Perkins Engineering

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16k Blue Ram Expansion System

Congratulations! You are a member of the ever-expanding family of Blue Ram owners. The Blue Ram system does more to expand the capabilities of your Arcade than any other expansion system at any price. With the *Blue Ram Super Extended BASIC 1.1* cartridge, you can now write larger programs which include 4 color graphic animations with simultaneous sound effects (like game cartridges). The 62 key keyboard and the other Blue Ram products will make your arcade into a powerful color computer that is a joy to use!

These preliminary instructions will be replaced by a more comprehensive set which you will receive by mail when they are complete.

Use *Blue Ram Super Extended BASIC 1.1* cartridge to write programs up to 3100 bytes plus 6200 words of storage for strings and SNAP shots, or you may enter these lines to write long programs of up to 12400 bytes plus 1536 words for strings and SNAP shots:

```
1 :INPUT %(!6FFC);:INPUT %(!6C20);RUN    <Press GO>
```

Then, without a line number enter this:

```
%(!6FFC)=!7000;%(!6FFE)=!A072;%(!6C82)=!7002;%(!7000)=-256    <Press GO>
```

Note that in the above no letter 'o' is used. In this document the difference between a zero and the letter "o" always looks like this: `0 = zero and O = Capital "o"`

Now use a high line number like 25000 to enter a dump routine:

```
:PRINT %(!6000),14;:PRINT %(!6FFC),(12408-SZ)÷2;:PRINT %(!6C20),115
```

Prepare a tape and your recorder and enter: `GOTO 25000`   Start tape and press GO Now you can use this tape to start a new program. Use line 25000 to dump all programs.
To reload, use `:INPUT ;RUN`

String entries and SNAP shots may be poked into the lower 3k between !600F and !6C1D. These limits allow plenty of room and still protect line 1 and the stack and variables.
Use this formula to calculate space used for SNAPs:
$$(W÷4+(RM\#0))×H+4$$
Where W and H are Width and Height of SNAP and (RM#0) means add one if `W÷4` results in a remainder. For example: SNAP 0,0,22,12,%(!600F)
$22 ÷ 4 = 5$ (+1 for RM) $= 6 × 12 = 72 + 4 =76$. !600F=24591. Add the 76 plus a cushion and you have 24668 or !605A to start your next SNAP.

Now you'll have to modify line 25000. `:PRINT %(!6000),14` saves only the 14 words (28 bytes) of line 1. Simply use RPL 25000/14/nnnn to save enough bytes.

Watch for tutorials in the *Arcadian* in the coming months.

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