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

                          1401 FORMAT RETRIEVAL                                                  PAGE    1

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

 101  1 01   001    JOB   1401 FORMAT RETRIEVAL
 102  1 02          CTL   6611
 103  1 03   SIZE   EQU   15999              USED TO ORG PROG IN UPPER CORE        15999
 104  1 04          ORG   1                       DEFINE FIELDS IN I/O                  0001
 105  1 05   AHERE  DS    3                        CONTROL BLOCKS RELATIVE          0003
 106  1 06   ALOW   DS    4                        TO ONE                           0007
 107  1 07   AHIGH  DS    4                                                         0011
 108  1 08   AB     DS    1                                                         0012
 109  1 09   BHERE  DS    3                                                         0015
 110  1 10   BLOW   DS    4                                                         0019
 111  1 11   BHIGH  DS    4                                                         0023
 112  1 12   BC     DS    1    B AND/OR C, A IS AND, O IS OR   *SAME FOR A,B      0024
 113  1 13   CHERE  DS    3    UNITS POS OF C FIELD            * FIELDS          0027
 114  1 14   CLOW   DS    4    LOWEST C TO BE USED             *                 0031
 115  1 15   CHIGH  DS    4    HIGHEST C TO BE USED            *                 0035
 116  1 16   STATUS DS    1    NO WM IF LAST,ZONE IF RD CDS FOR A LOW/HIGH       0036
 117  1 17   COUNT  DS    6    COUNT OUTPUT RECORDS                              0042
 118  1 18   NXTABC DS    3    START OF NEXT I/O CONTROL BLOCK, AHERE-3          0045
 119  1 19   IO     DS    1    START OF OUTPUT ROUTINE                           0046
 120  1 20   *
 121  1 21          ORG   81                                                            0081
 122  1 22   CGM    DCW   @}@                                                  1  0081              GMARK    4
 123  1 23          DS    5                                                       0086
 124  1 24   *THROUGHOUT GENERATION, X3 IS LAST LOC ASSIGNED, CALLED ORIGIN
 125  1 25   *FOR PROCESSING ROUTINES
 126  1 26   *  X1 IS START OF CURRENT OUTPUT BLOCK - 1
 127  1 27   *  X2 IS START OF CURRENT AHERE - 1
 128  1 28   *  X3 IS START OF TAPE INPUT RECORD - 1, ZERO IF CARD INPUT
 129  1 29   X1     DCW   #3                                                   3  0089                       5
 130  1 30          DS    1                                                       0090
 131  1 31   SWW    DC    #1                WM IF PRINT GEN                  1  0091                       6
 132  1 32   X2     DCW   #3                                                   3  0094                       6
 133  1 33          DS    1                                                       0095
 134  1 34   SWP    DC    #1                WM IF PUNCH GEN                  1  0096                       7
 135  1 35   X3     DCW   335               ITITIAL ORIGIN                   3  0099                       7
 136  1 36          DS    1                                                       0100
 137  1 37          ORG   181                                                           0181
 138  1 38          DCW   @}@                                                  1  0181              GMARK    8
 139  1 39   RECNT  DCW   -000000                                             6  0187                       8
 140  1 40   NOISEC DCW   #6                                                 6  0193                       8
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                          GENERATE PRINT AND PUNCH FILE CONTROLS                                 PAGE    2

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

 141  1 41          JOB   GENERATE PRINT AND PUNCH FILE CONTROLS
 142  1 42          ORG   336                                                           0336
 143  1 43   HEADPG SBR   HDX+3               EJECT                            4  0336  H 386               9
 144  1 44          CC    1                                                  2  0340  F 1                 9
 145  1 45          MRCM  HL1-131,201                                        7  0342  P 387 201           9
 146  1 46          A     *-6,PAGECT          PAGE COUNT                     7  0349  A 349 789           9
 147  1 47   PPAGE  NOP   PAGECT,*                                          7  0356  N 789 362           9
 148  1 48   HSP1   CC    /                                                  2  0363  F /                 9
 149  1 49          W                        PRINT HEADING                  1  0365  2                   9
 150  1 50          MRCM  HL2-131,201                                        7  0366  P 520 201          10
 151  1 51   HSP2   CC    S                                                  2  0373  F S                10
 152  1 52          W                                                       1  0375  2                  10
 153  1 53          MRCM  HC-131,201          CLEAR PRINT                    7  0376  P 653 201          10
 154  1 54   HDX    B     AFTIL                                            4  0383  B R8G              10
 155  1 55          DCW   #1                                               1  0387                     10
 156  1 56   HL1    DS    131                                                 0518
 157  1 57          DCW   @'@                                              1  0519                     11
 158  1 58   HL2    DS    132                                                 0651
 159  1 59          DCW   @'@                                              1  0652                     12
 160  1 60   HC     DS    132                                                 0784
 161  1 61          DCW   @'@                                              1  0785                     13
 162  1 62   PAGECT DCW   #4                                               4  0789                     13
 163  1 63   *
 164  1 64   FINCNT DCW   #6                                               6  0795                     13
 165  1 65   SEQCHK DCW   #9                                               9  0804                     13
 166  1 66          DS    45                  SAVE FOR ABC                   0849
 167  1 67   COUTT  EQU   *-3                                                 0846
 168  1 68   WI0    C     SEQCHK-8,SEQCHK-8                                7  0850  C 796 796          14
 169  1 69          BE    PRINT                                            5  0857  B 915 S            14
 170  1 70          BWZ   PRINT,RECNT,K       Q. FIRST RECORD                8  0862  V 915 187 K        14
 171  1 71   WI1    MCW   *,*                 RESET SEQUENCE                 7  0870  M 876 876          14
 172  1 72   WI2    NOP   COUTT,*             MOVE COUNT TO PRINT AREA       7  0877  N 846 883          14
 173  1 73          A     COUTT,FINCNT                                       7  0884  A 846 795          15
 174  1 74          S     COUTT                                              4  0891  S 846              15
 175  1 75   WI3    NOP   PAGECT              RESET PAGE COUNT               4  0895  N 789              15
 176  1 76          NOP                       PRINT TOTAL LINE               1  0899  N                  15
 177  1 77   WI4    NOP   COUTT,*             CLEAR PRINT AREA               7  0900  N 846 906          15
 178  1 78   WI5    NOP   HEADPG                                            4  0907  N 336              15
 179  1 79   SWTOT  B     PRINT+5                                            4  0911  B 920              15
 180  1 80   PRINT  BCV   HEADPG                                            5  0915  B 336 @            16
 181  1 81   *
 182  1 82   ORGSZE EQU   SIZE-999                                             15000
 183  1 83   ORGSZ2 EQU   ORGSZE-999                                           14001
 184  1 84          ORG   ORGSZ2-189                                                13812
 185  1 85   SETWM  B     *                   END SW STRING                  4 13812  B Y1E              17
 186  1 86   DOSET  SBR   SETWM+3                                           4 13816  H Y1E              17
 187  1 87          B     1+X2                                               4 13820  B 0!1              17
 188  1 88   STARTI CC    1                                                  2 13824  F 1                17
 189  1 89          MRCM  76,276              IDENTIFY PROGRAM AND VERSION   7 13826  P 076 276          17
 190  1 90          MLC   CPROG,274                                          7 13833  M M6E 274          17
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SEQ	PG	LIN	LABEL	OP	OPERANDS		SFX	CT	LOCN	INSTRUCTION TYPE	CARD
191	1	91		CC	T			2	13840	F T	17
192	1	92		W	READ			4	13842	2 G7?	18
193	1	93		C	6,CHEAD1	Q. HEAD		7	13846	C 006 M3A	18
194	1	94		BE	GENH			5	13853	B Y7B S	18
195	1	95		CS	PRINT+4			4	13858	/ 919	18
196	1	96		CS				1	13862	/	18
197	1	97		CS				1	13863	/	18
198	1	98		CS				1	13864	/	18
199	1	99		CS				1	13865	/	19
200	2	00		CS				1	13866	/	19
201	2	01		CS				1	13867	/	19
202	2	02		B	QPUNCH			4	13868	B L2B	19
203	2	03	GENH	SW	7			4	13872	, 007	19
204	2	04		MCW	76,HL1-62	STORE 1-70		7	13876	M 076 456	19
205	2	05		B	READ			4	13883	B G7?	19
206	2	06		C	6,CHEAD2			7	13887	C 006 M3G	20
207	2	07		BE	*+6			5	13894	B Z0D S	20
208	2	08		NOP	1111	HEAD 2 MISSING		4	13899	N /11	20
209	2	09		H				1	13903	.	20
210	2	10		SW	7,72			7	13904	, 007 072	20
211	2	11		MCW	68,HL1	STORE 71-132		7	13911	M 068 518	20
212	2	12		BCE	*+19,71,	Q. PAGE CT		8	13918	B Z4D 071	20
213	2	13		SW	69			4	13926	, 069	21
214	2	14		MCW	71,PPAGE+6			7	13930	M 071 362	21
215	2	15		MCW	CMCS,PPAGE			7	13937	M M5? 356	21
216	2	16		BCE	*+8,72,			8	13944	B Z5I 072	21
217	2	17		MCW	72,HSP1+1			7	13952	M 072 364	21
218	2	18		B	READ			4	13959	B G7?	21
219	2	19		C	6,CHEAD3			7	13963	C 006 M4C	22
220	2	20		BU	NOHL3			5	13970	B !4I /	22
221	2	21		SW	7			4	13975	, 007	22
222	2	22		MLC	76,HL2-62			7	13979	M 076 589	22
223	2	23		B	READ			4	13986	B G7?	22
224	2	24		C	6,CHEAD4			7	13990	C 006 M4I	22
225	2	25		BE	*+6			5	13997	B !0G S	22
226	2	26		NOP	1112	HEAD 4 MISSING		4	14002	N /12	23
227	2	27		H				1	14006	.	23
228	2	28		SW	7,72			7	14007	, 007 072	23
229	2	29		MLC	68,HL2			7	14014	M 068 651	23
230	2	30		BCE	*+8,72,			8	14021	B !3F 072	23
231	2	31		MLC	72,HSP2+1			7	14029	M 072 374	23
232	2	32		B	READ			4	14036	B G7?	23
233	2	33		B	QPRINT			4	14040	B !6C	24
234	2	34		BIN	HDX,			5	14044	B 383	24
235	2	35	NOHL3	SBR	HSP2-4,HC-131			7	14049	H 369 653	24
236	2	36		LCA	NOHL3-1,HSP2+4			7	14056	L !4H 377	24
237	2	37	QPRINT	C	5,CPRINT			7	14063	C 005 M5H	24
238	2	38		BE	*+6			5	14070	B !8? S	24
239	2	39		NOP	1114	NO PRINT AFTER HEAD		4	14075	N /14	24
240	2	40		H				1	14079	.	25

SEQ	PG	LIN	LABEL	OP	OPERANDS		SFX	CT	LOCN	INSTRUCTION TYPE	CARD
241	2	41		SBR	X3,SEQCHK	UP ORIGIN		7	14080	H 099 804	25
242	2	42		B	LDABC			4	14087	B ?2C	25
243	2	43		BCE	NOTOT,F3,	Q. TOTALS		8	14091	B J3A N5F	25
244	2	44		MCW	F3,WI2+6			7	14099	M N5F 883	25
245	2	45		MCW	F3,WI4+6			7	14106	M N5F 906	25
246	2	46		MCW	CMCS,WI2			7	14113	M M5? 877	26
247	2	47		MCW	CMCS,WI4			7	14120	M M5? 900	26
248	2	48		MCW	CW			4	14127	M M7C	26
249	2	49	NOTOT	BCE	NOSEQ,F1,	Q. SEQUENCE CHECK		8	14131	B K4B N5?	26
250	2	50		MZ	CB,F1-1			7	14139	Y H6H N4I	26
251	2	51		MCW	F1,WI0+3			7	14146	M N5? 853	27
252	2	52		SBR	X1,SEQCHK-9			7	14153	H 089 795	27
253	2	53		MN	F2-2,*+7			7	14160	D N5A J7C	27
254	2	54		SBR	WI0+6,0+X1			7	14167	H 856 0'0	27
255	2	55		SBR	WI1+6			4	14174	H 876	27
256	2	56		MCW	F1,WI1+3			7	14178	M N5? 873	27
257	2	57		BCE	NOSEQ,F4-2,	Q. SPACE AFTER BREAK		8	14185	B K4B N5G	28
258	2	58		BCE	EJ,F4-2,1			8	14193	B K2? N5G 1	28
259	2	59		LCA	CNN,WI5+3	SET CC X, NOP X		7	14201	L M5B 910	28
260	2	60		MCW	F4-2			4	14208	M N5G	28
261	2	61		LCA	CCC			4	14212	L M2E	28
262	2	62		B	NOSEQ			4	14216	B K4B	28
263	2	63	EJ	MCW	CB,WI5			7	14220	M H6H 907	29
264	2	64		BCE	*+8,F4-1,	Q. RESET PAGE COUNT		8	14227	B K4B N5H	29
265	2	65		MCW	CS,WI3			7	14235	M H7? 895	29
266	2	66	NOSEQ	SBR	X3,PRINT+4	UP ORIGIN		7	14242	H 099 919	29
267	2	67		B	GETDV			4	14249	B A5I	29
268	2	68		B	DOSET			4	14253	B Y1F	29
269	2	69		BCE	*+22,F2-1,	Q. SPACE AFTER PRINT		8	14257	B K8F N5B	30
270	2	70		MCW	F2-1,2+X3			7	14265	M N5B 0?2	30
271	2	71		MLCWA	CCC,1+X3			7	14272	L M2E 0?1	30
272	2	72		SBR	X3,2+X3			7	14279	H 099 0?2	30
273	2	73		SBR	12+X3,PASS			7	14286	H 0A2 C2I	30
274	2	74		LCA	CB,9+X3			7	14293	L H6H 0?9	31
275	2	75		LCA	CLRP+6			4	14300	L M2D	31
276	2	76		MLCWA	CW			4	14304	L M7C	31
277	2	77		SBR	X3,12+X3			7	14308	H 099 0A2	31
278	2	78		SW	1+X3,SWW	PRINT SW ON		7	14315	, 0?1 091	31
279	2	79	*								
280	2	80	QPUNCH	C	5,CPUNCH			7	14322	C 005 M7?	31
281	2	81		BU	CLRJNK	Q. PUNCH		5	14329	B M7D /	32
282	2	82		B	LDABC			4	14334	B ?2C	32
283	2	83		B	GETDV			4	14338	B A5I	32
284	2	84		B	DOSET			4	14342	B Y1F	32
285	2	85		LCA	CP,1+X3			7	14346	L M5C 0?1	32
286	2	86		BCE	NSTACK,F1-2,	Q. STACKER SELECTION		8	14353	B L9C N4H	32
287	2	87		MCW	F1-2,6+X3			7	14361	M N4H 0?6	32
288	2	88		SBR	5+X3,PASS			7	14368	H 0?5 C2I	33
289	2	89		LCA	CSS,2+X3			7	14375	L M7A 0?2	33
290	2	90		SBR	X3,6+X3			7	14382	H 099 0?6	33

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

291  2 91          B     *+15                                             4 14389  B M0G               33
292  2 92   NSTACK SBR   4+X3,PASS                                        7 14393  H 0?4 C2I           33
293  2 93          SBR   X3,4+X3                                         7 14400  H 099 0?4           33
294  2 94          SW    SWP,1+X3            PUNCH SW ON                  7 14407  , 096 0?1           34
295  2 95          B     QPUNCH                                           4 14414  B L2B               34
296  2 96   CLRP   MRCM  HC-131,201                                       7 14418  P 653 201           34
297  2 97   CCC    DCW   @F@                                             1 14425                      34
298  2 98   CHEAD1 DCW   @HEAD 1@                                        6 14431                      34
299  2 99   CHEAD2 DCW   @HEAD 2@                                        6 14437                      34
300  3 00   CHEAD3 DCW   @HEAD 3@                                        6 14443                      34
301  3 01   CHEAD4 DCW   @HEAD 4@                                        6 14449                      35
302  3 02   CMCS   MCS                                                   1 14450  Z                   35
303  3 03   CNN    DCW   @NN@                                           2 14452                      35
304  3 04   CP     P                                                     1 14453  4                   35
305  3 05   CPRINT DCW   @PRINT@                                        5 14458                      35
306  3 06   CPROG  DCW   @PROGRAM@                                      7 14465                      35
307  3 07   CPUNCH DCW   @PUNCH@                                        5 14470                      35
308  3 08   CSS    SS                                                    2 14471  K                   36
309  3 09   CW     W                                                     1 14473  2                   36
310  3 10   CLRJNK CS    *                  DONE WITH PRINT/PUNCH        4 14474  / M7G               36
311  3 11          CS                       CLEAR ROUTINES               1 14478  /                   36
312  3 12          CS                                                    1 14479  /                   36
313  3 13          CS                                                    1 14480  /                   36
314  3 14          CS                                                    1 14481  /                   36
315  3 15          CS                                                    1 14482  /                   37
316  3 16          CS                                                    1 14483  /                   37
317  3 17          CS                                                    1 14484  /                   37
318  3 18          CW    P                  PRINT OR PUNCH SWITCH OFF    4 14485  ) H2H               37
319  3 19          SBR   GETDV+10,*+4       NEW START FOR SW IN MCW      7 14489  H A6I M9I           37
320  3 20   CLRJK3 B     CLRJK2                                           4 14496  B N8E               37
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SEQ PG LIN  LABEL   OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD

321  3 21          JOB   GENERATE TAPE OUTPUT FILE CONTROLS
322  3 22   * THIS IS UPPER LIMIT OF USER GENERATED OUTPUT ROUTINES
323  3 23          B     TUP                                              4 14500  B P7A               37
324  3 24   * HOLD MUST BE IN CORE FOR GENERATION AND INITP
325  3 25   HOLD   DCW   #1                 *HOLD FILE DEFINITION        1 14504                      38
326  3 26          DC    #43                *                           43 14547                      39
327  3 27   F1     DCW   #3                 *                            3 14550                      39
328  3 28   F2     DCW   #3                 *                            3 14553                      39
329  3 29   F3     DCW   #3                 *                            3 14556                      39
330  3 30   F4     DCW   #3                 *                            3 14559                      39
331  3 31          DC    #25                *                           25 14584                      40
332  3 32   CLRJK2 CS    CLRJK3+3                                         4 14585  / M9I               40
333  3 33          CS                                                    1 14589  /                   40
334  3 34   *
335  3 35   QTYPEF BCE   READN,1,R           READ                         8 14590  B Q0A 001 R         40
336  3 36          BCE   END,1,E             END                          8 14598  B ?0? 001 E         41
337  3 37          BCE   TITLE,2,I           TITLE                        8 14606  B R2G 002 I         41
338  3 38          BCE   TAPEN,1,T           TAPEN                        8 14614  B O5C 001 T         41
339  3 39          NOP   2111                CARD TYPE ERROR              4 14622  N J11               41
340  3 40          H                                                     1 14626  .                   41
341  3 41   *
342  3 42   *GENERATED TAPE OUTPUT ROUTINES, SAMPLE
343  3 43   *         DS   45                      A,B,C CONTROL
344  3 44   WTAPE2 SBR   X1   ,*                * IS RECORD TO FILL - 1      4 14627  H 089               41
345  3 45   *              *,*
346  3 46   *              *,*                    GENERATED MOVE COMMANDS
347  3 47   *              *,*
348  3 48          BCE   WTAPE,0+1+X1,}          Q. END BLOCK, 0 IS REC LNG   8 14631  B F8D 0'1 } GMARK   42
349  3 49          SBR   WTAPE2+6            ???  SET TO NEXT BLOCK          4 14639  H O3C               42
350  3 50          B     PASS                                             4 14643  B C2I               42
351  3 51          DCW   2                                                1 14647                      42
352  3 52   STD    DCW   #5                  BLOCKCOUNT                   5 14652                      42
353  3 53   *WRITE AREA FOLLOWS WITH 'S, GM, AND WMS
354  3 54   *
355  3 55   *
356  3 56   TAPEN  B     LDABC               LOAD ABC FOR TAPE FILE       4 14653  B ?2C               42
357  3 562         MN    HOLD+4,*+4                                       7 14657  D N0H O6G           42
358  3 564         RWD   2                                                5 14664  U %U2 R             43
359  3 57          LCA   WTAPE2+3,4+X3                                    7 14669  L O3? 0?4           43
360  3 58          SBR   WHRWT2+3,7+X3        SBR X1,*                   7 14676  H O9D 0?7           43
361  3 59          SBR   X3                                               4 14683  H 099               43
362  3 60          B     GETDV                                            4 14687  B A5I               43
363  3 61   WHRWT2 SBR   *,22+X3                                          7 14691  H O9G 0B2           43
364  3 62          MLCWA STD                                              4 14698  L O5B               43
365  3 63          MLCWA                                                  1 14702  L                   44
366  3 64          LCA                                                    1 14703  L                   44
367  3 65          LCA                                                    1 14704  L                   44
368  3 66          LCA                                                    1 14705  L                   44
369  3 67          MN    HOLD+4,17+X3                                     7 14706  D N0H 0A7           44
370  3 70          MCW   WHRWT2+3,12+X3     MOVE SBR WTAPE2+6            7 14713  M O9D 0A2           44
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD
371  3 71          MN    F1,TUP+6                                       7 14720  D N5? P7G          44
372  3 72          MN                                                   1 14727  D                  45
373  3 73          MLC                                                  1 14728  M                  45
374  3 74          A     *-6,F1                                         7 14729  A P2I N5?          45
375  3 75          MN    F1,7+X3                                        7 14736  D N5? 0?7          45
376  3 76          MN                                                   1 14743  D                  45
377  3 77          MLC                                                  1 14744  M                  45
378  3 78          SBR   X3,22+X3                                       7 14745  H 099 0B2          45
379  3 79  QBLOCK  S     C1,F2                                          7 14752  S H3E N5C          46
380  3 80          BWZ   ORC,F2,K                                       8 14759  V P8F N5C K        46
381  3 81          B     1+X2                                           4 14767  B 0!1              46
382  3 82  TUP     SBR   X3,0+X3                                        7 14771  H 099 0?0          46
383  3 83          MLC   CRM                                            4 14778  M H2G              46
384  3 84          B     QBLOCK                                         4 14782  B P5B              46
385  3 85  ORC     SBR   X3,1+X3                                       7 14786  H 099 0?1          47
386  3 86          LCA   CGM                 END OF TAPE OUTPUT FILE GEN 4 14793  L 081              47
387  3 87          B     QTYPEF                                         4 14797  B N9?              47
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD
388  3 88          JOB   DATA MOVE GENERATION AND MISC CONTROL CARDS
389  3 89  READN   MRCM  1,HOLD                                         7 14801  P 001 N0D          47
390  3 90          BWZ   *+5,5,2             Q. TAPE INPUT            8 14808  V Q2? 005 2        47
391  3 91          B     NOLAB                                          4 14816  B Q6H              47
392  3 92          MN    5,*+4                                          7 14820  D 005 Q3?          48
393  3 93          RWD   1                   REWIND INPUT TAPE        5 14827  U %U1 R            48
394  3 94          BCE   NOLAB,51,           Q. TAPE LABEL            8 14832  B Q6H 051          48
395  3 95          MN    5,*+4                                          7 14840  D 005 Q5?          48
396  3 96          RT    1,201               READ TAPE LABEL          8 14847  M %U1 201 R        48
397  3 97          BER   TAPERR                                         5 14855  B I0A L            49
398  3 98          W                                                    1 14860  2                  49
399  3 99          MRCM  101,201                                        7 14861  P 101 201          49
400  4 00  NOLAB   MRCM  HIGHM-28,260                                   7 14868  P H3G 260          49
401  4 01          SBR   X3,1+X3                                       7 14875  H 099 0?1          49
402  4 02          SBR   293,0+X3                                      7 14882  H 293 0?0          49
403  4 03          W                                                    1 14889  2                  49
404  4 04          MRCM  130,260                                        7 14890  P 130 260          50
405  4 05  ASTATU  SBR   X1,*                 NO WM IN LAST STATUS     7 14897  H 089 R0C          50
406  4 06          CW    0+X1                                           4 14904  ) 0'0              50
407  4 07  FABC    SBR   9+X1,*              FIRST ABC                7 14908  H 0'9 R1D          50
408  4 08          SBR   X2                  INITIALIZE FOR PROCESSING 4 14915  H 094              50
409  4 09          B     READ                                           4 14919  B G7?              50
410  4 10          B     QTYPEF                                         4 14923  B N9?              50
411  4 11  *
412  4 12  TITLE   BCE   *+6,6,1                                       8 14927  B R4? 006 1        51
413  4 13          NOP   2121                FIRST TITLE NOT 1        4 14935  N J21              51
414  4 14          H                                                    1 14939  .                  51
415  4 15          MRCM  7,201                                          7 14940  P 007 201          51
416  4 16          R                                                    1 14947  1                  51
417  4 17          C     6,CTIT                                         7 14948  C 006 H3D          51
418  4 18          BE    *+6                                            5 14955  B R6E S            51
419  4 19          NOP   2122                TITLE 2 MISSING          4 14960  N J22              52
420  4 20          H                                                    1 14964  .                  52
421  4 21          LCA   CGM,69                                         7 14965  L 081 069          52
422  4 22          MRCM  7,271                                          7 14972  P 007 271          52
423  4 23          CC    1                                              2 14979  F 1                52
424  4 24          WR                                                   1 14981  3                  52
425  4 25          CCB   HEADPG+6,L                                     5 14982  F 342 L            52
426  4 26  AFTIL   BCE   END2,1,E                                       8 14987  B ?0H 001 E        53
427  4 27          NOP   2124                NO END AFTER TITLE        4 14995  N J24              53
428  4 28          H                                                    1 14999  .                  53
429  4 29  *
430  4 30  END     BWZ   HEADPG,SWW,1                                   8 15000  V 336 091 1        53
431  4 31  END2    CS    80                                             4 15008  / 080              53
432  4 32          SW    56,63                                          7 15012  , 056 063          53
433  4 33          R     56                                             4 15019  1 056              53
434  4 34  *
435  4 35  LDABC   SBR   LDABCX+3                                      4 15023  H A5H              54
436  4 36          SW    6                                              4 15027  , 006              54
437  4 37          LCA   BLK3,45+X3                                     7 15031  L H2C 0D5          54
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SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

438  4 38           LCA   BLK6                LOAD ABC CONTROLS          4 15038  L H2F              54
439  4 39           LCA   41                                             4 15042  L 041              54
440  4 40           MRCM  1,HOLD              HOLD FILE CARD             7 15046  P 001 N0D          54
441  4 41   ANXTAB  SBR   FABC+6,0+X3         CHAIN NXTABC               7 15053  H R1D 0?0          54
442  4 42           S     X1+1                                           4 15060  S 090              55
443  4 43   SWABC   SW    42+X1                                          4 15064  , 0U2              55
444  4 44           S     C4,42+X1                                       7 15068  S H3F 0U2          55
445  4 45           MN    42+X1,*+7                                      7 15075  D 0U2 ?8H          55
446  4 46           SBR   X2,0+X3                                        7 15082  H 094 0?0          55
447  4 47           SW    4+X2,8+X2           SET WM FOR LENGTH ABC      7 15089  , 0!4 0!8          55
448  4 48           SW    1+X3                SET WM FOR LOCATION        4 15096  , 0?1              56
449  4 49           MZ    CB,2+X3             INDEX FOR LOCATION         7 15100  Y H6H 0?2          56
450  4 50           BCE   *+19,X1,2                                      8 15107  B A3C 089 2        56
451  4 51           SBR   X1,1+X1                                        7 15115  H 089 0'1          56
452  4 52           SBR   X3,12+X3                                       7 15122  H 099 0A2          56
453  4 53           B     SWABC                                          4 15129  B ?6D              56
454  4 54           SW    12+X3               SET WM IN STATUS           4 15133  , 0A2              57
455  4 55           SBR   ASTATU+6,12+X3      LOCATION OF STATUS         7 15137  H R0C 0A2          57
456  4 56           SBR   ANXTAB+3,21+X3      CHAIN NXT ABC              7 15144  H ?5F 0B1          57
457  4 57           SBR   X3                                             4 15151  H 099              57
458  4 58   LDABCX  B     *                                              4 15155  B A5H              57
459  4 59   *
460  4 60   GETDV   SBR   GETDVX+3            READ AND ASSEMBLE MOVES    4 15159  H B0H              57
461  4 61           SBR   X2,SETWM-1          INIT SW STRING, SEE MCW    7 15163  H 094 Y1A          57
462  4 62   RCTL    B     READ                                           4 15170  B G7?              58
463  4 63           S     X1+1                SEARCH TABLE OF MOVES FOR TYPE 4 15174  S 090          58
464  4 64   QTYPEM  C     4,DATAMV+X1                                    7 15178  C 004 BSG          58
465  4 65           BU    *+16                                           5 15185  B B0E /            58
466  4 66           MCW   DATAMV+3+X1,*+8                                7 15190  M BT? B0D          58
467  4 67           S     X1+1                                           4 15197  S 090              58
468  4 68           B     *                   EXIT TO PROCESS TYPE       4 15201  B B0D              58
469  4 69   GETDVX  BCE   *,DATAMV+4+X1,*     EXIT TO FILE ASSEMBLY      8 15205  B B1B BTA *        59
470  4 70           SBR   X1,7+X1                                        7 15213  H 089 0'7          59
471  4 71           B     QTYPEM                                         4 15220  B A7H              59
472  4 72   DATAMV  DCW   @MLC @                                         4 15227                     59
473  4 73           DCW   MCW                                            3 15230  D6G                59
474  4 74           DCW   @MLZS@                                        4 15234                     59
475  4 75           DCW   MZ                                            3 15237  E7A                59
476  4 76           DCW   @MLNS@                                        4 15241                     60
477  4 77           DCW   MN                                            3 15244  E8B                60
478  4 78           DCW   @BWZ @                                        4 15248                     60
479  4 79           DCW   BWZ                                           3 15251  B8A                60
480  4 80           DCW   @BCE @                                        4 15255                     60
481  4 81           DCW   BCE                                           3 15258  B9B                60
482  4 812          DCW   @CONS@                                        4 15262                     60
483  4 814          DCW   CONST                                         3 15265  F5B                61
484  4 82           DCW   @CORE@                                        4 15269                     61
485  4 83           DCW   CORE                                          3 15272  D1E                61
486  4 84           DCW   @1HDR@                                        4 15276                     61
487  4 85           DCW   HDR                                           3 15279  G4F                61
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SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

488  4 86           DCW   @*@                                            1 15280                     61
489  4 87   *
490  4 88   BWZ     MCW   CBWZ,OP             ASSEMBLES                  7 15281  M C6G H6G          61
491  4 89           B     *+8                                            4 15288  B B9I              62
492  4 90   BCE     MCW   CB,OP                                          7 15292  M H6H H6G          62
493  4 91           SW    6+X1,9+X1           BWZ/BCE  *+6,CCC+X3,D      7 15299  , 0'6 0'9          62
494  4 92           SW    10+X1                   B    *+9               4 15306  , 0/0              62
495  4 93           MCW   8+X1,20+X3              DCW  @B@               7 15310  M 0'8 0B0          62
496  4 94           SBR   17+X3,13+X3             MCW  *-1,AAA+X1        7 15317  H 0A7 0A3          62
497  4 95           LCA   CMCW,14+X3                                     7 15324  L D7H 0A4          63
498  4 96           LCA   9+X1                                           4 15331  L 0'9              63
499  4 97           SBR   12+X3,21+X3                                    7 15335  H 0A2 0B1          63
500  4 98           LCA   CB,9+X3                                        7 15342  L H6H 0?9          63
501  4 99           MCW   13+X1                                          4 15349  M 0/3              63
502  5 00           SBR   4+X3,14+X3                                     7 15353  H 0?4 0A4          63
503  5 01           LCA   OP,1+X3                                       7 15360  L H6G 0?1          64
504  5 02   CBWZ    BWZ   *+8,P,1                                       8 15367  V C8B H2H 1        64
505  5 03           MZ    CS,19+X3                                       7 15375  Y H7? 0A9          64
506  5 04           MZ    CB,6+X3                                        7 15382  Y H6H 0?6          64
507  5 05           SBR   X3,20+X3                                      7 15389  H 099 0B0          64
508  5 06           BCE   RCTL,14+X1,                                   8 15396  B A7? 0/4          65
509  5 07           SBR   X1,8+X1                                       7 15404  H 089 0'8          65
510  5 08           B     BCE+7                                          4 15411  B B9I              65
511  5 09   *
512  5 10   CORE    MRCM  ORGIS,230                                      7 15415  P D5G 230          65
513  5 11           SBR   242,1+X3            PRINT ORIGIN FOR PATCH     7 15422  H 242 0?1          65
514  5 12           MN    8,*+9                                          7 15429  D 008 D4D          66
515  5 13           MN                                                   1 15436  D                  66
516  5 14           MN                                                   1 15437  D                  66
517  5 15           SBR   X3,0+X3                                        7 15438  H 099 0?0          66
518  5 16           W                                                    1 15445  2                  66
519  5 17           MRCM  130,230                                        7 15446  P 130 230          66
520  5 18           B     RCTL                                           4 15453  B A7?              66
521  5 19   ORGIS   DCW   @O@                                           1 15457                     67
522  5 20           DC    @RIGIN IS@                                     8 15465                     67
523  5 21           DCW   @}@                 ??? GMARK ???              1 15466          GMARK      67
524  5 22   *
525  5 23   MCW     SW    6+X1,9+X1           ASSEMBLES                  7 15467  , 0'6 0'9          67
526  5 24           SW    12+X1                MCW AAA+X3,CCC+X1         4 15474  , 0/2              67
527  5 25   CMCW    MCW   14+X1,7+X3                                     7 15478  M 0/4 0?7          67
528  5 26           MCW   8+X1                                           4 15485  M 0'8              67
529  5 27           LCA   CMCW                                           4 15489  L D7H              67
530  5 28           MCW   11+X1,0+X2           GENERATE SW STRING TO SW IN 7 15493  M 0/1 0!0          68
531  5 29           LCA   CSW                   EACH OUTPUT RECORD OF BLOCK 4 15500  L H7A              68
532  5 30           SBR   X2                                             4 15504  H 094              68
533  5 31           BWZ   *+8,P,1                                       8 15508  V E2C H2H 1        68
534  5 32           MZ    CB,3+X2                                        7 15516  Y H6H 0!3          68
535  5 33           BWZ   *+8,P,1                                       8 15523  V E3H H2H 1        68
536  5 34           MZ    CS,6+X3                                        7 15531  Y H7? 0?6          69
537  5 35           MZ    CB,3+X3                                        7 15538  Y H6H 0?3          69
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

538  5 36          SBR   X3,7+X3                                             7 15545  H 099 0?7          69
539  5 37          BCE   RCTL,15+X1,                                         8 15552  B A7? 0/5          69
540  5 38          SBR   X1,9+X1                                             7 15560  H 089 0'9          69
541  5 39          B     MCW                                                 4 15567  B D6G              70
542  5 40   *
543  5 41   MZ     MCW   CMZ,OP                                              7 15571  M F1B H6G          70
544  5 42          B     *+8                                                 4 15578  B E8I              70
545  5 43   MN     MCW   CMN,OP              ASSEMBLES                       7 15582  M H6I H6G          70
546  5 44          SW    6+X1                MZ/MN  AAA+X3,BBB+X1           4 15589  , 0'6              70
547  5 45          MCW   11+X1,7+X3                                          7 15593  M 0/1 0?7          70
548  5 46          LCA   OP                                                  4 15600  L H6G              70
549  5 47          BWZ   *+8,P,1                                             8 15604  V F1I H2H 1        71
550  5 48   CMZ    MZ    CS,6+X3                                             7 15612  Y H7? 0?6          71
551  5 49          MZ    CB,3+X3                                             7 15619  Y H6H 0?3          71
552  5 50          SBR   X3,7+X3                                             7 15626  H 099 0?7          71
553  5 51          BCE   RCTL,12+X1,                                         8 15633  B A7? 0/2          71
554  5 52          SBR   X1,6+X1                                             7 15641  H 089 0'6          72
555  5 525         B     MN+7                                                4 15648  B E8I              72
556  5 53   *
557  5 53A  CONST  SW    8,11                                                7 15652  , 008 011          72
558  5 53C         MLC   7,X1                                                7 15659  M 007 089          72
559  5 53E         MLC   BLK3,X1-2                                           7 15666  M H2C 087          72
560  5 53G         MLCWA CB,1+X3                                             7 15673  L H6H 0?1          72
561  5 53I         MA    X1,X3                                               7 15680  # 089 099          73
562  5 53K         MLC   10,11+X3                                           7 15687  M 010 0A1          73
563  5 53M         BWZ   *+8,P,1                                             8 15694  V G0I H2H 1        73
564  5 53O         MLZS  CS,10+X3                                            7 15702  Y H7? 0A0          73
565  5 53Q         MLCWA CMCW,5+X3                                           7 15709  L D7H 0?5          73
566  5 53S         SBR   8+X3                                               4 15716  H 0?8              74
567  5 53T         MLCWA 10+X1                                               4 15720  L 0/0              74
568  5 53U         SBR   *+4                                                 4 15724  H G3A              74
569  5 53W         SBR   *,5+X3                                              7 15728  H G3D 0?5          74
570  5 53Y         SBR   X3,11+X3                                            7 15735  H 099 0A1          74
571  5 530         B     RCTL                                                4 15742  B A7?              74
572  5 54   *
573  5 55   HDR    MN    HOLD+4,*+4                                          7 15746  D N0H G5F          74
574  5 56          WT    2,1                                                 8 15753  M %U2 001 W        75
575  5 57          BER   TAPERR                                              5 15761  B I0A L            75
576  5 58          B     RCTL                                                4 15766  B A7?              75
577  5 59   *
578  5 60   READ   SBR   READX+3            READ AND LIST CARD              4 15770  H H2?              75
579  5 61          CS    80                                                  4 15774  / 080              75
580  5 62          R                                                         1 15778  1                  75
581  5 63          SBR   X1,1                                               7 15779  H 089 001          75
582  5 64   READM  MRCM  0+X1,200+X1                                         7 15786  P 0'0 2'0          76
583  5 65          SAR   X1                                                  4 15793  Q 089              76
584  5 66          BCE   *+5,X1-1,8          LOOP IF RM IN CARD STOPPED MOVE 8 15797  B H0I 088 8        76
585  5 67          B     READM                                               4 15805  B G8F              76
586  5 68          W                                                         1 15809  2                  76
587  5 69          MRCM  101,201                                             7 15810  P 101 201          76
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

588  5 70   READX  B     *                                                   4 15817  B H2?              76
589  5 71   *
590  5 72   BLK3   DCW   #3                                                  3 15823                     77
591  5 73   BLK6   DC    #3                                                  3 15826                     77
592  5 74   CRM    DCW   @'@                                                 1 15827                     77
593  5 75   P      DCW   #1                  WM WHILE GEN PRINT/PUNCH        1 15828                     77
594  5 76   CTIT   DCW   @TITLE2@                                            6 15834                     77
595  5 77   C1     DCW   1                                                   1 15835                     77
596  5 78   C4     DCW   4                                                   1 15836                     77
597  5 79   HIGHM  DCW   @  HIGH LOCATION FOR OUTPUT IS@                    29 15865                     78
598  5 80          DCW   @}@                                                 1 15866              GMARK  78
599  5 81   OP     DCW   #1                  BWZ/BCE, MN/MZ FOR GENERATION   1 15867                     78
600  5 82   CB     B                                                         1 15868  B                  78
601  5 83   CMN    MN                                                        1 15869  D                  78
602  5 84   CS     S                                                         1 15870  S                  78
603  5 85   CSW    SW                                                        1 15871  ,                  78
604  5 86   *
605  5 87          ORG   SIZE-98                                                    15901
606  5 88   TAPERR SBR   COMAND+16              REPEAT 8 CHARACTER TAPE       4 15901  H I9F              79
607  5 89          SBR   *+4                    R/W COMMANDS  AFTER ERROR     4 15905  H I1B              79
608  5 90          C     *,COMAND+13                                         7 15909  C I1E I9C          79
609  5 91          C                                                         1 15916  C                  79
610  5 92          MCW                                                       1 15917  M                  79
611  5 93          MN    COMAND+17,COMAND+18                                 7 15918  D I9G I9H          79
612  5 94          MN    COMAND+3,BACKSP+3                                   7 15925  D I8C I6?          79
613  5 95   REPEAT A     *-6,COMAND+18                                       7 15932  A I3B I9H          80
614  5 96          C     COMAND+18,COMAND+17                                 7 15939  C I9H I9G          80
615  5 97          BU    *+7                                                 5 15946  B I5G /            80
616  5 98          H                                                         1 15951  .                  80
617  5 99          BSS   COMAND+13,G                                         5 15952  B I9C G            80
618  6 00   BACKSP CU    %U1,B                                               5 15957  U %U1 B            80
619  6 01          BCE   COMAND,COMAND+7,R                                  8 15962  B I8? I8G R        80
620  6 02          BL    COMAND                                              5 15970  B I8? T            81
621  6 03          CU    %U1,E                                               5 15975  U %U1 E            81
622  6 04   COMAND NOP   *,*,*                                               8 15980  N I8G I8G *        81
623  6 05          BER   REPEAT                                              5 15988  B I3B L            81
624  6 06          B     *-3                                                 4 15993  B I9C              81
625  6 07          DCW   7                                                   1 15997                     81
626  6 08          DCW   @ @                 ??? GMARK ???                   1 15998                     81
627  6 09          EX    STARTI                                                     B Y2D              82
628  6 10   ************************************************************************
629  6 11   *     CONTROL CARDS HERE IN CONDENSED DECK
630  6 12   ************************************************************************
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SEQ PG LIN  LABEL  OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD

631  6 13          JOB   INITIALIZE PROCESSING
632  6 14          ORG   SIZE-999                                                 15000
633  6 15          R     GETREC+11          CONSTANTS FOR CONVERSION          4 15000  1 C5E              85
634  6 16          BCE   LOADTR,1,,          OF GET TAPE TO READ CARD         8 15004  B B8D 001 ,        85
635  6 165         NOP                                                       1 15012  N                  85
636  6 17   CARD   MLCWA *-7,QPAD9                                          7 15013  L ?1B C6C          85
637  6 18          CHAIN 2                                                                MACRO
638                MLCWA                                                   1 15020  L          GEN     85
639                MLCWA                                                   1 15021  L          GEN     85
640  6 19          S     X3+1                                              4 15022  S 100              85
641  6 21          B     GETREC+7                                          4 15026  B C5A              86
642  6 22   *
643  6 23   INITP  CS    80                                                4 15030  / 080              86
644  6 24          BCE   CARD,HOLD+4,C                                     8 15034  B ?1C N0H C        86
645  6 245         MZ    *-6,ABIT           MAKE A-BIT CONSTANT            7 15042  Y ?4B H8H          86
646  6 25          MN    HOLD+4,RTAPE+3                                    7 15049  D N0H B1H          86
647  6 26          MN    HOLD+4,EOT1+3                                     7 15056  D N0H B6G          86
648  6 27          SBR   INTBLK+6,0+X3                                     7 15063  H B5I 0?0          87
649  6 28          SBR   RTAPE+6,1+X3        SET START OF TAPE INPUT BLOCK  7 15070  H B2A 0?1          87
650  6 29          SBR   GETBL3+6,13+X3      INIT NOISE TEST                7 15077  H B3D 0A3          87
651  6 295         SBR   GETBLK+6                                          4 15084  H B1D              87
652  6 297         MLC   ABIT,GETBL3+7                                     7 15088  M H8H B3E          87
653  6 30          A     *-6,F1                                            7 15095  A ?9E N5?          87
654  6 31          MN    F1,GETREC+13                                      7 15102  D N5? C5G          88
655  6 32          MN                                                      1 15109  D                  88
656  6 33          MLC                                                     1 15110  M                  88
657  6 34          MCW   RTAPE+7,GETBL2+7                                  7 15111  M B2B B4G          88
658  6 35          MLC   F3,REELS           SAVE INPUT REEL COUNT          7 15118  M N5F H9A          88
659  6 37          S     IPC1,REELS                                        7 15125  S A5D H9A          88
660  6 38          R                                                       1 15132  1                  88
661  6 39          CS    *-4                                               4 15133  / A3B              89
662  6 40          SBR   *-4                                               4 15137  H A3F              89
663  6 41          BWZ   *-15,HOLD,1                                       8 15141  V A3C N0D 1        89
664  6 42          BIN   GETBLK,                                           5 15149  B B0H              89
665  6 43   IPC1   DCW   1                                                 1 15154                     89
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SEQ PG LIN  LABEL  OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD

666  6 44          JOB   PROCESSING ROUTINES, INPUT/OUTPUT, PASS/FAIL
667  6 45          ORG   *+X00                                                  15200
668  6 455  ORGPRO EQU   *                                                    15199
669  6 46          DCW   @}@                CORE PROTECTION                 1 15200              GMARK   90
670  6 47   * THIS IS UPPER LIMIT OF USER TAPE INPUT BLOCK
671  6 48   *GET NEXT RECORD FROM BLOCKED INPUT TAPE
672  6 49   NOISE  A     *-6,NOISEC                                          7 15201  A B0A 193          90
673  6 50   GETBLK MLC   ABIT,0+12          INIT ABIT FOR NOISE REC TEST    7 15208  M H8H 012          90
674  6 505  RTAPE  RT    1,*                * IS READ AREA                   8 15215  M %U1 B2B R        90
675  6 51          BEF   EOT1                                              5 15223  B B6D K            90
676  6 52   GETBL3 BCE   NOISE,0+12,^  ABIT  Q. NOISE RECORD                8 15228  B B0A 012 ^        90
677  6 54          B     *+9                                               4 15236  B B4H              91
678  6 55   GETBL2 RT    1,*                CALLING SEQUENCE FOR TAPERR     8 15240  M %U1 B4G R        91
679  6 56          BER   TAPERR                                            5 15248  B I0A L            91
680  6 57   INTBLK SBR   X3,*               * IS READ AREA - 1              7 15253  H 099 B5I          91
681  6 58          B     QPAD9                                             4 15260  B C6C              91
682  6 59   EOT1   RWU   1                  INPUT REEL COMPLETED            5 15264  U %U1 U            91
683  6 60          S     PRC1,REELS         Q. ALL REELS                    7 15269  S H8I H9A          92
684  6 61          BWZ   GETBLK,REELS,B                                     8 15276  V B0H H9A B        92
685  6 62   LOADTR SW    56,63                                             7 15284  , 056 063          92
686  6 63          B     56                                                4 15291  B 056              92
687  6 64   SCAN9  MCW   X3,X1              FIRST CHAR OF RECORD WAS 9      7 15295  M 099 089          92
688  6 65          SBR   X1,1+X1             SCAN FOR ALL 9S                 7 15302  H 089 0'1          93
689  6 66          BCE   *-14,1+X1,9                                        8 15309  B C0B 0'1 9        93
690  6 67          BCE   GETREC+7,1+X1,'      YES, WAS PADDING              8 15317  B C5A 0'1 '        93
691  6 68          B     QPAD9+8              NO, PROCESS                   4 15325  B C7A              93
692  6 69   PASS   A     *-6,COUNT+X2                                        7 15329  A C2I 0M2          93
693  6 70   SELX   BW    OUTSEL,STATUS+X2   Q. LAST FILE DEF TESTED         8 15336  V C7A 0L6 1        94
694  6 71   GETREC A     *-6,RECNT          COUNT LAST INPUT RECORD         7 15344  A C4D 187          94
695  6 72          BCE   GETBLK,0+1+X3,}    Q. END OF BLK, 0 IS RECORD LNG  8 15351  B B0H 0?1 } GMARK   94
696  6 73          SBR   X3                 SET TO NEXT RECORD              4 15359  H 099              94
697  6 74   QPAD9  BCE   SCAN9,1+X3,9       Q. PADDING                      8 15363  B B9E 0?1 9        94
698  6 75   *
699  6 76   OUTSEL MCW   NXTABC+X2,X2            TEST FOR TRUTH OF A,B,C     7 15371  M 0M5 094          95
700  6 765          BCE   IO+X2,AHERE+X2,     WHEN AHERE BLK, ACCEPT ALL REC  8 15378  B 0M6 0!3          95
701  6 77           MCW   AHERE+X2,*+4                                      7 15386  M 0!3 C9F          95
702  6 78           C     *,ALOW+X2                                         7 15393  C C9I 0!7          95
703  6 79           BH    TSTAF                                             5 15400  B E5B U            95
704  6 80           MCW   AHERE+X2,*+4                                      7 15405  M 0!3 D1E          96
705  6 81           C     *,AHIGH+X2                                        7 15412  C D1H 0J1          96
706  6 82           BL    TSTAF                                             5 15419  B E5B T            96
707  6 83           BCE   IO+X2,AB+X2,                                      8 15424  B 0M6 0J2          96
708  6 84           BCE   TSTBP,AB+X2,O                                     8 15432  B D8F 0J2 O        96
709  6 85   TSTBL  MCW   BHERE+X2,*+4                                      7 15440  M 0J5 D5?          97
710  6 86          C     *,BLOW+X2                                         7 15447  C D5C 0J9          97
711  6 87          BCE   TSTBN,AB+X2,N                                     8 15454  B E7B 0J2 N        97
712  6 88          BH    TSTBF                                             5 15462  B E9F U            97
713  6 89          MCW   BHERE+X2,*+4                                      7 15467  M 0J5 D7G          97
714  6 90          C     *,BHIGH+X2                                        7 15474  C D8? 0K3          98
715  6 91          BL    TSTBF                                             5 15481  B E9F T            98
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD
716  6 92   TSTBP  BCE   IO+X2,BC+X2,                                        8 15486  B 0M6 0K4          98
717  6 93          BCE   IO+X2,BC+X2,O                                       8 15494  B 0M6 0K4 O        98
718  6 94   TSTCL  MCW   CHERE+X2,*+4                                       7 15502  M 0K7 E1B          98
719  6 95          C     *,CLOW+X2                                          7 15509  C E1E 0L1          99
720  6 96          BCE   TSTCN,BC+X2,N                                      8 15516  B F5F 0K4 N        99
721  6 97          BH    FAIL                                               5 15524  B F0D U            99
722  6 98          MCW   CHERE+X2,*+4                                       7 15529  M 0K7 E3I          99
723  6 99          C     *,CHIGH+X2                                         7 15536  C E4B 0L5          99
724  7 00          BL    FAIL                                               5 15543  B F0D T            99
725  7 01          B     IO+X2                                              4 15548  B 0M6             100
726  7 02   TSTAF  BCE   TSTBL,AB+X2,O                                      8 15552  B D4? 0J2 O       100
727  7 03          BCE   FAIL,AB+X2,                                       8 15560  B F0D 0J2         100
728  7 04          B     TSTBF                                              4 15568  B E9F             100
729  7 05   TSTBN  BH    TSTBP                                              5 15572  B D8F U           100
730  7 06          MLC   BHERE+X2,*+4                                       7 15577  M 0J5 E8G         100
731  7 07          C     *,BHIGH+X2                                         7 15584  C E9? 0K3         101
732  7 08          BL    TSTBP                                              5 15591  B D8F T           101
733  7 09   TSTBF  B     TSTCL,BC+X2,O                                      8 15596  B E0B 0K4 O       101
734  7 10   FAIL   BWZ   SELX,STATUS+X2,2                                   8 15604  V C3F 0L6 2       101
735  7 11          BCE   SELX,1,,              Q. END OF CARDS              8 15612  B C3F 001 ,       101
736  7 12          MCW   AHERE+X2,*+4                                       7 15620  M 0!3 F3?         102
737  7 13          C     *,AHIGH+X2                                         7 15627  C F3C 0J1         102
738  7 14          BL    *+5                                                5 15634  B F4C T           102
739  7 15          B     SELX                                               4 15639  B C3F             102
740  7 16          R                                                        1 15643  1                 102
741  7 17          MCW   16,AHIGH+X2                                        7 15644  M 016 0J1         102
742  7 18          MCW                                                      1 15651  M                 102
743  7 19          B     OUTSEL+7                                           4 15652  B C7H             103
744  7 20   TSTCN  BH    IO+X2                                              5 15656  B 0M6 U           103
745  7 21          MLC   CHERE+X2,*+4                                       7 15661  M 0K7 F7A         103
746  7 22          C     *,CHIGH+X2                                         7 15668  C F7D 0L5         103
747  7 23          BL    IO+X2                                              5 15675  B 0M6 T           103
748  7 24          B     FAIL                                               4 15680  B F0D             103
749  7 25   *
750  7 26   *GENERATED WRITE AND TAPERR MUST BE IN CORE FOR PROCESSING
751  7 27   * AND FOR CLOSE
752  7 28   *GENERALIZED WRITE OUTPUT BLOCK
753  7 29   WTAPE  SBR   X1                                                 4 15684  H 089             103
754  7 30   WTAPEL MCW   3+X1,*+4              RESET ROUTINE TO FILL        7 15688  M 0'3 F9H         104
755  7 31          SBR   *,13+X1               FIRST RECORD OF NEXT BLOCK   7 15695  H G0A 0/3         104
756  7 32          MCW   8+X1,*+4              DRIVE                        7 15702  M 0'8 G1B         104
757  7 33          WT    2,14+X1                                            8 15709  M %U2 0/4 W       104
758  7 34          BER   TAPERR                                             5 15717  B I0A L           104
759  7 35          A     *-6,13+X1            COUNT TAPE BLOCK            7 15722  A G2B 0/3         105
760  7 36   QEOT   BEF   *+5                  Q. EOT                       5 15729  B G3H K           105
761  7 37          B     PASS                                               4 15734  B C2I             105
762  7 38          MN    8+X1,*+4                                           7 15738  D 0'8 G4H         105
763  7 39          WTM   2                    TM                           5 15745  U %U2 M           105
764  7 40          MLC   13+X1,WTCNT                                        7 15750  M 0/3 H1F         105
765  7 41          MLC   WTTRL+25,13+X1                                     7 15757  M H3F 0/3         106
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD
766  7 42          MN    8+X1,*+4                                           7 15764  D 0'8 G7D         106
767  7 43          WT    2,WTTRL-4            WRITE TRAILER LABEL           8 15771  M %U2 H0G W       106
768  7 44          MN    8+X1,*+4                                           7 15779  D 0'8 G8I         106
769  7 45          WTM   2                    TM AFTER TRAILER              5 15786  U %U2 M           106
770  7 46          MN    8+X1,*+4                                           7 15791  D 0'8 H0A         107
771  7 47          RWU   2                                                  5 15798  U %U2 U           107
772  7 48   WTEX   B     PASS                                               4 15803  B C2I             107
773  7 49   WTTRL  DCW   @1EOR @              80 CHAR TRAILER LABEL        5 15811                    107
774  7 50   WTCNT  DCW   #5                                                 5 15816                    107
775  7 51          DA    1X70,G,C                                             15817  15886
775                DCW   @"@                                                1 15887            GMARK  109
776  7 52   ABIT   DCW   #1                                                 1 15888                    109
777  7 522  PRC1   DCW   1                                                  1 15889                    109
778  7 524  REELS  DCW   00                                                 2 15891                    110
779  7 53          EX    INITP                                                    B ?3?              111
780  7 54   ************************************************************************
781  7 55   *     CARD INPUT, WHEN USED, HERE
782  7 56   ************************************************************************
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SEQ PG LIN  LABEL   OP   OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

783  7 57           JOB  CLOSE FILES, PRINT I/O COUNTS
784  7 58           ORG  ORGPRO                                                  15199
785  7 59  ENDPRG SW   QEOT+4              MODIFY WT TO CLOSE FILE          4 15199  , G3C              114
786  7 60           MLC  @F@,WTTRL-1        CHANGE EOR TO EOF                7 15203  M E2C H1?          114
787  7 61           BSS  *+8,F                                               5 15210  B B2B F            114
788  7 62           MCW  CR,WTEX-1                                           7 15215  M E1G H0B          114
789  7 63           SBR  WTEX+3,QLAST                                        7 15222  H H0F C5F          114
790  7 64           BWZ  PFT,SWW,1          Q. PRINTED OUTPUT                8 15229  V B4A 091 1        114
791  7 65           B    FINDON+2                                            4 15237  B B7F              115
792  7 66  PFT    SBR  SWTOT+3,*+5        SWITCH TO FINAL TOTAL            7 15241  H 914 B5B          115
793  7 67           B    WI1                                                 4 15248  B 870              115
794  7 68           MLC  FINCNT,COUTT                                        7 15252  M 795 846          115
795  7 69           MCW  WI2+6,*+7                                           7 15259  M 883 B7B          115
796  7 70           NOP  *,*                                                 7 15266  N B7B B7B          115
797  7 71           W                                                        1 15273  2                  115
798  7 72  FINDON CC   1                                                     2 15274  F 1                116
799  7 73           CS   332                                                 4 15276  / 332              116
800  7 74           CS                                                       1 15280  /                  116
801  7 75           MCW  CINPUT,250         INPUT COUNT                      7 15281  M D9D 250          116
802  7 76           MCS  RECNT,258                                           7 15288  Z 187 258          116
803  7 77           BCE  *+15,NOISEC,                                        8 15295  B C1G 193          116
804  7 78           MLC  CNOISE,275                                          7 15303  M E0C 275          116
805  7 79           MCS  NOISEC,282                                          7 15310  Z 193 282          117
806  7 80           CC   T                                                   2 15317  F T                117
807  7 81           W                                                        1 15319  2                  117
808  7 82           CS                                                       1 15320  /                  117
809  7 83           CS                                                       1 15321  /                  117
810  7 84           MCW  COUT,255                                            7 15322  M E1F 255          117
811  7 85           CC   S                                                   2 15329  F S                117
812  7 86           W                                                        1 15331  2                  118
813  7 87           CS                                                       1 15332  /                  118
814  7 88           CS                                                       1 15333  /                  118
815  7 89  PCNT   MCW  NXTABC+X2,X2                                          7 15334  M 0M5 094          118
816  7 90           MCS  COUNT+X2,258                                        7 15341  Z 0M2 258          118
817  7 91           BCE  BT,IO+X2,H         Q. TAPE FILE                     8 15348  B C8I 0M6 H        118
818  7 92  QLAST  W                                                        1 15356  2                  118
819  7 93           BWZ  PCNT,STATUS+X2,1   Q. LAST FILE                     8 15357  V C3D 0L6 1        119
820  7 94           CC   1                                                   2 15365  F 1                119
821  7 95           BWZ  *+5,SWP,1                                           8 15367  V C7I 096 1        119
822  7 96           B    *+7                                                 4 15375  B C8E              119
823  7 97           CS   180                                                 4 15379  / 180              119
824  7 98           P                                                        1 15383  4                  119
825  7 99           P                                                        1 15384  4                  119
826  8 00           R    40                                                  4 15385  1 040              120
827  8 06  BT     MCW  IO+6+X2,X3                                          7 15389  M 0N2 099          120
828  8 07           MCW  X3,X1                                               7 15396  M 099 089          120
829  8 08           BCE  *+9,0+X1,}         SCAN BACKWARD FOR GM             8 15403  B D1I 0'0 } GMARK  120
830  8 09           SBR  X1                  ON BCE WTAPE,0+1+X1,GM          4 15411  H 089              120
831  8 10           B    *-15                                                4 15415  B D0C              120
832  8 11           SBR  X1,1+X1            SET X1 TO POINT TO CALLING SEQ   7 15419  H 089 0'1          121
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SEQ PG LIN  LABEL   OP   OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

833  8 12           MN   8+X1,250                                            7 15426  D 0'8 250          121
834  8 13           MCW  CTAPE,248                                           7 15433  M E2A 248          121
835  8 14           BWZ  QEOT,0+X3,2        Q. NO RECORDS IN THIS BLOCK      8 15440  V G2I 0?0 2        121
836  8 15  FILL9  MCW  C9,1+X3             SCAN FORWARD TO GM,              7 15448  M E2B 0?1          121
837  8 16           BCE  *+9,2+X3,'          FILL 9 PADDING                  8 15455  B D7A 0?2 '        122
838  8 17           SBR  X3                                                  4 15463  H 099              122
839  8 18           B    FILL9                                               4 15467  B D4H              122
840  8 19           BCE  WTAPEL,3+X3,}      Q. PADDING COMPLETE              8 15471  B F8H 0?3 } GMARK  122
841  8 20           SBR  X3,2+X3                                             7 15479  H 099 0?2          122
842  8 21           B    FILL9                                               4 15486  B D4H              122
843  8 24  CINPUT DCW  @INPUT@                                             5 15494                     123
844  8 25  CNOISE DCW  @NOISE REC@                                          9 15503                     123
845  8 26  COUT   DCW  @OUTPUT COUNTS@                                    13 15516                     123
846  8 27  CR     DCW  @R@                                                  1 15517                     123
847  8 28  CTAPE  DCW  @TAPE@                                              4 15521                     123
848  8 29  C9     DCW  @9@                                                  1 15522                     123
               DCW  @F@                                                  1 15523             LIT     123
849  8 30           EX   ENDPRG                                                      B A9I              124
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SEQ PG LIN  LABEL  OP    OPERANDS                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

850  8 31          JOB   LOAD NEXT PROGRAM OR HALT
851  8 315         ORG   ORGPRO                                      15199
852  8 32   QEOJL  BSS   EOJ,A                                   5 15199  B B3? A           127
853  8 33          CS    80                                    4 15204  / 080             127
854  8 34          SW    1                                     4 15208  , 001             127
855  8 35          R                                           1 15212  1                 127
856  8 36          BCE   SORT7,2,                              8 15213  B B2E 002         127
857  8 37          B     1                                     4 15221  B 001             127
858  8 38   *SORT7    SORT7
859          SORT7  B     X0K001                                4 15225  B I5A             127
860                 H                                           1 15229  .                 128
861          X0J001 ORG   15951                                   15230  15951
862          X0K001 SW    1                                     4 15951  , 001             129
863                 CS    *-4                                   4 15955  / I5D             129
864                 SBR   *-4                                   4 15959  H I5H             129
865                 BWZ   X0K001+4,1,1                          8 15963  V I5E 001 1       129
866                 B     *+2                                   4 15971  B I7F             129
867                 DCW   @ @                                   1 15975                    129
868          X0L001 RWD   1                                     5 15976  U %U1 R           129
869                 RTW   1,1                                   8 15981  L %U1 001 R       130
870                 BER   X0L001                                5 15989  B I7F L           130
871                 B     2701                                  4 15994  B P01             130
872                 ORG   X0J001                                       15230
873  8 39   EOJ    NOP   2888              EOJ HALT              4 15230  N Q88             131
874  8 40          H                                           1 15234  .                 131
875  8 41          B     EOJ                                   4 15235  B B3?             131
876  8 42          H                                           1 15239  .                 131
877  8 43          END   QEOJL                                        / A9I 080
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SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
AB	12	ABIT	15888	AFTIL	14987	AHERE	3	AHIGH	11	ALOW	7	ANXTAB	15053
ASTATU	14897	BACKSP	15957	BC	24	BCE	15292	BHERE	15	BHIGH	23	BLK3	15823
BLK6	15826	BLOW	19	BT	15389	BWZ	15281	C1	15835	C4	15836	C9	15522
CARD	15013	CB	15868	CBWZ	15367	CCC	14425	CGM	81	CHEAD1	14431	CHEAD2	14437
CHEAD3	14443	CHEAD4	14449	CHERE	27	CHIGH	35	CINPUT	15494	CLOW	31	CLRJK2	14585
CLRJK3	14496	CLRJNK	14474	CLRP	14418	CMCS	14450	CMCW	15478	CMN	15869	CMZ	15612
CNN	14452	CNOISE	15503	COMAND	15980	CONST	15652	CORE	15415	COUNT	42	COUT	15516
COUTT	846	CP	14453	CPRINT	14458	CPROG	14465	CPUNCH	14470	CR	15517	CRM	15827
CS	15870	CSS	14471	CSW	15871	CTAPE	15521	CTIT	15834	CW	14473	DATAMV	15227
DOSET	13816	EJ	14220	END	15000	END2	15008	ENDPRG	15199	EOJ	15230	EOT1	15264
F1	14550	F2	14553	F3	14556	F4	14559	FABC	14908	FAIL	15604	FILL9	15448
FINCNT	795	FINDON	15274	GENH	13872	GETBL2	15240	GETBL3	15228	GETBLK	15208	GETDV	15159
GETDVX	15205	GETREC	15344	HC	784	HDR	15746	HDX	383	HEADPG	336	HIGHM	15865
HL1	518	HL2	651	HOLD	14504	HSP1	363	HSP2	373	INITP	15030	INTBLK	15253
IO	46	IPC1	15154	LDABC	15023	LDABCX	15155	LOADTR	15284	MCW	15467	MN	15582
MZ	15571	NOHL3	14049	NOISE	15201	NOISEC	193	NOLAB	14868	NOSEQ	14242	NOTOT	14131
NSTACK	14393	NXTABC	45	OP	15867	ORC	14786	ORGIS	15457	ORGPRO	15199	ORGSZ2	14001
ORGSZE	15000	OUTSEL	15371	P	15828	PAGECT	789	PASS	15329	PCNT	15334	PFT	15241
PPAGE	356	PRC1	15889	PRINT	915	QBLOCK	14752	QEOJL	15199	QEOT	15729	QLAST	15356
QPAD9	15363	QPRINT	14063	QPUNCH	14322	QTYPEF	14590	QTYPEM	15178	RCTL	15170	READ	15770
READM	15786	READN	14801	READX	15817	RECNT	187	REELS	15891	REPEAT	15932	RTAPE	15215
SCAN9	15295	SELX	15336	SEQCHK	804	SETWM	13812	SIZE	15999	SORT7	15225	STARTI	13824
STATUS	36	STD	14652	SWABC	15064	SWP	96	SWTOT	911	SWW	91	TAPEN	14653
TAPERR	15901	TITLE	14927	TSTAF	15552	TSTBF	15596	TSTBL	15440	TSTBN	15572	TSTBP	15486
TSTCL	15502	TSTCN	15656	TUP	14771	WHRWT2	14691	WI0	850	WI1	870	WI2	877
WI3	895	WI4	900	WI5	907	WTAPE	15684	WTAPE2	14627	WTAPEL	15688	WTCNT	15816
WTEX	15803	WTTRL	15811	X0J001	15230	X0K001	15951	X0L001	15976	X1	89	X2	94
X3	99												