

PERKINS ENGINEERING has been contracted by Astrocade to finalize the AddUnder. John Perkins, of Artillery Duel and Blue Ram fame, will put the finishing touches to the printed circuit board design that is the basis for the AddUnder wiring, in order to incorporate all the specifications finally agreed upon. (And included in the 6-page item sent to all who asked for it, with SAE); and to make the board more amenable to manufacture.

Up to now, the basic wiring of the AddUnder has been created by hand for each unit, using such techniques as wire-wrap. And each unit has had different capabilities - witness all the different specifications. Now the wiring schematic can be reduced to a printed circuit board design, taking into account the manufacturing process of 'board stuffing' that must take place. For example, like parts should be grouped together, so that the machine operator can install them quickly. It is better to have all 470 ohm resistors for example, right next to each other, than have them scattered over the board. Remember, we are not talking about a board being packed by hand, but an assembly line where 15-20 boards per hour go through each station.

AUTHORS/SUBJECTS WANTED We want to increase the amount of textual material included in the ARCADIAN as well as the program material. We would therefore like to build up a cadre of technical writers who could be called upon to handle various subject areas. But not only do we need authors, we need subjects as well. Drop us a line on what you would like to see explained, or an area where clarification is needed, etc.; or if you would be willing to share your expertise. A question/answer segment might be the way to start this off, so lets hear from you.

SPECTRE'S MISSILE COMMAND, a program developed to utilize the improved hand controllers marketed by Spectre, is in the process of being converted into a game cartridge, so that you will be able to plug it into the game slot. Contact them at 14430 Barclay, Dearborn MI 48126 for info.

LOS ANGELES OWNERS INVITED to an Open House and general meeting in July for all Astrocade enthusiasts in the Los Angeles area. Call or write:

Mark Krivulka
HOME ARCADE ELECTRONICS
3742 Maxson Rd
El Monte 91732 (213) 443-4189

LINE NUMBERS There are two ways to command the Arcade to perform an operation; the "executive mode" whereby the command you type in will be done immediately upon pressing GO, and the more normal delayed method where you accumulate a batch of commands and the machine performs them in an orderly manner when you type RUN. The orderliness is created by the "LINE NUMBER" scheme.

Each command is given a line number, from 1 on up. The line number is typed first, then the command or other statement. As long as you do not press GO the material on the screen can be modified in any way. When GO is pressed, the line number and statement are stored in memory for future use. Line numbers don't have to start with 1, most programs start with "10". You don't have to enter them in numerical order - the machine fixes that automatically. You can also save a little memory space by ending a line with a semi-colon ; and immediately starting the next command. This play will work as long as: a) you don't exceed 102 characters on a line; or b) you don't set up an "IF" statement. (no ; allowed after an IF statement.)

One of the uses of the new Astrocade Basic EDIT function is the changing of line numbers. Suppose you got into a box, and the only way to get around it was to change a line number to something else. Say the command was 251 FOR A = 1 TO 40 and you had to change the line number to 389.

Type 251 PAUSE which gets you into the EDIT mode, and you see 251 FOR on the screen. Use the ERASE key to wipe out the FOR 1 5 2 and then retype the new number and the wiped-out command - 389 FOR continued use of the PAUSE key will bring back the rest of the line. Try a LIST 389,1 to see if the new line is correct. Then wipe out the old line by typing 251 GO. Don't forget that you have to replace the entry immediately after the line number. (This paragraph was based on material submitted by Ken Lill, who has other material in this issue. I took some editorial license and moved it into this area.)

There is a sort of standard procedure in program writing that places an interval of 10 between line numbers in a program. It is a convenience because it enables one to add more line numbers between existing lines in case it is necessary. The Arcade unit has the +10 key which automatically gives you a line number 10 higher than the previous one, so that by keying in (WORDS) GO the machine not only enters the statement, but adds 10 to the line number and displays it ready for the next command entry.

Printed for the mutual edification of the publisher and subscribers who are owners of the ARCADE unit, its programmable BASIC cartridges, and the ZGrass language. Printing is by a COMPRINT 912S (programs) and a NEC 8023 (text - driven by an Apple with Super-Text and Magic Window word processing systems.)

Since the Newsletter is 95 percent subscriber-generated, material is always in demand. Text material should be submitted as typewritten copy, preferably 47 characters per line and single spaced. Program material should be submitted both as a listing and on tape. Contributions are accepted without payment. However, programs entered in the Contest (accompanied by a signed statement indicating "this program is largely my own efforts and not a copy of an existing program") will be eligible for a prize. At least three programs are required for the Contest to operate. A panel of five judges will determine which of the submitted programs is "best." In addition, it is our policy to accumulate certain programs for subsequent sale on a tape, for which an author's royalty will be paid.

ARCADIAN

```

1 .
2 .POLO
3 .BY BOB HENSEL
10 NT=0;@(5)=0;@(6)=0;FC=137;BC=5
15 T=301
16 CLEAR
20 FOR A=-67TO 67STEP 11;BOX A,-7,1,72,1;NEXT A
30 FOR A=-43TO 30STEP 9;BOX -1,A,133,1,1;NEXT A
35 BOX -1,-7,135,74,3;BOX -1,30,135,1,3
40 BOX -73,-7,12,19,1;BOX 72,-7,12,19,1
50 BOX -50,37,34,11,1;BOX -45,37,22,9,2;BOX 49,37,34,11,1;BOX 44,37,22,9,2
60 P=1;X=-60;Y=36;GOSUB 1000;GOSUB 2000;X=-72;Y=-7;GOSUB 1000;P=2;X=59;Y=36;GO
SUB 1000;GOSUB 2010;X=71;Y=-7;GOSUB 1000
70 FOR A=1TO 8;X=-61+RND (10)*11;Y=-39+RND (6)*9;IF A<5GOSUB 2000
80 IF A>4GOSUB 2010
90 NEXT A
100 @(1)=-6;@(2)=5;@(3)=-21;@(4)=6;FOR P=1TO 2;X=@(P);Y=@(P+2);GOSUB 1000;NEXT
P
110 P=1
190 Z=0;B=-61;IF P=2B=60
200 D=RND (6);BOX -25,36,9,9,2;BOX -25,36,9,9,1;BOX -25,36, 7,7,2
220 IF D=1BOX -25, 36,1,1,1;GOTO 300
230 BOX -27,38,1,1,1;BOX -23,34,1,1,1;IF D=2GOTO 300
240 IF D>3BOX -27,34,1,1,1;BOX -23,38,1,1,1
250 IF D=4GOTO 300
260 IF D#6BOX -25,36,1,1,1
270 IF D=3GOTO 300
280 IF D=6BOX -25,38,1,1,1;BOX -25,34,1,1,1
300 .
310 X=71;P=P+1;IF P=3P=1;X=-72
311 IF JY(P)=0GOTO 314
312 BOX X,-7,6,13,1;Y=-3;IF JY(P)=-1Y=-12
313 GOSUB 1005
314 P=P+1;IF P=3P=1
320 IF Z>28GOTO 366
330 GOSUB 2015;IF JX(P)=0IF JY(P)=0GOTO 310
340 X=@(P)+Db11bJX(P);Y=@(P+2)+Db9bJY(P)
350 IF PX(X,Y)=0GOTO 330
352 IF Y<31IF Y>-44GOTO 356
354 GOTO 330
356 IF ABS(X)>65GOTO 900
360 BOX @(P),@(P+2),6,5,1;@(P)=X;@(P+2)=Y;GOSUB 1000
362 X=-5;IF P=2X=4
364 IF PX(X+@(P),@(P+2))=0GOTO 370
366 P=P+1;IF P=3P=1
368 GOTO 190
370 NT=1;X=@(P);Y=@(P+2);FOR A=1TO 3;BOX X,Y,6,5,1;GOSUB 1000;NEXT A;NT=0
372 @(P+4)=@(P+4)+1
380 GOTO 190
900 IF ABS(X)>75GOTO 330
910 IF Y>-13IF Y<0GOTO 930
920 GOTO 330
930 @(P+4)=@(P+4)+5
935 BOX @(P),@(P+2),6,6,1
938 GOSUB 1000
940 NT=15;MU=49;MU=51;MU=53;MU=56;MU=48;MU=53;MU=56;MU=48;MU=48;MU=48;NT=0;GOTO
16

```

AB or BB

Bob Hensel
8428 Ingleside Ave. South
Cottage Grove, MN 55016



```

1000 NT=5
1005 BOX X,Y,4,3,2;BOX X,Y-1,2,1,1;IF P=1BOX X+2,Y+2,2,2,2;BOX X-3,Y+1,1,1,2
1010 IF P=2BOX X-2,Y+2,2,2,2;BOX X+2,Y+1,1,1,2
1020 MU=67;NT=0;RETURN
2000 BOX X-5,Y+1,1,8,2;BOX X-1,Y-3,6,1,2;BOX X-1,Y+4,6,1,2;RETURN
2010 BOX X+4,Y+1,1,8,2;BOX X+1,Y-3,6,1,2;BOX X+1,Y+4,6,1,2;RETURN
2015 Z=Z+1;A=Zc2;IF RM=0RETURN
2018 BOX @(P),@(P+2),6,5,1
2020 T=T-1;CX=-5;CY=36;PRINT #1,Tc60,":",#1,RMc10,#1,RM
2022 Z=Z+1;CX=-51;CY=37;PRINT #2,@(5),;CX=38;PRINT #2,@(6),
2030 IF T=0GOTO 4000
2040 X= @(P);Y= @(P+2);GOSUB 1005;RETURN
4000 BOX 0,-3,62,26,2;CX=-25;CY=0;PRINT "GAME OVER
4010 IF JY(1)=1GOTO 15
4020 IF JY(1)=-1GOTO 1
4030 GOTO 4010

```

POLO is a two player game where the object is to score the most goals before time runs out. The computer will roll the dice and indicate the player who is up by making his horse blink off & on. The player then determines the best direction to move (up,down,diagonal) the number of squares on the dice, and uses JX & JY to make his move. If he lands in the opponents goal he scores 5 pts. If he lands on one of his own 'Lucky Horse Shoes' he scores 1 pt. and gets another turn, else play passes to his opponent. Each player has 15 sec. to make his move, or lose his turn. A defensive player can move his goalie up or down using JY. When time runs out, another period can be played by setting JY(1)-1. A new game is started with JY(1)=-1.

.....

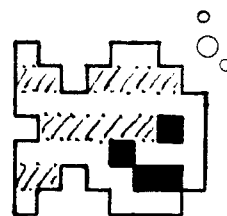
CATCHEM: Player (1) uses his joystick to maneuver his blip through the pattern, avoiding Player (2)'s blip. If Player (2) is successful in overlaying his blip on the other one, he gets a point. Three points to win. Patterns are drawn randomly. The program is written in Astro Basic, and can be played in Bally Basic by deleting lines 7031, 7032, and 7050. Program is on page 89.

* AD *

SFP's Video Game Catalog is Featuring Astrocade the Professional Arcade, and introducing the exciting new game Incredible Wizard. For prices and other Bally games and accessories, write; SFP D-A, 1064 N. Alta Ave., Dinuba CA 93618. (209)591-0555

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ARCADIAN

ASTRO ZAP 2000 BY GEORGE MOSES

This program will only run in Astro-Basic. For a listing that will run in Bally Basic send SASE to Arcadian, 3626 Morrie Dr., San Jose, CA 95127-9990

ASTRO ZAP is similar to the commercial arcade game "SPACE ZAP" by Midway, only you don't need a quarter to play. It will keep score for up to four humans, using 1 hand control for each. When you RUN the program, input the number of players from the keypad. When the game starts you will use only the joystick to fire back at the invading missiles. No trigger is necessary. You will receive 250 points for each missile you eliminate. A Kamikaze will orbit your space fortress at random intervals. You must shoot it down before the second orbit or it will dive into you. Each human begins with three bases and will be awarded a bonus base every 10,000 points. As points accumulate the missiles will travel faster until you can no longer keep up with the onslaught. If the missile hits the base there will be a terrible explosion which goes on and on and on. If you get sick of watching yourself explode, pull the trigger to abort the fireworks. This will bring up the next player's turn. The only other use of the trigger is at the GAME OVER display if you wish to start a new game.

IMPORTANT. Never put any spaces in this program unless you see the "■" symbol. Any spaces you see are only in there for clarity. A word of caution about the letter "O" (as in OH). It is used as a variable in lines 21, 22, 101 and 510. Use care not to confuse it with the "0" (as in zero.) Also use the computer command word "INPUT" in line 500 instead of typing the word out. You should have 47 bytes of memory left, a minimum of 40 bytes are needed to handle the scorekeeping strings.

```

1 NT=0;GOTO X
2 FOR K=1TO B;NEXT K;RETURN
3 TA=44;TB=53;TC=67;RETURN
4 VA=6;VB=6;VC=6;RETURN
5 CX=M;CY=N;RETURN
6 NV=T;MO=0;NM=1;RETURN
7 N=0;M=RND(30);RETURN
20 BOX 0,0,24,18,1;BOX 0,0,24,12,3;BOX
  0,0,18,18,3;BOX 0,0,20,1,3;BOX 0,0,1,14,3
21 FC=149;BC=8;C=1;CY=32;CX=-71;PRINT
  #1,@(O);IF @(F)=0PRINT #1,"00",
22 PRINT #1,@(F);IF @(O)▶4C= @(O)+J
23 IF @(P)=10@(P)=0;GOSUB 4;GOSUB
  3;MO=44;L=1;FOR A=1TO
  6;B=T;CY=0;CX=-26;PRINT
  "BONUS■BASE";MO=44;GOSUB 2;MO=89
24 IF B=T■B=S;BOX 0,0,60,8,2;GOSUB 2;
  NEXT A;▼;@(H)= @(H)+1;
  @(Q)= @(Q)+1;GOTO 511
25 IF L GOSUB 4;MO=T;GOSUB 3;GOSUB
  U;L=L-1;▼;B=V;GOSUB 2;IF L GOTO 25
26 N=N+1;IF N=M GOTO 70
27 IF B=V GOSUB 2
30 GOSUB 3;GOSUB 4;C=ABS(C);E=RND
  (4)+93;MO=T;IF E=94B=-40;GOTO 60
31 IF E=95B=64;C=-C
32 IF E=96B=40;C=-C;GOTO 60
33 IF E=97B=-64
50 CY=0;FOR A=B TO B+6STEP
  C;MO=A;CX=A;TV=E;IF JX(F)IF
  JY(F)=0XY=0;LINE ABS(A)×JX(F),0,3;IF
  PX(A,0)=0GOTO R
51 NEXT A;GOTO S

```

George Moses
PO Box 686
Brighton MI 48116

```

60 FOR A=B TO B+5STEP
  C;MO=A;CX=0;CY=A;TV=E;IF JY(F)IF
  JX(F)=0XY=0;LINE 0,ABS(A)×JY(F),3;IF
  PX(0,A)GOTO R
61 NEXT A;GOTO S
70 B=V;GOSUB 3;GOSUB 4;MO=20;
  VR=4;VF=50;M=0;N=30;D=-10;E=0
75 IF M■D=D+ABS(M)+(-M)×2
76 IF N■E=E+ABS(N)+(-N)×2
95 GOSUB 5;PRINT "+ ";GOSUB 5;PRINT "x ";GOSUB
  5;PRINT"■";FOR A=1TO 2;XY=0;LINE
  0,30×JY(F),3;XY=0;LINE 33×JX(F),0,3;IF
  PX(M,N)GOSUB 7;GOTO R
96 NEXT A;M=M+D;N=N+E;IF N=30E=E+3
98 IF M=0IF N=0GOTO S
99 GOTO 75
100 GOSUB 6;FOR A=2TO 10STEP 2;BC=RND
  (T);FC=BC-4;BOX CX-6,CY,A,A,3;NEXT A
101 BOX 0,0,W,10,2;BOX 0,0,10,88,2;▼;@(F)= @(F)+T;IF
  @(F)=V@(F)=0;@(P)= @(P)+1;@(O)= @(O)+1
110 GOTO 20
200 GOSUB 6;FOR A=2TO W;CX=RND
  (A)-A+2;BC=RND(T);FC=BC-4;
  CY=RND(A+2)-A+4;XY=0;LINE RND
  (W)-81,RND(88)-45,3;TV=46;NV=RND(2)+1
201 IF TR(F)=0NEXT A
211 L=1;@(H)= @(H)-1
215 H=H+1;IF H▶G+G■H=G+1
216 CLEAR ;FOR A=G+1TO G+4;IF @(A)=0NEXT
  A;BC=0;FC=149;CY=-8;CX=-28;
  PRINT "GAME■OVER";▼;GOTO V
220 ▼;NEXT F;GOTO Y
300 FOR MO=T TO 5STEP-1;A=1;NEXT MO;IF
  L=2FOR MO=5TO T;A=1;NEXT MO
301 RETURN
500 FOR A=0TO Z;@(A)=0;NEXT A;FOR A=17TO
  20;@(A)=2;NEXT A;CLEAR ;CY=0;PRINT "INPUT
  #■PLAYERS"; ;G=KP-48;IF (G◀1)+(G▶4)RUN
501 PRINT#2,G;FOR A=G+1TO G+G;@(A)=3;NEXT
  A;H=G+1;L=2
510 CLEAR ;FOR F=1TO
  G;O=F+8;P=F+12;Q=F+Z;GOSUB 7
511 CY=40;PRINT
  "■PLAYER";#2,F;J= @(Q)-1;CY=-32;PRINT
  "■BASES";PRINT #4, @(H),
512 IF @(H)=0GOTO 215
514 GOTO 20
1000 CY=40;CX=36;PRINT "SCORE";FOR A=1TO
  G;CX=24;PRINT #1,"#",A,"■", @(A+8);IF
  @(A)=0PRINT #1,"00",
1010 PRINT #1, @(A);NEXT A
1020 IF TR(1)RUN
1030 GOTO 1020

```

Because all memory is used up the variables R through Z must be loaded as direct commands from the keypad to make this program work.

Type the following without a line number:

```

R=100;S=200;T=250;U=300;V=1000;
W=160;X=500;Y=510;Z=16;RUN

```

WHEN YOU PRESS GO your program should run perfectly. To save the program on tape just use :PRINT GO with your recorder running on RECORD.

ARCADIAN

```

1 NT=0
2 R=0;A=5;B=0;D=43;E=0;S=0;W=0
3 Z=RND (100)+20
10 CLEAR
20 &(10)=0
30 CX=-16;CY=0
40 BC=153;FC=84
50 PRINT "CATCHEM"
60 BOX 0,0,45,9,3
65 PRINT ;PRINT ;PRINT "
70 &(10)=176
80 NT=2
90 FOR X=1TO 500;NEXT X;CLEAR
95 BC=8;FC=157
110 BOX 0,0,150,73,1;BOX 0,0,132,62,3
120 BOX 0,0,132,62,2;FOR X=-55TO 55STEP 18
130 BOX X,0,4,36,1;NEXT X
140 GOTO 2000
150 BOX 0,0,132,62,2;FOR Y=-35TO 35 STEP 18
155 BOX 0,Y,100,4,1
160 NEXT Y
170 BOX 0,-35,120,4,2
172 Z=RND (100)+20;W=0
175 R=R+1
180 CX=0;CY=-39;PRINT "ROUNDa",#1,R
190 GOTO 2000
1999 .
2000 IF JY(1)=1 B=B+4
2002 W=W+1
2010 IF JY(2)=1 E=E+5
2015 IF W=Z GOTO 8000
2020 IF JY(1)=-1B=B-4
2030 IF JY(2)=-1E=E-5
2040 IF JX(1)=1 A=A+4
2045 IF JX(2)=1 D=D+5
2050 IF JX(1)=-1A=A-4
2060 IF JX(2)=-1D=D-5
2066 GOTO 2085
2070 BOX A,B,2,2,1;BOX A,B,2,2,2
2080 BOX D,E,3,3,1;BOX D,E,3,3,2
2083 GOTO 2000
2085 .
2090 IF PX(A,B+4)=1 B=B-4
2100 IF PX(A+4,B)=1 A=A-4
2110 IF PX(A,B-4)=1 B=B+4
2120 IF PX(A-4,B)=1 A=A+6
2130 IF PX(D,E+4)=1 E=E-5
2140 IF PX(D+4,E)=1 D=D-5
2150 IF PX(D,E-4)=1 E=E+5
2151 IF R=3 GOTO 7000
2155 IF PX(D-4,E) D=D+5
2156 GOSUB 5000
2170 GOTO 2070
4000 S=S+1;CX=0;CY=-39;PRINT "SCOREa",#1,S
4005 A=5;B=0;D=43;E=0
4006 FOR Q=65TO 91;MU=Q;NEXT Q
4010 GOTO 175
5000 IF D+2=A GOTO 5020

```

Scott Taylor
14035 Dix
Southgate, MI 48195

BY SCOTT TAYLOR"

```

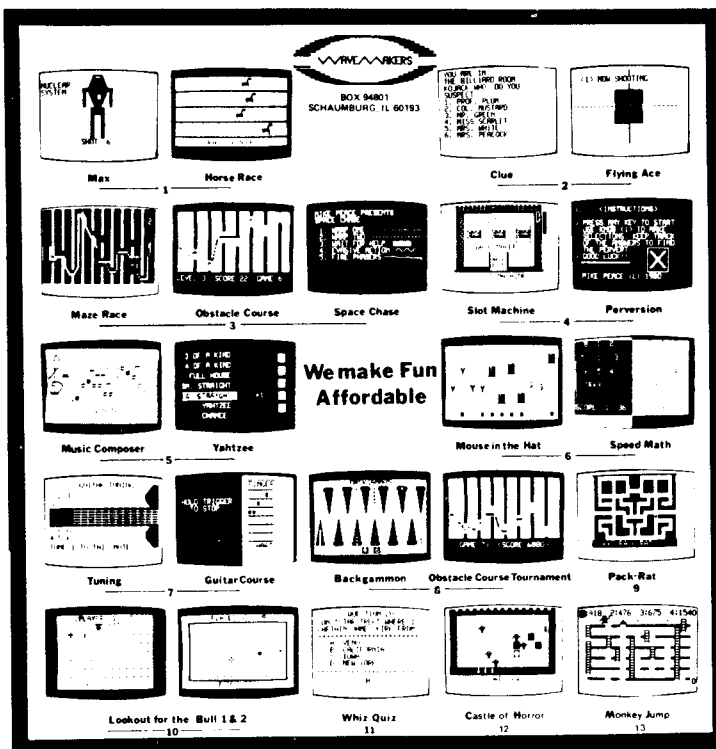
5001 IF D+1=A GOTO 5020
5002 IF D+3=A GOTO 5020
5005 IF D+4=A GOTO 5020
5010 IF D-2=A GOTO 5020
5011 IF D-1=A GOTO 5020
5012 IF D-3=A GOTO 5020
5015 IF D-4=A GOTO 5020
5017 RETURN
5020 IF E=B GOTO 4000
5025 IF E-1=B GOTO 4000
5027 IF E+2=B GOTO 4000
5028 IF E+3=B GOTO 4000
5030 IF E=B GOTO 4000
5035 IF E+1=B GOTO 4000
5037 IF E-2=B GOTO 4000
5038 IF E-3=B GOTO 4000
5040 RETURN
7000 CLEAR
7010 BC=88;FC=155
7015 CX=-50;CY=-37
7016 PRINT "SCORE:",#1,S
7020 PRINT ;PRINT ;PRINT
7030 PRINT "
* 7031 VA=15;VB=15
* 7032 TA=RND (15);TB=RND (15)
7040 BOX 12,17,60,10,3
* 7050 GOTO 7031
8000 I=RND (2)
8010 W=0;Z=RND (100)+20
8020 IF I=1 GOTO 120
8030 IF I=2 GOTO 150
8040 GOTO 8000

```

* Delete for BB

See page 87 for instructions

ARCADIAN



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ALL TAPES INCLUDE INSTRUCTIONS AND DOCUMENTATION.
TAPES 1 THROUGH 11 ARE RECORDED IN BOTH BALLY AND ASTRO BASIC, 12 AND 13 ARE IN ASTRO BASIC ONLY

16384 BYTES OF RAM FOR YOUR ARCADE!

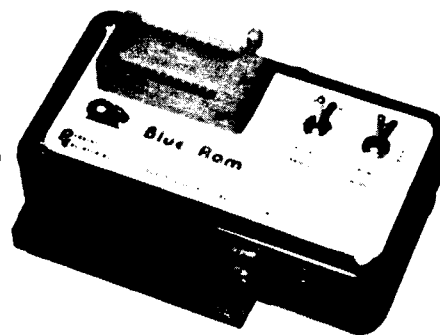
The Blue Ram

by Perkins Engineering has already opened the door to hundreds of creative programmers who love the powerful graphics and sound capabilities in the Astrocade, but were stymied by its lack of random access memory (RAM). No more! Now, instantly, you can have 16384 bytes of additional memory.

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Blue Ram Extended Basic Cartridge

Written by Jay Fenton and John Perkins to take advantage of the Blue Ram's exclusive input and output ports, hardware and software switching mechanisms, and the Astrocade's outstanding game and graphics design capabilities. Gives up to 15,500 bytes of programming space with special POINT, CIRCLE and SNAP commands, 4 colors, built-in math routines, keyboard and printer-driving logic, 300 baud or 2000 baud data output and much more! Will not operate without a Blue Ram or other extended memory. Regular price is \$49.95.



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When ordering specify whether you have
300 baud Bally Basic or 2000 baud Astrocade Basic



USING THE "EDITOR" OF THE ASTRO-BASIC

One of the best things that Jay Fenton put into the "new" BASIC cartridge is the EDITOR. With it you can change any information in any line INCLUDING the line number, with EASE! I've worked with "EDIT" features of other computers and I beleive that ASTRO'S is the easiest! Let's take a sample program:

```
>10 FOR A=0TO100STEP10
```

```
>20 NEXT A;@ (A)=A
```

```
>30 *(A)=@ (A)
```

```
>40 PRINT A;PRINT @ (A);PRINT *(A)
```

Let's say you want line >10 to read:

```
>10 FOR A=0TO 10STEP 2
```

First KEY-IN 10 and then press the PAUSE* button until you see the second "0" in the number 100. hit the ERASE key once. Then press the PAUSE key to get the word STEP to appear. KEY-IN the number 2 and hit GO. Now your "EDITing" is done! Easy, wasn't it?

Now let's add something to line >30. KEY-IN 30 and press PAUSE until you get to the "=" sign. Now KEY-IN A;. Press PAUSE until the last BYTE of the line ")" appears on the screen, and KEY-IN =A. Now KEY-IN CLEAR;LIST GO. Your LISTing should look like this:

```
>10 FOR A=0TO10STEP 2
```

```
>20 NEXT A;@ (A)=A
```

```
>30 *(A)=A;@ (A)=A
```

```
>40 PRINT A;PRINT @ (A);PRINT *(A)
```

Let's change line >20 to make it line >50. First KEY-IN 20, and press the PAUSE only ONCE. the word NEXT should be on the screen. Now press ERASE until the line number has been ERASEd. Don't worry, you can't ERASE out of the EDITOR mode! Now put the new line number in, 50, and KEY-IN the BYTE you ERASEd from the line, NEXT. Press the PAUSE once again. Since you have already put @ (A)=A in >30, you can now press GO. Press CLEAR;LIST GO again and your LISTing should now look like this:

```
>10 FOR A=0TO 20STEP 2
```

```
>20 NEXT A;@ (A)=A
```

```
>30 *(A)=A;@ (A)=A
```

```
>40 PRINT A;PRINT @ (A);PRINT *(A)
```

```
>50 NEXT A
```

Ken Lill
5039 S. Elizabeth
Chicago, Ill. 60609

Now all you need to do to complete your program is to KEY-IN 20 GO. This will delete line >20.

EXITING THE "EDITOR" MODE

There are four ways to exit the EDITOR mode. They are:

1. Press PAUSE until you have gone PAST the last byte of the line you have EDITed. This will place the corrected line into the memory!
2. Press HALT . This will NOT put any of your corrections into the line! Instead, it will leave the line as it was BEFORE you used the EDITOR!!!
3. Press GO . This will put your EDITed line into memory MINUS any data that may have been in the line AFTER the point you pressed GO
4. Press RESET . We all know what happens then- GOODBYE PROGRAM!!!!!!!

*Pressing WORDS SPACE has the same effect as pressing PAUSE to enter, work with, or exit the EDITOR!!!

ATTENTION!!

Announcing a once in a lifetime chance to purchase an extensive hardware & software library at less than half of the original cost. (Everything is clean and in new or near new condition.)

Bally Astrocade (wood grain finish)
2 hand controls
Old Basic...Interface...Instruction Book & storage box
New Basic...Patch cord...Instruction Book
8 Videocades...
Seawolf / Missile
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Baseball / Tennis
Bally Pinball
Clowns / Brickyard
Space Invaders
Galactic Invasion
Elementary / Bingo Math

Machine Language Manager w/ demo tape & manual
Ze Minicourse w/ demo & utility tape

Several third party software tapes (all include instructions & listings)
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24 L & M programs
All New Image programs
All Mark Keller programs
All Tiny Arcade programs
All Video Wizards programs

16 cassette tapes (old basic) with typed index...includes almost all programs available in the Arcadian and Cursor newsletters.

4- 90min. TDK's (packed with most every program available) in New Basic. These 4 cassettes are indexed individually. All cassettes have cases.

Customized clear plastic dust cover. Covers videocade port and reset/eject button to protect from accidental reset while programming.

The Arcadian Vol. 1 & 2 and Vol. 3 & 4 complete up to current issue. In two notebooks, tabbed off by issue, with table of contents and index.

All Cursor and Basic Express with index, in notebook.
Summer 1982 Sourcebook.

To purchase all of this new you would spend over \$1,265.
The old Basic and interface are no longer available in any stores.

You can purchase the complete set for less than half of original cost. The first serious \$600 offer gets it all. (Or the best offer by Sept. '82).

To make payment and delivery arrangements call 319-355-5460 or send a letter with your number to Ken Springsteen 1955 Winding Hill Rd. #1008 Davenport, IA. Zip 52807



VIPER Contest:*

From the company that was the first to bring you 16K memory expansion, a professional 62-key full size ASCII keyboard, and the excellent Extended Basic language -- we would like to announce our first software contest. The winner of this contest will receive a complete Viper Operating System or \$500 in cash!! The Viper Operating System includes these items:

- 3K dynamic RAM memory
- 1 Viper keyboard (with extension cable)
- 1 Viper dual port-bidirectional RS232 communications board
- 1 Extended Basic cartridge with 2K/4K baud tape interface
- 1 5-slot micro expander bus with terminator card
- 1 Viper cabinet with power interface board and cable

All entries must include a listing with comments, and the program on tape. Any language is acceptable (AB, BB, EB, machine code, etc) and there are no restraints on the program - any program type will be allowed (examples: educational, game, business, etc) - and the winning program will be chosen on its creativity and originality.

Programs previously or currently offered for sale will not be eligible. The winning entry will become the property of Alternative Engineering Co., The judging will be done by AEC personnel and the results will be final. The contest is now in operation and will end Oct 20, 1982. The winner will be notified by Nov 5, 1982.

We do more than talk expansion - we make it a reality!! Look for the entry blank in the next issue of the ARCADIAN.

INSTRUCTIONS for Battleship: →

START WITH REGULAR VERSION (0)
START PLAY WITH PLAYER #1 PLACING (HIDING) HIS FLEET OF SHIPS
(DON'T LET THE ENEMY WATCH!)

THE JOYSTICK CONTROLS WHERE EACH SHIP IS TO BE PLACED, THE TRIGGER PUTS IT IN

ALL SHIPS MUST BE PLACED IN A STRAIGHT LINE, EITHER HORIZONTAL, VERTICAL, OR DIAGONAL
ALL SHIPS OF THE SAME TYPE MUST TOUCH EACH OTHER
SHIPS NOT OF THE SAME TYPE MAY BUT DO NOT HAVE TO TOUCH EACH OTHER

EACH PLAYER STARTS WITH THE SAME COMPLIMENT OF SHIPS AS FOLLOWS:

- 5 AIRCRAFTCARRIERS (A)
- 4 BATTLESHIPS (B)
- 4 DESTROYERS (D)
- 3 CRUISERS (C)
- 2 SUBS (S)

AFTER BOTH PLAYERS HAVE PLACED THEIR FLEETS THEY MAY SHOOT THEIR 3 SHOT SALVOS,
USING THE JOYSTICK TO LOCATE AND THE TRIGGER TO FIRE EACH SHOT

HITS ARE NOT SHOWN UNTIL AFTER ALL 3 SHOTS ARE FIRED

ALL HITS ARE DISPLAYED BY SHIP TYPE

Note that the Advanced Version (1) shows only a "+" for hits, making it more difficult to analyze the board.

ARCADIAN

AB or BB

BATTLESHIP BY BILL MEAD

2940-H GRACE LANE
COSTA MESA, CA 92626
714/549-3227

```

5 NT=1;CLEAR ;BC=125;Z=0;P=1;U=0;O=0;GOTO 150
10 BOX 0,40,150,7,2;IF P=1CX=8;CY=40
11 IF P=2CX=-65;CY=40
12 PRINT " ",#1,P;;IF (O=18)+(U=18)PRINT " WINS";STOP
13 IF Z=1PRINT " SHOOT";GOTO 15
14 PRINT " HIDES
15 RETURN
20 H=8;U=-40;X=0;Y=0
28 BOX H,U,2,2,3
30 IF JX(P)=-1H=H-7;X=X-1;IF X<0X=0
32 IF H<0H=8
35 IF JX(P)=1H=H+7;X=X+1;IF X>9X=9
36 IF H>71H=71
37 IF JY(P)=-1U=U-8;Y=Y-1;IF Y<0Y=0
38 IF U<-40U=-40
39 IF JY(P)=1U=U+8;Y=Y+1;IF Y>9Y=9
40 IF U>32U=2
42 BOX H,U,2,2,3
43 IF Z=1IF TR(P)GOTO 1260
44 IF Z#1IF TR(P)GOTO 1075
45 GOTO 28
50 H=-70;U=-40;X=0;Y=0
52 BOX H,U,2,2,3
54 IF JX(P)=-1H=H-7;X=X-1;IF X<0X=0
55 IF H<-70H=-70
56 IF JX(P)=1H=H+7;X=X+1;IF X>9X=9
57 IF H>-7H=-7
58 IF JY(P)=-1U=U-8;Y=Y-1;IF Y<0Y=0
59 IF U<-40U=-40
60 IF JY(P)=1U=U+8;Y=Y+1;IF Y>9Y=9
61 IF U>32U=32
68 BOX H,U,2,2,3
69 IF Z#1IF TR(P)GOTO 1075
70 IF Z=1IF TR(P)GOTO 1260
72 GOTO 52
100 P=P+1;IF P>2P=1
105 RETURN
150 INPUT "REGULAR (0)  ADVANCED (1)"W
160 CLEAR ;GOTO 1000
199 IF W=1PRINT "+";RETURN
200 GOTO M+200
201 PRINT "A";RETURN
202 PRINT "B";RETURN
203 PRINT "D";RETURN
204 PRINT "C";RETURN
205 PRINT "S";RETURN
300 H=@(F)c100;U=RMc10;M=RM
310 IF P=1CX=Hb7+8;CY=Ub8-40
320 IF P=2CX=Hb7-70;CY=Ub8-40
330 RETURN
400 @(18)=62;@(19)=29;@(22)=229
410 FOR Q=25TO 45
420 NT=0;@(16)=Q
430 FOR R=1TO 10
440 NEXT R;NEXT Q
442 GOSUB 199
446 FOR R=16TO 23
448 @(R)=255;NEXT R
449 FOR R=1TO 300;NEXT R
450 FOR R=255TO 200STEP -1
451 @(21)=R;@(22)=R;NEXT R
460 FOR R=16TO 23;@(R)=0;NEXT R
465 IF P=10=0+1;IF O=18GOTO 10
467 IF P=2U=U+1;IF U=18GOTO 10
470 RETURN
1000 FOR A=-70TO -5STEP 7
1010 FOR B=-40TO 33STEP 8
1020 BOX A,B,6,7,1
1025 BOX A+78,B,6,7,3
1030 NEXT B
1040 NEXT A
1045 IF P=3GOTO 1210
1050 GOSUB 10
1065 FOR F=1TO 18
1070 IF P=1GOTO 50
1073 IF P=2GOTO 20
1075 CX=H;CY=U
1078 IF PX(CX,CY+2)=0GOTO 1070
1080 IF F<6PRINT "A";A=1;E=A
1090 IF F>5IF F<10PRINT "B";B=2;E=B
1100 IF F>9IF F<14PRINT "D";D=3;E=D
1110 IF F>13IF F<17PRINT "C";C=4;E=C
1120 IF F>16IF F<19PRINT "S";S=5;E=S
1122 IF P=1@(F)=Xb100+Yb10+E
1125 IF P=2@(F+20)=Xb100+Yb10+E
1130 NEXT F
1200 P=P+1;CLEAR ;GOTO 1000
1210 Z=1;GOSUB 100;GOSUB 10
1220 IF P=1FOR K=41TO 43
1230 IF P=2FOR K=44TO 46
1240 IF P=1GOTO 20
1250 IF P=2GOTO 50
1260 CX=H;CY=U;PRINT " ",
1265 @(K)=Xb100+Yb10
1270 NEXT K
1280 IF P=1FOR K=41TO 43
1290 IF P=2FOR K=44TO 46
1300 IF P=1FOR F=21TO 38
1310 IF P=2FOR F=1TO 18
1315 GOSUB 300
1320 IF @(K)=@(F)c10b10GOSUB 400
1340 NT=1;NEXT F
1350 NEXT K
1400 GOTO 1210

```

- For Sale: Bally Arcade, both Basics, 280z/Baseball/Clowns/
Pinball/Baron/TicTacToe/Black Jack/AstroBattle/2 Football/
StarBattle/SpaceFortress/ Sea Wolf/Galaxian/GrandPrix/ 6 hand
controllers/Cassette Interface, several tapes, All Arcadian/Cursor + Basic
Express. Best offer over 500. Larry Loiacono Box 627 Mechanicsburg PA 17055
(717-697-3042)
- Looking For: Seawolf/Baseball/ or Bally Pin. I'll pay \$17 for any of
these. Ben Pavone 259 Prospect St. Westfield, NJ 07090, 201-233-1277 call
before sending videocades
- For Sale: Arcade with 2 controllers, 12 cartridges incl. new Basic under 3
months old, plus Vol 4 of Arcadian \$450 Bally Jefferson 3010 N Arkendale St.
Dade City VA 22193 703-690-1837
- Wanted: used cassettes and programs/ games for the Arcade. Also have 15
Cybervision tapes to sell/trade, or want to purchase Cybervision unit. Bob
Mitcham Box 11029 Clearwater, FL 33516
- Wanted: contact with other subscribers around the ages of 10-13. Contact
Nick Brewer 5728 Marine Parkway, Mentor, OH 44060
- For Sale: Arcade with 13 videocades. Bally Basic and 4 controllers. System
like new \$375 complete. 408-262-3719 days-867-7256 nites (ask for Mrs.
Fisher)
- Astrocade units, cartridges, etc., St Clair County area 794-4528 Discounts
to "Arcadians" H. Gerow, Box 203 Algonac, MI 48001
- AT LAST a dealer for Astrocade in the Los Angeles area. HOME ARCADE
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