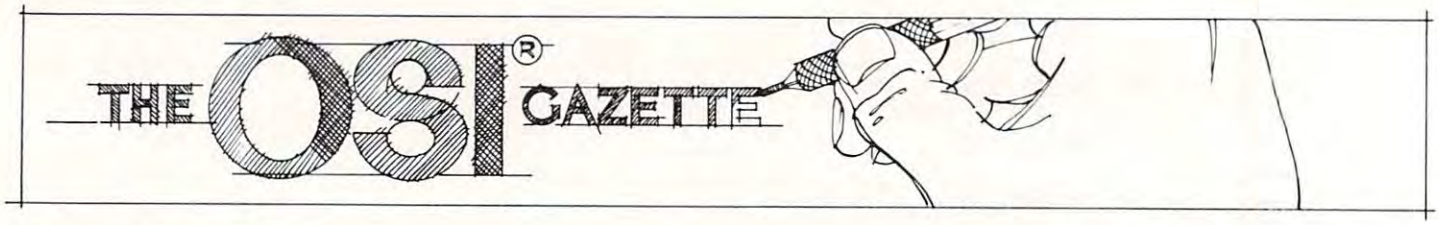

Autoloader For OSI

Charles Stewart
Adrian, MI

Almost anyone who has worked with an OSI computer in machine language has asked the question — "How can I save machine language programs?" There are various ways, most are in machine language themselves and load thru the monitor. But if the routines are to be interfaced with BASIC, the simplest way is to utilize the READ from DATA and POKE into memory.

The following routine is a BASIC program that will read a machine language program in memory and produce a BASIC load and go program with the machine language data in basic data statements (already decoded for you from the HEX the monitor requires to decimal).

To use, place the machine language program in memory via the monitor, assembler/editor etc. Unused memory locations in page two $0222 to $02FF in the standard OSI or locations above $0800 may be used. When you have the routine working as you want it, hit BREAK, COLD START, and answer 2048 to the prompt MEMORY SIZE. You should have 1297 Bytes free which is the minimum requirement to run the autoloader routine. You will still have your machine language routine in memory since an answer to MEMORY SIZE by a decimal number eliminates the memory check done by prom on a cold start.

How It Works

LINE 155 Requests the starting and ending addresses of the machine language program you wish to save. Respond with the decimal equivalent of the routine. The computer stores these in variables A and B. Next the program requests line number start and increment. Respond with the line number you wish to start the generated basic poke program with, followed by the line number to increment factor: i.e. a response of 100,10 will generate a BASIC program starting with line 100 followed by 110 and so on. The program stores these variables in D and E.

LINE 175 sets the maximum line length to 255 characters and places your OSI in the save mode.

LINE 180 prints to tape and screen the beginning line number and the statement For X = (decimal number entered as the start of the ML routine) TO (number entered as the end of the machine routine):READ Y:POKEX,Y:NEXT

LINES 210 to 275 are the meat of this program, where we look at the memory locations specified in variables A and B, and strip off the space always returned by basic in case the number may be negative. Then we print line number, the statement DATA followed by the actual data in the specified memory locations.

The Routine Works As Follows:

LINE 210 Sets two FOR NEXT loops from the address set as the start of the ML routine, the step 23 increments the memory addresses for the variable J

LINE 220 Reads the data in memory locations specified by line 210.

LINE 230 Strips off the leading space of the decimal number returned by basic. Not really necessary but saves considerable memory.

LINE 240 Prints line number and the statement DATA.

LINE 250 Prepares for print of the data and tests for the end of the routine.

LINE 251 Prints the machine code in decimal followed by a comma (CHR$(44))

LINE 270 Performs the same function as line 250.

LINE 271 Same as 251

LINE 280 Optional — used to automatically start the generated program when loaded into the computer.

LINE 290 Turns save flag off.

I have utilized this routine for the past 6 months and have found it to be quite a useful utility. It should function as described on most any computer utilizing microsoft basic with minor changes. Routine written on an OSI C1P.

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OSI

OSI

```
 10 REM CHARLES A STEWART
 20 REM 3033 MARVIN DR.
 30 REM ADRIAN MI 49221
 40 REM 517-265-4798
 50 REM AUTOLOAD PROGRAM FOR OSI C1P
 80 POKE133,0:POKE134,8
 90 DIMA$(24),B$(24):POKE15,0
 100 FORX=0TO40:PRINT:NEXT:PRINT" AUTO L
OAD OF MACHINE LANG PROG"
 110 PRINT" IN PAGE 2 OR MEMORY LOC ABOV
E $0800
 120 PRINT"PROGRAM REQUIRES 2047 BYTES T
O OPERATE
 150 FORX=1TO10:PRINT:NEXT
 155 INPUT"START,END ADDRESS IN DECIMAL"
;A,B
 170 PRINT:PRINT:INPUT"SOURCE PROGRAM LI
NE # START & INC";D,E
 175 POKE15,255:SAVE
 180 PRINTD;"FORX="A"TO"B":READY:POKEX,Y
:NEXT"
 210 FORI=ATOBSTEP23:FORJ=0TO22
 220 A$(J)=STR$(PEEK(I+J))
 230 A$(J)=RIGHT$(A$(J),LEN(A$(J))-1):NE
XTJ
 240 D=D+E:PRINTD;"DATA";
 250 FORJ=0TO11:IFI+J>BTHEN280
 251 PRINTA$(J);CHR$(44);:NEXT:PRINTA$(J
);
 260 D=D+E:PRINTD;"DATA";
 270 FORJ=13TO21:IFI+J>BTHEN280
 271 PRINTA$(J);CHR$(44);:NEXT:PRINTA$(J
);
 275 NEXTI
 280 PRINT:PRINT"POKE515,1:RUN"
 290 POKE517,0
```

Program Listing

```
START,END ADDRESS IN DECIMAL? 0,222

SOURCE PROGRAM LINE # START & INC? 100,1
0
 100 FORX= 0 TO 222 :READY:POKEX,Y:NEXT
 110 DATA76,116,162,76,195,168,5,174,193
,175,76,136,174
 120 DATA0,0,255,56,17,0,49,48,48,44
 130 DATA49,48,0,0,69,0,49,55,44,48,32,0
,78
 140 DATA34,0,75,0,53,49,53,44,49,58
 150 DATA82,85,78,34,0,82,73,78,84,65,36
,40,74
 160 DATA41,58,32,0,84,34,32,0,82,84
 170 DATA32,38,32,73,78,67,34,59,68,44,6
9,32,0
 180 DATA71,34,0,177,128,128,11,96,171,3
4
 190 DATA58,0,0,0,0,0,0,0,0,104,101,0,1
 200 DATA249,6,165,143,174,225,141,32,8,
6
 210 DATA247,1,32,25,0,251,1,3,226,5,12,
6,226
 220 DATA6,115,7,106,7,0,8,220,0,155
 230 DATA0,236,4,164,237,0,3,25,0,74,0,8
,6
 240 DATA71,6,255,164,0,83,0,104,0,4
 250 DATA76,30,180,19,6,227,5,0,0,6,6,13
6,0
 260 DATA0,175,33,0,0,136,161,0,0,33
 270 DATA56,0,8,0,230,195,208,2,230,196,
173,255,4
 280 DATA201,58,176,10,201,32,240,239,56
,233
 290 DATA48,56,233,208,96,128,79,199,82,
47,140,164,171
 300 DATA5,229,231,
POKE515,1:RUN
```

©

Example 1

Part One Of Two
OSI C1P Newspaper Route Listing Program

Charles L. Stanford
Cinnaminson, NJ

This program, like most, started out as a very simple task to fulfill a stated need. And like too many, it got very, very complicated. My son, John, has a paper route. In a big city suburb, newspaper routes are very volatile; the customer list changes as the promotions of the various papers attract readers, and as the residents move on with their corporations. So the route list is hard to keep current. Each day off requires a new hand-written list for the sub (too often Dad). A Paper Route program seemed like a natural. And the program was easy to write. It started out in much the same form as listed here. The data save method is similar to the one in **COMPUTE!**, Issue 2, "Home Accounting" article, with the exception that I added $trings for the customer's names. All seemed to be fine. But then the bug showed up. The program wouldn't save $trings to data statements when new customers were added! Everybody ended up with the same name.

A week (and a lot of POKEing around in RAM) later, I knew one heck of a lot more about my C1P's method of storing variable arrays, and the program ran. I think that a quick review of what I learned, and how the computer can be "fooled" by some $string manipulation tricks, will be useful to many readers.

Microsoft BASIC Source Code Storage

Much has been written on the method Microsoft