868
4730 46 06   HDTSC2 DCW   @C@                 B FOR 2-WAY                             1  3127                     868
4731 46 07   HDTSC8 DCW   @C@                                                         1  3128                     868
4732 46 08          DCW   #1                                                          1  3129                     868
4733 46 09   HDTSS0 SBR   HDTREX&3                                                    4  3130  H E29              869
4734 46 10          CS    320                                                         4  3134  / 320              869
4735 46 11          MLC   GPMARK,*&4                                                  7  3138  M 350 A48          869
4736 46 12          MLCWA 0,321                                                       7  3145  L 000 321          869
4737 46 13          MLC   HDTSC6,IREG1        ADDR TAPE # BUCKET OUTPUT               7  3152  M E41 089          869
4738 46 14   HDTSS1 S     &1,HDTSC1                                                   7  3159  S E48 A26          869
4739 46 15          BM    HDTSR1,HDTSC1                                               8  3166  V D80 A26 K        870
4740 46 16          MLNS  0&X1,HDTSS2&15      INITIALIZE I/O INSTRUCTIONS             7  3174  D 0|0 B52          870
4741 46 17          MLNS  0&X1,HDTSS2&34                                              7  3181  D 0|0 B71          870
4742 46 18          MLNS  0&X1,HTAXWT&7                                               7  3188  D 0|0 C41          870
4743 46 19          MLNS  0&X1,HTAXWT&12                                              7  3195  D 0|0 C46          870
4744 46 20          MLNS  0&X1,HTPSSW-2                                               7  3202  D 0|0 D31          871
4745 46 21          MLNS  0&X1,HTPAX-10                                               7  3209  D 0|0 D66          871
4746 46 22          MLNS  0&X1,HTAXRT&15                                              7  3216  D 0|0 C13          871
4747 46 23          MLNS  0&X1,HTNPSR-6                                               7  3223  D 0|0 C67          871
4748 46 24          MA    @001@,IREG1                                                 7  3230  # E51 089          871
4749 46 25   HDTSS2 MLC   @99@,HDTSC3#2       INIT PARITY RD BUCKET                   7  3237  M E46 E53          872
4750 46 26          CS    320                                                         4  3244  / 320              872
4751 46 27          CS                                                                1  3248  /                  872
4752 46 28          RWD   0                                                           5  3249  U %U0 R            872
4753 46 29          MLC   CENSIG,HSSSSS&7                                             7  3254  M 415 B83          872
4754 46 30          MLC   CENSIG,213                                                  7  3261  M 415 213          872
4755 46 31          RTW   0,201                                                       8  3268  L %U0 201 R        872
4756 46 32   HSSSSS BCE   HTNPSR,213,                                                 8  3276  B C73 213          873
4757 46 33          BEF   *&1                                                         5  3284  B B89 K            873
4758 46 34          BER   HDTSPR              BRANCH ON PARITY ERROR                  5  3289  B C99 L            873
4759 46 35          B     HTAXWT-7            NOP FOR INPUT                           4  3294  B C27              873
4760 46 36   HTAXRT NOP   0                   USER EXIT-HL OF INPUT TAPE              4  3298  N 000              873
4761 46 37          BCE   HDTSS1,THLTMO,      BRANCH IF NO TAPE MARK REQUIRED         8  3302  B A59 418          873
4762 46 38          RTW   0,201                                                       8  3310  L %U0 201 R        874
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

4763 46 39          BEF   HDTSS1                                                  5  3318  B A59 K            874
4764 46 40          B     HTHEL4                                                  4  3323  B A22              874
4765 46 41          MLC   @9@,HDTSC4#1                                            7  3327  M E47 E54          874
4766 46 42   HTAXWT NOP   0                   USER EXIT-PRIOR TO HL WRITE-OUTPT   4  3334  N 000              874
4767 46 43          BSP   0                                                       5  3338  U %U0 B            874
4768 46 44          WT    0,201                                                   8  3343  M %U0 201 W        875
4769 46 45          BER   HDTSPW                                                  5  3351  B C81 L            875
4770 46 46          BCE   HDTSS1,THLTMO,   BRANCH IF TAPE MARK IS NO TO BE        8  3356  B A59 418          875
4771 46 47          WTM   0                WRITTEN                                5  3364  U %U0 M            875
4772 46 48          B     HDTSS1                                                  4  3369  B A59              875
4773 46 49   HTNPSR CS    220              CLEAR NOISE RECORD                     4  3373  / 220              875
4774 46 50          B     HDTSS2&17                                               4  3377  B B54              875
4775 46 51   HDTSPW SBR   HTPAX&3,HDTSS2&17   RETURN TO READ INSTRUCTION          7  3381  H D79 B54          876
4776 46 52          MLC   @N@,HTPSSW       BYPASS SKIP ROUTINE                    7  3388  M E55 D33          876
4777 46 53          B     *&15                                                    4  3395  B D13              876
4778 46 54   HDTSPR SBR   HTPAX&3,HDTSS2&17    RETURN TO READ INSTRUCTION         7  3399  H D79 B54          876
4779 46 55          MLC   @B@,HTPSSW       ACTIVATE SKIP ROUTINE                  7  3406  M E56 D33          876
4780 46 56          S     &1,HDTSC3                                               7  3413  S E48 E53          876
4781 46 57          BM    HTHEL1,HDTSC3                                           8  3420  V ?80 E53 K        877
4782 46 58          BSP   0                                                       5  3428  U %U0 B            877
4783 46 59   HTPSSW B     HTPAX                                                   4  3433  B D76              877
4784 46 60          BCE   *&5,HDTSC3,G                                            8  3437  B D49 E53 G        877
4785 46 61          B     HTPAX                                                   4  3445  B D76              877
4786 46 62          MLC   @9@,HDTSC3                                              7  3449  M E47 E53          877
4787 46 63          S     &1,HDTSC4                                               7  3456  S E48 E54          878
4788 46 64          SKP   0                                                       5  3463  U %U0 E            878
4789 46 65          BM    HTHEL2,HDTRC4                                           8  3468  V ?95 E45 K        878
4790 46 66   HTPAX  B     0                EX PARITY ERROR ROUTINE                4  3476  B 000              878
4791 46 67   HDTSR1 SBR   HDTSS1&6,HDTSC2    INIT ROUTINE TO PROCESS INPUT        7  3480  H A65 A27          878
4792 46 68          SBR   HDTSS1&13,HDTSC2                                        7  3487  H A72 A27          878
4793 46 69          SBR   HDTSS1&10,HDTRAX-9                                      7  3494  H A69 E26          879
4794 46 70          SBR   HTPSSW-10,HTHEL3                                        7  3501  H D23 A07          879
4795 46 71          MLC   @N@,HTAXRT-4                                            7  3508  M E55 B94          879
4796 46 72          MLC   HDTSC7,IREG1     ADDR TAPE # BUCKET-INPUT               7  3515  M E44 089          879
4797 46 73          B     HDTSS1                                                  4  3522  B A59              879
4798 46 74          CS    80                                                      4  3526  / 080              879
4799 46 75          CS    332              CLEAR GROUPMARK-WORDMARK               4  3530  / 332              880
4800 46 76          CS                                                            1  3534  /                  880
4801 46 77   HDTRAX B     NXTPS                                                   4  3535  B 677              880
4802 46 78   HDTSC6 DSA   I1TUHA                                                  3  3541  562                880
4803 46 79   HDTSC7 DSA   O1TUHA                                                  3  3544  565                880
4804 46 80          LTORG *                                                              3545
                    DCW   @99@                                                    2  3546             LIT     880
                    DCW   @9@                                                     1  3547             LIT     880
                    DCW   &1                                                      1  3548             LIT     881
                    DCW   @001@                                                   3  3551             LIT     881
             HDTSC3 DCW   #02                                                     2  3553             AREA    881
             HDTSC4 DCW   #01                                                     1  3554             AREA    881
                    DCW   @N@                                                     1  3555             LIT     881
                    DCW   @B@                                                     1  3556             LIT     881
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD
4805 46 81          EX    OVLAP1                                                             B 25U               882
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

4806 46 82          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2  PUNCH URPI
4807 46 83          ORG   SAVE                                                            2926
4808 46 84   BBP2   NOP                                                          1  2926  N                  885
4809 46 85          MZ    SJA,SETPUN&5                                           7  2927  Y P18 R53          885
4810 46 86   SPADQ6 MLC   @1@,0              MOVE 1 INTO REDUND. BUCKET          7  2934  M ?53 000          885
4811 46 87          MA    I99,STREND                                             7  2941  # O49 576          885
4812 46 88   SETPUN SBR   MOVPUN&3,0                                             7  2948  H R76 000          885
4813 46 89          MA    @001@,MOVPUN&3                                         7  2955  # ?56 R76          885
4814 46 90          SBR   MOVPUN&13,101                                          7  2962  H R86 101          886
4815 46 91          CS    180                                                    4  2969  / 180              886
4816 46 92   MOVPUN MLC   0,PUNBKT           MOVE CHAR. TO INTERMED. BUCKET      7  2973  M 000 ?52          886
4817 46 93          MLC   PUNBKT,101                                             7  2980  M ?52 101          886
4818 46 94          C     MOVPUN&3,STREND                                        7  2987  C R76 576          886
4819 46 95          BE    PCHBB1                                                 5  2994  B ?29 S            886
4820 46 96          BCE   PCHBB2,MOVPUN&12,8                                     8  2999  B ?25 R85 8        887
4821 46 97          MA    @001@,MOVPUN&3                                         7  3007  # ?56 R76          887
4822 46 98          MA    @001@,MOVPUN&13                                        7  3014  # ?56 R86          887
4823 46 99          B     MOVPUN                                                 4  3021  B R73              887
4824 47 00   PCHBB2 P     SETPUN&7                                               4  3025  4 R55              887
4825 47 01   PCHBB1 P                        PUNCH LAST BLOCK                    1  3029  4                  887
4826 47 02          CS    180                                                    4  3030  / 180              887
4827 47 03          MA    @I9C@,RETN&3       MODIFY EXIT TO READ NEXT BLOCK      7  3034  # ?59 N33          888
4828 47 04          MLC   @B@,PDSW                                               7  3041  M ?60 /35          888
4829 47 05          B     RETN                                                   4  3048  B N30              888
4830 47 06   PUNBKT DCW   @0@                INTERMEDIATE BUCKET                 1  3052                     888
4831 47 07          LTORG *                                                               3053
                    DCW   @1@                                                    1  3053             LIT    888
                    DCW   @001@                                                  3  3056             LIT    888
                    DCW   @I9C@                                                  3  3059             LIT    888
                    DCW   @B@                                                    1  3060             LIT    889
4832 47 08          EX    RANOUT                                                      B T3X              890
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

4833 47 09          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2  TAPE URPI
4834 47 10          ORG   SAVE                                                               2926
4835 47 11   BBP4   MA    @I9C@,RETN&3                                               7  2926  # ?77 N33           893
4836 47 12          NOP                                                              1  2933  N                   893
4837 47 13          MLC   @1@,0                                                      7  2934  M ?78 000           893
4838 47 14          MZ    SJA,BBPQ8G&5                                               7  2941  Y P18 R67           893
4839 47 15          MLC   STREND,LGMTP&6                                             7  2948  M 576 R61           893
4840 47 16   LGMTP  LCA   0,0                  LOAD GROUPMARK                        7  2955  L 000 000           893
4841 47 17   BBPQ8G WT    0,1                                                        8  2962  M %U0 001 W         894
4842 47 18          BEF   BBPHLT                                                     5  2970  B ?34 K             894
4843 47 19          BER   BBPSKP                                                     5  2975  B ?20 L             894
4844 47 20          MLC   STREND,*&7                                                 7  2980  M 576 R93           894
4845 47 21          LCA   BLANK,0              CLEAR GROUPMARK                       7  2987  L N70 000           894
4846 47 22          CS    332                                                        4  2994  / 332               894
4847 47 23          CS                                                               1  2998  /                   894
4848 47 24          MLC   UNMSG,223                                                  7  2999  M ?74 223           895
4849 47 25          W                          PRINT MESSAGE                         1  3006  2                   895
4850 47 26          CC    1                                                          2  3007  F 1                 895
4851 47 27          MLC   *&1,PDSW                                                   7  3009  M ?16 /35           895
4852 47 28          B     RETN                                                       4  3016  B N30               895
4853 47 29   BBPSKP BSP   0                                                          5  3020  U %U0 B             895
4854 47 30          SKP   0                                                          5  3025  U %U0 E             895
4855 47 31          B     BBPQ8G                                                     4  3030  B R62               896
4856 47 32   BBPHLT H     BBPQ8G                                                     4  3034  . R62               896
4857 47 33   WTMBD  WTM   0                    CLOSE REDUNDANCY TAPE                 5  3038  U %U0 M             896
4858 47 34          RWU   0                                                          5  3043  U %U0 U             896
4859 47 35          B     NDSRT                                                      4  3048  B L2T               896
4860 47 36   UNMSG  DCW   @UNREAD BLK WRITTEN-TU 0@                                 23  3074                      897
4861 47 37          LTORG *                                                                  3075
                    DCW   @I9C@                                                      3  3077             LIT    897
                    DCW   @1@                                                        1  3078             LIT    897
4862 47 38          ORG   4000                                                               4000
4863 47 39   INITTP MLC   URPI,BBPQ8G&3        INITIALIZE FOR TAPE NUMBER            7  4000  M 186 R65           898
4864 47 40          MLC   URPI,BBPSKP&3                                              7  4007  M 186 ?23           898
4865 47 41          MLNS  URPI,BBPSKP&8                                              7  4014  D 186 ?28           898
4866 47 42          MLC   URPI,UNMSG                                                 7  4021  M 186 ?74           898
4867 47 43          MLC   URPI,WTMBD&3                                               7  4028  M 186 ?41           898
4868 47 44          MLC   URPI,WTMBD&8                                               7  4035  M 186 ?46           899
4869 47 45          MLC   GPMARK,LGMTP&3                                             7  4042  M 350 R58           899
4870 47 46          B     RANOUT                                                     4  4049  B T3X               899
4871 47 47          NOP                                                              1  4053  N                   899
4872 47 48          EX    INITTP                                                          B 00|               900
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

4873 47 49          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2  CORRECT URPI
4874 47 50          ORG   SAVE                                                         2926
4875 47 51   BBP3   NOP                                                         1  2926  N                  903
4876 47 52          MZ    SJA,*&13                                              7  2927  Y P18 R46          903
4877 47 53          NOP   0,0                                                   7  2934  N 000 000          903
4878 47 54          SBR   MOVCOR&3,0         INITIALIZE MOVE INSTRUCTION        7  2941  H R70 000          903
4879 47 55          MA    @001@,MOVCOR&3                                        7  2948  # ?43 R70          903
4880 47 56          CS    332                                                   4  2955  / 332              903
4881 47 57          CS                                                          1  2959  /                  903
4882 47 58          SBR   MOVCOR&13,201                                         7  2960  H R80 201          904
4883 47 59   MOVCOR MLC   0,CORBKT           MOVE CHAR. TO INTERMEDIATE BKT     7  2967  M 000 ?40          904
4884 47 60          MLC   CORBKT,201         MOVE CHARACTER TO PRINT AREA       7  2974  M ?40 201          904
4885 47 61          MA    @001@,MOVCOR&3     UPDATE MOVE INSTRUCTIONS           7  2981  # ?43 R70          904
4886 47 62          MA    @001@,MOVCOR&13                                       7  2988  # ?43 R80          904
4887 47 63          C     MOVCOR&3,STREND    CHECK FOR END OF INPUT BLOCK       7  2995  C R70 576          905
4888 47 64          BE    PRTBB2             END OF BLOCK                       5  3002  B ?27 S            905
4889 47 65          C     MOVCOR&13,@301@                                       7  3007  C R80 ?46          905
4890 47 66          BE    PRTBB1                                                5  3014  B ?23 S            905
4891 47 67          B     MOVCOR                                                4  3019  B R67              905
4892 47 68   PRTBB1 W     MOVCOR-12                                             4  3023  2 R55              905
4893 47 69   PRTBB2 W                        PRINT LAST BLOCK                   1  3027  2                  905
4894 47 70          CC    1                                                     2  3028  F 1                906
4895 47 71   TSSG2  H                                                           1  3030  .                  906
4896 47 72   ***            TURN SENSE SWITCH G ON TO BACKSPACE AND                C
4897 47 73   ***            REREAD IN ORDER TO CORRECT.  IF TAPE                   C
4898 47 74   ***            RECORD IS TO BE ACCEPTED AFTER CORRECTION,             C
4899 47 75   ***            TURN SENSE SWITCH G OFF AND PRESS START.               C
4900 47 76          BSS   BACKSP,G                                              5  3031  B N25 G            906
4901 47 77   SOMORE B     0                  RETURN TO PROCESS RECORD           4  3036  B 000              906
4902 47 78   CORBKT DCW   @0@                INTERMEDIATE STORAGE BUCKET        1  3040                     906
4903 47 79          LTORG *                                                            3041
                    DCW   @001@                                                 3  3043             LIT     906
                    DCW   @301@                                                 3  3046             LIT     906
4904 47 80          EX    RANOUT                                                         B T3X              907
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  SEQ PG LIN  LABEL   OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

 4905 47 81           JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2
 4906 47 82   *               OVERLAP AREA
 4907 47 83           ORG   4200                                                                 4200
 4908 47 84   PADQNA DCW    @   @                                                     3  4202                      910
 4909 47 85   NOP1    LCA   @N@,CTMSG-36                                              7  4203  L V5Z 29S           910
 4910 47 86           B     SETTP                                                     4  4210  B 22Z               910
 4911 47 87   OVLAP   BCE   NOP1,VARY,1                                               8  4214  B 20T 091 1         910
 4912 47 88           MLC   AGMEOA,LGMEOA&6    LOAD GROUPMARK                         7  4222  M O40 725           910
 4913 47 89   SETTP   MLC   MI1TUN,RDCPT&3     SET CHECKPOINT TAPE UNIT NUM           7  4229  M 341 687           910
 4914 47 90           MLC   MI1TUN,O1TUHA                                             7  4236  M 341 565           911
 4915 47 91           MLC   MI1TUN,RREDCP&3                                           7  4243  M 341 713           911
 4916 47 92           MLC   MI2TUN,O2TUHA                                             7  4250  M 342 566           911
 4917 47 93           MLC   I1TUN,I1TUHA                                              7  4257  M 338 562           911
 4918 47 94           MLC   I2TUN,I2TUHA                                              7  4264  M 339 563           911
 4919 47 95           A     @1@,CNOS1                                                 7  4271  A V6| 545           912
 4920 47 96           MLC   GMSET&3,PADQNA                                            7  4278  M 680 20S           912
 4921 47 97           MA    @I9I@,PADQNA                                              7  4285  # V6T 20S           912
 4922 47 98           MLC   PADQNA,BPADQ8&6                                           7  4292  M 20S /45           912
 4923 47 99           MLC   PADQNA,SPADQ6&6                                           7  4299  M 20S R40           912
 4924 48 00           BCE   FORTWO,I3TUN,                                             8  4306  B 54W 340           913
 4925 48 01           MLC   MI3TUN,O3TUHA                                             7  4314  M 343 567           913
 4926 48 02           MLC   I3TUN,I3TUHA                                              7  4321  M 340 564           913
 4927 48 03   CTMSG   MLC   CTNR,CNAR#6                                               7  4328  M 539 V6Z           913
 4928 48 04           S     PDCPUT,CNAR                                               7  4335  S 548 V6Z           913
 4929 48 05           MZ    BLANK,CNAR                                                7  4342  Y N70 V6Z           914
 4930 48 06           ZA    @3@,NOMP#6                                                7  4349  ? V7| V7W           914
 4931 48 07           MZ    @3@,NOMP                                                  7  4356  Y V7| V7W           914
 4932 48 08   DNMP    C     NOMP,CNSQ          DETERMINE MAX NUM OF MERGE PASSES      7  4363  C V7W 533           914
 4933 48 09           A     @1@,NMPP2#2                                               7  4370  A V6| V7Y           914
 4934 48 10           BE    PRINT1                                                    5  4377  B 41/ S             915
 4935 48 11           BL    PRINT1                                                    5  4382  B 41/ T             915
 4936 48 12   SWP1    B     TRITST                                                    4  4387  B 44U               915
 4937 48 13           A     NOMP                                                      4  4391  A V7W               915
 4938 48 14   OK1     C     NMPP2,@18@                                                7  4395  C V7Y V8|           915
 4939 48 15           BE    NMPE                                                      5  4402  B 47T S             915
 4940 48 16           B     DNMP                                                      4  4407  B 36T               915
 4941 48 17   PRINT1 MLC    NMPP2,PRMSA-6                                             7  4411  M V7Y U4Y           916
 4942 48 18           MLC   NMPP2,NMPL                                                7  4418  M V7Y 571           916
 4943 48 19           CS    332                                                       4  4425  / 332               916
 4944 48 20           CS                                                              1  4429  /                   916
 4945 48 21           MLC   PRMSA-6,218                                               7  4430  M U4Y 218           916
 4946 48 22           W                                                               1  4437  2                   916
 4947 48 23           CC    K                                                         2  4438  F K                 916
 4948 48 24           B     DETANM                                                    4  4440  B 47X               917
 4949 48 25   TRITST MLC    NOMP,CTNOMP#6                                             7  4444  M V7W V8W           917
 4950 48 26           A     CTNOMP                                                    4  4451  A V8W               917
 4951 48 27           A     NOMP,CTNOMP                                               7  4455  A V7W V8W           917
 4952 48 28           MLC   CTNOMP,NOMP                                               7  4462  M V8W V7W           917
 4953 48 29   AMY     B     OK1                                                       4  4469  B 39V               917
 4954 48 30   NMPE    H     *-3                                                       4  4473  . 47T               917
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

4955 48 31  DETANM ZA    @3@,NOMP                                                7  4477  ? V7| V7W          918
4956 48 32         MZ    @3@,NOMP                                                7  4484  Y V7| V7W          918
4957 48 33         MLC   &OK2,AMY&3                                              7  4491  M V8Z 47S          918
4958 48 34  DNMP2  C     NOMP,CNOS1          DETERMINE EST NUM OF MERGE PASSES   7  4498  C V7W 545          918
4959 48 35         A     @1@,NMAP2#2                                             7  4505  A V6| V9/          918
4960 48 36         BE    PRINT2                                                  5  4512  B 66S S            919
4961 48 37         BL    PRINT2                                                  5  4517  B 66S T            919
4962 48 38  SWP2   B     TRITST                                                  4  4522  B 44U              919
4963 48 39         A     NOMP                                                    4  4526  A V7W              919
4964 48 40  OK2    C     NMAP2,@18@                                              7  4530  C V9/ V8|          919
4965 48 41         BE    NMPE                                                    5  4537  B 47T S            919
4966 48 42         B     DETANM&14                                               4  4542  B 49/              919
4967 48 43  FORTWO MLC   TWI,@3@                                                 7  4546  M U2X V7|          920
4968 48 44         MLC   @N@,SWP1                                                7  4553  M V5Z 38X          920
4969 48 45         MLC   @N@,SWP2                                                7  4560  M V5Z 52S          920
4970 48 46         MLC   @B@,HDTRC1                                              7  4567  M V9S A26          920
4971 48 47         MLC   @B@,HDTRC2                                              7  4574  M V9S A27          920
4972 48 48         MLC   @B@,HDTRC8                                              7  4581  M V9S A28          921
4973 48 49         MLC   &AO2THA,NOSW&13                                         7  4588  M V9V M04          921
4974 48 50         MLC   @4@,CNTRA                                               7  4595  M V9W 572          921
4975 48 51         MLC   &EOFTST,FRAN&3                                          7  4602  M V9Z M60          921
4976 48 52         MLC   &CNTSW&7,FRAN&6                                         7  4609  M W0S M63          921
4977 48 53         SBR   READ2&15,EORB                                           7  4616  H T94 !38          922
4978 48 54         SBR   EOF1-1,GO                                               7  4623  H N44 751          922
4979 48 55         SBR   COMPAB&10,BLOW-7                                        7  4630  H 802 913          922
4980 48 56         SBR   COMPAB&15,ALOW-7                                        7  4637  H 807 863          922
4981 48 57         MLC   &GO,FSTRD2&3                                            7  4644  M W0V U27          922
4982 48 58         MLC   @N@,LGMEOA&21                                           7  4651  M V5Z 740          923
4983 48 59         B     CTMSG                                                   4  4658  B 32Y              923
4984 48 60  PRINT2 MLC   NMAP2,PRMSB-6                                           7  4662  M V9/ U7S          923
4985 48 61         CS    332                                                     4  4669  / 332              923
4986 48 62         CS                                                            1  4673  /                  923
4987 48 63         MLC   PRMSB-6,218                                             7  4674  M U7S 218          923
4988 48 64         W                                                             1  4681  2                  923
4989 48 65         CC    L                                                       2  4682  F L                924
4990 48 66         CC    L                                                       2  4684  F L                924
4991 48 67         MLC   CTNR,PRMSC1-22                                          7  4686  M 539 U8U          924
4992 48 68         MLC   CNAR,PRMSD-21                                           7  4693  M V6Z V1S          924
4993 48 69         MLC   PRMSD,227                                               7  4700  M V3T 227          924
4994 48 70         W                                                             1  4707  2                  924
4995 48 71         CS    332                                                     4  4708  / 332              924
4996 48 72         CS                                                            1  4712  /                  925
4997 48 73         BCE   PSPAFQ,VARY,1                                           8  4713  B 74/ 091 1        925
4998 48 74         MLC   PDCPUT,PRMSE-22                                         7  4721  M 548 V3W          925
4999 48 75         MLC   PRMSE,228                                               7  4728  M V5Y 228          925
5000 48 76         W                                                             1  4735  2                  925
5001 48 77         CS    332                                                     4  4736  / 332              925
5002 48 78         CS                                                            1  4740  /                  925
5003 48 79  PSPAFQ MLC   PRMSC1,228                                              7  4741  M V0W 228          926
5004 48 80         W                                                             1  4748  2                  926
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

5005 48 81          CC    K                                                          2  4749  F K                926
5006 48 82   REBLK  MLC   AIRA1,ENDRA1       END OF FIRST READ AREA                  7  4751  M O58 O76          926
5007 48 83          MA    BL,ENDRA1                                                  7  4758  # 085 O76          926
5008 48 84          MA    I99,ENDRA1                                                 7  4765  # O49 O76          926
5009 48 85          MLC   AIRA2,ENDRA2       END OF SECOND READ AREA                 7  4772  M O61 O79          926
5010 48 86          MA    BL,ENDRA2                                                  7  4779  # 085 O79          927
5011 48 87          MA    I99,ENDRA2                                                 7  4786  # O49 O79          927
5012 48 88          MLC   AIRA3,ENDRA3       END OF THIRD READ AREA                  7  4793  M O64 O82          927
5013 48 89          MA    BL,ENDRA3                                                  7  4800  # 085 O82          927
5014 48 90          MA    I99,ENDRA3                                                 7  4807  # O49 O82          927
5015 48 91          MLC   CFIRE,COMPAB&3     SET COMPARE INSTR                       7  4814  M 337 795          928
5016 48 92          MLC   CFIRE,COMPAB&6                                             7  4821  M 337 798          928
5017 48 93          MLC   CFIRE,COMPBC&3                                             7  4828  M 337 820          928
5018 48 94          MLC   CFIRE,COMPBC&6                                             7  4835  M 337 823          928
5019 48 95          MLC   CFIRE,COMPAC&3                                             7  4842  M 337 845          928
5020 48 96          MLC   CFIRE,COMPAC&6                                             7  4849  M 337 848          929
5021 48 97          BCE   SETDEC,DESCND,1                                            8  4856  B S5Z 090 1        929
5022 48 98          MZ    *-6,COMPAB&2                                               7  4864  Y 86U 794          929
5023 48 99          MZ    *-6,COMPAC&2                                               7  4871  Y 87/ 844          929
5024 49 00          MZ    REBLK,COMPAB&5                                             7  4878  Y 75/ 797          929
5025 49 01          MZ    REBLK,COMPBC&2                                             7  4885  Y 75/ 819          930
5026 49 02          MZ    DETANM,COMPAC&5                                            7  4892  Y 47X 847          930
5027 49 03          MZ    DETANM,COMPBC&5                                            7  4899  Y 47X 822          930
5028 49 04   CMPRE  MLC   BL,ARELO           RT EDGE OF OUTPUT                       7  4906  M 085 O85          930
5029 49 05          MA    I99,ARELO                                                  7  4913  # O49 O85          930
5030 49 06          MA    AOWA,ARELO                                                 7  4920  # O52 O85          931
5031 49 07          MLC   AIRA1,COMP11       FIRST READ AREA CF                      7  4927  M O58 O88          931
5032 49 08          MA    CFIRE,COMP11                                               7  4934  # 337 O88          931
5033 49 09          MA    I99,COMP11                                                 7  4941  # O49 O88          931
5034 49 10          MLC   AIRA2,COMP12       SECOND READ AREA CF                     7  4948  M O61 O91          931
5035 49 11          MA    CFIRE,COMP12                                               7  4955  # 337 O91          932
5036 49 12          MA    I99,COMP12                                                 7  4962  # O49 O91          932
5037 49 13          MLC   AIRA3,COMP13       THIRD READ AREA CF                      7  4969  M O64 O94          932
5038 49 14          MA    CFIRE,COMP13                                               7  4976  # 337 O94          932
5039 49 15          MA    I99,COMP13                                                 7  4983  # O49 O94          932
5040 49 16          MLC   COMP11,STEPA&6                                             7  4990  M O88 T31          933
5041 49 17          MLC   COMP12,STEPB&6                                             7  4997  M O91 U41          933
5042 49 18          MLC   COMP13,STEPC&6                                             7  5004  M O94 V51          933
5043 49 19          MLC   AOWA,SDCOMP        OUTPUT AREA CF1                         7  5011  M O52 P03          933
5044 49 20          MA    CFIRE,SDCOMP                                               7  5018  # 337 P03          933
5045 49 21          MA    I99,SDCOMP                                                 7  5025  # O49 P03          934
5046 49 22          BCE   CCFW1,CNOP,                                                8  5032  B |4X 086          934
5047 49 23          MLC   @N@,LMV                                                    7  5040  M V5Z |33          934
5048 49 24   CCFW1  C     NCF,@1@                                                    7  5047  C 096 V6|          934
5049 49 25          BU    CMBOL-8                                                    5  5054  B /0Z /            934
5050 49 26   *              CLEAR EQUALS ROUTINE                                     SORT2
5051 49 27          MLC   BLANK,COMPAB&16                                            7  5059  M N70 808          935
5052 49 28          MLC   BLANK,COMPBC&16                                            7  5066  M N70 833          935
5053 49 29          MLC   BLANK,COMPAC&16                                            7  5073  M N70 858          935
5054 49 30          BCE   CMBOL-8,DESCND,1                                           8  5080  B /0Z 090 1        935
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

5055 49 31          MLC   BLANK,STEPA&16                                                  7  5088  M N70 T41            935
5056 49 32          MLC   BLANK,STEPB&16                                                  7  5095  M N70 U51            936
5057 49 33          MLC   BLANK,STEPC&16                                                  7  5102  M N70 V61            936
5058 49 34          BCE   RIDZN,VARY,1                                                    8  5109  B S4/ 091 1          936
5059 49 35   CMBOL  MA    L,BOL              COMPUTE OUTPUT BLOCK LENGTH FOR              7  5117  # 347 P12            936
5060 49 36          A     @1@,CNBOL#3        FIXED LENGTH RECORDS                         7  5124  A V6| W0Y            936
5061 49 37          C     CNBOL,BO                                                        7  5131  C W0Y 185            937
5062 49 38          BU    CMBOL                                                           5  5138  B /1X /              937
5063 49 39          MLC   AOWA,ARELBO                                                     7  5143  M O52 O37            937
5064 49 40          MA    BOL,ARELBO                                                      7  5150  # P12 O37            937
5065 49 41          MA    I99,ARELBO                                                      7  5157  # O49 O37            937
5066 49 42          MLC   ARELBO,AGMEBO                                                   7  5164  M O37 O43            938
5067 49 43          MA    @001@,AGMEBO                                                    7  5171  # W1/ O43            938
5068 49 44          BCE   REED,PI,6                                                       8  5178  B S1Z 193 6          938
5069 49 45          MLC   PDCPUT,PDELIM#3    DETERMINE PADDING                            7  5186  M 548 W1U            938
5070 49 46   HOWMCH S     BO,PDELIM          REQUIREMENTS                                 7  5193  S 185 W1U            938
5071 49 47          BWZ   REED,PDELIM,K                                                   8  5200  V S1Z W1U K          939
5072 49 48          A     BO,REMOVE                                                       7  5208  A 185 P35            939
5073 49 49          B     HOWMCH                                                          4  5215  B /9T                939
5074 49 50   REED   CS    080                                                             4  5219  / 080                939
5075 49 51          SW    24,56                                                           7  5223  , 024 056            939
5076 49 52          SW    63,67                                                           7  5230  , 063 067            939
5077 49 53          R     56                                                              4  5237  1 056                940
5078 49 54   RIDZN  MLC   RCDIST,NOZNE                                                    7  5241  M 196 O55            940
5079 49 55          MA    @I9H@,NOZNE                                                     7  5248  # W1X O55            940
5080 49 56          B     REED                                                            4  5255  B S1Z                940
5081 49 57   SETDEC MLC   @T@,STEPA&16       INITIALIZE FOR DESCENDING ORDER              7  5259  M W1Y T41            940
5082 49 58          MLC   @U@,STEPA&11       OF SORT                                      7  5266  M W1Z T36            940
5083 49 59          MLC   @T@,STEPB&16                                                    7  5273  M W1Y U51            941
5084 49 60          MLC   @U@,STEPB&11                                                    7  5280  M W1Z U46            941
5085 49 61          MLC   @U@,STEPC&11                                                    7  5287  M W1Z V56            941
5086 49 62          MLC   @T@,STEPC&16                                                    7  5294  M W1Y V61            941
5087 49 63          MZ    REBLK,COMPAB&2                                                  7  5301  Y 75/ 794            941
5088 49 64          MZ    DETANM,COMPAC&2                                                 7  5308  Y 47X 844            942
5089 49 65          MZ    *-6,COMPAB&5                                                    7  5315  Y T1V 797            942
5090 49 66          MZ    DETANM,COMPBC&2                                                 7  5322  Y 47X 819            942
5091 49 67          MZ    *-6,COMPAC&5                                                    7  5329  Y T2Z 847            942
5092 49 68          MZ    REBLK,COMPBC&5                                                  7  5336  Y 75/ 822            942
5093 49 69          C     NCF,@01@                                                        7  5343  C 096 W2/            943
5094 49 70          BU    GOCFQ                                                           5  5350  B T9X /              943
5095 49 71          MLC   COMPAB&10,SKIP2-1                                               7  5355  M 802 812            943
5096 49 72          MLC   COMPBC&10,SKIP3-1                                               7  5362  M 827 837            943
5097 49 73          MLC   COMPAC&10,ALOW-8                                                7  5369  M 852 862            943
5098 49 74          MLC   STEPA&15,ISBMT-1                                                7  5376  M T40 T45            944
5099 49 75          MLC   STEPB&15,ISCMT-1                                                7  5383  M U50 U55            944
5100 49 76          MLC   STEPC&15,RIDGM1-1                                               7  5390  M V60 W28            944
5101 49 77   GOCFQ  BCE   SW9PD,PI,9                                                      8  5397  B U1W 193 9          944
5102 49 78          MLC   @9@,PI                                                          7  5405  M W2S 193            944
5103 49 79          B     CMPRE                                                           4  5412  B 90W                945
5104 49 80   SW9PD  MLC   @ @,PI                                                          7  5416  M W2T 193            945
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

5105 49 81          B     CMPRE                                                  4  5423  B 90W              945
5106 49 82   TWI    DCW   @2@                                                    1  5427                     945
5107 49 83   LRUN   DSA   RUNOUT                                                 3  5430  784                945
5108 49 84   PRMSA  DCW   @MAX PH 2 PASSES 00-ERROR@                            24  5454                     946
5109 49 85   PRMSB  DCW   @EST PH 2 PASSES 00-ERROR@                            24  5478                     947
5110 49 86   PRMSC1 DCW   @       REC PROCESSED-PASS 00@                        28  5506                     948
5111 49 87   PRMSD  DCW   @      -RECORDS READ-PASS 00@                         27  5533                     949
5112 49 88   PRMSE  DCW   @000 PAD REC ADDED-PASS 00@                           25  5558                     950
                    DCW   @N@                                                    1  5559             LIT     950
                    DCW   @1@                                                    1  5560             LIT     950
                    DCW   @I9I@                                                  3  5563             LIT     950
             CNAR   DCW   #06                                                    6  5569             AREA    950
                    DCW   @3@                                                    1  5570             LIT     950
             NOMP   DCW   #06                                                    6  5576             AREA    951
             NMPP2  DCW   #02                                                    2  5578             AREA    951
                    DCW   @18@                                                   2  5580             LIT     951
             CTNOMP DCW   #06                                                    6  5586             AREA    951
                    DCW   &OK2                                                   3  5589  53|        ADCON   951
             NMAP2  DCW   #02                                                    2  5591             AREA    951
                    DCW   @B@                                                    1  5592             LIT     951
                    DCW   &AO2THA                                                3  5595  O46        ADCON   952
                    DCW   @4@                                                    1  5596             LIT     952
                    DCW   &EOFTST                                                3  5599  !56        ADCON   952
                    DCW   &CNTSW&7                                               3  5602  L87        ADCON   952
                    DCW   &GO                                                    3  5605  751        ADCON   952
             CNBOL  DCW   #03                                                    3  5608             AREA    952
                    DCW   @001@                                                  3  5611             LIT     952
             PDELIM DCW   #03                                                    3  5614             AREA    953
                    DCW   @I9H@                                                  3  5617             LIT     953
                    DCW   @T@                                                    1  5618             LIT     953
                    DCW   @U@                                                    1  5619             LIT     953
                    DCW   @01@                                                   2  5621             LIT     953
                    DCW   @9@                                                    1  5622             LIT     953
                    DCW   @ @                                                    1  5623             LIT     953
5113 49 89          EX    OVLAP                                                         B 21U              954
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

5114 49 90          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2
5115 49 91          ORG   3900                                                           3900
5116 49 92   WMIRA5 CS    4299                CLEAR SET WORD MARK ROUTINE         4  3900  / 29Z               957
5117 49 93          CS                                                            1  3904  /                   957
5118 49 94          CS                                                            1  3905  /                   957
5119 49 95          NOP   NF0?,CLSTX1&3                                           7  3906  N I29 J94           957
5120 49 96          NOP   NF0?,CLSTX1&18                                          7  3913  N I29 K09           957
5121 49 97          CS    LGMEOA,3999                                             7  3920  / 719 I99           957
5122 49 98   NF0?   DCW   @F0?@                                                   3  3929                      957
5123 49 99   COA    EQU   WMIRA5                                                     3900
5124 50 00          BCE   COA,VARY,1                                              8  3930  B I00 091 1         958
5125 50 01          MLC   BLANK2,CNCF#2                                           7  3938  M N72 21/           958
5126 50 02   INWM12 MLC   AIRA1,ICF12#3       SET WORD MARKS IRA1                 7  3945  M O58 21U           958
5127 50 03          MA    CF1SL,ICF12                                             7  3952  # 353 21U           958
5128 50 04          MLC   ICF12,WMS12&3                                           7  3959  M 21U I76           958
5129 50 05          MLC   @   @,CNTB#3                                            7  3966  M 21X 22|           959
5130 50 06   ***            SET WORD MARKS LEFT EDGE OF CONTROL FIELDS
5131 50 07   WMS12  SW    0                                                       4  3973  , 000               959
5132 50 08          A     *-6,CNTB                                                7  3977  A I77 22|           959
5133 50 09          C     CNTB,B                                                  7  3984  C 22| 199           959
5134 50 10          BE    SWNCF                                                   5  3991  B 00X S             959
5135 50 11          MA    L,WMS12&3                                               7  3996  # 347 I76           959
5136 50 12          B     WMS12                                                   4  4003  B I73               960
5137 50 13   SWNCF  A     *-6,CNCF            NEXT CONTROL FIELD                  7  4007  A 00X 21/           960
5138 50 14          C     CNCF,NCF                                                7  4014  C 21/ 096           960
5139 50 15          BE    SWIRA2                                                  5  4021  B 03X S             960
5140 50 16          MA    @003@,INWM12&10                                         7  4026  # 22T I55           960
5141 50 17          B     INWM12                                                  4  4033  B I45               960
5142 50 18   SWIRA2 NOP   SWIRA3-8            RESET FOR IRA2                      4  4037  N 06W               960
5143 50 19          MLC   @B@,SWIRA2                                              7  4041  M 22U 03X           961
5144 50 20          SBR   INWM12&3,AIRA2                                          7  4048  H I48 O61           961
5145 50 21          SBR   INWM12&10,CF1SL                                         7  4055  H I55 353           961
5146 50 22          B     INWM12-7                                                4  4062  B I38               961
5147 50 23          BCE   INWMBI,I3TUN,       BRANCH IF TWO-WAY MERGE             8  4066  B 10T 340           961
5148 50 24   SWIRA3 NOP   INWMBI              RESET FOR IRA3                      4  4074  N 10T               961
5149 50 25          MLC   @B@,SWIRA3                                              7  4078  M 22U 07U           962
5150 50 26          SBR   INWM12&3,AIRA3                                          7  4085  H I48 O64           962
5151 50 27          SBR   INWM12&10,CF1SL                                         7  4092  H I55 353           962
5152 50 28          B     INWM12-7                                                4  4099  B I38               962
5153 50 29   ***            SET WORD MARKS LEFT EDGE OF EACH RECORD
5154 50 30   INWMBI MLC   AIRA1,ICF12                                             7  4103  M O58 21U           962
5155 50 31          MLC   ICF12,SW122&3                                           7  4110  M 21U 12X           962
5156 50 32          MLC   @   @,CNTB                                              7  4117  M 21X 22|           963
5157 50 33   SW122  SW    0                                                       4  4124  , 000               963
5158 50 34          A     *-6,CNTB                                                7  4128  A 12Y 22|           963
5159 50 35          C     CNTB,B                                                  7  4135  C 22| 199           963
5160 50 36          BE    WMIRA2                                                  5  4142  B 15Y S             963
5161 50 37          MA    L,SW122&3                                               7  4147  # 347 12X           963
5162 50 38          B     SW122                                                   4  4154  B 12U               964
5163 50 39   WMIRA2 NOP   WMIRA3-8                                                4  4158  N 18|               964
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                 SFX CT  LOCN  INSTRUCTION TYPE  CARD

5164 50 40          MLC   @B@,WMIRA2                                                    7  4162  M 22U 15Y          964
5165 50 41          MLC   AIRA2,ICF12                                                   7  4169  M O61 21U          964
5166 50 42          B     INWMBI&7                                                      4  4176  B 11|              964
5167 50 43          BCE   COA,I3TUN,         BRANCH IF TWO-WAY MERGE                    8  4180  B I00 340          964
5168 50 44   WMIRA3 NOP   COA                                                           4  4188  N I00              964
5169 50 45          MLC   @B@,WMIRA3                                                    7  4192  M 22U 18Y          965
5170 50 46          MLC   AIRA3,ICF12                                                   7  4199  M O64 21U          965
5171 50 47          B     INWMBI&7                                                      4  4206  B 11|              965
5172 50 48          LTORG *                                                                        4210
             CNCF   DCW   #02                                                           2  4211             AREA   965
             ICF12  DCW   #03                                                           3  4214             AREA   965
                    DCW   @   @                                                         3  4217             LIT    965
             CNTB   DCW   #03                                                           3  4220             AREA   965
                    DCW   @003@                                                         3  4223             LIT    966
                    DCW   @B@                                                           1  4224             LIT    966
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

5173 50 49          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2
5174 50 50   SETCLR BCE   PASMLT,LABELS,1                                        8  4225  B 31S 413 1         967
5175 50 51          SBR   CLSTX1&3,3600      NO LABELS INITIALIZATION            7  4233  H J94 F00           967
5176 50 52          SBR   CLSTX1&18                                              4  4240  H K09               967
5177 50 53          SBR   CLSTX1-12,NXTPS                                        7  4244  H J79 677           967
5178 50 54          SW    CPTGM-1                                                4  4251  , !4T               967
5179 50 55          SBR   QTRL&3,OUTTM                                           7  4255  H J19 J20           967
5180 50 56          MLC   @N@,CPTGM&14                                           7  4262  M Q8/ !5Y           968
5181 50 57          MLC   @N@,NOPPS2-18                                          7  4269  M Q8/ J2Y           968
5182 50 58          MLC   @N@,NOPPS2-11                                          7  4276  M Q8/ J3V           968
5183 50 59          MLC   @N@,NOPPS2-4                                           7  4283  M Q8/ J4S           968
5184 50 60          CS    080                                                    4  4290  / 080               968
5185 50 61          SW    024,056                                                7  4294  , 024 056           968
5186 50 62          SW    063,067                                                7  4301  , 063 067           969
5187 50 63          R     056                                                    4  4308  1 056               969
5188 50 64   PASMLT R                        BYPASS MULTIPHASE PROGRAM           1  4312  1                   969
5189 50 65          C     021,CONEND                                             7  4313  C 021 37Y           969
5190 50 66          BU    PASMLT                                                 5  4320  B 31S /             969
5191 50 67          R     NXTPS                                                  4  4325  1 677               969
5192 50 68   BUCPYS SW    FILNAM&1,FILESE&1                                      7  4329  , 448 453           969
5193 50 69          SW    SYSCRE&1                                               4  4336  , 458               970
5194 50 70          MLC   @N@,NOPDDD&14                                          7  4340  M Q8/ 42U           970
5195 50 71          MLC   @N@,NOPDDD&21                                          7  4347  M Q8/ 43/           970
5196 50 72          B     NOPDDD                                                 4  4354  B 41|               970
5197 50 73   CONEND DCW   @HEADER-TRAILER-PHASE2@                               21  4378                      971
5198 50 74   STPASS NOP   WRCK2                                                  4  4379  N W2|               971
5199 50 75          NOP   TSTPS                                                  4  4383  N 67T               971
5200 50 76          MLC   @B@,STPASS&4                                           7  4387  M Q8S 38T           971
5201 50 77          BCE   *&16,LABELS,                                           8  4394  B 41X 413           972
5202 50 78          BCE   BUCPYS,LBBUCK,1                                        8  4402  B 32Z 414 1         972
5203 50 79   NOPDDD MLC   @N@,HSSD-9         NOP SW D OPTION IF LABELS           7  4410  M Q8/ W4W           972
5204 50 80          MLC   CTNR,CTNR1                                             7  4417  M 539 O7X           972
5205 50 81          SW    OHDATE-4,TPSERL-4                                      7  4424  , 453 428           972
5206 50 82          SW    FLSERL-4                                               4  4431  , 433               973
5207 50 83          C     PDCPUT,@000@                                           7  4435  C 548 Q8V           973
5208 50 84          BU    *&8                                                    5  4442  B 45U /             973
5209 50 85          MLC   @6@,PI                                                 7  4447  M Q8W 193           973
5210 50 86          BCE   NXTINS,UNLOAD,                                         8  4454  B 50U 416           973
5211 50 87          MLC   @U@,REWIND&4       INITIALIZATION FOR UNLOAD OPTION    7  4462  M Q8X J34           973
5212 50 88          MLC   @U@,REWIND&9                                           7  4469  M Q8X J39           974
5213 50 89          MLC   @U@,REWIND&14                                          7  4476  M Q8X J44           974
5214 50 90          MLC   @U@,REWIND&19                                          7  4483  M Q8X J49           974
5215 50 91          MLC   @U@,THDTP&9                                            7  4490  M Q8X J67           974
5216 50 92          MLC   @U@,THDTP&14                                           7  4497  M Q8X J72           974
5217 50 93   NXTINS NOP                                                          1  4504  N                   974
5218 50 94          MLC   GPMARK,CPTGM&3                                         7  4505  M 350 !4X           975
5219 50 95          MLC   GPMARK,SETBK&3                                         7  4512  M 350 Z6S           975
5220 50 96          BCE   TOOQ,LDI,1                                             8  4519  B 53Z 187 1         975
5221 50 97          BCE   TOOQ,LDI,2                                             8  4527  B 53Z 187 2         975
5222 50 98          B     MUSHQ                                                  4  4535  B 83T               975
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

5223 50 99   TOOQ   MLC   SET1MV,SETOUT&6                                            7  4539  M P32 V6S           976
5224 51 00          MLC   ACNT,COMP2&3        SET COUNTERS                           7  4546  M O97 L0S           976
5225 51 01          MLC   ACTNR,RESET&3                                              7  4553  M P00 X2S           976
5226 51 02          MLC   ACTNR,PAD9&3                                               7  4560  M P00 |7X           976
5227 51 03          MLC   ACNT,SETNMP&3                                              7  4567  M O97 X5U           976
5228 51 04          MLC   ACNT,SETNMP&10                                             7  4574  M O97 X6/           977
5229 51 05          MLC   CLEPS,GMCLR&3                                              7  4581  M P21 W9/           977
5230 51 06          MLC   ACNT,TSTPS&3                                               7  4588  M O97 67W           977
5231 51 07          MLC   ACNT,TSTPS&44                                              7  4595  M O97 71X           977
5232 51 08          MLC   ACTNR,SETEND&28                                            7  4602  M P00 90V           977
5233 51 09          MLC   ACTNR,RESET&10                                             7  4609  M P00 X2Z           978
5234 51 10          MLC   ACTNR,COMPCT-4                                             7  4616  M P00 76|           978
5235 51 11          MLC   GMSET&3,PADQQA                                             7  4623  M 680 73S           978
5236 51 12          MA    @I9I@,PADQQA                                               7  4630  # Q9| 73S           978
5237 51 13          MLC   PADQQA,PADQCZ&6                                            7  4637  M 73S 89|           978
5238 51 14          MLC   ACTNR,COMPCT&6                                             7  4644  M P00 77|           979
5239 51 15          MLC   CSTCNS,CLSTX1&7                                            7  4651  M 552 J98           979
5240 51 16          BCE   TSTPS,I3TUN,                                               8  4658  B 67T 340           979
5241 51 17          MN    @2@,ZEROS1                                                 7  4666  D Q9/ N8Y           979
5242 51 18   TSTPS  C     0,@000000@                                                 7  4673  C 000 Q9X           979
5243 51 19          MLZS  *-6,CENSIG                                                 7  4680  Y 68| 415           980
5244 51 20          BCE   *&8,LBBUCK,1                                               8  4687  B 70S 414 1         980
5245 51 21          MLC   CENSIG,NSYHDR&7                                            7  4695  M 415 B75           980
5246 51 22          MLC   CENSIG,NSE&7                                               7  4702  M 415 W17           980
5247 51 23          BE    TLMPC                                                      5  4709  B 86Z S             980
5248 51 24          C     0,ZEROS1                                                   7  4714  C 000 N8Y           981
5249 51 25          BL    PSCNT                                                      5  4721  B 73T T             981
5250 51 26          B     SLMP                                                       4  4726  B 93U               981
5251 51 27   PADQQA DCW   @   @                                                      3  4732                      981
5252 51 28   PSCNT  CS    332                                                        4  4733  / 332               981
5253 51 29          CS                                                               1  4737  /                   981
5254 51 30          MLC   CNMP,PRMSC-6                                               7  4738  M 569 P3|           981
5255 51 31          C     CNMP,@00@           PASS TO PASS MESSAGES                  7  4745  C 569 Q9Z           982
5256 51 32          BE    GOON                                                       5  4752  B 80Y S             982
5257 51 33          MLC   0,PRMSC-28                                                 7  4757  M 000 P0Y           982
5258 51 34   COMPCT C     CTNR1,0             COMPARE RECORD COUNT                   7  4764  C O7X 000           982
5259 51 35          BU    ERRCT                                                      5  4771  B 84U /             982
5260 51 36   SUBPAD NOP   REMOVE,PRMSC-28                                            7  4776  N P35 P0Y           982
5261 51 37          MZ    SETNOS-1,PRMSC-28                                          7  4783  Y M20 P0Y           983
5262 51 38          MLC   PRMSC-6,228                                                7  4790  M P3| 228           983
5263 51 39   PRCT   W                                                                1  4797  2                   983
5264 51 40          CC    K                                                          2  4798  F K                 983
5265 51 41          NOP                       THIS BECOMES A HALT IF THERE IS        1  4800  N                   983
5266 51 42   *                                AN ERROR IN THE RECORD COUNT
5267 51 43          MLC   @N@,PRCT&3                                                 7  4801  M Q8/ 80|           983
5268 51 44   GOON   A     @1@,CNMP                                                   7  4808  A R0| 569           983
5269 51 45          S     @1@,NMPL                                                   7  4815  S R0| 571           984
5270 51 46          MZ    BLANK,NMPL                                                 7  4822  Y N70 571           984
5271 51 47          B     INIT1                                                      4  4829  B S8W               984
5272 51 48   MUSHQ  MLC   @ LOW@,PDTYQ-8                                             7  4833  M R0U Q4/           984
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

5273 51 49          B     TOOQ                                                        4  4840  B 53Z               984
5274 51 50   ERRCT  MLC   PRMSC,234                                                   7  4844  M P3W 234           984
5275 51 51          MLC   206,CTNR1           MOVE NEW COUNT TO CTNR1                 7  4851  M 206 O7X           985
5276 51 52          MLC   SLMP-4,PRCT&3                                               7  4858  M 93| 80|           985
5277 51 53          B     PRCT                                                        4  4865  B 79X               985
5278 51 54   TLMPC  NOP   SETEND                                                      4  4869  N 87X               985
5279 51 55          B     SLMP                                                        4  4873  B 93U               985
5280 51 56   SETEND LCA   ENDBR&4,GOON&4      END OF SORT                             7  4877  L 91U 81S           985
5281 51 57   PADQCZ BCE   PSCNT,0,1                                                   8  4884  B 73T 000 1         986
5282 51 58          MLC   @S@,SUBPAD                                                  7  4892  M R0V 77W           986
5283 51 59          MZ    @ @,0                                                       7  4899  Y R0W 000           986
5284 51 60          B     PSCNT                                                       4  4906  B 73T               986
5285 51 61   ENDBR  BIN   EPH2,                                                       5  4910  B Y1W               986
5286 51 62   LMPMSG CS    332                                                         4  4915  / 332               986
5287 51 63          CS                                                                1  4919  /                   986
5288 51 64          MLC   PRMSLP,225                                                  7  4920  M P0S 225           987
5289 51 65          W                         PRINT LAST MERGE PASS MESSAGE           1  4927  2                   987
5290 51 66          CC    1                                                           2  4928  F 1                 987
5291 51 67          H     SLMP&5                                                      4  4930  . 93Z               987
5292 51 68   SLMP   BSS   LMPMSG,B                                                    5  4934  B 91V B             987
5293 51 69   EXTLMP NOP   0                   USERS EXIT                              4  4939  N 000               987
5294 51 70          LCA   @N@,CNTSW           LAST MERGE PASS INITIALIZATION          7  4943  L Q8/ L80           987
5295 51 71          LCA   @N@,TSTPS&11                                                7  4950  L Q8/ 68U           988
5296 51 72          MLC   @B@,TLMPC                                                   7  4957  M Q8S 86Z           988
5297 51 73          MLC   @B@,QTRL                                                    7  4964  M Q8S J16           988
5298 51 74          MLC   @B@,PSLMP                                                   7  4971  M Q8S T9/           988
5299 51 75          SBR   EPH2-1,RDLBRT                                               7  4978  H Y1V O2Z           988
5300 51 76          MLC   @#@,WMIRA5&6                                                7  4985  M R0X I06           989
5301 51 77          MLC   @#@,WMIRA5&13                                               7  4992  M R0X I13           989
5302 51 78          BCE   *&22,LABELS,1                                               8  4999  B |2Y 413 1         989
5303 51 79          MLC   @#@,WMIRB5&6                                                7  5007  M R0X B06           989
5304 51 80          MLC   @#@,WMIRB5&13                                               7  5014  M R0X B13           989
5305 51 81          SBR   EPH2-1,PASS                                                 7  5021  H Y1V Z3W           990
5306 51 82          MLC   @A@,SETBAK-7                                                7  5028  M R0Y /99           990
5307 51 83          BCE   LSTVRY,VARY,1                                               8  5035  B L7Z 091 1         990
5308 51 84          BCE   NEWOUT,PI,6         CHECK PADDING INDICATOR                 8  5043  B /2X 193 6         990
5309 51 85          MLC   @N@,PDSW                                                    7  5051  M Q8/ /35           990
5310 51 86          BCE   PAD9,PI,9                                                   8  5058  B |7U 193 9         991
5311 51 87          BCE   PAD,PI,                                                     8  5066  B |9Z 193           991
5312 51 88   PAD9   MLC   0,PADCT                                                     7  5074  M 000 Q85           991
5313 51 89          S     REMOVE,PADCT                                                7  5081  S P35 Q85           991
5314 51 90          MZ    @ @,PADCT                                                   7  5088  Y R0W Q85           991
5315 51 91          B     NEWOUT                                                      4  5095  B /2X               992
5316 51 92   PAD    ZA    REMOVE,PADCT                                                7  5099  ? P35 Q85           992
5317 51 93          MZ    @ @,PADCT                                                   7  5106  Y R0W Q85           992
5318 51 94          MLC   @U@,AWAY&11                                                 7  5113  M Q8X /58           992
5319 51 95          MLC   @B@,AWAY&12                                                 7  5120  M Q8S /59           992
5320 51 96   NEWOUT MLC   AGMEBO,LGMEOA&6                                             7  5127  M O43 725           992
5321 51 97          MLC   ARELBO,ARELO                                                7  5134  M O37 O85           993
5322 51 98   OURBK  MLC   &BO,KOWNT&3                                                 7  5141  M R1/ /31           993
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

5323 51 99          MLC   OUTMOD,WOBR         SET OUTPUT MODE                       7  5148  M 549 /82           993
5324 52 00          SBR   CLINP2&3,INWM12-15                                        7  5155  H K21 I30           993
5325 52 01          BCE   INTRWU,VARY,1                                             8  5162  B S5U 091 1         993
5326 52 02          BCE   CKWM,CNOP,                                                8  5170  B /9S 086           994
5327 52 03          MA    I99,CKWM&6                                                7  5178  # O49 /9Y           994
5328 52 04          MA    I99,MOVOUT&6                                              7  5185  # O49 S3V           994
5329 52 05   CKWM   BWZ   MOVOUT,LMV,1                                              8  5192  V S2Z |33 1         994
5330 52 06          SW    CKWM&4                                                    4  5200  , /9W               994
5331 52 07          MLC   CKWM&6,LSTMOD&6                                           7  5204  M /9Y S2U           995
5332 52 08          MA    @I9D@,LSTMOD&6                                            7  5211  # R1U S2U           995
5333 52 09   LSTMOD MLC   OUTMOD,0                                                  7  5218  M 549 000           995
5334 52 10          B     INTRWU                                                    4  5225  B S5U               995
5335 52 11   MOVOUT MLC   OUTMOD,LMV                                                7  5229  M 549 |33           995
5336 52 12          MA    I99,CKWM&6                                                7  5236  # O49 /9Y           995
5337 52 13          MA    I99,MOVOUT&6                                              7  5243  # O49 S3V           996
5338 52 14          B     CKWM                                                      4  5250  B /9S               996
5339 52 15   INTRWU MLC   @U@,REWIND&19                                             7  5254  M Q8X J49           996
5340 52 16          MLC   I2TUHA,WOBR&3                                             7  5261  M 563 /85           996
5341 52 17          MLC   I2TUHA,WORED&3                                            7  5268  M 563 N76           996
5342 52 18          MLC   I2TUHA,ERTAPE&3                                           7  5275  M 563 O15           996
5343 52 19          B     PSCNT                                                     4  5282  B 73T               997
5344 52 20   *                                SET TAPE UNIT NUMBERS
5345 52 21   INIT1  MLC   I1TUHA,WRCKT&3                                            7  5286  M 562 W9Z           997
5346 52 22          MLC   I1TUHA,WRDCK&3                                            7  5293  M 562 L3|           997
5347 52 23          MLC   I1TUHA,ERSE1&3                                            7  5300  M 562 L7T           997
5348 52 24   ROTP   MLC   I1TUHA,CNRR                                               7  5307  M 562 N69           997
5349 52 25          MLC   O1TUHA,I1TUHA                                             7  5314  M 565 562           997
5350 52 26          MLC   CNRR,O1TUHA                                               7  5321  M N69 565           998
5351 52 27          MLC   I2TUHA,CNRR                                               7  5328  M 563 N69           998
5352 52 28          MLC   O2TUHA,I2TUHA                                             7  5335  M 566 563           998
5353 52 29          MLC   CNRR,O2TUHA                                               7  5342  M N69 566           998
5354 52 30          MLC   I1TUHA,REWIND&3                                           7  5349  M 562 J33           998
5355 52 31          MLC   I1TUHA,READ1&3                                            7  5356  M 562 S72           999
5356 52 32          MLC   I2TUHA,REWIND&8                                           7  5363  M 563 J38           999
5357 52 33          MLC   I2TUHA,READ2&3                                            7  5370  M 563 T82           999
5358 52 34          MLC   O1TUHA,REWIND&13                                          7  5377  M 565 J43           999
5359 52 35          MLC   O1TUHA,OUTTM&3                                            7  5384  M 565 J23           999
5360 52 36   PSLMP  NOP   CNTUE                                                     4  5391  N U1W               999
5361 52 37          MLC   O1TUHA,WOBR&3                                             7  5395  M 565 /85          1000
5362 52 38          MLC   O1TUHA,WORED&3                                            7  5402  M 565 N76          1000
5363 52 39          MLC   O1TUHA,ERTAPE&3                                           7  5409  M 565 O15          1000
5364 52 40   CNTUE  MLC   O2TUHA,OUTTM&8                                            7  5416  M 566 J28          1000
5365 52 41          MLC   O2TUHA,REWIND&18                                          7  5423  M 566 J48          1000
5366 52 42          MLC   I3TUHA,CNRR                                               7  5430  M 564 N69          1001
5367 52 43          MLC   O3TUHA,I3TUHA                                             7  5437  M 567 564          1001
5368 52 44          MLC   CNRR,O3TUHA                                               7  5444  M N69 567          1001
5369 52 45          MLC   I3TUHA,READ3&3                                            7  5451  M 564 U92          1001
5370 52 46          MLC   O3TUHA,THDTP&3                                            7  5458  M 567 J61          1001
5371 52 47          MLC   I3TUHA,THDTP&8                                            7  5465  M 564 J66          1002
5372 52 48          MLC   O3TUHA,THDTP&13                                           7  5472  M 567 J71          1002
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

5373 52 49          SBR   RUNOUT&3,SKIP1                                          7  5479  H 787 788         1002
5374 52 50          SBR   SKIP1&3,COMPAB                                          7  5486  H 791 792         1002
5375 52 51          SBR   SWOT&3,O2TUHA                                           7  5493  H L76 566         1002
5376 52 52          MLC   SDCOMP,SDCMPV                                           7  5500  M P03 P06         1003
5377 52 53          MLC   SDCOMP,STEPA&3                                          7  5507  M P03 T28         1003
5378 52 54          MLC   SDCOMP,STEPB&3                                          7  5514  M P03 U38         1003
5379 52 55          MLC   SDCOMP,STEPC&3                                          7  5521  M P03 V48         1003
5380 52 56          MLC   O2TUHA,OUTTM&8                                          7  5528  M 566 J28         1003
5381 52 57          MLC   O2TUHA,REWIND&18                                        7  5535  M 566 J48         1004
5382 52 58          MLC   O1TUHA,RDCPT&3                                          7  5542  M 565 687         1004
5383 52 59          MLC   O1TUHA,RREDCP&3                                         7  5549  M 565 713         1004
5384 52 60   SETOUT MLC   AREFO,0                                                 7  5556  M P15 000         1004
5385 52 61          MLC   BLANK2,CNEOR                                            7  5563  M N72 O34         1004
5386 52 62          BCE   WRCK2,I3TUN,        BRANCH IF 2-WAY MERGE               8  5570  B W2| 340         1005
5387 52 63          MLC   BLANK,CNTRA                                             7  5578  M N70 572         1005
5388 52 64          MLC   BLANK,CNTRB                                             7  5585  M N70 573         1005
5389 52 65          SBR   COMPAB&10,SKIP2                                         7  5592  H 802 813         1005
5390 52 66          SBR   COMPAB&15,SKIP3                                         7  5599  H 807 838         1005
5391 52 67          SBR   SKIP2&3,COMPBC                                          7  5606  H 816 817         1006
5392 52 68          SBR   SKIP3&3,COMPAC                                          7  5613  H 841 842         1006
5393 52 69   WRCK2  SW    1,5                 SET RESTART BRANCH                  7  5620  , 001 005         1006
5394 52 70          MLC   &HRES                                                   4  5627  M R1X             1006
5395 52 71          MLC   @B@                                                     4  5631  M Q8S             1006
5396 52 72          CW    ITLI                                                    4  5635  ) 188             1006
5397 52 73          MLC   @N@,STPASS                                              7  5639  M Q8/ 37Z         1007
5398 52 74          BIN   HSSD,D                                                  5  5646  B W5V D           1007
5399 52 75          B     IWRCK                                                   4  5651  B W7U             1007
5400 52 76   HSSD   CS    332                 SENSE SWITCH D INTERRUPT            4  5655  / 332             1007
5401 52 77          CS                                                            1  5659  /                 1007
5402 52 78          MLC   PRMXX,222                                               7  5660  M P5Y 222         1007
5403 52 79          W                         PRINT DENSITY MESSAGE               1  5667  2                 1007
5404 52 80          CC    1                                                       2  5668  F 1               1008
5405 52 81          H     *&1                                                     4  5670  . W7U             1008
5406 52 82   IWRCK  MLC   @  @,CNEOR                                              7  5674  M R1Z O34         1008
5407 52 83          MLC   BLANK2,CNRR                                             7  5681  M N72 N69         1008
5408 52 84   GMCLR  CW    0                                                       4  5688  ) 000             1008
5409 52 85   EXTCKP NOP   0                   USERS EXIT                          4  5692  N 000             1008
5410 52 86   WRCKT  WTW   0,1                 WRITE CHECKPOINT                    8  5696  L %U0 001 W       1008
5411 52 87          BER   WRDCK                                                   5  5704  B L2X L           1009
5412 52 88          BEF   WEFCK2                                                  5  5709  B N7Z K           1009
5413 52 89   TFI    BIN   INTRPT,E                                                5  5714  B Y7| E           1009
5414 52 90   RESET  S     0                                                       4  5719  S 000             1009
5415 52 91          MZ    BLANK,0                                                 7  5723  Y N70 000         1009
5416 52 92          MLC   INPUT1,IREG1                                            7  5730  M O67 089         1009
5417 52 93          MLC   INPUT2,IREG2                                            7  5737  M O70 094         1010
5418 52 94          MLC   INPUT3,IREG3                                            7  5744  M O73 099         1010
5419 52 95   SETNMP S     0                   PRINT MERGE PASS NUM MESSAGE        4  5751  S 000             1010
5420 52 96          MZ    BLANK,0                                                 7  5755  Y N70 000         1010
5421 52 97          CS    332                                                     4  5762  / 332             1010
5422 52 98          CS                                                            1  5766  /                 1010
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

5423 52 99          MLC   CNMP,PRMSH-27                                           7  5767  M 569 P8T          1010
5424 53 00          MLC   O1TUHA,PRMSH-20                                         7  5774  M 565 P9|          1011
5425 53 01          MLC   I1TUHA,PRMSH-14                                         7  5781  M 562 P9W          1011
5426 53 02          MLC   I2TUHA,PRMSH-12                                         7  5788  M 563 P9Y          1011
5427 53 03          MLC   I3TUHA,PRMSH-10                                         7  5795  M 564 Q0|          1011
5428 53 04          MLC   PRMSH-10,226                                            7  5802  M Q0| 226          1011
5429 53 05          W                                                             1  5809  2                  1011
5430 53 06          CC    1                                                       2  5810  F 1                1011
5431 53 07          B     CLSTX1-7                                                4  5812  B J84              1012
5432 53 08   EPH2   CS    332                                                     4  5816  / 332              1012
5433 53 09          CS                                                            1  5820  /                  1012
5434 53 10          MLC   O1TUHA,RWES&3                                           7  5821  M 565 Y4Y          1012
5435 53 11          MLC   O2TUHA,PRMSG-12                                         7  5828  M 566 P6U          1012
5436 53 12          MLC   PRMSG,218                                               7  5835  M P7W 218          1012
5437 53 13          W                          PRINT END OF SORT MESSAGE          1  5842  2                  1012
5438 53 14          CC    1                                                       2  5843  F 1                1013
5439 53 15   RWES   RWD   0                    REWIND CHECKPOINT TAPE             5  5845  U %U0 R            1013
5440 53 16          BCE   NDSRT,URPI,P                                            8  5850  B L2T 186 P        1013
5441 53 17          BCE   NDSRT,URPI,C                                            8  5858  B L2T 186 C        1013
5442 53 18          B     WTMBD                BRANCH TO CLOSE REDUNDANCY TAPE    4  5866  B ?38              1013
5443 53 19   INTRPT MLC   CNMP,PRMSH-27        SENSE SWITCH E INTERRUPT           7  5870  M 569 P8T          1013
5444 53 20          MLC   O1TUHA,PRMSH-20                                         7  5877  M 565 P9|          1014
5445 53 21          MLC   I1TUHA,PRMSH-14                                         7  5884  M 562 P9W          1014
5446 53 22          MLC   I2TUHA,PRMSH-12                                         7  5891  M 563 P9Y          1014
5447 53 23          MLC   I3TUHA,PRMSH-10                                         7  5898  M 564 Q0|          1014
5448 53 24          CS    332                                                     4  5905  / 332              1014
5449 53 25          CS                                                            1  5909  /                  1014
5450 53 26          MLC   PRMSH,234                                               7  5910  M Q1| 234          1015
5451 53 27          W                          PRINT INTERRUPT MESSAGE            1  5917  2                  1015
5452 53 28          CS    239                                                     4  5918  / 239              1015
5453 53 29          MLC   PDTYQ,212                                               7  5922  M Q4Z 212          1015
5454 53 30          W                                                             1  5929  2                  1015
5455 53 31          CC    1                                                       2  5930  F 1                1015
5456 53 32          H     RESET                                                   4  5932  . X1Z              1015
5457 53 33   PASS   R                                                             1  5936  1                  1016
5458 53 34          BCE   CLSTX1-7,040,/                                          8  5937  B J84 040 /        1016
5459 53 35          B     PASS                                                    4  5945  B Z3W              1016
5460 53 36   HRES   CS    332                  RESTART ROUTINE                    4  5949  / 332              1016
5461 53 37          CS                                                            1  5953  /                  1016
5462 53 38          RWD   1                                                       5  5954  U %U1 R            1016
5463 53 39   SETBK  SW    0                    INITIALIZE MESSAGES                4  5959  , 000              1016
5464 53 40          MLC   CNMP,PRMSI-20                                           7  5963  M 569 Q1X          1017
5465 53 41          MLC   I1TUHA,PRMSI-14                                         7  5970  M 562 Q2T          1017
5466 53 42          MLC   I2TUHA,PRMSI-12                                         7  5977  M 563 Q2V          1017
5467 53 43          MLC   I3TUHA,PRMSI-10                                         7  5984  M 564 Q2X          1017
5468 53 44          MLC   O1TUHA,PRMSI-4                                          7  5991  M 565 Q3T          1017
5469 53 45          MLC   O2TUHA,PRMSI-2                                          7  5998  M 566 Q3V          1018
5470 53 46          MLC   O3TUHA,PRMSI                                            7  6005  M 567 Q3X          1018
5471 53 47          MLC   PRMSI,227                                               7  6012  M Q3X 227          1018
5472 53 48          W                          PRINT RESTART MESSAGES             1  6019  2                  1018
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

5473 53 49          CS    228                                                  4  6020  / 228             1018
5474 53 50          MLC   PDTYQ,212                                            7  6024  M Q4Z 212         1018
5475 53 51          W                                                          1  6031  2                 1018
5476 53 52          CS    228                                                  4  6032  / 228             1019
5477 53 53          MLC   CARDMG,231                                           7  6036  M Q8| 231         1019
5478 53 54          W                                                          1  6043  2                 1019
5479 53 55   CPTGM  LCA   0,ITLI               LOAD GROUPMARK TO STOP TAPE READ    7  6044  L 000 188         1019
5480 53 56          MLC   @B@,STPASS                                           7  6051  M Q8S 37Z         1019
5481 53 57          MLC   @N@,NOPPS1           NOP IF NO LABELS                7  6058  M Q8/ J8V         1019
5482 53 58          BEF   *&1                                                  5  6065  B !7| K           1019
5483 53 59          MLZS  *-6,CENSIG                                           7  6070  Y !7| 415         1020
5484 53 60          BCE   *&8,LBBUCK,1                                         8  6077  B !9S 414 1       1020
5485 53 61          MLC   CENSIG,NSYHDR&7                                      7  6085  M 415 B75         1020
5486 53 62          MLC   CENSIG,NSE&7                                         7  6092  M 415 W17         1020
5487 53 63          CC    1                                                    2  6099  F 1               1020
5488 53 64          H                                                          1  6101  .                 1020
5489 53 65          BCE   *&19,LBBUCK,                                         8  6102  B J2Y 414         1021
5490 53 66          SBR   HDTSS1-4,HDTSC7                                      7  6110  H A55 E44         1021
5491 53 67          SBR   HDTRAX-17,HDTSC6                                     7  6117  H E18 E41         1021
5492 53 68          B     HDTSS0                                               4  6124  B A30             1021
5493 53 69          SBR   HDTRS1-4,HDTRC7                                      7  6128  H A55 E35         1021
5494 53 70          SBR   HDTREX-16,HDTRC6                                     7  6135  H E10 E32         1022
5495 53 71          B     HDTRS0               OPEN THE TAPES                  4  6142  B A30             1022
5496 53 72   NOPPS2 MLNS  I1TUHA,RCCP&3                                        7  6146  D 562 J7|         1022
5497 53 73          MLC   @ @,ERRCNT            INITIALIZE ERROR COUNTER       7  6153  M R0W N6Z         1022
5498 53 74          MLNS  I1TUHA,RSTBER&3                                      7  6160  D 562 K7X         1022
5499 53 75   RCCP   RTW   %U0,001                                              8  6167  L %U0 001 R       1023
5500 53 76          BER   RSTBER                                               5  6175  B K7U L           1023
5501 53 77          BEF   RSTBEF                                               5  6180  B K7| K           1023
5502 53 78   NOPPS1 B     WRCK2                                                4  6185  B W2|             1023
5503 53 79          SBR   HDTRS1-4,HDTRC6                                      7  6189  H A55 E32         1023
5504 53 80          SBR   HDTREX-16,HDTRC7                                     7  6196  H E10 E35         1023
5505 53 81          SBR   HDTRS1&10,HDTRRI                                     7  6203  H A69 D72         1024
5506 53 82          MLC   HDTRC8,HDTRC1                                        7  6210  M A28 A26         1024
5507 53 83          MLC   HDTRC8,HDTRC2                                        7  6217  M A28 A27         1024
5508 53 84          SBR   HTPRSW-10,HTHAL1                                     7  6224  H D15 ?80         1024
5509 53 85          SBR   HDTRS1&6,HDTRC1                                      7  6231  H A65 A26         1024
5510 53 86          SBR   HDTRS1&13,HDTRC1                                     7  6238  H A72 A26         1025
5511 53 87          MLC   @B@,HTEXRT-4                                         7  6245  M Q8S B86         1025
5512 53 88          MLC   @B@,NOPPS1                                           7  6252  M Q8S J8V         1025
5513 53 89          SBR   HDTREX&3,NXTPS                                       7  6259  H E29 677         1025
5514 53 90          B     WRCK2                                                4  6266  B W2|             1025
5515 53 91   RSTBEF H     WRCK2                                                4  6270  . W2|             1025
5516 53 92   RSTBER BSP   %U0                                                  5  6274  U %U0 B           1026
5517 53 93   CPTERR A     @1@,ERRCNT                                           7  6279  A R0| N6Z         1026
5518 53 94          BAV   CPTHLT                                               5  6286  B K9V Z           1026
5519 53 95          B     RCCP                                                 4  6291  B J6X             1026
5520 53 96   CPTHLT H     NOPPS2                                               4  6295  . J4W             1026
5521 53 97   COMP2  C     0,@000001@                                           7  6299  C 000 R2V         1026
5522 53 98          BL    SETNMP                                               5  6306  B X5/ T           1026
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 SEQ PG LIN  LABEL  OP    OPERANDS                                       SFX CT  LOCN  INSTRUCTION TYPE  CARD

5523 53 99          B     SLMP                                                4  6311  B 93U              1027
5524 54 00   EOFCP  H     STPASS                                              4  6315  . 37Z              1027
5525 54 01          B     RREDCP                                              4  6319  B 710              1027
5526 54 02   NDSRT  H     *-3                 END OF SORT                     4  6323  . L2T              1027
5527 54 03   WRDCK  BSP   0                   WRITE CHECKPOINT ERROR ROUTINE  5  6327  U %U0 B            1027
5528 54 04          BCE   ERCKP,CNRR,1                                        8  6332  B L5/ N69 1        1027
5529 54 05          A     @1@,CNRR                                            7  6340  A R0| N69          1027
5530 54 06          B     WRCKT                                               4  6347  B W9W              1028
5531 54 07   ERCKP  A     @1@,CNEOR                                           7  6351  A R0| O34          1028
5532 54 08          C     CNEOR,@10@                                          7  6358  C O34 R2X          1028
5533 54 09          BE    HRTRY                                               5  6365  B N7V S            1028
5534 54 10   ERSE1  SKP   0                                                   5  6370  U %U0 E            1028
5535 54 11          B     IWRCK&7                                             4  6375  B W8/              1028
5536 54 12   LSTVRY MA    NOZNE,ALOP&6        LAST MERGE PASS INITIALIZATION  7  6379  # O55 N9V          1028
5537 54 13          MA    @004@,COMETF         ALLOW FOR BLOCK COUNT FOR VLR  7  6386  # R3| 559          1029
5538 54 14          MA    NOZNE,ALOP&13       FOR VARIABLE LENGTH RECORDS     7  6393  # O55 O0S          1029
5539 54 15          MA    NOZNE,ALOP&20                                       7  6400  # O55 O0Z          1029
5540 54 16          MLC   ALOP&6,INCR1-8                                      7  6407  M N9V 890          1029
5541 54 17          MLC   ALOP&13,INCR2-8                                     7  6414  M O0S 940          1029
5542 54 18          MLC   ALOP&20,INCR3-8                                     7  6421  M O0Z 990          1030
5543 54 19          C     BO,@001@                                            7  6428  C 185 R3T          1030
5544 54 20          BE    ARL&8                                               5  6435  B N4| S            1030
5545 54 21          MLC   AOWA,SWOWA&3                                        7  6440  M O52 M5X          1030
5546 54 22          MA    @I9F@,SWOWA&3                                       7  6447  # R3W M5X          1030
5547 54 23   SWOWA  SW    0                                                   4  6454  , 000              1030
5548 54 24          MLC   COMETF,COMET                                        7  6458  M 559 556          1031
5549 54 25          MLC   @M@,INCR1-7                                         7  6465  M R3X 891          1031
5550 54 26          MLC   @M@,INCR2-7                                         7  6472  M R3X 941          1031
5551 54 27          MLC   @M@,INCR3-7                                         7  6479  M R3X 991          1031
5552 54 28          MLC   @?@,SETBAK                                          7  6486  M R3Y S06          1031
5553 54 29          MLC   @A@,ADDTO                                           7  6493  M R0Y |42          1032
5554 54 30          MLC   AOWA,*&14                                           7  6500  M O52 N2|          1032
5555 54 31          MA    I99,*&7                                             7  6507  # O49 N2|          1032
5556 54 32          LCA   @000D@,0                                            7  6514  L R4S 000          1032
5557 54 33          SW    SWOWA&1                                             4  6521  , M5V              1032
5558 54 34          MLC   SWOWA&3,WOBR&6                                      7  6525  M M5X /88          1032
5559 54 35   ARL    BCE   OURBK&7,BO,                                         8  6532  B /4Y 185          1033
5560 54 36          BCE   ELIMIT,RLIIND,1                                     8  6540  B O1| 560 1        1033
5561 54 37          MLC   &LSTOUT,ISOFL-1                                     7  6548  M R4V N7T          1033
5562 54 38          LCA   ISOFL,CKOUT&4                                       7  6555  L N7U |74          1033
5563 54 39          B     OURBK&7                                             4  6562  B /4Y              1033
5564 54 40   CNTBO  DCW   @   @                                               3  6568                     1033
5565 54 41   ERRCNT DCW   @ @                  ERROR BUCKET FOR CHECKPOINT READ  1  6569                  1033
5566 54 42   ISOFL        @B000 @                                             5  6574                     1034
5567 54 43   HRTRY  H     IWRCK                                               4  6575  . W7U              1034
5568 54 44   WEFCK2 H     TFI                                                 4  6579  . X1U              1034
5569 54 45   ZEROS1 DCW   @000001@                                            6  6588                     1034
5570 54 46   ALOP   MZ    BLANK,0&X1                                          7  6589  Y N70 0|0          1034
5571 54 47          MZ    BLANK,0&X2                                          7  6596  Y N70 0!0          1035
5572 54 48          MZ    BLANK,0&X3                                          7  6603  Y N70 0?0          1035
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

5573 54 49  ELIMIT BCE   ARL&16,RTAIN,1                                        8  6610  B N4Y 553 1       1035
5574 54 50         MA    @004@,WOBR&6       ELIMINATE RLI-VLR UNBLOCKED        7  6618  # R3| /88         1035
5575 54 51         B     ARL&16                                                4  6625  B N4Y             1035
5576 54 52  RDLBRT CS    80                  READ IN THE FINAL HEADER-         4  6629  / 080             1035
5577 54 53         SW    24,56               TRAILER ROUTINE                   7  6633  , 024 056         1036
5578 54 54         SW    63,67                                                 7  6640  , 063 067         1036
5579 54 55         BCE   NORMAL,LBBUCK,      BRANCH IF 80 CHARACTER ROUTINE    8  6647  B O6Y 414         1036
5580 54 56  ABNORM R                                                           1  6655  1                 1036
5581 54 57         BCE   NORMAL,68,B                                           8  6656  B O6Y 068 B       1036
5582 54 58         B     ABNORM                                                4  6664  B O5V             1036
5583 54 59  NORMAL R     56                                                    4  6668  1 056             1036
5584 54 60  CTNR1  DCW   @000000@                                              6  6677                    1037
5585 54 61  PRMSLP DCW   @LAST MERGE PASS-INTERRUPT@                          25  6702                    1037
5586 54 62  PRMSC  DCW   @       REC PROCESSED-PASS 00-ERROR@                 34  6736                    1038
5587 54 63  PRMXX  DCW   @DENSITY MAY BE CHANGED@                             22  6758                    1039
5588 54 64  PRMSG  DCW   @OUTP  -END OF SORT@                                 18  6776                    1040
5589 54 65  PRMSH  DCW   @PASS 00-CKPT 0-INP 0,0,0 INTERRUPT@                 34  6810                    1041
5590 54 66  PRMSI        @PASS 00 INP 0,0,0 OUT 0,0,0@                        27  6837                    1042
5591 54 67  PDTYQ  DCW   @HIGH DENSITY@                                       12  6849                    1042
5592 54 68  CARDMG DCW   @PLACE CARDS FROM 1442 IN READER@                    31  6880                    1043
5593 54 69         LTORG *                                                           6881
                   DCW   @N@                                                   1  6881              LIT   1043
                   DCW   @B@                                                   1  6882              LIT   1043
                   DCW   @000@                                                 3  6885              LIT   1043
                   DCW   @6@                                                   1  6886              LIT   1043
                   DCW   @U@                                                   1  6887              LIT   1043
                   DCW   @I9I@                                                 3  6890              LIT   1044
                   DCW   @2@                                                   1  6891              LIT   1044
                   DCW   @000000@                                              6  6897              LIT   1044
                   DCW   @00@                                                  2  6899              LIT   1044
                   DCW   @1@                                                   1  6900              LIT   1044
                   DCW   @ LOW@                                                4  6904              LIT   1044
                   DCW   @S@                                                   1  6905              LIT   1044
                   DCW   @ @                                                   1  6906              LIT   1045
                   DCW   @#@                                                   1  6907              LIT   1045
                   DCW   @A@                                                   1  6908              LIT   1045
                   DCW   &BO                                                   3  6911  185         ADCON 1045
                   DCW   @I9D@                                                 3  6914              LIT   1045
                   DCW   &HRES                                                 3  6917  Z4Z         ADCON 1045
                   DCW   @  @                                                  2  6919              LIT   1045
                   DCW   @000001@                                              6  6925              LIT   1046
                   DCW   @10@                                                  2  6927              LIT   1046
                   DCW   @004@                                                 3  6930              LIT   1046
                   DCW   @001@                                                 3  6933              LIT   1046
                   DCW   @I9F@                                                 3  6936              LIT   1046
                   DCW   @M@                                                   1  6937              LIT   1046
                   DCW   @?@                                                   1  6938              LIT   1046
                   DCW   @000D@                                                4  6942              LIT   1047
                   DCW   &LSTOUT                                               3  6945  K33         ADCON 1047
5594 54 70         EX    SETCLR                                                         B 22V             1048
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

5595 54 71          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2
5596 54 72          ORG   CLSTX1-18                                                      2173
5597 54 73          SBR   CLINP2&3,NXTPS                                           7  2173  H K21 677         1051
5598 54 74          B     CLSTX1                                                   4  2180  B J91             1051
5599 54 75          SBR   CLINP2&3,INWM22-15                                       7  2184  H K21 B30         1051
5600 54 76          ORG   EOFW1                                                          2549
5601 54 77          BCE   RWD,QTRL,B                                               8  2549  B ?80 J16 B       1052
5602 54 78          ORG   HTHAL1                                                         3080
5603 54 79   RWD    MLNS  WOBR&3,*&4                                               7  3080  D /85 ?90         1053
5604 54 80          WTM   0                                                        5  3087  U %U0 M           1053
5605 54 81          MLNS  WOBR&3,*&4                                               7  3092  D /85 A02         1053
5606 54 82          RWU   0                                                        5  3099  U %U0 U           1053
5607 54 83          BCE   HLT,O3TUHA,                                              8  3104  B A28 567         1053
5608 54 84          C     WOBR&3,O3TUHA                                            7  3112  C /85 567         1053
5609 54 85          BU    RTRN2-7                                                  5  3119  B S25 /           1054
5610 54 86          H     SWOT                                                     4  3124  . L73             1054
5611 54 87   HLT    H     RTRN2-7                                                  4  3128  . S25             1054
5612 54 88          NOP                                                            1  3132  N                 1054
5613 54 89   ***
5614 54 90   ***            SET WORD MARK ROUTINE WITHOUT LABELS
5615 54 91   ***
5616 54 92          ORG   3200                                                           3200
5617 54 93   WMIRB5 CS    3599                                                     4  3200  / E99             1055
5618 54 94          CS                                                             1  3204  /                 1055
5619 54 95          CS                                                             1  3205  /                 1055
5620 54 96          NOP   NF0?1,CLSTX1&3                                           7  3206  N B29 J94         1055
5621 54 97          NOP   NF0?1,CLSTX1&18                                          7  3213  N B29 K09         1055
5622 54 98          CS    LGMEOA,3299                                              7  3220  / 719 B99         1055
5623 54 99   NF0?1  DCW   @F0?@                                                    3  3229                    1055
5624 55 00          BCE   WMIRB5,VARY,1                                            8  3230  B B00 091 1       1056
5625 55 01          MLC   BLANK2,CNCFB#2                                           7  3238  M N72 E11         1056
5626 55 02   INWM22 MLC   AIRA1,ICF22#3                                            7  3245  M O58 E14         1056
5627 55 03          MA    CF1SL,ICF22                                              7  3252  # 353 E14         1056
5628 55 04          MLC   ICF22,WMS22&3                                            7  3259  M E14 B76         1056
5629 55 05          MLC   @   @,CNTBB#3                                            7  3266  M E17 E20         1057
5630 55 06   ***       SET WORD MARKS LEFT EDGE OF CONTROL FIELDS
5631 55 07   WMS22  SW    0                    SET WORD MARK                       4  3273  , 000             1057
5632 55 08          A     *-6,CNTBB                                                7  3277  A B77 E20         1057
5633 55 09          C     CNTBB,B                                                  7  3284  C E20 199         1057
5634 55 10          BE    SWNCFB                                                   5  3291  B C07 S           1057
5635 55 11          MA    L,WMS22&3                                                7  3296  # 347 B76         1057
5636 55 12          B     WMS22                                                    4  3303  B B73             1058
5637 55 13   SWNCFB A     *-6,CNCFB            NEXT CONTROL FIELD                  7  3307  A C07 E11         1058
5638 55 14          C     CNCFB,NCF                                                7  3314  C E11 096         1058
5639 55 15          BE    SWIRB2                                                   5  3321  B C37 S           1058
5640 55 16          MA    @003@,INWM22&10                                          7  3326  # E23 B55         1058
5641 55 17          B     INWM22                                                   4  3333  B B45             1058
5642 55 18   SWIRB2 NOP   SWIRB3-8             NEXT INPUT AREA                     4  3337  N C66             1058
5643 55 19          MLC   @B@,SWIRB2                                               7  3341  M E24 C37         1059
5644 55 20          SBR   INWM22&3,AIRA2                                           7  3348  H B48 O61         1059
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

5645 55 21          SBR   INWM22&10,CF1SL                                        7  3355  H B55 353         1059
5646 55 22          B     INWM22-7                                               4  3362  B B38             1059
5647 55 23          BCE   INWMCI,I3TUN,      BRANCH IF TWO-WAY MERGE             8  3366  B D03 340         1059
5648 55 24   SWIRB3 NOP   INWMCI             NEXT INPUT AREA                     4  3374  N D03             1059
5649 55 25          MLC   @B@,SWIRB3                                             7  3378  M E24 C74         1060
5650 55 26          SBR   INWM22&3,AIRA3                                         7  3385  H B48 O64         1060
5651 55 27          SBR   INWM22&10,CF1SL                                        7  3392  H B55 353         1060
5652 55 28          B     INWM22-7                                               4  3399  B B38             1060
5653 55 29   ***            SET WORD MARKS LEFT EDGE OF EACH RECORD
5654 55 30   INWMCI MLC   AIRA1,ICF22                                            7  3403  M O58 E14         1060
5655 55 31          MLC   ICF22,SW22&3                                           7  3410  M E14 D27         1060
5656 55 32          MLC   @   @,CNTBB                                            7  3417  M E17 E20         1061
5657 55 33   SW22   SW    0                                                      4  3424  , 000             1061
5658 55 34          A     *-6,CNTBB                                              7  3428  A D28 E20         1061
5659 55 35          C     CNTBB,B                                                7  3435  C E20 199         1061
5660 55 36          BE    WMIRB2                                                 5  3442  B D58 S           1061
5661 55 37          MA    L,SW22&3                                               7  3447  # 347 D27         1061
5662 55 38          B     SW22                                                   4  3454  B D24             1062
5663 55 39   WMIRB2 NOP   WMIRB3-8                                               4  3458  N D80             1062
5664 55 40          MLC   @B@,WMIRB2                                             7  3462  M E24 D58         1062
5665 55 41          MLC   AIRA2,ICF22                                            7  3469  M O61 E14         1062
5666 55 42          B     INWMCI&7                                               4  3476  B D10             1062
5667 55 43          BCE   WMIRB5,I3TUN,      BRANCH IF TWO-WAY MERGE             8  3480  B B00 340         1062
5668 55 44   WMIRB3 NOP   WMIRB5                                                 4  3488  N B00             1062
5669 55 45          MLC   @B@,WMIRB3                                             7  3492  M E24 D88         1063
5670 55 46          MLC   AIRA3,ICF22                                            7  3499  M O64 E14         1063
5671 55 47          B     INWMCI&7                                               4  3506  B D10             1063
5672 55 48          LTORG *                                                            3510
             CNCFB  DCW   #02                                                    2  3511              AREA  1063
             ICF22  DCW   #03                                                    3  3514              AREA  1063
                    DCW   @   @                                                  3  3517              LIT   1063
             CNTBB  DCW   #03                                                    3  3520              AREA  1063
                    DCW   @003@                                                  3  3523              LIT   1064
                    DCW   @B@                                                    1  3524              LIT   1064
5673 55 49          EX    PASMLT                                                          B 31S             1065
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

5674 55 50          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE
5675 55 51          ORG   STRTMP                                                          0553
5676 55 52          SFX   #                                                   #
5677 55 53          DCW   @MULTIPHASE@                                        #  10  0562                    1068
5678 55 54   *                                 CLEAR CORE FROM END OF AVAILABLE
5679 55 55   *                                 PHASE 2 AREA TO 700
5680 55 56   REPH1  MLC   CSTCNS,CLPH1&3                                      #   7  0563  M 552 577         1068
5681 55 57          SW    700                                                 #   4  0570  , 700             1068
5682 55 58   CLPH1  CS    0                  CLEARING BEGINS FROM PH2 USER    #   4  0574  / 000             1068
5683 55 59          SBR   CLPH1&3            AREA                             #   4  0578  H 577             1068
5684 55 60          BWZ   CLPH1,700,1                                         #   8  0582  V 574 700 1       1068
5685 55 61   *                                 LOAD MAINLINE AND FIRST INIT RTN
5686 55 62   *                                    BRANCH TO STRTN
5687 55 63          CS    80                 READ FIRST MULTIPHASE OVERLAY    #   4  0590  / 080             1069
5688 55 64          SW    24,56                                               #   7  0594  , 024 056         1069
5689 55 65          SW    63,67                                               #   7  0601  , 063 067         1069
5690 55 66          R     056                                                 #   4  0608  1 056             1069
5691 55 67          NOP                                                       #   1  0612  N                 1069
5692 55 68          EX    REPH1                                               #            B 563             1070
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

5693 55 69          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE           #
5694 55 70          SFX   #                                                  #
5695 55 71          ORG   STRTMP                                             #            0553
5696 55 72   OWA    DCW   @B01@              START OF OUTPUT AREA            #   3  0555                    1073
5697 55 73   CNMP   DCW   @00@               CURRENT MERGE PASS NUMBER       #   2  0557                    1073
5698 55 74   NMPL   DCW   @  @               NUM OF MULTIPHASE PASSES LEFT   #   2  0559                    1073
5699 55 75   CNTRB  DCW   @ @                NUM OF SEQ IF LESS THAN 8       #   1  0560                    1073
5700 55 76   CLEPS        @   @              LOC OF GMWM FOR CHECKPOINT      #   3  0563                    1073
5701 55 77   ACTNR        @   @              LOC OF TOTAL RCD COUNT          #   3  0566                    1073
5702 55 78   ACNT   DCW   @   @              LOC OF UNREADABLE RCD COUNT     #   3  0569                    1073
5703 55 79   NOMP   DCW   @00@               TOTAL NUM OF MERGE PASSES       #   2  0571                    1073
5704 55 80   SEQMRG DCW   @000000@           NUM SEQ TO BE MERGED CURRENT PASS #   6  0577                    1073
5705 55 81   YCNTR  DCW   @000000@                                           #   6  0583                    1074
5706 55 82   *                                 ALGORITHM COMPUTATION BUCKETS
5707 55 83   PCNTR  DCW   @000000@                                           #   6  0589                    1074
5708 55 84   XAREA  DCW   @000000@                                           #   6  0595                    1074
5709 55 85   YAREA  DCW   @000001@                                           #   6  0601                    1074
5710 55 86   *                                 MULTIPHASE CONSTANTS
5711 55 87   LIT001 DCW   @001@                                              #   3  0604                    1074
5712 55 88   LIT003 DCW   @003@                                              #   3  0607                    1074
5713 55 89   SIX 0S DCW   @000000@                                           #   6  0613                    1074
5714 55 90   NOP    DCW   @N@                                                #   1  0614                    1075
5715 55 91   KB     DCW   @B@                                                #   1  0615                    1075
5716 55 92   AONE   DCW   @1@                                                #   1  0616                    1075
5717 55 93   ATWO   DCW   @2@                                                #   1  0617                    1075
5718 55 94   AFOUR  DCW   @4@                                                #   1  0618                    1075
5719 55 95   TWOBL  DCW   @  @                                               #   2  0620                    1075
5720 55 96   I99    DCW   @I9I@                                              #   3  0623                    1075
5721 55 97   BLANK  EQU   TWOBL-1                                            #      0619
5722 55 98   AZERO  EQU   SIX 0S-5                                           #      0608
5723 55 99   RUNOTP EQU   RNOUTP                                             #      0780
5724 56 00   *            MULTIPHASE LABELS EQUATED WITH THOSE FROM ASSN PHASE
5725 56 01          SFX
5726 56 02   THEDTE EQU   DATE                                                      0501
5727 56 03   OTMOMP EQU   HTMO                                                      0190
5728 56 04   OHLIMP EQU   OTLI               OUTPUT HDR LABEL                       0189
5729 56 05   WLBKTM EQU   WLBKT                                                     0417
5730 56 06   OHLOPM EQU   OHLOP                                                     0419
5731 56 07   OTLIMP EQU   TLO                OUTPUT TRAILER LABEL                   0192
5732 56 08   OUTMLT EQU   OUTMOD             OUTPUT MODE INDICATOR                  0549
5733 56 09   LMULTI EQU   L                  RECORD LENGTH                          0347
5734 56 10   BMULTI EQU   B                  SORT BLOCKING                          0199
5735 56 11   BOMULT EQU   BO                 OUTPUT BLOCKING                        0185
5736 56 12   NCFMLT EQU   NCF                NUM CONTROL FIELDS                     0096
5737 56 13   BLMULT EQU   BL                 SORT BLOCK LENGTH                      0085
5738 56 14   CTNRML EQU   CTNR               TOTAL NUM OF RCDS                      0539
5739 56 15   PIMULT EQU   PI                 PADDING IND                            0193
5740 56 16   URPIML EQU   URPI               UNREADABLE RCD PROCED IND              0186
5741 56 17   IF1F2M EQU   IF1F2              DISTANCE BETWEEN CFS                   0383
5742 56 18   CNOSIM EQU   CNOS1              NUM TIMES TAPES SWITCHED IN PH 1       0545
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

5743 56 19   *                                 INPUT TAPE UNIT NUMBERS
5744 56 20   I1TUNM EQU   I1TUN                                                     0338
5745 56 21   I2TUNM EQU   I2TUN                                                     0339
5746 56 22   I3TUNM EQU   I3TUN                                                     0340
5747 56 23   MSMULT EQU   MS                 CORE SIZE                              0344
5748 56 24   CFIREM EQU   CFIRE              UNITS POS CF 1                         0337
5749 56 25   CNOPML EQU   CNOP               1 IF CF IN FIRST POS OF RCD            0086
5750 56 26   LDIMLT EQU   LDI                DENSITY INDICATOR                      0187
5751 56 27   CF1SLM EQU   CF1SL              HI ORDER POS CF 1                      0353
5752 56 28          SFX   #                                                  #
5753 56 29   ACNTR  DCW   @0@                STEPDOWN COUNTER                #   1  0624                    1076
5754 56 30   SPLCHR DCW   @|@                STEPDOWN COUNTER                #   1  0625                    1076
5755 56 31   PADQNQ DCW   @   @              LOC OF REDUNDANCY IND           #   3  0628                    1076
5756 56 32   *                                 TAPE UNIT AND SEQ COUNT BUCKETS
5757 56 33   I2TUHP DCW   @0@                                                #   1  0629                    1076
5758 56 34   I1TUHP DCW   @0@                                                #   1  0630                    1076
5759 56 35   O1TUHP DCW   @0000000@                                          #   7  0637                    1076
5760 56 36   O2TUHP DCW   @0000000@                                          #   7  0644                    1076
5761 56 37   TUHOLD DCW   @0000000@                                          #   7  0651                    1077
5762 56 38   TAPSEQ DCW   @000000@                                           #   6  0657                    1077
5763 56 39   AGMEOP DCW   #3                 END OF OUTPUT AREA              #   3  0660                    1077
5764 56 40   ARELBP DCW   @   @              END OF OUTPUT AREA-LAST PASS    #   3  0663                    1077
5765 56 41   AGMEBP DCW   @   @              LOC OF GMWM-LAST PASS           #   3  0666                    1077
5766 56 42   *                                 START OF INPUT AREAS
5767 56 43   INPT1P DCW   @   @                                              #   3  0669                    1077
5768 56 44   INPT2P DCW   @   @                                              #   3  0672                    1077
5769 56 45   INPT3P DCW   @   @                                              #   3  0675                    1078
5770 56 46   *                                 END OF INPUT AREAS
5771 56 47   NDRA1P DCW   @   @                                              #   3  0678                    1078
5772 56 48   NDRA2P       @   @                                              #   3  0681                    1078
5773 56 49   NDRA3P       @   @                                              #   3  0684                    1078
5774 56 50   *                                 UNITS POS CF1 REL TO INPUT AREAS
5775 56 51   CMP11P       @   @                                              #   3  0687                    1078
5776 56 52   CMP12P       @   @                                              #   3  0690                    1078
5777 56 53   CMP13P       @   @                                              #   3  0693                    1078
5778 56 54   ST1MVP DCW   @   @              LOC OF MTOA&6                   #   3  0696                    1078
5779 56 55   RMOVEP DCW   @   @              NUM OF PADDED RCDS TO BE REMOVED  #   3  0699                  1078
5780 56 56   *                                 START OF INPUT AREAS & 1
5781 56 57   AIRA1  DCW   @   @                                              #   3  0702                    1078
5782 56 58   AIRA2  DCW   @   @                                              #   3  0705                    1078
5783 56 59   AIRA3  DCW   @   @                                              #   3  0708                    1078
5784 56 60   *                                 START OF INPUT AREAS & 13
5785 56 61   NG1    DCW   @   @                                              #   3  0711                    1079
5786 56 62   NG2    DCW   @   @                                              #   3  0714                    1079
5787 56 63   NG3    DCW   @   @                                              #   3  0717                    1079
5788 56 64   ARELO        @   @              OUTPUT AREA & BLOCK LENGTH      #   3  0720                    1079
5789 56 65   BOL    DCW   @   @              BLOCK LENGTH-FINAL OUTPUT       #   3  0723                    1079
5790 56 66   AREFO        @   @              START OF OUTPUT AREA&1          #   3  0726                    1079
5791 56 67   CNRR   DCW   @  @               COUNT NUM TIMES RETRY READ      #   2  0728                    1079
5792 56 68   SJA    DCW   @ @                STORE ZONE FOR REDUND READ      #   1  0729                    1079
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

5793 56 69   CNEOR  DCW   @ @                 COUNT NUM TIMES ERASE TAPE          #   1  0730                    1079
5794 56 70   *                                  STANDARD LABEL BUCKETS
5795 56 71   OPENID DCW   @ @                                                     #   1  0731                    1080
5796 56 72   TPNOBK DCW   @0@                                                     #   1  0732                    1080
5797 56 73   KO     DCW   @O@                                                     #   1  0733                    1080
5798 56 74   KI     DCW   @I@                                                     #   1  0734                    1080
5799 56 75   EOJBK  DCW   @ @                                                     #   1  0735                    1080
5800 56 76   MULBKC DCW   @00000@             BLOCK COUNT                         #   5  0740                    1080
5801 56 77   SKIP1  EQU   CMPABP                                                  #      0784
5802 56 78   SKIP2  EQU   CMPBCP                                                  #      0805
5803 56 79   SKIP3  EQU   CMPACP                                                  #      0826
5804 56 80   *
5805 56 81   *                                  MAINLINE PROGRAM
5806 56 82   *
5807 56 83   LGMEOP LCA   0,0                 SET GMKS IN I/O AREAS               #   7  0741  L 000 000         1080
5808 56 84          LCA   0,0                                                     #   7  0748  L 000 000         1081
5809 56 85          LCA   0,0                                                     #   7  0755  L 000 000         1081
5810 56 86          LCA   0,0                                                     #   7  0762  L 000 000         1081
5811 56 87          MLC   SPLCHR,0                                                #   7  0769  M 625 000         1081
5812 56 88   REDETP B     STRD1                                                   #   4  0776  B |22             1081
5813 56 89   RNOUTP B     SKIP1               RUNOUT SWITCH                       #   4  0780  B 784             1081
5814 56 90   CMPABP C     0,0                 COMPARE A&B                         #   7  0784  C 000 000         1082
5815 56 91          BL    SKIP2               B LT A                              #   5  0791  B 805 T           1082
5816 56 92          BH    SKIP3               A LT B                              #   5  0796  B 826 U           1082
5817 56 93          B     EQU                                                     #   4  0801  B X41             1082
5818 56 94   CMPBCP C     0,0                 COMPARE B&C                         #   7  0805  C 000 000         1082
5819 56 95          BL    CLOW                C LT B                              #   5  0812  B S44 T           1082
5820 56 96          BH    BLOW                B LT C                              #   5  0817  B /11 U           1082
5821 56 97          B     EQU                                                     #   4  0822  B X41             1083
5822 56 98   CMPACP C     0,0                 COMPARE A&C                         #   7  0826  C 000 000         1083
5823 56 99          BL    CLOW                C LT A                              #   5  0833  B S44 T           1083
5824 57 00          BH    ALOW                A LT C                              #   5  0838  B 978 U           1083
5825 57 01          B     EQU                                                     #   4  0843  B X41             1083
5826 57 02   IMOVE  SBR   RTRN1&3                                                 #   4  0847  H 887             1083
5827 57 03          SBR   RTRN2&3                                                 #   4  0851  H 977             1083
5828 57 04   MTOA   MLC   0,0                 NUM MOVE INST EQUALS NUM CF         #   7  0855  M 000 000         1084
5829 57 05          MLC                         PLUS ONE IF CF NOT IN FIRST       #   1  0862  M                 1084
5830 57 06          MLC                         POSITION OF RECORD                #   1  0863  M                 1084
5831 57 07          MLC                                                           #   1  0864  M                 1084
5832 57 08          MLC                                                           #   1  0865  M                 1084
5833 57 09          MLC                                                           #   1  0866  M                 1084
5834 57 10          MLC                                                           #   1  0867  M                 1084
5835 57 11          MLC                                                           #   1  0868  M                 1085
5836 57 12          MLC                                                           #   1  0869  M                 1085
5837 57 13          MLC                                                           #   1  0870  M                 1085
5838 57 14   LMV    MLC                                                           #   1  0871  M                 1085
5839 57 15   CKOUT  C     0,ARELO             Q OUTPUT BLOCK FULL                 #   7  0872  C 000 720         1085
5840 57 16          BE    WRITE                                                   #   5  0879  B 888 S           1085
5841 57 17   RTRN1  B     0                                                       #   4  0884  B 000             1085
5842 57 18   WRITE  MLC   OWA,MTOA&6                                              #   7  0888  M 555 861         1086
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

5843 57 19   WTEX   NOP   0                   USERS EXIT PRIOR TO WRITE TAPE    #   4  0895  N 000             1086
5844 57 20   KOWNT  NOP   BMULTI,0            COUNT OUTPUT RECORDS              #   7  0899  N 199 000         1086
5845 57 21   PDSW   B     WOBR-7              NOP IF LAST PASS AND PAD. RCDS    #   4  0906  B 942             1086
5846 57 22   BPAQQ8 BCE   WOBR-7,0,1                                            #   8  0910  B 942 000 1       1086
5847 57 23   AWAY   C     0,PADCT#6           Q PADDED RECORD COUNT             #   7  0918  C 000 J00         1086
5848 57 24          BL    RTRN2                                                 #   5  0925  B 974 T           1087
5849 57 25          BE    RTRN2                                                 #   5  0930  B 974 S           1087
5850 57 26          NOP   NOP,BBP2                                              #   7  0935  N 614 J15         1087
5851 57 27          MLC   TWOBL,CNRR                                            #   7  0942  M 620 728         1087
5852 57 28   WOBR   WT    0,0                 WRITE OUTPUT BLOCK                #   8  0949  M %U0 000 W       1087
5853 57 29          BER   WORED                                                 #   5  0957  B W81 L           1087
5854 57 30          MLC   BLANK,0             CLEAR FIRST POS OF OUTPUT AREA    #   7  0962  M 619 000         1088
5855 57 31   *                                LAST PASS REPLACE ABOVE WITH
5856 57 32   *                                  INCREMENT BLOCK COUNT INST
5857 57 33          BEF   EOFW1                                                 #   5  0969  B !30 K           1088
5858 57 34   RTRN2  B     0                                                     #   4  0974  B 000             1088
5859 57 35   ALOW   MZ    *-6,MTOA&2          INIT TO MOVE RCD FROM A TO OUTPUT #   7  0978  Y 978 857         1088
5860 57 36          MA    LMULTI,MTOA&6                                         #   7  0985  # 347 861         1088
5861 57 37   INCR1  MA    LMULTI,IREG1                                          #   7  0992  # 347 089         1088
5862 57 38          B     IMOVE                                                 #   4  0999  B 847             1089
5863 57 39          C     IREG1,NDRA1P        ALL A RECORDS MOVED               #   7  1003  C 089 678         1089
5864 57 40          BU    RNOUTP              B SOME REMAIN                     #   5  1010  B 780 /           1089
5865 57 41          MLC   INPT1P,IREG1        INITIALIZE INDEX REGISTER         #   7  1015  M 669 089         1089
5866 57 42   STRD1  SBR   RTRD&3,READ1-7                                        #   7  1022  H U40 |44         1089
5867 57 43          SBR   RETN&3                                                #   4  1029  H Z49             1089
5868 57 44          MZ    *-6,SJA             STORE ZONE FOR REDUN READ         #   7  1033  Y |33 729         1090
5869 57 45          MLC   TWOBL                                                 #   4  1040  M 620             1090
5870 57 46          MLC   CENSIG,NG1                                            #   7  1044  M 415 711         1090
5871 57 47   READ1  RT    0,0                 READ FIRST INPUT TAPE             #   8  1051  M %U0 000 R       1090
5872 57 48          BEF   EOF1                                                  #   5  1059  B Z61 K           1090
5873 57 49   INTF1  BCE   RDGM,NG1,}                                            #   8  1064  B U10 711 } GMARK 1090
5874 57 50          BER   RED                                                   #   5  1072  B Y90 L           1091
5875 57 51          NOP   SPLCHR,0&X1                                           #   7  1077  N 625 0|0         1091
5876 57 52          MLC   NOP,*-13                                              #   7  1084  M 614 |77         1091
5877 57 53   RD1EX  NOP   0                   USERS EXIT AFTER READ FIRST TAPE  #   4  1091  N 000             1091
5878 57 54   RDFST1 B     STRD2               FIRST RECORD SWITCH               #   4  1095  B /55             1091
5879 57 55   STEPA  B     NEWASQ,0,|          START OF NEW SEQUENCE             #   8  1099  B T77 000 |       1091
5880 57 56          B     RNOUTP                                                #   4  1107  B 780             1091
5881 57 57   BLOW   MZ    NOP,MTOA&2          INIT TO MOVE RCD FROM B TO OUTPUT #   7  1111  Y 614 857         1092
5882 57 58          MA    LMULTI,MTOA&6                                         #   7  1118  # 347 861         1092
5883 57 59   INCR2  MA    LMULTI,IREG2                                          #   7  1125  # 347 094         1092
5884 57 60          B     IMOVE                                                 #   4  1132  B 847             1092
5885 57 61          C     IREG2,NDRA2P        ALL B RECORDS MOVED               #   7  1136  C 094 681         1092
5886 57 62          BU    RNOUTP              B SOME REMAIN                     #   5  1143  B 780 /           1092
5887 57 63          MLC   INPT2P,IREG2        INITIALIZE INDEX REGISTER         #   7  1148  M 672 094         1093
5888 57 64   STRD2  SBR   RTRD&3,READ2-7                                        #   7  1155  H U40 /77         1093
5889 57 65          SBR   RETN&3                                                #   4  1162  H Z49             1093
5890 57 66          MZ    NOP,SJA             STORE ZONE FOR REDUN READ         #   7  1166  Y 614 729         1093
5891 57 67          MLC   TWOBL                                                 #   4  1173  M 620             1093
5892 57 68          MLC   CENSIG,NG2                                            #   7  1177  M 415 714         1093
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

5893 57 69   READ2  RT    0,0                 READ SECOND INPUT TAPE               #   8  1184  M %U0 000 R       1094
5894 57 70          BEF   EOF2                                                     #   5  1192  B Z84 K           1094
5895 57 71   INTF2  BCE   RDGM,NG2,}                                               #   8  1197  B U10 714 } GMARK 1094
5896 57 72          BER   RED                                                      #   5  1205  B Y90 L           1094
5897 57 73          NOP   SPLCHR,0&X2                                              #   7  1210  N 625 0!0         1094
5898 57 74          MLC   NOP,*-13                                                 #   7  1217  M 614 S10         1095
5899 57 75   RD2EX  NOP   0                   USERS EXIT AFTER READ SECOND TAPE    #   4  1224  N 000             1095
5900 57 76   RDFST2 B     STRD3               FIRST RECORD SWITCH                  #   4  1228  B S88             1095
5901 57 77   STEPB  B     NEWBSQ,0,|          START OF NEW SEQUENCE                #   8  1232  B T88 000 |       1095
5902 57 78          B     RNOUTP                                                   #   4  1240  B 780             1095
5903 57 79   CLOW   MZ    KB,MTOA&2           INIT TO MOVE RCD FROM C TO OUTPUT    #   7  1244  Y 615 857         1095
5904 57 80          MA    LMULTI,MTOA&6                                            #   7  1251  # 347 861         1096
5905 57 81   INCR3  MA    LMULTI,IREG3                                             #   7  1258  # 347 099         1096
5906 57 82          B     IMOVE                                                    #   4  1265  B 847             1096
5907 57 83          C     IREG3,NDRA3P        ALL C RECORDS MOVED                  #   7  1269  C 099 684         1096
5908 57 84          BU    RNOUTP              SOME REMAIN                          #   5  1276  B 780 /           1096
5909 57 85          MLC   INPT3P,IREG3        INITIALIZE INDEX REGISTER            #   7  1281  M 675 099         1096
5910 57 86   STRD3  SBR   RTRD&3,READ3-7                                           #   7  1288  H U40 T10         1097
5911 57 87          SBR   RETN&3                                                   #   4  1295  H Z49             1097
5912 57 88          MZ    KB,SJA              STORE ZONE FOR REDUN READ            #   7  1299  Y 615 729         1097
5913 57 89          MLC   TWOBL                                                    #   4  1306  M 620             1097
5914 57 90          MLC   CENSIG,NG3                                               #   7  1310  M 415 717         1097
5915 57 91   READ3  RT    0,0                 READ THIRD INPUT TAPE                #   8  1317  M %U0 000 R       1097
5916 57 92          BEF   EOF3                                                     #   5  1325  B !07 K           1098
5917 57 93   INTF3  BCE   RDGM,NG3,}                                               #   8  1330  B U10 717 } GMARK 1098
5918 57 94          BER   RED                                                      #   5  1338  B Y90 L           1098
5919 57 95          NOP   SPLCHR,0&X3                                              #   7  1343  N 625 0?0         1098
5920 57 96          MLC   NOP,*-13                                                 #   7  1350  M 614 T43         1098
5921 57 97   RD3EX  NOP   0                   USERS EXIT AFTER READ THIRD TAPE     #   4  1357  N 000             1098
5922 57 98   RDFST3 B     RNOUTP              FIRST RECORD SWITCH                  #   4  1361  B 780             1099
5923 57 99   STEPC  B     NEWCSQ,0,|          START OF NEW SEQUENCE                #   8  1365  B T99 000 |       1099
5924 58 00          B     RNOUTP              ADD THE NUMBER ASSOCIATED            #   4  1373  B 780             1099
5925 58 01   NEWASQ A     AONE,ACNTR          WITH UNIT THAT HAS REACHED           #   7  1377  A 616 624         1099
5926 58 02          B     EOSTSP              A NEW SEQUENCE                       #   4  1384  B U41             1099
5927 58 03   NEWBSQ A     ATWO,ACNTR                                               #   7  1388  A 617 624         1099
5928 58 04          B     EOSTSP                                                   #   4  1395  B U41             1099
5929 58 05   NEWCSQ A     AFOUR,ACNTR                                              #   7  1399  A 618 624         1100
5930 58 06          B     EOSTSP                                                   #   4  1406  B U41             1100
5931 58 07   *                                  CLEAR NOISE RECORD
5932 58 08   RDGM   MZ    SJA,*&6                                                  #   7  1410  Y 729 U22         1100
5933 58 09          MN    TWOBL,13                                                 #   7  1417  D 620 013         1100
5934 58 10          MN                                                             #   1  1424  D                 1100
5935 58 11          MN                                                             #   1  1425  D                 1100
5936 58 12          MN                                                             #   1  1426  D                 1100
5937 58 13          MN                                                             #   1  1427  D                 1101
5938 58 14          MN                                                             #   1  1428  D                 1101
5939 58 15          MN                                                             #   1  1429  D                 1101
5940 58 16          MN                                                             #   1  1430  D                 1101
5941 58 17          MN                                                             #   1  1431  D                 1101
5942 58 18          MN                                                             #   1  1432  D                 1101
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

5943 58 19          MN                                                         #   1  1433  D                 1101
5944 58 20          MN                                                         #   1  1434  D                 1102
5945 58 21          MN                                                         #   1  1435  D                 1102
5946 58 22          MN                                                         #   1  1436  D                 1102
5947 58 23   RTRD   B     0                   RETURN TO READ TAPE              #   4  1437  B 000             1102
5948 58 24   *                     DETERMINE CONTENTS OF ACNTR AND BRANCH TO
5949 58 25   *                     CORRESPONDING RTN TO SET RUNOUT SWITCH
5950 58 26   EOSTSP BCE   SDALL,ACNTR,7       Q NEW SEQ ON ALL UNITS           #   8  1441  B V74 624 7       1102
5951 58 27          BCE   SDAC,ACNTR,5        B TO INSTRUCTIONS WHICH          #   8  1449  B V01 624 5       1102
5952 58 28          BCE   SDAB,ACNTR,3        RE-INITIALIZE COMPARE INSTRUCTION #  8  1457  B V12 624 3       1102
5953 58 29          BCE   SDBC,ACNTR,6        FOR UNITS THAT HAVE NOT          #   8  1465  B V23 624 6       1103
5954 58 30          BCE   SDA,ACNTR,1         REACHED A NEW SEQUENCE           #   8  1473  B V34 624 1       1103
5955 58 31          BCE   SDB,ACNTR,2                                          #   8  1481  B V45 624 2       1103
5956 58 32          BCE   SDC,ACNTR,4                                          #   8  1489  B V56 624 4       1103
5957 58 33          B     RNOUTP                                               #   4  1497  B 780             1103
5958 58 34   SDAC   SBR   RNOUTP&3,BLOW                                        #   7  1501  H 783 /11         1104
5959 58 35          B     RNOUTP                                               #   4  1508  B 780             1104
5960 58 36   SDAB   SBR   RNOUTP&3,CLOW                                        #   7  1512  H 783 S44         1104
5961 58 37          B     RNOUTP                                               #   4  1519  B 780             1104
5962 58 38   SDBC   SBR   RNOUTP&3,ALOW                                        #   7  1523  H 783 978         1104
5963 58 39          B     RNOUTP                                               #   4  1530  B 780             1104
5964 58 40   SDA    SBR   RNOUTP&3,SKIP2                                       #   7  1534  H 783 805         1105
5965 58 41          B     RNOUTP                                               #   4  1541  B 780             1105
5966 58 42   SDB    SBR   RNOUTP&3,CMPACP                                      #   7  1545  H 783 826         1105
5967 58 43          B     RNOUTP                                               #   4  1552  B 780             1105
5968 58 44   SDC    SBR   CMPABP&15,ALOW                                       #   7  1556  H 799 978         1105
5969 58 45          SBR   CMPABP&10,BLOW                                       #   7  1563  H 794 /11         1105
5970 58 46          B     RNOUTP                                               #   4  1570  B 780             1106
5971 58 47   SDALL  SBR   RNOUTP&3,SKIP1      RESET TO ORIGINAL COMPARE INST   #   7  1574  H 783 784         1106
5972 58 48          SBR   CMPABP&10,SKIP2     WHEN NEW SEQUENCE OR EOF HAS BEEN #  7  1581  H 794 805         1106
5973 58 49          SBR   CMPABP&15,SKIP3     REACHED ON ALL TAPES             #   7  1588  H 799 826         1106
5974 58 50          MLC   AZERO,ACNTR                                          #   7  1595  M 608 624         1106
5975 58 51          MLC   SPLCHR,0            SET SEQ CHAR IN WRITE OUT AREA   #   7  1602  M 625 000         1106
5976 58 52   SEQCMP C     0,PCNTR             Q ALL SEQUENCES PROCESSED        #   7  1609  C 000 589         1107
5977 58 53   *                                  END OF PASS BRANCH
5978 58 54          BE    RWINDP                                               #   5  1616  B W51 S           1107
5979 58 55          A     AONE,PCNTR                                           #   7  1621  A 616 589         1107
5980 58 56          B     RNOUTP                                               #   4  1628  B 780             1107
5981 58 57   *                                  LAST PASS ROUTINE
5982 58 58   LPEOJ  MLC   AONE,EOJBK                                           #   7  1632  M 616 735         1107
5983 58 59          BCE   RWINDP,OTLIMP,                                       #   8  1639  B W51 192         1107
5984 58 60          B     LMHLTP              STANDARD TRAILER LABEL BRANCH    #   4  1647  B R12             1108
5985 58 61   RWINDP WTM   0                   WRITE T M ON OUTPUT TAPE         #   5  1651  U %U0 M           1108
5986 58 62          RWD   0                                                    #   5  1656  U %U0 R           1108
5987 58 63          CW    0                   CLEAR WORD MARKS AT END OF       #   4  1661  ) 000             1108
5988 58 64          CW    0                   I/O AREAS TO ALLOW WRITING       #   4  1665  ) 000             1108
5989 58 65          CW    0                   OF CHECKPOINT                    #   4  1669  ) 000             1108
5990 58 66          CW    0                                                    #   4  1673  ) 000             1108
5991 58 67   *                                MAINLINE BRANCH TO WKLBLI
5992 58 68   ENDMP  B     ENDMLT                                               #   4  1677  B O69             1109
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

5993 58 69  *                                WRITE REDUNDANCY ROUTINE
5994 58 70  WORED  BSP   0                                                  #   5  1681  U %U0 B            1109
5995 58 71         BCE   ERASE,CNRR,1                                       #   8  1686  B X05 728 1        1109
5996 58 72         A     AONE,CNRR                                          #   7  1694  A 616 728          1109
5997 58 73         B     WOBR                                               #   4  1701  B 949              1109
5998 58 74  ERASE  A     AONE,CNEOR                                         #   7  1705  A 616 730          1109
5999 58 75         BCE   HWRED,CNEOR,0       TEN SKIPS BRANCH               #   8  1712  B X29 730 0        1110
6000 58 76  ERTAPP SKP   0                                                  #   5  1720  U %U0 E            1110
6001 58 77         B     WOBR-7                                             #   4  1725  B 942              1110
6002 58 78  HWRED  H                                                        #   1  1729  .                  1110
6003 58 79         MLC   TWOBL,CNEOR                                        #   7  1730  M 620 730          1110
6004 58 80         B     ERTAPP                                             #   4  1737  B X20              1110
6005 58 81  *                                  EQUAL ROUTINE
6006 58 82  EQU    SBR   EQHLD#3             SET INSTRUCTIONS               #   4  1741  H J03              1110
6007 58 83         MLC   IREG1,HLDX1P#3      TO COMPARE SECONDARY           #   7  1745  M 089 J06          1111
6008 58 84         MLC   EQHLD,IREG1         CONTROL FIELDS                 #   7  1752  M J03 089          1111
6009 58 85         MA    @I8E@,IREG1                                        #   7  1759  # J09 089          1111
6010 58 86         MLC   0&X1,CMNCF&6                                       #   7  1766  M 0|0 Y61          1111
6011 58 87         MLC   4&X1,CMNCF&10                                      #   7  1773  M 0|4 Y65          1111
6012 58 88         MLC   9&X1,NXTCFP&17                                     #   7  1780  M 0|9 Y39          1112
6013 58 89         MLC   9&X1,CMNCF&15                                      #   7  1787  M 0|9 Y70          1112
6014 58 90         MLC   HLDX1P,IREG1                                       #   7  1794  M J06 089          1112
6015 58 91         MLC   TWOBL,CNCF2#2                                      #   7  1801  M 620 J11          1112
6016 58 92         SBR   ICFL&3,IF1F2M                                      #   7  1808  H Y44 383          1112
6017 58 93         SBR   ICFL2&3,IF1F2M                                     #   7  1815  H Y51 383          1113
6018 58 94  NXTCFP A     AONE,CNCF2                                         #   7  1822  A 616 J11          1113
6019 58 95         C     CNCF2,NCFMLT                                       #   7  1829  C J11 096          1113
6020 58 96         BE    0                                                  #   5  1836  B 000 S            1113
6021 58 97  ICFL   MA    0,CMNCF&3                                          #   7  1841  # 000 Y58          1113
6022 58 98  ICFL2  MA    0,CMNCF&6                                          #   7  1848  # 000 Y61          1114
6023 58 99  CMNCF  C     0,0                                                #   7  1855  C 000 000          1114
6024 59 00         BL    0                                                  #   5  1862  B 000 T            1114
6025 59 01         BH    0                                                  #   5  1867  B 000 U            1114
6026 59 02         MA    LIT003,ICFL&3                                      #   7  1872  # 607 Y44          1114
6027 59 03         MA    LIT003,ICFL2&3                                     #   7  1879  # 607 Y51          1114
6028 59 04         B     NXTCFP                                             #   4  1886  B Y22              1115
6029 59 05  *                                READ REDUNDANCY ROUTINE
6030 59 06  RED    SBR   TUNOS&3                                            #   4  1890  H Z37              1115
6031 59 07         SBR   SMOREP&3                                           #   4  1894  H K38              1115
6032 59 08         MA    @I7G@,TUNOS&3                                      #   7  1898  # J14 Z37          1115
6033 59 09         A     AONE,CNRR                                          #   7  1905  A 616 728          1115
6034 59 10         NOP   SJA,REDSQ-3                                        #   7  1912  N 729 J27          1115
6035 59 11  SETZN  MZ    SJA,MHBB&2                                         #   7  1919  Y 729 J54          1116
6036 59 12         BWZ   SUBT B,CNRR-1,S                                    #   8  1926  V Z50 727 S        1116
6037 59 13  TUNOS  MN    0,BCKSPP&3                                         #   7  1934  D 000 Z44          1116
6038 59 14  BCKSPP BSP   0                                                  #   5  1941  U %U0 B            1116
6039 59 15  RETN   B     0                                                  #   4  1946  B 000              1116
6040 59 16  SUBT B NOP   BMULTI,0            ADD IF NOT CORRECT OPTION      #   7  1950  N 199 000          1116
6041 59 17         B     BBP2                                               #   4  1957  B J15              1117
6042 59 18  EOF1   A     AONE,ACNTR          END OF FILE ON FIRST INPUT UNIT #  7  1961  A 616 624          1117
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

6043 59 19          RWD   0                                                      #   5  1968  U %U0 R            1117
6044 59 20          MLC   BLANK,0            REMOVE 1401 GENERATED GP MK         #   7  1973  M 619 000          1117
6045 59 21          B     EOSTSP                                                 #   4  1980  B U41              1117
6046 59 22   EOF2   A     ATWO,ACNTR         END OF FILE ON SECOND INPUT UNIT    #   7  1984  A 617 624          1117
6047 59 23          RWD   0                                                      #   5  1991  U %U0 R            1117
6048 59 24          MLC   BLANK,0            REMOVE 1401 GENERATED GP MK         #   7  1996  M 619 000          1118
6049 59 25          B     EOSTSP                                                 #   4  2003  B U41              1118
6050 59 26   EOF3   A     AFOUR,ACNTR        END OF FILE ON THIRD INPUT UNIT     #   7  2007  A 618 624          1118
6051 59 27          RWD   0                                                      #   5  2014  U %U0 R            1118
6052 59 28          MLC   BLANK,0            REMOVE 1401 GENERATED GP MK         #   7  2019  M 619 000          1118
6053 59 29          B     EOSTSP                                                 #   4  2026  B U41              1118
6054 59 30   *                                 END OF REEL ON OUTPUT UNIT
6055 59 31   EOFW1  NOP   LPSQCP             LAST PASS BRANCH                    #   4  2030  N !53              1118
6056 59 32          CS    332                                                    #   4  2034  / 332              1119
6057 59 33          CS                                                           #   1  2038  /                  1119
6058 59 34          MLC   WROM,227                                               #   7  2039  M !94 227          1119
6059 59 35          W                                                            #   1  2046  2                  1119
6060 59 36          CC    1                                                      #   2  2047  F 1                1119
6061 59 37          H     *-3                                                    #   4  2049  . !49              1119
6062 59 38   LPSQCP C     ACTNR,CTNRML                                           #   7  2053  C 566 539          1119
6063 59 39          BE    LPEOJ              END OF JOB BRANCH                   #   5  2060  B W32 S            1120
6064 59 40          B     LMHLTP             END OF REEL BRANCH                  #   4  2065  B R12              1120
6065 59 41   WROM   DCW   @OUTPUT EXCEEDS REEL LENGTH@                           #  26  2094                     1120
6066 59 42          LTORG *                                                      #             2095
             PADCT# DCW   #06                                                    #   6  2100              AREA  1121
             EQHLD# DCW   #03                                                    #   3  2103              AREA  1121
             HLDX1P DCW   #03                                                    #   3  2106              AREA  1121
                    DCW   @I8E@                                                  #   3  2109              LIT   1121
             CNCF2# DCW   #02                                                    #   2  2111              AREA  1121
                    DCW   @I7G@                                                  #   3  2114              LIT   1121
6067 59 43   SAVE   ORG   *                                                      #      2115   2115
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

6068 59 44          JOB   ** IBM 1401 SORT 7 VERSION 2 MULTIPHASE                 #
6069 59 45          ORG   ADJEND                                                  #           2699
6070 59 46   *              MULTIPHASE WORK LABEL ROUTINE TO PROCESS STANDARD
6071 59 47   *                   HEADER LABELS ON ALL WORK TAPES
6072 59 48   *
6073 59 49   *     TAPES ARE REFERRED TO AS OUTPUT OR INPUT DEPENDING
6074 59 50   *      UPON WHETHER THEY ARE OUTPUT OR INPUT REELS TO THE
6075 59 51   *    NEXT PASS.
6076 59 52   *
6077 59 53   MLHHL1 H     MULEX1         PRESS START TO ACCEPT LABEL            #   4  2699  . Q26            1122
6078 59 54   *                              AS READ.THE REDUNDANT REC.
6079 59 55   *                              WILL BE WRITTEN AS THE H.L.
6080 59 56          B     MULHRD-19    PRESS START RESET/START TO             #   4  2703  B P81            1122
6081 59 57   *                              RETRY UP TO 99 MORE TIMES.
6082 59 58   *
6083 59 59   MLHHL2 H                    PRESS START TO TRY TO WRITE            #   1  2707  .                1122
6084 59 60          MLC   AZERO,MULHC2       THE HEADER LABEL AGAIN  UP TO      #   7  2708  M 608 ?72        1122
6085 59 61          B     MULHWT         9 SKIPS.                               #   4  2715  B R21            1122
6086 59 62   *
6087 59 63   MLHHL3 H     MULEX1         PRESS START TO ACCEPT INPUT            #   4  2719  . Q26            1122
6088 59 64   *                              HEADER LABEL AS READ.
6089 59 65          B     MULHRD-19    PRESS START RESET/START TO             #   4  2723  B P81            1122
6090 59 66   *                              RETRY UP TO 99 MORE TIMES.
6091 59 67   *
6092 59 68   MLHHL4 H     *-3            NO T/M AFTER H.L. WHEN ONE             #   4  2727  . P27            1123
6093 59 69   *                              HAS BEEN SPECIFIED AS BEING
6094 59 70   *                              THERE-RESTART PROG.
6095 59 71   MLHENT SBR   MLHEXT&3                                              #   4  2731  H R54            1123
6096 59 72          MN    TPNOBK,MULST1&14                                      #   7  2735  D 732 P77        1123
6097 59 73          MN    TPNOBK,MULHRD&3                                       #   7  2742  D 732 Q03        1123
6098 59 74          MN    TPNOBK,MULTMR&3                                       #   7  2749  D 732 Q49        1123
6099 59 75          MN    TPNOBK,MLHST3&11                                      #   7  2756  D 732 ?07        1123
6100 59 76   MULST1 CS    181            CLEAR HDR LABEL READ/WRITE AREA        #   4  2763  / 181            1124
6101 59 77          MLCWA 0,181                                                 #   7  2767  L 000 181        1124
6102 59 78          RWD   0                                                     #   5  2774  U %U0 R          1124
6103 59 79          MLC   SIX 0S-4,MULHC1#2  INIT ERROR COUNTER                 #   7  2779  M 609 ?69        1124
6104 59 80          MLC   CENSIG,MULHRD&15                                      #   7  2786  M 415 Q15        1124
6105 59 81          MLC   CENSIG,114                                            #   7  2793  M 415 114        1124
6106 59 82   MULHRD RTW   0,101                                                 #   8  2800  L %U0 101 R      1125
6107 59 83          BCE   MLHNOS,114,        IF NOISE RECORD                    #   8  2808  B R55 114        1125
6108 59 84          BEF   *&1                                                   #   5  2816  B Q21 K          1125
6109 59 85          BER   MLHRDP              PARITY ERROR ROUTINE              #   5  2821  B R63 L          1125
6110 59 86   MULEX1 NOP   0                  USERS EXIT                         #   4  2826  N 000            1125
6111 59 87          BCE   MULST2,OPENID,O     IF OUTPUT TAPE                    #   8  2830  B Q63 731 O      1125
6112 59 88          BCE   CLR280,THLTMO,     IF NO TM AFTER HL                  #   8  2838  B R47 418        1126
6113 59 89   MULTMR RT    0,101              READ TAPEMARK                      #   8  2846  M %U0 101 R      1126
6114 59 90          BEF   CLR280                                                #   5  2854  B R47 K          1126
6115 59 91          B     MLHHL4              ERROR CONDITION                   #   4  2859  B P27            1126
6116 59 92   MULST2 MN    TPNOBK,MULEX2&7     INIT I/O INSTRUCTIONS             #   7  2863  D 732 R19        1126
6117 59 93          MN    TPNOBK,MULHWT&3                                       #   7  2870  D 732 R24        1126
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6118 59 94          MN    TPNOBK,CLR280-2                                      #   7  2877  D 732 R45         1127
6119 59 95          MN    TPNOBK,MLHPWT&10                                     #   7  2884  D 732 ?23         1127
6120 59 96          MN    TPNOBK,MLHST4&3                                      #   7  2891  D 732 ?47         1127
6121 59 97          MLC   @09@,MULHC1         RESET ERROR COUNTER              #   7  2898  M ?71 ?69         1127
6122 59 98          MLC   AZERO,MULHC2#1                                       #   7  2905  M 608 ?72         1127
6123 59 99   MULEX2 NOP   0                  USERS EXIT                        #   4  2912  N 000             1127
6124 60 00          RWD   0                                                    #   5  2916  U %U0 R           1128
6125 60 01   MULHWT WT    0,101                                                #   8  2921  M %U0 101 W       1128
6126 60 02          BER   MLHPWT              PARITY ERROR                     #   5  2929  B ?13 L           1128
6127 60 03          BCE   *&6,THLTMO,         IF NO T/M AFTER H.L.             #   8  2934  B R47 418         1128
6128 60 04          WTM   0                                                    #   5  2942  U %U0 M           1128
6129 60 05   CLR280 CS    181                                                  #   4  2947  / 181             1128
6130 60 06   MLHEXT B     0                  RETURN TO NEXT SEQUENTIAL INST    #   4  2951  B 000             1128
6131 60 07   *
6132 60 08   MLHNOS CS    114                                                  #   4  2955  / 114             1129
6133 60 09          B     MULHRD-14                                            #   4  2959  B P86             1129
6134 60 10   *
6135 60 11   *     READ PARITY ERROR ROUTINE
6136 60 12   *
6137 60 13   *             TRY TO READ HEADER 99 TIMES THEN HALT
6138 60 14   MLHRDP BCE   *&12,OPENID,O       IF OUTPUT TAPE                   #   8  2963  B R82 731 O       1129
6139 60 15          SBR   MLHST3&3,MLHHL3                                      #   7  2971  H R99 P19         1129
6140 60 16          B     *&8                                                  #   4  2978  B R89             1129
6141 60 17          SBR   MLHST3&3,MLHHL1                                      #   7  2982  H R99 O99         1129
6142 60 18          A     AONE,MULHC1                                          #   7  2989  A 616 ?69         1130
6143 60 19   MLHST3 BWZ   MLHHL1,MULHC1-1,S   IF 99 TRIES                      #   8  2996  V O99 ?68 S       1130
6144 60 20          BSP   0                                                    #   5  3004  U %U0 B           1130
6145 60 21          B     MULHRD-14                                            #   4  3009  B P86             1130
6146 60 22   *
6147 60 23   *     WRITE PARITY ERROR ROUTINE
6148 60 24   *
6149 60 25   *             TRY TO WRITE HEADER TWICE IN SAME PLACE THEN
6150 60 26   *                  SPACE FORWARD   AFTER TEN SKIPS HALT
6151 60 27   MLHPWT S     AONE,MULHC1                                          #   7  3013  S 616 ?69         1130
6152 60 28          BSP   0                                                    #   5  3020  U %U0 B           1130
6153 60 29          BCE   *&5,MULHC1,G                                         #   8  3025  B ?37 ?69 G       1131
6154 60 30          B     MULHWT                                               #   4  3033  B R21             1131
6155 60 31          MLC   @09@,MULHC1                                          #   7  3037  M ?71 ?69         1131
6156 60 32   MLHST4 SKP   0                                                    #   5  3044  U %U0 E           1131
6157 60 33          A     AONE,MULHC2                                          #   7  3049  A 616 ?72         1131
6158 60 34          BCE   MLHHL2,MULHC2,0                                      #   8  3056  B P07 ?72 0       1131
6159 60 35          B     MULHWT                                               #   4  3064  B R21             1132
6160 60 36          LTORG *                                                    #           3068
             MULHC1 DCW   #02                                                  #   2  3069              AREA  1132
                    DCW   @09@                                                 #   2  3071              LIT   1132
             MULHC2 DCW   #01                                                  #   1  3072              AREA  1132
6161 60 37   WKLEND ORG   *                                                    #      3073   3073
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6162 60 38          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE             #
6163 60 39          ORG   KEEP                                                 #            2254
6164 60 40   MLTPHZ SBR   REDETP&3,STRD1      START OF MULTIPHASE ADJUSTMENT   #   7  2254  H 779 |22         1133
6165 60 41          B     STRD2                                                #   4  2261  B /55             1133
6166 60 42   *                                  PASS P1 SEQUENCES ROUTINE
6167 60 43   PASSP1 MLC   BLANK,0                                              #   7  2265  M 619 000         1133
6168 60 44          MLC   NOP,RDFST2                                           #   7  2272  M 614 S28         1133
6169 60 45          BCE   SETP3,CNTRB,1                                        #   8  2279  B N02 560 1       1133
6170 60 46   P1CHAR MLC   SPLCHR,0            MOVE SEQ CHAR TO OUTPUT AREA     #   7  2287  M 625 000         1134
6171 60 47          C     P1AREA,PCNTR        Q SEQ PASSED EQUAL TO P1         #   7  2294  C O86 589         1134
6172 60 48          BE    SETP2                                                #   5  2301  B L81 S           1134
6173 60 49          A     AONE,PCNTR          BUMP SEQUENCE COUNTER            #   7  2306  A 616 589         1134
6174 60 50          B     RNOUTP                                               #   4  2313  B 780             1134
6175 60 51   P1EOF  RWD   0                                                    #   5  2317  U %U0 R           1134
6176 60 52          MLC   BLANK,0             REMOVE 1401 GENERATED GP MK      #   7  2322  M 619 000         1135
6177 60 53          C     P1AREA,SIX 0S                                        #   7  2329  C O86 613         1135
6178 60 54          BE    SETP2                                                #   5  2336  B L81 S           1135
6179 60 55          SBR   RDFST2&3,PASSP1                                      #   7  2341  H S31 K65         1135
6180 60 56   P1EOF2 A     AONE,PCNTR                                           #   7  2348  A 616 589         1135
6181 60 57          MLC   KB,RDFST2                                            #   7  2355  M 615 S28         1136
6182 60 58          MLC   I2TUHP,TPNOBK                                        #   7  2362  M 629 732         1136
6183 60 59          MLC   KI                                                   #   4  2369  M 734             1136
6184 60 60          B     MLHENT                                               #   4  2373  B P31             1136
6185 60 61          B     STRD2                                                #   4  2377  B /55             1136
6186 60 62   *                                  INIT TO PASS P2 SEQ
6187 60 63   SETP2  MN    O1TUHP,WOBR&3       SET NEW OUTPUT TAPE              #   7  2381  D 637 952         1136
6188 60 64          MN    O1TUHP,WORED&3                                       #   7  2388  D 637 W84         1137
6189 60 65          MN    O1TUHP,ERTAPP&3                                      #   7  2395  D 637 X23         1137
6190 60 66          MLC   SIX 0S,PCNTR        RESET SEQUENCE COUNTER           #   7  2402  M 613 589         1137
6191 60 67          SBR   STEPB&3,PASSP2                                       #   7  2409  H S35 M23         1137
6192 60 68          SBR   READ2&11,P2EOF                                       #   7  2416  H /95 M67         1137
6193 60 69   *                                  PASS P2 SEQUENCES ROUTINE
6194 60 70   PASSP2 MLC   BLANK,0                                              #   7  2423  M 619 000         1138
6195 60 71   P2CHAR MLC   SPLCHR,0            MOVE SEQ CHAR TO OUTPUT AREA     #   7  2430  M 625 000         1138
6196 60 72          MLC   NOP,RDFST2                                           #   7  2437  M 614 S28         1138
6197 60 73          C     P2AREA,PCNTR        Q SEQ PASSED EQUAL TO P2         #   7  2444  C O92 589         1138
6198 60 74          BE    SETP3                                                #   5  2451  B N02 S           1138
6199 60 75          A     AONE,PCNTR          BUMP COUNTER                     #   7  2456  A 616 589         1139
6200 60 76          B     RNOUTP                                               #   4  2463  B 780             1139
6201 60 77   P2EOF  RWD   0                                                    #   5  2467  U %U0 R           1139
6202 60 78          MLC   BLANK,0                                              #   7  2472  M 619 000         1139
6203 60 79          C     P2AREA,SIX 0S                                        #   7  2479  C O92 613         1139
6204 60 80          BE    SETP3                                                #   5  2486  B N02 S           1139
6205 60 81          SBR   RDFST2&3,PASSP2                                      #   7  2491  H S31 M23         1140
6206 60 82          B     P1EOF2                                               #   4  2498  B L48             1140
6207 60 83   *                                  INIT TO PASS P3 SEQ
6208 60 84   SETP3  MLC   SIX 0S,PCNTR        RESET SEQUENCE COUNTER           #   7  2502  M 613 589         1140
6209 60 85   RTNPP3 MLC   GPMARK,*&4                                           #   7  2509  M 350 N19         1140
6210 60 86          LCA   0,002               BYPASS CHECKPOINT WRITTEN        #   7  2516  L 000 002         1140
6211 60 87          MLC   I1TUHP,*&4          DURING PHASE 1                   #   7  2523  M 630 N33         1140
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

6212 60 88          RT    0,001                                               #   8  2530  M %U0 001 R       1141
6213 60 89          SBR   RNOUTP&3,ALOW       SET RUNOUT TO PASS SEQUENCES    #   7  2538  H 783 978         1141
6214 60 90          MLC   INPT1P,STEPA&6      FROM FIRST UNIT                 #   7  2545  M 669 /05         1141
6215 60 91          SBR   STEPA&3,PASSP3                                      #   7  2552  H /02 N63         1141
6216 60 92          B     STRD1               READ FIRST RECORD               #   4  2559  B |22             1141
6217 60 93   *                                  PASS P3 SEQUENCES ROUTINE
6218 60 94   PASSP3 MLC   BLANK,0                                             #   7  2563  M 619 000         1142
6219 60 95   P3CHAR MLC   SPLCHR,0            MOVE SEQ CHAR TO OUTPUT AREA    #   7  2570  M 625 000         1142
6220 60 96          MLC   NOP,RDFST1                                          #   7  2577  M 614 |95         1142
6221 60 97          C     P3AREA,PCNTR        Q SEQ PASSED EQUAL TO P3        #   7  2584  C O98 589         1142
6222 60 98          BE    READ X                                              #   5  2591  B O59 S           1142
6223 60 99          A     AONE,PCNTR          BUMP COUNTER                    #   7  2596  A 616 589         1143
6224 61 00          B     RNOUTP                                              #   4  2603  B 780             1143
6225 61 01   P3EOF  RWD   0                                                   #   5  2607  U %U0 R           1143
6226 61 02          MLC   BLANK,0             REMOVE 1401 GENERATED GP MK     #   7  2612  M 619 000         1143
6227 61 03          SBR   RDFST1&3,PASSP3                                     #   7  2619  H |98 N63         1143
6228 61 04          MLC   KB,RDFST1                                           #   7  2626  M 615 |95         1143
6229 61 05          A     AONE,PCNTR          BUMP COUNTER                    #   7  2633  A 616 589         1144
6230 61 06          MLC   I1TUHP,TPNOBK                                       #   7  2640  M 630 732         1144
6231 61 07          MLC   KI                                                  #   4  2647  M 734             1144
6232 61 08          B     MLHENT                                              #   4  2651  B P31             1144
6233 61 09          B     RTNPP3                                              #   4  2655  B N09             1144
6234 61 10   READ X CS    080                 READ IN ROUTINE                 #   4  2659  / 080             1144
6235 61 11          SW    024,056             FOR MERGING X SEQUENCES         #   7  2663  , 024 056         1144
6236 61 12          SW    063,067                                             #   7  2670  , 063 067         1145
6237 61 13          R     056                                                 #   4  2677  1 056             1145
6238 61 14   P1AREA DCW   @000000@                                            #   6  2686                    1145
6239 61 15   P2AREA DCW   @000000@                                            #   6  2692                    1145
6240 61 16   P3AREA DCW   @000000@                                            #   6  2698                    1145
6241 61 17          LTORG *                                                   #           2699
6242 61 18   ADJEND ORG   *                                                   #      2699  2699
6243 61 19          ORG   087                                                 #           0087
6244 61 20   IREG1  DCW   000                                                 #   3  0089                    1146
6245 61 21          ORG   092                                                 #           0092
6246 61 22   IREG2  DCW   000                                                 #   3  0094                    1147
6247 61 23          ORG   097                                                 #           0097
6248 61 24   IREG3  DCW   000                                                 #   3  0099                    1148
6249 61 25          ORG   3200                                                #           3200
6250 61 26   LLCHEK BCE   STRTN,LBBUCK,                                       #   8  3200  B B30 414         1149
6251 61 27          CS    80                                                  #   4  3208  / 080             1149
6252 61 28          SW    24,56                                               #   7  3212  , 024 056         1149
6253 61 29          SW    63,67                                               #   7  3219  , 063 067         1149
6254 61 30          R     56                                                  #   4  3226  1 056             1149
6255 61 31   STRTN  BCE   STU,LABELS,1        LABELS BRANCH                   #   8  3230  B B59 413 1       1149
6256 61 32          MLC   NOP,SETP2-8         NOP BRANCHES TO WORK LABEL RTN  #   7  3238  M 614 L73         1150
6257 61 33          MLC   NOP,READ X-8                                        #   7  3245  M 614 O51         1150
6258 61 34          SBR   OWA,2801            SET NO LABELS OUTPUT AREA       #   7  3252  H 555 Q01         1150
6259 61 35   STU    BCE   FRAMOR,LBBUCK,                                      #   8  3259  B B92 414         1150
6260 61 36          SBR   SETP2-5,MLHANT    BRANCHES CHANGED FOR 120 CHAR.    #   7  3267  H L76 P31         1150
6261 61 37          SBR   READ X-5,MLHANT                                     #   7  3274  H O54 P31         1151
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6262 61 38          SBR   RWINDP-1,LMHKTP                                      #   7  3281  H W50 R09         1151
6263 61 39          SBR   LPSQCP&15                                            #   4  3288  H !68             1151
6264 61 40   FRAMOR MLC   I1TUNM,O1TUHP      STORE INPUT AND OUTPUT TAPE       #   7  3292  M 338 637         1151
6265 61 41          MLC   I2TUNM,O2TUHP      UNIT NUMBERS AS USED IN           #   7  3299  M 339 644         1151
6266 61 42          MLC   MI1TUN,I1TUHP      PHASE 1                           #   7  3306  M 341 630         1151
6267 61 43          MLC   MI2TUN,I2TUHP                                        #   7  3313  M 342 629         1152
6268 61 44          SBR   IREG1,MTOA                                           #   7  3320  H 089 855         1152
6269 61 45          MLC   NCFMLT,NCFHDP#2                                      #   7  3327  M 096 |3W         1152
6270 61 46          MLC   NOP,AWAY&12                                          #   7  3334  M 614 930         1152
6271 61 47          MLC   OWA,AIRA1                                            #   7  3341  M 555 702         1152
6272 61 48          MA    BLMULT,AIRA1       SET LOCATIONS FOR                 #   7  3348  # 085 702         1153
6273 61 49          MLC   AIRA1,AGMEOP       GROUP MARK WORD MARK AT END OF    #   7  3355  M 702 660         1153
6274 61 50          MLC   AIRA1,LGMEOP&6     EACH INPUT                        #   7  3362  M 702 747         1153
6275 61 51          MLC   AIRA1,RWINDP&25    AND OUTPUT AREA                   #   7  3369  M 702 W76         1153
6276 61 52          MA    @002@,AIRA1                                          #   7  3376  # |3Z 702         1153
6277 61 53          MLC   AIRA1,AIRA2                                          #   7  3383  M 702 705         1154
6278 61 54          MA    BLMULT,AIRA2                                         #   7  3390  # 085 705         1154
6279 61 55          MA    LIT001,AIRA2                                         #   7  3397  # 604 705         1154
6280 61 56          MLC   AIRA2,LGMEOP&13                                      #   7  3404  M 705 754         1154
6281 61 57          MLC   AIRA2,RWINDP&13                                      #   7  3411  M 705 W64         1154
6282 61 58          MA    @002@,AIRA2                                          #   7  3418  # |3Z 705         1155
6283 61 59          MLC   AIRA2,AIRA3                                          #   7  3425  M 705 708         1155
6284 61 60          MA    BLMULT,AIRA3                                         #   7  3432  # 085 708         1155
6285 61 61          MA    LIT001,AIRA3                                         #   7  3439  # 604 708         1155
6286 61 62          MLC   AIRA3,LGMEOP&20                                      #   7  3446  M 708 761         1155
6287 61 63          MLC   AIRA3,RWINDP&17                                      #   7  3453  M 708 W68         1156
6288 61 64          MA    @002@,AIRA3                                          #   7  3460  # |3Z 708         1156
6289 61 65          MLC   AIRA1,EOF1&18      INITIALIZE REMOVAL OF 1401        #   7  3467  M 702 Z79         1156
6290 61 66          MLC   AIRA2,EOF2&18      GENERATED GROUP MARK              #   7  3474  M 705 !02         1156
6291 61 67          MLC   AIRA3,EOF3&18                                        #   7  3481  M 708 !25         1156
6292 61 68          MLC   AIRA3,AIRA4#3                                        #   7  3488  M 708 |4S         1157
6293 61 69          MA    BLMULT,AIRA4                                         #   7  3495  # 085 |4S         1157
6294 61 70          MA    LIT001,AIRA4                                         #   7  3502  # 604 |4S         1157
6295 61 71          MLC   AIRA4,LGMEOP&27                                      #   7  3509  M |4S 768         1157
6296 61 72          MLC   AIRA4,RWINDP&21                                      #   7  3516  M |4S W72         1157
6297 61 73          MLC   AIRA3,INPT3P                                         #   7  3523  M 708 675         1158
6298 61 74          MA    I99,INPT3P                                           #   7  3530  # 623 675         1158
6299 61 75          MLC   INPT3P,READ3&6                                       #   7  3537  M 675 T23         1158
6300 61 76          MLC   OWA,AREFO                                            #   7  3544  M 555 726         1158
6301 61 77          MA    I99,OWA                                              #   7  3551  # 623 555         1158
6302 61 78          MLC   OWA,WOBR&6                                           #   7  3558  M 555 955         1159
6303 61 79          MLC   OWA,WOBR&19        SET LOCATIONS FOR START OF        #   7  3565  M 555 968         1159
6304 61 80          MLC   AIRA1,INPT1P       INPUT READ AREAS                  #   7  3572  M 702 669         1159
6305 61 81          MA    I99,INPT1P                                           #   7  3579  # 623 669         1159
6306 61 82          MLC   INPT1P,READ1&6                                       #   7  3586  M 669 |57         1159
6307 61 83          MLC   AIRA2,INPT2P                                         #   7  3593  M 705 672         1160
6308 61 84          MA    I99,INPT2P                                           #   7  3600  # 623 672         1160
6309 61 85          MLC   INPT2P,READ2&6                                       #   7  3607  M 672 /90         1160
6310 61 86   *                                 SET ADDR OF GROUP MARK WORD MARK
6311 61 87          MLC   GPMARK,LGMEOP&3                                      #   7  3614  M 350 744         1160
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

6312 61 88          MLC   GPMARK,LGMEOP&10                                 #   7  3621  M 350 751         1160
6313 61 89          MLC   GPMARK,LGMEOP&17                                 #   7  3628  M 350 758         1161
6314 61 90          MLC   GPMARK,LGMEOP&24                                 #   7  3635  M 350 765         1161
6315 61 91          BCE   *&12,LBBUCK,                                     #   8  3642  B F61 414         1161
6316 61 92          MLC   GPMARK,MVLST1&8                                  #   7  3650  M 350 P71         1161
6317 61 93          B     *&8                                              #   4  3657  B F68             1161
6318 61 94          MLC   GPMARK,MULST1&7                                  #   7  3661  M 350 P70         1162
6319 61 95          MLC   AIRA1,NG1           SET NOISE RECORD TEST        #   7  3668  M 702 711         1162
6320 61 96          MA    @012@,NG1                                        #   7  3675  # |4V 711         1162
6321 61 97          MLC   AIRA2,NG2                                        #   7  3682  M 705 714         1162
6322 61 98          MA    @012@,NG2                                        #   7  3689  # |4V 714         1162
6323 61 99          MLC   AIRA3,NG3                                        #   7  3696  M 708 717         1163
6324 62 00          MA    @012@,NG3                                        #   7  3703  # |4V 717         1163
6325 62 01          MLC   NG1,INTF1&6                                      #   7  3710  M 711 |70         1163
6326 62 02          MLC   NG2,INTF2&6                                      #   7  3717  M 714 S03         1163
6327 62 03          MLC   NG3,INTF3&6                                      #   7  3724  M 717 T36         1163
6328 62 04          MLC   CENSIG,INTF1&7                                   #   7  3731  M 415 |71         1164
6329 62 05          MLC   CENSIG,INTF2&7                                   #   7  3738  M 415 S04         1164
6330 62 06          MLC   CENSIG,INTF3&7                                   #   7  3745  M 415 T37         1164
6331 62 07          MLC   NG1,READ1-1                                      #   7  3752  M 711 |50         1164
6332 62 08          MLC   NG2,READ2-1                                      #   7  3759  M 714 /83         1164
6333 62 09          MLC   NG3,READ3-1                                      #   7  3766  M 717 T16         1165
6334 62 10   *                              LOAD MODE INITIALIZATION
6335 62 11          BCE   CMTOA,OUTMLT,M      OUTPUT MOVE MODE BRANCH      #   8  3773  B H21 549 M       1165
6336 62 12          MLC   OUTMLT,SBR-6                                     #   7  3781  M 549 72Y         1165
6337 62 13   MODMV  MLC   OUTMLT,LMV          CHANGE MOVE INST TO LOAD INST #  7  3788  M 549 871         1165
6338 62 14          BCE   CMTOA,CTMV-1,1                                   #   8  3795  B H21 |4W 1       1165
6339 62 15          A     AONE,CTMV#2                                      #   7  3803  A 616 |4X         1166
6340 62 16          MA    I99,MODMV&6                                      #   7  3810  # 623 G94         1166
6341 62 17          B     MODMV                                            #   4  3817  B G88             1166
6342 62 18   CMTOA  C     NCFHDP,@10@         INITIALIZE MOVE TO           #   7  3821  C |3W |4Z         1166
6343 62 19          BE    CKPOS1              OUTPUT AREA DEPENDENT        #   5  3828  B H51 S           1166
6344 62 20          MA    LIT001,IREG1        UPON NUMBER OF CONTROL FIELDS #  7  3833  # 604 089         1166
6345 62 21          A     AONE,NCFHDP                                      #   7  3840  A 616 |3W         1167
6346 62 22          B     CMTOA                                            #   4  3847  B H21             1167
6347 62 23   CKPOS1 BCE   MSBR,CNOPML,                                     #   8  3851  B H66 086         1167
6348 62 24          MA    LIT001,IREG1        EXEC ONLY IF CF IN FIRST RCD POS #  7  3859  # 604 089      1167
6349 62 25   MSBR   LCA   SBR,6&X1                                         #   7  3866  L 73U 0|6         1167
6350 62 26          LCA                                                    #   1  3873  L                 1167
6351 62 27          LCA                                                    #   1  3874  L                 1167
6352 62 28          MLC   IREG1,ST1MVP                                     #   7  3875  M 089 696         1168
6353 62 29          MA    LIT006,ST1MVP                                    #   7  3882  # |3U 696         1168
6354 62 30          MLC   ST1MVP,*&7                                       #   7  3889  M 696 I02         1168
6355 62 31          MLC   OWA,0               MOVE START OF OUTPUT INTO MTOA&6 #  7  3896  M 555 000      1168
6356 62 32          MLC   ST1MVP,WRITE&6                                   #   7  3903  M 696 894         1168
6357 62 33          MLC   ST1MVP,ALOW&13                                   #   7  3910  M 696 991         1169
6358 62 34          MLC   ST1MVP,BLOW&13                                   #   7  3917  M 696 /24         1169
6359 62 35          MLC   ST1MVP,CLOW&13                                   #   7  3924  M 696 S57         1169
6360 62 36          MLC   ST1MVP,CKOUT&3                                   #   7  3931  M 696 875         1169
6361 62 37          MLC   IREG1,IREG2                                      #   7  3938  M 089 094         1169
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

6362 62 38          MA    @I9B@,IREG2        ESTABLISH LOCATION OF IMOVE       #   7  3945  # |5S 094         1170
6363 62 39          MLC   IREG2,INCR1&10                                       #   7  3952  M 094 |02         1170
6364 62 40          MLC   IREG2,INCR2&10                                       #   7  3959  M 094 /35         1170
6365 62 41          MLC   IREG2,INCR3&10                                       #   7  3966  M 094 S68         1170
6366 62 42          MLC   IREG1,IREG3                                          #   7  3973  M 089 099         1170
6367 62 43          MA    @002@,IREG3        ESTABLISH LOCATION OF MTOA&2      #   7  3980  # |3Z 099         1171
6368 62 44          MLC   IREG3,ALOW&6                                         #   7  3987  M 099 984         1171
6369 62 45          MLC   IREG3,BLOW&6                                         #   7  3994  M 099 /17         1171
6370 62 46          MLC   IREG3,CLOW&6                                         #   7  4001  M 099 S50         1171
6371 62 47   *              ESTABLISH S, N, A1, B1, AND C1
6372 62 48   *                S, TOTAL NUM OF SEQ PRIOR TO ADJUSTMENT
6373 62 49   *                N, TOTAL NUM OF SEQ AFTER ADJUSTMENT
6374 62 50   *                A1,B1,C1  NUM OF SEQ ON EACH INPUT TAPE 1,3,4
6375 62 51   *                   RESPECTIVELY AFTER ADJUSTMENT
6376 62 52   *              COMPUTE ADJUSTMENT VALUES Y, X, P1, P2, P3
6377 62 53   *                Y, NUM OF SEQ TO BE 3 WAY MERGED TO HIGH OUTPUT
6378 62 54   *                X, NUM OF SEQ TO BE 2 WAY MERGED TO LOW OUTPUT
6379 62 55   *                P1, NUM OF SEQ TO BE PASSED FROM HIGH INPUT TO
6380 62 56   *                   HIGH OUTPUT TAPE
6381 62 57   *                P2, NUM OF SEQ TO BE PASSED FROM HIGH INPUT TO
6382 62 58   *                   LOW OUTPUT TAPE
6383 62 59   *                P3, NUM OF SEQ TO BE PASSED FROM LOW INPUT TO
6384 62 60   *                   LOW OUTPUT TAPE
6385 62 61          A     AONE,CNOSIM                                          #   7  4008  A 616 545         1171
6386 62 62          MLC   CNOSIM,NOSQCT                                        #   7  4015  M 545 |0/         1172
6387 62 63          A     NOSQCT             FIND NUMBER OF SEQUENCES          #   4  4022  A |0/             1172
6388 62 64          A     NOSQCT             ON EACH INPUT TAPE REEL           #   4  4026  A |0/             1172
6389 62 65          A     CNOSIM,NOSQCT                                        #   7  4030  A 545 |0/         1172
6390 62 66          MLC   CNOSIM,SQHOLD                                        #   7  4037  M 545 |0X         1172
6391 62 67          MLC   NOSQCT-1,SEQ1                                        #   7  4044  M |0| |1T         1172
6392 62 68          MLC   NOSQCT-1,SEQ2                                        #   7  4051  M |0| |1Z         1173
6393 62 69          A     AONE,NOMP          BUMP NUM OF MERGE COUNTER         #   7  4058  A 616 571         1173
6394 62 70          C     NOSQCT,@5@                                           #   7  4065  C |0/ |5T         1173
6395 62 71          BE    SEQ/                                                 #   5  4072  B 62/ S           1173
6396 62 72  TEST7   C     CNOSIM,@000008@    Q TOTAL SEQUENCES LESS THAN 8     #   7  4077  C 545 |5Z         1173
6397 62 73          BH    MODIF1                                               #   5  4084  B 74Y U           1173
6398 62 74          MLC   @9@,CNTRB                                            #   7  4089  M |6| 560         1174
6399 62 75   *              TEST TO FIND FIRST N&3C1 FROM TABLE WHICH IS EQUAL
6400 62 76   *                   TO OR GREATER THAN S
6401 62 77  LOOKUP  C     HOLDC1,CNOSIM                                        #   7  4096  C |3/ 545         1174
6402 62 78          BH    UPTBLE                                               #   5  4103  B 63S U           1174
6403 62 79          S     AREAN,SQHOLD       FIND Y EQUAL TO S-N DIVIDED       #   7  4108  S |2V |0X         1174
6404 62 80          MZ    AONE,SQHOLD        BY THREE[TRUNCATED]               #   7  4115  Y 616 |0X         1174
6405 62 81          MLC   SQHOLD,HOLDSN                                        #   7  4122  M |0X 74X         1175
6406 62 82          A     HOLDSN                                               #   4  4129  A 74X             1175
6407 62 83          A     SQHOLD,HOLDSN                                        #   7  4133  A |0X 74X         1175
6408 62 84          MLC   HOLDSN,ADHOLD                                        #   7  4140  M 74X 99U         1175
6409 62 85          A     ADHOLD,HOLDSN-1                                      #   7  4147  A 99U 74W         1175
6410 62 86          A     ADHOLD,HOLDSN-2                                      #   7  4154  A 99U 74V         1175
6411 62 87          A     ADHOLD,HOLDSN-3                                      #   7  4161  A 99U 74U         1176
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

6412 62 88          A     ADHOLD,HOLDSN-4                                     #   7  4168  A 99U 74T         1176
6413 62 89          A     ADHOLD,HOLDSN-5                                     #   7  4175  A 99U 74S         1176
6414 62 90          A     ADHOLD,HOLDSN-6                                     #   7  4182  A 99U 74/         1176
6415 62 91          A     @5@,HOLDSN-5                                        #   7  4189  A |5T 74S         1176
6416 62 92          MLC   HOLDSN-7,YAREA                                      #   7  4196  M 74| 601         1177
6417 62 93          MLC   SQHOLD,XAREA       FIND X EQUALTO S-N-2Y            #   7  4203  M |0X 595         1177
6418 62 94          MLC   YAREA,SQHOLD                                        #   7  4210  M 601 |0X         1177
6419 62 95          A     SQHOLD                                              #   4  4217  A |0X             1177
6420 62 96          S     SQHOLD,XAREA                                        #   7  4221  S |0X 595         1177
6421 62 97          MZ    AONE,XAREA                                          #   7  4228  Y 616 595         1177
6422 62 98          MLC   AREAC1,P1AREA      FIND PASS P1 EQUAL TO C1-Y       #   7  4235  M 97W O86         1178
6423 62 99          S     YAREA,P1AREA                                        #   7  4242  S 601 O86         1178
6424 63 00          MZ    AONE,P1AREA                                         #   7  4249  Y 616 O86         1178
6425 63 01          MLC   SEQ2,P2AREA                                         #   7  4256  M |1Z O92         1178
6426 63 02          S     XAREA,P2AREA       FIND PASS P2 EQUAL TO A-X-C1     #   7  4263  S 595 O92         1178
6427 63 03          S     AREAC1,P2AREA                                       #   7  4270  S 97W O92         1179
6428 63 04          MZ    AONE,P2AREA                                         #   7  4277  Y 616 O92         1179
6429 63 05          MLC   SEQ1,P3AREA        FIND PASS P3 EQUAL TO A&K-X-Y-A1 #   7  4284  M |1T O98         1179
6430 63 06          S     XAREA,P3AREA                                        #   7  4291  S 595 O98         1179
6431 63 07          S     YAREA,P3AREA                                        #   7  4298  S 601 O98         1179
6432 63 08          S     AREAA1,P3AREA                                       #   7  4305  S 98Y O98         1180
6433 63 09          MZ    AONE,P3AREA                                         #   7  4312  Y 616 O98         1180
6434 63 10   SPCRTN MLC   INPT2P,STEPB&6     INITIALIZE INSTRUCTIONS IN       #   7  4319  M 672 S38         1180
6435 63 11          MLC   I2TUHP,READ2&3     ADJUSTMENT ROUTINE TO PASS       #   7  4326  M 629 /87         1180
6436 63 12          MLC   I1TUHP,P3EOF&3     P1,P2,AND P3 NUMBER              #   7  4333  M 630 O10         1180
6437 63 13          MLC   I2TUHP,P1EOF&3     OF SEQUENCES                     #   7  4340  M 629 L20         1181
6438 63 14          MLC   I2TUHP,P2EOF&3                                      #   7  4347  M 629 M70         1181
6439 63 15          MA    EOF1&18,P1EOF&11                                    #   7  4354  # Z79 L28         1181
6440 63 16          MA    EOF2&18,P2EOF&11                                    #   7  4361  # !02 M78         1181
6441 63 17          MA    EOF3&18,P3EOF&11                                    #   7  4368  # !25 O18         1181
6442 63 18          MLC   INPT2P,PASSP1&6                                     #   7  4375  M 672 K71         1182
6443 63 19          MLC   INPT3P,STEPC&6                                      #   7  4382  M 675 T71         1182
6444 63 20          SBR   RDFST2&3,PASSP1                                     #   7  4389  H S31 K65         1182
6445 63 21          SBR   STEPB&3,PASSP1                                      #   7  4396  H S35 K65         1182
6446 63 22          SBR   RNOUTP&3,BLOW                                       #   7  4403  H 783 /11         1182
6447 63 23          MLC   OWA,P1CHAR&6                                        #   7  4410  M 555 K93         1183
6448 63 24          MLC   INPT2P,PASSP2&6                                     #   7  4417  M 672 M29         1183
6449 63 25          MLC   OWA,P2CHAR&6                                        #   7  4424  M 555 M36         1183
6450 63 26          MLC   INPT1P,PASSP3&6                                     #   7  4431  M 669 N69         1183
6451 63 27          MLC   OWA,P3CHAR&6                                        #   7  4438  M 555 N76         1183
6452 63 28          MLC   SIX 0S-5,I3TUNM                                     #   7  4445  M 608 340         1184
6453 63 29          MLC   SIX 0S-5,MI3TUN                                     #   7  4452  M 608 343         1184
6454 63 30          SBR   RDFST1&3,PASSP3                                     #   7  4459  H |98 N63         1184
6455 63 31          MLC   P1AREA,YCNTR                                        #   7  4466  M O86 583         1184
6456 63 32          A     YAREA,YCNTR                                         #   7  4473  A 601 583         1184
6457 63 33          MN    O2TUHP,WOBR&3                                       #   7  4480  D 644 952         1185
6458 63 34          MN    O2TUHP,WORED&3                                      #   7  4487  D 644 W84         1185
6459 63 35          MN    O2TUHP,ERTAPP&3                                     #   7  4494  D 644 X23         1185
6460 63 36          MN    O1TUHP,READ3&3                                      #   7  4501  D 637 T20         1185
6461 63 37          A     P3AREA,O2TUHP-1                                     #   7  4508  A O98 643         1185
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

6462 63 38          A     XAREA,O2TUHP-1                                      #   7  4515  A 595 643          1186
6463 63 39          MLC   SEQ1,TUHOLD-1                                       #   7  4522  M |1T 650          1186
6464 63 40          MLC   O2TUHP-1,TAPSEQ                                     #   7  4529  M 643 657          1186
6465 63 41          A     P2AREA,TAPSEQ                                       #   7  4536  A O92 657          1186
6466 63 42          SBR   READ2&11,P1EOF                                      #   7  4543  H /95 L17          1186
6467 63 43          MLC   I1TUHP,READ1&3                                      #   7  4550  M 630 |54          1187
6468 63 44          MLC   I1TUHP,EOF1&10                                      #   7  4557  M 630 Z71          1187
6469 63 45          SBR   READ1&11,P3EOF                                      #   7  4564  H |62 O07          1187
6470 63 46          MLC   OWA,REDETP-1                                        #   7  4571  M 555 775          1187
6471 63 47          CS    080                  READ OVERLAP INST INTO CORE    #   4  4578  / 080              1187
6472 63 48          SW    24,56                                               #   7  4582  , 024 056          1187
6473 63 49          SW    63,67                                               #   7  4589  , 063 067          1188
6474 63 50          BCE   WLBLOL,LBBUCK,                                      #   8  4596  B 60Y 414          1188
6475 63 51  OLYRED R      056                                                 #   4  4604  1 056              1188
6476 63 52  WLBLOL R                                                          #   1  4608  1                  1188
6477 63 53          BCE   OLYRED,68,B                                         #   8  4609  B 60U 068 B        1188
6478 63 54          B     WLBLOL                                              #   4  4617  B 60Y              1188
6479 63 55  SEQ/    A     AONE,SEQ1            INCREASE SEQ1 WHEN TOTAL NUM   #   7  4621  A 616 |1T          1188
6480 63 56          B     TEST7                OF SEQUENCES IS ODD            #   4  4628  B 07X              1189
6481 63 57  *               LOOP TO REACH THE NEXT HIGHER LEVEL OF THE
6482 63 58  *                    MULTIPHASE MERGE TABLE
6483 63 59  UPTBLE MLC   AREAC1,HOLDC1                                       #   7  4632  M 97W |3/          1189
6484 63 60          A     AREAB1,AREAC1                                       #   7  4639  A 98S 97W          1189
6485 63 61          MLC   HOLDC1,AREAB1                                       #   7  4646  M |3/ 98S          1189
6486 63 62          A     AREAA1,AREAB1                                       #   7  4653  A 98Y 98S          1189
6487 63 63          MLC   HOLDC1,AREAA1                                       #   7  4660  M |3/ 98Y          1189
6488 63 64          A     AREAB1,HOLDC1                                       #   7  4667  A 98S |3/          1190
6489 63 65          A     AREAC1,HOLDC1                                       #   7  4674  A 97W |3/          1190
6490 63 66          MLC   HOLDC1,AREAN                                        #   7  4681  M |3/ |2V          1190
6491 63 67          A     AREAC1,HOLDC1                                       #   7  4688  A 97W |3/          1190
6492 63 68          A     AREAC1,HOLDC1                                       #   7  4695  A 97W |3/          1190
6493 63 69          A     AREAC1,HOLDC1                                       #   7  4702  A 97W |3/          1191
6494 63 70          A     AONE,NOMP                                           #   7  4709  A 616 571          1191
6495 63 71          B     LOOKUP                                              #   4  4716  B 09W              1191
6496 63 72          SBR   RTRN1&3                                             #   4  4720  H 887              1191
6497 63 73          SBR   RTRN2&3                                             #   4  4724  H 977              1191
6498 63 74  SBR     DCW   @M000000@                                           #   7  4734                     1191
6499 63 75  HOLDSN DCW    @0000000000000@                                     #  13  4747                     1192
6500 63 76  MODIF1 BCE    SEQNO1,CNOSIM,1      SET INSTRUCTIONS FOR EXCEPTION #   8  4748  B 84S 545 1        1192
6501 63 77          BCE   SEQNO2,CNOSIM,2      CASES WHERE TOTAL NUMBER OF    #   8  4756  B 85T 545 2        1192
6502 63 78          BCE   SEQNO3,CNOSIM,3      SEQUENCES IS LESS THAN EIGHT   #   8  4764  B 86U 545 3        1192
6503 63 79          BCE   SEQNO4,CNOSIM,4                                     #   8  4772  B 88S 545 4        1193
6504 63 80          BCE   SEQNO5,CNOSIM,5                                     #   8  4780  B 91U 545 5        1193
6505 63 81          BCE   SEQNO6,CNOSIM,6                                     #   8  4788  B 94W 545 6        1193
6506 63 82          MLC   @7@,CNTRB            SEQUENCE TOTAL EQUALS SEVEN    #   7  4796  M |6/ 560          1193
6507 63 83          MLC   ATWO,NOMP            SET NOMP TO TWO                #   7  4803  M 617 571          1193
6508 63 84          A     AONE,P1AREA          SET P1 TO ONE                  #   7  4810  A 616 O86          1194
6509 63 85          A     AONE,P2AREA          SET P2 TO ONE                  #   7  4817  A 616 O92          1194
6510 63 86          A     ATWO,P3AREA          SET P3 TO TWO                  #   7  4824  A 617 O98          1194
6511 63 87          MLC   AONE,YAREA           SET Y TO ONE                   #   7  4831  M 616 601          1194
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

6512 63 88          B     SPCRTN                                                #   4  4838  B 31Z             1194
6513 63 89   SEQNO1 MLC   AONE,CNTRB          SEQUENCE TOTAL EQUALS ONE         #   7  4842  M 616 560         1194
6514 63 90          B     SPCRTN                                                #   4  4849  B 31Z             1195
6515 63 91   SEQNO2 MLC   ATWO,CNTRB          SEQUENCE TOTAL EQUALS TWO         #   7  4853  M 617 560         1195
6516 63 92          B     SPCRTN                                                #   4  4860  B 31Z             1195
6517 63 93   SEQNO3 MLC   AONE,XAREA          SEQUENCE TOTAL EQUALS THREE       #   7  4864  M 616 595         1195
6518 63 94          MLC   LIT003,CNTRB        SET X TO ONE                      #   7  4871  M 607 560         1195
6519 63 95          B     SPCRTN                                                #   4  4878  B 31Z             1195
6520 63 96   SEQNO4 MLC   AFOUR,CNTRB         SEQUENCE TOTAL EQUALS FOUR        #   7  4882  M 618 560         1196
6521 63 97          MLC   AONE,P2AREA         SET P2 TO ONE                     #   7  4889  M 616 O92         1196
6522 63 98          MLC   AONE,P3AREA         SET P3 TO ONE                     #   7  4896  M 616 O98         1196
6523 63 99          MLC   AONE,YAREA          SET Y TO ONE                      #   7  4903  M 616 601         1196
6524 64 00          B     SPCRTN                                                #   4  4910  B 31Z             1196
6525 64 01   SEQNO5 MLC   @5@,CNTRB           SEQUENCE TOTAL EQUALS FIVE        #   7  4914  M |5T 560         1196
6526 64 02          MLC   AONE,XAREA          SET X TO ONE                      #   7  4921  M 616 595         1197
6527 64 03          MLC   AONE,P3AREA         SET P3 TO ONE                     #   7  4928  M 616 O98         1197
6528 64 04          MLC   AONE,YAREA          SET Y TO ONE                      #   7  4935  M 616 601         1197
6529 64 05          B     SPCRTN                                                #   4  4942  B 31Z             1197
6530 64 06   SEQNO6 MLC   ATWO,XAREA          SEQUENCE TOTAL EQUALS SIX         #   7  4946  M 617 595         1197
6531 64 07          MLC   LIT006,CNTRB        SET X TO TWO                      #   7  4953  M |3U 560         1197
6532 64 08          MLC   AONE,YAREA          SET Y TO ONE                      #   7  4960  M 616 601         1198
6533 64 09          B     SPCRTN                                                #   4  4967  B 31Z             1198
6534 64 10   AREAC1 DCW   @000001@                                              #   6  4976                    1198
6535 64 11   AREAB1 DCW   @000001@                                              #   6  4982                    1198
6536 64 12   AREAA1 DCW   @000001@                                              #   6  4988                    1198
6537 64 13   ADHOLD DCW   @000000@                                              #   6  4994                    1198
6538 64 14   NOSQCT DCW   @0000000@                                             #   7  5001                    1199
6539 64 15   SQHOLD DCW   @000000@                                              #   6  5007                    1199
6540 64 16   SEQ1   DCW   @000000@                                              #   6  5013                    1199
6541 64 17   SEQ2   DCW   @000000@                                              #   6  5019                    1199
6542 64 18   AREAN  DCW   @000003@                                              #   6  5025                    1199
6543 64 19   HOLDC1 DCW   @000006@                                              #   6  5031                    1199
6544 64 20   LIT006 DCW   @006@                                                 #   3  5034                    1200
             NCFHDP DCW   #02                                                   #   2  5036              AREA  1200
                    DCW   @002@                                                 #   3  5039              LIT   1200
             AIRA4# DCW   #03                                                   #   3  5042              AREA  1200
                    DCW   @012@                                                 #   3  5045              LIT   1200
             CTMV # DCW   #02                                                   #   2  5047              AREA  1200
                    DCW   @10@                                                  #   2  5049              LIT   1200
                    DCW   @I9B@                                                 #   3  5052              LIT   1201
                    DCW   @5@                                                   #   1  5053              LIT   1201
                    DCW   @000008@                                              #   6  5059              LIT   1201
                    DCW   @9@                                                   #   1  5060              LIT   1201
                    DCW   @7@                                                   #   1  5061              LIT   1201
6545 64 21          EX    LLCHEK                                                #            B B00             1202
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6546 64 22          JOB   ** IBM 1401 SORT 7 VERSION 2 MULTIPHASE               #
6547 64 23   *
6548 64 24   *              120 CHARACTER WORK LABEL ROUTINE
6549 64 25          ORG   ADJEND                                                #             2699
6550 64 26   *              TAPES ARE REFERRED TO AS OUTPUT OR INPUT DEPENDING
6551 64 27   *              ON WHETHER THEY ARE OUTPUT OR INPUT REELS TO NXT PS
6552 64 28   MLHIL1 H     MULAX1              PRESS START TO ACCEPT LABEL AS   #   4  2699  . Q27             1205
6553 64 29   *                                   READ.THE REDUNDANT RECORD WILL
6554 64 30   *                                   BE WRITTEN AS THE HEADER LABEL
6555 64 31          B     MVLHRD-14          PRESS START/RESET-START TO RETRY  #   4  2703  B P87             1205
6556 64 32   *                                   UP TO 99 MORE TIMES
6557 64 33   MLHIL2 H                         PRESS START TO TRY TO WRITE THE  #   1  2707  .                 1205
6558 64 34          MLC   AZERO,MVLHC2                                          #   7  2708  M 608 ?72         1205
6559 64 35          B     MVLHWT                                                #   4  2715  B R22             1205
6560 64 36   MLHIL3 H     MULAX1              PRESS START TO ACCEPT INPUT HDR  #   4  2719  . Q27             1205
6561 64 37          B     MVLHRD-14          LABEL AS READ.PRESS START RESET   #   4  2723  B P87             1205
6562 64 38   *                                   START TO RETRY UP TO 99 TIMES
6563 64 39   MLHIL4 H     *-3                NO TAPEMARK AFTER HL WHEN ONE HAS #   4  2727  . P27             1206
6564 64 40   *                                   BEEN SPECIFIED-RESTART PROGRAM
6565 64 41   MLHANT SBR   MLHAXT&3                                              #   4  2731  H R56             1206
6566 64 42          MLNS  TPNOBK,MVLST1&15                                      #   7  2735  D 732 P78         1206
6567 64 43          MLNS  TPNOBK,MVLHRD&3                                       #   7  2742  D 732 Q04         1206
6568 64 44          MLNS  TPNOBK,MVLTMR&3                                       #   7  2749  D 732 Q50         1206
6569 64 45          MLNS  TPNOBK,MEHST3&11                                      #   7  2756  D 732 ?09         1206
6570 64 46   MVLST1 CS    332                                                   #   4  2763  / 332             1207
6571 64 47          CS                                                          #   1  2767  /                 1207
6572 64 48          MLCWA 0,321                                                 #   7  2768  L 000 321         1207
6573 64 49          RWD   0                                                     #   5  2775  U %U0 R           1207
6574 64 50          MLC   SIX 0S-4,MVLHC1#2                                     #   7  2780  M 609 ?71         1207
6575 64 51          MLC   CENSIG,MKHNOS&7                                       #   7  2787  M 415 Q16         1207
6576 64 52          MLC   CENSIG,214                                            #   7  2794  M 415 214         1207
6577 64 53   MVLHRD RTW   0,201                                                 #   8  2801  L %U0 201 R       1208
6578 64 54   MKHNOS BCE   MLHNUS,214,        BRANCH IF NOISE RECORD             #   8  2809  B R57 214         1208
6579 64 55          BEF   *&1                                                   #   5  2817  B Q22 K           1208
6580 64 56          BER   MEHRDP              BRANCH TO PARITY ERROR ROUTINE   #   5  2822  B R65 L           1208
6581 64 57   MULAX1 NOP   0                   USERS EXIT                       #   4  2827  N 000             1208
6582 64 58          BCE   MVLST2,OPENID,O     IF OUTPUT TAPE                   #   8  2831  B Q64 731 O       1208
6583 64 59          BCE   CLR331,THLTMO,       NO TAPEMARK AFTER HEADER LABEL  #   8  2839  B R48 418         1209
6584 64 60   MVLTMR RT    0,201            READ TAPEMARK                        #   8  2847  M %U0 201 R       1209
6585 64 61          BEF   CLR331                                                #   5  2855  B R48 K           1209
6586 64 62          B     MLHIL4              A TAPEMARK SHOULD BE PRESENT     #   4  2860  B P27             1209
6587 64 63   MVLST2 MLNS  TPNOBK,MULAX2&7     INIT I/O INSTRUCTIONS            #   7  2864  D 732 R20         1209
6588 64 64          MLNS  TPNOBK,MVLHWT&3                                       #   7  2871  D 732 R25         1209
6589 64 65          MLNS  TPNOBK,CLR331-2                                       #   7  2878  D 732 R46         1210
6590 64 66          MLNS  TPNOBK,MEHPWT&10                                      #   7  2885  D 732 ?25         1210
6591 64 67          MLNS  TPNOBK,MEHST4&3                                       #   7  2892  D 732 ?49         1210
6592 64 68          MLC   AZERO,MVLHC2#1                                        #   7  2899  M 608 ?72         1210
6593 64 69          MLC   @09@,MVLHC1         RESET ERROR COUNTER              #   7  2906  M ?74 ?71         1210
6594 64 70   MULAX2 NOP   0                   USER EXIT                        #   4  2913  N 000             1210
6595 64 71          RWD   0                                                     #   5  2917  U %U0 R           1211
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

6596 64 72  MVLHWT WT    0,201                                                     #   8  2922  M %U0 201 W       1211
6597 64 73         BER   MEHPWT              PARITY ERROR                          #   5  2930  B ?15 L           1211
6598 64 74         BCE   *&6,THLTMO,         NO TAPEMARK AFTER HEADER LABEL        #   8  2935  B R48 418         1211
6599 64 75         WTM   0                                                         #   5  2943  U %U0 M           1211
6600 64 76  CLR331 CS    332                                                       #   4  2948  / 332             1211
6601 64 77         CS                                                              #   1  2952  /                 1211
6602 64 78  MLHAXT B     0                   RETURN TO NEXT SEQUENTIAL INST        #   4  2953  B 000             1212
6603 64 79  MLHNUS CS    220                 CLEAR NOISE RECORD                    #   4  2957  / 220             1212
6604 64 80         B     MVLHRD                                                    #   4  2961  B Q01             1212
6605 64 81  *
6606 64 82  *          READ PARITY ERROR ROUTINE
6607 64 83  *          TRY TO READ HEADER 99 TIMES THEN HALT
6608 64 84  MEHRDP BCE   *&12,OPENID,O       IF OUTPUT TAPE                        #   8  2965  B R84 731 O       1212
6609 64 85         SBR   MEHST3,MLHIL3                                             #   7  2973  H R98 P19         1212
6610 64 86         B     *&8                                                       #   4  2980  B R91             1212
6611 64 87         SBR   MEHST3,MLHIL1                                             #   7  2984  H R98 O99         1212
6612 64 88         A     AONE,MVLHC1                                               #   7  2991  A 616 ?71         1213
6613 64 89  MEHST3 BWZ   MLHIL1,MVLHC1-1,S   IF 99 TRIES                           #   8  2998  V O99 ?70 S       1213
6614 64 90         BSP   0                                                         #   5  3006  U %U0 B           1213
6615 64 91         B     MVLHRD                                                    #   4  3011  B Q01             1213
6616 64 92  *
6617 64 93  *          WRITE PARITY ERROR ROUTINE
6618 64 94  *
6619 64 95  *          TRY TO WRITE HEADER TWICE IN SAME PLACE THEN SPACE
6620 64 96  *          FOWARD----AFTER TEN SKIPS-HALT----
6621 64 97  MEHPWT S     AONE,MVLHC1                                               #   7  3015  S 616 ?71         1213
6622 64 98         BSP   0                                                         #   5  3022  U %U0 B           1213
6623 64 99         BCE   *&5,MVLHC1,G                                              #   8  3027  B ?39 ?71 G       1214
6624 65 00         B     MVLHWT                                                    #   4  3035  B R22             1214
6625 65 01         MLC   @09@,MVLHC1                                               #   7  3039  M ?74 ?71         1214
6626 65 02  MEHST4 SKP   0                                                         #   5  3046  U %U0 E           1214
6627 65 03         A     AONE,MVLHC2                                               #   7  3051  A 616 ?72         1214
6628 65 04         BCE   MLHIL2,MVLHC2,0                                           #   8  3058  B P07 ?72 0       1214
6629 65 05         B     MVLHWT                                                    #   4  3066  B R22             1215
6630 65 06         LTORG *                                                         #              3070
            MVLHC1 DCW   #02                                                       #   2  3071                AREA  1215
            MVLHC2 DCW   #01                                                       #   1  3072                AREA  1215
                   DCW   @09@                                                      #   2  3074                LIT   1215
6631 65 07  WKLAND ORG   *                                                         #      3075    3075
6632 65 08         EX    STRTN                                                     #            B B30             1216
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6633 65 09          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE            #
6634 65 10          ORG   3200                                                #            3200
6635 65 11   OVLAP  MLC   CTNRML,CNAR#6       ESTABLISH NUM OF RCDS           #    7  3200  M 539 19/         1219
6636 65 12          S     PDCPUT,CNAR                                         #    7  3207  S 548 19/         1219
6637 65 13          MZ    BLANK,CNAR                                          #    7  3214  Y 619 19/         1219
6638 65 14          MLC   NOMP,NMPP2#2                                        #    7  3221  M 571 19T         1219
6639 65 15          MLC   NMPP2,PRMSA                                         #    7  3228  M 19T 10U         1219
6640 65 16          MLC   NMPP2,NMPL                                          #    7  3235  M 19T 559         1220
6641 65 17          CS    332                                                 #    4  3242  / 332             1220
6642 65 18          CS                                                        #    1  3246  /                 1220
6643 65 19          MLC   PRMSA,227                                           #    7  3247  M 10U 227         1220
6644 65 20          W                                                         #    1  3254  2                 1220
6645 65 21          CC    K                   PRINT TOTAL NUMBER OF MERGES    #    2  3255  F K               1220
6646 65 22          MLC   CTNRML,PMSC1P-22                                    #    7  3257  M 539 11|         1220
6647 65 23          MLC   CNAR,PRMSD-22                                       #    7  3264  M 19/ 13Y         1221
6648 65 24          CS    228                                                 #    4  3271  / 228             1221
6649 65 25          MLC   PRMSD,228                                           #    7  3275  M 16| 228         1221
6650 65 26          W                         PRINT ACTUAL NUMBER OF RECORDS  #    1  3282  2                 1221
6651 65 27          CS    332                                                 #    4  3283  / 332             1221
6652 65 28          CS                                                        #    1  3287  /                 1221
6653 65 29          MLC   PDCPUT,PRMSE-22                                     #    7  3288  M 548 16T         1221
6654 65 30          MLC   PRMSE,228                                           #    7  3295  M 18V 228         1222
6655 65 31          W                         PRINT NUMBER OF PADDED RECORDS  #    1  3302  2                 1222
6656 65 32          CS    332                                                 #    4  3303  / 332             1222
6657 65 33          CS                                                        #    1  3307  /                 1222
6658 65 34          MLC   PMSC1P,228                                          #    7  3308  M 13S 228         1222
6659 65 35          W                         PRINT TOTAL OF ACTUAL AND       #    1  3315  2                 1222
6660 65 36          CC    1                   PADDED RECORDS                  #    2  3316  F 1               1222
6661 65 37          MLC   @I9W@,IREG1                                         #    7  3318  M 19W 089         1223
6662 65 38          BCE   LD12K,MSMULT,5                                      #    8  3325  B H91 344 5       1223
6663 65 39          BCE   LD16K,MSMULT,6                                      #    8  3333  B I02 344 6       1223
6664 65 40   LDCST  LCA   SIX 0S,0&X1         INITIALIZE AREA AND INSTRUCTIONS #   7  3341  L 613 0|0         1223
6665 65 41          LCA   SIX 0S              FOR COUNTING NUMBER OF RECORDS  #    4  3348  L 613             1223
6666 65 42          SBR   CLEPS               PROCESSED                       #    4  3352  H 563             1223
6667 65 43          MLC   IREG1,ACNT                                          #    7  3356  M 089 569         1224
6668 65 44          MLC   ACNT,SUBT B&6                                       #    7  3363  M 569 Z56         1224
6669 65 45          MA    @I9D@,IREG1                                         #    7  3370  # 19Z 089         1224
6670 65 46          MLC   IREG1,ACTNR                                         #    7  3377  M 089 566         1224
6671 65 47          MLC   ACTNR,KOWNT&6                                       #    7  3384  M 566 905         1224
6672 65 48          MLC   ACTNR,AWAY&3                                        #    7  3391  M 566 921         1225
6673 65 49          MLC   ACTNR,LPSQCP&3                                      #    7  3398  M 566 !56         1225
6674 65 50          MLC   AIRA1,NDRA1P        END OF FIRST READ AREA          #    7  3405  M 702 678         1225
6675 65 51          MA    BLMULT,NDRA1P                                       #    7  3412  # 085 678         1225
6676 65 52          MA    I99,NDRA1P                                          #    7  3419  # 623 678         1225
6677 65 53          MLC   AIRA2,NDRA2P        END OF SECOND READ AREA         #    7  3426  M 705 681         1226
6678 65 54          MA    BLMULT,NDRA2P                                       #    7  3433  # 085 681         1226
6679 65 55          MA    I99,NDRA2P                                          #    7  3440  # 623 681         1226
6680 65 56          MLC   AIRA3,NDRA3P        END OF THIRD READ AREA          #    7  3447  M 708 684         1226
6681 65 57          MA    BLMULT,NDRA3P                                       #    7  3454  # 085 684         1226
6682 65 58          MA    I99,NDRA3P                                          #    7  3461  # 623 684         1227
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 SEQ PG LIN  LABEL  OP     OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

6683 65 59          MLC    CFIREM,CMPABP&3    SET COMPARE INSTR                   #   7  3468  M 337 787          1227
6684 65 60          MLC    CFIREM,CMPABP&6                                        #   7  3475  M 337 790          1227
6685 65 61          MLC    CFIREM,CMPBCP&3                                        #   7  3482  M 337 808          1227
6686 65 62          MLC    CFIREM,CMPBCP&6                                        #   7  3489  M 337 811          1227
6687 65 63          MLC    CFIREM,CMPACP&3                                        #   7  3496  M 337 829          1228
6688 65 64          MLC    CFIREM,CMPACP&6                                        #   7  3503  M 337 832          1228
6689 65 65          MZ     *-6,CMPABP&2                                           #   7  3510  Y E10 786          1228
6690 65 66          MZ     *-6,CMPACP&2                                           #   7  3517  Y E17 828          1228
6691 65 67          MZ     NOP,CMPABP&5                                           #   7  3524  Y 614 789          1228
6692 65 68          MZ     NOP,CMPBCP&2                                           #   7  3531  Y 614 807          1229
6693 65 69          MZ     KB,CMPACP&5                                            #   7  3538  Y 615 831          1229
6694 65 70          MZ     KB,CMPBCP&5                                            #   7  3545  Y 615 810          1229
6695 65 71          MLC    OWA,ARELO                                              #   7  3552  M 555 720          1229
6696 65 72          MA     BLMULT,ARELO                                           #   7  3559  # 085 720          1229
6697 65 73          MLC    AIRA1,CMP11P       FIRST READ AREA CF                  #   7  3566  M 702 687          1230
6698 65 74          MA     CFIREM,CMP11P                                          #   7  3573  # 337 687          1230
6699 65 75          MA     I99,CMP11P                                             #   7  3580  # 623 687          1230
6700 65 76          MLC    AIRA2,CMP12P       SECOND READ AREA CF                 #   7  3587  M 705 690          1230
6701 65 77          MA     CFIREM,CMP12P                                          #   7  3594  # 337 690          1230
6702 65 78          MA     I99,CMP12P                                             #   7  3601  # 623 690          1231
6703 65 79          MLC    AIRA3,CMP13P       THIRD READ AREA CF                  #   7  3608  M 708 693          1231
6704 65 80          MA     CFIREM,CMP13P                                          #   7  3615  # 337 693          1231
6705 65 81          MA     I99,CMP13P                                             #   7  3622  # 623 693          1231
6706 65 82          BCE    CCFW1,DESCND,                                          #   8  3629  B G16 090          1231
6707 65 83          MLC    SNGLET,CMPABP&16   DESCENDING ORDER INITIALIZATION     #   7  3637  M 07V 800          1232
6708 65 84          MLC    SNGLET,CMPBCP&16       EXCHANGE BHS AND BLS            #   7  3644  M 07V 821          1232
6709 65 85          MLC    SNGLET,CMPACP&16                                       #   7  3651  M 07V 842          1232
6710 65 86          MLC    SNGLET,CMNCF&16                                        #   7  3658  M 07V Y71          1232
6711 65 87          MLC    SNGLEU,CMPABP&11                                       #   7  3665  M 07W 795          1232
6712 65 88          MLC    SNGLEU,CMPBCP&11                                       #   7  3672  M 07W 816          1233
6713 65 89          MLC    SNGLEU,CMPACP&11                                       #   7  3679  M 07W 837          1233
6714 65 90          MLC    SNGLEU,CMNCF&11                                        #   7  3686  M 07W Y66          1233
6715 65 91          BCE    CCFW1,PIMULT,6                                         #   8  3693  B G16 193 6        1233
6716 65 92          BCE    CHG9PD,PIMULT,9        CHANGE PADDING INDICATOR        #   8  3701  B H80 193 9        1233
6717 65 93          MLC    SNGLE9,PIMULT                                          #   7  3709  M 07X 193          1234
6718 65 94   CCFW1  C      NCFMLT,AONE                                            #   7  3716  C 096 616          1234
6719 65 95          BU     CKRWD                                                  #   5  3723  B G49 /            1234
6720 65 96   *                                 CLEAR EQUALS ROUTINE
6721 65 97          MLC    BLANK,CMPABP&16                                        #   7  3728  M 619 800          1234
6722 65 98          MLC    BLANK,CMPBCP&16                                        #   7  3735  M 619 821          1234
6723 65 99          MLC    BLANK,CMPACP&16                                        #   7  3742  M 619 842          1235
6724 66 00   CKRWD  BCE    CMBOL,UNLOAD,                                          #   8  3749  B G85 416          1235
6725 66 01          MLC    SNGLEU,EOF1&11     REWIND AND UNLOAD INITIALIZATION    #   7  3757  M 07W Z72          1235
6726 66 02          MLC    SNGLEU,EOF2&11                                         #   7  3764  M 07W Z95          1235
6727 66 03          MLC    SNGLEU,EOF3&11                                         #   7  3771  M 07W !18          1235
6728 66 04          MLC    SNGLEU,RWINDP&9                                        #   7  3778  M 07W W60          1236
6729 66 05   *                                 COMPUTE OUTPUT BLOCK LENGTH
6730 66 06   CMBOL  MA     LMULTI,BOL                                             #   7  3785  # 347 723          1236
6731 66 07          A      AONE,CNBOL#3                                           #   7  3792  A 616 20S          1236
6732 66 08          C      CNBOL,BOMULT                                           #   7  3799  C 20S 185          1236
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6733 66 09          BU    CMBOL                                                #   5  3806  B G85 /           1236
6734 66 10          MLC   OWA,ARELBP                                           #   7  3811  M 555 663         1237
6735 66 11          MA    BOL,ARELBP                                           #   7  3818  # 723 663         1237
6736 66 12          MLC   ARELBP,AGMEBP                                        #   7  3825  M 663 666         1237
6737 66 13          MA    LIT001,AGMEBP                                        #   7  3832  # 604 666         1237
6738 66 14   *                                COMPUTE PADDING REQUIREMENTS
6739 66 15          BCE   REED,PIMULT,6                                        #   8  3839  B I13 193 6       1237
6740 66 16          MLC   PDCPUT,PDELMP#3                                      #   7  3847  M 548 20V         1238
6741 66 17   HWMCHP S     BOMULT,PDELMP                                        #   7  3854  S 185 20V         1238
6742 66 18          BWZ   REED,PDELMP,K                                        #   8  3861  V I13 20V K       1238
6743 66 19          A     BOMULT,RMOVEP                                        #   7  3869  A 185 699         1238
6744 66 20          B     HWMCHP                                               #   4  3876  B H54             1238
6745 66 21   CHG9PD MLC   BLANK,PIMULT                                         #   7  3880  M 619 193         1239
6746 66 22          B     CCFW1                                                #   4  3887  B G16             1239
6747 66 23   LD12K  MA    @00|@,IREG1         MODIFY FOR 12K SYSTEM            #   7  3891  # 20Y 089         1239
6748 66 24          B     LDCST                                                #   4  3898  B C41             1239
6749 66 25   LD16K  MA    @00!@,IREG1         MODIFY FOR 16K SYSTEM            #   7  3902  # 21/ 089         1239
6750 66 26          B     LDCST                                                #   4  3909  B C41             1239
6751 66 27   REED   CS    080                 DETERMINE REDUNDANCY ROUTINE     #   4  3913  / 080             1239
6752 66 28          MLC   INPT1P,IREG1        REQUESTED BY USER                #   7  3917  M 669 089         1240
6753 66 29          MLC   INPT2P,IREG2                                         #   7  3924  M 672 094         1240
6754 66 30          MLC   INPT3P,IREG3                                         #   7  3931  M 675 099         1240
6755 66 31          SW    24,56                                                #   7  3938  , 024 056         1240
6756 66 32          SW    63,67                                                #   7  3945  , 063 067         1240
6757 66 33          BCE   STURPP,URPIML,C                                      #   8  3952  B 02/ 186 C       1241
6758 66 34          SBR   RED&7,REDSQ&6                                        #   7  3960  H Y97 J36         1241
6759 66 35          MLC   SETZN,SETZN-7                                        #   7  3967  M Z19 Z12         1241
6760 66 36          MLC   @A@,SUBT B                                           #   7  3974  M 21S Z50         1241
6761 66 37          MLC   *-6,WOBR-14                                          #   7  3981  M I81 935         1241
6762 66 38          BCE   STURQP,URPIML,P                                      #   8  3988  B 01U 186 P       1242
6763 66 39          SBR   SETZN&6,BBPQQG&5                                     #   7  3996  H Z25 J42         1242
6764 66 40          MLC   SNGLET,IDENT&7                                       #   7  4003  M 07V 03W         1242
6765 66 41          B     IDENT-1                                              #   4  4010  B 02Y             1242
6766 66 42   STURQP SBR   SETZN&6,MHBB1&2                                      #   7  4014  H Z25 J71         1242
6767 66 43   STURPP MLC   URPIML,IDENT&7      READ INTO CORE                   #   7  4021  M 186 03W         1243
6768 66 44          R                         REQUESTED REDUNDANCY ROUTINE     #   1  4028  1                 1243
6769 66 45   IDENT  BCE   056,079,                                             #   8  4029  B 056 079         1243
6770 66 46          R     IDENT                                                #   4  4037  1 02Z             1243
6771 66 47   RANOTP CS    080                                                  #   4  4041  / 080             1243
6772 66 48          SW    24,56                                                #   7  4045  , 024 056         1243
6773 66 49          SW    63,67                                                #   7  4052  , 063 067         1243
6774 66 50          R     FRGETP                                               #   4  4059  1 06T             1244
6775 66 51   *                                BYPASS OTHER REDUND RTN
6776 66 52   *                                LOAD NEXT INIT RTN AND BR TO STBRG
6777 66 53   FRGETP BCE   056,079,                                             #   8  4063  B 056 079         1244
6778 66 54          R     FRGETP                                               #   4  4071  1 06T             1244
6779 66 55   SNGLET DCW   @T@                                                  #   1  4075                    1244
6780 66 56   SNGLEU DCW   @U@                                                  #   1  4076                    1244
6781 66 57   SNGLE9 DCW   @9@                                                  #   1  4077                    1244
6782 66 58   PRMSA  DCW   @NUM OF MULTIPHASE PASSES 00@                        #  27  4104                    1245
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

6783 66 59   PMSC1P DCW   @       -RECORDS READ-PASS 00@                   #  28  4132                    1246
6784 66 60   PRMSD  DCW   @       -RECORDS READ-PASS 00@                   #  28  4160                    1247
6785 66 61   PRMSE  DCW   @000 PAD REC ADDED-PASS 00@                      #  25  4185                    1248
             CNAR # DCW   #06                                              #   6  4191              AREA  1248
             NMPP2# DCW   #02                                              #   2  4193              AREA  1248
                    DCW   @I9W@                                            #   3  4196              LIT   1248
                    DCW   @I9D@                                            #   3  4199              LIT   1248
             CNBOL# DCW   #03                                              #   3  4202              AREA  1249
             PDELMP DCW   #03                                              #   3  4205              AREA  1249
                    DCW   @00|@                                            #   3  4208              LIT   1249
                    DCW   @00!@                                            #   3  4211              LIT   1249
                    DCW   @A@                                              #   1  4212              LIT   1249
6786 66 62          EX    OVLAP                                            #              B B00             1250
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6787 66 63          JOB   ** IBM 1401 SORT 7 VERSION 1  MULTIPHASE  PUNCH URPI #
6788 66 64          ORG   SAVE                                                 #           2115
6789 66 65   BBP2   MLC   AONE,0                                               #   7  2115  M 616 000         1253
6790 66 66          BCE   *&8,0,              IF START OF SEQUENCE             #   8  2122  B J37 000         1253
6791 66 67   REDSQ  MLC   *-6,0               ACTIVATE SEQ CHAR MOVE           #   7  2130  M J30 000         1253
6792 66 68          MLC   SIX 0S-3,CT3DG                                       #   7  2137  M 610 K50         1253
6793 66 69   PBB    SBR   MHBB1&13,100                                         #   7  2144  H J82 100         1253
6794 66 70          CS    180                                                  #   4  2151  / 180             1254
6795 66 71   MBB2   MA    LIT001,MHBB1&3                                       #   7  2155  # 604 J72         1254
6796 66 72          MA    LIT001,MHBB1&13                                      #   7  2162  # 604 J82         1254
6797 66 73   MHBB1  MLC   0,CNRR-1                                             #   7  2169  M 000 727         1254
6798 66 74          MLC   CNRR-1,0                                             #   7  2176  M 727 000         1254
6799 66 75          MA    LIT001,CT3DG                                         #   7  2183  # 604 K50         1254
6800 66 76          C     CT3DG,BLMULT                                         #   7  2190  C K50 085         1255
6801 66 77          BE    PCHB1P                                               #   5  2197  B K18 S           1255
6802 66 78          BCE   PCHB2P,MHBB1&12,8                                    #   8  2202  B K14 J81 8       1255
6803 66 79          B     MBB2                                                 #   4  2210  B J55             1255
6804 66 80   PCHB2P P     PBB                 PUNCH FULL CARD                  #   4  2214  4 J44             1255
6805 66 81   PCHB1P P                         PUNCH LAST CHAR OF UNREADABLE BLK #  1  2218  4                 1255
6806 66 82          MLC   SIX 0S-3,MHBB1&3                                     #   7  2219  M 610 J72         1255
6807 66 83          MA    @I8I@,RETN&3                                         #   7  2226  # K53 Z49         1256
6808 66 84          MLC   KB,PDSW                                              #   7  2233  M 615 906         1256
6809 66 85          CS    180                                                  #   4  2240  / 180             1256
6810 66 86          B     RETN                                                 #   4  2244  B Z46             1256
6811 66 87   CT3DG  DCW   @   @                                                #   3  2250                    1256
6812 66 88          LTORG *                                                    #           2251
                    DCW   @I8I@                                                #   3  2253              LIT   1256
6813 66 89   KEEP   ORG   *                                                    #      2254  2254
6814 66 90          EX    RANOTP                                               #            B 04/             1257
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

6815 66 91          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE  CORRECT         #
6816 66 92          ORG   SAVE                                                      #           2115
6817 66 93   BBP3   NOP   TSSG2                                                     #    4  2115  N K22             1260
6818 66 94          MLC   SIX 0S,CT3G1P#3                                           #    7  2119  M 613 K41         1260
6819 66 95   PRTBB  SBR   MHBB&13,200                                               #    7  2126  H J65 200         1260
6820 66 96          CS    332                                                       #    4  2133  / 332             1260
6821 66 97          CS                                                              #    1  2137  /                 1260
6822 66 98   MBB1   MA    LIT001,MHBB&3                                             #    7  2138  # 604 J55         1260
6823 66 99          MA    LIT001,MHBB&13                                            #    7  2145  # 604 J65         1260
6824 67 00   MHBB   MLC   0,CNRR-1                                                  #    7  2152  M 000 727         1261
6825 67 01          MLC   CNRR-1,0                                                  #    7  2159  M 727 000         1261
6826 67 02          MA    LIT001,CT3G1P                                             #    7  2166  # 604 K41         1261
6827 67 03          C     CT3G1P,BLMULT                                             #    7  2173  C K41 085         1261
6828 67 04          BE    PRTB2P                                                    #    5  2180  B K12 S           1261
6829 67 05          BCE   PRTB1P,MHBB&11,3                                          #    8  2185  B K08 J63 3       1262
6830 67 06          B     MBB1                                                      #    4  2193  B J38             1262
6831 67 07   COREKP MLC   KB,BBP3                                                   #    7  2197  M 615 J15         1262
6832 67 08          B     BCKSPP                                                    #    4  2204  B Z41             1262
6833 67 09   PRTB1P W     PRTBB                PRINT UNREADABLE BLOCK               #    4  2208  2 J26             1262
6834 67 10   PRTB2P W                          100 CHARACTERS PER LINE              #    1  2212  2                 1262
6835 67 11          MLC   SIX 0S-3,MHBB&3                                           #    7  2213  M 610 J55         1262
6836 67 12          CC    1                                                         #    2  2220  F 1               1263
6837 67 13   TSSG2  H                                                               #    1  2222  .                 1263
6838 67 14   *              PUT SENSE SWITCH G ON TO REREAD RECORD IN ORDER TO
6839 67 15   *              CORRECT.  IF RECORD IS TO BE ACCEPTED AFTER
6840 67 16   *              CORRECTION, SET SENSE SWITCH G OFF AND PRESS START.
6841 67 17          BSS   COREKP,G                                                  #    5  2223  B J97 G           1263
6842 67 18          MLC   NOP,BBP3                                                  #    7  2228  M 614 J15         1263
6843 67 19   SMOREP B     0                                                         #    4  2235  B 000             1263
6844 67 20          LTORG *                                                         #           2239
             CT3G1P DCW   #03                                                       #    3  2241             AREA  1263
6845 67 21          EX    RANOTP                                                    #             B 04/             1264
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6846 67 22          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE  TAPE URPI  #
6847 67 23          ORG   SAVE                                                 #            2115
6848 67 24   BBP4   MLC   AONE,0                                               #   7  2115  M 616 000         1267
6849 67 25          BCE   *&8,0,              IF START OF SEQUENCE             #   8  2122  B J37 000         1267
6850 67 26          MLC   *-6,0               ACTIVATE SEQ CHAR MOVE           #   7  2130  M J30 000         1267
6851 67 27   BBPQQG WT    0,1                 WRITE UNREADABLE BLOCK ON TAPE   #   8  2137  M %U0 001 W       1267
6852 67 28          BEF   BTPEF                                                #   5  2145  B K02 K           1267
6853 67 29          BER   BTPER                                                #   5  2150  B J88 L           1268
6854 67 30          CS    332                                                  #   4  2155  / 332             1268
6855 67 31          CS                                                         #   1  2159  /                 1268
6856 67 32          MLC   UNMSG,223                                            #   7  2160  M K28 223         1268
6857 67 33          W                                                          #   1  2167  2                 1268
6858 67 34          CC    1                                                    #   2  2168  F 1               1268
6859 67 35          MLC   KB,PDSW                                              #   7  2170  M 615 906         1268
6860 67 36          MA    @I8I@,RETN&3                                         #   7  2177  # K31 Z49         1269
6861 67 37          B     RETN                                                 #   4  2184  B Z46             1269
6862 67 38   BTPER  BSP   0                                                    #   5  2188  U %U0 B           1269
6863 67 39          SKP   0                                                    #   5  2193  U %U0 E           1269
6864 67 40          B     BBPQQG                                               #   4  2198  B J37             1269
6865 67 41   BTPEF  H     BBPQQG                                               #   4  2202  . J37             1269
6866 67 42   UNMSG  DCW   @UNREAD BLK WRITTEN-TU 0@                            #  23  2228                    1270
6867 67 43          LTORG *                                                    #            2229
                    DCW   @I8I@                                                #   3  2231              LIT   1270
6868 67 44          ORG   WKLAND                                               #            3075
6869 67 45   INTBT  MLC   URPIML,BTPER&3      MOVE DUMP TAPE UNIT NUM INTO INST #  7  3075  M 186 J91         1271
6870 67 46          MLC   URPIML,BBPQQG&3                                      #   7  3082  M 186 J40         1271
6871 67 47          MLC   URPIML,UNMSG                                         #   7  3089  M 186 K28         1271
6872 67 48          MLC   URPIML,BTPER&8                                       #   7  3096  M 186 J96         1271
6873 67 49          B     RANOTP                                               #   4  3103  B 04/             1271
6874 67 50          NOP                                                        #   1  3107  N                 1271
6875 67 51          EX    INTBT                                                #            B ?75             1272
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

6876 67 52          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE              #
6877 67 53          ORG   WKLAND                                                #           3075
6878 67 54   *              LABELS ROUTINE TO CLEAR AREAS AND SET WORDMARKS
6879 67 55   ACOA   SBR   REDETP&3,MLTPHZ                                       #   7  3075  H 779 K54         1275
6880 67 56          CS    3499                                                  #   4  3082  / D99             1275
6881 67 57          CS                         CLEAR OUTPUT AREA                #   1  3086  /                 1275
6882 67 58          CS                                                          #   1  3087  /                 1275
6883 67 59          B     LGMEOP                                                #   4  3088  B 741             1275
6884 67 60   STBRG  MLC   NDRA3P,ACLINP&3                                       #   7  3092  M 684 A06         1275
6885 67 61          SW    3500                                                  #   4  3099  , E00             1275
6886 67 62   ACLINP CS    0                CLEAR INPUT AREAS                    #   4  3103  / 000             1276
6887 67 63          SBR   ACLINP&3                                              #   4  3107  H A06             1276
6888 67 64          BWZ   ACLINP,3500,1                                         #   8  3111  V A03 E00 1       1276
6889 67 65          MLC   TWOBL,ACNCF#2        SET WORD MARKS IN                #   7  3119  M 620 C84         1276
6890 67 66   ANWM12 MLC   AIRA1,AICF12#3       INPUT AREAS FOR CONTROL          #   7  3126  M 702 C87         1276
6891 67 67          MA    CF1SLM,AICF12        FIELD DESIGNATION                #   7  3133  # 353 C87         1276
6892 67 68          MLC   AICF12,AWMS12&3                                       #   7  3140  M C87 A57         1277
6893 67 69          MLC   @   @,ACNTB                                           #   7  3147  M C90 C93         1277
6894 67 70   AWMS12 SW    0                                                     #   4  3154  , 000             1277
6895 67 71          A     AONE,ACNTB                                            #   7  3158  A 616 C93         1277
6896 67 72          C     ACNTB,BMULTI                                          #   7  3165  C C93 199         1277
6897 67 73   *                             BRANCH TO GET NEXT CF
6898 67 74          BE    ASWNCF                                                #   5  3172  B A88 S           1277
6899 67 75          MA    LMULTI,AWMS12&3                                       #   7  3177  # 347 A57         1278
6900 67 76          B     AWMS12                                                #   4  3184  B A54             1278
6901 67 77   ASWNCF A     AONE,ACNCF                                            #   7  3188  A 616 C84         1278
6902 67 78          C     ACNCF,NCFMLT                                          #   7  3195  C C84 096         1278
6903 67 79   *                             BRANCH TO INIT NEXT INPUT AREA
6904 67 80          BE    AWIRA2                                                #   5  3202  B B18 S           1278
6905 67 81          MA    LIT003,ANWM12&10                                      #   7  3207  # 607 A36         1278
6906 67 82          B     ANWM12                                                #   4  3214  B A26             1279
6907 67 83   AWIRA2 NOP   AWIRA3                                                #   4  3218  N B47             1279
6908 67 84          MLC   KB,AWIRA2                                             #   7  3222  M 615 B18         1279
6909 67 85          SBR   ANWM12&3,AIRA2                                        #   7  3229  H A29 705         1279
6910 67 86          SBR   ANWM12&10,CF1SLM                                      #   7  3236  H A36 353         1279
6911 67 87          B     ANWM12-7                                              #   4  3243  B A19             1279
6912 67 88   AWIRA3 NOP   AWMSET                                                #   4  3247  N B76             1279
6913 67 89          MLC   KB,AWIRA3                                             #   7  3251  M 615 B47         1280
6914 67 90          SBR   ANWM12&3,AIRA3                                        #   7  3258  H A29 708         1280
6915 67 91          SBR   ANWM12&10,CF1SLM                                      #   7  3265  H A36 353         1280
6916 67 92          B     ANWM12-7                                              #   4  3272  B A19             1280
6917 67 93   AWMSET BCE   ACOA,CNOPML,1        WM ALREADY SET IN FIRST POS      #   8  3276  B ?75 086 1       1280
6918 67 94   ANWMBI MLC   AIRA1,AICF12                                          #   7  3284  M 702 C87         1281
6919 67 95          MLC   AICF12,ASW12&3                                        #   7  3291  M C87 C08         1281
6920 67 96          MLC   @   @,ACNTB#3                                         #   7  3298  M C90 C93         1281
6921 67 97   *                             SET WORD MARKS IN FIRST POS OF EACH
6922 67 98   *                             RECORD IN INPUT AREAS
6923 67 99   ASW12  SW    0                                                     #   4  3305  , 000             1281
6924 68 00          A     AONE,ACNTB                                            #   7  3309  A 616 C93         1281
6925 68 01          C     ACNTB,BMULTI                                          #   7  3316  C C93 199         1281
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

6926 68 02          BE    AMIRA2                                              #   5  3323  B C39 S           1282
6927 68 03          MA    LMULTI,ASW12&3                                      #   7  3328  # 347 C08         1282
6928 68 04          B     ASW12                                               #   4  3335  B C05             1282
6929 68 05   AMIRA2 NOP   AMIRA3                                              #   4  3339  N C61             1282
6930 68 06          MLC   KB,AMIRA2                                           #   7  3343  M 615 C39         1282
6931 68 07          MLC   AIRA2,AICF12                                        #   7  3350  M 705 C87         1282
6932 68 08          B     ANWMBI&7                                            #   4  3357  B B91             1282
6933 68 09   AMIRA3 NOP   ACOA                                                #   4  3361  N ?75             1283
6934 68 10          MLC   KB,AMIRA3                                           #   7  3365  M 615 C61         1283
6935 68 11          MLC   AIRA3,AICF12                                        #   7  3372  M 708 C87         1283
6936 68 12          B     ANWMBI&7                                            #   4  3379  B B91             1283
6937 68 13          LTORG *                                                   #             3383             
             ACNCF# DCW   #02                                                 #   2  3384              AREA  1283
             AICF12 DCW   #03                                                 #   3  3387              AREA  1283
                    DCW   @   @                                               #   3  3390              LIT   1283
             ACNTB# DCW   #03                                                 #   3  3393              AREA  1284
6938 68 14   AMV    MLC   GPMARK,PADQNQ      SET REDUNDANCY INDICATOR         #   7  3394  M 350 628         1284
6939 68 15          MA    I99,PADQNQ                                          #   7  3401  # 623 628         1284
6940 68 16          MLC   PADQNQ,BPAQQ8&6                                     #   7  3408  M 628 916         1284
6941 68 17          BCE   *&8,URPIML,C                                        #   8  3415  B D30 186 C       1284
6942 68 18          MLC   PADQNQ,BBP2&6                                       #   7  3423  M 628 J21         1284
6943 68 19          BCE   YSLBL,LABELS,1                                      #   8  3430  B D60 413 1       1285
6944 68 20          CS    080                LOAD NO LABELS CLEAR ROUTINE     #   4  3438  / 080             1285
6945 68 21          SW    24,56                                               #   7  3442  , 024 056         1285
6946 68 22          SW    63,67                                               #   7  3449  , 063 067         1285
6947 68 23          R     056                                                 #   4  3456  1 056             1285
6948 68 24   YSLBL  R                        BYPASS NO LABELS CLEAR ROUTINE   #   1  3460  1                 1285
6949 68 25          BCE   STBRG,068,B                                         #   8  3461  B ?92 068 B       1285
6950 68 26          B     YSLBL                                               #   4  3469  B D60             1286
6951 68 27          NOP                                                       #   1  3473  N                 1286
6952 68 28          EX    AMV                                                 #            B C94             1287
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

6953 68 29          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE             #
6954 68 30          ORG   ADJEND                                               #            2699
6955 68 31   *              NO LABELS ROUTINE TO CLEAR AREAS AND SET WORDMARKS
6956 68 32   BCOA   SBR   REDETP&3,MLTPHZ                                      #   7  2699  H 779 K54         1290
6957 68 33          CS    3199                CLEAR OUTPUT AREA                #   4  2706  / A99             1290
6958 68 34          CS                                                         #   1  2710  /                 1290
6959 68 35          CS                                                         #   1  2711  /                 1290
6960 68 36          CS                                                         #   1  2712  /                 1290
6961 68 37          B     LGMEOP                                               #   4  2713  B 741             1290
6962 68 38   BST    MLC   NDRA3P,BCLIN&3                                       #   7  2717  M 684 P31         1290
6963 68 39          SW    3200                                                 #   4  2724  , B00             1291
6964 68 40   BCLIN  CS    0                   CLEAR INPUT AREAS                #   4  2728  / 000             1291
6965 68 41          SBR   BCLIN&3                                              #   4  2732  H P31             1291
6966 68 42          BWZ   BCLIN,3200,1                                         #   8  2736  V P28 B00 1       1291
6967 68 43          MLC   TWOBL,BCNCF#2       SET WORD MARKS IN INPUT AREAS FOR #   7  2744  M 620 ?09         1291
6968 68 44   BAR1   MLC   AIRA1,BICF#3        CONTROL FIELD DESIGNATION        #   7  2751  M 702 ?12         1291
6969 68 45          MA    CF1SLM,BICF                                          #   7  2758  # 353 ?12         1292
6970 68 46          MLC   BICF,BWMS&3                                          #   7  2765  M ?12 P82         1292
6971 68 47          MLC   @   @,BCNTA#3                                        #   7  2772  M ?15 ?18         1292
6972 68 48   BWMS   SW    0                                                    #   4  2779  , 000             1292
6973 68 49          A     AONE,BCNTA                                           #   7  2783  A 616 ?18         1292
6974 68 50          C     BCNTA,BMULTI                                         #   7  2790  C ?18 199         1292
6975 68 51          BE    BSWNCF              BRANCH TO GET NEXT CF            #   5  2797  B Q13 S           1293
6976 68 52          MA    LMULTI,BWMS&3                                        #   7  2802  # 347 P82         1293
6977 68 53          B     BWMS                                                 #   4  2809  B P79             1293
6978 68 54   BSWNCF A     AONE,BCNCF                                           #   7  2813  A 616 ?09         1293
6979 68 55          C     BCNCF,NCFMLT                                         #   7  2820  C ?09 096         1293
6980 68 56          BE    BAR2                BRANCH TO INIT NEXT INPUT AREA   #   5  2827  B Q43 S           1293
6981 68 57          MA    LIT003,BAR1&10                                       #   7  2832  # 607 P61         1294
6982 68 58          B     BAR1                                                 #   4  2839  B P51             1294
6983 68 59   BAR2   NOP   BAR3                                                 #   4  2843  N Q72             1294
6984 68 60          MLC   KB,BAR2                                              #   7  2847  M 615 Q43         1294
6985 68 61          SBR   BAR1&3,AIRA2                                         #   7  2854  H P54 705         1294
6986 68 62          SBR   BAR1&10,CF1SLM                                       #   7  2861  H P61 353         1294
6987 68 63          B     BAR1-7                                               #   4  2868  B P44             1295
6988 68 64   BAR3   NOP   BWMST                                                #   4  2872  N R01             1295
6989 68 65          MLC   KB,BAR3                                              #   7  2876  M 615 Q72         1295
6990 68 66          SBR   BAR1&3,AIRA3                                         #   7  2883  H P54 708         1295
6991 68 67          SBR   BAR1&10,CF1SLM                                       #   7  2890  H P61 353         1295
6992 68 68          B     BAR1-7                                               #   4  2897  B P44             1295
6993 68 69   BWMST  BCE   BCOA,CNOPML,1       WM ALREADY SET IN FIRST POS      #   8  2901  B O99 086 1       1296
6994 68 70   BWMBI  MLC   AIRA1,BICF                                           #   7  2909  M 702 ?12         1296
6995 68 71          MLC   BICF,BSWN1&3                                         #   7  2916  M ?12 R33         1296
6996 68 72          MLC   @   @,BCNTA                                          #   7  2923  M ?15 ?18         1296
6997 68 73   BSWN1  SW    0                   SET WORD MARKS IN FIRST RCD POS  #   4  2930  , 000             1296
6998 68 74          A     AONE,BCNTA                                           #   7  2934  A 616 ?18         1297
6999 68 75          C     BCNTA,BMULTI                                         #   7  2941  C ?18 199         1297
7000 68 76          BE    BLDAR2                                               #   5  2948  B R64 S           1297
7001 68 77          MA    LMULTI,BSWN1&3                                       #   7  2953  # 347 R33         1297
7002 68 78          B     BSWN1                                                #   4  2960  B R30             1297
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                   SFX CT  LOCN  INSTRUCTION TYPE  CARD

7003 68 79   BLDAR2 NOP   BLDAR3                                                      #   4  2964  N R86              1297
7004 68 80          MLC   KB,BLDAR2                                                   #   7  2968  M 615 R64          1298
7005 68 81          MLC   AIRA2,BICF                                                  #   7  2975  M 705 ?12          1298
7006 68 82          B     BWMBI&7                                                     #   4  2982  B R16              1298
7007 68 83   BLDAR3 NOP   BCOA                                                        #   4  2986  N O99              1298
7008 68 84          MLC   KB,BLDAR3                                                   #   7  2990  M 615 R86          1298
7009 68 85          MLC   AIRA3,BICF                                                  #   7  2997  M 708 ?12          1298
7010 68 86          B     BWMBI&7                                                     #   4  3004  B R16              1299
7011 68 87          LTORG *                                                           #             3008
             BCNCF# DCW   #02                                                         #   2  3009              AREA  1299
             BICF # DCW   #03                                                         #   3  3012              AREA  1299
                    DCW   @   @                                                       #   3  3015              LIT   1299
             BCNTA# DCW   #03                                                         #   3  3018              AREA  1299
7012 68 88          EX    BST                                                         #            B P17              1300
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7013 68 89          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE             #
7014 68 90   *
7015 68 91   *                                 TWO WAY MERGE X SEQUENCES ROUTINE
7016 68 92   *
7017 68 93          ORG   KEEP                                                 #            2254
7018 68 94   SET X  MLC   SIX 0S,PCNTR         INITIALIZE INSTRUCTIONS FOR     #    7  2254  M 613 589         1303
7019 68 95          MLC   OWA,XCHAR&6          TWO WAY MERGE OF X NUMBER       #    7  2261  M 555 M08         1303
7020 68 96          MLC   INPT1P,MRGE X&6      OF SEQUENCES                    #    7  2268  M 669 L94         1303
7021 68 97          MLC   INPT2P,MRGE X&13                                     #    7  2275  M 672 M01         1303
7022 68 98          SBR   RUNOTP&3,SKIP1                                       #    7  2282  H 783 784         1303
7023 68 99          SBR   CMPABP&15,ALOW                                       #    7  2289  H 799 978         1304
7024 69 00          SBR   READ1&11,ASDEOF                                      #    7  2296  H |62 M32         1304
7025 69 01          SBR   READ2&11,BSDEOF                                      #    7  2303  H /95 N02         1304
7026 69 02          MLC   I2TUHP,BSDEOF&3                                      #    7  2310  M 629 N05         1304
7027 69 03          MLC   I1TUHP,ASDEOF&3                                      #    7  2317  M 630 M35         1304
7028 69 04          MLC   EOF2&18,BSDEOF&11                                    #    7  2324  M !02 N13         1305
7029 69 05          MLC   EOF1&18,ASDEOF&11                                    #    7  2331  M Z79 M43         1305
7030 69 06          SBR   CMPABP&10,BLOW                                       #    7  2338  H 794 /11         1305
7031 69 07          SBR   STEPA&3,ASD                                          #    7  2345  H /02 M84         1305
7032 69 08          SBR   STEPB&3,BSD                                          #    7  2352  H S35 N62         1305
7033 69 09          MLC   AZERO,ACNTR                                          #    7  2359  M 608 624         1306
7034 69 10          BCE   MRGE X,LABELS,1                                      #    8  2366  B L88 413 1       1306
7035 69 11          MLC   NOP,ASDEND-8         NOP BRANCHES TO WORK LABEL RTN  #    7  2374  M 614 M69         1306
7036 69 12          MLC   NOP,BSDEND-8                                         #    7  2381  M 614 N47         1306
7037 69 13   MRGE X MLC   BLANK,0                                              #    7  2388  M 619 000         1306
7038 69 14          MLC   BLANK,0                                              #    7  2395  M 619 000         1307
7039 69 15   XCHAR  MLC   SPLCHR,0                                             #    7  2402  M 625 000         1307
7040 69 16          C     XAREA,PCNTR          Q X SEQUENCES MERGED            #    7  2409  C 595 589         1307
7041 69 17          BE    READ Y                                               #    5  2416  B O06 S           1307
7042 69 18          A     AONE,PCNTR                                           #    7  2421  A 616 589         1307
7043 69 19          B     RUNOTP                                               #    4  2428  B 780             1307
7044 69 20   ASDEOF RWD   0                                                    #    5  2432  U %U0 R           1308
7045 69 21          MLC   BLANK,0                                              #    7  2437  M 619 000         1308
7046 69 22          SBR   RDFST1&3,ASDEND                                      #    7  2444  H |98 M77         1308
7047 69 23          MLC   KB,RDFST1                                            #    7  2451  M 615 |95         1308
7048 69 24          MLC   I1TUHP,TPNOBK        SETX  EOF                       #    7  2458  M 630 732         1308
7049 69 25          MLC   KI                                                   #    4  2465  M 734             1308
7050 69 26          B     MLHENT                                               #    4  2469  B P31             1309
7051 69 27          B     STRD1                                                #    4  2473  B |22             1309
7052 69 28   ASDEND MLC   NOP,RDFST1                                           #    7  2477  M 614 |95         1309
7053 69 29   ASD    SBR   RUNOTP&3,BLOW        SET TO RUNOUT SECOND UNIT       #    7  2484  H 783 /11         1309
7054 69 30          A     AONE,ACNTR                                           #    7  2491  A 616 624         1309
7055 69 31          B     ALGEOS                                               #    4  2498  B N76             1309
7056 69 32   BSDEOF RWD   0                                                    #    5  2502  U %U0 R           1309
7057 69 33          MLC   BLANK,0                                              #    7  2507  M 619 000         1310
7058 69 34          SBR   RDFST2&3,BSDEND                                      #    7  2514  H S31 N55         1310
7059 69 35          BCE   BSDEND,CNTRB,3                                       #    8  2521  B N55 560 3       1310
7060 69 36          MLC   KB,RDFST2                                            #    7  2529  M 615 S28         1310
7061 69 37          MLC   I2TUHP,TPNOBK        SETX  EOF                       #    7  2536  M 629 732         1310
7062 69 38          MLC   KI                                                   #    4  2543  M 734             1311
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7063 69 39          B     MLHENT                                               #   4  2547  B P31             1311
7064 69 40          B     STRD2                                                #   4  2551  B /55             1311
7065 69 41   BSDEND MLC   NOP,RDFST2                                           #   7  2555  M 614 S28         1311
7066 69 42   BSD    SBR   RUNOTP&3,ALOW       SET TO RUNOUT FIRST UNIT         #   7  2562  H 783 978         1311
7067 69 43          A     ATWO,ACNTR                                           #   7  2569  A 617 624         1311
7068 69 44   ALGEOS B     ABSD,ACNTR,3        Q NEW SEQ ON BOTH UNITS          #   8  2576  B N88 624 3       1312
7069 69 45          B     RUNOTP                                               #   4  2584  B 780             1312
7070 69 46   ABSD   SBR   RUNOTP&3,SKIP1      RESTORE COMPARE INST             #   7  2588  H 783 784         1312
7071 69 47          MLC   AZERO,ACNTR         RESET COUNTER                    #   7  2595  M 608 624         1312
7072 69 48          B     MRGE X                                               #   4  2602  B L88             1312
7073 69 49   READ Y CS    080                 READ INTO CORE ROUTINE           #   4  2606  / 080             1312
7074 69 50          SW    024,056             TO THREEWAY MERGE Y NUMBER       #   7  2610  , 024 056         1313
7075 69 51          SW    063,067             OF SEQUENCES                     #   7  2617  , 063 067         1313
7076 69 52          R     056                                                  #   4  2624  1 056             1313
7077 69 53          NOP                                                        #   1  2628  N                 1313
7078 69 54          EX    SET X                                                #            B K54             1314
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 SEQ PG LIN  LABEL   OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7079 69 55           JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE              #
7080 69 56           ORG   KEEP                                                  #            2254
7081 69 57   *
7082 69 58   *                                 THREE WAY MERGE Y SEQUENCES ROUTINE
7083 69 59   *
7084 69 60   SET Y   MLC   SIX 0S,PCNTR        INITIALIZE MAIN LINE PROGRAM      #   7  2254  M 613 589         1317
7085 69 61   *                                 FOR 3 WAY MERGING Y NUM OF SEQ
7086 69 62           MN    O1TUHP,EOF3&10                                        #   7  2261  D 637 !17         1317
7087 69 63           MN    O1TUHP,Y TPMK&3                                       #   7  2268  D 637 K97         1317
7088 69 64           MN    O1TUHP,Y TPMK&8                                       #   7  2275  D 637 L02         1317
7089 69 65           C     O2TUHP-1,SIX 0S                                       #   7  2282  C 643 613         1317
7090 69 66           BE    *&11                                                  #   5  2289  B L04 S           1318
7091 69 67   Y TPMK WTM    0                                                     #   5  2294  U %U0 M           1318
7092 69 68           RWD   0                                                     #   5  2299  U %U0 R           1318
7093 69 69           SBR   RUNOTP&3,SKIP1                                        #   7  2304  H 783 784         1318
7094 69 70           SBR   CMPABP&10,SKIP2                                       #   7  2311  H 794 805         1318
7095 69 71           SBR   CMPABP&15,SKIP3                                       #   7  2318  H 799 826         1318
7096 69 72           MLC   I1TUHP,EOF1&10                                        #   7  2325  M 630 Z71         1319
7097 69 73           MLC   I2TUHP,EOF2&10                                        #   7  2332  M 629 Z94         1319
7098 69 74           MLC   AZERO,ACNTR                                           #   7  2339  M 608 624         1319
7099 69 75   *                                   SET OUTPUT TAPE UNIT NUM
7100 69 76           SW    O2TUHP                                                #   4  2346  , 644             1319
7101 69 77           MLC   O2TUHP,RWINDP&3                                       #   7  2350  M 644 W54         1319
7102 69 78           MLC   O2TUHP,RWINDP&8                                       #   7  2357  M 644 W59         1319
7103 69 79           MLC   O2TUHP,WOBR&3                                         #   7  2364  M 644 952         1320
7104 69 80           MLC   O2TUHP,WORED&3                                        #   7  2371  M 644 W84         1320
7105 69 81           MLC   O2TUHP,ERTAPP&3                                       #   7  2378  M 644 X23         1320
7106 69 82           CW    O2TUHP                                                #   4  2385  ) 644             1320
7107 69 83           SBR   STEPA&3,NEWASQ                                        #   7  2389  H /02 T77         1320
7108 69 84           SBR   STEPB&3,NEWBSQ                                        #   7  2396  H S35 T88         1320
7109 69 85           SBR   STEPC&3,NEWCSQ                                        #   7  2403  H T68 T99         1321
7110 69 86           SBR   SEQCMP&10,RWINDP                                      #   7  2410  H W19 W51         1321
7111 69 87           SBR   SEQCMP&3,YAREA                                        #   7  2417  H W12 601         1321
7112 69 88           MLC   OWA,SEQCMP-1                                          #   7  2424  M 555 W08         1321
7113 69 89           MLC   YAREA,SEQMRG                                          #   7  2431  M 601 577         1321
7114 69 90           MLC   INPT3P,ENTER3&20                                      #   7  2438  M 675 N67         1322
7115 69 91           SBR   RDFST3&3,ENTER3                                       #   7  2445  H T64 N47         1322
7116 69 92           SBR   READ1&11,EOF1                                         #   7  2452  H |62 Z61         1322
7117 69 93           SBR   READ2&11,EOF2                                         #   7  2459  H /95 Z84         1322
7118 69 94           BCE   *&8,LABELS,1                                          #   8  2466  B M81 413 1       1322
7119 69 95           MLC   NOP,ENTER3-8        NOP BRANCH TO WORK LABEL RTN      #   7  2474  M 614 N39         1323
7120 69 96           BCE   *&8,LBBUCK,                                           #   8  2481  B M96 414         1323
7121 69 97           SBR   ENTER3-5,MLHANT                                       #   7  2489  H N42 P31         1323
7122 69 98   *                                 DETERMINE IF SPECIAL CASE  TOTAL
7123 69 99           C     YLIT3,CNTRB         NUM OF SEQ LESS THAN 7            #   7  2496  C O91 560         1323
7124 70 00           BL    SETONE                                                #   5  2503  B N91 T           1323
7125 70 01           BCE   SETHRE,CNTRB,3                                        #   8  2508  B O23 560 3       1324
7126 70 02           C     CNTRB,YLIT7                                           #   7  2516  C 560 O92         1324
7127 70 03           BH    SET456                                                #   5  2523  B O30 U           1324
7128 70 04   RDHDR3 MLC    O1TUHP,TPNOBK       SETY  RD HDR ON INPUT             #   7  2528  M 637 732         1324
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

7129 70 05          MLC   KI                                                     #   4  2535  M 734              1324
7130 70 06          B     MLHENT                                                 #   4  2539  B P31              1324
7131 70 07          B     STRD3               READ FIRST RECORD OF THIRD UNIT    #   4  2543  B S88              1324
7132 70 08   ENTER3 MLC   NOP,RDFST3                                             #   7  2547  M 614 T61          1325
7133 70 09          SBR   REDETP&3,RUNOTP                                        #   7  2554  H 779 780          1325
7134 70 10          MLC   BLANK,0                                                #   7  2561  M 619 000          1325
7135 70 11          C     YAREA,PCNTR         Q Y SEQUENCES MERGED               #   7  2568  C 601 589          1325
7136 70 12          BE    ENDMLT                                                 #   5  2575  B O69 S            1325
7137 70 13          A     AONE,PCNTR                                             #   7  2580  A 616 589          1326
7138 70 14          B     RUNOTP                                                 #   4  2587  B 780              1326
7139 70 15   SETONE MLC   AZERO,O1TUHP-1      SET ROTATION FOR LESS THAN         #   7  2591  M 608 636          1326
7140 70 16          MLC   AZERO,TUHOLD-1      FOUR SEQUENCES                     #   7  2598  M 608 650          1326
7141 70 17          MLC   AZERO,O2TUHP-1                                         #   7  2605  M 608 643          1326
7142 70 18          MLC   AONE,SEQMRG                                            #   7  2612  M 616 577          1326
7143 70 19          B     ENDMLT                                                 #   4  2619  B O69              1327
7144 70 20   SETHRE SBR   ENTER3-1,ENDMLT                                        #   7  2623  H N46 O69          1327
7145 70 21   SET456 MLC   AONE,O2TUHP-1                                          #   7  2630  M 616 643          1327
7146 70 22          MLC   ATWO,TUHOLD-1                                          #   7  2637  M 617 650          1327
7147 70 23          MLC   AZERO,SEQMRG                                           #   7  2644  M 608 577          1327
7148 70 24          MLC   AZERO,TAPSEQ                                           #   7  2651  M 608 657          1327
7149 70 25          MLC   AZERO,O1TUHP-1                                         #   7  2658  M 608 636          1328
7150 70 26          B     RDHDR3                                                 #   4  2665  B N28              1328
7151 70 27   ENDMLT CS    080                 LOAD NEXT BLOCK-ADJMS              #   4  2669  / 080              1328
7152 70 28          SW    24,56                                                  #   7  2673  , 024 056          1328
7153 70 29          SW    63,67                                                  #   7  2680  , 063 067          1328
7154 70 30          R     056                                                    #   4  2687  1 056              1328
7155 70 31   YLIT3  DCW   @3@                                                    #   1  2691                     1328
7156 70 32   YLIT7  DCW   @7@                                                    #   1  2692                     1329
7157 70 33          EX    SET Y                                                  #              B K54              1330
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

7158 70 34          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE               #
7159 70 35          ORG   KEEP                                                   #           2254
7160 70 36   ADJMS  CS    332                                                    #   4  2254  / 332             1333
7161 70 37          CS                                                           #   1  2258  /                 1333
7162 70 38          MLC   MLTMSG,228         PRINT END OF ADJUSTMENT MESSAGE     #   7  2259  M M11 228         1333
7163 70 39          W                                                            #   1  2266  2                 1333
7164 70 40          CC    1                                                      #   2  2267  F 1               1333
7165 70 41          SBR   SEQCMP&3,SEQMRG    INITIALIZE MAINLINE INSTRUCTIONS    #   7  2269  H W12 577         1333
7166 70 42          SBR   ENDMP&3,WKLBLI                                         #   7  2276  H W80 K54         1333
7167 70 43          SBR   RDFST1&3,STRD2                                         #   7  2283  H |98 /55         1334
7168 70 44          SBR   RDFST2&3,STRD3                                         #   7  2290  H S31 S88         1334
7169 70 45          C     PDCPUT,SIX 0S-3                                        #   7  2297  C 548 610         1334
7170 70 46          BU    *&8                                                    #   5  2304  B L16 /           1334
7171 70 47          MLC   @6@,PIMULT                                             #   7  2309  M M12 193         1334
7172 70 48          SW    3200                                                   #   4  2316  , B00             1334
7173 70 49          MLC   CSTCNS,CLADJ&3                                         #   7  2320  M 552 L30         1335
7174 70 50   CLADJ  CS    0                                                      #   4  2327  / 000             1335
7175 70 51          SBR   CLADJ&3                                                #   4  2331  H L30             1335
7176 70 52   REPLAC BWZ   CLADJ,3200,1                                           #   8  2335  V L27 B00 1       1335
7177 70 53          BCE   CLAD,LABELS,1                                          #   8  2343  B L58 413 1       1335
7178 70 54          CS    3199                                                   #   4  2351  / A99             1335
7179 70 55          CS                                                           #   1  2355  /                 1335
7180 70 56          CS                                                           #   1  2356  /                 1336
7181 70 57          CS                                                           #   1  2357  /                 1336
7182 70 58   CLAD   CS    180                                                    #   4  2358  / 180             1336
7183 70 59   *                               LOAD RESTART AND PHASE TO PHASE RTN
7184 70 60          CS    080                                                    #   4  2362  / 080             1336
7185 70 61          SW    24,56                                                  #   7  2366  , 024 056         1336
7186 70 62          SW    63,67                                                  #   7  2373  , 063 067         1336
7187 70 63          R     056                                                    #   4  2380  1 056             1336
7188 70 64   MLTMSG DCW   @END OF MULTIPHASE ADJUSTMENT@                         #  28  2411                    1337
7189 70 65          LTORG *                                                      #           2412
                    DCW   @6@                                                    #   1  2412              LIT   1337
7190 70 66          EX    ADJMS                                                  #            B K54             1338
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 SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

7191 70 67          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE            #
7192 70 68   *         RESTART ROUTINE
7193 70 69   *             EXECUTED ONLY IF PROGRAM INTERRUPTED AND SUBSEQUENTLY
7194 70 70   *             RESTARTED BY TAPE LOAD OF CHECKPOINT
7195 70 71   *         NOTE NOT APPLICABLE FOR RUN REQUIRING ONLY ONE MERGE PASS
7196 70 72   *             SENSE SWITCH F MUST BE ON TO RESTART LAST PASS
7197 70 73          ORG   RSTORG                                              #             3594
7198 70 74   HRES   MLC   PRMSJ,231          PRINT CARD READER MESSAGE        #   7  3594  M 18Y 231         1341
7199 70 75          W                                                         #   1  3601  2                 1341
7200 70 76          BEF   *&1                                                 #   5  3602  B F07 K           1341
7201 70 77          MLZS  *-6,CENSIG                                          #   7  3607  Y F07 415         1341
7202 70 78          MLC   CENSIG,INTF1&7                                      #   7  3614  M 415 |71         1341
7203 70 79          MLC   CENSIG,INTF2&7                                      #   7  3621  M 415 S04         1341
7204 70 80          MLC   CENSIG,INTF3&7                                      #   7  3628  M 415 T37         1342
7205 70 81          MLC   GPMARK,IREG1       SET GMWM IN UPPER CORE           #   7  3635  M 350 089         1342
7206 70 82          SW    0&X1                                                #   4  3642  , 0|0             1342
7207 70 83          MLC   GM,0&X1                                             #   7  3646  M 20S 0|0         1342
7208 70 84          MLC   INPT1P,IREG1                                        #   7  3653  M 669 089         1342
7209 70 85          BSS   FSTLP,F            RESTART LAST PASS BRANCH         #   5  3660  B 06V F           1342
7210 70 86   SWFRTN CS    240                                                 #   4  3665  / 240             1343
7211 70 87          MLC   PRMSI,238                                           #   7  3669  M Z2X 238         1343
7212 70 88          MLC   PRMSH-9                                             #   4  3676  M Z1/             1343
7213 70 89          W                        PRINT RESTART MESSAGE            #   1  3680  2                 1343
7214 70 90          CS    240                                                 #   4  3681  / 240             1343
7215 70 91          MLC   PDTYQP,212                                          #   7  3685  M W4Y 212         1343
7216 70 92          W                        PRINT DENSITY MESSAGE            #   1  3692  2                 1343
7217 70 93          CC    1                                                   #   2  3693  F 1               1344
7218 70 94          BSS   ALTRD,F            LAST PASS BRANCH  TAPES SHOULD   #   5  3695  B G75 F           1344
7219 70 95   *                               ALREADY BE POS PAST HDRS IF PRESENT
7220 70 96          H                        HALT  SET TAPE UNIT NUMS         #   1  3700  .                 1344
7221 70 97   *                               READY CARD READER[IF NOT LAST PASS]
7222 70 98          BCE   *&22,LBBUCK,                                        #   8  3701  B G30 414         1344
7223 70 99          SBR   ALTRD-1,MLHANT                                      #   7  3709  H G74 P31         1344
7224 71 00          SBR   ALTRD-12,MLHANT                                     #   7  3716  H G63 P31         1344
7225 71 01          SBR   ALTRD-23,MLHANT                                     #   7  3723  H G52 P31         1344
7226 71 02          BCE   ALTRD,LABELS,      NO LABELS BRANCH                 #   8  3730  B G75 413         1345
7227 71 03          MLC   I1TUHP,TPNOBK      INIT TO RD HDR ON INPUT TAPES    #   7  3738  M 630 732         1345
7228 71 04          MLC   KI                                                  #   4  3745  M 734             1345
7229 71 05          B     MLHENT                                              #   4  3749  B P31             1345
7230 71 06          MLC   I2TUHP,TPNOBK                                       #   7  3753  M 629 732         1345
7231 71 07          B     MLHENT                                              #   4  3760  B P31             1345
7232 71 08          MLC   O1TUHP,TPNOBK                                       #   7  3764  M 637 732         1346
7233 71 09          B     MLHENT                                              #   4  3771  B P31             1346
7234 71 10   *                               ALTER RD TAPE 1 RD AREA & BRS
7235 71 11   ALTRD  MLC   INTF1&4,SAVE4                                       #   7  3775  M |68 20/         1346
7236 71 12          MLC   BLANK,INTF1&4                                       #   7  3782  M 619 |68         1346
7237 71 13          SBR   INTF1&3,RDFST1                                      #   7  3789  H |67 |95         1346
7238 71 14          SBR   READ1&6,245                                         #   7  3796  H |57 245         1346
7239 71 15          SBR   STEPA&6                                             #   4  3803  H /05             1347
7240 71 16          SW    249                SET GMWM                         #   4  3807  , 249             1347
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

7241 71 17          MLC   GM,249                                              #   7  3811  M 20S 249         1347
7242 71 18          SBR   STEPA&11,READ1                                      #   7  3818  H /10 |51         1347
7243 71 19          SBR   STEPA&3,REENT1                                      #   7  3825  H /02 H36         1347
7244 71 20          B     READ1                                               #   4  3832  B |51             1347
7245 71 21   *                                READ TAPE 1 UNTIL POS CORRECTLY
7246 71 22   REENT1 A     AONE,RECNT#6                                        #   7  3836  A 616 19U         1348
7247 71 23          C     O2TUHP-1,RECNT                                      #   7  3843  C 643 19U         1348
7248 71 24          BH    RSTRD1                                              #   5  3850  B H59 U           1348
7249 71 25          B     READ1                                               #   4  3855  B |51             1348
7250 71 26   *                                RESTORE RD TAPE 1 RTN AND ALTER
7251 71 27   *                                  RD TAPE 2 RD AREA & BRS
7252 71 28   RSTRD1 MLC   SAVE4,INTF1&4                                       #   7  3859  M 20/ |68         1348
7253 71 29          MLC   INPT1P,READ1&6                                      #   7  3866  M 669 |57         1348
7254 71 30          MLC   INPT1P,STEPA&6                                      #   7  3873  M 669 /05         1349
7255 71 31          MLC   INTF2&4,SAVE4                                       #   7  3880  M S01 20/         1349
7256 71 32          MLC   BLANK,INTF2&4                                       #   7  3887  M 619 S01         1349
7257 71 33          SBR   INTF2&3,RDFST2                                      #   7  3894  H S00 S28         1349
7258 71 34          SBR   READ2&6,245                                         #   7  3901  H /90 245         1349
7259 71 35          SBR   STEPB&6                                             #   4  3908  H S38             1349
7260 71 36          SBR   STEPB&11,READ2                                      #   7  3912  H S43 /84         1350
7261 71 37          SBR   STEPB&3,REENT2                                      #   7  3919  H S35 I37         1350
7262 71 38          MLC   XAREA,RECNT                                         #   7  3926  M 595 19U         1350
7263 71 39          B     READ2                                               #   4  3933  B /84             1350
7264 71 40   *                                READ TAPE 2 UNTIL POS CORRECTLY
7265 71 41   REENT2 A     AONE,RECNT                                          #   7  3937  A 616 19U         1350
7266 71 42          C     O1TUHP-1,RECNT                                      #   7  3944  C 636 19U         1350
7267 71 43          BH    RSTRD2                                              #   5  3951  B I60 U           1351
7268 71 44          B     READ2                                               #   4  3956  B /84             1351
7269 71 45   *                                RESTORE RD TAPE 2 RTN
7270 71 46   RSTRD2 MLC   SAVE4,INTF2&4                                       #   7  3960  M 20/ S01         1351
7271 71 47          MLC   INPT2P,READ2&6                                      #   7  3967  M 672 /90         1351
7272 71 48          MLC   INPT2P,STEPB&6                                      #   7  3974  M 672 S38         1351
7273 71 49          MLC   BLANK,249          CLEAR GMWM                       #   7  3981  M 619 249         1351
7274 71 50          SBR   STEPA&11,RUNOTP                                     #   7  3988  H /10 780         1352
7275 71 51          SBR   STEPB&11,RUNOTP                                     #   7  3995  H S43 780         1352
7276 71 52          SBR   STEPA&3,NEWASQ                                      #   7  4002  H /02 T77         1352
7277 71 53          SBR   STEPB&3,NEWBSQ                                      #   7  4009  H S35 T88         1352
7278 71 54          C     AZERO1,CNMP                                         #   7  4016  C Y4T 557         1352
7279 71 55   RESUME BE    SCLINP             FIRST AND LAST PASS BRANCH       #   5  4023  B E75 S           1353
7280 71 56          SW    249                                                 #   4  4028  , 249             1353
7281 71 57          MLC   GM,249                                              #   7  4032  M 20S 249         1353
7282 71 58          MLC   READ3&3,RDT3&3                                      #   7  4039  M T20 04Z         1353
7283 71 59   RDT3   RT    0,245                                               #   8  4046  M %U0 245 R       1353
7284 71 60          MLC   BLANK,249                                           #   7  4054  M 619 249         1353
7285 71 61          B     SCLINP                                              #   4  4061  B E75             1354
7286 71 62   FSTLP  CC    1                                                   #   2  4065  F 1               1354
7287 71 63          H                        HALT TO READY CARD RDR           #   1  4067  .                 1354
7288 71 64   *                               SET TAPE UNIT NUMS
7289 71 65          BCE   FSETLP,LABELS,     NO LABELS BRANCH                 #   8  4068  B 13S 413         1354
7290 71 66          MLC   I1TUHP,TPNOBK      READ HDR ON INPUT TAPES PRIOR TO #   7  4076  M 630 732         1354
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

7291 71 67          MLC   KI                   LAST PASS RESTART INIT             #   4  4083  M 734             1354
7292 71 68          BCE   *&8,LBBUCK,                                             #   8  4087  B 10S 414         1354
7293 71 69          SBR   *&4,MLHANT                                              #   7  4095  H 10V P31         1355
7294 71 70          B     MLHENT                                                  #   4  4102  B P31             1355
7295 71 71          MLC   O1TUHP,TPNOBK                                           #   7  4106  M 637 732         1355
7296 71 72          BCE   *&8,LBBUCK,                                             #   8  4113  B 12Y 414         1355
7297 71 73          SBR   *&4,MLHANT                                              #   7  4121  H 13/ P31         1355
7298 71 74          B     MLHENT                                                  #   4  4128  B P31             1355
7299 71 75   FSETLP MLC   BLANK,RESUME&4       RESTART LAST PASS INIT             #   7  4132  M 619 02X         1356
7300 71 76          MLC   BLANK,PPSMS&25                                          #   7  4139  M 619 80V         1356
7301 71 77          MLC   &SWFRTN                                                 #   4  4146  M 19X             1356
7302 71 78          MLC   KB                                                      #   4  4150  M 615             1356
7303 71 79          B     PSTPAS                                                  #   4  4154  B 32V             1356
7304 71 80   PRMSJ  DCW   @PLACE CARDS FROM 1507 IN READER@                       #  31  4188                    1357
7305 71 81          LTORG *                                                       #             4189
             RECNT# DCW   #06                                                     #   6  4194              AREA  1357
                    DCW   &SWFRTN                                                 #   3  4197  F65         ADCON 1358
7306 71 82   SAVE4  DCW   #04                                                     #   4  4201                    1358
7307 71 83   GM     DC    @}@                                                     #   1  4202              GMARK 1358
7308 71 84   RSTEND ORG   *                                                       #      4203   4203
7309 71 85   *
7310 71 86   *              READ CHECKPOINT ROUTINE
7311 71 87   *
7312 71 88          ORG   KEEP                                                    #             2254
7313 71 89   *                                INIT FOR NEXT MERGE PASS
7314 71 90   WKLBLI MLC   O2TUHP,TPNOBK        INIT TO READ HDR ON INPUT          #   7  2254  M 644 732         1359
7315 71 91          MLC   KI                                                      #   4  2261  M 734             1359
7316 71 92          B     MLHENT               BRANCH TO WORK LABEL ROUTINE       #   4  2265  B P31             1359
7317 71 93   FRSTME B     PSTPAS               FIRST PASS BRANCH ONLY             #   4  2269  B 32V             1359
7318 71 94   GMSET  LCA   0,0                  SET GM FOR CHECK POINT             #   7  2273  L 000 000         1359
7319 71 95   RDCPT  RTW   0,1                  READ CHECKPOINT                    #   8  2280  L %U0 001 R       1359
7320 71 96          BER   RERDCP-4                                                #   5  2288  B L02 L           1359
7321 71 97          BEF   EOFCP                                                   #   5  2293  B 20T K           1360
7322 71 98          B     PSTPAS                                                  #   4  2298  B 32V             1360
7323 71 99          H     PSTPAS                                                  #   4  2302  . 32V             1360
7324 72 00   RERDCP BSP   0                                                       #   5  2306  U %U0 B           1360
7325 72 01          B     RDCPT                                                   #   4  2311  B K80             1360
7326 72 02   ASIX   DCW   @6@                                                     #   1  2315                    1360
7327 72 03   MLEND  ORG   *                                                       #      2316   2316
7328 72 04          ORG   RSTEND                                                  #             4203
7329 72 05   EOFCP  H     PSTPAS                                                  #   4  4203  . 32V             1361
7330 72 06          B     RERDCP                                                  #   4  4207  B L06             1361
7331 72 07   LBLCK  BCE   RDEOJ-22,LABELS,                                        #   8  4211  B |3Y 413         1361
7332 72 08          BCE   *&15,LBBUCK,                                            #   8  4219  B 24/ 414         1361
7333 72 09          SBR   GO ON-8,MLHANT                                          #   7  4227  H 48U P31         1361
7334 72 10          SBR   FRSTME-1,MLHANT                                         #   7  4234  H K68 P31         1361
7335 72 11          SBR   PSTPAS&10,PNWM12-8                                      #   7  4241  H 33V C07         1362
7336 72 12          MLC   NOP,IWRCK-5          NOP SW D OPTION IF LABELS          #   7  4248  M 614 74Z         1362
7337 72 13   RDBY   R                                                             #   1  4255  1                 1362
7338 72 14          BCE   *&5,068,B                                               #   8  4256  B 26Y 068 B       1362
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7339 72 15          B     RDBY                                                  #   4  4264  B 25V              1362
7340 72 16   RDBY1  SBR   RDBY&4,*&5         BYPASS LAST 2 BLOCKS OF BAL MERGE #   7  4268  H 25Z 27Z          1362
7341 72 17          B     RDBY                                                  #   4  4275  B 25V              1362
7342 72 18          SBR   RDBY&4,*&5                                            #   7  4279  H 25Z 29|          1363
7343 72 19          B     RDBY                                                  #   4  4286  B 25V              1363
7344 72 20          SBR   RDBY&4,*&5                                            #   7  4290  H 25Z 30/          1363
7345 72 21          B     RDBY                                                  #   4  4297  B 25V              1363
7346 72 22          C     ATWO,CNTRB         CHECK FOR 1 OR 2 SEQ               #   7  4301  C 617 560          1363
7347 72 23          BH    WKLBLI                                                #   5  4308  B K54 U            1363
7348 72 24          MN    O2TUHP,*&4                                            #   7  4313  D 644 32T          1364
7349 72 25          RWD   0                                                     #   5  4320  U %U0 R            1364
7350 72 26   *              PHASE TO PHASE ROUTINE
7351 72 27   *                   START OF NEXT MERGE PASS FOLLOWING THE READING
7352 72 28   *                   INTO CORE OF CHECKPOINT
7353 72 29   PSTPAS NOP   TSTPS                                                 #   4  4325  N 39V              1364
7354 72 30          LCA   LGMEOP&27,NLAR1-8  INIT INST TO LOAD GMWMS            #   7  4329  L 768 N51          1364
7355 72 31          LCA                                                         #   1  4336  L                  1364
7356 72 32          LCA                                                         #   1  4337  L                  1364
7357 72 33          MLC   KB,PSTPAS                                             #   7  4338  M 615 32V          1364
7358 72 34   *              EXECUTE PSTPAS ROUTINE ONLY ONCE  THEREAFTER, BRANCH
7359 72 35   *                DIRECTLY TO TSTPS RTN TO DETERMINE MERGE PASS NUM
7360 72 36          MLC   NOP,FRSTME                                            #   7  4345  M 614 K69          1365
7361 72 37          MLC   GPMARK,GMSET&3                                        #   7  4352  M 350 K76          1365
7362 72 38          MLC   CLEPS,GMSET&6                                         #   7  4359  M 563 K79          1365
7363 72 39          MLC   ACNT,PDCHKP&3                                         #   7  4366  M 569 S0W          1365
7364 72 40          MLC   ST1MVP,STOUTP&6                                       #   7  4373  M 696 77U          1365
7365 72 41          MLC   CLEPS,GMCLR&3                                         #   7  4380  M 563 81U          1366
7366 72 42          BCE   MUSHQP,LDIMLT,                                        #   8  4387  B 87Z 187          1366
7367 72 43   TSTPS  C     AZERO1,NMPL        START OF LAST MERGE PASS           #   7  4395  C Y4T 559          1366
7368 72 44          MLZS  *-6,CENSIG                                            #   7  4402  Y 40S 415          1366
7369 72 45          MLC   CENSIG,INTF1&7                                        #   7  4409  M 415 |71          1366
7370 72 46          MLC   CENSIG,INTF2&7                                        #   7  4416  M 415 S04          1367
7371 72 47          MLC   CENSIG,INTF3&7                                        #   7  4423  M 415 T37          1367
7372 72 48          BE    SLMP                                                  #   5  4430  B 89| S            1367
7373 72 49          MLC   I2TUHP,WRCKT&3                                        #   7  4435  M 629 84Y          1367
7374 72 50          MLC   I2TUHP,WRDCK&3     SET TAPE UNIT NUM FOR              #   7  4442  M 629 X8S          1367
7375 72 51          MLC   I2TUHP,ERSE1&3     READING AND WRITING OF             #   7  4449  M 629 Y2/          1368
7376 72 52          MLC   I2TUHP,PRMSH-26    CHECKPOINT                         #   7  4456  M 629 Y9U          1368
7377 72 53          MLC   I2TUHP,RDCPT&3                                        #   7  4463  M 629 K83          1368
7378 72 54          MLC   I2TUHP,TPNOBK      INIT TO WRITE HDR ON OUTPUT        #   7  4470  M 629 732          1368
7379 72 55          MLC   KO                                                    #   4  4477  M 733              1368
7380 72 56          B     MLHENT             BRANCH TO WORK LABEL ROUTINE       #   4  4481  B P31              1368
7381 72 57          MLC   I2TUHP,RERDCP&3                                       #   7  4485  M 629 L09          1369
7382 72 58   GO ON  A     AONE,CNMP          BUMP MERGE COUNTER                 #   7  4492  A 616 557          1369
7383 72 59          A     @I9@,NMPL          DECREASE COUNT OF MERGES LEFT      #   7  4499  A Z2Z 559          1369
7384 72 60          NOP   RSTONE                                                #   4  4506  N U7V              1369
7385 72 61          MLC   SIX 0S,PCNTR                                          #   7  4510  M 613 589          1369
7386 72 62   *              ROTATE TAPE UNIT NUMS AND ESTABLISH NUM SEQ TO BE
7387 72 63   *                   MERGED IN PASS
7388 72 64          MLC   I2TUHP,TUHOLD      STORE SECOND TAPE UNIT NUMBER      #   7  4517  M 629 651          1369
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

7389 72 65          MLC   I1TUHP,I2TUHP                                       #   7  4524  M 630 629          1370
7390 72 66          MLC   O1TUHP,I1TUHP                                       #   7  4531  M 637 630          1370
7391 72 67          MLC   O2TUHP,O1TUHP       MOVE CNT OF SEQ MRGED ON 1ST UNIT #   7  4538  M 644 637          1370
7392 72 68          MLC   TUHOLD,O2TUHP                                       #   7  4545  M 651 644          1370
7393 72 69   UPDTCT MLC   SEQMRG,O2TUHP-1     MOVE CNT OF LAST MERGE FOR 2ND  #   7  4552  M 577 643          1370
7394 72 70          A     O2TUHP-1,O1TUHP-1  ADD TOT SEQ MERGED ON 1ST AND 2ND #   7  4559  A 643 636          1371
7395 72 71          S     O1TUHP-1,TUHOLD-1  SUB FROM TOT SEQ INIT ON 3RD     #   7  4566  S 636 650          1371
7396 72 72          MZ    BLANK,TUHOLD-1      STORE RESULT FOR NUM OF SEQ     #   7  4573  Y 619 650          1371
7397 72 73          MLC   TUHOLD-1,SEQMRG     IN NEXT MERGE PASS              #   7  4580  M 650 577          1371
7398 72 74          MLC   TAPSEQ,TUHOLD-1     MOVE SEQ TOT OF PREVIOUS MERGE  #   7  4587  M 657 650          1371
7399 72 75          MLC   YCNTR,TAPSEQ        MOVE SEQ TOT OF PASS P1 & Y MERGE #   7  4594  M 583 657          1372
7400 72 76          SBR   *-10,O2TUHP-1       AFTER 1ST MERGE REPLACE YCNTR   #   7  4601  H 59X 643          1372
7401 72 77   *                                WITH TOTAL FROM PREVIOUS MERGE
7402 72 78   *          SET INPUT AND OUTPUT UNIT NUMS FOR PASS
7403 72 79   FORONE SW    O2TUHP,O1TUHP                                       #   7  4608  , 644 637          1372
7404 72 80          MLC   O2TUHP,PRMSH-10                                     #   7  4615  M 644 Z1|          1372
7405 72 81          MLC   O2TUHP,WOBR&3                                       #   7  4622  M 644 952          1372
7406 72 82          MLC   O2TUHP,WORED&3                                      #   7  4629  M 644 W84          1373
7407 72 83          MLC   O2TUHP,ERTAPP&3                                     #   7  4636  M 644 X23          1373
7408 72 84          MLC   O2TUHP,RWINDP&3                                     #   7  4643  M 644 W54          1373
7409 72 85          MLC   O2TUHP,RWINDP&8                                     #   7  4650  M 644 W59          1373
7410 72 86          MLC   I1TUHP,READ1&3                                      #   7  4657  M 630 |54          1373
7411 72 87          MLC   I1TUHP,EOF1&10                                      #   7  4664  M 630 Z71          1374
7412 72 88          MLC   I2TUHP,READ2&3                                      #   7  4671  M 629 /87          1374
7413 72 89          MLC   I2TUHP,EOF2&10                                      #   7  4678  M 629 Z94          1374
7414 72 90          MLC   O1TUHP,READ3&3                                      #   7  4685  M 637 T20          1374
7415 72 91          MLC   O1TUHP,EOF3&10                                      #   7  4692  M 637 !17          1374
7416 72 92          MLC   O1TUHP,PRMSH-16                                     #   7  4699  M 637 Z0U          1375
7417 72 93          CW    O2TUHP,O1TUHP                                       #   7  4706  ) 644 637          1375
7418 72 94   STBCK  MLC   I1TUHP,BACK2&3                                      #   7  4713  M 630 A81          1375
7419 72 95          MLC   I2TUHP,BACK1&3                                      #   7  4720  M 629 A93          1375
7420 72 96          A     AONE,PCNTR                                          #   7  4727  A 616 589          1375
7421 72 97   *                                SET BRANCH INST FOR RESTART
7422 72 98          SW    1,5                                                 #   7  4734  , 001 005          1376
7423 72 99          MLC   &HRES                                               #   4  4741  M Z3S              1376
7424 73 00          MLC   KB                                                  #   4  4745  M 615              1376
7425 73 01          BIN   HSSD,D                                              #   5  4749  B V8U D            1376
7426 73 02   IWRCK  MLC   TWOBL,CNEOR         RESET CHECKPOINT REDUND COUNTER #   7  4754  M 620 730          1376
7427 73 03          MLC   TWOBL,CNRR                                          #   7  4761  M 620 728          1376
7428 73 04   STOUTP MLC   OWA,0               RESET MOVE TO OUTPUT AREA       #   7  4768  M 555 000          1377
7429 73 05          CS    332                                                 #   4  4775  / 332              1377
7430 73 06          CS                                                        #   1  4779  /                  1377
7431 73 07   PPSMS  MLC   CNMP,PRMSH-33                                       #   7  4780  M 557 Y8X          1377
7432 73 08          MLC   I2TUHP,PRMSH-18                                     #   7  4787  M 629 Z0S          1377
7433 73 09          MLC   I1TUHP,PRMSH-20                                     #   7  4794  M 630 Z0|          1377
7434 73 10          MLC   PRMSH-10,230        PRINT MESSAGE LISTING UNIT      #   7  4801  M Z1| 230          1378
7435 73 11          W                         NUMBERS OF INPUT,OUTPUT,AND     #   1  4808  2                  1378
7436 73 12          CC    1                   CHECKPOINT TAPES                #   2  4809  F 1                1378
7437 73 13   GMCLR  CW    0                                                   #   4  4811  ) 000              1378
7438 73 14          MLC   SIX 0S,XAREA                                        #   7  4815  M 613 595          1378
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7439 73 15          C     AZERO1,CNMP                                          #   7  4822  C Y4T 557          1378
7440 73 16          BU    WRCKT-4                                              #   5  4829  B 84/ /            1378
7441 73 17          MLC   AONE,XAREA                                           #   7  4834  M 616 595          1379
7442 73 18   CPEX   NOP   0                   USERS EXIT PRIOR TO WRITE CHKPT  #   4  4841  N 000              1379
7443 73 19   WRCKT  WTW   0,1                 WRITE CHECKPOINT                 #   8  4845  L %U0 001 W        1379
7444 73 20          BER   WRDCK                                                #   5  4853  B X7Z L            1379
7445 73 21          BEF   WFCK2P                                               #   5  4858  B Y3Y K            1379
7446 73 22   TF1    BIN   INTRPP,E            INTERRUPT IF SENSE SWITCH E IS ON #   5  4863  B X5T E            1379
7447 73 23          B     SCLINP                                               #   4  4868  B E75              1379
7448 73 24   BLKCNT A     AONE,MULBKC         LAST PASS INST TO INC BLK COUNT  #   7  4872  A 616 740          1380
7449 73 25   MUSHQP MLC   @ LOW@,PDTYQP-8                                      #   7  4879  M Z3W W4|          1380
7450 73 26          B     TSTPS                                                #   4  4886  B 39V              1380
7451 73 27   SLMP   C     LIT003,CNTRB        LAST MERGE PASS INITIALIZATION   #   7  4890  C 607 560          1380
7452 73 28          BL    *&12                                                 #   5  4897  B 91T T            1380
7453 73 29          MLC   I2TUHP,TPNOBK                                        #   7  4902  M 629 732          1380
7454 73 30          B     *&8                                                  #   4  4909  B 92|              1381
7455 73 31          MLC   O2TUHP,TPNOBK                                        #   7  4913  M 644 732          1381
7456 73 32   SLMP1  BSS   LPMSGP,B                                             #   5  4920  B W0T B            1381
7457 73 33   LPEX   NOP   0                   USERS EXIT LAST MERGE PASS INIT  #   4  4925  N 000              1381
7458 73 34          MLC   @N00@,WRCKT&2                                        #   7  4929  M Z3Z 84X          1381
7459 73 35          MLC   BLANK,SEQCMP&11                                      #   7  4936  M 619 W20          1381
7460 73 36          MLC   @A@,KOWNT                                            #   7  4943  M Z4| 899          1382
7461 73 37          MLC   @U@,RWINDP&9        UNLOAD FINAL OUTPUT TAPE         #   7  4950  M Z4/ W60          1382
7462 73 38          MLC   KB,EOFW1            INIT LAST PASS BRANCH            #   7  4957  M 615 !30          1382
7463 73 39          SBR   SEQCMP&10,LPEOJ                                      #   7  4964  H W19 W32          1382
7464 73 40          MLC   OWA,WOBR&6                                           #   7  4971  M 555 955          1382
7465 73 41          MA    LIT001,WOBR&6                                        #   7  4978  # 604 955          1383
7466 73 42          LCA   RDEOJ,GMSET&3       INSERT RTN TO LOAD END OF JOB IN #   7  4985  L |6| K76          1383
7467 73 43          LCA                     WKLBLI SO EXEC AT END OF LAST PASS #   1  4992  L                  1383
7468 73 44          LCA                                                        #   1  4993  L                  1383
7469 73 45          LCA                                                        #   1  4994  L                  1383
7470 73 46          LCA                                                        #   1  4995  L                  1383
7471 73 47          BCE   BYLBL,LABELS,       NO LABELS BRANCH                 #   8  4996  B W4Z 413          1383
7472 73 48   *                                  LOAD FINAL LABEL RTN
7473 73 49          BCE   OKEIGH,LBBUCK,                                       #   8  5004  B |3Y 414          1384
7474 73 50   NOKEIY R                                                          #   1  5012  1                  1384
7475 73 51          BCE   OKEIGH,68,B                                          #   8  5013  B |3Y 068 B        1384
7476 73 52          B     NOKEIY                                               #   4  5021  B |1S              1384
7477 73 53   WELEAT R                                                          #   1  5025  1                  1384
7478 73 54          BCE   INTLB,68,B                                           #   8  5026  B |6/ 068 B        1384
7479 73 55          B     WELEAT                                               #   4  5034  B |2V              1384
7480 73 56   OKEIGH CS    80                                                   #   4  5038  / 080              1385
7481 73 57          SW    24,56                                                #   7  5042  , 024 056          1385
7482 73 58          SW    63,67                                                #   7  5049  , 063 067          1385
7483 73 59          R     56                                                   #   4  5056  1 056              1385
7484 73 60   RDEOJ  NOP                       LOAD RTN FOR END OF JOB          #   1  5060  N                  1385
7485 73 61   *                                  INIT FINAL LABEL RTN
7486 73 62   INTLB  MLC   TPNOBK,FPHDS3-10                                     #   7  5061  M 732 M38          1385
7487 73 63          MLC   TPNOBK,FPHDS3&3                                      #   7  5068  M 732 M51          1385
7488 73 64          MLC   TPNOBK,FPHDX2&7                                      #   7  5075  M 732 N75          1386
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

7489 73 65          MLC   TPNOBK,FPHDX1&7                                  #   7  5082  M 732 M97          1386
7490 73 66          MLC   TPNOBK,FPHDX3&15                                 #   7  5089  M 732 O00          1386
7491 73 67          MLC   TPNOBK,FPPSW-2                                   #   7  5096  M 732 Q07          1386
7492 73 68          MLC   TPNOBK,FPPARX-17                                 #   7  5103  M 732 Q35          1386
7493 73 69          MLC   TPNOBK,LMHLTP&22                                 #   7  5110  M 732 R34          1387
7494 73 70          MLC   TPNOBK,FTREX1&21                                 #   7  5117  M 732 ?15          1387
7495 73 71          MLC   TPNOBK,FTREX2&26                                 #   7  5124  M 732 ?51          1387
7496 73 72          MLC   TPNOBK,FTREX2&31                                 #   7  5131  M 732 ?56          1387
7497 73 73          MLC   TPNOBK,FPTSMG      INIT CHANGE REEL MSG          #   7  5138  M 732 R11          1387
7498 73 74          MLC   TPNOBK,SAVM2                                     #   7  5145  M 732 P71          1388
7499 73 75          BCE   *&15,OHLIMP,2                                    #   8  5152  B /7U 189 2        1388
7500 73 76          MLC   NOP,FPHDX1&24      NOP CHAINED MOVES IF INPUT HDR #  7  5160  M 614 N14          1388
7501 73 77          MLC   NOP,FPHDX1&25      AND OUTPUT HDR ARE THE SAME   #   7  5167  M 614 N15          1388
7502 73 78          MLC   GPMARK,LMHLTP&7                                  #   7  5174  M 350 R19          1388
7503 73 79          MLC   GPMARK,FPHDS1&7                                  #   7  5181  M 350 L99          1389
7504 73 80          MLC   BLKCNT&6,WOBR&19   INSERT INST TO INC BLOCK COUNT #  7  5188  M 87Y 968          1389
7505 73 81          BCE   NWOUTP,PIMULT,6    SET FOR ELIMINATION           #   8  5195  B S8U 193 6        1389
7506 73 82   PDCHKP C     0,SIX 0S                                         #   7  5203  C 000 613          1389
7507 73 83          BU    NWOUTP                                           #   5  5210  B S8U /            1389
7508 73 84          MLC   NOP,PDSW           OF RECORD PADDING             #   7  5215  M 614 906          1390
7509 73 85          BCE   PAD9,PIMULT,9                                    #   8  5222  B S3Y 193 9        1390
7510 73 86          BCE   PAD,PIMULT,                                      #   8  5230  B S5W 193          1390
7511 73 87   PAD9   MLC   CTNRML,PADCT                                     #   7  5238  M 539 J00          1390
7512 73 88          S     RMOVEP,PADCT                                     #   7  5245  S 699 J00          1390
7513 73 89          B     PAD&21                                           #   4  5252  B S7X              1391
7514 73 90   PAD    MLC   @U@,AWAY&11                                      #   7  5256  M Z4/ 929          1391
7515 73 91          MLC   KB,AWAY&12                                       #   7  5263  M 615 930          1391
7516 73 92          ZA    RMOVEP,PADCT                                     #   7  5270  ? 699 J00          1391
7517 73 93          MZ    BLANK,PADCT                                      #   7  5277  Y 619 J00          1391
7518 73 94   NWOUTP MLC   AGMEBP,LGMEOP&6    SET BLOCKING FOR              #   7  5284  M 666 747          1391
7519 73 95          MLC   AGMEBP,ENDMP-1     FINAL OUTPUT                  #   7  5291  M 666 W76          1392
7520 73 96          MLC   ARELBP,ARELO                                     #   7  5298  M 663 720          1392
7521 73 97          SBR   KOWNT&3,BOMULT                                   #   7  5305  H 902 185          1392
7522 73 98          BCE   *&8,OUTMLT,M       OUTPUT MOVE MODE BRANCH       #   8  5312  B T2X 549 M        1392
7523 73 99          MLC   OUTMLT,WOBR        CHANGE WT INST SO FINAL OUTPUT #  7  5320  M 549 949          1392
7524 74 00   *                               IN LOAD MODE
7525 74 01          BCE   SPLCAS,LABELS,                                   #   8  5327  B T4X 413          1393
7526 74 02          BCE   FPHES1,LBBUCK,1                                  #   8  5335  B L92 414 1        1393
7527 74 03          B     FPHDS1             BRANCH TO FINAL LABEL ROUTINE #   4  5343  B L92              1393
7528 74 04   SPLCAS C     ASIX,CNTRB         CHECK FOR NUM SEQ LESS THAN 7 #   7  5347  C L15 560          1393
7529 74 05          BH    GO ON                                            #   5  5354  B 49S U            1393
7530 74 06          LCA   PRMSH-33,PRMSH-26  ELIMINATE CHECKPOINT REF IN MSG # 7  5359  L Y8X Y9U          1393
7531 74 07          SBR   PPSMS&6,PRMSH-26   WHEN ONLY ONE PASS            #   7  5366  H 78W Y9U          1394
7532 74 08          SBR   PPSMS&27,223                                     #   7  5373  H 80X 223          1394
7533 74 09          SBR   INTRPP&6,233                                     #   7  5380  H X5Z 233          1394
7534 74 10          BCE   ONESEQ,CNTRB,1                                   #   8  5387  B U3W 560 1        1394
7535 74 11          BCE   TWOSEQ,CNTRB,2                                   #   8  5395  B U8W 560 2        1394
7536 74 12          BCE   TRISEQ,CNTRB,3                                   #   8  5403  B U9X 560 3        1395
7537 74 13   FIVSEQ SBR   RSTONE&10,GO ON&18  NUM OF SEQ IS 4,5 OR 6       #   7  5411  H U8V 51|          1395
7538 74 14          MLC   ATWO,ACNTR                                       #   7  5418  M 617 624          1395
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

7539 74 15          SBR   ONESEQ&17,I1TUHP                                         #   7  5425  H U5T 630         1395
7540 74 16          B     ONESEQ&7                                                 #   4  5432  B U4T             1395
7541 74 17   ONESEQ MLC   ASIX,ACNTR                                               #   7  5436  M L15 624         1396
7542 74 18          MLC   I2TUHP,I2HOLD#1                                          #   7  5443  M 629 Z4S         1396
7543 74 19          MLC   O1TUHP,I2TUHP                                            #   7  5450  M 637 629         1396
7544 74 20          MLC   KB,GO ON&14                                              #   7  5457  M 615 50W         1396
7545 74 21   MKSBR  MLC   FIVSEQ,ENTRTN&21                                         #   7  5464  M U1/ ?96         1396
7546 74 22          B     GO ON                                                    #   4  5471  B 49S             1396
7547 74 23   RSTONE MLC   I2HOLD,I2TUHP                                            #   7  5475  M Z4S 629         1397
7548 74 24          B     FORONE                                                   #   4  5482  B 60Y             1397
7549 74 25   TWOSEQ MLC   AFOUR,ACNTR                                              #   7  5486  M 618 624         1397
7550 74 26          B     ONESEQ&7                                                 #   4  5493  B U4T             1397
7551 74 27   TRISEQ SBR   TWOSEQ-1,UPDTCT                                          #   7  5497  H U8V 55S         1397
7552 74 28          MLC   NOP,ONESEQ&7                                             #   7  5504  M 614 U4T         1397
7553 74 29          MLC   O1TUHP,I2HOLD                                            #   7  5511  M 637 Z4S         1398
7554 74 30          MLC   O2TUHP,O1TUHP                                            #   7  5518  M 644 637         1398
7555 74 31          MLC   I2TUHP,O2TUHP                                            #   7  5525  M 629 644         1398
7556 74 32          MLC   AZERO,O1TUHP-1                                           #   7  5532  M 608 636         1398
7557 74 33          MLC   AONE,O2TUHP-1                                            #   7  5539  M 616 643         1398
7558 74 34          SBR   STEPA&3,EOSTSP                                           #   7  5546  H /02 U41         1399
7559 74 35          SBR   STEPB&3                                                  #   4  5553  H S35             1399
7560 74 36          SBR   STEPC&3                                                  #   4  5557  H T68             1399
7561 74 37          MLNS  I1TUHP,*&4                                               #   7  5561  D 630 V7/         1399
7562 74 38          BSP   0                                                        #   5  5568  U %U0 B           1399
7563 74 39          MLC   NOP,RSTONE-11                                            #   7  5573  M 614 U6U         1399
7564 74 40          B     TWOSEQ                                                   #   4  5580  B U8W             1399
7565 74 41   HSSD   CS    332                  SENSE SWITCH D ON                   #   4  5584  / 332             1400
7566 74 42          CS                                                             #   1  5588  /                 1400
7567 74 43          MLC   PRMSF,222                                                #   7  5589  M Y8| 222         1400
7568 74 44          W                          PRINT DENSITY CHANGE MESSAGE        #   1  5596  2                 1400
7569 74 45          CC    1                                                        #   2  5597  F 1               1400
7570 74 46          H     IWRCK                RETURN TO INIT PRIOR TO WT CHKPT    #   4  5599  . 75U             1400
7571 74 47   *                                 LAST MERGE PASS INTERRUPT
7572 74 48   *                                   SENSE SWITCH B ON
7573 74 49   LPMSGP CS    332                                                      #   4  5603  / 332             1400
7574 74 50          CS                                                             #   1  5607  /                 1401
7575 74 51          MLC   TPNOBK,PRMSH-10                                          #   7  5608  M 732 Z1|         1401
7576 74 52          SW    216                                                      #   4  5615  , 216             1401
7577 74 53          MLC   PRMSH,231                                                #   7  5619  M Z2| 231         1401
7578 74 54          MLC   PMSLPP                                                   #   4  5626  M Y5Y             1401
7579 74 55          W                                                              #   1  5630  2                 1401
7580 74 56          CC    1                                                        #   2  5631  F 1               1401
7581 74 57          H     SLMP1&5                                                  #   4  5633  . 92V             1402
7582 74 58   PDTYQP DCW   @HIGH DENSITY@                                           #  12  5648                    1402
7583 74 59   *                      NO LABELS RTN-EXEC IN LAST PASS INIT
7584 74 60   BYLBL  MLC   TPNOBK,WROM1           SET UP CHANGE REEL MESSAGE        #   7  5649  M 732 X5S         1402
7585 74 61          MLCWA WROM1,WROM                                               #   7  5656  L X5S !94         1402
7586 74 62          SBR   LPSQCP-1,RTRN2                                           #   7  5663  H !52 974         1402
7587 74 63          MLC   TPNOBK,MARTIF&3                                          #   7  5670  M 732 X2Y         1403
7588 74 64          MLC   TPNOBK,MARTEF-2                                          #   7  5677  M 732 X3T         1403
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7589 74 65          MLCWA MARTEF&4,WROM-15                                     #   7  5684  L X3Z !79         1403
7590 74 66          MLCWA                                                      #   1  5691  L                 1403
7591 74 67          MLCWA                                                      #   1  5692  L                 1403
7592 74 68          MLCWA                                                      #   1  5693  L                 1403
7593 74 69          MLC   NOP,WOBR&13         NOP INST TO CLEAR FIRST POS OUTPT #   7  5694  M 614 962         1403
7594 74 70   BYLBL1 R                         BYPASS FINAL LABEL ROUTINE       #   1  5701  1                 1404
7595 74 71          BCE   *&5,68,B                                             #   8  5702  B X1U 068 B       1404
7596 74 72          B     BYLBL1                                               #   4  5710  B X0/             1404
7597 74 73          SBR   BYLBL1&4,PDCHKP-8                                    #   7  5714  H X0V /9V         1404
7598 74 74          B     BYLBL1                                               #   4  5721  B X0/             1404
7599 74 75   MARTIF WTM   0                                                    #   5  5725  U %U0 M           1404
7600 74 76          RWU   0                                                    #   5  5730  U %U0 U           1404
7601 74 77   MARTEF B     EOFW1&4                                              #   4  5735  B !34             1405
7602 74 78          DCW   @ @                                                  #   1  5739                    1405
7603 74 79   WROM1  DCW   @CHANGE UNIT 0@                                      #  13  5752                    1405
7604 74 80   *                                SENSE SWITCH E ON  INTERRUPT
7605 74 81   INTRPP MLC   PRMSH,240                                            #   7  5753  M Z2| 240         1405
7606 74 82          W                                                          #   1  5760  2                 1405
7607 74 83          CS    240                                                  #   4  5761  / 240             1405
7608 74 84          MLC   PDTYQP,212                                           #   7  5765  M W4Y 212         1405
7609 74 85          W                                                          #   1  5772  2                 1406
7610 74 86          CC    1                                                    #   2  5773  F 1               1406
7611 74 87          H     SCLINP                                               #   4  5775  . E75             1406
7612 74 88   *                         WRITE CHECKPOINT ERROR ROUTINE
7613 74 89   WRDCK  BSP   0                                                    #   5  5779  U %U0 B           1406
7614 74 90          BCE   ERCKP,CNRR,1                                         #   8  5784  B Y0T 728 1       1406
7615 74 91          A     AONE,CNRR                                            #   7  5792  A 616 728         1406
7616 74 92          B     WRCKT                                                #   4  5799  B 84V             1406
7617 74 93   ERCKP  A     AONE,CNEOR                                           #   7  5803  A 616 730         1407
7618 74 94          BCE   HRTRY,CNEOR,0       TEN SKIPS BRANCH                 #   8  5810  B Y3U 730 0       1407
7619 74 95   ERSE1  SKP   0                                                    #   5  5818  U %U0 E           1407
7620 74 96          MLC   TWOBL,CNRR                                           #   7  5823  M 620 728         1407
7621 74 97          B     WRCKT                                                #   4  5830  B 84V             1407
7622 74 98   HRTRY  H     IWRCK                                                #   4  5834  . 75U             1407
7623 74 99   WFCK2P H     TF1                                                  #   4  5838  . 86T             1407
7624 75 00   AZERO1 DCW   @01@                                                 #   2  5843                    1408
7625 75 01   PMSLPP DCW   @LAST MERGE PASS@                                    #  15  5858                    1408
7626 75 02   PRMSF  DCW   @DENSITY MAY BE CHANGED@                             #  22  5880                    1408
7627 75 03   PRMSH  DCW   @PASS 00-CKPT 0-INP 0,0,0 OUT-0 INTERRUPT@           #  40  5920                    1411
7628 75 04   PRMSI  DCW   @RESTART@                                            #   7  5927                    1411
7629 75 05          LTORG *                                                    #             5928
                    DCW   @I9@                                                 #   2  5929               LIT   1411
                    DCW   &HRES #                                              #   3  5932  E94          ADCON 1411
                    DCW   @ LOW@                                               #   4  5936               LIT   1411
                    DCW   @N00@                                                #   3  5939               LIT   1412
                    DCW   @A@                                                  #   1  5940               LIT   1412
                    DCW   @U@                                                  #   1  5941               LIT   1412
             I2HOLD DCW   #01                                                  #   1  5942               AREA  1412
7630 75 06          ORG   WKLAND                                               #             3075
7631 75 07   *
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

7632 75 08   *              LABELS ROUTINE TO CLEAR AREAS AND SET WORDMARKS
7633 75 09   *
7634 75 10   ENTRTN MLC   NOP,RDFST1          RETURN FROM READING INPUT TAPE[S] #   7  3075  M 614 |95         1413
7635 75 11          MLC   NOP,RDFST2                                        #   7  3082  M 614 S28         1413
7636 75 12          MLC   NOP,RDFST3                                        #   7  3089  M 614 T61         1413
7637 75 13          NOP   REDETP&3,EOSTSP     SBR INST IF NUM SEQ 1,2,4,5 OR 6  #   7  3096  N 779 U41         1413
7638 75 14          SBR   RDFST3&3,RUNOTP                                   #   7  3103  H T64 780         1413
7639 75 15          CS    3599                CLEAR OUTPUT AREA             #   4  3110  / E99             1413
7640 75 16          CS                                                      #   1  3114  /                 1414
7641 75 17   ENCSTN CS                                                      #   1  3115  /                 1414
7642 75 18          CS                                                      #   1  3116  /                 1414
7643 75 19          B     LGMEOP                                            #   4  3117  B 741             1414
7644 75 20   COAP   SBR   RDFST3&3,ENTRTN                                   #   7  3121  H T64 ?75         1414
7645 75 21          C     ASIX,CNTRB          TEST FOR NUM OF SEQ LESS THAN 7  #   7  3128  C L15 560         1414
7646 75 22          BH    ENTREC                                            #   5  3135  B A64 U           1414
7647 75 23          C     LIT003,CNTRB                                      #   7  3140  C 607 560         1415
7648 75 24          BE    CNTRB3              NUM OF SEQ IS 3               #   5  3147  B B49 S           1415
7649 75 25          BL    CNTRB2              NUM OF SEQ IS 1 OR 2          #   5  3152  B A99 T           1415
7650 75 26          SBR   RDFST1&3,STRD3      NUM OF SEQ IS 4, 5 OR 6       #   7  3157  H |98 S88         1415
7651 75 27   *                                RESTORE FIRST RCD SWITCHES AND
7652 75 28   *                                BACKSPACE TWO TAPES
7653 75 29   ENTREC MLC   KB,RDFST3                                         #   7  3164  M 615 T61         1415
7654 75 30          MLC   KB,RDFST2                                         #   7  3171  M 615 S28         1415
7655 75 31   BACK2  BSP   0                                                 #   5  3178  U %U0 B           1416
7656 75 32          MLC   KB,RDFST1                                         #   7  3183  M 615 |95         1416
7657 75 33   BACK1  BSP   0                                                 #   5  3190  U %U0 B           1416
7658 75 34   *                                READ INPUT TAPES
7659 75 35          B     STRD1                                             #   4  3195  B |22             1416
7660 75 36   CNTRB2 MN    O1TUHP,*&4                                        #   7  3199  D 637 B09         1416
7661 75 37          RWD   0                                                 #   5  3206  U %U0 R           1416
7662 75 38          BCE   ENTRTN,CNTRB,3                                    #   8  3211  B ?75 560 3       1417
7663 75 39          BCE   CNTQQ1,CNTRB,2                                    #   8  3219  B B38 560 2       1417
7664 75 40          SBR   RDFST1&3,ENTRTN                                   #   7  3227  H |98 ?75         1417
7665 75 41          B     BACK2-7                                           #   4  3234  B A71             1417
7666 75 42   CNTQQ1 SBR   RDFST2&3,ENTRTN                                   #   7  3238  H S31 ?75         1417
7667 75 43          B     BACK2-7                                           #   4  3245  B A71             1417
7668 75 44   CNTRB3 SBR   RDFST2&3,CNTRB2                                   #   7  3249  H S31 A99         1418
7669 75 45          MLC   KB,RDFST2                                         #   7  3256  M 615 S28         1418
7670 75 46          B     STRD2                                             #   4  3263  B /55             1418
7671 75 47          SW    3600                                              #   4  3267  , F00             1418
7672 75 48   CLINPP CS    0                   CLEAR INPUT AREAS             #   4  3271  / 000             1418
7673 75 49          SBR   CLINPP&3                                          #   4  3275  H B74             1418
7674 75 50          BWZ   CLINPP,3600,1                                     #   8  3279  V B71 F00 1       1418
7675 75 51          LCA   0,0                 SET GMWMS IN INPUT AREAS PRIOR  #   7  3287  L 000 000         1419
7676 75 52          LCA   0,0                 TO READING TAPES              #   7  3294  L 000 000         1419
7677 75 53          LCA   0,0                                               #   7  3301  L 000 000         1419
7678 75 54          MLC   TWOBL,PCNCF         SET WORD MARKS IN             #   7  3308  M 620 728         1419
7679 75 55   PNWM12 MLC   AIRA1,PICF12        INPUT AREAS FOR CONTROL       #   7  3315  M 702 552         1419
7680 75 56          MA    CF1SLM,PICF12       FIELD DESIGNATION             #   7  3322  # 353 552         1420
7681 75 57          MLC   PICF12,PWMS12&3                                   #   7  3329  M 552 C46         1420
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

7682 75 58          MLC   SIX 0S-3,PCNTB                                        #   7  3336  M 610 E74         1420
7683 75 59   PWMS12 SW    0                                                     #   4  3343  , 000             1420
7684 75 60          A     AONE,PCNTB                                            #   7  3347  A 616 E74         1420
7685 75 61          C     PCNTB,BMULTI                                          #   7  3354  C E74 199         1420
7686 75 62   *                            BRANCH TO GET NEXT CF
7687 75 63          BE    PSWNCF                                                #   5  3361  B C77 S           1421
7688 75 64          MA    LMULTI,PWMS12&3                                       #   7  3366  # 347 C46         1421
7689 75 65          B     PWMS12                                                #   4  3373  B C43             1421
7690 75 66   PSWNCF A     AONE,PCNCF                                            #   7  3377  A 616 728         1421
7691 75 67          C     PCNCF,NCFMLT                                          #   7  3384  C 728 096         1421
7692 75 68   *                            BRANCH TO INIT NEXT INPUT AREA
7693 75 69          BE    PWIRA2                                                #   5  3391  B D07 S           1421
7694 75 70          MA    LIT003,PNWM12&10                                      #   7  3396  # 607 C25         1422
7695 75 71          B     PNWM12                                                #   4  3403  B C15             1422
7696 75 72   PWIRA2 NOP   PWIRA3                                                #   4  3407  N D36             1422
7697 75 73          MLC   KB,PWIRA2                                             #   7  3411  M 615 D07         1422
7698 75 74          SBR   PNWM12&3,AIRA2                                        #   7  3418  H C18 705         1422
7699 75 75          SBR   PNWM12&10,CF1SLM                                      #   7  3425  H C25 353         1422
7700 75 76          B     PNWM12-7                                              #   4  3432  B C08             1423
7701 75 77   PWIRA3 NOP   PWMSET                                                #   4  3436  N D65             1423
7702 75 78          MLC   KB,PWIRA3                                             #   7  3440  M 615 D36         1423
7703 75 79          SBR   PNWM12&3,AIRA3                                        #   7  3447  H C18 708         1423
7704 75 80          SBR   PNWM12&10,CF1SLM                                      #   7  3454  H C25 353         1423
7705 75 81          B     PNWM12-7                                              #   4  3461  B C08             1423
7706 75 82   PWMSET BCE   COAP,CNOPML,1       WM ALREADY SET IN FIRST POS       #   8  3465  B A21 086 1       1424
7707 75 83   PNWMBI MLC   AIRA1,PICF12                                          #   7  3473  M 702 552         1424
7708 75 84          MLC   PICF12,PSW12&3                                        #   7  3480  M 552 D97         1424
7709 75 85          MLC   SIX 0S-3,PCNTB#3                                      #   7  3487  M 610 E74         1424
7710 75 86   *                            SET WORD MARK IN FIRST POS OF EACH
7711 75 87   *                            RECORD IN INPUT AREAS
7712 75 88   PSW12  SW    0                                                     #   4  3494  , 000             1424
7713 75 89          A     AONE,PCNTB                                            #   7  3498  A 616 E74         1425
7714 75 90          C     PCNTB,BMULTI                                          #   7  3505  C E74 199         1425
7715 75 91          BE    PMIRA2                                                #   5  3512  B E28 S           1425
7716 75 92          MA    LMULTI,PSW12&3                                        #   7  3517  # 347 D97         1425
7717 75 93          B     PSW12                                                 #   4  3524  B D94             1425
7718 75 94   PMIRA2 NOP   PMIRA3                                                #   4  3528  N E50             1425
7719 75 95          MLC   KB,PMIRA2                                             #   7  3532  M 615 E28         1426
7720 75 96          MLC   AIRA2,PICF12                                          #   7  3539  M 705 552         1426
7721 75 97          B     PNWMBI&7                                              #   4  3546  B D80             1426
7722 75 98   PMIRA3 NOP   COAP                                                  #   4  3550  N A21             1426
7723 75 99          MLC   KB,PMIRA3                                             #   7  3554  M 615 E50         1426
7724 76 00          MLC   AIRA3,PICF12                                          #   7  3561  M 708 552         1426
7725 76 01          B     PNWMBI&7                                              #   4  3568  B D80             1427
7726 76 02          LTORG *                                                     #          3572
             PCNTB# DCW   #03                                                   #   3  3574              AREA  1427
7727 76 03   PCNCF  EQU   CNRR                                                  #      0728
7728 76 04   PICF12 EQU   CSTCNS                                                #      0552
7729 76 05   SCLINP MLC   NDRA3P,CLINPP&3                                       #   7  3575  M 684 B74         1427
7730 76 06          MLC   TWOBL,CNRR                                            #   7  3582  M 620 728         1427
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

7731 76 07          B     CLINPP-4                                           #   4  3589  B B67             1427
7732 76 08          NOP                                                      #   1  3593  N                 1427
7733 76 09   RSTORG ORG   *                                                  #      3594   3594
7734 76 10          EX    LBLCK                                              #            B 21/             1428
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

7735 76 11          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE          #
7736 76 12   *
7737 76 13   *              NO LABELS ROUTINE TO CLEAR AREAS AND SET WORDMARKS
7738 76 14   *
7739 76 15          ORG   RESUME                                            #            4023
7740 76 16          BE    NLST                                              #   5  4023  B N04 S           1431
7741 76 17          ORG   FSTLP-4                                           #            4061
7742 76 18          B     NLST                                              #   4  4061  B N04             1432
7743 76 19          ORG   WKLBLI&11                                         #            2265
7744 76 20          NOP   MLHENT                                            #   4  2265  N P31             1433
7745 76 21          ORG   GO ON-11                                          #            4481
7746 76 22          NOP   MLHENT                                            #   4  4481  N P31             1434
7747 76 23          ORG   STBCK                                             #            4713
7748 76 24          MLC   I1TUHP,NLBK2&3                                    #   7  4713  M 630 M18         1435
7749 76 25          MLC   I2TUHP,NLBK1&3                                    #   7  4720  M 629 M30         1435
7750 76 26          ORG   TF1&5                                             #            4868
7751 76 27          B     NLST                                              #   4  4868  B N04             1436
7752 76 28          ORG   MKSBR                                             #            5464
7753 76 29          MLC   FIVSEQ,NLENT&21                                   #   7  5464  M U1/ L37         1437
7754 76 30          ORG   INTRPP&22                                         #            5775
7755 76 31          H     NLST                                              #   4  5775  . N04             1438
7756 76 32          ORG   MLEND                                             #            2316
7757 76 33   NLENT  MLC   NOP,RDFST1         RETURN FROM READING INPUT TAPE[S] #   7  2316  M 614 |95         1439
7758 76 34          MLC   NOP,RDFST2                                        #   7  2323  M 614 S28         1439
7759 76 35          MLC   NOP,RDFST3                                        #   7  2330  M 614 T61         1439
7760 76 36          NOP   REDETP&3,EOSTSP    SBR INST IF NUM SEQ 1,2,4,5 OR 6  #   7  2337  N 779 U41         1439
7761 76 37          SBR   RDFST3&3,RUNOTP                                   #   7  2344  H T64 780         1439
7762 76 38          CS    LGMEOP,2899                                       #   7  2351  / 741 Q99         1440
7763 76 39   NLCLO  SBR   RDFST3&3,NLENT                                    #   7  2358  H T64 L16         1440
7764 76 40          C     ASIX,CNTRB         TEST FOR NUM SEQ LESS THAN 7     #   7  2365  C L15 560         1440
7765 76 41          BH    NLREC                                             #   5  2372  B M01 U           1440
7766 76 42          C     LIT003,CNTRB                                      #   7  2377  C 607 560         1440
7767 76 43          BE    BCNTR3             NUM OF SEQ IS 3                #   5  2384  B M86 S           1440
7768 76 44          BL    BCNTR2             NUM OF SEQ IS 1 OR 2           #   5  2389  B M36 T           1441
7769 76 45          SBR   RDFST1&3,STRD3     NUM OF SEQ IS 4,5, OR 6        #   7  2394  H |98 S88         1441
7770 76 46   NLREC  MLC   KB,RDFST3                                         #   7  2401  M 615 T61         1441
7771 76 47          MLC   KB,RDFST2                                         #   7  2408  M 615 S28         1441
7772 76 48   NLBK2  BSP   0                                                 #   5  2415  U %U0 B           1441
7773 76 49          MLC   KB,RDFST1                                         #   7  2420  M 615 |95         1441
7774 76 50   NLBK1  BSP   0                                                 #   5  2427  U %U0 B           1442
7775 76 51          B     STRD1              READ INPUT TAPE[S]             #   4  2432  B |22             1442
7776 76 52   BCNTR2 MN    O1TUHP,*&4                                        #   7  2436  D 637 M46         1442
7777 76 53          RWD   0                                                 #   5  2443  U %U0 R           1442
7778 76 54          BCE   NLENT,CNTRB,3                                     #   8  2448  B L16 560 3       1442
7779 76 55          BCE   NLCTQ,CNTRB,2                                     #   8  2456  B M75 560 2       1442
7780 76 56          SBR   RDFST1&3,NLENT                                    #   7  2464  H |98 L16         1443
7781 76 57          B     NLBK2-7                                           #   4  2471  B M08             1443
7782 76 58   NLCTQ  SBR   RDFST2&3,NLENT                                    #   7  2475  H S31 L16         1443
7783 76 59          B     NLBK2-7                                           #   4  2482  B M08             1443
7784 76 60   BCNTR3 SBR   RDFST2&3,BCNTR2                                   #   7  2486  H S31 M36         1443
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7785 76 61          MLC   KB,RDFST2                                            #   7  2493  M 615 S28         1443
7786 76 62          B     STRD2                                                #   4  2500  B /55             1444
7787 76 63   NLST   MLC   NDRA3P,NLCLI&3                                       #   7  2504  M 684 N18         1444
7788 76 64          SW    2900                                                 #   4  2511  , R00             1444
7789 76 65   NLCLI  CS    0                   CLEAR INPUT AREAS AND TO 2900    #   4  2515  / 000             1444
7790 76 66          SBR   NLCLI&3                                              #   4  2519  H N18             1444
7791 76 67          BWZ   NLCLI,2900,1                                         #   8  2523  V N15 R00 1       1444
7792 76 68          LCA   0,0                 SET GMWMS IN INPUT AREAS PRIOR   #   7  2531  L 000 000         1444
7793 76 69          LCA   0,0                 TO READING TAPES                 #   7  2538  L 000 000         1445
7794 76 70          LCA   0,0                                                  #   7  2545  L 000 000         1445
7795 76 71          MLC   TWOBL,NLCNF#2       SET WORD MARKS IN INPUT AREAS FOR #  7  2552  M 620 Q17         1445
7796 76 72   NLAR1  MLC   AIRA1,NLPCF#3       CONTROL FIELD DESIGNATION        #   7  2559  M 702 Q20         1445
7797 76 73          MA    CF1SLM,NLPCF                                         #   7  2566  # 353 Q20         1445
7798 76 74          MLC   NLPCF,NLSWM&3                                        #   7  2573  M Q20 N90         1446
7799 76 75          MLC   @   @,NLCNT#3                                        #   7  2580  M Q23 Q26         1446
7800 76 76   NLSWM  SW    0                                                    #   4  2587  , 000             1446
7801 76 77          A     AONE,NLCNT                                           #   7  2591  A 616 Q26         1446
7802 76 78          C     NLCNT,BMULTI                                         #   7  2598  C Q26 199         1446
7803 76 79          BE    NLNCF               BRANCH TO GET NEXT CF            #   5  2605  B O21 S           1446
7804 76 80          MA    LMULTI,NLSWM&3                                       #   7  2610  # 347 N90         1447
7805 76 81          B     NLSWM                                                #   4  2617  B N87             1447
7806 76 82   NLNCF  A     AONE,NLCNF                                           #   7  2621  A 616 Q17         1447
7807 76 83          C     NLCNF,NCFMLT                                         #   7  2628  C Q17 096         1447
7808 76 84          BE    NLAR2               BRANCH TO INIT NEXT INPUT AREA   #   5  2635  B O51 S           1447
7809 76 85          MA    LIT003,NLAR1&10                                      #   7  2640  # 607 N69         1447
7810 76 86          B     NLAR1                                                #   4  2647  B N59             1448
7811 76 87   NLAR2  NOP   NLAR3                                                #   4  2651  N O80             1448
7812 76 88          MLC   KB,NLAR2                                             #   7  2655  M 615 O51         1448
7813 76 89          SBR   NLAR1&3,AIRA2                                        #   7  2662  H N62 705         1448
7814 76 90          SBR   NLAR1&10,CF1SLM                                      #   7  2669  H N69 353         1448
7815 76 91          B     NLAR1-7                                              #   4  2676  B N52             1448
7816 76 92   NLAR3  NOP   NLWMST                                               #   4  2680  N P09             1448
7817 76 93          MLC   KB,NLAR3                                             #   7  2684  M 615 O80         1449
7818 76 94          SBR   NLAR1&3,AIRA3                                        #   7  2691  H N62 708         1449
7819 76 95          SBR   NLAR1&10,CF1SLM                                      #   7  2698  H N69 353         1449
7820 76 96          B     NLAR1-7                                              #   4  2705  B N52             1449
7821 76 97   NLWMST BCE   NLCLO,CNOPML,1      WM ALREADY SET IN FIRST POS      #   8  2709  B L58 086 1       1449
7822 76 98   NLWMBI MLC   AIRA1,NLPCF                                          #   7  2717  M 702 Q20         1450
7823 76 99          MLC   NLPCF,NLST1&3                                        #   7  2724  M Q20 P41         1450
7824 77 00          MLC   @   @,NLCNT                                          #   7  2731  M Q23 Q26         1450
7825 77 01   NLST1  SW    0                   SET WORD MARK IN FIRST POS OF    #   4  2738  , 000             1450
7826 77 02          A     AONE,NLCNT          EACH RECORD IN INPUT AREAS       #   7  2742  A 616 Q26         1450
7827 77 03          C     NLCNT,BMULTI                                         #   7  2749  C Q26 199         1450
7828 77 04          BE    NLST2                                                #   5  2756  B P72 S           1451
7829 77 05          MA    LMULTI,NLST1&3                                       #   7  2761  # 347 P41         1451
7830 77 06          B     NLST1                                                #   4  2768  B P38             1451
7831 77 07   NLST2  NOP   NLST3                                                #   4  2772  N P94             1451
7832 77 08          MLC   KB,NLST2                                             #   7  2776  M 615 P72         1451
7833 77 09          MLC   AIRA2,NLPCF                                          #   7  2783  M 705 Q20         1451
7834 77 10          B     NLWMBI&7                                             #   4  2790  B P24             1451
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 SEQ PG LIN  LABEL   OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

7835 77 11   NLST3   NOP   NLCLO                                                    #   4  2794  N L58              1452
7836 77 12           MLC   KB,NLST3                                                 #   7  2798  M 615 P94          1452
7837 77 13           MLC   AIRA3,NLPCF                                              #   7  2805  M 708 Q20          1452
7838 77 14           B     NLWMBI&7                                                 #   4  2812  B P24              1452
             NLCNF# DCW   #02                                                       #   2  2817              AREA  1452
             NLPCF# DCW   #03                                                       #   3  2820              AREA  1452
                    DCW   @   @                                                     #   3  2823              LIT   1452
             NLCNT# DCW   #03                                                       #   3  2826              AREA  1453
7839 77 15           EX    RDBY1                                                    #              B 26Y              1454
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

7840 77 16          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2            #
7841 77 17   ***
7842 77 18   ***            MULTIPHASE BYPASS CONSTANT
7843 77 19   ***
7844 77 20          SFX
7845 77 21   HEADER DCW   @HEADER-TRAILER-PHASE2@                              21  2847                    1457
7846 77 22          EX    PASMLT                                                         B 31S             1458
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

7847 77 23          JOB   ** IBM 1401 SORT 7 VERSION 2  PHASE 2
7848 77 24   ***
7849 77 25   ***            PHASE 2 - FINAL HEADER/TRAILER LABEL ROUTINE
7850 77 26   ***
7851 77 27          SFX
7852 77 28          ORG   INIT1                                                           5286
7853 77 29   *
7854 77 30   *      INIT. FINAL PASS HEADER TRAILER ROUTINE
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

7855 77 31          JOB   ** IBM 1401 SORT 7 VERSION 2 PHASE 2
7856 77 32   ***
7857 77 33   ***            PHASE 2 - FINAL HEADER/TRAILER LABEL ROUTINE
7858 77 34   ***
7859 77 35          ORG   INIT1                                                          5286
7860 77 36   *
7861 77 37   *              INITIALIZATION FINAL PASS HDR-TRL ROUTINE
7862 77 38   *
7863 77 39   REDEMP BCE   RDMP,LBBUCK,                                         8  5286  B T1W 414         1461
7864 77 40          CS    80                                                   4  5294  / 080             1461
7865 77 41          SW    24,56                                                7  5298  , 024 056         1461
7866 77 42          SW    63,67                                                7  5305  , 063 067         1461
7867 77 43          R     056                                                  4  5312  1 056             1461
7868 77 44   RDMP   R                                                          1  5316  1                 1461
7869 77 45          BCE   *&5,40,/                                             8  5317  B T2Z 040 /       1461
7870 77 46          B     RDMP                                                 4  5325  B T1W             1462
7871 77 47          BCE   CLSTX1-7,LABELS,   BRANCH IF BYPASSING LABELS        8  5329  B J84 413         1462
7872 77 48          MN    O2TUHA,LPHDX2&12                                     7  5337  D 566 C65         1462
7873 77 49          MN    O2TUHA,LPHDX2&7                                      7  5344  D 566 C60         1462
7874 77 50          MN    O2TUHA,LPHDX3&15                                     7  5351  D 566 C90         1462
7875 77 51          MN    O2TUHA,LPHDS3-10                                     7  5358  D 566 B28         1463
7876 77 52          MN    O2TUHA,LPHDS3&3                                      7  5365  D 566 B41         1463
7877 77 53          MN    O2TUHA,LPPSW-2                                       7  5372  D 566 E99         1463
7878 77 54          MN    O2TUHA,LPPARX-2                                      7  5379  D 566 F42         1463
7879 77 55          MN    O2TUHA,LPTSMG                                        7  5386  D 566 G12         1463
7880 77 56          MN    O2TUHA,LPTRS1&29                                     7  5393  D 566 G42         1464
7881 77 57          MN    O2TUHA,LPTRX1&21                                     7  5400  D 566 H12         1464
7882 77 58          MN    O2TUHA,LPTRX2&14                                     7  5407  D 566 H36         1464
7883 77 59          MN    O2TUHA,LPTRX2&19                                     7  5414  D 566 H41         1464
7884 77 60          MLCWA NOPINC-1,THDTP-10                                    7  5421  L U5W J48         1464
7885 77 61          MLC   LPPSW,REWIND&14                                      7  5428  M F01 J44         1465
7886 77 62          MLC   CENSIG,LPHDSH&7                                      7  5435  M 415 B53         1465
7887 77 63          SBR   CLSTX1-12,NXTPS                                      7  5442  H J79 677         1465
7888 77 64          B     LPTRET&7                                             4  5449  B A52             1465
7889 77 65          NOP                                                        1  5453  N                 1465
7890 77 66   NOPINC DC    @0000@                                               4  5457                    1465
7891 77 67          ORG   HTHAL1                                                         3080
7892 77 68   OHLI   EQU   OTLI                                                    0189
7893 77 69   OTMO   EQU   HTMO                                                    0190
7894 77 70   *
7895 77 71   *         HALT AREA FOR FINAL OUTP HEADER TRAILER ROUTINE
7896 77 72   *
7897 77 73   LPHDH1 MLC   N99P2,LPHDC1                                         7  3080  M P23 H63         1466
7898 77 74          H     LPHDX1              PRESS START TO ACCEPT            4  3087  . B80             1466
7899 77 75   *                              UNREADABLE BLK AS H.L.
7900 77 76   *                              RETEN CYC WILL NOT BE CK
7901 77 77          B     LPPSW-5             PRESS START/RESET AND START      4  3091  B E96             1466
7902 77 78   *                              TO RETRY UP TO 99 MORE TIMES
7903 77 79   *                              -A NEW REEL MAY BE MOUNTED
7904 77 80   *
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

7905 77 81   LPHDH2 H     LPHDS2        PRESS START TO PROCESS NEW REEL              4  3095  . B00             1466
7906 77 82          MLC   @10@,LPHDC2   PRESS START RESET AND START TO               7  3099  M H60 H65         1466
7907 77 83          B     LPPARX-5       RETRY UP TO 10 SKIPS MORE                   4  3106  B F39             1466
7908 77 84   *
7909 77 85   LPHDH3 H     LPHDX1             PRESS START TO ACCEPT THIS TAPE         4  3110  . B80             1466
7910 77 86          B     LPHDS2        PRESS START RESET AND START IF               4  3114  B B00             1467
7911 77 87   *                             A NEW REEL IS TO BE PROCESSED
7912 77 88   *
7913 77 89   LPTRH1 H     LPTRX2        PRESS START TO ACCEPT T.L.AS WT.             4  3118  . H22             1467
7914 77 90          MLC   @10@,LPHDC2   PRESS START RESET AND START TO               7  3122  M H60 H65         1467
7915 77 91   *                          TRY WRITING
7916 77 92          B     LPPARX-5       T.L.UP TO 10 MORE SKIPS                     4  3129  B F39             1467
7917 77 93   *
7918 77 94   LPTRH2 H     LPHDS1&7      PRESS START AFTER MOUNTING A                 4  3133  . A82             1467
7919 77 95   *                             NEW REEL FOR OUTPUT
7920 77 96   *
7921 77 97   CKPTET SBR   LPHDEX&3           ENTER FROM RESTART ROUT.                4  3137  H D14             1467
7922 77 98          B     *&8                                                        4  3141  B A52             1467
7923 77 99   LPTRET SBR   LPHDEX&3,RTRN2-7   ENTER FROM TRAILER ROUTINE              7  3145  H D14 S25         1468
7924 78 00          B     LPHDS1                                                     4  3152  B A75             1468
7925 78 01          CS    332                                                        4  3156  / 332             1468
7926 78 02          CS                                                               1  3160  /                 1468
7927 78 03          MLC   LPTSMG,228                                                 7  3161  M G12 228         1468
7928 78 04          W                        CHANGE TAPE MESSAGE                     1  3168  2                 1468
7929 78 05          CC    1                                                          2  3169  F 1               1468
7930 78 06          B     LPTRH2                                                     4  3171  B A33             1469
7931 78 07   LPHDS1 MLC   @N@,LPTRET&7                                               7  3175  M H61 A52         1469
7932 78 08          CS    179                                                        4  3182  / 179             1469
7933 78 09          MLC   GPMARK,*&4                                                 7  3186  M 350 A96         1469
7934 78 10          MLCWA 0,180              LOAD A G/M-W/M                          7  3193  L 000 180         1469
7935 78 11   LPHDS2 MLC   N99P2,LPHDC1#2                                             7  3200  M P23 H63         1469
7936 78 12          MLC   @10@,LPHDC2#2                                              7  3207  M H60 H65         1470
7937 78 13          CS    179                                                        4  3214  / 179             1470
7938 78 14          MLC   CENSIG,113                                                 7  3218  M 415 113         1470
7939 78 15          RWD   0                                                          5  3225  U %U0 R           1470
7940 78 16          BCE   LPHDEX&4,OHLI,     IF NO NEW H.L.-COL.22 CC.1              8  3230  B D15 189         1470
7941 78 17   LPHDS3 RT    0,100                                                      8  3238  M %U0 100 R       1470
7942 78 18   LPHDSH BCE   LPHDNR,113,                                                8  3246  B D19 113         1471
7943 78 19          BEF   *&1                                                        5  3254  B B59 K           1471
7944 78 20          BER   LPERRT                                                     5  3259  B E67 L           1471
7945 78 21          BCE   LPHDRC,WLBKT,1     IF NO RETEN CYC CK-COL.4 CC.3           8  3264  B D36 417 1       1471
7946 78 22          BCE   LPHDRC,OHLOP,1     IF NO RETEN CYC CK-COL.1 CC.5           8  3272  B D36 419 1       1471
7947 78 23   LPHDX1 NOP   0                  EXIT-ACCESS TO H.L.                     4  3280  N 000             1471
7948 78 24          BCE   LPHDX2,OHLI,       IF NO H.L.-COL.22 CC.1                  8  3284  B C53 189         1472
7949 78 25          MLC   RTCYCL&1,139       H.L. INFORMATION                        7  3292  M 462 139         1472
7950 78 26          MLC                       TO WRITE FIELD                         1  3299  M                 1472
7951 78 27          MLC                                                              1  3300  M                 1472
7952 78 28          MLC   HDRTAG,104         HEADER FLAG                             7  3301  M 427 104         1472
7953 78 29          SW    140                                                        4  3308  , 140             1472
7954 78 30          MLC   331,179                                                    7  3312  M 331 179         1472
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

7955 78 31          SW    105                                                    4  3319  , 105              1473
7956 78 32          BCE   *&8,TPSROP,        IF TO RETAIN TAPE SERIAL #          8  3323  B C38 422          1473
7957 78 33   *                                  COL.34 CC.5
7958 78 34          MLC   TPSERL,109         NEW TAPE SERIAL #                   7  3331  M 432 109          1473
7959 78 35          BCE   *&8,FLSROP,        COL.2 CC.5                          8  3338  B C53 420          1473
7960 78 36          MLC   109,114            TAPE SERIAL # REPLACES FILE         7  3346  M 109 114          1473
7961 78 37   *                                  SERIAL #
7962 78 38   LPHDX2 NOP   0                  EXIT-BEFORE WRITING H.L.            4  3353  N 000              1473
7963 78 39          BSP   0                                                      5  3357  U %U0 B            1474
7964 78 40          WT    0,100                                                  8  3362  M %U0 100 W        1474
7965 78 41          BER   LPERWT                                                 5  3370  B F66 L            1474
7966 78 42   LPHDX3 NOP   0                  EXIT AFTER WRITING H.L.             4  3375  N 000              1474
7967 78 43          BCE   *&6,OTMO,          IF NO T/M AFTER H.L.                8  3379  B C92 190          1474
7968 78 44   *                                  COL.23 CC.1
7969 78 45          WTM   0                                                      5  3387  U %U0 M            1474
7970 78 46          BCE   *&8,RLSQOP,        NO REEL SEQ UPDATE                  8  3392  B D07 421          1475
7971 78 47   *                                  COL.3 CC.5
7972 78 48          A     &1,REELSQ                                              7  3400  A H66 441          1475
7973 78 49          CS    181                                                    4  3407  / 181              1475
7974 78 50   LPHDEX B     CLSTX1-7           GENERAL EXIT                        4  3411  B J84              1475
7975 78 51          B     LPHDEX-4                                               4  3415  B D07              1475
7976 78 52   LPHDNR CS    120                CLEAR NOISE REC AREA                4  3419  / 120              1475
7977 78 53          B     LPHDS3                                                 4  3423  B B38              1475
7978 78 54   ****           RETENTION CYCLE CHECK
7979 78 55          DCW   @  @                                                   2  3428                     1476
7980 78 56          DCW   @   @                                                  3  3431                     1476
7981 78 57   CRTC2  DCW   @    @                                                 4  3435                     1476
7982 78 58   LPHDRC ZA    138,CRTC2          MOVE LABEL INFORMATION              7  3436  ? 138 D35          1476
7983 78 59          MLC                         INTO CHECK BUCKET                1  3443  M                  1476
7984 78 60          MLC                                                          1  3444  M                  1476
7985 78 61          SW    OHDATE-2                                               4  3445  , 455              1476
7986 78 62   CLWL2  C     OHDATE-3,CRTC2-7                                       7  3449  C 454 D28          1477
7987 78 63          BU    MODYR2                                                 5  3456  B E27 /            1477
7988 78 64          A     CRTC2-4,CRTC2         ADD TAPE DAYS TO RT. CYL.        7  3461  A D31 D35          1477
7989 78 65          S     OHDATE,CRTC2          SUB. CONT. DAYS FROM RT. CYL.    7  3468  S 457 D35          1477
7990 78 66          CW    OHDATE-2                                               4  3475  ) 455              1477
7991 78 67          BWZ   LPHDX1,CRTC2,K        CAN TAPE BE WRITTEN ON           8  3479  V B80 D35 K        1477
7992 78 68          CS    332                   NO                               4  3487  / 332              1478
7993 78 69          CS                                                           1  3491  /                  1478
7994 78 70          MLC   SAVMP2,227            PRINT MESSAGE INDICATING         7  3492  M E66 227          1478
7995 78 71          MLNS  CRTC2,222             DAYS TAPE IS TO BE RETAINED      7  3499  D D35 222          1478
7996 78 72          MLNS                                                         1  3506  D                  1478
7997 78 73          MLNS                                                         1  3507  D                  1478
7998 78 74          MLC   SAVMP1                                                 4  3508  M E61              1478
7999 78 75          MLC   O2TUHA                                                 4  3512  M 566              1479
8000 78 76          MLC   SAVMP3                                                 4  3516  M E56              1479
8001 78 77          W                                                            1  3520  2                  1479
8002 78 78          CC    1                                                      2  3521  F 1                1479
8003 78 79          B     LPHDH3                BRANCH TO HALT                   4  3523  B A10              1479
8004 78 80   MODYR2 S     TSF2,CRTC2            SUB. 365 FROM RET.               7  3527  S E44 D35          1479
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

8005 78 81          A                         CYCLE AND ADD 1 TO                  1  3534  A                 1479
8006 78 82          A                         TAPE YEARS                          1  3535  A                 1480
8007 78 83          B     CLWL2               CHECK YEAR COMPARE AGAIN            4  3536  B D49             1480
8008 78 84          DCW   @1@                                                     1  3540                    1480
8009 78 85          DCW   @0@                                                     1  3541                    1480
8010 78 86   TSF2   DCW   @365@                                                   3  3544                    1480
8011 78 87   SAVMP3 DCW   @RETAIN TAPE @                                         12  3556                    1480
8012 78 88   SAVMP1 DCW   @ FOR @                                                 5  3561                    1480
8013 78 89   SAVMP2 DCW   @ DAYS@                                                 5  3566                    1481
8014 78 90   *
8015 78 91   *       HEADER LABEL READ ERROR ENTRANCE
8016 78 92   *
8017 78 93   LPERRT SBR   LPPARX&3,LPHDS3                                         7  3567  H F47 B38         1481
8018 78 94          MLC   @B@,LPPSW                                               7  3574  M H67 F01         1481
8019 78 95          S     &1,LPHDC1                                               7  3581  S H66 H63         1481
8020 78 96          BM    LPHDH1,LPHDC1      UNREADABLE BLK                       8  3588  V ?80 H63 K       1481
8021 78 97          BSP   0                                                       5  3596  U %U0 B           1481
8022 78 98   LPPSW  B     LPPARX             NOP IF WRITE CONDITION               4  3601  B F44             1482
8023 78 99          BCE   *&5,LPHDC1,G       IF TIME TO SKIP                      8  3605  B F17 H63 G       1482
8024 79 00          B     LPPARX                                                  4  3613  B F44             1482
8025 79 01          MLC   N99P2-1,LPHDC1                                          7  3617  M P22 H63         1482
8026 79 02          S     &1,LPHDC2                                               7  3624  S H66 H65         1482
8027 79 03          BM    LPHDH2,LPHDC2                                           8  3631  V ?95 H65 K       1482
8028 79 04          SKP   0                                                       5  3639  U %U0 E           1483
8029 79 05   LPPARX B     0                  ERROR ROUTINE EXIT                   4  3644  B 000             1483
8030 79 06   *
8031 79 07   *         TRAILER LABEL WRITE ERROR ENTRANCE
8032 79 08   *
8033 79 09   LPTRPE SBR   LPPARX&3,LPTRX1&18                                      7  3648  H F47 H09         1483
8034 79 10          SBR   LPPARX-10,LPTRH1                                        7  3655  H F34 A18         1483
8035 79 11          B     *&15                                                    4  3662  B F80             1483
8036 79 12   *
8037 79 13   *         HEADER LABEL WRITE ERROR ENTRANCE
8038 79 14   *
8039 79 15   LPERWT SBR   LPPARX&3,LPHDX2&9                                       7  3666  H F47 C62         1483
8040 79 16          SBR   LPPARX-10,LPHDH2                                        7  3673  H F34 ?95         1484
8041 79 17          MLC   @N@,LPPSW                                               7  3680  M H61 F01         1484
8042 79 18          B     LPERRT&14                                               4  3687  B E81             1484
8043 79 19   LPTSMG DCW   @ CHANGE REEL ON UNIT 0@                               22  3712                    1485
8044 79 20   *
8045 79 21   *     TRAILER LABEL ROUTINE-ENTER FROM EOF ON OUTP OR EOJ
8046 79 22   *
8047 79 23   LPTRS1 CS    180                                                     4  3713  / 180             1485
8048 79 24          MLC   GPMARK,*&4                                              7  3717  M 350 G27         1485
8049 79 25          MLCWA 0,180              LOAD IN A G/M-W/M                    7  3724  L 000 180         1486
8050 79 26          BCE   LPTRX2,TLO,    NO TRAILER LABEL-COL.25 CC.1             8  3731  B H22 192         1486
8051 79 27          WTM   0                                                       5  3739  U %U0 M           1486
8052 79 28          BCE   *&12,CNTRA,7       END OF JOB                           8  3744  B G63 572 7       1486
8053 79 29          MLC   @1EOR @,104                                             7  3752  M H72 104         1486
8054 79 30          B     *&8                                                     4  3759  B G70             1486
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                       SFX CT  LOCN  INSTRUCTION TYPE  CARD

8055 79 31          MLC   @1EOF @,104                                                           7  3763  M H77 104         1487
8056 79 32          MLC   TAPBLC,109          TAPE BLK COUNT                                    7  3770  M Q91 109         1487
8057 79 33          MLC   ACTNR,*&4                                                             7  3777  M P00 G87         1487
8058 79 34          MLC   000,119                                                               7  3784  M 000 119         1487
8059 79 35   LPTRX1 NOP   0                   EXIT-ACCESS TO T.L.                               4  3791  N 000             1487
8060 79 36          MLC   N99P2,LPHDC1                                                          7  3795  M P23 H63         1487
8061 79 37          MLC   @10@,LPHDC2                                                           7  3802  M H60 H65         1488
8062 79 38          WT    0,100                                                                 8  3809  M %U0 100 W       1488
8063 79 39          BER   LPTRPE                                                                5  3817  B F48 L           1488
8064 79 40   LPTRX2 NOP   0                   EXIT-AFTER T.L.WRITE                              4  3822  N 000             1488
8065 79 41          MLC   @00000@,TAPBLC                                                        7  3826  M H82 Q91         1488
8066 79 42          WTM   0                                                                     5  3833  U %U0 M           1488
8067 79 43          RWU   0                                                                     5  3838  U %U0 U           1489
8068 79 44          CS    181                                                                   4  3843  / 181             1489
8069 79 45          BCE   REWIND,CNTRA,7                                                        8  3847  B J30 572 7       1489
8070 79 46          B     LPTRET                                                                4  3855  B A45             1489
                    DCW   @10@                                                                  2  3860              LIT   1489
                    DCW   @N@                                                                   1  3861              LIT   1489
             LPHDC1 DCW   #02                                                                   2  3863              AREA  1489
             LPHDC2 DCW   #02                                                                   2  3865              AREA  1490
                    DCW   &1                                                                    1  3866              LIT   1490
                    DCW   @B@                                                                   1  3867              LIT   1490
                    DCW   @1EOR @                                                               5  3872              LIT   1490
                    DCW   @1EOF @                                                               5  3877              LIT   1490
                    DCW   @00000@                                                               5  3882              LIT   1490
8071 79 47          EX    INIT1                                                                          B S8W             1491
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

8072 79 48          JOB   ** IBM 1401 SORT 7 VERSION 2 PHASE 2
8073 79 49   ***
8074 79 50   ***            FINAL PASS INIT FOR HEADER-TRAILER ROUTINE
8075 79 51   ***            120 CHARACTER LABELS
8076 79 52   ***
8077 79 53          ORG   INIT1                                                                  5286
8078 79 54   *
8079 79 55   *
8080 79 56   REDMPS R                                                               1  5286  1                1494
8081 79 57          BCE   *&5,40,/                                                  8  5287  B S9Z 040 /      1494
8082 79 58          B     REDMPS                                                    4  5295  B S8W            1494
8083 79 59          MLNS  O2TUHA,LPHEX2&12                                          7  5299  D 566 C34        1494
8084 79 60          MLNS  O2TUHA,LPHEX2&7                                           7  5306  D 566 C29        1494
8085 79 61          MLNS  O2TUHA,LPHEX3&15                                          7  5313  D 566 C63        1494
8086 79 62          MLNS  O2TUHA,LPHES3-10                                          7  5320  D 566 B25        1495
8087 79 63          MLNS  O2TUHA,LPHES3&3                                           7  5327  D 566 B38        1495
8088 79 64          MLNS  O2TUHA,LPPPSW-2                                           7  5334  D 566 E72        1495
8089 79 65          MLNS  O2TUHA,LPPERX-2                                           7  5341  D 566 F15        1495
8090 79 66          MLNS  O2TUHA,LPTMEG-1                                           7  5348  D 566 F85        1495
8091 79 67          MLNS  O2TUHA,LPTSS1&30                                          7  5355  D 566 G17        1496
8092 79 68          MLNS  O2TUHA,LPTSX1&21                                          7  5362  D 566 G80        1496
8093 79 69          MLC   CENSIG,LANOIS&7                                           7  5369  M 415 B50        1496
8094 79 70          MLNS  O2TUHA,LPTSX2&14                                          7  5376  D 566 H04        1496
8095 79 71          SBR   QTRL&3,LPTSS1                                             7  5383  H J19 F87        1496
8096 79 72          MLNS  O2TUHA,LPTSX2&19                                          7  5390  D 566 H09        1497
8097 79 73          MLCWA NOPINK-1,THDTP-10                                         7  5397  L U2V J48        1497
8098 79 74          MLC   LPPPSW,REWIND&14                                          7  5404  M E74 J44        1497
8099 79 75          SBR   CLSTX1-12,NXTPS                                           7  5411  H J79 677        1497
8100 79 76          B     LPTRAT&7                                                  4  5418  B A52            1497
8101 79 77          NOP                                                             1  5422  N                1497
8102 79 78   NOPINK DC    @0000@                                                    4  5426                   1497
8103 79 79          ORG   HTHEL1                                                                 3080
8104 79 80   UHLI   EQU   OTLI                                                         0189
8105 79 81   UTMU   EQU   HTMO                                                         0190
8106 79 82   *
8107 79 83   *              HALT AREA FOR FINAL OUTPUT HDR-TRL ROUTINE
8108 79 84   *
8109 79 85   LPHEH1 MLC   N99P2,LPHEC1         PRESS START TO ACCEPT UNREADABLE     7  3080  M P23 H32        1498
8110 79 86          H     LPHEX1               BLOCK AS H.L. RET CYCLE WILL NOT     4  3087  . B69            1498
8111 79 87          B     LPPPSW               BE CHECKED PRESS START RESET AND     4  3091  B E74            1498
8112 79 88   *                                   START TO RETRY UP TO 99 TIMES
8113 79 89   *                                   A NEW REEL MAY BE MOUNTED
8114 79 90   *
8115 79 91   LPHEH2 H     LPHES2               PRESS START TO PROCESS NEW REEL      4  3095  . A96            1498
8116 79 92          MLC   @10@,LPHEC2          PRESS START-RESET AND START TO       7  3099  M H29 H34        1498
8117 79 93          B     LPPERX-5             RETRY UP TO 10 MORE SKIPS            4  3106  B F12            1498
8118 79 94   LPHEH3 H     LPHEX1               PRESS START TO ACCEPT THIS TAPE      4  3110  . B69            1498
8119 79 95          B     LPHES2               PRESS START-RESET AND START IF A     4  3114  B A96            1499
8120 79 96   *                                   NEW REEL IS TO BE PROCESSED
8121 79 97   LPTSH1 H     LPTSX2               PRESS START TO ACCEPT TL AS WT.      4  3118  . G90            1499
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 SEQ PG LIN  LABEL  OP    OPERANDS                                              SFX CT  LOCN  INSTRUCTION TYPE  CARD

8122 79 98          MLC   @10@,LPHEC2         PRESS START-RESET AND START TO       7  3122  M H29 H34         1499
8123 79 99          B     LPPERX-5            TRY WRITING-UP TO 10 MORE SKIPS      4  3129  B F12             1499
8124 80 00   LPTSH2 H     LPHES1&7            PRESS START AFTER MOUNTING A NEW     4  3133  . A82             1499
8125 80 01   *                                  REEL FOR OUTPUT
8126 80 02   CKPTAT SBR   LPHDAX&3            ENTER FROM RESTART ROUTINE           4  3137  H C87             1499
8127 80 03          B     *&8                                                      4  3141  B A52             1499
8128 80 04   LPTRAT SBR   LPHDAX&3,RTRN2-7    ENTER FROM TRAILER ROUTINE           7  3145  H C87 S25         1500
8129 80 05          B     LPHES1                                                   4  3152  B A75             1500
8130 80 06          CS    332                                                      4  3156  / 332             1500
8131 80 07          CS                                                             1  3160  /                 1500
8132 80 08          MLC   LPTMEG,228          CHANGE TAPE MESSAGE                  7  3161  M F86 228         1500
8133 80 09          W                                                              1  3168  2                 1500
8134 80 10          CC    1                                                        2  3169  F 1               1500
8135 80 11          B     LPTSH2                                                   4  3171  B A33             1501
8136 80 12   LPHES1 MLC   @N@,LPTRAT&7                                             7  3175  M H30 A52         1501
8137 80 13          MLC   GPMARK,*&4                                               7  3182  M 350 A92         1501
8138 80 14   LEMARK MLCWA 0,320                                                    7  3189  L 000 320         1501
8139 80 15   LPHES2 MLC   N99P2,LPHEC1#2                                           7  3196  M P23 H32         1501
8140 80 16          MLC   @10@,LPHEC2#2                                            7  3203  M H29 H34         1501
8141 80 17          CS    319                                                      4  3210  / 319             1502
8142 80 18          CS                                                             1  3214  /                 1502
8143 80 19   LENOSE MLC   CENSIG,213                                               7  3215  M 415 213         1502
8144 80 20          RWD   0                                                        5  3222  U %U0 R           1502
8145 80 21          BCE   LPHDAX&4,OHLI,                                           8  3227  B C88 189         1502
8146 80 22   LPHES3 RTW   0,200                                                    8  3235  L %U0 200 R       1502
8147 80 23   LANOIS BCE   LPHENR,213,                                              8  3243  B C92 213         1503
8148 80 24          BEF   *&1                                                      5  3251  B B56 K           1503
8149 80 25          BER   LPARRT                                                   5  3256  B E40 L           1503
8150 80 26          BCE   LPHERC,OHLOP,1    IF NO RET CYC CK-COL1 CC5              8  3261  B D09 419 1       1503
8151 80 27   LPHEX1 NOP   0                                                        4  3269  N 000             1503
8152 80 28          BCE   LPHEX2,OHLI,                                             8  3273  B C22 189         1503
8153 80 29          MLC   RESEQE,239                                               7  3281  M 461 239         1504
8154 80 30          MLC   FILESE,229                                               7  3288  M 452 229         1504
8155 80 31          MLC                                                            1  3295  M                 1504
8156 80 32          MLC   SYSCRE,255                                               7  3296  M 457 255         1504
8157 80 33          SW    225                                                      4  3303  , 225             1504
8158 80 34          BCE   *&8,FLSROP,       COL2 CC5                               8  3307  B C22 420         1504
8159 80 35          MLC   234,229                                                  7  3315  M 234 229         1505
8160 80 36   LPHEX2 NOP   0                 EXIT-BEFORE WRITING HL                 4  3322  N 000             1505
8161 80 37          BSP   0                                                        5  3326  U %U0 B           1505
8162 80 38          WT    0,200                                                    8  3331  M %U0 200 W       1505
8163 80 39          CS    332                                                      4  3339  / 332             1505
8164 80 40          BER   LPARWT                                                   5  3343  B F39 L           1505
8165 80 41   LPHEX3 NOP   0                 EXIT AFTER WRITING HL                  4  3348  N 000             1505
8166 80 42          BCE   *&6,OTMO,         BRANCH IF NO TM AFT HL                 8  3352  B C65 190         1506
8167 80 43   *                                COL23 CC1
8168 80 44          WTM   0                                                        5  3360  U %U0 M           1506
8169 80 45          BCE   *&8,RLSQOP,                                              8  3365  B C80 421         1506
8170 80 46          A     &1,RESEQE                                                7  3373  A H35 461         1506
8171 80 47          CS    181                                                      4  3380  / 181             1506
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 SEQ PG LIN  LABEL  OP    OPERANDS                                               SFX CT  LOCN  INSTRUCTION TYPE  CARD

8172 80 48   LPHDAX B     CLSTX1-7           GENERAL EXIT                              4  3384  B J84              1506
8173 80 49          B     LPHDAX-4                                                     4  3388  B C80              1507
8174 80 50   LPHENR CS    220                CLEAR NOISE RECORD                        4  3392  / 220              1507
8175 80 51          B     LPHES3                                                       4  3396  B B35              1507
8176 80 52   ****                RETENTION CYCLE CHECK
8177 80 53          DCW   @    @                                                       4  3403                     1507
8178 80 54          DCW   @  @                                                         2  3405                     1507
8179 80 55   UTCRTY DCW   @   @                                                        3  3408                     1507
8180 80 56   LPHERC MLC   214,UTCRTY                                                   7  3409  M 214 D08          1507
8181 80 57          MLC                                                                1  3416  M                  1508
8182 80 58          MLC                                                                1  3417  M                  1508
8183 80 59          SW    CREATD-2                                                     4  3418  , 435              1508
8184 80 60   CLWIL2 C     CREATD-3,UTCRTY-3                                            7  3422  C 434 D05          1508
8185 80 61          BU    MUDIFY                                                       5  3429  B E00 /            1508
8186 80 62          A     UTCRTY,UTCRTY-5                                              7  3434  A D08 D03          1508
8187 80 63          S     CREATD,UTCRTY-5                                              7  3441  S 437 D03          1508
8188 80 64          CW    CREATD-2                                                     4  3448  ) 435              1509
8189 80 65          BWZ   LPHEX1,UTCRTY-5,K  CAN TAPE BE WRITTEN ON                    8  3452  V B69 D03 K        1509
8190 80 66          CS    319                                                          4  3460  / 319              1509
8191 80 67          CS                                                                 1  3464  /                  1509
8192 80 68          MLC   S2VMEP,227                                                   7  3465  M E39 227          1509
8193 80 69          MLNS  UTCRTY-5,222                                                 7  3472  D D03 222          1509
8194 80 70          MLNS                                                               1  3479  D                  1509
8195 80 71          MLNS                                                               1  3480  D                  1510
8196 80 72          MLC   S1VMEP                                                       4  3481  M E34              1510
8197 80 73          MLC   O2TUHA                                                       4  3485  M 566              1510
8198 80 74          MLC   S3VMEP                                                       4  3489  M E29              1510
8199 80 75          W                                                                  1  3493  2                  1510
8200 80 76          CC    1                                                            2  3494  F 1                1510
8201 80 77          B     LPHDH3             BRANCH TO HALT                            4  3496  B A10              1510
8202 80 78   MUDIFY A     FST365&2,UTCRTY    SUB 365 FROM RET. CYC AND ADD 1           7  3500  A E17 D08          1511
8203 80 79          A                        TO TAPE YEARS                             1  3507  A                  1511
8204 80 80          S                                                                  1  3508  S                  1511
8205 80 81          B     CLWIL2             CHECK YEAR COMPARE AGAIN                  4  3509  B D22              1511
8206 80 82   FST365 DCW   @365@                                                        3  3515                     1511
8207 80 83          DCW   @1@                                                          1  3516                     1511
8208 80 84          DCW   @0@                                                          1  3517                     1511
8209 80 85   S3VMEP DCW   @RETAIN TAPE @                                              12  3529                     1512
8210 80 86   S1VMEP DCW   @ FOR @                                                      5  3534                     1512
8211 80 87   S2VMEP DCW   @ DAYS@                                                      5  3539                     1512
8212 80 88   *
8213 80 89   *              HEADER LABEL READ ERROR ENTRANCE
8214 80 90   *
8215 80 91   LPARRT SBR   LPPERX&3,LPHES3                                              7  3540  H F20 B35          1512
8216 80 92          MLC   @B@,LPPPSW                                                   7  3547  M H36 E74          1512
8217 80 93          S     &1,LPHEC1                                                    7  3554  S H35 H32          1513
8218 80 94          BM    LPHEH1,LPHEC1      UNREADABLE BLOCK                          8  3561  V ?80 H32 K        1513
8219 80 95          BSP   0                                                            5  3569  U %U0 B            1513
8220 80 96   LPPPSW B     LPPERX             NOP IF WRITE CONDITION                    4  3574  B F17              1513
8221 80 97          BCE   *&5,LPHEC1,G                                                 8  3578  B E90 H32 G        1513
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

8222 80 98          B     LPPERX                                                       4  3586  B F17             1513
8223 80 99          MLC   N99P2-1,LPHEC1                                               7  3590  M P22 H32         1514
8224 81 00          S     &1,LPHEC2                                                    7  3597  S H35 H34         1514
8225 81 01          BM    LPHEH2,LPHEC2                                                8  3604  V ?95 H34 K       1514
8226 81 02          SKP   0                                                            5  3612  U %U0 E           1514
8227 81 03   LPPERX B     0                   ERROR ROUTINE EXIT                       4  3617  B 000             1514
8228 81 04   *
8229 81 05   *              TRAILER LABEL WRITE ERROR ENTRANCE
8230 81 06   *
8231 81 07   LPTSPE SBR   LPPERX&3,LPTSX1&18                                           7  3621  H F20 G77         1514
8232 81 08          SBR   LPPERX-10,LPTRH1                                             7  3628  H F07 A18         1515
8233 81 09          B     *&15                                                         4  3635  B F53             1515
8234 81 10   *
8235 81 11   *              HEADER LABEL WRITE ERROR ENTRANCE
8236 81 12   *
8237 81 13   LPARWT SBR   LPPERX&3,LPHEX2&9                                            7  3639  H F20 C31         1515
8238 81 14          SBR   LPPERX-10,LPHEH2                                             7  3646  H F07 ?95         1515
8239 81 15          MLC   @N@,LPPPSW                                                   7  3653  M H30 E74         1515
8240 81 16          B     LPARRT&14                                                    4  3660  B E54             1515
8241 81 17   LPTMEG DCW   @ CHANGE REEL ON UNIT 0 @                                   23  3686                    1516
8242 81 18   *
8243 81 19   *              TRAILER LABEL ROUTINE
8244 81 20   *
8245 81 21   LPTSS1 CS    332                                                          4  3687  / 332             1516
8246 81 22          CS                                                                 1  3691  /                 1516
8247 81 23          MLC   GPMARK,*&4                                                   7  3692  M 350 G02         1516
8248 81 24          MLCWA 0,320                                                        7  3699  L 000 320         1517
8249 81 25          BCE   LPTSX2,TLO,         NO TRAILER LABEL                         8  3706  B G90 192         1517
8250 81 26          WTM   0                                                            5  3714  U %U0 M           1517
8251 81 27          BCE   *&12,CNTRA,7        END OF JOB                               8  3719  B G38 572 7       1517
8252 81 28          MLC   @1EOR @,204                                                  7  3727  M H41 204         1517
8253 81 29          B     *&8                                                          4  3734  B G45             1517
8254 81 30          MLC   @1EOF @,204                                                  7  3738  M H46 204         1518
8255 81 31          MLC   TAPBLC,271          TAPE BLK COUNT                           7  3745  M Q91 271         1518
8256 81 32          MLC   N99P2,LPHEC1                                                 7  3752  M P23 H32         1518
8257 81 33   LPTSX1 NOP   0                   USER EXIT                                4  3759  N 000             1518
8258 81 34          MLC   @10@,LPHEC2                                                  7  3763  M H29 H34         1518
8259 81 35          MLC   N99P2,LPHEC1                                                 7  3770  M P23 H32         1518
8260 81 36          WT    0,200                                                        8  3777  M %U0 200 W       1519
8261 81 37          BER   LPTSPE                                                       5  3785  B F21 L           1519
8262 81 38   LPTSX2 NOP   0                   USER EXIT                                4  3790  N 000             1519
8263 81 39          MLC   @00000@,TAPBLC                                               7  3794  M H51 Q91         1519
8264 81 40          WTM   0                                                            5  3801  U %U0 M           1519
8265 81 41          RWU   0                                                            5  3806  U %U0 U           1519
8266 81 42          CS    332                                                          4  3811  / 332             1519
8267 81 43          CS                                                                 1  3815  /                 1520
8268 81 44          BCE   REWIND,CNTRA,7                                               8  3816  B J30 572 7       1520
8269 81 45          B     LPTRAT                                                       4  3824  B A45             1520
                    DCW   @10@                                                         2  3829              LIT   1520
                    DCW   @N@                                                          1  3830              LIT   1520
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

             LPHEC1 DCW   #02                                                     2  3832              AREA  1520
             LPHEC2 DCW   #02                                                     2  3834              AREA  1520
                    DCW   &1                                                      1  3835              LIT   1521
                    DCW   @B@                                                     1  3836              LIT   1521
                    DCW   @1EOR @                                                 5  3841              LIT   1521
                    DCW   @1EOF @                                                 5  3846              LIT   1521
                    DCW   @00000@                                                 5  3851              LIT   1521
8270 81 46          EX    INIT1                                                          B S8W               1522
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 SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

8271 81 47          JOB   ** IBM 1401 SORT 7 VERSION 2 MULTIPHASE
8272 81 48   *              MULTIPHASE FINAL OUTPUT LABEL ROUTINE TO WRITE
8273 81 49   *              STANDARD HEADER AND TRAILER LABELS ON FINAL
8274 81 50   *              OUTPUT TAPES
8275 81 51          SFX   #                                                   #
8276 81 52          ORG   MLEND                                               #            2316
8277 81 53   *
8278 81 54   *     HALT AREA FOR FINAL OUTP HEADER TRAILER ROUTINE
8279 81 55   *
8280 81 56   FPHDH1 MLC   FTRAC3-3,FHTC1     PRESS START TO ACCEPT UNREADABLE  #   7  2316  M 609 ?63         1525
8281 81 57   *                                  BLK AS HDR--RETEN CYC WILL NOT
8282 81 58   *                                  BE CHECKED
8283 81 59          H     FPHDX1                                              #   4  2323  . M90             1525
8284 81 60          B     FPHDS2             PRESS START RESET AND START TO    #   4  2327  B M03             1525
8285 81 61   *                                  RETRY UP TO 99 MORE TIMES
8286 81 62   *                               A NEW REEL MAY BE MOUNTED
8287 81 63   FPHDH2 H     FPHDS2         PRESS START TO PROCESS A NEW REEL.    #   4  2331  . M03             1525
8288 81 64          MLC   FTRAC3-4,FHTC2  PRESS START RESET AND START TO       #   7  2335  M 608 ?64         1525
8289 81 65          B     FPHDX2             RETRY UP TO 9 SKIPS               #   4  2342  B N68             1525
8290 81 66   *
8291 81 67   FPHDH3 H     FPHDX1             RETEN CYC HALT  PRESS START TO    #   4  2346  . M90             1525
8292 81 68          B     FPHDS1         ACCEPT THIS TAPE.PRESS START          #   4  2350  B L92             1526
8293 81 69   *                                RESET AND START IF A NEW REEL
8294 81 70   *                                IS TO BE PROCESSED.
8295 81 71   *
8296 81 72   FPTRH1 H     FTREX2         PRESS START TO ACCEPT T.L.            #   4  2354  . ?25             1526
8297 81 73   *                                AS WRITTEN
8298 81 74          B     FTREX1&11      PRESS START RESET AND START TO        #   4  2358  B ?05             1526
8299 81 75   *                                TRY WRITING T.L. UP TO 10 MORE
8300 81 76   *                                SKIPS.
8301 81 77   FPTRH2 H     FPHDS1         PRESS START AFTER MOUNTING A          #   4  2362  . L92             1526
8302 81 78   *                                NEW REEL FOR OUTPUT
8303 81 79   FPTRET SBR   FPHDEX&3,RTRN2                                      #   7  2366  H O24 974         1526
8304 81 80          CS    332                                                 #   4  2373  / 332             1526
8305 81 81          CS                                                        #   1  2377  /                 1526
8306 81 82          MLC   FPTSMG,228                                          #   7  2378  M R11 228         1527
8307 81 83          W                           CHANGE REEL MESSAGE           #   1  2385  2                 1527
8308 81 84          CC    1                                                   #   2  2386  F 1               1527
8309 81 85          B     FPTRH2                                              #   4  2388  B L62             1527
8310 81 86   FPHDS1 CS    180                                                 #   4  2392  / 180             1527
8311 81 87          MLCWA 0,180                                               #   7  2396  L 000 180         1527
8312 81 88   FPHDS2 MLC   FTRAC3-3,FHTC1#2                                    #   7  2403  M 609 ?63         1527
8313 81 89          MLC   FTRAC3-4,FHTC2#1                                    #   7  2410  M 608 ?64         1528
8314 81 90          CS    179                                                 #   4  2417  / 179             1528
8315 81 91          MLC   CENSIG,113                                          #   7  2421  M 415 113         1528
8316 81 92          MLC   CENSIG,MLNOIS&7                                     #   7  2428  M 415 M63         1528
8317 81 93          RWD   0                                                   #   5  2435  U %U0 R           1528
8318 81 94          BCE   FPHDEX&4,OHLIMP,   IF NO HEADER LABEL               #   8  2440  B O25 189         1528
8319 81 95   FPHDS3 RTW   0,100                                               #   8  2448  L %U0 100 R       1529
8320 81 96   MLNOIS BCE   FPHDNR,113,                                         #   8  2456  B O37 113         1529
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

8321 81 97          BEF   *&1                                                      #   5  2464  B M69 K           1529
8322 81 98          BER   FPERRT                                                   #   5  2469  B P82 L           1529
8323 81 99          BCE   FPHDRC,WLBKTM,1    IF RETEN CYC CK                       #   8  2474  B O54 417 1       1529
8324 82 00          BCE   FPHDRC,OHLOPM,1                                          #   8  2482  B O54 419 1       1530
8325 82 01   FPHDX1 NOP   0                   EXIT-ACCESS TO H.L.                  #   4  2490  N 000             1530
8326 82 02          RWD   0                                                        #   5  2494  U %U0 R           1530
8327 82 03          BCE   FPHDEX-4,OHLIMP,   IF NO HEADER LABEL                    #   8  2499  B O17 189         1530
8328 82 04          MLC   RTCYCL&1,139        H.L.INFORMATION TO                   #   7  2507  M 462 139         1530
8329 82 05          MLC                       READ-WRITE H.L.AREA                  #   1  2514  M                 1530
8330 82 06          MLC                                                            #   1  2515  M                 1530
8331 82 07          MLC   HDRTAG,104          HEADER FLAG                          #   7  2516  M 427 104         1531
8332 82 08          SW    140                                                      #   4  2523  , 140             1531
8333 82 09          MLC   331,179                                                  #   7  2527  M 331 179         1531
8334 82 10          SW    105                                                      #   4  2534  , 105             1531
8335 82 11          BCE   *&8,TPSROP,         IF TO RETAIN TAPE SERIAL #           #   8  2538  B N53 422         1531
8336 82 12          MLC   TPSERL,109          NEW TAPE SERIAL #                    #   7  2546  M 432 109         1531
8337 82 13          BCE   *&8,FLSROP,                                              #   8  2553  B N68 420         1532
8338 82 14          MLC   109,114             TAPE SERIAL # REPLACES THE           #   7  2561  M 109 114         1532
8339 82 15   *                                  FILE SERIAL #                                                     1532
8340 82 16   FPHDX2 NOP   0                   EXIT-BEFORE WRITING H.L.             #   4  2568  N 000             1532
8341 82 17          WT    0,100                                                    #   8  2572  M %U0 100 W       1532
8342 82 18          BER   FPERWT                                                   #   5  2580  B Q56 L           1532
8343 82 19   FPHDX3 NOP   0                                                        #   4  2585  N 000             1532
8344 82 20          BCE   *&6,OTMOMP,        IF NO TM AFTER H.L.                   #   8  2589  B O02 190         1533
8345 82 21          WTM   0                                                        #   5  2597  U %U0 M           1533
8346 82 22          BCE   *&8,RLSQOP,         IF NO REEL SEQ UPDATE                #   8  2602  B O17 421         1533
8347 82 23          A     AONE,REELSQ                                              #   7  2610  A 616 441         1533
8348 82 24          CS    181                                                      #   4  2617  / 181             1533
8349 82 25   FPHDEX B     SPLCAS             RETURN TO LAST PASS INIT              #   4  2621  B T4X             1533
8350 82 26          BCE   FPHDEX-4,WLBKTM,   NO WK TAPE HL CK                      #   8  2625  B O17 417         1534
8351 82 27          B     FPHDS3                                                   #   4  2633  B M48             1534
8352 82 28   FPHDNR CS    120                 CLEAR NOISE REC AREA                 #   4  2637  / 120             1534
8353 82 29          B     FPHDS3                                                   #   4  2641  B M48             1534
8354 82 30   *                  RETENTION CYCLE CK.
8355 82 31          DCW   #2                                                       #   2  2646                    1534
8356 82 32          DCW   #3                                                       #   3  2649                    1534
8357 82 33   CRTCY  DCW   #4                                                       #   4  2653                    1534
8358 82 34   FPHDRC ZA    138,CRTCY          MOVE TAPE INFO. TO CHECK BUCKET       #   7  2654  ? 138 O53         1535
8359 82 35          MLC                                                            #   1  2661  M                 1535
8360 82 36          MLC                                                            #   1  2662  M                 1535
8361 82 37          SW    OHDATE-2                                                 #   4  2663  , 455             1535
8362 82 38   CLW    C     OHDATE-3,CRTCY-7   COMPARE YEAR                          #   7  2667  C 454 O46         1535
8363 82 39          BU    MODY                                                     #   5  2674  B P41 /           1535
8364 82 40          A     CRTCY-4,CRTCY      ADD TAPE DAYS TO RT CYCLE             #   7  2679  A O49 O53         1535
8365 82 41          S     OHDATE,CRTCY       SUB CONT DAYS FROM RT CYCLE           #   7  2686  S 457 O53         1536
8366 82 42          CW    OHDATE-2                                                 #   4  2693  ) 455             1536
8367 82 43          BWZ   FPHDX1,CRTCY,K     CAN WE WRITE ON TAPE                  #   8  2697  V M90 O53 K       1536
8368 82 44          CS    332                NO-PRINT MESSAGE                      #   4  2705  / 332             1536
8369 82 45          CS                       INDICATING DAYS TAPE                  #   1  2709  /                 1536
8370 82 46          MLC   SAVMS,227          IS TO BE RETAINED                     #   7  2710  M P81 227         1536
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

8371 82 47          MLNS  CRTCY,222                                            #   7  2717  D O53 222         1536
8372 82 48          MLNS                                                       #   1  2724  D                 1537
8373 82 49          MLNS                                                       #   1  2725  D                 1537
8374 82 50          MLC   SAVM1                                                #   4  2726  M P76             1537
8375 82 51          MLC   SAVM2                                                #   4  2730  M P71             1537
8376 82 52          W                                                          #   1  2734  2                 1537
8377 82 53          CC    1                                                    #   2  2735  F 1               1537
8378 82 54          B     FPHDH3                                               #   4  2737  B L46             1537
8379 82 55   MODY   S     TSF1,CRTCY          SUBTRACT 365 FROM                #   7  2741  S P58 O53         1538
8380 82 56          A                         RT CYCLE AND ADD 1 TO            #   1  2748  A                 1538
8381 82 57          A                         TAPE YEARS                       #   1  2749  A                 1538
8382 82 58          B     CLW                                                  #   4  2750  B O67             1538
8383 82 59          DCW   @1@                                                  #   1  2754                    1538
8384 82 60          DCW   @0@                                                  #   1  2755                    1538
8385 82 61   TSF1   DCW   @365@                                                #   3  2758                    1538
8386 82 62   SAVM2  DCW   @RETAIN TAPE  @                                      #  13  2771                    1539
8387 82 63   SAVM1  DCW   @ FOR @                                              #   5  2776                    1539
8388 82 64   SAVMS  DCW   @ DAYS@                                              #   5  2781                    1539
8389 82 65   *
8390 82 66   *     HEADER LABEL READ ERROR ENTRANCE AND READ-WRITE
8391 82 67   *           ERROR  ROUTINE
8392 82 68   FPERRT MLC   KB,FPPSW                                             #   7  2782  M 615 Q09         1539
8393 82 69          A     AONE,FHTC1                                           #   7  2789  A 616 ?63         1539
8394 82 70          BWZ   FPHDH1,FHTC1-1,S     IF UNREADABLE BLK               #   8  2796  V L16 ?62 S       1540
8395 82 71          BSP   0                                                    #   5  2804  U %U0 B           1540
8396 82 72   FPPSW  B     FPHDS3              NOP IF WRITE CONDITION           #   4  2809  B M48             1540
8397 82 73          BCE   *&5,FHTC1,2          IF TIME TO SKIP                 #   8  2813  B Q25 ?63 2       1540
8398 82 74          B     FPPARX                                               #   4  2821  B Q52             1540
8399 82 75          MLC   FTRAC3-4,FHTC1                                       #   7  2825  M 608 ?63         1540
8400 82 76          SKP   0                                                    #   5  2832  U %U0 E           1541
8401 82 77          A     AONE,FHTC2                                           #   7  2837  A 616 ?64         1541
8402 82 78          BCE   FPHDH2,FHTC2,0                                       #   8  2844  B L31 ?64 0       1541
8403 82 79   FPPARX B     0                                                    #   4  2852  B 000             1541
8404 82 80   *
8405 82 81   *     HEADER LABEL WRITE ERROR ENTRANCE
8406 82 82   *
8407 82 83   FPERWT SBR   FPPARX&3,FPHDX2                                      #   7  2856  H Q55 N68         1541
8408 82 84          SBR   FPPARX-5,FPHDH2                                      #   7  2863  H Q47 L31         1541
8409 82 85          MLC   NOP,FPPSW                                            #   7  2870  M 614 Q09         1542
8410 82 86          B     FPERRT&7                                             #   4  2877  B P89             1542
8411 82 87   *
8412 82 88   *     TRAILER LABEL WRITE ERROR ENTRANCE
8413 82 89   *
8414 82 90   FPTRPE SBR   FPPARX&3,FTREX1&18                                   #   7  2881  H Q55 ?12         1542
8415 82 91          SBR   FPPARX-5,FPTRH1                                      #   7  2888  H Q47 L54         1542
8416 82 92          B     FPERWT&14                                            #   4  2895  B Q70             1542
8417 82 93   FPTSMG DCW   @CHANGE UNIT 0@                                      #  13  2911                    1543
8418 82 94   *
8419 82 95   *     TRAILER  LABEL  ROUTINE
8420 82 96   *
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 SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD

8421 82 97   LMHLTP CS    180                                                  #   4  2912  / 180             1543
8422 82 98          MLCWA 0,180              LOAD IN A G/M-W/M                 #   7  2916  L 000 180         1543
8423 82 99          BCE   FTREX2,OTLIMP,    NO TRAILER LABEL                   #   8  2923  B ?25 192         1543
8424 83 00          WTM   0                                                    #   5  2931  U %U0 M           1543
8425 83 01          MLC   @1EOR @,104                                          #   7  2936  M ?69 104         1544
8426 83 02          BCE   *&5,EOJBK,1       IF END OF JOB                      #   8  2943  B R55 735 1       1544
8427 83 03          B     *&8                                                  #   4  2951  B R62             1544
8428 83 04          MLC   @F@,103                                              #   7  2955  M ?70 103         1544
8429 83 05          MLC   MULBKC,109         TAPE BLOCK COUNT                  #   7  2962  M 740 109         1544
8430 83 06          MLC   ACTNR,*&4                                            #   7  2969  M 566 R79         1545
8431 83 07          MLC   000,119                                              #   7  2976  M 000 119         1545
8432 83 08          SW    110                                                  #   4  2983  , 110             1545
8433 83 09          S     RMOVEP,119                                           #   7  2987  S 699 119         1545
8434 83 10   FTREX1 NOP   0                  EXIT-ACCESS TO T.L.               #   4  2994  N 000             1545
8435 83 11          MLC   FTRAC3-3,FHTC1                                       #   7  2998  M 609 ?63         1545
8436 83 12          MLC   FTRAC3-4,FHTC2                                       #   7  3005  M 608 ?64         1546
8437 83 13          WT    0,100                                                #   8  3012  M %U0 100 W       1546
8438 83 14          BER   FPTRPE                                               #   5  3020  B Q81 L           1546
8439 83 15   FTREX2 NOP   0                  EXIT-AFTER T.L. WRITE             #   4  3025  N 000             1546
8440 83 16          CS    180                                                  #   4  3029  / 180             1546
8441 83 17          BCE   RWINDP,EOJBK,1                                       #   8  3033  B W51 735 1       1546
8442 83 18          MLC   FTRAC3,MULBKC                                        #   7  3041  M 612 740         1547
8443 83 19          WTM   0                                                    #   5  3048  U %U0 M           1547
8444 83 20          RWU   0                                                    #   5  3053  U %U0 U           1547
8445 83 21          B     FPTRET            OPEN NEW REEL                      #   4  3058  B L66             1547
8446 83 22   FTRAC3 EQU   SIX 0S-1          FIVE ZEROS                         #      0612
8447 83 23          LTORG *                                                    #             3062
             FHTC1# DCW   #02                                                  #   2  3063             AREA   1547
             FHTC2# DCW   #01                                                  #   1  3064             AREA   1547
                    DCW   @1EOR @                                              #   5  3069             LIT    1547
                    DCW   @F@                                                  #   1  3070             LIT    1548
8448 83 24          EX    WELEAT                                               #            B |2V             1549
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

8449 83 25          JOB   ** IBM 1401 SORT 7 VERSION 2 MULTIPHASE          #
8450 83 26   *              MULTIPHASE FINAL OUTPUT LABEL ROUTINE TO WRITE
8451 83 27   *              STANDARD HEADER AND TRAILER LABELS ON FINAL OUTPUT
8452 83 28   *              TAPES FOR 120 CHARACTER LABEL OPTION
8453 83 29          SFX   #                                                #
8454 83 30          ORG   INTLB                                            #             5061
8455 83 31          MLC   TPNOBK,FPHES3-24                                 #   7  5061  M 732 M26         1552
8456 83 32          MLC   TPNOBK,FPHES3&3                                  #   7  5068  M 732 M53         1552
8457 83 33          MLC   TPNOBK,FPHEX2&7                                  #   7  5075  M 732 N49         1552
8458 83 34          MLC   TPNOBK,FPHEX1&7                                  #   7  5082  M 732 M91         1552
8459 83 35          MLC   TPNOBK,FPHEX3&15                                 #   7  5089  M 732 N74         1552
8460 83 36          MLC   TPNOBK,FPPSSW-2                                  #   7  5096  M 732 P96         1553
8461 83 37          MLC   TPNOBK,FPPERX-17                                 #   7  5103  M 732 Q24         1553
8462 83 38          MLC   TPNOBK,LMHKTP&23                                 #   7  5110  M 732 R32         1553
8463 83 39          MLC   TPNOBK,FTRAX1&21                                 #   7  5117  M 732 R88         1553
8464 83 40          MLC   TPNOBK,FTRAX2&26                                 #   7  5124  M 732 ?24         1553
8465 83 41          MLC   TPNOBK,FTRAX2&31                                 #   7  5131  M 732 ?29         1554
8466 83 42          MLC   TPNOBK,FPTMEG                                    #   7  5138  M 732 R08         1554
8467 83 43          MLC   TPNOBK,SMVM2                                     #   7  5145  M 732 P61         1554
8468 83 44          BCE   *&15,OHLIMP,4                                    #   8  5152  B /7U 189 4       1554
8469 83 45          MLC   NOP,PRILAL                                       #   7  5160  M 614 N07         1554
8470 83 46          NOP   NOP,PRILAL                                       #   7  5167  N 614 N07         1555
8471 83 47          MLC   GPMARK,LMHKTP&8                                  #   7  5174  M 350 R17         1555
8472 83 48          MLC   GPMARK,FPHES1&8                                  #   7  5181  M 350 M00         1555
8473 83 49          MLC   BLKCNT&6,WOBR&19                                 #   7  5188  M 87Y 968         1555
8474 83 50          BCE   NWOUTP,PIMULT,6                                  #   8  5195  B S8U 193 6       1555
8475 83 51          ORG   MLEND                                            #             2316
8476 83 52   *
8477 83 53   *              HALT AREA FOR FINAL OUTPUT HEADER TRAILER ROUTINE
8478 83 54   *
8479 83 55   FPHEH1 MLC   FTREC3-3,FHTD1                                   #   7  2316  M 609 ?36         1556
8480 83 56   *                                  BLK AS HDR---RETEN CYC WILL NOT
8481 83 57          H     FPHEX1              BE CHECKED-PRESS START RESET AND  #   4  2323  . M84             1556
8482 83 58          B     FPHES2              START TO RETRY UP TO 99 TIMES     #   4  2327  B M04             1556
8483 83 59   *                                  A NEW REEL MAY BE MOUNTED
8484 83 60   FPHEH2 H     FPHES2              PRESS START TO PRO A NEW REEL.    #   4  2331  . M04             1556
8485 83 61          MLC   FTREC3-4,FHTD2                                   #   7  2335  M 608 ?37         1556
8486 83 62          B     FPHEX2              TO 9 SKIPS                        #   4  2342  B N42             1556
8487 83 63   FPHEH3 H     FPHEX1              RET CYC HALT PRESS START TO       #   4  2346  . M84             1556
8488 83 64          B     FPHES1              ACCEPT THIS TAPE.START RESET AND  #   4  2350  B L92             1557
8489 83 65   *                                  START IF A NEW REEL IS TO BE PRO-
8490 83 66   *                                  CESSED
8491 83 67   FPTSH1 H     FTRAX2              PRESS START TO ACCEPT TL AS       #   4  2354  . R98             1557
8492 83 68          B     FTRAX1&11           WRITTEN-START RESET AND START TO  #   4  2358  B R78             1557
8493 83 69   *                                  WRITING TL UP TO 10 MORE SKIPS
8494 83 70   FPTSH2 H     FPHES1              PRESS START AFTER MOUNTING A NEW  #   4  2362  . L92             1557
8495 83 71   *                                  REEL FOR OUTPUT
8496 83 72   FPTRAT SBR   FPHDAX&3,RTRN2                                   #   7  2366  H N99 974         1557
8497 83 73          CS    332                                              #   4  2373  / 332             1557
8498 83 74          CS                                                     #   1  2377  /                 1557
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

8499 83 75          MLC   FPTMEG,228                                        #   7  2378  M R08 228         1558
8500 83 76          W                        CHANGE REEL MESSAGE            #   1  2385  2                 1558
8501 83 77          CC    1                                                 #   2  2386  F 1               1558
8502 83 78          B     FPTSH2                                            #   4  2388  B L62             1558
8503 83 79   FPHES1 CS    332                                               #   4  2392  / 332             1558
8504 83 80          CS                                                      #   1  2396  /                 1558
8505 83 81          MLCWA 0,320                                             #   7  2397  L 000 320         1558
8506 83 82   FPHES2 MLC   FTREC3-3,FHTD1#2                                  #   7  2404  M 609 ?36         1559
8507 83 83          MLC   FTREC3-4,FHTD2#1                                  #   7  2411  M 608 ?37         1559
8508 83 84          CS    319                                               #   4  2418  / 319             1559
8509 83 85          CS                                                      #   1  2422  /                 1559
8510 83 86          RWD   0                                                 #   5  2423  U %U0 R           1559
8511 83 87          BCE   FPHDAX&4,OHLIMP,     IF NO HEADER LABEL           #   8  2428  B O00 189         1559
8512 83 88          MLC   CENSIG,213                                        #   7  2436  M 415 213         1559
8513 83 89          MLC   CENSIG,FPNSSE&7                                   #   7  2443  M 415 M65         1560
8514 83 90   FPHES3 RTW   0,200                                             #   8  2450  L %U0 200 R       1560
8515 83 91   FPNSSE BCE   FPHENR,213,        NOISE RECORD TEST              #   8  2458  B O12 213         1560
8516 83 92          BEF   *&1                                               #   5  2466  B M71 K           1560
8517 83 93          BER   FPARRT                                            #   5  2471  B P71 L           1560
8518 83 94          BCE   FPHERC,OHLOPM,1                                   #   8  2476  B O29 419 1       1561
8519 83 95   FPHEX1 NOP   0                  USER EXIT                      #   4  2484  N 000             1561
8520 83 96          RWD   0                                                 #   5  2488  U %U0 R           1561
8521 83 97          MLC   RESEQE&1,239                                      #   7  2493  M 462 239         1561
8522 83 98          MLC   FILESE,229                                        #   7  2500  M 452 229         1561
8523 83 99   PRILAL MLC                                                     #   1  2507  M                 1561
8524 84 00          NOP                                                     #   1  2508  N                 1561
8525 84 01          MLC   HDRTAG,204                                        #   7  2509  M 427 204         1562
8526 84 02          MLC   SYSCRE,255                                        #   7  2516  M 457 255         1562
8527 84 03          BCE   *&12,FLSROP,                                      #   8  2523  B N42 420         1562
8528 84 04          SW    225                                               #   4  2531  , 225             1562
8529 84 05          MLC   234,229                                           #   7  2535  M 234 229         1562
8530 84 06   FPHEX2 NOP   0                  USER EXIT                      #   4  2542  N 000             1562
8531 84 07          WT    0,200                                             #   8  2546  M %U0 200 W       1563
8532 84 08          BER   FPARWT                                            #   5  2554  B Q45 L           1563
8533 84 09   FPHEX3 NOP   0                  USER AREA                      #   4  2559  N 000             1563
8534 84 10          BCE   *&6,OTMOMP,        IF NO TM AFTER HL              #   8  2563  B N76 190         1563
8535 84 11          WTM   0                                                 #   5  2571  U %U0 M           1563
8536 84 12          BCE   *&8,RLSQOP,        IF NO REEL SEQ UPDATE          #   8  2576  B N91 421         1563
8537 84 13          A     AONE,REELSQ                                       #   7  2584  A 616 441         1564
8538 84 14          CS    332                                               #   4  2591  / 332             1564
8539 84 15          CS                                                      #   1  2595  /                 1564
8540 84 16   FPHDAX B     SPLCAS             RETURN TO LAST PASS INIT       #   4  2596  B T4X             1564
8541 84 17          BCE   FPHDAX-5,WLBKTM,     NO WORK TAPE HL CHECK        #   8  2600  B N91 417         1564
8542 84 18          B     FPHES3                                            #   4  2608  B M50             1564
8543 84 19   FPHENR CS    220                CLEAR NOISE RECORD AREA        #   4  2612  / 220             1564
8544 84 20          B     FPHES3                                            #   4  2616  B M50             1565
8545 84 21   *              RETENTION CYCLE CHECK
8546 84 22          DCW   #4                                                #   4  2623                    1565
8547 84 23          DCW   #2                                                #   2  2625                    1565
8548 84 24   UTCRTZ DCW    #3                                               #   3  2628                    1565
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 SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

8549 84 25   FPHERC MLC   214,UTCRTZ                                       #   7  2629  M 214 O28         1565
8550 84 26          MLC                                                    #   1  2636  M                 1565
8551 84 27          ZA                                                     #   1  2637  ?                 1565
8552 84 28          SW    CREATD-2                                         #   4  2638  , 435             1566
8553 84 29   CLWIL8 C     CREATD-3,UTCRTZ-7                                #   7  2642  C 434 O21         1566
8554 84 30          BU    CHANGE                                           #   5  2649  B P31 /           1566
8555 84 31          A     UTCRTZ,UTCRTZ-5    ADD TAPE DAYS TO RETENTION CYCLE  #   7  2654  A O28 O23         1566
8556 84 32          S     CREATD,UTCRTZ-5                                  #   7  2661  S 437 O23         1566
8557 84 33          CW    CREATD-2                                         #   4  2668  ) 435             1566
8558 84 34          BWZ   FPHEX1,UTCRTZ-5,K                                #   8  2672  V M84 O23 K       1567
8559 84 35          CS    180                                              #   4  2680  / 180             1567
8560 84 36          MLC   280,180            STORE LABEL PRO TEMPORE       #   7  2684  M 280 180         1567
8561 84 37          CS    319                                              #   4  2691  / 319             1567
8562 84 38          CS                       PRINT MESSAGE INDICATING DAYS #   1  2695  /                 1567
8563 84 39          MLC   SMVMS,227          TAPE IS TO BE RETAINED        #   7  2696  M P70 227         1567
8564 84 40          MLNS  UTCRTZ-5                                         #   4  2703  D O23             1567
8565 84 41          MLNS                                                   #   1  2707  D                 1568
8566 84 42          MLNS                                                   #   1  2708  D                 1568
8567 84 43          MLC   SMVM1                                            #   4  2709  M P66             1568
8568 84 44          MLC   SMVM2                                            #   4  2713  M P61             1568
8569 84 45          W                                                      #   1  2717  2                 1568
8570 84 46          CC    1                                                #   2  2718  F 1               1568
8571 84 47          MLC   180,280                                          #   7  2720  M 180 280         1568
8572 84 48          B     FPHEH3                                           #   4  2727  B L46             1569
8573 84 49   CHANGE A     FST364&2,UTCRTZ                                  #   7  2731  A P48 O28         1569
8574 84 50          A                                                      #   1  2738  A                 1569
8575 84 51          S                                                      #   1  2739  S                 1569
8576 84 52          B     CLWIL8                                           #   4  2740  B O42             1569
8577 84 53   FST364 DCW   @365@                                            #   3  2746                    1569
8578 84 54          DCW   @1@                                              #   1  2747                    1569
8579 84 55          DCW   @0@                                              #   1  2748                    1570
8580 84 56   SMVM2  DCW   @RETAIN TAPE  @                                  #  13  2761                    1570
8581 84 57   SMVM1  DCW   @ FOR @                                          #   5  2766                    1570
8582 84 58   SMVMS  DCW   @DAYS@                                           #   4  2770                    1570
8583 84 59   *              HEADER LABEL READ-WRITE ERROR ROUTINE
8584 84 60   FPARRT MLC   KB,FPPSSW                                        #   7  2771  M 615 P98         1570
8585 84 61          A     AONE,FHTD1                                       #   7  2778  A 616 ?36         1570
8586 84 62          BWZ   FPHEH1,FHTD1,S     IF UNREADABLE BLOCK           #   8  2785  V L16 ?36 S       1571
8587 84 63          BSP   0                                                #   5  2793  U %U0 B           1571
8588 84 64   FPPSSW B     FPHES3             NOP IF WRITE CONDITION        #   4  2798  B M50             1571
8589 84 65          BCE   *&5,FHTD1,2                                      #   8  2802  B Q14 ?36 2       1571
8590 84 66          B     FPPERX                                           #   4  2810  B Q41             1571
8591 84 67          MLC   FTREC3-4,FHTC1                                   #   7  2814  M 608 ?63         1571
8592 84 68          SKP   0                                                #   5  2821  U %U0 E           1572
8593 84 69          A     AONE,FHTD2                                       #   7  2826  A 616 ?37         1572
8594 84 70          BCE   FPHEH2,FHTD2,O                                   #   8  2833  B L31 ?37 O       1572
8595 84 71   FPPERX B     0                                                #   4  2841  B 000             1572
8596 84 72   *
8597 84 73   *              HEADER LABEL WRITE ERROR ENTRANCE
8598 84 74   *
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 SEQ PG LIN  LABEL  OP    OPERANDS                                             SFX CT  LOCN  INSTRUCTION TYPE  CARD

8599 84 75   FPARWT SBR   FPPERX&3,FPHEX2                                       #   7  2845  H Q44 N42         1572
8600 84 76          SBR   FPPERX-5,FPHEH2                                       #   7  2852  H Q36 L31         1572
8601 84 77          MLC   NOP,FPPSSW                                            #   7  2859  M 614 P98         1573
8602 84 78          B     FPARRT&7                                              #   4  2866  B P78             1573
8603 84 79   *              TRAILER LABEL WRITE ERROR ENTRANCE
8604 84 80   FRTSPE SBR   FPPERX&3,FTRAX1&18                                    #   7  2870  H Q44 R85         1573
8605 84 81          SBR   FPPERX-5,FPTSH1                                       #   7  2877  H Q36 L54         1573
8606 84 82          B     FPARWT&14                                             #   4  2884  B Q59             1573
8607 84 83   FPTMEG DCW   @CHANGE REEL ON UNIT 0@                               #  21  2908                    1574
8608 84 84   *
8609 84 85   *              TRAILER LABEL ROUTINE
8610 84 86   *
8611 84 87   LMHKTP CS    330                                                   #   4  2909  / 330             1574
8612 84 88          CS                                                          #   1  2913  /                 1574
8613 84 89          MLCWA 0,320                                                 #   7  2914  L 000 320         1574
8614 84 90          BCE   FTRAX2,OTLIMP,     NO TRAILER LABELS                  #   8  2921  B R98 192         1575
8615 84 91          WTM   0                                                     #   5  2929  U %U0 M           1575
8616 84 92          BCE   *&12,EOJBK,1       IF END OF JOB                      #   8  2934  B R53 735 1       1575
8617 84 93          MLC   @1EOR @,204                                           #   7  2942  M ?42 204         1575
8618 84 94          B     *&8                                                   #   4  2949  B R60             1575
8619 84 95          MLC   @1EOF @,204                                           #   7  2953  M ?47 204         1575
8620 84 96          MLC   MULBKC,271                                            #   7  2960  M 740 271         1576
8621 84 97   FTRAX1 NOP   0                  USERS EXIT                         #   4  2967  N 000             1576
8622 84 98          MLC   FTREC3-3,FHTD1                                        #   7  2971  M 609 ?36         1576
8623 84 99          MLC   FTREC3-4,FHTD2                                        #   7  2978  M 608 ?37         1576
8624 85 00          WT    0,200                                                 #   8  2985  M %U0 200 W       1576
8625 85 01          BER   FRTSPE                                                #   5  2993  B Q70 L           1576
8626 85 02   FTRAX2 NOP   0                  USERS EXIT                         #   4  2998  N 000             1577
8627 85 03          CS    332                                                   #   4  3002  / 332             1577
8628 85 04          BCE   RWINDP,EOJBK,1                                        #   8  3006  B W51 735 1       1577
8629 85 05          MLC   FTREC3,MULBKC                                         #   7  3014  M 612 740         1577
8630 85 06          WTM   0                                                     #   5  3021  U %U0 M           1577
8631 85 07          RWU   0                                                     #   5  3026  U %U0 U           1577
8632 85 08          B     FPTRAT             OPEN NEW REEL                      #   4  3031  B L66             1577
8633 85 09   FTREC3 EQU   SIX 0S-1                                              #      0612
8634 85 10          LTORG *                                                     #             3035
             FHTD1# DCW   #02                                                   #   2  3036             AREA  1578
             FHTD2# DCW   #01                                                   #   1  3037             AREA  1578
                    DCW   @1EOR @                                               #   5  3042             LIT   1578
                    DCW   @1EOF @                                               #   5  3047             LIT   1578
8635 85 11          EX    INTLB                                                 #            B |6/             1579
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 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

8636 85 12          JOB   ** IBM 1401 SORT 7 VERSION 2  MULTIPHASE           #
8637 85 13          ORG   3200                                               #           3200
8638 85 14   *                                INITIALIZE END OF JOB ROUTINE
8639 85 15   EOJ    MLC   ACNT,UNRDCK&6                                      #   7  3200  M 569 B48         1582
8640 85 16          MLC   ACNT,FERMS&3                                       #   7  3207  M 569 C96         1582
8641 85 17          MLC   ACTNR,PERCK&3                                      #   7  3214  M 566 B62         1582
8642 85 18          MLC   ACTNR,ERRC-8                                       #   7  3221  M 566 D55         1582
8643 85 19          MLC   ACTNR,PADQZ&11                                     #   7  3228  M 566 D55         1582
8644 85 20          MLC   PADQNQ,PADQZ&6                                     #   7  3235  M 628 D50         1583
8645 85 21   UNRDCK C     SIX 0S,0            UNREADABLE RCD CHECK           #   7  3242  C 613 000         1583
8646 85 22          CS    332                                                #   4  3249  / 332             1583
8647 85 23          CS                                                       #   1  3253  /                 1583
8648 85 24          BU    FERMS                                              #   5  3254  B C93 /           1583
8649 85 25   PERCK  C     0,CTNRML            TOTAL RCD CHECK                #   7  3259  C 000 539         1583
8650 85 26          BU    ERRC                                               #   5  3266  B D63 /           1583
8651 85 27          MLC   CTNRML,TOTMS-24                                    #   7  3271  M 539 E14         1584
8652 85 28          MLC   TOTMS,230                                          #   7  3278  M E38 230         1584
8653 85 29          W                         PRINT TOTAL RCD MSG            #   1  3285  2                 1584
8654 85 30          CS    230                                                #   4  3286  / 230             1584
8655 85 31          MLC   RMOVEP,PDMSG-23                                    #   7  3290  M 699 E45         1584
8656 85 32          C     PDMSG-23,@       @  PADDED RCD CHECK               #   7  3297  C E45 E07         1584
8657 85 33          BU    PRNTQ                                              #   5  3304  B C16 /           1584
8658 85 34          MLC   SIX 0S,PDMSG-23                                    #   7  3309  M 613 E45         1585
8659 85 35   PRNTQ  MLC   PDMSG,229                                          #   7  3316  M E68 229         1585
8660 85 36          W                         PRINT PADDED RCD MSG           #   1  3323  2                 1585
8661 85 37          CS    230                                                #   4  3324  / 230             1585
8662 85 38          S     RMOVEP,CTNRML                                      #   7  3328  S 699 539         1585
8663 85 39          MZ    BLANK,CTNRML                                       #   7  3335  Y 619 539         1585
8664 85 40          MLC   CTNRML,FINMS-21                                    #   7  3342  M 539 E74         1586
8665 85 41   PTFIN  MLC   FINMS,227                                          #   7  3349  M E95 227         1586
8666 85 42          W                         PRINT FINAL RCD OUTPUT MSG     #   1  3356  2                 1586
8667 85 43          CC    K                                                  #   2  3357  F K               1586
8668 85 44          CS    332                                                #   4  3359  / 332             1586
8669 85 45          CS                                                       #   1  3363  /                 1586
8670 85 46          MLNS  O2TUHP,PRMS-12                                     #   7  3364  D 644 F31         1586
8671 85 47          MLC   PRMS,218                                           #   7  3371  M F43 218         1587
8672 85 48          W                         PRINT END OF SORT MSG          #   1  3378  2                 1587
8673 85 49          CC    1                                                  #   2  3379  F 1               1587
8674 85 50          BWZ   IWTM2P,URPIML,2     DUMP TAPE OPTION BRANCH        #   8  3381  V D74 186 2       1587
8675 85 51   ENDSRT H     *-3                 FINAL HALT                     #   4  3389  . C89             1587
8676 85 52   FERMS  MLC   0,FINER-19                                         #   7  3393  M 000 F01         1587
8677 85 53          MLC   FINER,225                                          #   7  3400  M F20 225         1587
8678 85 54          W                         PRINT UNRD RCD MSG             #   1  3407  2                 1588
8679 85 55          CS    230                                                #   4  3408  / 230             1588
8680 85 56          SW    PTFIN-10,PTFIN-17                                  #   7  3412  , C39 C32         1588
8681 85 57          MLC   ERRC-8,PTFIN-4                                     #   7  3419  M D55 C45         1588
8682 85 58          MLC   ERRC-8                                             #   4  3426  M D55             1588
8683 85 59          MLC   ERRC-8,PTFIN-15                                    #   7  3430  M D55 C34         1588
8684 85 60          CW    PTFIN-10,PTFIN-17                                  #   7  3437  ) C39 C32         1588
8685 85 61   PADQZ  BCE   PERCK&12,0,                                        #   8  3444  B B71 000         1589
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 SEQ PG LIN  LABEL  OP    OPERANDS                                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

8686 85 62          MLC   0,FINMS-21                                               #   7  3452  M 000 E74         1589
8687 85 63          B     PTFIN                                                    #   4  3459  B C49             1589
8688 85 64   ERRC   MLC   ERCTMG,236                                               #   7  3463  M F25 236         1589
8689 85 65          B     ERRC-11                                                  #   4  3470  B D52             1589
8690 85 66   IWTM2P MLC   URPIML,WTMBD&3     REWIND DUMP TAPE                      #   7  3474  M 186 D91         1589
8691 85 67          MLC   URPIML,WTMBD&8                                           #   7  3481  M 186 D96         1590
8692 85 68   WTMBD  WTM   0                                                        #   5  3488  U %U0 M           1590
8693 85 69          RWU   0                                                        #   5  3493  U %U0 U           1590
8694 85 70          B     ENDSRT                                                   #   4  3498  B C89             1590
8695 85 71          LTORG *                                                        #             3502
                    DCW   @      @                                                 #   6  3507              LIT   1590
8696 85 72   TOTMS  DCW   @        TOTAL RECORDS PROCESSED@                        #  31  3538                    1591
8697 85 73   PDMSG  DCW   @        PADDED RECORDS REMOVED@                         #  30  3568                    1592
8698 85 74   FINMS  DCW   @       RECORDS FINAL OUTPUT@                            #  27  3595                    1593
8699 85 75   FINER  DCW   @       UNREADABLE RECORDS@                              #  25  3620                    1594
8700 85 76   ERCTMG DCW   @ERROR@                                                  #   5  3625                    1594
8701 85 77   PRMS   DCW   @OUTP  -END OF SORT@                                     #  18  3643                    1595
8702 85 78          END   EOJ                                                      #            / B00 080
```

| SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABNORM | 6655 | ABSD # | 2588 | ABZX | 1346 | ACCEPT | 1944 | ACLINP | 3103 | ACNCF# | 3384 | ACNT | 2697 |
| ACNT # | 569 | ACNTB# | 3393 | ACNTR# | 624 | ACOA # | 3075 | ACPLB | 4873 | ACTNR | 2700 | ACTNR# | 566 |
| AD4RLI | 3567 | ADD | 3511 | ADD4 | 3415 | ADDB | 2149 | ADDBI | 4319 | ADDBLF | 4779 | ADDNCF | 2430 |
| ADDRSS | 5563 | ADDTO | 1042 | ADHOLD | 4994 | ADJEND | 2699 | ADJMS# | 2254 | ADRLRD | 3105 | ADRTBL | 3066 |
| AFOUR# | 618 | AGMEBO | 2643 | AGMEBP | 666 | AGMEOA | 2640 | AGMEOP | 660 | AICF12 | 3387 | AINT | 1034 |
| AIRA1 | 2658 | AIRA1# | 702 | AIRA2 | 2661 | AIRA2# | 705 | AIRA3 | 2664 | AIRA3# | 708 | AIRA4 | 5521 |
| AIRA4# | 5042 | ALGEOS | 2576 | ALOP | 6589 | ALOW | 870 | ALOW # | 978 | ALTRD# | 3775 | AMIRA2 | 3339 |
| AMIRA3 | 3361 | AMV # | 3394 | AMY | 4469 | ANCCF | 2486 | ANNENC | 5533 | ANOSCK | 2338 | ANWM12 | 3126 |
| ANWMBI | 3284 | AO2THA | 2646 | AONE # | 616 | AOWA | 2652 | AREAA1 | 4988 | AREAB1 | 4982 | AREAC1 | 4976 |
| AREAN# | 5025 | AREFO | 2715 | AREFO# | 726 | ARELBO | 2637 | ARELBP | 663 | ARELO | 2685 | ARELO# | 720 |
| ARL | 6532 | ARNOUT | 5492 | ART | 4497 | ARTRN | 5446 | ASCNDG | 5949 | ASCNDN | 5853 | ASD # | 2484 |
| ASDEND | 2477 | ASDEOF | 2432 | ASIX # | 2315 | ASW12# | 3305 | ASWNCF | 3188 | ATEK | 4243 | ATWO # | 617 |
| AUGBI | 5055 | AWAY | 1147 | AWAY # | 918 | AWIRA2 | 3218 | AWIRA3 | 3247 | AWMS12 | 3154 | AWMSET | 3276 |
| AZERO# | 608 | AZERO1 | 5843 | B | 199 | B000R | 1855 | B001R | 1883 | B002B | 3120 | B002R | 1956 |
| B002RA | 2034 | B004B | 3155 | B008B | 3225 | B00EQ | 1499 | B010R | 1841 | B010RI | 1834 | B011R | 1876 |
| B011T | 1073 | B011TA | 1059 | B011TB | 1087 | B011TH | 1080 | B013R | 1848 | B016B | 3365 | B01EQ | 1506 |
| B032B | 3400 | B03EQ | 1525 | B04EQ | 1530 | B064B | 3470 | B07EQ | 1534 | B128B | 3610 | B2000 | 1398 |
| B2001 | 1409 | B201W | 1661 | B202W | 1756 | B203W | 1783 | B211W | 1650 | B212W | 1691 | B2200 | 1356 |
| B2201 | 1391 | B2201V | 1370 | B2202 | 1441 | B2202A | 1448 | B220VL | 1377 | B2211 | 1457 | B2211B | 1434 |
| B2211C | 1453 | B2211D | 1427 | B2212 | 1464 | B256B | 3645 | B4S07 | 3013 | B4S08 | 3017 | B4S10 | 2838 |
| B4S10A | 2886 | B4S18 | 3053 | B4S18A | 3080 | B4S19 | 3046 | B4S20 | 3054 | B4S21 | 3059 | B4SS5 | 2966 |
| B500B | 3634 | B501B | 3669 | B502B | 3693 | B503B | 3739 | B504B | 3833 | B505B | 3763 | B506B | 3787 |
| B512B | 3715 | B514B | 3844 | B515B | 3809 | B516B | 3798 | B522B | 3704 | B600B | 3389 | B601B | 3424 |
| B602B | 3448 | B603B | 3494 | B604B | 3588 | B605B | 3518 | B606B | 3542 | B612B | 3459 | B614B | 3599 |
| B615B | 3564 | B616B | 3553 | B700B | 3144 | B701B | 3179 | B702B | 3203 | B703B | 3249 | B704B | 3343 |
| B705B | 3273 | B706B | 3297 | B712B | 3214 | B714B | 3354 | B715B | 3319 | B716B | 3308 | BACK1# | 3190 |
| BACK2# | 3178 | BACKSP | 2525 | BAKTRL | 2678 | BAR1 # | 2751 | BAR2 # | 2843 | BAR3 # | 2872 | BBP2 | 2926 |
| BBP2 # | 2115 | BBP3 | 2926 | BBP3 # | 2115 | BBP4 | 2926 | BBP4 # | 2115 | BBPHLT | 3034 | BBPQ8G | 2962 |
| BBPQQG | 2137 | BBPSKP | 3020 | BBS10 | 3087 | BBS100 | 3095 | BCKHDR | 2307 | BCKHER | 2300 | BCKSPP | 1941 |
| BCKTRL | 2700 | BCLIN# | 2728 | BCLWMK | 5397 | BCNCF# | 3009 | BCNTA# | 3018 | BCNTR2 | 2436 | BCNTR3 | 2486 |
| BCOA # | 2699 | BFRST3 | 850 | BGET1 | 2502 | BI | 3986 | BICF # | 3012 | BILRGM | 5650 | BISUBB | 7678 |
| BKET | 6246 | BL | 85 | BL4 | 5642 | BLANK | 2570 | BLANK# | 619 | BLANK2 | 2572 | BLCMPT | 6245 |
| BLDAR2 | 2964 | BLDAR3 | 2986 | BLKCNT | 4872 | BLKCT | 2729 | BLKCT1 | 903 | BLMULT | 85 | BLNK1 | 7412 |
| BLNK5 | 7355 | BLOW | 920 | BLOW # | 1111 | BMULTI | 199 | BO | 185 | BOL | 2712 | BOL # | 723 |
| BOLMAX | 5638 | BOMULT | 185 | BOSUBB | 5634 | BP000 | 1349 | BP001 | 1614 | BP002 | 1621 | BP2200 | 1363 |
| BPADQ7 | 1164 | BPADQ8 | 1139 | BPAQQ8 | 910 | BPSS | 5045 | BR | 5367 | BRANCH | 6030 | BRMAX | 4599 |
| BRMAXL | 4961 | BRNCH | 2965 | BRNCHK | 5106 | BRNON | 6709 | BRNON1 | 6717 | BRNON2 | 6725 | BRNON3 | 6733 |
| BRNON4 | 6741 | BRXQ | 1372 | BRZAQ | 2878 | BSCBSC | 1562 | BSD # | 2562 | BSDEND | 2555 | BSDEOF | 2502 |
| BST # | 2717 | BSWN1# | 2930 | BSWNCF | 2813 | BT | 5628 | BTOHAS | 5010 | BTPEF# | 2202 | BTPER# | 2188 |
| BTPVLM | 2142 | BTRUTN | 5570 | BUCKET | 6263 | BUCPYS | 4329 | BWMBI# | 2909 | BWMS # | 2779 | BWMST# | 2901 |
| BYLAPS | 1415 | BYLBL# | 5649 | BYLBL1 | 5701 | C16000 | 580 | CARDMG | 6880 | CARYON | 2858 | CBC | 1420 |
| CBIBT | 4307 | CBOL | 4765 | CCB | 575 | CCC3BI | 4711 | CCCFRE | 4044 | CCFW1 | 5047 | CCFW1# | 3716 |
| CCFXSL | 2617 | CCTLCF | 2511 | CDLNG | 7343 | CDTO | 953 | CENSIG | 415 | CF0RE | 4041 | CF0REX | 5603 |
| CF0SL | 380 | CF1RE | 4014 | CF1REX | 5567 | CF1SL | 353 | CF1SLM | 353 | CF1SLX | 5612 | CF2RE | 4017 |
| CF2REX | 5571 | CF2SL | 356 | CF3RE | 4020 | CF3REX | 5575 | CF3SL | 359 | CF4RE | 4023 | CF4REX | 5579 |
| CF4SL | 362 | CF5RE | 4026 | CF5REX | 5583 | CF5SL | 365 | CF6RE | 4029 | CF6REX | 5587 | CF6SL | 368 |
| CF7RE | 4032 | CF7REX | 5591 | CF7SL | 371 | CF8RE | 4035 | CF8REX | 5595 | CF8SL | 374 | CF9RE | 4038 |
| CF9REX | 5599 | CF9SL | 377 | CFIFTY | 4990 | CFIRE | 337 | CFIREM | 337 | CGET1 | 2502 | CHANGE | 2731 |
| CHECK | 5339 | CHECKQ | 3849 | CHECLA | 1155 | CHG9PD | 3880 | CHKCFL | 2474 | CHKPNT | 5582 | CHKPRT | 6387 |
| CHKPT1 | 5000 | CHNGOP | 4916 | CHNGYR | 4566 | CHOOSE | 5276 | CICLE | 2191 | CICLE1 | 2198 | CIFXFY | 6001 |
| CKNOIS | 1907 | CKOT | 1016 | CKOUT | 1070 | CKOUT# | 872 | CKPOS1 | 3851 | CKPTAT | 3137 | CKPTCR | 5302 |
| CKPTET | 3137 | CKRWD# | 3749 | CKURPI | 2595 | CKWM | 5192 | CLAD # | 2358 | CLADJ# | 2327 | CLEARS | 2844 |
| CLEPS | 2721 | CLEPS# | 563 | CLINP2 | 2218 | CLINPP | 3271 | CLOW | 970 | CLOW # | 1244 | CLPH1 | 573 |
| CLPH1# | 574 | CLR | 748 | CLR1 | 916 | CLR12 | 768 | CLR280 | 2947 | CLR331 | 2948 | CLRGMP | 1566 |
| CLRTN | 905 | CLSTX1 | 2191 | CLTLCF | 2569 | CLW | 1161 | CLW # | 2667 | CLWIL2 | 3422 | CLWIL8 | 2642 |
| CLWL | 4486 | CLWL2 | 3449 | CLWMGM | 748 | CLWMK | 5422 | CLWMVL | 1135 | CLWOTW | 1175 | CM18TB | 1242 |
| CM201 | 6663 | CMBCK | 4066 | CMBLN | 1677 | CMBOL | 5117 | CMBOL# | 3785 | CMNCF | 2841 | CMNCF# | 1855 |
| CMNREC | 4008 | CMP11P | 687 | CMP12P | 690 | CMP13P | 693 | CMPABP | 784 | CMPACP | 826 | CMPBCP | 805 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CMPCOU | 1194 | CMPCOW | 1191 | CMPGLG | 6326 | CMPLBL | 5632 | CMPLMT | 3493 | CMPLRG | 1188 | CMPMFS | 4876 |
| CMPRE | 4906 | CMPRLL | 3915 | CMPRLU | 4248 | CMPRNS | 5553 | CMPT3B | 5300 | CMPT52 | 4869 | CMPT5G | 4876 |
| CMPTBL | 4431 | CMPTBT | 4260 | CMPTG4 | 6115 | CMPTGC | 6087 | CMPTNC | 5469 | CMPTUP | 3589 | CMTGLG | 4790 |
| CMTOA | 4703 | CMTOA# | 3821 | CMUSAR | 2070 | CMXBLK | 4011 | CNAR | 5569 | CNAR # | 4191 | CNBOL | 5608 |
| CNBOL# | 4202 | CNCF | 4211 | CNCF2 | 2922 | CNCF2# | 2111 | CNCFB | 3511 | CNEOR | 2634 | CNEOR# | 730 |
| CNITQ | 3888 | CNMP | 569 | CNMP # | 557 | CNOP | 86 | CNOP1 | 2546 | CNOPML | 86 | CNOS1 | 545 |
| CNOSIM | 545 | CNRR | 2569 | CNRR # | 728 | CNSQ | 533 | CNTB | 4220 | CNTBB | 3520 | CNTBO | 6568 |
| CNTBO1 | 2741 | CNTER1 | 7448 | CNTNCF | 5620 | CNTQQ1 | 3238 | CNTR | 2743 | CNTR1 | 791 | CNTR2 | 816 |
| CNTR50 | 1809 | CNTRA | 572 | CNTRB | 573 | CNTRB# | 560 | CNTRB2 | 3199 | CNTRB3 | 3249 | CNTSW | 2380 |
| CNTUE | 5416 | CNTVL1 | 4341 | CNTVL3 | 4472 | CNTVLR | 4348 | CNVRS1 | 1052 | CNVRSN | 1031 | COA | 3900 |
| COAP # | 3121 | COMET | 556 | COMETF | 559 | COMP11 | 2688 | COMP12 | 2691 | COMP13 | 2694 | COMP2 | 6299 |
| COMPAB | 792 | COMPAC | 842 | COMPBC | 817 | COMPCT | 4764 | COMPL | 4005 | CON16T | 4319 | CONEND | 4378 |
| CONMLT | 628 | CONST1 | 5462 | CONST2 | 5474 | CONST3 | 5486 | CONSTX | 679 | CONVRT | 698 | COPNGT | 2192 |
| CORBKT | 3040 | COREKP | 2197 | CORINI | 5000 | COUNT | 5623 | COUNT2 | 5622 | COUNT3 | 5631 | COUNTR | 1812 |
| COWNTR | 2746 | CPDON | 1910 | CPEX # | 4841 | CPLITP | 869 | CPTERR | 6279 | CPTGM | 6044 | CPTHLT | 6295 |
| CQZ | 1645 | CRE | 2647 | CREATD | 437 | CRLBCK | 4135 | CRLNLR | 775 | CRTC2 | 3435 | CRTCY | 1147 |
| CRTCY# | 2653 | CRTCYB | 1161 | CRTCYL | 4648 | CRYBU1 | 4612 | CRYBU2 | 4610 | CRYBU3 | 1291 | CRYBU4 | 1279 |
| CSCAN | 6652 | CSCNT | 7345 | CST322 | 899 | CSTCNS | 552 | CT3DG# | 2250 | CT3G1P | 2241 | CTBL | 815 |
| CTLAG6 | 5571 | CTLAGN | 5241 | CTLCF | 5618 | CTLCF4 | 3175 | CTMSG | 4328 | CTMV | 5505 | CTMV # | 5047 |
| CTNOMP | 5586 | CTNR | 539 | CTNR1 | 6677 | CTNRML | 539 | CTOL | 5132 | CTPAVL | 5225 | CULLES | 4484 |
| CYCLE | 1301 | CYCLE1 | 1308 | CZONE | 647 | D | 2757 | DARAWL | 4426 | DATE | 501 | DATE80 | 3325 |
| DBLVLG | 4416 | DECBY1 | 6172 | DECIDE | 5403 | DELEXC | 4116 | DESCND | 90 | DETANM | 4477 | DETPRM | 4809 |
| DETS | 5372 | DIVTHR | 4667 | DNMP | 4363 | DNMP2 | 4498 | DNSTY | 4828 | DTPRM1 | 4816 | DUBLG | 5688 |
| DUBLG1 | 5756 | DUBLG2 | 5707 | DUBLG3 | 5792 | DUBLGL | 5165 | DUMMY | 2179 | DVD | 3238 | DVD10 | 4697 |
| DVR | 3217 | E | 2761 | ED OP | 5381 | EEWWKL | 4885 | EFS | 4002 | EFSCPT | 6262 | EFSMES | 5960 |
| EFSTPT | 6277 | EFSTRT | 6242 | ELIMIT | 6610 | EMM | 5006 | ENCSTN | 3115 | ENDAPH | 700 | ENDBR | 4910 |
| ENDE | 2331 | ENDMLT | 2669 | ENDMP# | 1677 | ENDMSG | 775 | ENDPAD | 2175 | ENDPAS | 2104 | ENDPRT | 5348 |
| ENDRA1 | 2676 | ENDRA2 | 2679 | ENDRA3 | 2682 | ENDSRT | 3389 | ENTER3 | 2547 | ENTMLT | 602 | ENTREC | 3164 |
| ENTRTN | 3075 | EOF1 | 2545 | EOF1 # | 1961 | EOF2 | 2534 | EOF2 # | 1984 | EOF3 # | 2007 | EOFA | 2362 |
| EOFAB | 2333 | EOFAC | 2304 | EOFB | 2344 | EOFBC | 2293 | EOFC | 2315 | EOFCHK | 5153 | EOFCP | 6315 |
| EOFCP# | 4203 | EOFMFS | 1813 | EOFPNT | 1868 | EOFRD | 2074 | EOFRIT | 1829 | EOFRTN | 2449 | EOFRWD | 2128 |
| EOFTST | 2056 | EOFW | 1695 | EOFW1 | 2549 | EOFW1# | 2030 | EOFW2 | 1699 | EOFWND | 1721 | EOJ # | 3200 |
| EOJBK# | 735 | EOPNGT | 2195 | EORA | 2027 | EORB | 2038 | EORC | 2049 | EOSA | 1688 | EOSB | 1699 |
| EOSC | 1710 | EOSTSP | 1441 | EOSTST | 1717 | EPH2 | 5816 | EQHLD | 2914 | EQHLD# | 2103 | EQLRTN | 1492 |
| EQRTSZ | 5576 | EQU | 2742 | EQU # | 1741 | EQUAL | 1484 | EQUALS | 1249 | ERASE | 2597 | ERASE# | 1705 |
| ERCHK1 | 5101 | ERCKP | 6351 | ERCKP# | 5803 | ERCTMG | 3625 | EREINE | 2721 | ERETRL | 2687 | ERLAEL | 1207 |
| ERM6SW | 7458 | ERMCD | 6561 | ERMCF | 6814 | ERMDP | 6789 | ERMRL | 6829 | ERMS6 | 6920 | ERMTP | 6771 |
| ERRC # | 3463 | ERRCC | 6844 | ERRCHK | 5094 | ERRCNT | 6569 | ERRCT | 4844 | ERRHDR | 2535 | ERRLBL | 6866 |
| ERRLI | 6991 | ERRMS2 | 4210 | ERRMS3 | 4229 | ERRMS4 | 2523 | ERRMS5 | 5961 | ERRMSQ | 4412 | ERRMSX | 4386 |
| ERRMSY | 5147 | ERRTPV | 6634 | ERRTRL | 2709 | ERSCHK | 5121 | ERSE1 | 6370 | ERSE1# | 5818 | ERSHK1 | 5140 |
| ERSRTN | 1771 | ERTAPE | 2612 | ERTAPP | 1720 | ETND | 785 | EWWKL | 4900 | EXDTAP | 831 | EXETAP | 852 |
| EXIT0 | 4334 | EXIT1 | 1171 | EXIT2 | 1310 | EXIT3 | 1420 | EXIT4 | 1530 | EXIT5 | 4661 | EXIT6 | 2680 |
| EXIT7 | 2481 | EXIT9 | 4710 | EXITAP | 982 | EXPAND | 620 | EXTCKP | 5692 | EXTLMP | 4939 | FAKE | 5407 |
| FERMS# | 3393 | FHTC1# | 3063 | FHTC2# | 3064 | FHTD1# | 3036 | FHTD2# | 3037 | FILESE | 452 | FILNAM | 447 |
| FINER# | 3620 | FINMS# | 3595 | FIRSTG | 6234 | FIVSEQ | 5411 | FLNAME | 452 | FLR | 91 | FLRRTN | 5014 |
| FLSERL | 437 | FLSROP | 420 | FNAME | 2447 | FORGET | 5359 | FORONE | 4608 | FORTWO | 4546 | FPARRT | 2771 |
| FPARWT | 2845 | FPERRT | 2782 | FPERWT | 2856 | FPHDAX | 2596 | FPHDEX | 2621 | FPHDH1 | 2316 | FPHDH2 | 2331 |
| FPHDH3 | 2346 | FPHDNR | 2637 | FPHDRC | 2654 | FPHDS1 | 2392 | FPHDS2 | 2403 | FPHDS3 | 2448 | FPHDX1 | 2490 |
| FPHDX2 | 2568 | FPHDX3 | 2585 | FPHEH1 | 2316 | FPHEH2 | 2331 | FPHEH3 | 2346 | FPHENR | 2612 | FPHERC | 2629 |
| FPHES1 | 2392 | FPHES2 | 2404 | FPHES3 | 2450 | FPHEX1 | 2484 | FPHEX2 | 2542 | FPHEX3 | 2559 | FPNSSE | 2458 |
| FPPARX | 2852 | FPPERX | 2841 | FPPSSW | 2798 | FPPSW# | 2809 | FPTMEG | 2908 | FPTRAT | 2366 | FPTRET | 2366 |
| FPTRH1 | 2354 | FPTRH2 | 2362 | FPTRPE | 2881 | FPTSH1 | 2354 | FPTSH2 | 2362 | FPTSMG | 2911 | FRAMOR | 3292 |
| FRAN | 2457 | FRED | 5415 | FRGETP | 4063 | FRRHDR | 2535 | FRSTME | 2269 | FRTSPE | 2870 | FSETLP | 4132 |
| FSLST | 4047 | FST364 | 2746 | FST365 | 3515 | FSTLP# | 4065 | FSTRD1 | 1314 | FSTRD2 | 1424 | FSTRD3 | 1534 |
| FTRAC3 | 612 | FTRAX1 | 2967 | FTRAX2 | 2998 | FTREC3 | 612 | FTREX1 | 2994 | FTREX2 | 3025 | FXCHEK | 4175 |
| G | 857 | G/4 | 2770 | G/4INT | 5556 | G1 | 895 | G2TMS | 4358 | G3TMS | 4553 | GCMPLT | 6229 |
| GCNT7 | 1133 | GCNTR | 3111 | GETEXT | 1920 | GL | 6331 | GL1111 | 5191 | GL1112 | 5199 | GL3 | 5176 |
| GL3NXT | 5184 | GL3VL | 4428 | GM | 7998 | GM # | 4202 | GMCLR | 5688 | GMCLR# | 4811 | GMSET | 677 |
| GMSET# | 2273 | GO | 751 | GO ON# | 4492 | GOCFQ | 5397 | GOON | 4808 | GOPOS | 5500 | GPMARK | 350 |
| GPMK | 2282 | GPMRK | 5332 | H13H10 | 6340 | H50 | 4976 | HALF | 2754 | HDIRG | 5682 | HDRANT | 2268 |
| HDRAXT | 2507 | HDRBKT | 4993 | HDRENT | 2268 | HDREXT | 2507 | HDRTAG | 427 | HDTRAX | 3535 | HDTRC1 | 3126 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HDTRC2 | 3127 | HDTRC3 | 3544 | HDTRC4 | 3545 | HDTRC6 | 3532 | HDTRC7 | 3535 | HDTRC8 | 3128 | HDTREX | 3526 |
| HDTRPR | 3391 | HDTRPW | 3373 | HDTRRI | 3472 | HDTRS0 | 3130 | HDTRS1 | 3159 | HDTRS2 | 3237 | HDTSC1 | 3126 |
| HDTSC2 | 3127 | HDTSC3 | 3553 | HDTSC4 | 3554 | HDTSC6 | 3541 | HDTSC7 | 3544 | HDTSC8 | 3128 | HDTSPR | 3399 |
| HDTSPW | 3381 | HDTSR1 | 3480 | HDTSS0 | 3130 | HDTSS1 | 3159 | HDTSS2 | 3237 | HEADER | 2847 | HERBKT | 4975 |
| HERE | 700 | HERTAG | 427 | HIDNSY | 4862 | HLCRY1 | 4596 | HLCRY2 | 4594 | HLCRY3 | 1275 | HLCRY4 | 1263 |
| HLD34G | 6304 | HLD3G | 6289 | HLDX1P | 2106 | HLMN | 6321 | HLT | 3128 | HLTCHK | 5149 | HLTMFS | 2781 |
| HLTWTR | 1792 | HOLD | 693 | HOLD2 | 6311 | HOLDC1 | 5031 | HOLDG | 6292 | HOLDGL | 4502 | HOLDND | 1347 |
| HOLDSN | 4747 | HOLDX1 | 2917 | HOUT | 799 | HOWMCH | 5193 | HPNDPM | 2840 | HRES | 5949 | HRES # | 3594 |
| HRTRY | 6575 | HRTRY# | 5834 | HSSD | 5655 | HSSD # | 5584 | HSSSSS | 3276 | HTAXRT | 3298 | HTAXWT | 3334 |
| HTEXRT | 3290 | HTEXWT | 3326 | HTHAL1 | 3080 | HTHAL2 | 3095 | HTHAL3 | 3107 | HTHAL4 | 3122 | HTHEL1 | 3080 |
| HTHEL2 | 3095 | HTHEL3 | 3107 | HTHEL4 | 3122 | HTMGHT | 1283 | HTMO | 190 | HTNOSR | 3365 | HTNPSR | 3373 |
| HTPAX | 3476 | HTPEX | 3468 | HTPRSW | 3425 | HTPSSW | 3433 | HUH | 5994 | HWMCHP | 3854 | HWRED | 2621 |
| HWRED# | 1729 | I1TUHA | 562 | I1TUHP | 630 | I1TUN | 338 | I1TUNM | 338 | I2HOLD | 5942 | I2TUHA | 563 |
| I2TUHP | 629 | I2TUN | 339 | I2TUNM | 339 | I3TUHA | 564 | I3TUN | 340 | I3TUNM | 340 | I99 | 2649 |
| I99 # | 623 | ICF12 | 4214 | ICF22 | 3514 | ICFL | 2827 | ICFL # | 1841 | ICFL2 | 2834 | ICFL2# | 1848 |
| IDENT | 5325 | IDENT# | 4029 | IF1F2 | 383 | IF1F2M | 383 | IF2F3 | 386 | IF3F4 | 389 | IF4F5 | 392 |
| IF5F6 | 395 | IF6F7 | 398 | IF7F8 | 401 | IF8F9 | 404 | IF9F0 | 407 | IMOVE | 1013 | IMOVE# | 847 |
| INCR1 | 898 | INCR1# | 992 | INCR2 | 948 | INCR2# | 1125 | INCR3 | 998 | INCR3# | 1258 | INDEX | 3243 |
| INDEX1 | 89 | INDEX2 | 94 | INDEX3 | 99 | INDXUR | 1607 | INIT | 3812 | INIT1 | 5286 | INITTP | 4000 |
| INMODE | 562 | INPT1P | 669 | INPT2P | 672 | INPT3P | 675 | INPUT1 | 2667 | INPUT2 | 2670 | INPUT3 | 2673 |
| INRPCH | 5426 | INSRT5 | 4974 | INSTP | 5096 | INSWF | 1095 | INSWIN | 2981 | INSWN7 | 1034 | INTAL1 | 4272 |
| INTBT# | 3075 | INTF1# | 1064 | INTF2# | 1197 | INTF3# | 1330 | INTGLG | 6281 | INTIAL | 4257 | INTLB# | 5061 |
| INTOUT | 571 | INTRPP | 5753 | INTRPT | 5870 | INTRWU | 5254 | INTTER | 5000 | INVLST | 4970 | INVLW1 | 4887 |
| INVLW2 | 4917 | INVLW3 | 4936 | INVLWM | 4825 | INWM12 | 3945 | INWM22 | 3245 | INWMBI | 4103 | INWMCI | 3403 |
| IREG1 | 89 | IREG1# | 89 | IREG2 | 94 | IREG2# | 94 | IREG3 | 99 | IREG3# | 99 | IRENE | 830 |
| ISAMT | 1236 | ISBMT | 1346 | ISCMT | 1456 | ISOFL | 6574 | ISONED | 5558 | ISSO | 1069 | ITLGHT | 1331 |
| ITLI | 188 | ITPBKT | 2747 | IWRCK | 5674 | IWRCK# | 4754 | IWTM2P | 3474 | JDYLNR | 771 | K16000 | 585 |
| K1BLNK | 854 | K2BLNK | 878 | K2FLD | 847 | K3400 | 3865 | K4 | 2750 | K5TOK3 | 4048 | K999 | 3114 |
| KB # | 615 | KEEP # | 2254 | KHTD | 618 | KI # | 734 | KIRG | 5679 | KKK3 | 619 | KLTD | 602 |
| KO # | 733 | KOWNT | 1128 | KOWNT# | 899 | KRCNT | 1519 | KRUNCH | 561 | KTD | 610 | KTHREE | 4967 |
| KTWO | 5544 | L | 347 | L10 | 4386 | L102 | 4584 | L103 | 4513 | L104 | 4595 | L4 | 5646 |
| LAB120 | 5362 | LABELS | 413 | LABNOS | 2338 | LANOIS | 3243 | LAST | 1613 | LASTWT | 2222 | LAYCHK | 4200 |
| LBBGHT | 1350 | LBBQ | 2942 | LBBUCK | 414 | LBBWZ | 2956 | LBI3T | 867 | LBLBKT | 496 | LBLCK# | 4211 |
| LBLSAM | 572 | LBMI3T | 864 | LCRD | 5016 | LD12K | 5371 | LD12K# | 3891 | LD16K | 5382 | LD16K# | 3902 |
| LDBKPM | 2929 | LDBLNK | 5494 | LDCST | 4890 | LDCST# | 3341 | LDG333 | 5076 | LDGM | 5035 | LDI | 187 |
| LDIMLT | 187 | LDIRG | 5676 | LDNINE | 5487 | LDXQ | 6232 | LEMARK | 3189 | LENOSE | 3215 | LEVWLR | 4782 |
| LFTOUT | 4151 | LGMEOA | 719 | LGMEOP | 741 | LGMTP | 2955 | LIT001 | 604 | LIT003 | 607 | LIT006 | 5034 |
| LLCHEK | 3200 | LMHKTP | 2909 | LMHLTP | 2912 | LMPMSG | 4915 | LMULTI | 347 | LMV | 1033 | LMV # | 871 |
| LOADGM | 1207 | LOADTB | 2871 | LOC | 3246 | LODTB1 | 2875 | LODTB2 | 2882 | LODTB3 | 2889 | LOG3 | 4642 |
| LOOKUP | 4096 | LORCRD | 2773 | LOU | 5438 | LPARRT | 3540 | LPARWT | 3639 | LPEOJ# | 1632 | LPERRT | 3567 |
| LPERWT | 3666 | LPEX # | 4925 | LPHDAX | 3384 | LPHDC1 | 3863 | LPHDC2 | 3865 | LPHDEX | 3411 | LPHDH1 | 3080 |
| LPHDH2 | 3095 | LPHDH3 | 3110 | LPHDNR | 3419 | LPHDRC | 3436 | LPHDS1 | 3175 | LPHDS2 | 3200 | LPHDS3 | 3238 |
| LPHDSH | 3246 | LPHDX1 | 3280 | LPHDX2 | 3353 | LPHDX3 | 3375 | LPHEC1 | 3832 | LPHEC2 | 3834 | LPHEH1 | 3080 |
| LPHEH2 | 3095 | LPHEH3 | 3110 | LPHENR | 3392 | LPHERC | 3409 | LPHES1 | 3175 | LPHES2 | 3196 | LPHES3 | 3235 |
| LPHEX1 | 3269 | LPHEX2 | 3322 | LPHEX3 | 3348 | LPMSGP | 5603 | LPPARX | 3644 | LPPERX | 3617 | LPPPSW | 3574 |
| LPPSW | 3601 | LPSQCP | 2053 | LPTMEG | 3686 | LPTRAT | 3145 | LPTRET | 3145 | LPTRH1 | 3118 | LPTRH2 | 3133 |
| LPTRPE | 3648 | LPTRS1 | 3713 | LPTRX1 | 3791 | LPTRX2 | 3822 | LPTSH1 | 3118 | LPTSH2 | 3133 | LPTSMG | 3712 |
| LPTSPE | 3621 | LPTSS1 | 3687 | LPTSX1 | 3759 | LPTSX2 | 3790 | LRG2G1 | 565 | LRUN | 5430 | LSTBK1 | 1182 |
| LSTBLK | 1175 | LSTCHK | 2101 | LSTMOD | 5218 | LSTOUT | 2233 | LSTSD | 2709 | LSTVRY | 6379 | MAGMWL | 4296 |
| MAOWA | 4436 | MARTEF | 5735 | MARTIF | 5725 | MAX | 2900 | MAXBLK | 3995 | MAXBLO | 5673 | MAXFS | 1796 |
| MBB1 # | 2138 | MBB2 # | 2155 | MEHPWT | 3015 | MEHRDP | 2965 | MEHST3 | 2998 | MEHST4 | 3046 | MESS9 | 933 |
| MFS | 3981 | MFSDVD | 5669 | MFSEXH | 5865 | MFSIZE | 885 | MHBB # | 2152 | MHBB1# | 2169 | MI1TUN | 341 |
| MI2TUN | 342 | MI3TUN | 343 | MINREC | 3992 | MKHNOS | 2809 | MKSBR# | 5464 | MLEND# | 2316 | MLHANT | 2731 |
| MLHAXT | 2953 | MLHENT | 2731 | MLHEXT | 2951 | MLHHL1 | 2699 | MLHHL2 | 2707 | MLHHL3 | 2719 | MLHHL4 | 2727 |
| MLHIL1 | 2699 | MLHIL2 | 2707 | MLHIL3 | 2719 | MLHIL4 | 2727 | MLHNOS | 2955 | MLHNUS | 2957 | MLHPWT | 3013 |
| MLHRDP | 2963 | MLHST3 | 2996 | MLHST4 | 3044 | MLNOIS | 2456 | MLTIBL | 4334 | MLTMSG | 2411 | MLTPHZ | 2254 |
| MNO | 2428 | MNREC4 | 5650 | MOADD | 5102 | MODAD | 3526 | MODADR | 5579 | MODIF1 | 4748 | MODIFY | 1242 |
| MODMV | 4276 | MODMV# | 3788 | MODY | 1235 | MODY # | 2741 | MODYR | 4568 | MODYR2 | 3527 | MOVCOR | 2967 |
| MOVOUT | 5229 | MOVPUN | 2973 | MOVPUT | 6293 | MOVUR | 719 | MPZ1 | 5264 | MRGE X | 2388 | MS | 344 |
| MS4 | 3636 | MS5 | 3654 | MS6 | 3679 | MSBR | 4733 | MSBR # | 3866 | MSMULT | 344 | MTOA | 1017 |
| MTOA # | 855 | MUDIFY | 3500 | MULAX1 | 2827 | MULAX2 | 2913 | MULBKC | 740 | MULEX1 | 2826 | MULEX2 | 2912 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MULHC1 | 3069 | MULHC2 | 3072 | MULHRD | 2800 | MULHWT | 2921 | MULST1 | 2763 | MULST2 | 2863 | MULTMR | 2846 |
| MUSHQ | 4833 | MUSHQP | 4879 | MVCN2 | 3083 | MVLHC1 | 3071 | MVLHC2 | 3072 | MVLHRD | 2801 | MVLHWT | 2922 |
| MVLST1 | 2763 | MVLST2 | 2864 | MVLTMR | 2847 | MVNDPM | 4832 | MVNEQL | 5912 | MVOHDT | 3378 | MVPADG | 1966 |
| MXBLK4 | 5654 | N | 1483 | N99P2 | 2723 | NAMFIL | 2447 | NC1CF | 5615 | NCF | 96 | NCF7 | 1135 |
| NCFCT | 7341 | NCFHDP | 5036 | NCFHLD | 5514 | NCFMLT | 96 | NCFPUT | 5005 | NCFTOP | 5003 | NDFPGM | 6314 |
| NDFZ1 | 2215 | NDRA1P | 678 | NDRA2P | 681 | NDRA3P | 684 | NDRSTT | 5260 | NDSRT | 6323 | NEGIFD | 6085 |
| NEW | 3239 | NEWASQ | 1377 | NEWBSQ | 1388 | NEWCSQ | 1399 | NEWOUT | 5127 | NEXTCF | 2808 | NEXTST | 779 |
| NEXTTP | 1271 | NF0? | 3929 | NF0?1 | 3229 | NG1 | 5495 | NG1 # | 711 | NG2 | 5498 | NG2 # | 714 |
| NG3 | 5501 | NG3 # | 717 | NINE | 871 | NINEG | 6323 | NINTNN | 873 | NITTAP | 3099 | NLAR1# | 2559 |
| NLAR2# | 2651 | NLAR3# | 2680 | NLBK1# | 2427 | NLBK2# | 2415 | NLCLI# | 2515 | NLCLO# | 2358 | NLCNF# | 2817 |
| NLCNT# | 2826 | NLCTQ# | 2475 | NLENT# | 2316 | NLNCF# | 2621 | NLPCF# | 2820 | NLREC# | 2401 | NLST # | 2504 |
| NLST1# | 2738 | NLST2# | 2772 | NLST3# | 2794 | NLSWM# | 2587 | NLWMBI | 2717 | NLWMST | 2709 | NMAP2 | 5591 |
| NMPE | 4473 | NMPL | 571 | NMPL # | 559 | NMPP2 | 5578 | NMPP2# | 4193 | NOEQL | 5639 | NOINTP | 3983 |
| NOISBL | 2527 | NOISE | 1595 | NOISEL | 2527 | NOISEW | 4819 | NOISOW | 4804 | NOISRT | 2043 | NOKEIY | 5012 |
| NOLNZG | 719 | NOMO | 1090 | NOMP | 5576 | NOMP # | 571 | NOOFCF | 5625 | NOP | 1807 | NOP # | 614 |
| NOP1 | 4203 | NOPDDD | 4410 | NOPINC | 5457 | NOPINK | 5426 | NOPMFS | 1869 | NOPPN | 3578 | NOPPS1 | 6185 |
| NOPPS2 | 6146 | NORLIN | 4265 | NORMAL | 6668 | NORSIF | 1732 | NOSOAP | 4191 | NOSQCT | 5001 | NOSW | 2391 |
| NOSWCH | 1341 | NOTAPG | 5633 | NOTAPS | 886 | NOWL | 4889 | NOZNE | 2655 | NSE | 1610 | NSERTN | 1625 |
| NSHKFZ | 2223 | NSYHDR | 3268 | NTOTVL | 6334 | NUMRTR | 3708 | NWOUTP | 5284 | NXBYPS | 4784 | NXTCFP | 1822 |
| NXTINA | 1047 | NXTINS | 4504 | NXTINT | 4797 | NXTPS | 677 | NXTTP1 | 1278 | NYETWL | 4874 | O1 | 892 |
| O1FA | 2767 | O1TUHA | 565 | O1TUHP | 637 | O2TUHA | 566 | O2TUHP | 644 | O3TUHA | 567 | OACPLB | 4858 |
| OERDWL | 4834 | OHDATE | 457 | OHLI | 189 | OHLIMP | 189 | OHLOP | 419 | OHLOPM | 419 | OK1 | 4395 |
| OK2 | 4530 | OKEIGH | 5038 | OKIND | 6705 | OKRD1 | 1248 | OKRD2 | 1358 | OKRD3 | 1468 | OLGA | 1747 |
| OLYRED | 4604 | ONE | 898 | ONECF | 2557 | ONERM | 904 | ONESEQ | 5436 | ONETWO | 5556 | ONLY2 | 4570 |
| ONPTAR | 2741 | ONPTRI | 3108 | OPENID | 731 | OPNGRT | 2242 | OSTOPW | 4850 | OTLGHT | 1307 | OTLI | 189 |
| OTLIMP | 192 | OTMO | 190 | OTMOMP | 190 | OTW050 | 4961 | OTW0BC | 4976 | OTWNOI | 4438 | OURBK | 5141 |
| OUT | 5456 | OUTMLT | 549 | OUTMOD | 549 | OUTTM | 2120 | OVER | 5485 | OVLAP | 4214 | OVLAP# | 3200 |
| OVLAP1 | 4254 | OWA # | 555 | P003 | 3151 | P009 | 3221 | P021 | 3361 | P024 | 3396 | P072 | 3466 |
| P1344 | 3851 | P144 | 3606 | P15999 | 861 | P192 | 3641 | P1AREA | 2686 | P1CHAR | 2287 | P1EOF# | 2317 |
| P1EOF2 | 2348 | P2AREA | 2692 | P2CHAR | 2430 | P2EOF# | 2467 | P3AREA | 2698 | P3CHAR | 2570 | P3EOF# | 2607 |
| P576 | 3711 | PAD | 5099 | PAD # | 5256 | PAD9 | 5074 | PAD9 # | 5238 | PADBO1 | 2218 | PADCT | 2885 |
| PADCT# | 2100 | PADQCZ | 4884 | PADQNA | 4202 | PADQNQ | 628 | PADQQA | 4732 | PADQZ# | 3444 | PADRTN | 1996 |
| PADVLR | 1876 | PAIN | 3547 | PARAXT | 1688 | PAREXT | 1651 | PASMLT | 4312 | PASS | 5936 | PASSP1 | 2265 |
| PASSP2 | 2423 | PASSP3 | 2563 | PBB # | 2144 | PBDBK1 | 714 | PBDBK2 | 725 | PBDBK3 | 732 | PBDBK4 | 784 |
| PBDBK5 | 809 | PCHB1P | 2218 | PCHB2P | 2214 | PCHBB1 | 3029 | PCHBB2 | 3025 | PCNCF# | 728 | PCNTB# | 3574 |
| PCNTR# | 589 | PCOMPL | 853 | PDCHCK | 2221 | PDCHKP | 5203 | PDCPUT | 548 | PDELIM | 5614 | PDELMP | 4205 |
| PDEXIT | 1962 | PDMSG# | 3568 | PDSW | 1135 | PDSW # | 906 | PDTYQ | 6849 | PDTYQP | 5648 | PERCK# | 3259 |
| PHZ1MG | 6362 | PI | 193 | PICF12 | 552 | PIMULT | 193 | PLC1 | 3073 | PLCFRF | 2914 | PLEPAS | 4219 |
| PLY111 | 4957 | PLYIN1 | 6236 | PLYIN2 | 6261 | PLYIN3 | 835 | PLYIN4 | 1684 | PLYIN5 | 4175 | PLZERO | 2222 |
| PMIRA2 | 3528 | PMIRA3 | 3550 | PMSC1P | 4132 | PMSLPP | 5858 | PNWM12 | 3315 | PNWMBI | 3473 | POT | 6231 |
| PPSMS# | 4780 | PRACT1 | 1162 | PRAIPX | 1104 | PRAIRT | 1358 | PRANOS | 1133 | PRAOTX | 1319 | PRAPC1 | 821 |
| PRAPC2 | 822 | PRAPC3 | 1731 | PRAPC4 | 1734 | PRAPH1 | 600 | PRAPH2 | 615 | PRAPH3 | 630 | PRAPH4 | 638 |
| PRAPH5 | 642 | PRAPRT | 1611 | PRAPSW | 1645 | PRAPWT | 1692 | PRARCT | 1141 | PRARDR | 1412 | PRARTI | 1074 |
| PRAST1 | 936 | PRAST2 | 1028 | PRASTO | 823 | PRCT | 4797 | PRECT1 | 1148 | PREIPX | 1090 | PREIRT | 1347 |
| PRENOS | 1119 | PREOTX | 1308 | PREPC1 | 800 | PREPC2 | 801 | PREPC3 | 1694 | PREPC4 | 1697 | PREPH1 | 620 |
| PREPH2 | 635 | PREPH3 | 650 | PREPH4 | 658 | PREPH5 | 662 | PREPRT | 1574 | PREPSW | 1608 | PREPWT | 1655 |
| PRERCT | 1127 | PRERDR | 1401 | PRERTI | 1060 | PREST0 | 802 | PREST1 | 923 | PREST2 | 1015 | PRGMSZ | 5543 |
| PRILAL | 2507 | PRINT1 | 4411 | PRINT2 | 4662 | PRMCD | 7321 | PRMCDX | 7294 | PRMCF | 7140 | PRMDIN | 4117 |
| PRMDOT | 4118 | PRMDP | 7096 | PRMLBL | 6919 | PRMRL | 7181 | PRMRLI | 7228 | PRMS # | 3643 | PRMS1 | 5719 |
| PRMS2 | 5749 | PRMS2A | 6439 | PRMS3 | 5778 | PRMS4 | 5821 | PRMS5 | 5840 | PRMS6 | 5864 | PRMS8 | 1426 |
| PRMS9 | 1472 | PRMSA | 5454 | PRMSA# | 4104 | PRMSB | 5478 | PRMSC | 6736 | PRMSC1 | 5506 | PRMSD | 5533 |
| PRMSD# | 4160 | PRMSE | 5558 | PRMSE# | 4185 | PRMSEF | 1610 | PRMSF | 1573 | PRMSF# | 5880 | PRMSG | 6776 |
| PRMSG7 | 5629 | PRMSG9 | 6226 | PRMSH | 6810 | PRMSH# | 5920 | PRMSI | 6837 | PRMSI# | 5927 | PRMSJ# | 4188 |
| PRMSLP | 6702 | PRMSQ | 6415 | PRMSU | 1510 | PRMSX | 4115 | PRMSX1 | 6472 | PRMSY | 6560 | PRMSZ | 6394 |
| PRMSZ1 | 6339 | PRMTP | 7040 | PRMTPV | 6633 | PRMXX | 6758 | PRMZQ | 7339 | PRNTQ# | 3316 | PRTB1P | 2208 |
| PRTB2P | 2212 | PRTBB# | 2126 | PRTBB1 | 3023 | PRTBB2 | 3027 | PSCNT | 4733 | PSLMP | 5391 | PSPAFQ | 4741 |
| PSTPAS | 4325 | PSW12# | 3494 | PSWNCF | 3377 | PTCHB1 | 4322 | PTCHBR | 4329 | PTCHP2 | 577 | PTFIN# | 3349 |
| PUNBKT | 3052 | PUNINI | 5000 | PUTEXT | 1405 | PWIRA2 | 3407 | PWIRA3 | 3436 | PWMS12 | 3343 | PWMSET | 3465 |
| QBACK | 5035 | QNRCMK | 2025 | QOUNTR | 5009 | QRS | 7242 | QSS | 3240 | QTRL | 2116 | QUOT | 3238 |
| QZSW1 | 7356 | QZWRIT | 6782 | QZWRT | 6584 | RANOTP | 4041 | RANOUT | 5337 | RAREAT | 2666 | RCC4 | 7416 |
| RCCP | 6167 | RCDIST | 196 | RCMKPI | 527 | RD1EX# | 1091 | RD2EX# | 1224 | RD3EX# | 1357 | RDBY # | 4255 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RDBY1# | 4268 | RDCARD | 2363 | RDCPT | 684 | RDCPT# | 2280 | RDCRD | 5258 | RDEOJ# | 5060 | RDFST1 | 1095 |
| RDFST2 | 1228 | RDFST3 | 1361 | RDGM # | 1410 | RDHD1 | 2312 | RDHDR3 | 2528 | RDHDRL | 2326 | RDIH | 5173 |
| RDLBRT | 6629 | RDMP | 5316 | RDO120 | 5266 | RDOH | 5226 | RDT3 # | 4046 | RDTL1 | 2609 | RDTL2 | 2610 |
| RDTPMK | 2485 | RDTRAL | 2617 | RDTRLL | 2616 | RDURLD | 5350 | RDWL | 4414 | READ X | 2659 | READ Y | 2606 |
| READ1 | 1269 | READ1# | 1051 | READ2 | 1379 | READ2# | 1184 | READ3 | 1489 | READ3# | 1317 | READC3 | 2777 |
| READCC | 700 | READTP | 747 | REBLK | 4751 | RECNT# | 4194 | RED | 2475 | RED # | 1890 | REDEMP | 5286 |
| REDETP | 776 | REDMPS | 5286 | REDOLB | 2511 | REDSQ# | 2130 | REED | 5219 | REED # | 3913 | REELSQ | 441 |
| REENT1 | 3836 | REENT2 | 3937 | REHD2 | 2312 | REHDRL | 2326 | REKMKS | 2717 | REMOVE | 2735 | REMTS | 562 |
| REOYRE | 4615 | REPH1# | 563 | REPL | 1159 | REPLAC | 2335 | RERD | 2688 | RERDCP | 2306 | RERDWL | 4849 |
| REREAD | 2511 | RESEQE | 461 | RESET | 5719 | RESTRT | 5157 | RESUME | 4023 | RETADD | 5552 | RETN | 2530 |
| RETN # | 1946 | RETNOP | 1428 | RETPER | 432 | RETPMK | 2485 | RETURN | 2878 | REVRS3 | 5399 | REVRS4 | 5417 |
| REVRS5 | 5392 | REWIND | 2130 | REWND1 | 2217 | RIDGM | 1658 | RIDGM1 | 1629 | RIDGM2 | 1640 | RIDGM3 | 1651 |
| RIDZN | 5241 | RITEXT | 1657 | RLI | 2042 | RLIIND | 560 | RLINO | 1965 | RLINO1 | 4327 | RLINO2 | 4320 |
| RLIYES | 2026 | RLSQOP | 421 | RMDRSN | 3241 | RMOVEP | 699 | RMVRGM | 1213 | RNGL1Q | 1932 | RNGL2Q | 1933 |
| RNGLNQ | 1924 | RNOUTA | 2005 | RNOUTB | 1994 | RNOUTC | 2016 | RNOUTP | 780 | ROTP | 5307 | RPCHBR | 5375 |
| RRDC | 1500 | RREDCP | 710 | RSTBEF | 6270 | RSTBER | 6274 | RSTEND | 4203 | RSTONE | 5475 | RSTORG | 3594 |
| RSTRD1 | 3859 | RSTRD2 | 3960 | RTAIN | 553 | RTCHK1 | 5033 | RTCHK2 | 5058 | RTCYCL | 461 | RTEND | 6701 |
| RTFINI | 6767 | RTN1 | 1591 | RTNPP3 | 2509 | RTOK | 6753 | RTOUR | 1273 | RTRD # | 1437 | RTREAD | 1684 |
| RTRN1 | 1099 | RTRN1# | 884 | RTRN2 | 1232 | RTRN2# | 974 | RUNOTP | 780 | RUNOUT | 784 | RUTN | 3247 |
| RWD | 3080 | RWD2WY | 2278 | RWDINP | 863 | RWDJNP | 884 | RWES | 5845 | RWINDP | 1651 | S1VMEP | 3534 |
| S2VMEP | 3539 | S3VMEP | 3529 | SAVE | 2926 | SAVE # | 2115 | SAVE4# | 4201 | SAVM1 | 1302 | SAVM1# | 2776 |
| SAVM2 | 1297 | SAVM2# | 2771 | SAVMB1 | 1313 | SAVMB2 | 1308 | SAVMBS | 1318 | SAVMES | 4637 | SAVMP1 | 3561 |
| SAVMP2 | 3566 | SAVMP3 | 3556 | SAVMS | 1307 | SAVMS# | 2781 | SAVMS1 | 4634 | SAVMS2 | 4629 | SAVMSG | 4639 |
| SBCNOP | 5227 | SBR | 5453 | SBR # | 4734 | SBRTLB | 1586 | SBRTRP | 1501 | SBTRCB | 5237 | SCHTP1 | 2168 |
| SCLINP | 3575 | SDA | 1882 | SDA # | 1534 | SDAB | 1844 | SDAB # | 1512 | SDAC | 1825 | SDAC # | 1501 |
| SDALL | 1785 | SDALL# | 1574 | SDB | 1917 | SDB # | 1545 | SDBC | 1863 | SDBC # | 1523 | SDC | 1952 |
| SDC # | 1556 | SDCMPV | 2706 | SDCOMP | 2703 | SEQ/ # | 4621 | SEQ1 # | 5013 | SEQ2 # | 5019 | SEQCMP | 1609 |
| SEQMRG | 577 | SEQNO1 | 4842 | SEQNO2 | 4853 | SEQNO3 | 4864 | SEQNO4 | 4882 | SEQNO5 | 4914 | SEQNO6 | 4946 |
| SET X# | 2254 | SET Y# | 2254 | SET1MV | 2732 | SET456 | 2630 | SET7 | 1030 | SET71 | 1016 | SETBAK | 1206 |
| SETBK | 5959 | SETCLR | 4225 | SETDEC | 5259 | SETEND | 4877 | SETG | 4538 | SETG1 | 1146 | SETG12 | 1139 |
| SETG1H | 1164 | SETG1J | 1130 | SETGFR | 4620 | SETGM | 2260 | SETHRE | 2623 | SETMG2 | 4560 | SETMXG | 4362 |
| SETNMP | 5751 | SETNOS | 2421 | SETONE | 2591 | SETOUT | 5556 | SETP2# | 2381 | SETP3# | 2502 | SETPUN | 2948 |
| SETPUT | 5182 | SETTP | 4229 | SETURP | 5317 | SETURQ | 5310 | SETWM | 6209 | SETWM1 | 3052 | SETWMK | 2977 |
| SETZN# | 1919 | SEVEN | 5557 | SHINE | 6153 | SHKFZ | 2094 | SHKFZD | 2116 | SIGN | 5545 | SIX 0S | 613 |
| SJA | 2718 | SJA # | 729 | SKEIGT | 2408 | SKIP1 | 788 | SKIP1# | 784 | SKIP2 | 813 | SKIP2# | 805 |
| SKIP3 | 838 | SKIP3# | 826 | SKIPPS | 4241 | SLMP | 4934 | SLMP # | 4890 | SLMP1# | 4920 | SLOT1 | 2900 |
| SLRCC | 4121 | SMOREP | 2235 | SMVM1# | 2766 | SMVM2# | 2761 | SMVMS# | 2770 | SNGLCF | 6103 | SNGLE9 | 4077 |
| SNGLET | 4075 | SNGLEU | 4076 | SOMORE | 3036 | SONED | 2780 | SORTLB | 1549 | SORTRP | 1469 | SORTWL | 1451 |
| SOS | 1106 | SPADQ6 | 2934 | SPCRLI | 6953 | SPCRTN | 4319 | SPLCAS | 5347 | SPLCHR | 625 | SQHOLD | 5007 |
| SRTWLB | 1449 | ST1MVP | 696 | STBCK# | 4713 | STBRG# | 3092 | STCMP4 | 5938 | STCMP5 | 6061 | STCMPR | 5963 |
| STEPA | 1325 | STEPA# | 1099 | STEPB | 1435 | STEPB# | 1232 | STEPC | 1545 | STEPC# | 1365 | STG1J | 1123 |
| STMRWM | 1116 | STNEQL | 5842 | STOPH | 2561 | STOPIH | 2562 | STOPIT | 2713 | STOPT | 2735 | STOPW | 4865 |
| STOUTP | 4768 | STPASS | 4379 | STPCM1 | 1235 | STPCM2 | 1240 | STPCMP | 1228 | STPDNR | 1200 | STPH2 | 562 |
| STRD1# | 1022 | STRD2# | 1155 | STRD3# | 1288 | STREND | 576 | STRTCL | 2851 | STRTMP | 553 | STRTN | 4324 |
| STRTN# | 3230 | STU # | 3259 | STURPI | 5395 | STURPP | 4021 | STURQP | 4014 | STWMK1 | 2963 | STWMVL | 1020 |
| SUBBB | 4059 | SUBPAD | 4776 | SUBT B | 1950 | SUBTCT | 5449 | SVMES1 | 4632 | SVMES2 | 4627 | SW11 | 7357 |
| SW12 | 7358 | SW122 | 4124 | SW13 | 7359 | SW14 | 7360 | SW15 | 7361 | SW22 | 3424 | SW9PD | 5416 |
| SWCHTP | 2161 | SWCTAP | 2145 | SWFRTN | 3665 | SWIRA2 | 4037 | SWIRA3 | 4074 | SWIRB2 | 3337 | SWIRB3 | 3374 |
| SWKLB | 4338 | SWKLBA | 700 | SWKLBB | 700 | SWNCF | 4007 | SWNCFB | 3307 | SWOT | 2373 | SWOWA | 6454 |
| SWP | 7456 | SWP1 | 4387 | SWP2 | 4522 | SXTNTH | 6251 | SYSCRE | 457 | TAPBLC | 2891 | TAPERD | 2235 |
| TAPERW | 1751 | TAPRD1 | 2231 | TAPRD2 | 2252 | TAPSEQ | 657 | TBC | 4988 | TBLE | 1195 | TCD3 | 3098 |
| TCOMET | 590 | TCOMTF | 595 | TEMP | 3196 | TESFB1 | 1295 | TEST C | 575 | TEST7# | 4077 | TESTML | 5000 |
| TESTMX | 3467 | TF1 # | 4863 | TFI | 5714 | THDTP | 2158 | THEDTE | 501 | THIRTN | 6865 | THLTMO | 418 |
| THREE | 889 | THREEB | 870 | THREEG | 6285 | THRU | 4786 | THRWSZ | 5567 | TL | 191 | TLCF | 3989 |
| TLMPC | 4869 | TLO | 192 | TM SHK | 5005 | TML | 5058 | TOOQ | 4539 | TOOWA | 4738 | TOTMS# | 3538 |
| TOWYMG | 5226 | TPAVLM | 412 | TPBKT | 1348 | TPCNPM | 2843 | TPNOBK | 732 | TPPSBL | 5353 | TPRUTN | 5573 |
| TPSERL | 432 | TPSROP | 422 | TPV1 | 568 | TPWKBK | 4987 | TPWRBK | 4972 | TREQRG | 6309 | TRIHLD | 2738 |
| TRISEQ | 5497 | TRITST | 4444 | TRLANT | 2585 | TRLAXT | 2662 | TRLENT | 2584 | TRLEXT | 2684 | TSARNA | 810 |
| TSERO | 7350 | TSF | 4617 | TSF1 | 1284 | TSF1 # | 2758 | TSF2 | 3544 | TSINK | 7411 | TSSG2 | 3030 |
| TSSG2# | 2222 | TSTFPD | 2788 | TSTLBL | 2219 | TSTPS | 4673 | TSTPS# | 4395 | TSTSSG | 778 | TSTVRY | 4969 |
| TUHOLD | 651 | TUNOS | 2518 | TUNOS# | 1934 | TURMSG | 828 | TWI | 5427 | TWLABL | 4311 | TWNEXT | 2386 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TWO | 876 | TWO2 | 5547 | TWOBL | 2725 | TWOBL# | 620 | TWOSEQ | 5486 | UAPHZ1 | 4126 | UCMESG | 2584 |
| UCMSG | 2583 | UHLI | 189 | UNLOAD | 416 | UNMSG | 3074 | UNMSG# | 2228 | UNRDCK | 3242 | UPDT | 1124 |
| UPDTCT | 4552 | UPLMT | 5658 | UPTBLE | 4632 | URPI | 186 | URPIML | 186 | URTAPE | 615 | USEXT0 | 4381 |
| USEXT5 | 4659 | USEXT6 | 2658 | USEXT7 | 2481 | USEXT9 | 4708 | UTCRTY | 3408 | UTCRTZ | 2628 | UTMU | 190 |
| VARBL | 4479 | VARLNT | 988 | VARMFS | 4803 | VARY | 91 | VARYCT | 1049 | VARYSD | 1082 | VLBL | 4505 |
| VLRER | 1015 | VLRERM | 1393 | VLRGET | 1813 | VLRPAD | 2179 | VLRRTN | 6254 | VLTHR1 | 4446 | VLTHR2 | 4487 |
| VLTHR3 | 4435 | VLTHRU | 4390 | VRBSD | 5393 | VRE | 2796 | WDMKST | 1104 | WEFCK2 | 6579 | WELEAT | 5025 |
| WETWIL | 4670 | WFCK2P | 5838 | WHICH | 5368 | WKAREA | 5608 | WKENOI | 4440 | WKLAND | 3075 | WKLBLI | 2254 |
| WKLEND | 3073 | WLANOI | 1068 | WLAREA | 4204 | WLBKT | 417 | WLBKTM | 417 | WLBLOL | 4608 | WLBNOI | 1082 |
| WLGM | 4256 | WMIRA2 | 4158 | WMIRA3 | 4188 | WMIRA5 | 3900 | WMIRB2 | 3458 | WMIRB3 | 3488 | WMIRB5 | 3200 |
| WMS12 | 3973 | WMS22 | 3273 | WOBR | 1182 | WOBR # | 949 | WORED | 2573 | WORED# | 1681 | WORTEN | 4297 |
| WRCK2 | 5620 | WRCKT | 5696 | WRCKT# | 4845 | WRDCK | 6327 | WRDCK# | 5779 | WRGSET | 806 | WRITE | 1103 |
| WRITE# | 888 | WRITEA | 5104 | WRITFL | 1643 | WRLERT | 792 | WROM # | 2094 | WROM1# | 5752 | WRTCHK | 5040 |
| WRTFL1 | 1636 | WTEX # | 895 | WTMBD | 3038 | WTMBD# | 3488 | WTNOW | 5419 | WTWL | 4672 | WTWTT | 730 |
| X | 6317 | X1 | 89 | X2 | 94 | X3 | 99 | XAREA# | 595 | XCHAR# | 2402 | XXX | 4633 |
| XYZ | 3783 | Y | 6320 | Y TPMK | 2294 | YAREA# | 601 | YCNTR# | 583 | YEACHK | 4646 | YFIFTY | 4978 |
| YLIT3# | 2691 | YLIT7# | 2692 | YSLBL# | 3460 | Z | 2812 | Z5DIGT | 5638 | ZERO | 2753 | ZEROS1 | 6588 |
| ZQST | 7339 | ZWEWAY | 4736 | ZZGX | 2134 | ZZRQ | 1626 | | | | | | |