Bin Sequential Dumper

```
XX00 0077   MASK,      77              /OBTAINS 2 OCTAL DIGITS OF WORD
  01 0000   BLKLEN,    0               /WILL CONTAIN -# OF WORDS IN BLOCK
  02 0000   CHKSUM,    0               /WILL CONTAIN THE CHECKSUM
  03 0000   LOC,       0               /INDEX TO LOCATION BEING DUMPED
  04 0000   TEMP,      0               /TEMPORARY VARIABLE
  05 0000   MLENLT,    0               /-# OF LT FRAMES TO PRINT
  06 0000   STRTADR,   0               /1ST LOCATION TO BE DUMPED, SET BY SWR
  07 0000   ENDADR,    0               /LAST LOCATION TO BE DUMPED, SET BY SWR
  10 0100   ADDRESS,   100             /USED TO INDICATE WORD IS ADDRESS
  11 0200   LTCODE,    200             /CODE FOR LEADER/TRAILER
  12 7700   LENTTY,    7700            /-# OF FRAMES OF L/T NEEDED FOR TTY
  13 6000   LENCST,    6000            /-# OF FRAMES OF L/T NEEDED FOR CASSETTE
  14 5347   TTY,       JMP PRINT +6    /USED TO SET PRINT ROUTINE FOR TTY
  15 7000   CST,       NOP             /USED TO SET PRINT ROUTINE FOR CASSETTE
  16 7200   START,     CLA             /START OF PROGRAM
  17 7404              OSR
  20 7500              SMA             /TEST DETERMINES I/O DEVICE SELECTED
  21 5230              JMP .+7
  22 7200              CLA             /INITIALIZE FOR TTY
  23 1214              TAD TTY
  24 3342              DCA PRINT+1     /SETS PRINT ROUTINE FOR TTY
  25 1212              TAD LENTTY
  26 3205              DCA MLENLT      /SETS # OF L/T FRAMES FOR TTY
  27 5235              JMP .+6
  30 7200              CLA             /INITIALIZE FOR CASSETTE
  31 1215              TAD CST
  32 3342              DCA PRINT+1     /SETS PRINT ROUTINE FOR CASSETTE
  33 1213              TAD LENCST
  34 3205              DCA MLENLT      /SETS # L/T FRAMES FOR CASSETTE
  35 7200              CLA             /THIS SECTION COUNTS # WORDS IN BLOCK
  36 7001              IAC
  37 1207              TAD ENDADR
  40 7041              CIA
  41 1206              TAD STRTADR
  42 3201              DCA BLKLEN
  43 1206              TAD STRTADR     /SETS INDEX LOC TO BEGINNING OF BLOCK
  44 3203              DCA LOC
  45 3202              DCA CHKSUM      /SETS CHECKSUM TO 0
  46 4330              JMS LT          /PRINTS L/T FRAMES
  47 7200              CLA             /THIS SECTION OBTAINS 1ST 2 DIGITS OF STRTADR
  50 1206              TAD STRTADR
  51 7012              RTR
  52 7012              RTR
  53 7012              RTR
  54 0200              AND MASK
  55 1210              TAD ADDRESS     /SIGNIFIES LOAD ADDRESS AND NOT DATA
  56 4320              JMS CHECK       /PRINTS 2 DIGITS AND CREATES CHECKSUM
  57 7200              CLA             /THIS SECTION SENDS LAST 2 DIGITS OF STRTADR
  60 1206              TAD STRTADR
  61 0200              AND MASK
  62 4320              JMS CHECK
  63 7200   LOOP,      CLA             /IN SIMILAR FASHION DUMPS BLOCK
  64 1603              TAD I LOC
  65 7012              RTR
  66 7012              RTR
  67 7012              RTR
  70 0200              AND MASK
```

```
 71 4320              JMS CHECK
 72 7200              CLA
 73 1603              TAD I LOC
 74 0200              AND MASK
 75 4320              JMS CHECK
 76 2203              ISZ LOC
 77 7000              NOP
100 2201              ISZ BLKLEN     /TESTS WHETHER LOC HAS ACCESSED WHOLE BLOCK
101 5263              JMP LOOP
102 7200              CLA            /ALL OF BLOCK HAS BEEN DUMPED, NOW DUMP CHECKSUM
103 1202              TAD CHKSUM
104 7012              RTR
105 7012              RTR
106 7012              RTR
107 0200              AND MASK
110 4341              JMS PRINT
111 7200              CLA
112 1202              TAD CHKSUM
113 0200              AND MASK
114 4341              JMS PRINT
115 4330              JMS LT
116 7402              HLT            /DONE WITH DUMP
117 5216              JMP START      /PRESS CONTINUE TO RESTART
120 0000  CHECK,      0              /SUBROUTINE CALCULATES CHECKSUM THEN CALLS PRINT
121 3204              DCA TEMP
122 1202              TAD CHKSUM
123 1204              TAD TEMP
124 3202              DCA CHKSUM
125 1204              TAD TEMP
126 1341              JMS PRINT
127 5720              JMP I CHECK
130 0000  LT,         0              /SUBROUTINE COUNTS # L/T FRAMES PRINTED
131 7200              CLA            /ALSO CALLS PRINT
132 1205              TAD MLENLT
133 3204              DCA TEMP
134 1211              TAD LTCODE
135 4341              JMS PRINT
136 2204              ISZ TEMP
137 5335              JMP .-2
140 5730              JMP I LT
141 0000  PRINT,      0              /SUBROUTINE PRINTS DATA
142 0000              0              /SET TO CST OR TTY
143 6156              CWLS
144 6151              CWSF
145 5344              JMP .-1
146 5741              JMP I PRINT
147 6046              TLS
150 6041              TSF
151 5350              JMP .-1
152 5741              JMP I PRINT
```

This program will dump a block of core onto the cassette or onto the TTY tape sing the BIN format. If bit 0 of the switch register is one, the TTY punch will e d. Otherwise data is written onto the cassette. This program may be loaded t the beginning of any page of core. For dumping data it is often useful to have t occupy 7400-7552 as this space may be unused. To obtain a tape of this program n BIN format, simply toggle this program in the desired page of core and then ave this program dump itself.

Operating Procedures- Bin Sequential Dumper

A. To dump data already in core
   1) Be sure the data doesn't occupy the area where this program will be loaded.
   2) Load this program with the BIN LOADER.
   3) Put the address of the first location to be dumped in the variable STRTADR (location XX06).
   4) Put the address of the last location to be dumped in the variable ENDADR (location XX07).
   5) Set SWR bit 0 to one for the TTY or to zero for the cassette.
   6) Put 7416 in the PC, press CLEAR, and then depress CONT.

Assumes Load at 7400

B. To dump a language
   1) Load this program using the BIN LOADER.
   2) Load the language.
   3) Check location XX00 to see if it contains 0077. If it does, continue with steps A.3-6. If the contents of the location have been altered see section C.
   4) After the language has been dumped, it may be started. This provides an additional test on the data that has been dumped.

C. Core usage conflicts
   1) This program can be loaded at the beginning of any page of core by repunching the loading location given on the paper tape. This necessitates repunching the checksum. If the facililties to do this aren't available, load the program manually into the desired page and then have the program dump itself.
   2) If a language overwrites this program when this program is located at 7400, it means that the language uses all of memory except for the area occupied by the BIN LOADER. (Almost all languages preserve the BIN LOADER). This program is available in another version which occupies the area the BIN LOADER occupies. This version is called the RIM VERSION BIN SEQUENTIAL DUMP, is loadable by the RIM LOADER (always preserved), dumps only on the cassette, and necessarily destroys the BIN LOADER. The RIM version should be used when the language just loaded has overwritten the BIN SEQUENTIAL DUMPER that was loaded at location 7400.

D. Restarting the program
   1) Change STRTADR and ENDADR if needed.
   2) Select the proper I/O device.
   3) Depress CLEAR and then CONT.

Rim Version Bin Sequential Dumper

```
7626  0077   MASK,      77
7627  0000   BLKLEN,    0
7630  0000   CHKSUM,    0
7631  0000   LOC,       0
7632  0000   TEMP,      0
7633  6000   MLENLT,    0
7634  0000   STRTADR,   0
7635  0000   ENDADR,    0
7636  0100   ADDRESS,   100
7637  0200   LTCODE,    200
7640  6000   LENCST,    6000
7641  7200   START,     CLA
7642  1240              TAD LENCST
7643  3233              DCA MLENLT
```

```
7644  7001              IAC
7645  1235              TAD ENDADR
7646  7041              CIA
7647  1234              TAD STRTADR
7650  3227              DCA BLKLEN
7651  1234              TAD STRTADR
76    3231              DCA LOC
7653  3230              DCA CHKSUM
7654  4336              JMS LT
7655  7200              CLA
7656  1234              TAD STRTADR
7657  7012              RTR
7660  7012              RTR
7661  7012              RTR
7662  0226              AND MASK
7663  1236              TAD ADDRESS
7664  4326              JMS CHECK
7665  7200              CLA
7666  1234              TAD STRTADR
7667  0226              AND MASK
7670  4326              JMS CHECK
7671  7200  LOOP,       CLA
7672  1631              TAD I LOC
7673  7012              RTR
7674  7012              RTR
7675  7012              RTR
7676  0226              AND MASK
7677  4326              JMS CHECK
7700  7200              CLA
7701  1631              TAD I LOC
7702  0226              AND MASK
77    4326              JMS CHECK
7704  2231              ISZ LOC
7705  7000              NOP
7706  2227              ISZ BLKLEN
7707  5271              JMP LOOP
7710  7200              CLA
7711  1230              TAD CHKSUM
7712  7012              RTR
7713  7012              RTR
7714  7012              RTR
7715  0226              AND MASK
7716  4347              JMS PRINT
7717  7200              CLA
7720  1230              TAD CHKSUM
7721  0226              AND MASK
7722  4347              JMS PRINT
7723  4336              JMS LT
7724  7402              HLT
7725  5241              JMP START
7726  0000  CHECK,       0
7727  3232              DCA TEMP
7730  1230              TAD CHKSUM
7731  1232              TAD TEMP
7732  3230              DCA CHKSUM
7     1232              TAD TEMP
734   4347              JMS PRINT
7735  5726              JMP I CHECK
7736  0000  LT,         0
```