```
CLEAR STORAGE 1     ,008015,019026,030,034041,045,053,0570571026                                       1
CLEAR STORAGE 2     L068112,102106,113/101099/Z99,027A070028)027B0010270B0261,001/001113I0             2
BOOTSTRAP           ,008015,022029,036040,047054,061068,072/061039              ,0010011040            3

                          READ TEST TAPE ROUTINE                                     5300F              PAGE    1

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

 101                JOB   READ TEST TAPE ROUTINE
 102                CTL   221
 103         *
 104         * THIS ENCOMPASSES 5300E AND 5310E FROM THE DIAGNOSTICS.
 105         * IT ASSUMES THE AUTOCODER LOADER CLEARS CORE, SO IT DOESN'T
 106         * NEED TO POSTPONE LOADING THE TAPE LOADER.
 107         *
 108         NRTAPE EQU   1           TAPE DRIVE TO READ                              0001
 109         NWTAPE EQU   1           TAPE DRIVE TO WRITE                             0001
 110         *
 111         * THIS IS THE TAPE LOADER, WHICH IS WRITTEN IN THE FIRST TAPE BLOCK.
 112         *
 113         * A BRANCH TO HERE IS PLANTED IN 1-5 BEFORE THE BLOCK IS WRITTEN,
 114         * SO THIS IS WHERE THE DIAGNOSTIC TAPE STARTS EXECUTING WHEN IT
 115         * IS LOADED.
 116         *
 117                ORG   1280                                                           1280
 118  1 280  BEGLDR H     *&1         BEGIN THE LOADER HERE                    4  1280  . S84             4
 119  1 284         SW    GMWM                                                 4  1284  , T98             4
 120         *
 121         * PROGRAMS COME HERE TO LOAD DETAIL RECORDS OR THE NEXT PROGRAM.
 122         * THIS HAS TO BE AT 1288 BECAUSE THE TRAILER CARD AFTER EACH
 123         * PROGRAM MEDDLES WITH THE PROGRAM'S READ ROUTINE TO PLANT A
 124         * BRANCH TO HERE.
 125         *
 126  1 288  LOAD   CS    81          ENSURE NO GMWM IN 1-81                   4  1288  / 081             4
 127  1 292         RTW   NRTAPE,1                                             8  1292  L %U1 001 R       4
 128  1 300         LCA   GMWM&1      SET GMWM AFTER INPUT                     4  1300  L T99             4
 129  1 304         BER   RTAPER                                               5  1304  B T56 L           4
 130  1 309         BEF   RTAPEF                                               5  1309  B T66 K           4
 131  1 314         BCE   LOAD,80,A   TITLE CARD OF PROGRAM?                   8  1314  B S88 080 A       5
 132  1 322         SW    1273                                                 4  1322  , S73             5
 133  1 326         C     76,1276     CHECK IF DESIRED/EXCLUDED BLOCK          7  1326  C 076 S76         5
 134  1 333         BSS   GOEQ,F                                               5  1333  B T47 F           5
 135  1 338         BU    377         RUN TEST IF NOT EXCLUDED                 5  1338  B 377 /           5
 136  1 343         B     LOAD        LOAD THE NEXT ONE                        4  1343  B S88             5
 137  1 347  GOEQ   BU    LOAD        LOAD NEXT ONE IF THIS ONE IS NOT DESIRED 5  1347  B S88 /           5
 138  1 362         B     377         RUN TEST IF DESIRED ONE                  4  1352  B 377             6
 139  1 356  RTAPER BSP   NRTAPE      ERROR DURING READ                        5  1356  U %U1 B           6
 140  1 361         NOP               PATCH IN A HALT HERE IF YOU FEEL LIKE IT 1  1361  N                 6
 141  1 362         B     LOAD                                                 4  1362  B S88             6
 142  1 366  RTAPEF RWD   NRTAPE      END-OF-FILE DURING READ                  5  1366  U %U1 R           6
 143  1 371         NOP               PATCH IN A HALT HERE IF YOU FEEL LIKE IT 1  1371  N                 6
 144  1 372         B     LOAD                                                 4  1372  B S88             6
 145                DCW   #22                                                 22  1397                    7
 146         *
 147         * THIS GMWM NOT ONLY STOPS THE WRITING OF BLOCKS TO TAPE, BUT
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SEQ PG LIN  LABEL  OP    OPERANDS                                         SFX CT  LOCN  INSTRUCTION TYPE  CARD

148         * IT ALSO TELLS THE TRAILER CARD AFTER A PROGRAM TO GO TO THE
149         * WRITE-THE-PROGRAM ROUTINE AT ,WPROG, AFTER LOADING THE PROGRAM,
150         * INSTEAD OF RUNNING IT.
151         *
152         * IT HAS TO BE AT 1398.
153         *
154  1 398  GMWM   DCW   @}@                                                   1  1398              GMARK    7
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SEQ PG LIN  LABEL  OP    OPERANDS                                           SFX CT  LOCN  INSTRUCTION TYPE  CARD

                   JOB   WRITE TEST TAPE ROUTINE
            *
            * HERE'S THE CODE TO LOAD THE PROGRAMS AND WRITE THE TAPE.
            *
            * THE FIRST RECORD ON THE TAPE IS THE TAPE READ ROUTINE.
            *
            * BEFORE EACH PROGRAM THERE IS AN 80-CHARACTER RECORD WITH ,A, IN
            * COLUMN 80, WHICH IS THE SET-WORD-MARK CARD FROM THE PROGRAM DECK.
            * THE PROGRAM ID NUMBER IS IN COLUMNS 73-76, AND THE VERSION IN 77.
            *
            * THEN THE PROGRAM ITSELF AS A 1250-CHARACTER RECORD.
            *
            * THEN THE PROGRAM'S DETAIL RECORDS, IF ANY, AS 80-CHARACTER RECORDS.
            *
            * ALL RECORDS ARE WRITTEN WITH WORD MARKS.
            *
                   ORG   1514                                                          1514
            START  H     *&3         START TO SKIP PUNCHING SAMPLE TRAILER        4  1514  . V20                8
                   P                 START RESET TO PUNCH SAMPLE TRAILER          1  1518  4                    8
                   H                                                              1  1519  .                    8
                   CS    180         CLEAR SAMPLE TRAILER                         4  1520  / 180                8
                   RWD   NWTAPE                                                   5  1524  U %U1 R              8
                   LCA   KBEGLD&4,5  SETUP ENTRY TO THE TAPE LOADER               7  1529  L W68 005            8
            DETAIL CW    SWITCH      SETUP TO READ DETAIL AND HEADERS             4  1536  ) V59                8
            WRITE  WTW   NWTAPE,1    WRITE A BLOCK                                8  1540  L %U1 001 W          9
                   BER   WTAPER                                                   5  1548  B W22 L              9
                   BEF   WTAPEF                                                   5  1553  B W36 K              9
                   NOP               INCLUDES NEXT INSTR IF NEXT HAS NO WM        1  1558  N                    9
            SWITCH R     1           LOADS A PROGRAM DECK IF IT HAS A WM          4  1559  1 001                9
            *
            * READ DETAIL AND HEADER CARDS AND WRITE TO TAPE
            *
                   BLC   FINISH                                                   5  1563  B W45 A              9
                   CS    81          CLEAR 1-81                                   4  1568  / 081                9
                   SW    1                                                        4  1572  , 001               10
                   R                 READ DETAIL CARD                             1  1576  1                   10
                   LCA   GMWM,81                                                  7  1577  L T98 081           10
                   BCE   PROG,80,A   PROGRAM HEADER CARD?                         8  1584  B V96 080 A         10
                   B     WRITE       NO, JUST WRITE IT                            4  1592  B V40               10
            *
            * SET UP TO WRITE A PROGRAM INSTEAD OF DETAIL CARDS
            *
            PROG   SW    SWITCH      SETUP TO LOAD THE PROGRAM                    4  1596  , V59               10
                   B     WRITE       WRITE THE PROGRAM HEADER                     4  1600  B V40               10
            *
            * COME BACK HERE AFTER LOADING THE PROGRAM.
            * THIS MUST BE AT 1604 BECAUSE THAT'S THE ADDRESS IN
            * THE TRAILER CARD OF EACH PROGRAM.
            *
            WPROG  LCA   GMWM,1250                                                7  1604  L T98 S50           11
```

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

205                MCW   KB,81       ,B, INSTEAD OF GM IN 81                    7  1611  M W60 081           11
206                B     DETAIL      WRITE THE PROGRAM                          4  1618  B V36               11
207         *
208         * TAPE ERROR AND EOF ROUTINES
209         *
210         WTAPER BSP   NWTAPE      BACKSPACE OVER BAD SPOT                    5  1622  U %U1 B             11
211                SKP   NWTAPE      WRITE 3 INCHES OF BLANK TAPE               5  1627  U %U1 E             11
212                B     WRITE       TRY AGAIN                                  4  1632  B V40               11
213         WTAPEF NOP   666         END OF REEL, SET A AND B REGS              4  1636  N 666               11
214                H                                                            1  1640  .                   12
215                B     WTAPEF      STUCK HERE, NOTHING ELSE TO DO             4  1641  B W36               12
216         *
217         * NO MORE CARDS
218         *
219         FINISH WTM   NWTAPE      WRITE TAPE MARK                            5  1645  U %U1 M             12
220                RWD   NWTAPE      REWIND BUT DON'T UNLOAD                    5  1650  U %U1 R             12
221         DONE   NOP   111         SET A AND B REGS                           4  1655  N 111               12
222                H                                                            1  1659  .                   12
223         KB     B     DONE                                                   4  1660  B W55               12
224         KBEGLD BIN   BEGLDR,                                                5  1664  B S80               13
```

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

225                JOB   TRAILER CARD
226         *
227         * HERE'S THE TRAILER CARD, OFFSET BY 100.
228         * WHEN IT'S EXECUTED, THERE ARE ALREADY WORD MARKS IN
229         * 1, 8 AND 12.
230         *
231                ORG   101                                                         0101
232         TRAILR SW    WM4-100,WM5-100                                     7  0101  , 019 027           14
233                SW    WM6-100                                             4  0108  , 031               14
234                SW    WM7-100,WM8-100                                     7  0112  , 038 042           14
235         WM4    BCE   WM6-100,GMWM,}  LOADING TO TAPE?                    8  0119  B 031 T98 } GMARK   14
236         WM5    B     400             NO, RUN THE PROGRAM                 4  0127  B 400               14
237         WM6    LCA   GOLOAD-100,352  MEDDLE WITH PROGRAM'S READ ROUTINE  7  0131  L 046 352           14
238         WM7    B     WPROG           GO TO TAPE WRITE ROUTINE            4  0138  B W04               15
239         WM8    BIN   LOAD,                                               5  0142  B S88               15
240         GOLOAD EQU   *                                                      0146
241                DC    #2                                                  2  0148                      15
242                DC    @PROGRAM TITLE HERE      @                         24  0172                      15
243                DC    @####R@                                             5  0177                      16
244                DC    @ 00@                                               3  0180                      16
245                END   START                                                    / V14 080
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SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
BEGLDR	1280	DETAIL	1536	DONE	1655	FINISH	1645	GMWM	1398	GOEQ	1347	GOLOAD	146
KB	1660	KBEGLD	1664	LOAD	1288	NRTAPE	1	NWTAPE	1	PROG	1596	RTAPEF	1366
RTAPER	1356	START	1514	SWITCH	1559	TRAILR	101	WM4	119	WM5	127	WM6	131
WM7	138	WM8	142	WPROG	1604	WRITE	1540	WTAPEF	1636	WTAPER	1622		