

KEYBOARD AND ZGRASS material was supposed to be here - actually a brochure they are making up that I was going to summarize - but it is still at the print shop as of press time. So the suggestion is that you contact the Alternative Engineering people at 1169 Outlet Rd., Hallowell, ME 04347 directly and get the brochure on both systems.

FOOTBALL CHALLENGE has been expressed by Bob Moore, 3419 Valle Vista, Chino Hills, CA 91710. "I feel that I can beat anybody on the Bally Football cartridge, and would like to extend a challenge to anybody living in my area. I am the 'greatest' on the Football cartridge!"

ASTROCADE WRITEUP in the March issue of Video Games magazine by Mark Brownstein. He writes about possible futures of the Astrocade machine. This must have been written sometime last year as I know some of the statements are no longer true.

LATE ASTROCADE NEWS On March 14, a final hearing was held in the Columbus court, and the plan for reorganization approved. This plan provided for the settlement of debts (not all at 100 cents on the dollar), and allows Astrocade to move ahead with their future plans. Only a few words are indicated in the plan - they will manufacture a unit in Korea, and look to foreign markets as well as the US market. One feature required will be a conversion chip to allow use on European tv sets. Rumor has it that a prototype machine will be shown at the Summer electronic show, and things will move ahead after that.

NEW MEMORY SAVER - THE ZEROPOWER RAM I don't usually write about non-Arcade products, but here is something to tease your imagination. Mostek now has a 16K RAM chip with a piggyback battery (MK48Z02). It won't forget its programming when the computer is turned off. Using CMOS technology, it is a pin-for-pin replacement for a 4016. Looking ahead- one can see a board game (chess) where all the piece locations are saved for another time - or mailed to your opponent. An adventure game that remembers where you are and your prizes. Suppose you invented a game on one of the extended memory systems, stored it in the chip, and sent it for review, comments from a buddy. One could put a ROM program on one chip in a cartridge, and store variable data used with that program on the new chip also located in the cartridge.

PROGRAMS NEEDED for publication. Also printed material as well. There are three programs this month that are contest entries: Atlantis, Shoot the Duck, and Round Robin Utility. Except for Math Teacher, the others are reprints of ones that we had in earlier issues. Which means that I'm running out of material. Authors and programmers please note!!!

AND THE CONTEST WINNER IS "SHOOT THE DUCK"!!! George Moses, our Musicman, added a little rhythm to the tune that was provided, and also said that the flying duck could be speeded up by actually replacing some GOSUE statements with the routine spelled out at that location. (Having to find the subroutine prior to execution does slow down the Basic.)

```

1 .POLO
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
120 Z=0;B=-61;IF P=2B=60
130 D=RND (6);BOX -25,36,9,9,2;BOX -25,36,9,9,1;BOX -25,36,7,7,2
140 IF D=1BOX -25,36,1,1,1;GOTO 300
150 BOX -27,38,1,1,1;BOX -23,34,1,1,1;IF D=2GOTO 300
160 IF D>3BOX -27,34,1,1,1;BOX -23,38,1,1,1
170 IF D=4GOTO 300
180 IF D#6BOX -25,36,1,1,1
190 IF D=3GOTO 300
200 IF D=6BOX -25,38,1,1,1;BOX -25,34,1,1,1
210 .
220 X=71;P=P+1;IF P=3P=1;X=-72
230 IF JY(P)=0GOTO 314
240 BOX X,-7,6,13,1;Y=-3;IF JY(P)=-1Y=-12
250 GOSUB 1005
260 P=P+1;IF P=3P=1
270 IF Z>28GOTO 366
280 GOSUB 2015;IF JX(P)=0IF JY(P)=0GOTO 310
290 X=@(P)+Db11bJX(P);Y=@(P+2)+Db9bJY(P)
300 IF PX(X,Y)=0GOTO 330
310 IF Y<31IF Y>-44GOTO 356
320 GOTO 330
330 IF ABS(X)>65GOTO 900
340 BOX @(P),@(P+2),6,5,1;@(P)=X;@(P+2)=Y;GOSUB 1000
350 X=-5;IF P=2X=4
360 IF PX(X+@(P),@(P+2))=0GOTO 370
370 P=P+1;IF P=3P=1
380 GOTO 190
390 NT=1;X=@(P);Y=@(P+2);FOR A=1TO 3;BOX X,Y,6,5,1;GOSUB 1000;NEXT A;NT=0
400 @(P+4)=@(P+4)+1
410 GOTO 190
420 IF ABS(X)>75GOTO 330
430 IF Y>-13IF Y<0GOTO 930
440 GOTO 330
450 @(P+4)=@(P+4)+5
460 BOX @(P),@(P+2),6,6,1
470 GOSUB 1000
480 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
490 NT=5
500 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
510 IF P=2BOX X-2,Y+2,2,2,2;BOX X+2,Y+1,1,1,2

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from Vol 4, page 87.

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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
>

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POLO is a two-player game. The computer rolls the dice and indicates the player who is up by blinking his horse. The player can move his horse the number of squares determined by the roll of the dice - and the direction by his joystick. Landing in the goal is 5 points. The goalie can move up/down via joystick. If a player lands in one of his 'Lucky Horseshoe', he gets a point and another turn. And there is a 15 second timer.

```

1 .BRICK 'N THE WALL
2 .MIKE PEACE
10 T=0;Z=0;BC=-41;FC=8
20 BOX 0,0,160,88,1
30 NT=20;S=0;&(9)=-1;MU=49;BC=BC+24;MU=51;MU=53;BOX 0,-5,110,72,2;MU=62
40 FOR B=0TO 27STEP 9;FOR A=-50TO 50STEP 10;BOX A,B,9,5,(B#18);NEXT A;NEXT B
50 GOSUB 190;FOR A=0TO 200;NEXT A;IF Z>46GOTO 170
60 A=90;X=0;Y=0;B=RND(5)-3;C=-3;GOSUB 210
70 FOR G=1TO 2;BOX A,-35,11,3,3;A=KN(1)c3+KN(1)c16;BOX A,-35,11,3,3
80 BOX X,Y,1,1,3;X=X+B;Y=Y+C;BOX X,Y,1,1,3
90 B=B+(B=0)
100 IF Y>27C=-C;MU=70;B=B+RND(3)-2
110 IF Y<-20IF PX(X,Y+C)B=X-A
120 IF PX(X,Y+C)BOX(X+85)c10b10-80,Y+C+Cc5b5,10,5,(Y>-15)b2;C=-C;MU=95;IF Y>-15
GOSUB 180;IF S=33GOTO 30
130 IF PX(X+B,Y)B=-B;MU=58
150 IF Y<-37FOR H=90TO 70STEP -1;MU=H;NEXT H;Z=Z+1;GOSUB 210;GOTO 50
160 G=1;NEXT G
170 CY=-10;CX=-15;PRINT " GAME";CX=-15;PRINT " OVER";A=KP;RUN
180 S=S+1;T=T+(Y+8)c5b2
190 CY=40;CX=-60
200 NT=0;PRINT "<SCORE> ",#0,T," <BALLS> ",5-Z;NT=2;RETURN
210 BOX X,Y,1,1,3;BOX A,-35,11,3,3;RETURN
>

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from Vol 4, page 77

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1 .
2 .
3 .REBOUND
5 CLEAR ;&(9)=60;BC=121;FC=127;NT=4
8 CX=-30;CY=12;PRINT "LET'S PLAY";CX=-49;CY=-6;PRINT "* R E B O U N D *";FOR
Z=0TO 1600;NEXT Z
10 H=0;S=0;G=20;E=75;F=35;M=1000;R=100;N=10;GOTO 180
20 L=(K#2)b127;&(2)=L;&(3)=L;L=116+(K=2);BC=L;&(0)=L;&(1)=L;FC=0;X=5;Y=5
30 CLEAR ;&(9)=212;FOR D=25TO -25STEP -N;FOR C=-65TO 65STEP N
35 BOX C,D,3,3,1;BOX C,D,5,1,1;BOX C,D,1,5,1;NEXT C;NEXT D
40 NT=5;A=RND (3)b5-N;B=RND (3)b5-N;IF A=0IF B=0GOTO 40
50 CY=F;CX=-F;PRINT "\^/GET READY\^/";FOR Z=0TO 800;NEXT Z;BOX 0,F,160,8,2;IF
KGOSUB 250
60 BOX X,Y,5,5,1;FOR T=-84TO 30bM;X=X+A;Y=Y+B;IF (ABS(X)=E)+(ABS(Y)=F)GOTO R
70 P=P+PX(X,Y+2);FOR Z=0TO W;IF X=I IF Y=JGOTO 280
80 IF P=84 S=S+Mb(K+1)+8400-Tc2b5;GOTO 140
90 NEXT Z;BOX X,Y,5,5,3;BOX X-A,Y-B,5,5,2;NEXT T;GOTO 130
100 BOX X,Y,5,5,3;BOX X-A,Y-B,5,5,3;IF ABS(X)=E A=-Xc15;B=JY(1)b5
110 IF ABS(Y)=F B=-Yc7;A=JX(1)b5;IF ABS(X)=EGOTO 300
120 MU=E;T=T-1;NEXT T
130 GOSUB 600;S=S+PbR-(84-ABS(T))c2b5
135 CX=-51;CY=F;PRINT "TOO BAD.. DUMMY !!";FOR Z=0TO 2000;NEXT Z;CLEAR ;GOTO 18
0
140 CLEAR ;&(9)=50;BC=200;FC=7;CY=8;NT=3;PRINT #15,(K+1)bM;CX=-F;PRINT "++ BONU
S! ++
150 IF K<3CX=-F;PRINT "SCORE:",#6,S
160 &(21)=15;FOR Z=1TO G;FOR Q=15TO G;&(19)=Q;NEXT Q;NEXT Z;&(21)=0;&(19)=0;IF
(K+1)=3GOSUB 500
170 IF K<2K=K+1;P=1;CLEAR ;GOTO G
180 CLEAR ;&(9)=50;BC=8;FC=7;NT=0;PRINT " YOUR SCORE HIGH SCORE
190 PRINT " -----
200 IF S>H H=S
210 PRINT #8,S,#14,H;CY=0;PRINT "BALL SPEED-a
220 CX=-F;CY=-39;PRINT "R E B O U N D",;CY=0
230 BOX 0,-39,90,9,3;W=&(28)c50;CX=0;PRINT #2,W,;IF TR(1)CLEAR ;K=0;S=0;P=1;I=1
;J=1;GOTO G
240 GOTO 230
250 I=RND (13)bN-E;J=RND (6)bN-F;IF (I=5)+(J=5)GOTO 250
260 IF (I=J)+(I+J=10)GOTO 250
265 IF K#2BOX I,J,3,1,2;BOX I,J,1,3,2
270 FOR U=1TO 16;BOX I,J,5,5,3;MU=R;NEXT U;RETURN
280 IF P#84GOTO 130
290 S=S+Mb(K+1)+8400-Tc5b5;GOTO 140
300 CY=F;NT=0;&(9)=-1;BC=33;FC=7;PRINT " BALL IS STUCK IN CORNER
320 GOSUB 600;CX=-32;CY=-F;PRINT "YOU TURKEY !!";FOR Z=0TO 2000;NEXT Z;GOTO 160

500 CLEAR ;&(9)=45;BC=200;FC=7;&(0)=89;&(1)=89;&(2)=FC;&(3)=FC
510 FOR X=60TO -64STEP -1;&(9)=X;NEXT X;BC=9;FOR X=-64TO -45STEP 1;&(9)=X;NEXT
X
515 CX=-F;CY=20;PRINT "YOU DID IT !!
520 PRINT ;PRINT " YOU'RE THE GREATEST";PRINT ;CX=-F;PRINT "AMERICAN HERO";F
OR Z=0TO 3500;NEXT Z;GOTO 180
600 &(22)=111;FOR Z=30TO 150;&(17)=Z;&(18)=Z+13;NEXT Z;&(22)=0;&(17)=0;&(18)=0
=ETURN

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ORIGINALLY APPEARED IN Vol 3, page 124 and was the prize winner that month. There was a little space available, and some additions were made. Use the joystick to control the angle of rebound as the ball reaches the wall.

April 20, 1984



Vol 6, No 6

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10 BC=15;PRINT " MATH TEACHER
20 PRINT "-----
30 C=0
40 PRINT "ENTER 1 FOR ADDITION "
50 PRINT " 2 FOR SUBTRACTION "
60 PRINT " 3 FOR MULTIPLICATION
70 PRINT " 4 FOR DIVISION
80 INPUT B
90 PRINT "DIFFICULTY LEVEL
100 PRINT "ENTER 1 FOR EASY
110 PRINT " 2 FOR MEDIUM
120 PRINT " 3 FOR DIFFICULT
130 PRINT " 4 FOR VERY DIFFICULT
140 INPUT X
150 PRINT "HOW MANY QUESTIONS ?"
160 INPUT A
170 IF B=1GOTO 300
180 IF B=2GOTO 500
190 IF B=3GOTO 700
200 IF B=4GOTO 900
300 FOR N=1TO A
310 N=(N+1)-1
320 PRINT "QUESTION #",N
330 IF X=1;E=RND (5);F=RND (5)
340 IF X=2;E=RND (50);F=RND (50)
350 IF X=3;E=RND (500);F=RND (500)
360 IF X=4;E=RND (5000);F=RND (5000)
370 PRINT E;PRINT "+";PRINT F;PRINT "=";INPUT G
380 IF G=(E+F);PRINT "ABSOLUTELY CORRECT";C=(C+1)
390 IF G#(E+F);PRINT "NOPE THAT'S NOT CORRECT, THE ANSWER IS",(E+F)
400 NEXT N
410 GOTO 1000
500 FOR N=1TO A
510 N=(N+1)-1
520 PRINT "QUESTION #",N
530 IF X=1;K=RND (5);F=RND (5);E=(K+F)
540 IF X=2;K=RND (50);F=RND (50);E=(K+F)
550 IF X=3;K=RND (500);F=RND (500);E=(K+F)
560 IF X=4;K=RND (5000);F=RND (5000);E=(K+F)
570 PRINT E;PRINT "-";PRINT F;PRINT "=";INPUT G
580 IF G=(E-F);PRINT "ABSOLUTELY CORRECT";C=(C+1)
590 IF G#(E-F);PRINT "NOPE THAT'S NOT CORRECT, THE ANSWER IS",(E-F)
600 NEXT N
610 GOTO 1000
700 FOR N=1TO A
710 N=(N+1)-1
720 PRINT "QUESTION #",N
730 IF X=1;E=RND (5);F=RND (5)
740 IF X=2;E=RND (50);F=RND (50)
750 IF X=3;E=RND (100);F=RND (50)
760 IF X=4;E=RND (150);F=RND (75)
770 PRINT E;PRINT "b";PRINT F;PRINT "=";INPUT G
780 IF G=(EbF);PRINT "ABSOLUTELY CORRECT";C=(C+1)
790 IF G#(EbF);PRINT "NOPE THAT'S NOT CORRECT, THE ANSWER IS",(EbF)
800 NEXT N
810 GOTO 1000
900 FOR N=1TO A
910 N=(N+1)-1
920 PRINT "QUESTION #",N
930 IF X=1;E=RND (5);F=RND (5)
940 IF X=2;E=RND (100);F=RND (10)
950 IF X=3;E=RND (100);F=RND (50)
960 IF X=4;E=RND (125);F=RND (75)
965 K=(EbF)
970 PRINT K;PRINT "c";PRINT F;PRINT "=";INPUT G
975 IF G=E;PRINT "ABSOLUTELY CORRECT";C=(C+1)
980 IF G#E;PRINT "NOPE THAT'S NOT CORRECT, THE ANSWER IS",E
990 NEXT N
1000 CLEAR
1010 PRINT "FINAL TALLY
1020 PRINT "CORRECT ANSWERS",C
1030 PRINT "INCORRECT ANSWERS",(A-C)
1040 PRINT (Cb100)cA,"%","FOR THIS EXERCISE

```

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In laying out this page, I noticed a couple of items that beginning programmers might want to experiment with. The program as written is quite self-explanatory and easy to follow. The suggestions I am including would "tighten up" the listing (that is, save memory space), but at the expense of some clarity. The idea is to use a SUBROUTINE whenever there is duplication of material. You will see the words "ABSOLUTELY CORRECT" a number of times. The program could be rewritten

```

1100 PRINT"ABSOLUTELY CORRECT"; RETURN and change line 380 to read
380 IF G=(E+F);GOSUB 1100; C=(C+1) and lines 580, 780, and 975 would
be similarly changed.

```

Some kind of thing for line 380, etc.

Also note that (E+F) is used a number of times. One could state early-on that S=(E+F) and then use S. And so forth.

ROUND ROBIN UTILITY

LOWERCASE WORDS ARE 1-BYTE KEYPAD WORDS. UNDERSCORES ARE SPACES.

```

1 .ROUND_ROBIN_UTILITY
2 .BY_JOHN_HAMMOND
3 .SEPTEMBER_1983
10 clear ;NT=0;CY=20;print "__ROUND_ROBIN_UT
ILITY
20 CY=5;print "__NUMBER_OF_TEAMS_-" ;input
"T
30 if (T<3)+(T>999)print "___3_to_999_TEAMS"
;Y=5;gosub 950;goto 20
40 print "___STARTING_ROUND_-" ;input "W
50 Z=T+2;U=RM;Z=T+U
60 if (W<1)+(W>Z-1)_print "___1_TD",#4,Z-1,"
_ONLY";Y=-10;gosub 950;CY=-3;goto 40
70 K=3+W-1;L=Z+2+1;S=2-L;P=1;B=(W-1)+2;if RM
_L=L+S+B;S=1-S;goto 90
80 L=L+B;if L>Z-1_L=L-Z+1
90 CX=-23;print "for TEAM_-" ;print "'('0'_'
_for ALL TEAMS)
100 CX=37;CY=-11;input "E
110 if (E<0)+(E>T)_print "___0_TD",#4,T,"_0
_NLY_-" ;Y=-17;gosub 950;CY=-11;goto 90
120 for R=W_to Z-1;J=K;K=K+1;M=-2;if E_goto
500
130 for N=1_to Z-1;J=J-1;if J=0_J=Z-1
140 I=J;if N=L_I=Z
150 if I<N+1_next N;goto 190
160 if I=ZxU_next N;goto 190
170 if M=30_gosub 300;if P_goto 220
180 M=M+2;*(M)=N;*(M+1)=I;next N
190 if U_if M=30_gosub 300;if P_goto 220
200 if U_M=M+2;*(M)=0;*(M+1)=L
210 gosub 300
220 L=L+S;S=1-S;if L=Z_L=1
230 next R;gosub 450;run
300 if P_P=0;goto 330
310 gosub 450;if (A=99)+(A=104)run
320 if (A=98)+(A=107)if (*(0)>2)+(*(0)=0)if
E=0_P=1;goto 410
330 clear ;print "__ROUND_ROBIN_-" ;#2,T,"_T
EAMS
340 print "___ROUND",#4,R;CY=20;X=-70
350 for Q=0_to M_step 2
360 CX=X;X=-56-X;if *(Q)_print #3,*(Q),"_VS"
;goto 380
370 print "_BYE_-" ;
380 B=2;if *(Q+1)>9_B=3;if *(Q+1)>99_B=4
390 print #B,*(Q+1);if X<_0_print
400 next Q
410 M=-2;return
450 CX=0;CY=-39;print "ψ";A=KP;clear ;return

```

This program generates the opponent pairings in a round robin competition for three to 999 teams. The program begins with a set-up menu:

1. Enter the number of teams (3-999)
2. Enter the starting round to be displayed (Enter 1 when all rounds are required.)
3. Enter the team numbers to be displayed (Enter 0 when all teams are required.)

A maximum of 16 opponent pairings will be displayed on one screen. When more pairings are required for a round or when the display for a round is complete the program computes the next screen's information; and when ready, a down arrow is displayed. Enter LIST or 'divide' sign to end the display and RETURN to set up menu. Enter NEXT or 'multiply' to bypass the remainder of the round presently being displayed. Press any other key to display the next screen. When a round is complete, the program returns to the setup menu.

```

500 M=0;if E=L_goto 540
510 if E=Z_I=L_goto 530
520 I=J-E;if I<1_I=Z-1+I
530 *(0)=E;*(1)=I;goto 210
540 if U_*(0)=0;*(1)=E;goto 210
550 *(0)=E;*(1)=Z;goto 210
950 for B=1_to 999;next B;box 0,Y,160,22,2;r
eturn

```

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ATLANTIS

LOWERCASE WORDS ARE 1-BYTE KEYPAD WORDS. UNDERSCORES ARE SPACES.

```

1 CY=30;BC=0;FC=7;ψ;F=0;P=0;R=0;K=0;NT=0;print
  '___BY_FRED_RODNEY_1984';if JY(1)goto 10
2 gosub 90;G=0;CX=-48;input 'TURNS?(1-99)_'
  ,T
3 gosub 90;CX=-44;input 'SPEED?(1-2)_' ,S;O=
  2xS+1;M=SxS-3xS-S+1;if (S<1)+(S>2)goto 3
4 gosub 90;CX=-44;input 'WIND?(Y>1)_' ,W
10 gosub 90;U=Sx4+1;H=U+3;gosub 70;gosub 50;
  gosub 940
20 gosub 50;F=F+1;if F>Tgoto 2000
26 for A=-80to 66step H;CY=30;CX=A
30 NT=0;print '  >';if TR(2)if N_V=R;gosub 2
  00;N=0;if R>V_A=66
35 ψ;next A;gosub 50
43 for A=70to -80step -H;CY=30;CX=A;print '*<
  _';if TR(1)if N_V=K;gosub 300;N=0;if K>V_A=-
  80
45 ψ;next A;goto 20
50 N=1;box 0,28,160,14,2;for L=1to 300;next
  L;return
60 clear ;P=1;gosub 100;run
70 BC=190;FC=0;return
75 NM=2;for L=250to 0step -5;NV=L;next L;ψ;r
  eturn
80 if W=16=rnd (0)+M
85 return
90 box 0,0,160,44,2;CY=0;return
100 for C=-5to 6step 2;D=rnd (2);E=rnd (6)+2
110 box C,-30,D,E,3;next C;box 0,-33,14,6,1;
  box 0,-33,4,2,3;box 0,-35,80,1,1;if P=0retur
  n
130 line -80,-36,0;line 79,-36,1;NT=0
132 Y=-36;for L=1to 4;Y=Y-2;X=79;line X,Y,0
134 I=rnd (4)+1;X=X-I;J=rnd (2);line X,Y,J;i
  f X>-80goto 134
138 next L
140 print '____*_A_T_L_A_N_T_I_S_*';box 0,35
  ,120,1,1;return
200 Z=1;X=A+10;gosub 80;NT=1;for Y=29to -36s
  tep -U;X=X+(JX(2)xS)+G
240 box X,Y,1,2,3;box X,Y,1,2,3;MU=31;MU=59;
  MU=31;NM=2;NV=35
245 if Y<-32if Zgosub 250
248 next Y;ψ;NT=0;Z=1;return
250 for L=-2to 1;if X=Lgosub 800
255 next L;Z=0;return
270 box -1,-25,20,22,3;box -1,-25,20,22,3;bo
  x 0,-21,26,22,2;BC=0;FC=190;box 0,31,120,8,2
275 BC=98;FC=0;NT=6;for L=1to 6;MU=90;MU=65;
  next L;gosub 70;goto 940
300 Z=1;X=0;gosub 80;NT=1;for Y=-30to 35step
  U;X=X+(JX(1)xS)+G
340 box X,Y,1,2,3;box X,Y,1,2,3;MU=87;MU=59;
  MU=87;NM=2;NV=35;if Y>28if Zgoto 360
350 next Y;NT=0;return
  
```

```

360 for L=-3to 1;if X=A+L_goto 900
365 next L;Z=0;NT=0;return
  
```

```

800 NT=0;CY=-30;CX=-5;print 'x*x';box 0,31,1
  20,8,2;line 0,-30,0;line -5,-20,1;line 0,-18
  ,0;line 0,-30,1
840 line 5,-20,1;NT=3;for Q=90to 190step 10;
  MU=Q;next Q;ψ
850 NT=0;Z=2;CY=-30;CX=-5;print '***';BC=0;F
  C=190;R=R+1;gosub 70;gosub 75;gosub 270;goto
  100
900 NT=0;CY=30;CX=A;print '*';BC=0;FC=190;go
  sub 70;Z=2;gosub 75;box A,31,20,8,2;K=K+1
910 NT=5;for Q=190to 10step -10;FC=7;BC=0;FC
  =0;MU=Q;next Q;NT=0;gosub 70
940 NT=0;CY=0;print #5,K,#18,R;for Q=1to 500
  ;next Q;goto 90
2000 CY=0;print #5,K,'___GAME_OVER___',#1,
  R,'_'
2002 NM=2;for L=20to 146step 6;if TR(1)run
2006 NV=L;next L;BC=rnd (255);for L=290to 40
  step -1;if TR(1)run
2009 NV=L+2;next L;FC=rnd (255);box 0,0,70,1
  2,3;goto 2002
5000 gosub 90;CX=-21;print 'STAND_BY';print
  
```

ATLANTIS

AFTER YOU'VE TYPED PROGRAM, INITIATE WATER DRAWING ROUTINE BY ENTERING GOTO 60 COMMAND. WHEN PROMPT 'TURNS?' APPEARS, PRESS HALT. SET UP YOUR TAPE RECORDER TYPE GOTO 5000, START TAPE AND PRESS GO. LOAD THE GAME WITH THE USUAL !INPUT;RUN

PLAYER 1 DEFENDS ATLANTIS, LAUNCHES THE MISSILES (TRIGGER) AND GUIDES THEM (JOYSTICK) SCORE IS ON THE RIGHT # OF BOMBERS HIT.

PLAYER 2 ATTACKS ATLANTIS, RELEASES BOMBS (TRIGGER) AND GUIDES THEM (JOYSTICK). SCORE IS ON THE RIGHT (# OF CITIES HIT). SPECIAL REPLAY FEATURES!!! FOR A NEW GAME (A CHANGE IN NUMBER OF TURNS, SPEED OR WIND) SQUEEZE TR(1) WHEN GAME OVER APPEARS. FOR ANOTHER GAME (SAME NUMBER OF TURNS, SPEED & WIND) PUSH AND HOLD JOYSTICK 1 FORWARD THEN SQUEEZE TRIGGER 1. NOTE: PLAYER 2 GOES FIRST

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ARCADIAN

SHOOT THE DUCK

April 20, 1984

Vol 6. No 6

LOWERCASE WORDS ARE 1-BYTE KEYPAD WORDS, UNDERSCORES ARE SPACES.

```

1 .i_11_11_1023_33_3300___5_5_650
2 .31023_32_2100000_____
3 clear ;SM=1;P=20200;CALLP+74;NT=1;goto 31
4 CY=39;print "_HUNTER_",#0,M,"____SHOTS"
  ,#3,K;return
6 if *(0)<0;if N>160Q=45
7 if *(0)>0;if N<10Q=45;return
8 return
9 NM=-1;NV=-1;VC=-1
10 for U=1to 20;next U;psi;return
11 if M=1B=B+K;D=D+W
12 if M=2E=E+K;F=F+W
13 if M=3G=G+K;H=H+W
14 if M=4I=I+K;J=J+W
15 return
16 if TR(M);gosub 9;NT=0;K=K+1;gosub 4;gosub
  18
17 return
18 for G=-34to 50step 4;gosub 500;if Q>45ret
  urn
19 N=N+*(0);gosub 301;if *(0)>0Z=Z+1;if Z>12
  9Z=128
20 if *(0)<0;Z=Z+1;if Z>131Z=130
21 gosub 23;gosub 6;next Q;return
23 if PX(0,Q)=0;gosub 700;return
24 if PX(0,Q-1)=0;gosub 700
25 return
26 NT=5;for U=1to 3;MU=112;BC=U*20;next U;BC
  =7;return
28 CY=15;for U=1to 52step 2;TV=47;TV=92
29 if U>24CY=-13
30 next U;return
31 clear ;gosub 28;CY=0;input "___NUMBER_OF_
  HUNTERS?"L
32 if L>4L=4
40 clear ;gosub 28;CY=0;input "___NUMBER_OF_
  DUCKS?"T
41 clear ;if T>99T=99
60 NT=0;M=1;R=0;V=0;W=0;B=0
61 clear ;for U=20008to U+14step 2;%(U)=0;ne
  xt U
62 %(P+26)=P+50
63 %(P+24)=2562;Z=128;%(P+17)=Z;%(P+10)=Z
64 %(P+8)=26684;%(P+15)=10307;BC=7;FC=160
65 %(P+6)=51;%(P+13)=7731;CALLP
66 %(P+6)=12083;%(P+13)=20787;CALLP
67 %(P+6)=27443;%(P+13)=-29645;CALLP
72 %(P+8)=10289;%(P+24)=1281
73 %(P+26)=P+28
90 gosub 4
95 if R=TxL;goto 200
100 A=0;box 0,-40,3,8,1;CY=-40;CX=13;gosub 6
  00;print "PULL
110 if JY(M)box 18,-39,30,11,2;R=R+1;goto 14
  0
130 goto 110
140 S=rnd (4)+1;Y=rnd (2)+S*10
141 gosub 300;C=rnd (2);if C=2goto 161
151 for N=0to 150step S;Z=Z+1;if Z=130Z=128;
  *(0)=S
152 goto 162
161 for N=150to 4step -S;Z=Z+1;if Z=132Z=130
  ;*(0)=-S
162 gosub 301;NT=5
176 gosub 16
178 next N;box 0,10,160,52,2;NT=1;%(10)=176
179 gosub 11
180 M=M+1;V=0;K=0;W=0;if M>L_M=1
  
```

```

190 goto 90
200 clear ;FC=200;CY=20;print "_HUNTER:___#1_
  _#2_#3_#4
210 print ;print "_HITS:",#6,D,#4,F,#4,H,#4,
  J
220 print ;print "_SHOTS:",#5,B,#4,E,#4,G,#4
  ,I
230 print ;print "____USE_TR(1)to run
240 if TR(1)goto 60
250 goto 240
300 %(P+7)=-9999;Z=128;%(P+10)=Z;%(P+17)=Z;r
  eturn
301 %(P+17)=Z
302 %(P+14)=Y*256+N;CALLP
303 %(P+7)=%(P+14);%(P+10)=%(P+17)
304 NT=5;if V>60;Y=Y+6;if Y>81Y=81
305 if Y>80%(P+7)=-9999;NT=0;%(10)=160;CALLP
306 MU=112;return
500 box 0,Q,1,2,3;box 0,Q-4,1,2,3;return
600 NT=5;for Q=-24573to -24513step 1;MU=45;M
  U=%(Q)
601 if Q=-24541Q=-24538
602 next Q;NT=1;return
700 box 0,Q,1,2,3;V=N;W=W+1;Q=45;gosub 26;r
  eturn
  
```

James Wilchen
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SHOOT THE DUCK

YOU TRY TO SHOOT THE DUCK WITH LESS SHOTS. YOU HAVE TO SHOOT BEFORE HE IS LINED UP WITH THE GUN IN HOPES HE WILL FLY INTO YOUR BULLET. PLAYS 1 TO 4 PLAYERS AND 1 TO 99 DUCKS.

FIRST YOU MUST LOAD THE 'SHOOT THE DUCK DATA' ON THE DATA LIST WITH THIS ROUTINE: FOR A=20200 TO 20312 STEP 2;INPUT %(A); NEXT A

INPUT THE DATA FROM THE KEYPAD, THEN SAVE IT ON TAPE WITH :PRINT %(20200),57 DO NOT REWIND TAPE!!! TYPE IN PROGRAM AND SAVE IT ON THE TAPE JUST BEYOND THE DATA YOU SAVED BEFORE. IMPORTANT! SAVE THE MAIN PART OF THE PROGRAM LIKE THIS

```

:PRINT %(-24576),900
:PRINT %(20000),46
  
```

NOW THAT YOU HAVE ALL THIS STUFF ON TAPE YOU CAN LOAD IT ALL INTO MEMORY LIKE THIS:

```

:INPUT %(20200);:INPUT %(-24576);
:INPUT %(20000);SM=2
  
```

WHEN IT ALL GETS LOADED, FIND A BLANK SPOT ON YOUR TAPE AND SAVE IT ALL IN ONE BLOCK LIKE THIS:

```
PRINT ";RUN";:PRINT %(16384),2010
  
```

NOT ONLY WILL THIS TIE IT ALL TOGETHER IN ONE PIECE, IT WILL ALSO MAKE YOU PROGRAM RUN AUTOMATICALLY WHEN YOU LOAD IT WITH :INPUT

SHOOT THE DUCK DATA

USING THE FOR-NEXT ROUTINE ABOVE, INPUT THIS DATA. GO DOWN EACH COLUMN.

8669	1281	0	0	18433
20221	20228	-8161	-8960	20053
-43	5942	-897	-43	1876
-3789	15612	-257	53	22850
10456	1560	-257	10280	302
130	-1017	-385	20287	18762
13311	6204	-1985	20991	333
20741	-6036	-8165	-11832	18775
-32216	15423	-32767	1737	17228
-12032	24600	-32765	21828	17736
-32567	16352	-16377	19267	82
0	6204			


```

1 .COLOR CHART
2 .
3 .BY JIM WINN
4 .
5 E=480;F=1250
10 CLEAR ;BC=0;FC=7;C=0;NT=0
20 PRINT "    0=BLACK    7=WHITE    90=RED    205=CYAN    172=GREEN    4
3=MAGENTA
30 PRINT "    249=BLUE    126=YELLOW
70 NT=3;CX=-60;CY=-20;PRINT "SELECT YOUR COLOR ?";NT=0
80 K=KN(1)C30
85 CX=-42;CY=-30
90 IF K=-4GOSUB 400
100 IF K=-3GOSUB 410
110 IF K=-2GOSUB 420
120 IF K=-1GOSUB 430
130 IF K=1GOSUB 440
140 IF K=2GOSUB 450
150 IF K=3GOSUB 460
160 IF K=4GOSUB 470
170 IF TR(1)GOTO 190
180 GOTO 80
190 CLEAR ;IF (A=0)+(A=7)+(A=43)+(A=90)+(A=126)+(A=172)+(A=205)+(A=249)C=C+A
200 C=C+JY(1)
210 IF JY(1)CLEAR 1040 BOX -40,20,40,20,1;BOX -40,-25,30,1,1;BOX -40,-25,1,30,1
220 IF C>255 C=255 1050 &(2)=C;&(3)=C
230 IF C<0 C=0 1060 BOX 40,20,40,20,1;BOX 40,-25,30,1,1;BOX 40,-25,1,30,1
240 BC=C;FC=BC+12
245 IF JY(1)=3CX=-35;CY=0;PRINT C
250 IF JX(1)=1GOTO 10
255 IF JX(1)=-1 GOTO 800
280 GOTO 200
400 A=0;PRINT A;GOTO E
410 A=90;PRINT A;GOTO E
420 A=172;PRINT A;GOTO E
430 A=249;PRINT A;GOTO E
440 A=7;PRINT A;GOTO E
450 A=205;PRINT A;GOTO E
460 A=43;PRINT A;GOTO E
470 A=126;PRINT A;GOTO E
480 RETURN
800 CLEAR ;&(9)=84
810 &(0)=C;&(1)=C;B=C
820 C=0;BC=0;FC=7;NT=0
830 PRINT "    0=BLACK
840 PRINT "    7=WHITE
850 PRINT "    90=RED
860 PRINT "    172=GREEN
870 PRINT "    249=BLUE";NT=3
880 CY=-20;PRINT "SELECT COLOR";NT=0
890 K=KN(1)C50+2
895 CY=-30
900 IF K=0GOSUB 1200
910 IF K=1GOSUB 1210
920 IF K=2GOSUB 1220
930 IF K=3GOSUB 1230
940 IF K=4GOSUB 1240
950 IF TR(1)GOTO 970
960 GOTO 890
970 CLEAR ;IF (A=0)+(A=7)+(A=90)+(A=172)+(A=249)C=C+A
980 C=C+JY(1)
985 IF JY(1)CLEAR
990 IF C>255 C=255
1000 IF C<0 C=0
1010 NT=0;BC=C;FC=B
1015 IF JY(1)=0CY=0;PRINT C;CX=3;CY=0;PRINT E
1020 IF JX(1)=1&(9)=50;GOTO 10
1025 IF JX(1)=-1CLEAR ;GOTO 820
1030 IF TR(1)=0GOTO 980
1070 GOTO 980
1200 A=0;PRINT A;GOTO F
1210 A=7;PRINT A;GOTO F
1220 A=90;PRINT A;GOTO F
1230 A=172;PRINT A;GOTO F
1240 A=249;PRINT A;GOTO F
1250 RETURN
>

```

This program is a utility to help you select colors for a program. A menu first appears asking for a choice of 7 major colors. Once this has been picked, you can make a fine adjustment by the joystick, forward or back. Once you see one you like, move the joystick to the left, and you can make a selection for the second color. Pull the trigger to see how the colors interact. Start again by pushing the joystick right. Code numbers for each color also appear for future use.

from Vol 3, page 35.

Jim Winn
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Boiling Springs, NC 28017

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AFTER SOME CAREFUL CONSIDERATIONS IT WAS DETERMINED THAT A DEMO WOULD PROVE USELESS TO PURCHASERS AFTER ONE PLAY. THEREFORE, THE GAME "MEMOMAX" WILL BE INCLUDED, ON SIDE 2, OF THE ASTRO-ANALYST. THE EXTRA CHARGE REFLECTS THE ADDED TIME NEEDED TO PREPARE EACH TAPE AND FOR THE ASSOCIATED DOCUMENTATION.

60

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