



RETIRING ??? Yes, we are going to close down the presses with this issue, primarily because there isn't enough interest left out there to make it work. New subscribers are coming in at an ever decreasing rate, and we usually have only a 50% renewal rate, so the group gets ever tighter. Only a miniscule percentage of subscribers have been contributors - when we had thousands of subscribers that percentage was enough, but now with only a few hundred subscribers, there are too few to fill the Newsletter.

I might editorialize a bit on Mike Prosis's questions in his Game Player article. While there are tens of thousands of Arcade games out there, the distribution system has dropped to zero. This means that the stores, the outlets for sales of cartridges or tapes, have disappeared. How else can a manufacturer of a program communicate with the consumer? The only alternative is advertising - we collectively did some of that in Electronic Games - but it is very expensive for the little guy to do. And returns are really quite low.

CREDIT MISPLACED when we said that Rusty Blommaert had done the American Flag program of p.76. It was actually done by Barry Ellerson of 5017 N.River Rd, Schiller Park, IL, 60176. Rusty did have a hand in the 4D2 program in this issue.

ERRATA in Gas Well Bonanza, (p.85). We neglected to tell you about the variables:

```
S=RND(53)-63; T=RND(54)-19; P=1; U=12; V=102; FOR A= 1 TO 4; \ (A)=500; NEXT A
```

Joe will put his program on your tape for \$5, using his RShack CTR-60 machine (but no guarantee that his recorder is compatible) check his address on p. 85.

The following check list of company-produced cartridges will help you to determine if you have a complete set. Even so, 2020, 3006, 3007, 4003, 4005, and 5004 never made production.

Stock Number	Description
<input type="checkbox"/> 2001	280 ZZZAP/Dodgem
<input type="checkbox"/> 2002	Seawolf/Missle
<input type="checkbox"/> 2003	Panzer Attack/Red Baron
<input type="checkbox"/> 2004	Brickyard/Clowns
<input type="checkbox"/> 2005	Star Battle
<input type="checkbox"/> 2009	Astro Battle
<input type="checkbox"/> 2010	Dogpatch
<input type="checkbox"/> 2011	Galactic Invasion
<input type="checkbox"/> 2012	Space Fortress
<input type="checkbox"/> 2014	Grand Prix/Demolition Derby
<input type="checkbox"/> 2015	Pirate's Chase
<input type="checkbox"/> 2017	The Incredible Wizard (Like Wizard of Wor)
<input type="checkbox"/> 2018	Solar Conqueror (Like Asteroids)
<input type="checkbox"/> 2019	Cosmic Raiders (Like Defenders)
<input type="checkbox"/> 2020	Missile Attack

3000 SPORTS SERIES

<input type="checkbox"/> 3001	Baseball/Tennis/Hockey/Handball
<input type="checkbox"/> 3002	Football
<input type="checkbox"/> 3005	Astrocade Pjnnball

Stock Number	Description
<input type="checkbox"/> 3006	Bowling
<input type="checkbox"/> 3007	Soccer

EDUCATIONAL SERIES

<input type="checkbox"/> 4001	Bingo Math/Speed Math
<input type="checkbox"/> 4002	Letter Match/Spell 'N Score/ Crosswords
<input type="checkbox"/> 4003	Music Maker
<input type="checkbox"/> 4004	Biorhythm
<input type="checkbox"/> 4005	Creative Crayon
<input type="checkbox"/> 4005P	Creative Crayon with Light Pen

STRATEGY SERIES

<input type="checkbox"/> 5001	Amazing Maze/Tic-Tac-Toe
<input type="checkbox"/> 5002	Blackjack/Poker/Acey-Ducey
<input type="checkbox"/> 5004	Conan the Barbarian
<input type="checkbox"/> 5005	Artillery Duel
<input type="checkbox"/> 6004	Astrocade BASIC System
<input type="checkbox"/> ACI-0200	Hand Controls (Set of 2)
<input type="checkbox"/> ABA1000	Astrocade <small>the Professional Arcade</small> Astrocade BASIC Cartridge & Audio interface are included at no extra charge

MAZE AVENGER

BY DALE LOW

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1750 CHARACTERS

```

1 P=0;Z=3;L=Z;W=2;U=2
2 Y=-10;X=0
5 clear ;%(D)=-9999
6 box 0,-5,150,76,1;box 0,-5,145,70,2
7 box 0,-30,2,20,1;box 0,-20,28,2,1;box 0,10
  ,2,20,1;box 0,20,28,2,1
8 box -37,-10,47,2,1;box 36,-10,47,2,1;box 5
9,-15,2,12,1;box -59,-15,2,12,1
9 box -14,0,2,20,1;box 14,0,2,20,1;box -30,2
5,2,10,1;box 30,25,2,10,1
10 box -30,5,2,10,1;box 30,5,2,10,1;box -36,
10,14,2,1;box 36,10,14,2,1
11 box -62,0,25,2,1;box 62,0,25,2,1;box -53,
20,14,2,1;box 53,20,14,2,1
12 box -59,15,2,10,1;box 59,15,2,10,1;box -5
1,-30,16,2,1;box 51,-30,16,2,1
14 box -44,-25,2,10,1;box 44,-25,2,10,1
15 box -29,-25,2,10,1;box 29,-25,2,10,1;box
-23,-30,14,2,1;box 23,-30,14,2,1
20 for A=0to Z;*(A)=rnd(9);next A
21 for A=0to Zstep 2;@(A)=rnd(10)x15-82
22 @(A+1)=rnd(7)x10-45;next A
23 for A=0to Zstep 2;CX=@(A);CY=@(A+1);TV=99
+rnd(4);next A
90 for Q=1to 2;X=X+((JX(1)=1)x(PX(X+4,Y)=0))
-((JX(1)=-1)x(PX(X-4,Y)=0))
100 Y=Y+((JY(1)=1)x(PX(X,Y+4)=0))-((JY(1)=-1
)x(PX(X,Y-4)=0));next Q
105 K=K+1;if K>129K=128
106 %(S)=K
110 gosub 111;goto 169
111 if Y>26Y=26
112 if X>68X=68
113 if X<-68X=-68
120 if Y<-37Y=-37
130 H=X+76;V=ABS(Y-40);%(C)=Vx256+H;CALLB;%(
D)=%(C);%(T)=%(S);return
169 MU=10;if rnd(30-U)=1goto 700
170 if TR(1)=0goto 90
180 MU=88;F=JY(1)x3;B=JX(1)x3;I=X+G;J=Y+F;fo
r Q=1to 80
230 I=I+Gx2;J=J+Fx2
235 for A=0to Zstep 2
236 if *(A)if I+7>@(A)if I-7<@(A)if J+5>@(A+
1)if J-5<@(A+1)goto 500
237 next A
240 box I,J,2,2,3;box I,J,2,2,3
250 if (PX(I,J))+ (PX(I+2,J))+ (PX(I-2,J))+ (PX
(I,J+2))+ (PX(I,J-2))Q=81
260 next Q;MU=82;MU=85;goto 90

```

```

500 for M=99to 80step -2;MU=M;MU=M+2;MU=M+4;
next M
505 box @(A),@(A+1),10,8,2;CX=@(A);CY=@(A+1)
;TV=*(A)+48
510 P=P+*(A);*(A)=0;for M=1to 500;next M;box
@(A),@(A+1),10,8,2;W=W-1;if W#0goto 530
520 U=U+(U<5);Z=Ux2-1;W=U;P=P+27;for A=79to
99;MU=A;MU=A+2;MU=A+4;next A;goto 20
530 CY=40;CX=0;print #0,P;Q=81;goto 237
700 NT=9;MU=83;MU=73;MU=63;NT=1
710 M=7;N=5;A=0
720 A=A+1;if A>25goto 90
730 M=M+(rnd(3)-2)x14;N=N+(rnd(3)-2)x10
740 M=M+(M<-65)x14-(M>65)x14
745 N=N+(N<-35)x10-(N>25)x10
750 box M,N,5,5,3;box M,N,5,5,3
770 X=X+JX(1)x9;Y=Y+JY(1)x9;gosub 111
790 if M>X-29if M<X+29if N<Y+29if N>Y-29for
Q=1to 2;line M,N,0;line X,Y,3;next Q;L=L-1;go
to (L=0)x800+90
795 goto 720

```

INPUT THE FOLLOWING DATA ARRAY

```

%( 20237)= 8669
%( 20239)= 20258
%( 20241)= -43
%( 20243)= 26163
%( 20245)= 10298
%( 20247)= 128
%( 20249)= 13311
%( 20251)= 14950
%( 20253)= -32728
%( 20255)= -12032
%( 20257)= -32567
%( 20259)= 0
%( 20261)= 1537
%( 20263)= 20265
%( 20265)= 7692
%( 20267)= 16141
%( 20269)= 4652
%( 20271)= 7692
%( 20273)= 16172
%( 20275)= 4621
%( 20277)= -223

```

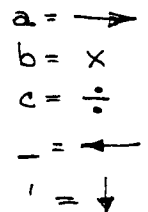
AFTER ENTERING THE PROGRAM AND THE DATA ARRAY
PRINT THE WHOLE THING TO TAPE LIKE THIS:
PRINT %(16384),2000
THIS WILL SAVE YOUR DATA TOO.

Dale Low
3020 Cook St
VICTORIA BC
V8T 3S9
CANADA



```

1 Q=0;CLEAR ;NT=0;CX=-30;CY=0;PRINT "LIZARD LUNCH";FC=34;BOX 0,0,140,25,3;FOR A
=0TO 180;&(10)=A;NEXT A
2 IF TR(1)NT=0;GOTO 700
3 GOTO 2
10 CLEAR ;BC=8;FC=140;S=0;T=5
11 BOX 0,0,160,80,3;BOX 0,0,156,76,3
12 CX=30;CY=30;PRINT "FLY #"
13 CX=30;CY=-18;PRINT "TIME:"
20 BOX 44,0,4,14,1;BOX 43,0,2,10,3;BOX 47,0,14,6,1;BOX 56,0,10,14,1;BOX 60,0,2,1
8,1
21 BOX 41,1,2,1,3;BOX 41,-2,2,1,3;BOX 39,0,1,4,1;BOX 58,0,8,8,2
22 BOX 58,0,10,4,1;BOX 65,0,20,2,1
30 LINE 38,0,4
40 X=JX(1)b30-30;Y=KN(1)c84b30
50 IF TR(1)MU="a";LINE X,Y,3;LINE 38,0,3;LINE X,Y,3;LINE 38,0,3;IF X=HIF Y=VGOSU
B 550
60 T=T-1;IF T<1GOSUB 500
70 J=RND (10)+75;MU=J
71 Q=Q+1;IF Q>200GOTO 650
72 IF S>20NT=10;MU="↑";MU="_";NT=50;MU="a";NT=0;GOTO 600
80 GOTO 40
500 BOX H,U,12,12,2;H=RND (3)b30-90;U=RND (3)b30-60;T=RND (P+1)
501 BOX H,U,3,9,1;BOX H,U,1,11,3;BOX H,U,11,1,1;BOX H+5,U,2,3,3;RETURN
550 M=12;FOR A=MT0 1STEP -1;FC=RND (10)b10;BOX X,Y,M,M,3;BOX X,Y,M,M,2;MU=M;M=M-
1;NEXT A;FC=140;S=S+1
551 CX=10;CY=18;PRINT S;GOTO 500
600 CX=18;CY=-30;PRINT Q;CX=-30;CY=0;PRINT "GAME OVER";BC=0;BOX 0,0,160,80,3
601 IF TR(1)FOR A=180TO 0STEP -1;&(10)=A;NEXT A;RUN
602 GOTO 601
650 CX=-40;CY=15;PRINT "DEAD LIZARD!";BOX 42,-8,40,10,2;BOX 41,1,2,1,3;GOTO 600
700 FOR A=180TO 0STEP -1;&(10)=A;NEXT A
701 CLEAR ;FC=107;BC=7;CX=-60;CY=30;PRINT "ENTER DIFFICULTY
702 BOX 0,30,160,20,3
703 CX=-40;CY=15;PRINT "1-MONITOR LIZARD
704 CX=-40;CY=6;PRINT "2-SALAMANDER
705 CX=-40;CY=-3;PRINT "3-TADPOLE
706 FOR A=0TO 180;&(10)=A;NEXT A
707 P=KN(1)c84+2
708 IF TR(1)NT=1;GOTO 10
709 CX=-70;CY=-35;PRINT P
710 GOTO 707
    
```



```

1 .350003135500031357b17b17b1b2b150000
2 GOSUB 38;CLEAR ;GOTO 70
3 BOX X,Y,11,11,1;BOX X,Y,9,9,2;RETURN
4 BOX X,Y,1,1,1;RETURN
5 BOX X+2,Y+2,1,1,1;BOX X-2,Y-2,1,1,1;RETURN
6 GOSUB 4;GOSUB 5;RETURN
7 GOSUB 5;BOX X-2,Y+2,1,1,1;BOX X+2,Y-2,1,1,1;RETURN
8 GOSUB 7;GOSUB 4;RETURN
9 GOSUB 7;BOX X,Y+2,1,1,1;BOX X,Y-2,1,1,1;RETURN
10 X=-43;Y=35;FOR N=1TO 5;A=RND (6)+3;@(N)=A;IF @(N+6)X=X+17;NEXT N;RETURN
11 GOSUB 3;GOSUB A;X=X+17;NEXT N;RETURN
12 B=RND (6);FOR M=1TO B;GOSUB 10;NEXT M;RETURN
13 IF R>-50IF R<-35X=-43;GOSUB 20;GOSUB @(1);@(7)=1;U=1;GOSUB 21
14 IF R>-35IF R<-16X=-25;GOSUB 20;GOSUB @(2);@(8)=1;U=2;GOSUB 21
15 IF R>-16IF R<0X=-8;GOSUB 20;GOSUB @(3);@(9)=1;U=3;GOSUB 21
16 IF R>0IF R<17X=9;GOSUB 20;GOSUB @(4);@(10)=1;U=4;GOSUB 21
17 IF R>17IF R<33X=26;GOSUB 20;GOSUB @(5);@(11)=1;U=5;GOSUB 21
18 IF R>33IF R<49X=43;GOSUB 20;GOSUB @(6);@(12)=1;U=6;GOSUB 21
19 RETURN
20 Y=35;BOX X,Y,12,12,2;Y=15;GOSUB 3;RETURN
21 IF @(U)=8U=50
22 IF @(U)=4U=100
23 GOSUB 24;U=0;RETURN
24 GOSUB 25;CX=43;S=S+U;PRINT #0,S;RETURN
25 CY=-((P-1)b8-5;CX=-4;RETURN
26 Z=200;IF P=1FC=137;G=G+S;GOSUB 25;PRINT #4,G,;IF G>DGOTO Z
27 IF P=2FC=240;H=H+S;GOSUB 25;PRINT #4,H,;IF H>DGOTO Z
28 IF P=3FC=89;I=I+S;GOSUB 25;PRINT #4,I,;IF I>DGOTO Z
29 IF P=4FC=107;J=J+S;GOSUB 25;PRINT #4,J,;IF J>DGOTO Z
30 PRINT "_UP";RETURN
31 FOR Z=7TO 12;@(Z)=0;NEXT Z;RETURN
32 CY=-37;RETURN
33 GOSUB 32;PRINT " TO ROLL DICE PUSH JY UP↑";RETURN
34 GOSUB 32;PRINT " USE TRIGGER TO SAVE DICE";RETURN
37 GOSUB 32;PRINT " YOUR OPT. TO ROLL AGAIN";RETURN
38 NT=13;FOR Z=-24573TO -24538;MU=%(Z);NEXT Z;NT=0;RETURN
39 BOX R,Q,20,8,2;BOX R,Q,1,6,1;LINE R-3,Q,4;LINE R,Q+3,1;LINE R+3,Q,1
40 IF R>49BOX R,Q,15,8,2;R=-49
41 RETURN
44 BOX 0,26,120,35,2;RETURN
45 GOSUB 32;INPUT "INPUT 1-6 TO SCORE 3 DIE"K;IF K=1U=700
46 IF K=2U=200
47 IF K=3U=300
48 IF K=4U=400
49 IF K=5U=350
50 IF K=6U=600
51 GOSUB 24;U=0;GOSUB 32;PRINT " NOW MOVE THE DICE DOWN ";RETURN
52 P=P+1;GOSUB 44;T=0;C=0;S=0;BOX 44,-17,55,32,2;GOSUB 31;GOSUB 33;IF P>L P=1
53 RETURN
70 P=1;C=0;G=0;H=0;I=0;J=0;S=0;GOSUB 31;D=4999;T=0;Q=25;BC=5
80 CY=0;INPUT "***NUMBER*OF*PLAYERS?"L;IF L>4L=4
90 CLEAR ;CY=-5;FOR N=1TO L;PRINT "aPLAYER #",#0,N," ";NEXT N
100 CY=5;CX=-5;PRINT "TOTAL PRESENT";GOSUB 26;GOSUB 33
110 IF JY(P)=1BOX 0,31,120,19,2;GOSUB 12;C=1;GOSUB 34
120 IF JX(P)=1GOSUB 52;GOSUB 26
125 IF TR(P)T=T+1;GOSUB 13;IF T=6T=0;GOSUB 44;GOSUB 37;GOSUB 31;C=0;GOSUB 38
130 IF JY(P)=-1BOX R,Q,9,8,2;GOSUB 45
140 IF JX(P)=-1GOSUB 26;GOSUB 52;GOSUB 26
150 R=R+4;GOSUB 40;IF CGOSUB 39
160 GOTO 110
200 GOSUB 44;CY=35;PRINT " GAME OVER PLAYER #",#0,P," WINS";GOSUB 38

```

b means X

C means ÷


CRAZIE DICE RULES


This is a game of chance, strategy, and greed. The object is to be the first player to reach 5,000 points.


You start by rolling six dice. If you don't get a pointer (a one, a five, or three of a kind) on the first or subsequent roll(s) you must pass the play to the next player without adding your present score to your total. You must save at least one pointer on each roll of the dice. If you get pointers on all six dice, you have the option to roll again (greed) but remember any time you roll again and don't get a pointer you must pass play without adding to your total. Three of a kind need not be side by side, but must be on a single roll of the dice. Two to four players. Different colors for each player.

Trigger: Moves a die from the top row (the dice you roll) to the bottom row (the dice you save)



Joystick:

Adds present score to total and passes play to next player	Rolls dice	Passes play to next player without adding present score to total
		
	Adjust score for saving 3 of a kind (do this before moving dice down)	

Point value: A  = 50pt.

A  = 100pt.

3  = 1000pt. 3  = 200pt.

3  = 300pt. 3  = 400pt. Etc.

Extra 2's, 3's, 4's, 6's don't count extra points.

An optional rule for crazie dice: We call it "getting on the board". Simply, your present score must be 500 or more before you can add it to your total. After that, your "on the board" and may save any amount less than or greater than 500 if you choose.

D-D-DIGITAL MANIA

We've done a lot of basic programming and maybe even a little machine language. So, what's left? Is there anything else I can do with my computer?

YOU BET!! There is no reason why your Astrocade could not be controlling a robot, guarding your home, or talking.

Of course, these projects would require considerable experience with electronics, mechanics, and machine code to bring them about. But that doesn't mean we can't learn what it's all about.

One thing that we were blessed with is our microprocessor is a Z-80. This MPU is especially suited for this sort of thing. Another is the expansion bus in the back of the machine. These 50 connections provide us with everything we need, to do any thing we want.

If this sounds simple, it isn't. But, in a while, you will, at least understand it.

Now, DON'T go probing around with a bunch of wires to see what might happen. You could easily damage your machine, permanently!! The purpose of this series is to try explaining the use and operation of these control lines, address lines, and data lines and to, eventually, put them to use. So lets get started.

First off, IF statements are a form of logic that control the flow of a program, that is, true/false, on/off. And if you've, at least, played with machine code, you should be acquainted with "1"'s and "0"'s. This same form of logic is what controls the "hardware" connected to our Z-80 MPU. But how are "1"'s and "0"'s transmitted along copper lines?

Just as 3 volts will power a flashlight & 110 volts would burn out the bulb, instantly, the signals to and from the computer have to be within certain voltage parameters. There are several families of logic which are separated mainly by differing voltage requirements for their signals. I won't attempt to discuss all of these, only to compare two of these families.

These two happen to be the most common: TTL (transistor/transistor logic) and C/MOS (complementary metal oxide).

C/MOS requires maximum 1.5 volts for logic "0" and minimum 3.5 volts for logic "1".

TTL requires 0.4 volts maximum for logic "0" and 2.4 volts minimum for logic "1". To make this easier, let's concern ourselves with just TTL and forget the rest for now.

TTL has specific voltage parameters that represent these logic levels "0" low and "1" high as shown by this chart:

LOGIC	LEVEL	MINIMUM	MAXIMUM V.
0	LOW	0.0 VOLTS	0.4 VOLTS
1	HIGH	2.4 VOLTS	5.0 VOLTS

To put this into prospective, let's take an example from page 99 of your Bally Basic Manual. Look at #14, \overline{RD} which is one of the contacts of our expansion bus. This is the read line and it is connected to the Z-80, various components inside the Astrocade and any extended memory you might have attached.

This line is used for various reasons and at various times during the execution of a program. One of which is "reading" memory. When data is requested from a memory location, this \overline{RD} line swings from a high "1", to an active low "0". This then becomes the necessary signal for the memory chips to pass the data along to the data bus. The data bus, by the way, are lines D0 thru D7 which hold the 8 bits that represent 0 to 255 decimal. (Send **3ASE** for free conversion chart). The bar over the top of \overline{RD} means that this signal is active low or that \overline{RD} will only go low during a read operation. This is exactly how memory distinguishes a read from a write operation.

\overline{RD}	LOW DURING A READ
\overline{RD}	HIGH DURING A WRITE

Next time, we will further discuss the expansion bus and, hopefully, understand it. For now, remember the two charts above. I'd appreciate questions or answers, projects or ideas from experts and novices alike.

Ed Horger



```

1 Y=(R-1)cS)b8-K;X=(RM+1)b8-12
2 CX=X;GOSUB 25;CY=YcKb2+Y;RETURN
3 BOX U,W,C,C,3;IF (X#U)+(Y#W)MU=J
4 RETURN
5 FOR M=0TO ZbH;NEXT M;RETURN
6 R=A;GOSUB 1;GOSUB 5;RETURN
7 MU=J;L=L-1;GOTO 79
8 BOX X,Y,C,C,3;U=X;W=Y;RETURN
9 B=(Y+K)c8bS+(X+12)c8;RETURN
10 D=-1bD;GOTO 15
11 IF ABS(D)=1D=S;F=1;GOTO 15
12 D=1;F=S;GOTO 15
13 IF ABS(D)=1D=-S;F=1;GOTO 15
14 D=-1;F=S
15 B=E;GOTO 250
16 FOR R=1TO H;IF @(R)GOSUB 1;C=7;GOSUB 8;MU=J;IF U>0IF PX(X,Y)=0Q=Q+5
17 NEXT R;RETURN
18 X=-4;Y=K;RETURN
19 CY=0;CX=-75;RETURN
20 R=B;GOSUB 1;GOSUB 5;IF A=B TU=43;GOTO 7
21 TU=L;GOTO 79
25 IF X=68CX=70
26 RETURN
30 IF @(B)GOSUB 6;TU=45;N=1
31 RETURN
40 CY=-32;INPUT " INPUT 1-4 PLYRS:"P
41 IF (P<1)+(P>4)GOTO 40
48 T=P;U=-1;FOR N=5TO 8;@(H+N)=0;NEXT N
50 CLEAR ;PRINT " BALLY";PRINT " BLACK";PRINT " BOX",
52 O=0;Q=0;L=64;I=0;T=T+1;IF T>P T=1;I=4;U=U+1
54 FOR N=-32TO 32STEP 8;LINE 0,N,4;LINE 64,N,1;LINE N+32,-32,4;LINE N+32,32,1;
NEXT N;PRINT #1,"#",T
55 BOX 32,0,67,67,3
60 FOR N=1TO H+I;@(N)=0;MU=N;NEXT N;FOR N=1TO 5
64 R=RND (8)bS+RND (8)+1;IF @(R)GOTO 64
65 @(R)=1;NEXT N
68 IF U=0PRINT ;PRINT " TEST";GOSUB 16
79 &(20)=0;GOSUB 18;GOTO 97
80 X=JX(T)bB+X;IF X<-4X=-4
82 IF X>J X=J
90 Y=JY(T)bB+Y;IF Y<-K Y=-K
92 IF Y>K Y=K
94 GOSUB 3
97 C=3;IF ABS(Y)<<KIF X<JIF X>-4C=5
98 GOSUB 8;IF TR(T)GOTO 106
102 GOTO 80
106 IF C=5GOTO 500
107 IF ABS(Y)=KIF (X=-4)+(X=J)GOTO 80
110 O=O+1;L=L+1;IF L>90L=65
115 GOSUB 19;PRINT #1,"PROBES=",Q;&(20)=H;NT=H;MU=J;NT=2;GOSUB 9;A=B;GOSUB 2;TU
=L
130 D=S;F=1;IF Y=K D=-S
132 IF X=-4D=1;F=S
134 IF X=J D=-1;F=S
140 B=B+D;Z=1S;N=0;GOSUB 30;IF NGOTO 7
150 IF @(B-F)+@(B+F)>0GOSUB 6;TU=43;GOTO 7
160 GOTO 210
200 E=B;B=B+D;G=BcS;IF (RM=0)+(RM=1)+(B>89)+(B<12)GOTO 20
210 N=0;GOSUB 30;IF NGOTO 7
220 IF @(B-F)IF @(B+F)GOTO 5
230 IF @(B-F)GOTO 11
240 IF @(B+F)GOTO 13
250 Z=Z-2;IF Z<0Z=0
252 GOTO 200
500 MU=J;IF U=0T=4;GOTO 50
510 O=1-2bPX(X,Y)+O
515 BOX -46,-20,J,17,2;IF O=4GOSUB 19;CY=-16;PRINT "LAST";PRINT "GUESS
520 IF O<5GOTO 79
600 GOSUB 16;GOSUB 19;PRINT #1,"SCORE=",Q;@(H+T)=Q;@(H+T+4)=@(H+T+4)+Q
630 IF TR(T)GOTO 640
632 GOTO 630
    
```

This is a computerized version of a game produced by Parker Brothers. An article in Creative Computing (Feb., 1980) discussed the game for a PET program.

How the game is played: The black box is an 8x8 grid. At the beginning of each game, the computer locates 5 balls (i.e., obstacles), one in each of 5 randomly selected squares. The balls are invisible to the player.

The object of the game is to determine the locations of the 5 balls least amount of information possible.

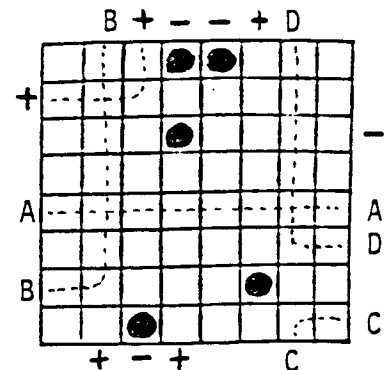
The player obtains information about the location of the balls by sending a probe into the box at one of the 32 edge squares, and observing its behavior: it may emerge at another edge square, be reflected back to the square the probe entered, or be absorbed. Based on these observations and the rules for how probes move, the player can deduce the location of the 5 balls.

BLACK BOX

Steve Walters
556 Langfield
Northville, MI 48167

```

640 CLEAR ;CY=32;IF T=PPRINT "END ",
642 PRINT #2,"ROUND",U;FOR N=1TO P;PRINT ;
PRINT #1,"#",N," SCORE=",@(H+N);IF T
=PPRINT #1," AUG=",@(H+N+4)cU,
648 PRINT ;NEXT N
650 IF TR(T)GOTO 50
652 GOTO 650
    
```



BACKGAMMON

BY MIKE PEACE

YOU ARE THE SQUARES, THE COMPUTER IS THE X'S. THE OBJECT OF THE GAME IS TO MOVE ALL YOUR MEN CLOCKWISE TO OR PAST THE POINT ON TOP WHERE YOU HAVE 3 MEN (THE 6TH SPIKE FROM THE RIGHT), THEN TO BEAR THEM OFF THE BOARD BY THROWS OF THE DICE. A PLAYER CAN MOVE ONE MAN FOR THE TOTAL OF THE THROW, OR TWO MEN, ONE FOR EACH NUMBER ON THE DICE. DICE ARE SHOWN IN BOTTOM CENTER OF THE SCREEN. TO MOVE PUSH CONTROL HANDLE LEFT FOR CLOCKWISE OR RIGHT FOR COUNTERCLOCKWISE. WHEN YOU HAVE POSITIONED THE FLASHING BOX AT THE PIECE YOU WISH TO MOVE, PULL THE TRIGGER. YOU WILL NOW BE MOVING THAT PIECE TO THE NEW LOCATION DETERMINED BY THE DICE. PULL THE TRIGGER AGAIN TO COMPLETE THE MOVE. YOU MUST MOVE ALL OF YOUR MEN TO THE RIGHT OF THE SPIKE I PREVIOUSLY MENTIONED BEFORE YOU CAN TAKE THEM OFF THE BOARD. TO MOVE THEM OFF, SIMPLY USE THE MOVING METHOD TO GET THEM OFF THE UPPER RIGHT OF THE BOARD. THE COMPUTER WILL PLACE YOUR MEN AT THE LOWER LEFT AND ITS MEN AT THE LOWER RIGHT OF THE SCREEN. YOU GET TWO FULL MOVES FOR DOUBLES, AND YOU CAN SEND THE COMPUTER'S MAN BACK TO START IF YOU LAND ON HIS SINGLE MAN. YOU CANNOT LAND ON ANY SPIKE THAT IS OCCUPIED BY MORE THAN ONE OF YOUR OPPONENT'S MEN. THE COMPUTER FOLLOWS THE SAME RULES. IF YOU ARE SENT BACK TO THE START YOU CANNOT MOVE ANOTHER MAN UNTIL THE ONE OFF THE BOARD IS RESTORED TO THE PLAYING FIELD. ANY WRONG MOVE IS PENALIZED BY LOSS OF PART OR ALL OF THAT TURN. IN BEARING OFF YOU MAY NOT USE THE TOTAL OF BOTH DICE FOR ONE MOVE. IF YOU HAVE NEVER PLAYED BEFORE, WATCH THE COMPUTER'S MOVES TO LEARN MORE QUICKLY. GOOD LUCK!

MIKE PEACE

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1739 CHARACTERS

```

5  NT=2;clear ;H=500;Z=85;O=13;C=6;F=0;U=0;G=
25;goto 200
10  box X,Y,1,3,3;box X,Y,3,1,3
12  box X,Y,3,3,3;return
13  for O=6to Z;MU=0;next O
15  for O=4to 12;MU=Z+K;gosub P;next O;return

20  C=14;gosub 225;CY=1;CX=-30;NT=0;return
25  if W>G_W=0
26  if W<0W=G
28  if W<13X=84-Wx13;Y=-32+ABS@(W)x4-Vx4
29  if W>12X=-72+13x(W-13);Y=32-ABS@(W)x4+V
x4
30  if W=0Y=-40;X=@(W)x3+66-F;MU=X
31  if W=25Y=-40;X=@(W)x3-66+U;MU=75
34  return
35  for A=1to 24;if @(A)>0return
36  next A;gosub 20;print "YOU_WON!";A=KP;run

70  gosub G;P=11+N;gosub 15;@(W)=@(W)+L;W=Q
71  if @(W)=L_P=11+L;gosub G;gosub O;@(W)=0;@
(K)=@(K)+L;P=W;W=K;gosub G;gosub 11+L;MU=Z;W=
P
72  if Q=Gif N=1U=U+3;goto 75
73  if Q=0if N=-1F=F+3;goto 75
74  @(W)=@(W)+N
75  gosub G;P=11+N;gosub 15;return
80  @(26)=D+W;@(27)=I+W;@(28)=D+I+W
81  for S=26to 28;if @(S)<1@(S)=0;if A>7C=0
82  if @(S)>24@(S)=G;if A<19@(S)=W
84  next S;return
85  S=rnd(3)+G;if T>2if (S=J)+(S=28)#0goto Z
86  if S=28if @(28)=Kgoto Z
87  return
99  P=C;gosub 80
100  for M=1to 5;gosub Z

```

```

120  if @(@(S))<Eif @(@(S))>C_J=S;Q=@(S);T=T+
1; if S=28T=T+1
140  if Q#-2return
160  C=P;next M;return
200  for A=-78to 76step O;line A,-34,0;line A
+0,35,1;line A,35,0;line A+0,-34,1;next A
205  for A=-59to 72step 26;for B=31to 1step -
6;box A-0,-B,(B+3)+3,6,1;box A,B+2,(B+3)+3,6,
1;next B;next A
206  for A=0to G;@(A)=0;next A;@(1)=2;@(6)=-5
;@(8)=-3;@(12)=5;@(13)=-5;@(17)=3;@(19)=5;@(2
4)=-2
207  for W=1to G;A=10;if @(W)>0A=12
208  for V=1to ABS@(W));if @(W)gosub G;gosub
A
210  next V;next W;V=1;CX=-G;print "BACKGAMMO
N
225  box 0,1,160,C,2;if C=14return
300  D=rnd(6);I=rnd(6);CY=-39;CX=-14;print
#2,D,"_",I;box 0,-39,27,8,3;box 0,-39,7,8,3;T
=2;if D=(I)T=0
330  N=N+1;J=-G;if N>0N=-1;goto 600
400  K=G;Q=-2;N=0;L=-1
410  gosub 35;gosub H;if Q=-2goto 410
415  if @(@)if Q#0for M=0to G;MU=69;next M;go
to 400
420  gosub 12;gosub H;if N#0goto 410
430  P=W;W=Q;gosub 80
435  for M=0to 15;gosub Z;if P=@(S)J=S;Q=P;go
to 450
440  MU=48+M;next M
450  gosub G;gosub 12;gosub 70;T=T+1;if S=28T
=T+1
460  if T>3goto 300
470  goto 400
500  W=W-JX(1);gosub G;gosub 12;gosub 12;if T
R(1)gosub 550;MU=72;return
510  goto H
550  if Q=-2if @(W)>0Q=W;return
560  if Q#-2if @(W)>-2N=1;return
570  N=0;return
600  D=-D;I=-I;L=1;K=0
610  R=1;for A=Gto 1step N;if @(A)<0goto 616
615  next A;gosub 20;print "COMPUTER_WON";if
KPrun
616  E=2;if @(G)<0R=A
630  for W=Ato Rstep N;B=@(W);Q=-2;if B>0goto
636
632  if E=0C=-2;gosub 99
634  if E=2C=-G;gosub 99
635  if Q#-2goto 660
636  if E<0goto 300
650  next W;E=E-2;goto 630
660  gosub 70;if T>3goto 300
670  goto 610

```


GAMBITS
presents
"BOING"
Starring in
SPRING THING Part I

Imagine controlling a coil spring inside of a building located in deep space. There is no gravity or friction to slow it down! Now imagine that you must avoid being hit by a battery of laser canons that keep shooting faster the longer you stay alive, and try to pick up valuable gold rings!

This is how this fast paced game is played! "Turning it over" (12,500 points) will start your game over with the number of SPRINGs you have left plus one, which, by then, will be a welcome relief!!

Options include:

1 to 4 Players

Individual selection of laser firing speeds

Individual selection of the number of SPRING THINGS

Individual selection of hand controls

Continuous play or Stop after each SPRING

This game can be played on ANY BLUE RAM BASIC!

The cost is only \$6.95 (U.S.)!

Send check or money order to:

KEN LILL

6608 S. CAMPBELL

CHICAGO, ILLINOIS 60629

Please allow 2 to 4 weeks for delivery

SPECIAL OFFER!!

Buy your SPRING THING Part I tape before January 31, 1985 and "Turn - it - over" and you will receive either a \$1.00 refund OR \$1.50 credit towards the purchase of either a SPRING THING Part II or ARCADE GOLF tape! Sorry. offer available only once per tape! (Part II available in 1985)

"REPACK" [UTILITY]

[FOR AB + 8K ADDED MEMORY]

```

5 CLEAR ;CY=10;CX=-21;PRINT "ZERØING";CX=-9;PRINT "RAM";CX=-18;PRINT "PLEASE"
;CX=-12;PRINT "WAIT
10 A=24576;B=32767;C=-A;D=-22772;E=19998;F=20358;G=16384;FOR N=ATO BSTEP 2;%(N
)=0;NEXT N;CLEAR ;PRINT " READY";PRINT " AWAITING INPUT
15 PRINT " OF TEXT
20 :INPUT %(A);PRINT " IN BLUE RAM
30 H=28600;I=30500;K=31000;M=K;J=30858;L=%(20000);FOR N=CTO LSTEP 2;%(M)=%(N);
M=M+2;NEXT N;PRINT " UNPACKING TEXT
40 P=8192;R=2308;FOR N=GTO ESTEP 2;%(N)=%(N+P);NEXT N;M=H;FOR N=CTO DSTEP 2;%(
M)=%(N);M=M+2;NEXT N;M=K;FOR N=CTO LSTEP 2;%(N)=%(M);M=M+2;NEXT N
50 CLEAR ;PRINT " TEXT UNPACKED";FOR N=ITO JSTEP 2;%(N)=%(N-R);NEXT N;PRINT
" READY TO LOAD PICTURE
60 :INPUT %(A);PRINT " IN BLUE RAM
70 FOR N=0TO R;NEXT N;M=K;PRINT " REPACKING TEXT
80 FOR N=GTO ESTEP 2;%(N)=%(N+P);NEXT N;FOR N=CTO LSTEP 2;%(N)=%(M);M=M+2;NEXT
N;M=H
90 FOR N=CTO DSTEP 2;%(N)=%(M);M=M+2;NEXT N;FOR N=GTO ESTEP 2;%(N+P)=%(N);NEXT
N;M=K;FOR N=CTO LSTEP 2;%(N)=%(M);M=M+2;NEXT N
100 CLEAR ;PRINT " TEXT REPACKED";FOR N=ITO JSTEP 2;%(N-R)=%(N);NEXT N;M=0;FO
R N=28346TO 28550STEP 2;IF %(N)M=(N-28344)c2
110 NEXT N;N=M+21b(M#0);PRINT " DO YOU WANT";PRINT " FILE SEARCH?";PRINT " 1=Y
ES 2=N0
120 O=KP-50;IF OINPUT " FILE SEARCH N0.?"Y
130 IF (O<-1)+(O>0)GOTO 120
140 PRINT " PRESS ANY KEY FOR";PRINT " :PRINT
150 IF KP=O:PRINT Y,1
160 :PRINT %(A),1864+N;PRINT " :LIST ";;LIST ;IF O:LIST
170 PRINT ;PRINT " TO RERUN UTILITY PRESS";PRINT " (G0)
180 IF KP=13RUN
ENTER>PRINT " ;RUN ";;PRINT %(16384),1887 [GET TAPE MOVING AND PRESS G0]

```

TO USE "REPACK":

- >1. KEY IN UTILITY AND PUT ON PERMANENT STORAGE TAPE
- >2. KEY IN PROGRAM TEXT, VARIABLES, STRINGS, AND MACHINE CODE IN STACK AREA
- >3. TAPE ALL AT ONCE!!
NOTE: YOUR LIMITS ARE FROM SIMPLE :PRINT ,OR RATHER:
FROM :PRINT %(16384),1864 TO :PRINT %(16384),1987 [HALF THE STACK]
- >4. PRESS [RESET] AND KEY IN PICTURE PROGRAM OR LOAD AB SCRIBLING
- >5. TAPE PICTURE PROGRAM OR SCRIBBLING BEHIND TEXT WITH PICTURE SHOWING
NOTE: TRY PUTTING: IF &(23):PRINT INTO SCRIBBLING SOMEWHERE
AND HIT LEFT KEY COLUMN TO DUMP [IF SCRIBBLING WAS USED]
- >6. LOAD "REPACK"
- >7. LOAD TEXT AT "AWAITING INPUT OF TEXT"
- >8. LOAD PICTURE AT "READY TO LOAD PICTURE"
- >9. CHOOSE FILE SEARCH, [TO FOLLOW VOL.5 PG.125 ARCADIAN "FILE SEARCHER"]
- >10. DUMP FINISHED PROGRAM TO TAPE
- >11. PLAY FINISHED TAPE BACK IN TO VERIFY

Oct 31, 1984

ARCADIAN

Vol 6 No 11/12

REPACK" [UTILITY]

[FOR AB NO ADDED MEMORY]

[USE FOLLOWING PROCEDURE]

- >1. KEY IN PROGRAM TEXT, VARIABLES, STRINGS, AND MACHINE CODE IN STACK AREA
- >2. AFTER DEBUGGING, TAPE MACHINE CODE WITH :PRINT % (20237),60 [OR WHATEVER]
- >3. RUN 30 SEC. OF BLANK TAPE THROUGH AND TAPE THE TEXT AND VARIABLES THERE
NOTE: USE :PRINT %(-24576),904;:PRINT %(20000),57
- >4. REWIND TAPE, ENTER :LIST , AND PLAY TAPE STOPPING WHEN CURSOR RETURNS
- >5. PRESS [RESET] AND KEY IN PICTURE PROGRAM OR LOAD AB SCRIBBLING
NOTE: REMOVE WORK TAPE TO USE SCRIBBLING BUT DON'T REWIND
- >6. TAPE PICTURE PROGRAM OR SCRIBBLING BEFORE TEXT WITH PICTURE SHOWING
- >7. REWIND TAPE AND PRESS [RESET]
- >8. RELOAD MACHINE CODE WITH :INPUT % (20237) [OR WHATEVER] AND STOP TAPE
- >9. ENTER THIS LINE, PRESS [G0] AND PLAY THE TAPE

PRINT " :RUN " ;:INPUT ;:INPUT %(-24576) ;:INPUT %(20000) ;IF KP:PRINT %(16384),1987
[OR WHATEVER]

- >10. GET OUT YOUR FINISH TAPE, START IT RECORDING AN HIT A KEY
- >11. USE :LIST TO VERIFY

[QUESTIONS???) WRITE TO :

MICHAEL D. WHITE
4585 COUNTY LINE #2
R.D.#1 BOX 373
WAKEMAN, OHIO 44889

"REPACK" PICTURE CONTEST RULES

AS YOU HAVE SEEN, THERE IS NO PICTURE FOR "REPACK"

SIMPLY SEND IN A TITLE PICTURE FOR THE UTILITY, ON A CASSETTE TAPE OR A LISTING THAT DRAWS YOUR PICTURE

ALL CONTESTANTS RECIEVE A COUPON TOWARDS A QUADRA PURCHASE

THE BEST JUDGED PICTURE RECIEVES QUADRA FREE!!!

PRESENT OWNERS OF QUADRA ARE NOT ELIGIBLE FOR AN OBVIOUS REASON
[YOU ALREADY HAVE THE PRIZE]

METROPOLITAN ATTACK!

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1535 CHARACTERS

```

2 NT=0;clear ;print ;input "BASES?"S
5 BC=0;O=10;T=2;@(1)=25;@(2)=25;@(3)=25;V=49
9;M=0;Q=4;W=200;FC=14;gosub 2000
10 clear ;FC=14;box 0,-42,160,3,3
20 box 0,-40,10,7,1
30 X=10451;Y=10240;Z=10285
35 B=-40;C=40;D=0;E=C;F=C;G=F
40 for A=30to 70step 35;box A,-38-rnd (3),9,
5,1;box -A,-38-rnd (3),9,5,1;next A
50 for A=-4to 4step 3;box A,-38,1,1,2;next A
60 C=C-T-rnd (3);E=E-T-rnd (3);G=G-T-rnd (3)
;B=B+rnd (7)-4;D=D+rnd (7)-3;F=F+rnd (7)-3
61 if Q=2if M>W_T=T+1;W=W+200;goto 70
62 if M>W_Q=Q-1;W=W+200
65 if M>Vgosub 1000
67 if @(1)<5if @(2)<5if @(3)<5BC=1
70 XY=X;line B,C,3;X=XY;XY=Y;line D,E,3;Y=XY
;XY=Z;line F,G,3;Z=XY
71 NT=0;CY=42;CX=-30;print #0,M;NT=1
75 if (C<-37)+(E<-38)+(G<-37)goto 200
80 for A=1to Q;gosub 100;next A;goto 60
100 J=KN(1)+85+2
102 VA=2;VB=2;VC=2;TA=166;TB=TA;TC=99;VR=13;
VF=2
105 H=H+JX(1)x(5+T);I=I+JY(1)x(5+T);if I>35I
=35
106 if I<-30I=-30
107 CX=H;CY=I;print "+";K=0;CX=H;CY=I;print
" "
108 if TR(1)#1return
109 if @(J)=0MU="4";return
110 if J=1R=-10049
111 if J=2R=-10240
112 if J=3R=-10175
115 @(J)=@(J)-1;VC=5;TA=53;NM=2;VR=63;VF=3;M
O=-1;TC=29;VA=5;VB=6;if @(1)=0if @(2)=0if @(3)
)=0goto 1600
116 for K=1to 2;XY=R;line H,I,3;next K
120 if H>B-Oif H<B+Oif I<Cif I>C-Obox -52,6,
50,75,2;X=10451;B=-40;C=40;NV=-1;M=M+20
130 if H>D-Oif H<D+Oif I<Eif I>E-O_M=M+20;bo
x 0,6,53,75,2;Y=10240;NV=-1;D=0;E=40
140 if H>F-Oif H<F+Oif I<Gif I>G-O_NV=-1;M=M
+20;box 52,6,53,75,2;Z=10285;F=40;G=F
150 NV=0;return
200 for A=1to 30;BC=89;MU=44;BC=0;MU=95;next
A;S=S-1;if S=0goto 600
210 gosub 2000;goto 10
600 v;for A=50to 101;FC=89;box 0,-38,160,10,
3;FC=14;MU=A;next A;STOP
1000 NT=0;CY=30;print "___BONUS_BASE";print
"___FUEL_BONUS";print
1001 NT=1;for A=1to 100step 3;MU=A;next A;fo
r A=1to @(1)+@(2)+@(3);print "*",M=M+5;next
A;CX=-30;CY=40;print #0,M;for A=1to 3;@(A)=25
;next A
1002 for A=1to 1200;next A
1003 BC=0;if O<200=0+1
1010 V=V+500;S=S+1;gosub 2000;goto 10
1600 CY=10;print "___OUT_OF_ENERGY!";goto 600
2000 v;clear ;CY=0;CX=0;print #0,S;for A=1to
40;box 0,0,30,30,3;next A;return

```

CONNECT FOUR ENLARGED
ADAPTED FROM ROBERT LEAKE'S PROGRAM
WHICH APPEARED IN LAST MONTH'S ARCADIAN.
USE REM LINES 1 - 7 FROM LAST MONTH
AND RETYPE THE PROGRAM FROM LINE 8 THRU THE
END. THIS VERSION FILLS THE WHOLE SCREEN!

ADAPTED BY H.L. HANSON

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1104 CHARACTERS

```

8 BC=0;FC=110;goto 14
9 box 0,41,117,2,2
10 box -72+18xC,41,9,2,1;return
11 M=%(-24225+14xE+2xC);return
12 U=Q+7;F=RM;if F=0F=7
13 box -72+18xF,-37+(Q-1)+7x13,17,12,3;retur
n
14 clear ;input "___1_OR_2_PLAYERS?"P
15 for A=1to 76;*(A)=0;next A;clear ;box 0,-
5,127,79,1;for Q=1to 42;gosub 12;next Q;C=1;g
osub 10;T=-1;N=69
16 J=(T+3)+2
17 D=C+JX(J);if C#Dif D<(B-D)C=D;gosub 9
18 if TR(J)#1+*(C)=6)goto 17
19 gosub 37;T=-T;if P#1goto 16
20 L=-9999;for C=1to 7;gosub 9;if *(C)=6goto
36
21 E=*(C);gosub 11;W=0;for A=M+1to A+(M)+25
6;B=%(A)+256-24;S=*(B)
22 W=W+*(80+S);next A;if W>*(83)K=C;C=7;got
o 36
23 if *(C)=5goto 35
24 if W>*(77)goto 35
25 E=E+1;gosub 11;G=0;H=1;for A=M+1to A+(M)
+256;B=%(A)+256-24;S=*(B)
26 if S=-3G=1
27 if S=-2W=W-2x*(78)+3
28 if S=2W=W+*(82)+3
29 if S=3H=0;W=-3333
30 next A;if G_W=-6666;goto 35
31 if H+*(C)=4)goto 35
32 E=E+1;gosub 11;I=0;for A=M+1to A+(M)+256
;B=%(A)+256-24;S=*(B)
33 if S=3I=1
34 next A;if I_K=C;C=7;goto 36
35 if W>L_L=W;K=C
36 next C;C=K;gosub 37;T=-1;goto 17
37 E=*(C);gosub 11;*(C)=*(C)+1;X=-72+18xC;Y=
-50+13x*(C);gosub 9;box X,Y,13,10,1;box X,Y,7
,6,(7+T)+2;MU=84
38 for A=M+1to A+(M)+256;B=%(A)+256-24;S=*(
B);if S=4goto 46
39 if SxT<0*(B)=4;N=N-1;goto 46
40 S=S+T;*(B)=S;if S#4xTgoto 46
41 R=1;Z=%(-24144+B)+256-31;if B>31R=6
42 if B>43R=7
43 if B>64R=8
44 N=0;for Q=Zto Z+3xRstep R;gosub 12;gosub
13;MU=87+N;next Q;if TR(J)run
45 goto 44
46 next A;if Nreturn
47 CX=-20;print "TIE_GAME",
48 if TR(J)run
49 goto 48

```

Official
ASTROCADE SCOREBOARD

GAME	SKILL	LIVES	SCORE	NAME
MUNCHER	/	/	90,500	Joe Adams
COSMIC RAIDERS	1	3		
COSMIC RAIDERS	9	3	11,150	George Moses
SOLAR CONQUEROR	1	3	*89,588	Chuck Hirsch
SOLAR CONQUEROR	9	3	*136,742	Thomas Wenzel
THE WIZARD	1	/	453,200	Stan Kendall
THE WIZARD	3	/		
BALLY PIN I	/	/	320,430	Don Gladden
BALLY PIN II	/	/	340,640	Rick Mattice
PIRATES CHASE	1	3		
PIRATES CHASE	9	3	705,284	Peggy Gladden
GALACTIC INVASION	1	3		
GALACTIC INVASION	9	3		
SPACE FORTRESS	1	3		
SPACE FORTRESS	9	3	*10,300	Noreen Haisman
BRICKYARD	1	6	1,875	Kelly Prosisie
BRICKYARD	4	6		
MS. CANDYMAN	1	/	265,122	Craig Conner
MS. CANDYMAN	3	/	61,578	Craig Conner
ASTRO BATTLE	1	/	*13,620	Noreen Haisman
ASTRO BATTLE	4	/		
SEA DEVIL	/	/	177,850	Eric Allen
SNEAKY SNAKE	/	/	56,457	Joe Adams
TREASURE COVE	?	?	32,817	David Krec
COLLISION COURSE	/	/		
EXITOR'S REVENGE	/	/	31,575	Fred Olivas
DUNGEONS OF DRACULA	/	/	3,440	Al Showalter
FLYING ACE	/	6		
PACK RAT II **	/	/		

**New version only

*Indicates new high score

THIS SERIES OF ARTICLES IS TO ADD SOME KNOWLEDGE TO READERS THAT MAY BE IN THE DARK ABOUT SOME OF THE BASIC NO-NO'S OF PROGRAMMING!

PROGRAMMING FOR SPEED!

THERE ARE SEVERAL BASIC THINGS THAT YOU MUST TRY TO DO, IN ORDER TO KEEP YOUR MOVING OBJECT GOING AT IT'S FASTEST POSSIBLE SPEED. ONE IS TO MAKE THE PORTION OF THE PROGRAM THAT DOES ALL OF YOUR MOTION AND CHECKING DOWN TO THE MINIMUM NUMBER OF BYTES! NEXT IS TO KEEP YOUR 'IF' STATEMENTS AT A MINIMUM IN THIS AREA. KEEP YOUR 'IF' STATEMENTS AS SHORT AS POSSIBLE. ONE OTHER THING TO TRY TO DO IS TO USE BOOLEAN ALGEBRA (TRUE/FALSE) STATEMENTS AS MUCH AS YOU CAN, PROVIDING THEY ARE NOT A LOT LONGER THAN A SHORT 'IF'! LET'S TRY TO WRITE A PROGRAM THAT WILL DO JUST WHAT WE WANT IT TO DO AS FAR AS SPEED.

```
10 IF Z=0GOTO 100
20 X=X+JX(1)B3;Y=Y+JY(1)B3;IF V=XIF Y=WRUN
30 BOX V,W,5,5,3;BOX X,Y,5,5,3;V=X;W=Y;IF
  ABS(Y-E)<4IF ABS(X-D)<4GOTO 50
40 RUN
50 GOSUB 80;CX=-15;CY=0;PRINT "HIT!";FOR A=
  0TO 999;NEXT A;BOX 0,0,35,11,2;GOSUB 80
60 D=RND (150)-75;E=RND (80)-40;IF ABS(D)<
  18IF ABS(E)<6GOTO 60
70 BOX F,G,3,3,3;BOX D,E,3,3,3;F=D;G=E;RUN
80 BC=90-(BC#9)B81;RETURN
100 CLEAR;FC=132;W=200;F=W;Z=W;GOSUB 80;GOTO
  60
```

NOW LET'S ANALYZE THIS PROGRAM. LINE # 10 CHECKS Z. IF IT IS 0 THEN IT WILL JUMP TO LINE 100 WHERE WE CLEAR AND WE SET THE FC TO YELLOW COLOR. NEXT WE SET W AND F TO 200 SO THAT WHEN WE GO TO THE BOX MAKING LINES THE FIRST BOX OF EACH TYPE IS MADE OFF OF THE SCREEN. THIS IS IMPORTANT ALSO, TO REDUCE THE AMOUNT OF FLICKER. NEXT IS TO SET Z TO A NUMBER. ANY NUMBER BETWEEN -32767 AND 32767 WILL DO, AS LONG AS IT IS NOT 0! THE REASON THAT WE DO THIS IS TO LET US SAVE BYTES LATER BY SAYING 'RUN' INSTEAD OF GOTO 20! NOW WE GO TO SUBROUTINE #80. THIS IS WHAT I SAID BEFORE - BOOLEAN ALGEBRA; THIS LINE IS SHORTER THAN THE 2 STATEMENTS-

```
80 IF BC=9BC=90;RETURN
90 BC=9;RETURN
```

IT IS ONLY SHORTER BY 4 BYTES, BUT AS WE WELL KNOW, 4 BYTES CAN GIVE US THAT LITTLE ROOM WE NEED LATER! NOW WE JUMP TO LINE 60. HERE WE SET D & E TO RANDOM NUMBERS. IF THEY HAPPEN TO BE IN THE CENTER, WE KEEP GOING BACK AND RESETTING THEM UNTIL THEY'RE NOT! NEXT WE MAKE OUR SMALL BOX AT F & G. THIS WILL BE USED LATER IN THE PROGRAM AS OUR LAST LOCATION OF THIS BOX. THIS IS SO WE CAN ERASE IT. THIS IS WHY WE MADE THE FIRST BOX OUTSIDE OF THE SCREEN LIMITS. FINALLY WE ARE PUTTING OUR FIRST BOX ON THE SCREEN, AT D&E. NOW WE SET F & G TO THIS SPOT SO THAT IT KNOWS WHERE TO ERASE. FINALLY WE GO TO THE

MAIN PART OF OUR PROGRAM. LINE 20 CHANGES X & Y SO THAT OUR BIG BOX CAN MOVE. THEN WE CHECK V & W AGAINST X & Y. IF WE HAVEN'T MOVED THE JOYSTICK, WE WON'T MAKE ANY NEW BOXES AND THERE WON'T BE ANY FLICKER. THE RUN THEN SEES THAT Z # 0, SO IT PASSES IT BY AND GOES THRU OUR HAND CONTROL CHECK ONCE MORE. LINE 30 ACTS LIKE 70 EXCEPT THAT AT THE END IT CHECKS TO SEE IF WE ARE TOUCHING OUR TARGET BOX. THIS TYPE OF STATEMENT IS MUCH FASTER THEN PX() STATEMENTS. HOWEVER, THERE ARE TIMES WHEN THIS CANNOT BE USED IN THEIR PLACE. IN WHICH CASE, TRY TO CHECK ONLY WHAT IS ABSOLUTELY NECESSARY! THE MORE CHECKS YOU PUT INTO THE LINES FROM 20 TO 40, THE SLOWER THE MOTION OF YOUR MOVING OBJECT! IF THE EITHER OF THE IF STATEMENTS ARE NOT TRUE, THEN THE RUN IS SEEN IN LINE 40. IF THEY ARE BOTH TRUE, IT MEANS THAT YOU 'HIT' YOUR TARGET AND THEN IT EXECUTES LINES 50 TO 70! THESE SHOULD BE EASY ENOUGH TO UNDERSTAND. IF YOU WANT TO ADD ANY SOUND TO BE PLAYING DURING THE TIME THAT YOU ARE MOVING AROUND, TRY TO KEEP IT SHORT AND SIMPLE. A GOOD WAY TO DO THIS IS TO ONLY CHANGE 1 NOTE DURING THIS TIME. SET UP YOUR VOLUMES AND ALL OTHER PARTS OF YOUR MOTION SOUND(S) OUTSIDE OF LINES 20 - 40, SAY IN 70 BEFORE THE GOTO STATEMENT. IF YOU WANT TO ADD ANY KIND OF SCORING, THAT SHOULD ALSO BE INCLUDED SOME WHERE BETWEEN LINES 50 & 70. I DON'T THINK THAT ANYONE WILL COMPLAIN THAT IT TAKES TOO LONG FOR THEIR SCORE TO APPEAR. WHAT EVERYONE REALLY WANTS IS FOR THEIR MAN TO MOVE AS FAST AS POSSIBLE. ONE FINAL HINT AS TO WHERE TO PUT YOUR MAIN MOTION PART OF YOUR PROGRAM - **NEAR THE TOP!**

THE ONLY THINGS THAT SHOULD BE KEPT BEFORE IT ARE ANY SUBROUTINES THAT MAY BE NEEDED TO DO CHECKS, ADD MUSIC, OR MOVE YOUR PIECE(S) AROUND. ANYTHING ELSE SHOULD COME AFTER!!

THE WAY THAT YOU WOULD SAVE A PROGRAM LIKE THIS IS TO SET Z TO 0 PRIOR TO YOUR ;PRINT. IF YOU DON'T, YOU WILL HAVE TO SAY ;INPUT ;GOTO 100 'G0' TO MAKE IT START OUT RIGHT!!

I HOPE THAT WHAT I'VE DISCUSSED IN THIS ARTICLE WILL HELP YOU IN YOUR FUTURE PROGRAMMING!

FOREVER PROGRAMMING,
KEN LILL
6608 S. CAMPBELL
CHICAGO, ILLINOIS 60629

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1621 CHARACTERS

```

1 .THE_GAME_OF_WAR
2 .BY_EDWARD_MAHONEY
3 .JUNE_2,_1984
10 clear ;BC=10;FC=190;%(9)=87;%(0)=43;%(1)=
43;%(2)=126;%(3)=126;gosub 15;goto S#5
15 CY=0;CX=-27;print 'SHUFFLING';for I=1to 3
00
16 A=rnd (52);B=rnd (52);*(0)=*(A);*(A)=*(B)
;*(B)=*(0);next I;return
20 C=(Ex2)+T;return
30 D=(Fx2)+T;return
40 G=(E)+Q;O=(F)+Q;return
50 I=(I)+Q;return
61 TV=74;return
62 TV=81;return
63 TV=75;return
64 TV=65;return
70 if (M-U<1)+(N-U<1)goto S
75 return
80 L=53;for CY=24to -8step -8;for CX=-70to 7
0step 132;TV=*(L);next CX;L=L+1;next CY
90 CX=-65;CY=35;gosub 92;CX=20;gosub 92;retu
rn
92 print "CARD #";return
100 L=50;H=-50;B=M-40;J=N-40;Y=B
110 for W=1to 2;box H,-10,22,62,2
120 for A=-42to Ystep 2;box H,A,22,1,1
130 next A;H=L;Y=J;next W
200 for A=-60to -38
210 box -H,B,22,1,1;box -H,B,22,1,2
220 box A,B,3,1,2;box A+18,B,3,1,1
230 box L,J,22,1,1;box L,J,22,1,2
240 box -A,J,3,1,2;box -A-18,J,3,1,1
250 next A;X=-28;L=-37;H=-2
260 for W=1to 2;for Y=Bto Lstep H
270 box X,Y,20,1,3;box X,Y,20,1,3
280 box X,B,20,2,2;next Y;L=20;H=2;B=J;X=28;
next W

```

VIDEO : VIDEO

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1005 CHARACTERS

```

1 .__VIDEO__:_VIDEO___.1
2 .FRED_R0DNEY,_1984_.2_
3 NT=0;clear ;%(9)=-10;for N=130to -130step
-10;BC=246;FC=0;gosub 4;BC=0;FC=7;gosub 5;got
o 6
4 L=ABS(N);Z=5-3x(NK0);for X=-L+Zto Lstep Z;
line 0,0,4;line X,ABS(X)-L,3;line 0,0,4;line
-X,L-ABS(X),3;next X
5 for Q=0to 3xABS(N);next Q;return
6 BC=7;FC=0;gosub 5;%(0)=7;%(1)=7;%(2)=0;%(3)
=0;BC=0;FC=7;%(9)=84;gosub 5;box -40,22,80,4
4,3;box 40,-22,80,44,3;gosub 5;FC=0
7 BC=246;%(0)=55;%(1)=55;gosub 5;FC=67;%(2)=
235;%(3)=235;gosub 5;FC=0;%(2)=0;%(3)=0;box -
40,22,80,44,3;box 40,-22,80,44,3
8 gosub 5;%(9)=-10;BC=55;gosub 4;if NK0goto
12

```

```

290 box X,-31,20,2,2;box 20,J,39,2,2
300 box 0,-30,17,20,1;box 0,-30,13,18,2
310 box 0,30,17,20,1;box 0,30,13,18,2
320 X=-2;return
400 box 0,-30,17,20,3;box 0,-30,17,20,1
410 box 0,30,17,20,3;box 0,30,17,20,1;return
420 box 0,0,70,24,2;return
500 for Z=Kto Pstep 2;if X(Z)=87X(Z)=L
520 next Z;U=0;return
800 CX=-27;CY=35;print #2,E;CX=58;print #2,
F,
810 CX=X;CY=Y+4;if I#10box X+4,CY,8,8,2
820 if I>10gosub I+50;goto 840
830 print #0,I,
840 CX=X+6;CY=Y-5;TV=RM;return
1000 U=0;M=26;N=26;E=rnd (52);F=rnd (52);gos
ub 80;gosub 20;gosub 30;gosub 8
1040 gosub 70;if E>52E=1;gosub 20
1050 if X(C)#77E=E+1;gosub 20;goto V
1060 if F>52F=1;gosub 30
1070 if X(D)#89F=F+1;gosub 30;goto 1060
1080 I=E;gosub 50;Y=-30;gosub R;I=F;gosub 50
;Y=30;gosub R
1100 gosub 40;if G=0 CX=-20;CY=8;print "_WA
R";U=U+1;gosub 70;X(C)=87;X(D)=87;goto 2040
2000 CX=-20;CY=-8;if G>0print '<_I_WIN';M=M+
U+1;N=N-U-1;L=77;X(D)=L;if U;gosub 500
2010 if G<0print 'YOU_WIN_>';N=N+U+1;M=M-U-1
;L=89;X(C)=L;if U;gosub 500
2030 CX=-71;CY=-24;print #2,M;CX=68;print #
2,N;CX=-68;print '>';CX=69;print '<',
2040 E=E+1;F=F+1;gosub 20;gosub 30;for Z=1to
V;next Z
2050 gosub 400;gosub 420;gosub 8;goto V
5000 for I=1to 10;gosub 420;CX=-27;CY=0;prin
t "_GAME_OVER",
5010 for Z=1to V;next Z;next I

```

```

9 if N=0for L=3to 156step 4;BC=rnd (243);FC=
BC+12;box 0,0,L,L+2,3;next L;clear ;next N
10 line 0,0,4;BC=127;for C=1to 3step 2;for X
=-L+2to L+2step C+2+1;line X,ABS(X)-38,C;line
0,0,C
11 line -X,38-ABS(X),C;line 0,0,C;next X;gos
ub 5;next C;for L=0to 5;box 0,0,137,77,3;gosu
b 5;next L;gosub 5;clear ;next N
12 line 0,0,4;BC=127;for X=-L+5to L+5;line X
,ABS(X)-26,1+(X>0);line 0,0,1;line -X,26-ABS(
X),1+(X>0);line 0,0,1;next X;gosub 5;for L=0t
o 9
13 box 0,0,Lx2+Xx2,66,3;gosub 5;next L;gosub
5;clear ;next N;BC=55;N=-230;gosub 4;BC=0;FC
=246;gosub 5;gosub 4
14 print ;for L=0to 2;BC=rnd (243);FC=BC+12;
list ,2;next L;BC=0;FC=7;for L=0to 44;box 0,4
,160,19,3;next L;N=333;gosub 5;run
15 for X=-130to 130;line 0,0,1;line X,ABS(X)
-130,4;line 0,0,1;line -X,130-ABS(X),4;next X
;box 0,0,160,35,2;CY=4;list ,2;box 0,0,156,31
,3;print

```

```

5 X=0;Y=0
10 BOX 0,0,170,120,4;GOSUB 40;GOSUB 50
20 NT=0;CLEAR ;GOTO 110
25 CY=24;PRINT " PULL TRIGGER WHEN READY";IF TR(1)RETURN
26 GOTO 25
30 X=X+JX(1);Y=Y+JY(1);RETURN
40 SN.0,0,170,110,@(1);RETURN
50 SH.0,0,0,@(1);RETURN
60 M=0;PRINT " MODE?";RETURN
70 B=B+JY(1);IF JX(1)=-1B=B-10
80 IF JX(1)=1B=B+10
90 RETURN
100 FOR A=1TO 900;NEXT A;RETURN
110 FC=193;FB=91;FA=108;CT=50;CF=SM.;CLEAR ;GOSUB 50;PRINT " (1) CIRCLE";PRINT
" (2) BOX ";PRINT " (3) LINE ";PRINT " (4) ALPHABET
120 S=0;PRINT "SELECT:",
130 S=S+JY(1);IF S>4S=4
140 CY=25;CX=-40;PRINT #1,S,#1," ";IF TR(1)GOTO 160
150 GOTO 130
160 IF S=4GOTO 570
165 IF S#ABS(S)GOTO 2000
170 IF S=2GOTO 300
180 IF S=3GOTO 470
190 GOSUB 60;GOSUB 100
200 M=M+JY(1);IF M>7M=7
210 CY=20;CX=-43;PRINT #1,M,#1," ";IF TR(1)GOTO 230
220 GOTO 200
230 GOSUB 30;GOSUB 50;R=KN(1);IF R<1R=1
240 CI.X,Y,R,M
250 IF TR(1)GOSUB 100;GOTO 270
260 GOTO 230
270 IF JY(1)GOTO 110
280 IF TR(1)GOSUB 40;GOTO 110
290 GOTO 270
300 PRINT " SIZE:
310 B=0;PRINT " WIDTH?
320 GOSUB 70;W=B;CX=-44;CY=13;PRINT #1,W,#1," ";IF TR(1)GOSUB 100;GOTO 340
330 GOTO 320
340 B=0;PRINT " HEIGHT?
350 GOSUB 70;H=B;CX=-44;CY=7;PRINT #1,H,#1," ";IF TR(1)GOTO 370
360 GOTO 350
370 GOSUB 60;GOSUB 100
380 IF TR(1)GOSUB 100;GOTO 420
390 M=M+JY(1);IF M>7M=7
400 CX=-44;CY=0;PRINT #1,M,#1," "
410 GOTO 380
420 GOSUB 30;GOSUB 50;BOX X,Y,W,H,M;IF TR(1)GOSUB 100;GOTO 440
430 GOTO 420
440 IF TR(1)GOSUB 40;GOTO 110
450 IF JY(1)GOTO 110
460 GOTO 440
470 GOSUB 60;GOSUB 100
480 M=M+JY(1);IF M>7M=7
490 CY=20;CX=-44;PRINT #1,M,#1," ";IF TR(1)GOSUB 100;GOTO 510
500 GOTO 480
510 GOSUB 30;GOSUB 50;BOX X,Y,1,1,7;IF TR(1)GOSUB 100;GOTO 530
520 GOTO 510
530 LINE X,Y,M
540 IF TR(1)GOSUB 40;GOTO 110
550 IF JY(1)GOTO 110
560 GOTO 540
570 PRINT " (1) LARGE";PRINT " (2) SMALL
580 PRINT "FONT?
590 F=F+JY(1);IF F>2F=2
600 IF F<1F=1
610 CY=7;CX=-55;PRINT #1,F;IF TR(1)GOTO 630
620 GOTO 590
630 IF F=1CF=LA.
640 GOSUB 100
650 C=C+JY(1);IF C<33C=33
660 IF C>99C=99
670 CY=0;CX=-40;TV=C;IF TR(1)GOSUB 100;GOTO 690
680 GOTO 650
690 GOSUB 30;GOSUB 50;CX=X;CY=Y;TV=C;IF TR(1)GOSUB 100;GOTO 710

```

BLUE RAM or VIPER memory systems only.


```

700 GOTO 690
710 IF JY(1)GOTO 110
720 IF TR(1)GOSUB 40;GOTO 110
730 GOTO 710
980 CT=-52;NT=0;*PRINT ;TV=27;TV="3";TV=24;:RETURN
990 FOR S=1+16383 TO 40+16383
1000 :PRINT ;CT=-52;TV=27;TV=76;TV=152;TV=1;FOR I=S+4079TD S STEP -40;FOR R=1TD
4;B=BYTE%(I),1);TV=B;NEXT R;NEXT I;PRINT
1010 NEXT S;:RETURN
1020 CY=50;GOTO 110
2000 CLEAR ;PRINT " 1. TO PRINTER
2010 PRINT " 2. TO TAPE
2020 PRINT " 3. INPUT TAPE
2030 PRINT " SELECT",
2032 S=S+JY(1);IF S>35=3
2033 IF S<1S=1
2034 CX=-40;CY=30;PRINT ,#1,S
2035 IF TR(1)#1GOTO 2032
2036 IF S=1GOSUB 100;GOSUB 25;GOSUB 50;GOSUB 980;GOTO 110
2038 IF S=2GOSUB 100;GOSUB 25;CLEAR ;GOSUB 50;PUT%(16382),4081;GOTO 110
2040 IF S=3GOSUB 100;GOSUB 25;CLEAR ;GET %(16382);GOSUB 40;GOTO 110

```

```

1 .HOCKEY
2 .BY BRIAN_HILDEBRAND
3 .INSPIRED_BY_PETE_MURRAY
10 clear ;E=0;I=2;F=-2;H=0;O=0;P=0;K=0;L=0
20 box 0,39,141,3,1;box 72,-2,3,85,1;box 0,-
43,141,3,1;box -72,-2,3,85,1;box 72,-2,3,20,2
;box -72,-2,3,20,2
30 goto 100
40 box A,B-2,3,5,1;A=A+C;box A,B+27,3,5,1;bo
x A,B-2,3,5,1
50 box A,B-32,3,5,1;A=A+C;box A,B+12,3,5,1;b
ox A,B-17,3,5,1
60 if C=50;goto 110
70 if C=-50;goto 125
80 if R=1_B=KN(1)#20;A=-60;C=50;goto 40
90 if R=2_B=KN(2)#20;A=60;C=-50;goto 40
91 box A,-2,3,79,2;A=A+C;box A,-2,3,79,2;A=A
+C;box A,-2,3,79,2;goto 80
100 if O#KN(1)#20_R=1;A=-60;C=50;goto 91
110 O=KN(1)#20
120 if P#KN(2)#20_R=2;A=60;C=-50;goto 91
125 P=KN(2)#20
126 box E,F,2,2,2;E=E+I;F=F+H
130 if (PX(E+3,F))I=-2
140 if (PX(E-3,F))I=2
150 if (PX(E,F+3))H=H-2
160 if (PX(E,F-3))H=H+2
170 box E,F,2,2,1;
175 if E<-72K=K+1;goto 190
176 if E>73L=L+1;goto 190
178 if TR(1)+TR(2)goto 10
180 goto 100
190 box E,F,2,2,2;CY=30;print L;print #13,K
;for M=1to 100;next M;box -35,30,20,8,2;box 4
5,30,20,8,2;box -72,30,3,20,1;E=0;F=-2;goto 1
00

```



LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1656 CHARACTERS

```

1 .ROTATE
2 goto 12
3 Z=P+4;H=RM;if H=0H=4
4 CX=30+10xH;CY=45-10x((P-1)+4+1);TV=@(P);re
turn
5 N=N+1;Z=@(P);@(P)=@(P+4);@(P+4)=@(P+5);@(P
+5)=@(P+1);@(P+1)=Z;T=P;gosub 3;P=P+1;gosub 3
;P=P+4;gosub 3;P=P-1;gosub 3;return
6 for J=1to 16;if M=@(J)P=J
7 next J;return
8 for I=0to 999;next I
9 CX=-29;CY=-24;box 0,-22,159,43,2;return
10 for I=17to 32;P=I-16;@(P)=@(I);gosub 3;ne
xt I;L=0;R=R+1;S=0;T=0;V=N;box -19,14,106,31,
2;return
11 CX=-65;CY=25;print #1,"RESET_#_",R,";",N;
return
12 clear ;BC=223;FC=8;for I=0to 40step 10;bo
x 54,I,41,1,1;box I+34,20,1,41,1;next I
13 C=0;for I=1to 16;@(I)=I+64;next I;CY=35;i
nput " __LEVEL"D
14 if (D<1)+(D>40)run
15 for I=1to D
16 P=rrnd (11);if P-P+4x4=0goto 16
17 Z=@(P);@(P)=@(P+1);@(P+1)=@(P+5);@(P+5)=@
(P+4);@(P+4)=Z;@(I+32)=@(P)
18 next I;for I=17to 32;P=I-16;@(I)=@(P);gos
ub 3;next I
19 CX=-65;CY=5;print "MOVE_#_",#1,N-V+1,"?_
";M=KP;if M>63if M<85TV=31;TV=M;goto 21
20 goto 19
21 if M=81goto 27
22 if M=82gosub 10;gosub 11;goto 19
23 if M=83goto 39
24 if M=84if Tfor I=1to 3;P=T;gosub 5;next I
;N=N-4;S=0;T=0
25 if M=84goto 19

```

```

26 gosub 6;H=P-P+4x4=0;goto 39
27 gosub 9;print "SPOILSPORT!
28 gosub 8;CX=-65;print "YOU_QUIT_AFTER_",#1
,N,"_MOVES!
29 gosub 8;print "ANSWER?(Y/N)
30 if KP#89goto 51
31 gosub 9;BC=119;FC=0;print "CHEATING???"
32 B=0;K=0;gosub 10;gosub 11;gosub 9;CX=-23;
CY=-5;for I=D+32to 33step -1;M=@(I);X=CX;Y=CY
;CX=-65;CY=5;if Kgoto 36
33 if B=0goto 36
34 Z=KP;if Z=99goto 19
35 if Z=13K=1
36 B=B+1;print "MOVE_#_",#1,B,"_",TV=M;if B
>C_C=B;box 21,35,13,9,2;CX=19;CY=35;print #1,
C;box 21,35,13,9,3
37 gosub 6;gosub 5;CX=X;CY=Y;TV=M;if B-B+10x
10=0CX=-23;CY=CY-8
38 next I;goto 50
39 if M=83S=1;goto 19
40 if Lgoto 44
41 if S=0goto 44
42 if H_S=0;goto 19
43 Z=@(P);@(P)=@(P+1);@(P+1)=Z;gosub 3;P=P+1
;gosub 3;L=1;N=N+1;S=0;T=0;CX=-65;CY=15;print
"SP_MOVE";goto 46
44 if (P>11)+Hgoto 19
45 gosub 5
46 for I=1to 15;if @(I)>@(I+1)goto 19
47 next I;gosub 9;if N<Dprint "WOW!_SHARTY!"
;gosub 8
48 CX=-47;print "YOU_WON_IN_",#1,N,"_MOVES!";
;if N>Dgosub 8;CX=-41;print #1,N-D,"_MORE_THA
N_ME!
49 if D>Ngosub 8;CX=-41;print #1,D-N,"_FEWER
_THAN_ME!";gosub 8;CX=-77;print "BET_YOU_CAN'
T_DO_IT_AGAIN!
50 gosub 8
51 N=0;gosub 10;gosub 9;R=0;CX=-35;print "NE
W_GAME?(Y/N)
52 if KP#89gosub 9;goto 19
53 run

```

"ROTATE" is a sort of 2-d Cube pl's '15-puzzle', where scrambled letters have to be placed in alphabetical order by rotating a 2x2 square segment within the total board.

Rotate a 2x2 square by keying in the letter in the upperleft hand corner of that square, and so put the whole board in order. One special move will interchange two horizontally adjacent letters at each reset if you enter "S", then the left letter of the pair. Reset by entering "R". Correct a wrong rotation with "T". Quit with "Q". Keypad entry for each move of answer, reenter game after seeing part of answer by ":" key, or "GO" key for full speed. "LEVEL" equals approximate difficulty.

We have a lengthy description of the operation of this game, what the computer is doing, etc., which we will send to you, on receipt of a long stamped, self-addressed envelope (LSSAE) (REF)

Robert Newman
190 S. Marengo Ave.#8
Pasadena, CA 91101

THE GAME PLAYER

ponders the future
by examining the past . . .

PART ONE

As the 1983-84 volume of the Arcadian comes to a close and as it is about to enter its seventh year of publication, it is an appropriate time to glance back at the past year's game reviews, some significant events in gaming, and examine what appears to be an alarming and ominous trend in the videogame industry, including and most importantly those software manufacturers who create and sell games for the Astrocade system.

It was just over a year ago that the software market had an historic first, when Esoterica Ltd. released TREASURE COVE, the first privately produced cartridge game for the Astrocade system. At a time when Astrocade had not released a new cartridge in over a year, the news of this action by Esoterica was the most exciting and significant event since the "new" ASTROCADE BASIC cartridge hit the scene.

The release of TREASURE COVE represented an important change for Astrocade owners. They hopefully would no longer have to depend on Astrocade as a sole source of cartridge games, a most significant factor since the Astrocade company was having serious difficulty surviving. (See "Video Game Death ..." Vol. 5, No. 1, Pg. 3). Even today the future of Astrocade remains uncertain, and in the light of the current state of the home video-game computer industry, do not be surprised if you never see another cartridge from the Astrocade people again.

Esoterica later went on to release a cartridge titled BLASTDROIDS, which, along with TREASURE COVE, were never submitted for review. The Esoterica people have recently announced that both of these cartridges will no longer be available, a sign of an unfortunate trend that may be spreading to other companies.

Soon after the Esoterica cartridges, L&M Software released its first cartridge, MS. CANDYMAN, (Vol. 6, No. 1) an instant success for L&M and still one of the finest cartridge games to ever be made for the Astrocade system. It featured very high resolution and extremely colorful graphics, along with an outstanding musical score.

Eventually, the year 1984 would see three more software manufacturers enter the cartridge game scene, with all but one being established companies who all had been producing games on tape cassettes.

New Image gave us a cartridge called SNEAKY SNAKE, (Vol. 6, No. 10) a colorful underwater action game similar in concept to Astrocade's COSMIC RAIDERS, produced by Bit Fiddlers and distributed by L&M Software. Finally, and most recently, a cartridge titled MAZEMAN was put on sale by a new-comer

to the marketing scene, Dave Carson, a long-time subscriber and contributor to the Arcadian. Although GAME PLAYER has received numerous letters requesting recommendations on MAZEMAN, we have not had a cartridge made available for review. As with any product that is purchased "sight unseen", we can only suggest the old adage "buyer beware".

The total number of privately produced cartridge games currently available stands at seven, including the MUNCHER cartridge, which probably is the most popular game played on the Astrocade system. There is a very interesting history and story behind how this cartridge came to be, but I am afraid we are not yet at liberty to comment. (Rumor has it that the MUNCHER cartridge was discovered at an abandoned science outpost on Omicron Ceti II by a landing party from the USS Starship Enterprise. Later, during a research mission via a space-time warp to study 1984 Earth cultures, the cartridge was accidentally beamed down and subsequently lost somewhere in San Jose, California.)

The past year also saw the emergence of two new software manufacturers, specializing in taped cassettes. A company in Canada calling itself Astrogames released a four-game tape cassette simply called Tape A-1 (Vol. 6 No.1). It was and is a nice collection of games, especially at a price of only nine dollars. Later, Astrogames would release Tape A-2, (Vol. 6 No. 5) containing the games NIGHT BOMBERS and ADVENTURE, the latter of which is particularly interesting, being similar in concept to the popular Atari game PITFALL.

In May, Fred Rodney Educational Software entered the market, releasing a tape cassette titled MORSE CODE TRAINER (Vol. 6 No. 4), an excellent tutorial of the "Code". His next release was ASTRO ANALYST and MEMOMAX (Vol. 6 No. 8, both), two cute brain teasers.

This past year has been an optimistic one for game players everywhere in terms of new cartridges and new manufacturers. But this writer fears dark clouds may be in the distance for all who enjoy playing games on the Astrocade system. As one who reviews new games, I am always striving to stay well informed of what's happening in the area of soon-to-be-released products and games for the Astrocade. In doing so, I have noticed a trend that has me concerned.

The number of games, both cartridge and tape, that have been released in the last six months, was zero. Prior to that, Fred Rodney released four tape programs, Dave Carson put out a cartridge, his first, and Astrogames produced a couple of tapes. Early in the year we saw SEA DEVIL and SNEAKY SNAKE.

Granted, the summer is generally slower. But there are some facts that cannot be ignored. Remember Wavemakers, the company that produces one of the best line of tape games? No new games for over a year. Wavemakers had been producing one new game about every two to three months. And then there's the other "biggie", L&M Software. Nothing from them either for a year, not since the

EXTENDED MEMORY PRODUCTS REVIEW

BY DAVE CARSON

SINCE THIS IS THE FIRST COLUMN IN A WHILE, I HAVE SOME UPDATING TO DO. I'VE BEEN REALLY BUSY SINCE GETTING BACK TO WORK. I'M WORKING IN A LOCAL COMPUTER SHOP, PROMOTING OUR SYSTEM AS MUCH AS POSSIBLE, AND KEEPING A CLOSE EYE ON WHAT IS HAPPENING IN THE HOME COMPUTER WORLD. I HAVE SOME VERY GOOD MATERIAL TO REPORT ON IN THE NEXT COUPLE OF ISSUES BEGINNING WITH THIS MONTH'S FEATURE, OUTPOST 19 FROM WAVEMAKERS. THERE IS ONE ITEM THAT I WOULD RATHER NOT HAVE TO REPORT, SOON AFTER MY LAST COLUMN APPEARED, RUSTY FROM R&L ENTERPRISES CALLED TO INFORM ME THAT R&L NO LONGER EXISTS. A REAL SAD NOTE. THE 64K BOARD WAS AN EXCELLENT PIECE OF HARDWARE AND SHOWED A LOT OF PROMISE AND EXCITEMENT FOR THE BALLY-ASTROCADE SYSTEM. THE REASON HE GAVE ME WAS LACK OF SUPPORT AND SALES.

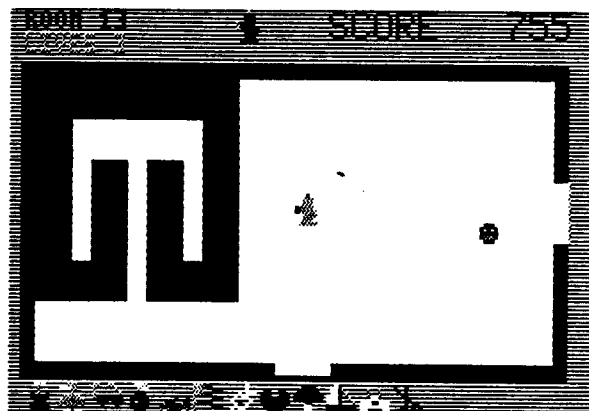
AS BUSY AS I'M TOLD THAT MIKE PEACE HAS BEEN, HE STILL FINDS TIME TO CRANK OUT A NEW MASTERPIECE EVERY ONCE IN A WHILE. OUTPOST 19 IS HIS LATEST EXTENDED BASIC CREATION AND DEFINITELY IS A MASTERPIECE. MORE SOFTWARE LIKE THIS AND INTEREST IN THE SYSTEM WOULD BE GROWING RATHER THAN DECLINING!

THE SCENARIO OF THE GAME IS THAT YOU ARE STRANDED ABOARD A LONELY SPACE STATION. SEARCHING YOUR SURROUNDINGS WILL REVEAL TROPHIES AND TREASURES THAT YOU MAY "PICK UP" FOR POINTS. YOU WILL ALSO FIND THAT YOU ARE NOT QUITE ALONE. THERE IS A REALLY BAD GUY ON BOARD THAT CAN PASS THROUGH WALLS. LEAVES A TRAIL OF "POISONED" GARBAGE, AND IS OBSESSED WITH GETTING RID OF INTRUDERS (YOU)!! HE ALSO POISONS THE TREASURE IN THE ROOM THAT HE'S IN SO DON'T PICK IT UP WHEN HE IS PRESENT.

THE SPACE STATION IS EQUIPPED WITH A COMPUTER WHICH YOU CAN ACCESS BY PULLING THE TRIGGER. IN DOING SO, YOU WILL BE SHOWN A LOCATION GRID THAT IS MORE OR LESS A MAP OF THE LEVEL THAT YOU ARE ON. IT SHOWS ALL OF THE ROOMS, ROOM NUMBERS, AND WHETHER THERE IS STILL A TREASURE IN THE ROOMS. THE GRID ALSO SHOWS YOUR LOCATION AND THE LOCATION OF THE MONSTER IN HIS QUEST TO GET TO YOU. USE IT OFTEN!!

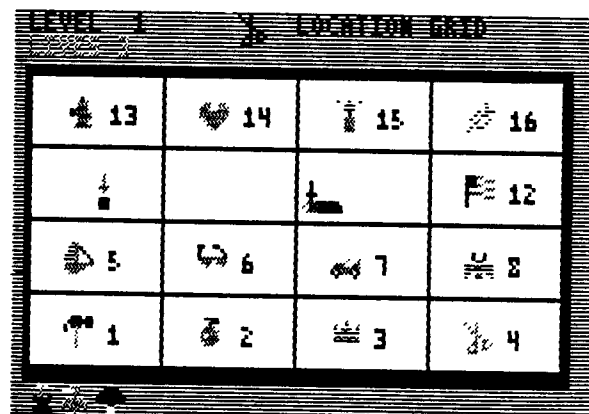
THE ROOMS ARE NUMBERED FROM ONE TO SIXTEEN. IN THE EVEN NUMBERED ONES, YOU WILL GET A BURST OF ENERGY (SPEED) WHEN PICKING UP A TROPHY. IN THE ODD NUMBERED ROOMS THERE ARE INVISIBLE TRANSPORTERS THAT WILL SEND YOU TO A NEW LOCATION ON OUTPOST 19. THESE TRANSPORTERS ARE ALWAYS IN THE SAME PLACE AND WILL ALWAYS SEND YOU TO THE SAME ROOM. IT TAKES PLAY EXPERIENCE TO BECOME FAMILIAR ENOUGH TO USE THE TRANSPORTERS EFFICIENTLY. AFTER REACHING THE FOURTH LEVEL, THE MONSTER BEGINS TO USE HIS OWN TRANSPORTER, SO BEWARE!

THE ROOMS ARE ALL DIFFERENT IN THEIR GENERAL LAYOUT. THEY EACH HAVE A TREASURE AND SOME TYPE OF SIMPLE MAZE CONFIGURATION. THE DOORS MAY LEAD IN ANY OF FOUR DIRECTIONS WITH SOME BEING "ONE WAY". MEANING THAT IF YOU GO THROUGH THEN YOU CAN'T GET BACK BY THE SAME DOOR. ROOM 13, SHOWN HERE, HAS AN EAST DOOR AND A SOUTH DOOR.



YOUR PLAYER PIECE IS THE FACE NEAR THE EAST DOOR. THE "FIRE PLUG" IN THE CENTER IS THE TREASURE. THERE IS A TRANSPORTER SOMEWHERE (MAYBE IN THE MAZE??). THE STATUS LINE AT THE TOP SHOWS ROOM NUMBER AND REMAINING LIVES ON THE LEFT. IN THE CENTER IS THE MOST VALUABLE TREASURE AT THE PRESENT TIME. IN THIS CASE IT HAPPENS TO BE THE ONE IN THIS ROOM. YOUR SCORE IS ON THE RIGHT. THE LOWER STATUS LINE KEEPS TRACK OF THE ITEMS THAT YOU HAVE COLLECTED. YOU NEED ALL SIXTEEN IN ORDER TO ADVANCE TO THE NEXT LEVEL.

THE COMPUTER DISPLAY BELOW SHOWS THE PLAYER LOCATION IN ROOM 9 AND THE BAD GUY IN ROOM 11. THE TRAIL HE'S LEAVING SHOWS HIS PROGRESS DURING THE TIME THIS DISPLAY WAS USED.



THE STATUS LINES SHOW LEVEL, LIVES, CURRENT MOST VALUABLE TROPHY, AND TROPHIES GATHERED.

OUTPOST 19 IS A RELATIVELY EASY GAME TO PLAY IN THE EARLY LEVELS. LATER LEVELS PRESENT AN ENTIRELY DIFFERENT SITUATION WHEN THE MONSTER CAN USE HIS OWN TRANSPORTERS.

THERE IS LOTS OF FUN AND CHALLENGE FOR EVERYONE IN THIS GAME. IT TAKES STRATEGY TO STAY AHEAD OF THE BAD GUY AND WHEN HE GETS CLOSE. SKILL AND REFLEXES. DON'T TOUCH HIS TRAIL. IN FACT, DON'T TOUCH ANYTHING IN THE ROOM BUT THE WALLS IF HE IS IN THE ROOM WITH YOU.

THE USE OF GRAPHICS AND COLOR IN OUTPOST 19 ARE GREAT. SO IS THE SOUND AND OVERALL PLAYABILITY. WITH THE EXCEPTION OF ONE OR TWO CARTRIDGES THAT I CAN THINK OF, THIS MAY BE THE BEST PIECE OF GAME SOFTWARE YET IN EXISTENCE FOR THE BALLY-ASTROCADE MACHINE. THIS MAY BE A RATHER STRONG STATEMENT BUT IT'S MY HONEST OPINION.

I REALLY HOPE THAT MIKE PEACE CAN CONTINUE TO FIND THE TIME TO WRITE IN E.B. AND PRODUCE SOFTWARE FOR US. THE MORE HE DOES, THE BETTER IT GETS. EACH SEEMS TO BE MORE SOPHISTICATED AND INNOVATIVE THAN THE LAST. KEEP IT UP, MIKE, WE NEED YOU. MIKE NEEDS OUR SUPPORT IN ORDER TO DO THIS TYPE OF WORK. KEEP IT PROFITABLE FOR HIM. I HAVE YET TO SEE AN E.B. GAME FROM HIM THAT I COULD NOT FULLY RECOMMEND. BY ALL MEANS, OUTPOST 19 IS A "MUST HAVE" PIECE OF SOFTWARE FOR ALL BLUE RAM USERS. IT HAS MY HIGHEST RECOMMENDATION!!!

STILL TO COME. ANOTHER GAME FROM KEN LILL OF GAMBITS SOFTWARE. AND SOME BLUE RAM CONVERSIONS OF SOME OF THE CLASSICS FROM WAVEMAKERS SO STAY TUNED. DON'T FORGET TO RENEW YOUR SUBSCRIPTIONS, THERE'S STILL LIFE LEFT IN THE OLD BALLY!!

ALL QUESTIONS AND COMMENTS INCLUDING A S.A.S.E. WILL BE ANSWERED.

DAVE CARSON
P.O. BOX 39 (FOR UPS-309 STATE ST.)
KIPTON, OHIO
44849

MS. CANDYMAN cartridge. (Although they did distribute Bit Fiddler's SEA DEVIL cartridge) They, too, had been averaging about four to five new releases per year. Most recently was the announcement that Esoterica Ltd. would no longer be making the BLASTDROIDS and TREASURE COVE cartridges. Why?

And whatever happened to Tiny Arcade, Edge Software and the George Moses Co.? All, at one time, were major producers of Astrocade games, and all of whom have not been heard from in well over two years.

I cannot give you a good or satisfactory answer. I can, however, point out that profits from videogame Arcades across the nation are down 50 percent and that a number of videogame trade magazines have folded. In my area, Washington, D.C., I can name more Arcades that have recently closed than I can those that are still in business.

The key question then, is, are videogames a fad that is now passing? Industry-wide, the answer seems to be, Yes. How will this affect the Arcadian and the companies that have been making games for the Astrocade? Has the Astrocade system taken its last breath?

GAME PLAYER, 48-G Ridge Road,
Greenbelt, Maryland 20770)

© M. L. Prosize 1984

```

6 .
8 .
20 PRINT " (C)BALLY CHESS BOARD"
30 PRINT " BY JOHN COLLINS
50 GOSUB 3000;GOSUB 2000
80 Q=1;GOSUB 1800;Q=-1
90 GOSUB 1800;GOTO 80
1000 M=-20+Kb10;N=-45+Lb10;IF (Lc2)b2#LGOTO 1030
1010 IF (Kc2)b2=KGOTO 1040
1020 BOX M,N,10,10,2;IF G=1IF Q=1BOX M,N,8,8,1
1025 RETURN
1030 IF (Kc2)b2=KGOTO 1020
1040 BOX M,N,10,10,1;IF G=1IF Q=-1BOX M,N,8,8,2
1045 RETURN
1800 I=0;CX=-75;CY=40;IF Q=1PRINT " WHITE";GOTO 1805
1802 PRINT " BLACK"
1805 I=I+1;PRINT " FROM";INPUT " RANK"R;INPUT " FILE" S
1807 IF R=0INPUT "LOC" S;INPUT "VAL",@(S);GOTO 1805
1810 T=S+(R-1)b8;P=@(T);IF (T<1)+(T>64)GOTO 1805
1820 IF @(T)<1IF Q=1GOTO 1805
1830 IF @(T)>-1IF Q=-1GOTO 1805
1840 I=I+1;PRINT " TO";INPUT " RANK"U;INPUT " FILE" U
1850 W=U+(U-1)b8;IF (W<1)+(W>64)GOTO 1840
1860 IF @(W)>0IF Q=1GOTO 1840
1870 IF @(W)<0IF Q=-1GOTO 1840
1880 @(T)=0;@(W)=P
1900 K=S;L=R;G=0;GOSUB 1000
1910 K=U;L=U;G=1;GOSUB 1000
1920 Z=2200+ABS(Pb10);GOSUB Z
1930 IF ABS(P)=6IF ABS(T-W)=2 PRINT "MOVE ROOK";CX=-75;CY=30;GOTO 1805
1940 IF I>2GOSUB 2000
1945 RETURN
2000 CLEAR ;BOX 25,0,86,86,3
2010 FOR I=1TO 64:M=-20+(I-((I-1)c8)b8)b10
2020 N=-35+((I-1)c8)b10
2030 IF ((I-1)c8)=((I-1)c8)c2)b2GOTO 2040
2032 IF (Ic2)b2#IBOX M,N,10,10,3
2034 IF (Ic2)b2=1IF @(I)<0BOX M,N,8,8,3
2035 IF @(I)=0GOTO 2100
2036 IF (Ic2)b2#1IF @(I)>0BOX M,N,8,8,3
2037 GOTO 2060
2040 IF (Ic2)b2=IBOX M,N,10,10,3
2042 IF (Ic2)b2#1IF @(I)<0BOX M,N,8,8,3
2050 IF (Ic2)b2=1IF @(I)>0BOX M,N,8,8,3
2060 Z=2200+ABS(@(I)b10);GOSUB Z
2100 NEXT I;RETURN
2200 RETURN
2210 BOX M,N-1,2,3,3;BOX M,N+1,4,1,3
2214 BOX M,N-3,4,1,3;BOX M,N+2,2,1,3;RETURN
2220 BOX M+2,N-1,2,7,3;BOX M-1,N-3,3,2,3
2222 BOX M-1,N,3,1,3;BOX M,N+1,3,1,3
2224 BOX M,N+2,1,1,3;RETURN
2230 BOX M,N-3,6,2,3;BOX M,N-1,4,2,3
2234 BOX M,N+1,2,3,3;RETURN
2240 BOX M,N-3,6,2,3;BOX M,N,4,4,3
2242 BOX M-3,N+2,1,2,3;BOX M+2,N+2,1,2,3
2246 BOX M,N+2,2,1,3;RETURN
2250 BOX M,N-4,8,2,3;BOX M,N-1,6,4,3
2252 BOX M,N+1,8,1,3;BOX M-2,N+2,2,1,3
2254 BOX M+2,N+2,2,1,3;RETURN
2260 BOX M,N,8,2,3;BOX M,N-2,6,1,3
2262 BOX M,N-3,8,2,3;BOX M,N+1,2,1,3
2264 BOX M,N+2,6,1,3;BOX M,N+3,2,1,3;RETURN
3000 FOR I=17TO 48;@(I)=0;NEXT I
3010 FOR I=9TO 16;@(I)=1;@(I+40)=-1;NEXT I
3020 @(1)=4;@(8)=4;@(57)=-4;@(64)=-4
3030 @(2)=2;@(7)=2;@(58)=-2;@(53)=-2
3040 @(3)=3;@(6)=3;@(59)=-3;@(62)=-3
3050 @(4)=5;@(5)=6;@(60)=-5;@(61)=-6;RETURN

```



**3 PART
HARMONY**

**MUSIC SOFTWARE
MAKE YOUR ARCADE SING**

These six tapes allow you to turn your computer into a fantastic musical instrument! Sit back and listen to it play continuous Bach, Christmas Music or Ragtime in 3-part harmony! Or, thrill to the best of the Beatles Greatest Hits!

**BEATLES GREATEST HITS
AND FLIGHT SIMULATOR \$10.00**

8 of The Beatles best rock hits plus a challenging game!

27 CHRISTMAS CAROLS \$10.00

All your favorites. Some with vibrato

SCOTT JOPLIN RAGTIME \$10.00

You won't believe it's your computer!

BACH'S TWO PART INVENTIONS \$10.00

All 15 of 'em play continuously

BACH'S SINFONIA TO CANTATA 29 \$5.00

Classical. Plays with breathtaking speed!

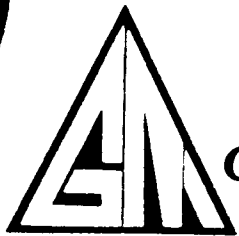
3 VOICE MUSIC ASSEMBLER \$10.00

Tutorial, taped program and documentation show you how to program 3 voice music using a new technique of storing the notes in screen memory allowing up to 2400 notes

HOME BUDGET KEEPER \$10.00

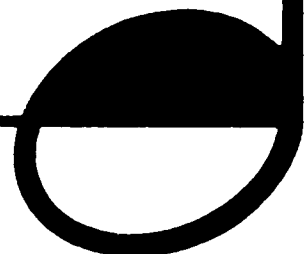
Nope! No music here! This one keeps track of 20 household expense categories plus all your income. Will register a Percentage-Of-Income Statement for every expense category to date on demand. Fast graphics. Highlighted items and columns. Retape program after each use and it automatically accumulates all expenses and income and separates them by week, month and year-to-date!!! Available in 2000 baud BASIC only. This tape comes with a FREE Astro-Zap game and the famous Analog Non-Digital Clock program.

Send check or money order to:



GEORGE MOSES CO.

P.O. BOX 686, BRIGHTON, MICH. 48116



Oct 31, 1984

OTHELLO

BY BOB WEBER

USES HAND CONTROLLER. ENTER 0 PLAYERS AND MACHINE WILL PLAY ITSELF TO DEMONSTRATE HOW THE GAME IS PLAYED. SCORE IS DISPLAYED ON THE SCREEN THROUGHOUT THE GAME. MOVES ARE MADE BY PUSHING THE JOYSTICK FORWARD AND TURNING THE KNOB TO SELECT LETTER. THEN WITH THE JOYSTICK IN THE NORMAL POSITION, TURN KNOB TO SELECT NUMBER, PULL THE TRIGGER TO MAKE YOUR MOVE. IF YOUR MOVE IS PUT ON THE SCREEN AND THEN REMOVED, YOU HAVE MADE AN ILLEGAL MOVE. BOARD IS LETTERED AND NUMBERED FOR TOURNAMENT OTHELLO. USE HAND CONTROLLER #1 TO SELECT THE NUMBER OF PLAYERS. PLAYS 0 TO 2 PLAYERS

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES = SPACES. 1574 CHARACTERS

```

1 clear ;goto 20
2 B=L;O=0;E=B+10;D=B-E*10;Y=-36+D*8;X=-36+E*8;if A=2goto 350
3 if A=3goto 360
4 box X,Y,5,5,1;box X,Y,3,3,3;box X,Y,1,1,3;A=2;return
5 NT=1;P=0
6 L=L+N;A=@(L);MU=L;if A=R_P=1;goto 6
7 NT=0;if A=Mif T=2return
8 if A=0return
9 if A=3if P=1if T=2goto 530
10 if A=3return
11 L=L-N;A=@(L);if A=R_U=1;@(L)=M;A=M;gosub 2
12 if A=Mreturn
13 goto 11
20 &(9)=72;BC=rnd (32)*8;FC=BC+4+rnd (32)*8;
&(0)=BC;&(1)=BC;A=FC+rnd (32)*8;&(2)=A;&(3)=A+1
30 for Z=1to 87step 2;box 0,0,Z,Z,3;next Z;C
Y=38;input "PLAYERS?"Q
50 clear ;for Z=0to 100;@(Z)=0;next Z;T=1;fo
r Z=1to 8;for W=1to 8;@(Z*10+W)=3;next W;next
Z
60 M=1;@(44)=1;@(55)=1;@(54)=2;@(45)=2
70 R=65;for Z=-28to 28step 8;for Y=-38to 38s
tep 76;CX=Z;CY=Y;TV=R;CX=Y;CY=Z;print #1,73-R
;next Y;R=R+1;next Z
80 for X=-32to 32step 8;box X,0,1,64,1;box 0
,X,64,1,1;next X;for L=44to 55;A=@(L);if A<3i
f A>0gosub 2
90 next L;S=4
100 if S=64goto 20
110 if M=1if Q=0M=2;R=1;goto 490
120 if M=2if Q<2M=1;R=2;goto 490
130 Z=0;if TR(M)goto 130
140 CY=9;print #1,M,"?_",
150 Z=Z+JX(M);if Z<1Z=0;Y=0;print "00";goto
180
160 Y=Y+JY(M);if Y>8Y=8
161 if Z>8Z=8
162 if Y<2Y=1
170 TV=Z+64;print #1,9-Y
180 if TR(M)Z=Z*10+Y;goto 200
190 goto 140
200 U=0;if Z=0goto 320
210 A=@(Z);if A<3if A>0goto 130
220 if M=1M=2;R=1;goto 240
230 M=1;R=2
240 @(Z)=M;A=M;S=S+1;L=Z;gosub 2
250 for W=-1to 1;for V=-1to 1;N=W*10+V;L=Z;g
osub 5;next V;next W
260 if Q<2if T=2goto 510
270 if U=@(Z)=3;A=3;L=Z;S=S-1;goto 2
280 goto 460
320 O=O+1;if O>1goto 20
325 if Q=0goto 100
330 if M=2M=1;goto 100
340 M=2;goto 100
350 box X,Y,5,5,1;A=1;return
360 box X,Y,5,5,2;goto 330
460 Z=0;for T=1to 88;if @(T)=2Z=Z+1
470 next T;CY=-15;print "#1=",#2,Z;print "#2
=",#2,S-Z
480 goto 100
490 CY=1;print "HMM..";F=0;T=2;H=-3;for Z=11
to 88;if @(Z)=Mgoto 250
510 next Z;if H=-3T=1;CY=1;print #1,R,"__00"
;NT=3;for Z=1to 15;MU=61;next Z;NT=0;if Q=1M=
2
515 if H=-3goto 320
520 goto 620
530 G=0;K=L+10;J=L-K*10;if (J=1)+(J=8)G=G+1
540 if (K=1)+(K=8)G=G+1
550 if (J=2)+(J=7)G=G-1
560 if (K=2)+(K=7)G=G-1
570 if G<Hreturn
580 if G>H_H=G;F=L;goto 600
590 if rnd (2)=1F=L
600 return
620 @(F)=M;S=S+1;A=M;I=F+10;K=F-I*10;CY=1;pr
int #1,R,"__";TV=I+64;print #1,9-K;L=F
630 gosub 2;Z=L;T=1;goto 250

```


OCT 31, 1984



Vol 6, No 11/12

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERScores
= SPACES. 1552 CHARACTERS

```

3 clear ;*(38)=0;*(39)=0
4 T=200;D=3;NT=8;S=36;BC=176;FC=101;CX=H;CY=
-F;print "KONCENTRATION";CX=H;CY=16;NT=0
5 print "EASY=1";CX=H;print "HARD=2";CX=H;in
put "1_OR_2">G;NT=8;*(9)=255
6 for I=1to 36step 2;*(I)=rnd (26)+64;*(I+1)
=*(I);next I;for I=1to 36
7 A=rnd (36);*(O)=*(A);*(A)=*(I);*(I)=*(O);in
ext I
8 A=rnd (36);B=rnd (36);if A#Bif *(A)=*(B)_*
(A)=36;*(B)=36;box 0,0,159,F,2;goto 10
9 goto 8
10 BC=rnd (32)x8;FC=rnd (32)x8-3;for Y=-28to
35step 16;MU=Y;MU=142;for X=-63to 80step 16;
MU=X;box X,Y,15,15,1
15 box X,Y,9,9,D;next X;next Y;MU=60;MU=53;M
U=44;MU=35;E=1
20 for Y=-28to 35step 16;for X=-63to 80step
16;CX=X;CY=Y;if G=1if D=3TV=*(E)
30 if D=1CX=X-3
40 if D=1if E<10print #0,0,E,
50 if D=1if E>9print #0,E,
140 E=E+1;next X;next Y;MU=160;MU=140;MU=136
;MU=120
170 if TR(1)goto T
180 MU=50;MU=39;MU=44;goto 170
200 D=1;T=507;M=1;goto 10
250 NT=0;CX=12;CY=-F;if T=1print "PLAYER_1",
;return
255 print "PLAYER_2";return
300 gosub J;T=0;CX=70;CY=F;input "box 1'A";
CX=-46;CY=F;C=A;gosub K;CX=-70;CY=32;input "b
ox 2'B"
350 if A#CX=-69;CY=-F;print "box 2=_box 1
_ND! ND!";NT=50;gosub L;box 0,-F,159,9,2;got
o 300

```

```

400 CX=-46;CY=32;C=B;gosub K;if *(A)=36if *(
B)=36goto N
405 if *(A)=36goto D
410 if *(B)=36goto D
420 if *(A)=*(B)goto 3020
500 CX=-60;CY=-F;print "NO_MATCH";NT=20;gos
ub L
502 if S<3CX=-60;CY=-F;gosub J;NT=0;print "G
AME_OVER_PULL_TR(1)",;goto J+Q
505 if T=1T=2;gosub 250;goto 510
507 T=1;gosub 250
510 if TR(T)goto 300
515 if S=0goto 502
520 goto 510
1000 print "MATCH!";NT=50;MU=60;MU=33;MU=3
9;NT=5;E=1;for Y=-28to 35step 16;for X=-63to
80step 16;CX=X;CY=Y
1010 MU=X;MU=Y;if E=A_C=A;S=S-1;goto P
1020 if E=B_C=B;S=S-1;goto P
1090 E=E+1;next X;next Y;return
2200 print #0,C,"=",;TV=*(C);return
2300 box X,Y,15,15,2;TV=*(C);*(C)=0;goto 109
0
2400 for I=1to 3;MU=241;MU=216;MU=205;next I
;return
3000 *(T+37)=*(T+37)+164
3010 *(T+37)=*(T+37)+164
3020 *(T+37)=*(T+37)+*(A)+*(B)
3030 CX=25;CY=F;if Mprint "1>";CX=25;print "
2>";M=0
3040 CX=F;CY=F;print #1,*(38);CX=F;print #1,
*(39)
3050 CX=-30;CY=-F;gosub Q;gosub 250;goto 510
4000 box -F,36,81,16,2;box 0,-F,159,9,2;retu
rn
5000 if TR(1)run
5010 goto J+Q

```

SET THESE VARIABLES BEFORE SAVING TO TAPE
F=40 H=-39 J=4000 K=2200 L=2400 N=3000
O=3010 P=2300 Q=1000

PROG 'CLOCK' 5/19/84 SEK

```

10 CLEAR ;NT=0;BC=158;FC=0
20 .'CLOCK' S.KENDALL 5/19/84
70 CY=30;INPUT " ENTER HR & MIN"A,B
71 CLEAR
100 BOX 0,0,100,40,2
120 FOR H=ATO 24;IF H=24 A=0
130 FOR M=BTO 59;IF M=59 B=0
140 FOR S=0TO 59
144 CY=10;CX=-34;PRINT "HR MIN SEC"
150 CY=-10;CX=-34;PRINT #1,H,#2," : ",#2,M,#2," : ",#2,S
160 FOR N=1TO 740;NEXT N;.TIME ADJUST.
170 NEXT S;NEXT M;NEXT H;GOTO 120

```

This little program puts a digital clock on the screen. Change the value of N in Line 160 to speed up or slow down the clock. 740 was too slow for my Arcade.

ABC HOBBYCRAFT'S

FALL SALE

This month we are expanding our sale items to cover cassette tapes (Astrocade BASIC required). We are offering your choice of these tapes at the price of \$3.95 each. Please, when ordering list second and third choices. Quantities are limited, and when they are gone they are gone so place your order now!

The following titles are available:

L&M software

Candy man -- Secret of Pellucitar -- Ayatollah Dart Board/Crazy Ball
-- Alien Invasion -- Target/Mind Bender -- Space Sleuth/Fox & The
Hare -- 3D Tic Tac Toe/Mission Impossible -- Exitor's Revenge --
Space Quest 2001/Starbase 2000 -- Sink the U-Boat/Air Drop

WaveMakers

Pack Rat -- Collision Course -- Castle of Horror -- Lookout for the
Bull -- The Gate Escape -- Character Analysis -- Max the Robot from
Space/Horse Race -- Whiz Quiz -- BackSammon -- Guitar Course --
Slot Machine -- Maze Race -- Flying Ace

Tiny Arcade

Beep/Star Siege -- Space Gauntlet/Quadron -- Viperian/Druncher
Vindicator/Art Show & Fireworks -- Omega Valley/Astro Terror

Bit Fiddlers

Goldfish Demo -- Chicken!

Please note that the listings under the company headings are separate tapes for \$3.95 each

Please remember to make second and third choices when ordering these tapes. The quantity is very limited in some cases.

To go along with this month's special tape bargains we are offering the Astrocade BASIC at the low, low price of \$9.95 each. We also have a few of our \$4.95 cartridges left we will continue these this month or until the supply is depleted. You can choose from the following cartridges: 280 ZzzzP/Dodgem -- Red Baron/Panzer Attack -- Astro Battle -- DogPatch -- Space Fortress -- Baseball -- Football -- Bally Pin -- Bionhym -- BlackJack/Poker. Please list a second and third choice if possible when ordering these cartridges.

ABC HOBBYCRAFT

YOUR ASTROCADE SOURCE

This month we find ourselves in a position to offer Astrocade Arcade units at a very favorable price. We need to move these units fast. We decided that if we were to succeed in moving these units we had to offer them at a very low price. We decided that \$34.95 would be a favorable price, so that is what we are selling them for. Just think, these would cost less than Astrocade's current repair price--also less than a pair of hand controllers. These are brand new factory warranted units. Coupled with some of our bargain priced games these units would make great Christmas presents.

Order by mail or by phone (no phone calls on Wednesday please I need at least one day off a week). We accept Master Card, VISA, Personal checks, Money orders, or we can send the order C.O.D. (except to Canada). We can ship the order UPS or Parcel Post. Please include \$1.50 per order to cover the shipping costs. Let us be your one stop source for Astrocade information and products.

We regret to say that our stocks of the fine Sneaky Snake cartridge by New Image are depleted. The cartridge is now out of production (at least for the present time). We will let you know if and when we purchase some more of this cartridge.

We are also looking to purchase existing dealer inventories of cartridges. If you have some to sell please send us a list of what you have and an estimate of how much you want for them. Maybe we can get together and work something out.

This being the last issue of this volume, we would like to thank all of the fellow arcadians who have supported us through the years. We would also like to remind you that we will continue to support the Astrocade as long as there are still people in search of new games. We will continue to publish our exclusive Astrocade Underground newsletter whenever there is anything new to report--just let us know and we will send you the latest edition at no cost to you.

* Controllers \$54.95/pair *

ABC HOBBYCRAFT-2155 E. Morgan Ave.-Evansville IN-47711-(812) 477-9661

since 1946



LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES
= SPACES. 1189 CHARACTERS

```

10 goto 2400
20 XY=0;line X,Y,3
30 if Y_XY=0;line X,-Y,3
40 if Xif Y_XY=0;line -X,-Y,3
50 if X_XY=0;line -X,Y,3
60 return
70 CALL20002
80 CALL20002
90 if TR(1)=0return
100 &(9)=44
110 K=8701;CALL20020
120 clear
130 NT=-1;v
140 &(10)=176
160 NT=1
170 gosub 2000
180 STOP
200 for X=3to 79step 2
210 box 0,0,X,X,3
220 next X
230 goto 70
300 for Y=79to 3step -2
310 box 0,0,Y+Y-1,Y,3
320 next Y
330 goto 70
500 for Y=0to 40step 10
510 for X=5to 75step 10
520 gosub 20
530 next X
540 next Y
550 goto 70
700 for Y=0to 39
710 X=78-2xY
720 gosub 20
730 next Y
740 goto 70
900 return
1100 for X=0to 79
1110 Y=39-X+2
1120 gosub 20
1130 next X
1140 goto 70
1300 X=79
1310 for Y=0to 42
1320 gosub 20
1330 next Y
1340 goto 70
1500 return
1700 Y=42
1710 for X=0to 79
1720 gosub 20
1730 next X
1740 goto 70
2000 F=21024;G=19494;H=00;return
2010 F=20303;G=21328;H=33;return
2020 F=13313;G=12868;H=00;return
2030 F=16706;G=19532;H=89;return
2040 F=21313;G=21076;H=79;return
2050 F=16706;G=18771;H=67;return
2060 F=17952;G=20053;H=32;return
2070 F=16711;G=17741;H=83;return
2080 F=21837;G=18771;H=67;return
2090 F=22305;G=22351;H=33;return
2100 F=17736;G=19532;H=79;return
2110 F=16928;G=17753;H=32;return
2200 for Z=1to 32767

```

```

2210 W=Z+12
2220 gosub 2030+RMx10
2230 W=Z+2
2240 if RM=0gosub 200
2250 for V=3to 17step 2
2260 W=Z+V
2270 if RM=0gosub Vx100
2280 next V
2290 next Z
2300 goto 2200
2399 .SET-UP_SECTION;
2400 if @(1)=8693goto 2450
2410 for R=0to 87
2420 print R,
2430 input ""@(R)
2440 next R
2450 .
2460 clear
2470 .
2480 NT=-1;v
2490 &(9)=44
2500 &(10)=172
2510 A=-43;B=1845;C=-22499
2520 D=20012;E=-13871
2530 gosub 2020
2540 CALL20002
2550 for R=0to 87
2560 X(2xR+19824)=X(R)
2570 FC=Rx8-696
2580 next R
2590 J=8691;K=19824
2600 L=-27102;M=-1202
2610 N=201
2630 CALL20002
2640 CALL20020
2650 &(9)=20
2660 goto 2200

```

```

@(27)=1824
@(28)=21050
@(29)=12878
@(30)=19976
@(31)=-19025
@(32)=3122
@(33)=31822
@(34)=21974
@(35)=8352
@(36)=14855
@(37)=20046
@(38)=2354
@(39)=-20658
@(40)=3855
@(41)=3855
@(42)=2866
@(43)=-7858
@(44)=32485
@(45)=-767
@(46)=11263
@(47)=2423
@(48)=16582
@(49)=11127
@(50)=2423
@(51)=-32570
@(52)=11127
@(53)=2423
@(54)=-16186
@(55)=11127
@(56)=2423
@(57)=6145
@(58)=-4856
@(59)=-7749
@(60)=7994
@(61)=-14770
@(62)=12408
@(63)=15878
@(64)=332
@(65)=-8
@(66)=12809
@(67)=19999
@(68)=4051
@(69)=2817
@(70)=-4856
@(71)=-3653
@(72)=-15903
@(73)=-13829
@(74)=30451
@(75)=64
@(76)=0
@(77)=1
@(78)=0
@(79)=0
@(80)=0
@(81)=0
@(82)=0
@(83)=0
@(84)=0
@(85)=0
@(86)=-256
@(87)=19456

```

@ () ARRAYS

```

@(0)=-6715
@(1)=8693
@(2)=19998
@(3)=-4090
@(4)=7387
@(5)=-25429
@(6)=3855
@(7)=3855
@(8)=20284
@(9)=-28290
@(10)=11127
@(11)=12517
@(12)=-2807
@(13)=-14722
@(14)=30472
@(15)=58
@(16)=-3762
@(17)=-24473
@(18)=1824
@(19)=20538
@(20)=12878
@(21)=19975
@(22)=4015
@(23)=3855
@(24)=28431
@(25)=-14724
@(26)=-24491

```

The first step of this colorful display program will ask you to load the array.

Oct 31, 1984



Vol 6 No 11/12

LOWERCASE = 1-BYTE KEYPAD WORDS. UNDERSCORES = SPACES. 2001 CHARACTERS

```

:___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 (0=18)+(U=18)print '
WINS';STOP
__13_if Z=1print '_SHOOTS';goto 15
__14_print '_HIDES
__15_return
__20_H=8;V=-40;X=0;Y=0
__28_box H,V,2,2,3
__30_if JX(P)=-1H=H-7;X=X-1;if X<0X=0
__32_if H<8H=8
__35_if JX(P)=1H=H+7;X=X+1;if X>9X=9
__36_if H>71H=71
__37_if JY(P)=-1V=V-8;Y=Y-1;if Y<0Y=0
__38_if V<-40V=-40
__39_if JY(P)=1V=V+8;Y=Y+1;if Y>9Y=9
__40_if V>32V=32
__42_box H,V,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;V=-40;X=0;Y=0
__52_box H,V,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)=-1V=V-8;Y=Y-1;if Y<0Y=0
__59_if V<-40V=-40
__60_if JY(P)=1V=V+8;Y=Y+1;if Y>9Y=9
__61_if V>32V=32
__68_box H,V,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)+100;V=RM+10;M=RM
__310_if P=1CX=Hx7+8;CY=Vx8-40
__320_if P=2CX=Hx7-70;CY=Vx8-40
__330_return
__400_NT=-1;!(18)=62;!(19)=29;!(22)=229
__410_for Q=25to 45
__420_   !(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 0=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=V
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)=Xx100+Yx10+E
1125_if P=2@(F+20)=Xx100+Yx10+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=V;print '*',
1265_@(K)=Xx100+Yx10
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)+10x10gosub 400
1340_NT=1;next F
1350_next K
1400_goto 1210

```

BATTLESHIP

ADS: FOR SALE: Bally Arcade units, brand new with two controllers and AstroBasic \$50. + \$10. shipping. Used controllers \$15. each. CARTRIDGES: PinBall, Dogpatch, Amazing Maze, AstroZap, Letter Match, Acey D., Speed Math, Basic, Galactic Inv. at \$7.50 each + \$5. shipping. US Money Orders only. Allow 3 weeks delivery. J.Capra, 232 Edgewood Ave Thornwood, NY 10594

FOR SALE- CARTRIDGES at greatly reduced prices: Basic @ 9.95; Wizard and Art.Duel @ 4.95; Space Fort, Pirates Chase, Bally Pin @ 3.95, Please include \$1. for shipping. J. Santhoff, PSC Box 3597 APO SF CA 96264

NOTICE: I GAVE UP ON THE ADD-UNDER!! ALL MY BALLY "STUFF" FOR SALE;
2 NEW ARCADES W/AB&2 CONTROLLERS @ \$50.00 EA.
ALSO MY BALLY SYSTEM INCL: BB W/INTERFACE, AB, 4 CONTROLLERS&4NEW CORDS,
ALL ISSUES OF CURSOR & ARCADIAN (STARTING 11/06/78), PEEK&POKE MANUAL,
COMPUTER EAR (SPEECH RECOGNITION-ANDERSON RESEARCH), L&M LIGHT SHOW,
TAPE RECORDER/PLAYER, AND 16 TAPES CONTAINING OVER 200 PROGRAMS.
ALL MANUALS & DOCUMENTATION ARE INCLUDED!!! \$425.00 OR BEST OFFER
BY 12/15/84.... also 30 GAME CARTRIDGES: \$6.00 ea. (MOST ARE NEW) INCL:
2001, 2002, 2003, 2004, 2005, 2009, 2011, 2012, 2014, 2015, 3001, 3002, 3005,
4002, 5002. (6004 @18.00ea). JERRY HEERE 2802 AVON AVE.
SINKING SPRING, PA. 19608 OR CALL (215) 6785068 6:00 TO MIDNIGHT(est.)
OR ANYTIME ON WEEKENDS!!

128

ARCADIAN

Robert Fabris, ex-everything
3626 Morrie Drive
San Jose, CA 95127-9990

the SOURCE TCD 959

