January 9, 1982

Dear Bob,

Hope you can use the enclosed tutorial.

Frog Leap is included as a contest entry. I had it all
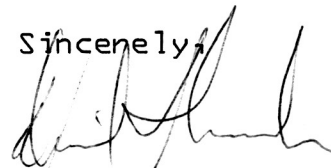ready to send in when I noticed that you are renewing the
competition.

On the flip side is a maze program which actually uses the
big routine at the end of the tutorial. Load it with the
2000 baud cartridge, RUN, swap, and RUN it with the old
cartridge.

'Mazin' has a <u>lot</u> of machine code in it and uses many calls
to the old Basic. I don't know how you could include it in
the ▽Arcadian▽ because of the machine code. But if you
can and want to, be my guest.

To play 'Mazin', you guide the square cursor through the
maze with your joystick from left to right. If you want
to see the maze being constructed {really pretty because of
the speed of machine code} simply keep your trigger
depressed when you initiate a new turn. The scoring at the
right is a running average, not total. The timer, by the
way, is in true seconds, since it is updated in an inter-
rupt routine.

I continue to appreciate your work on the 'Arcadian'.
Don't stop.

Sincerely,

Dave Ibach

Happy
New
Year!

FROG LEAP {Astrovision Basic}

by Dave & Ben Ibach

```
1 GOTO 9
2 M=%{R}÷256;IF {M=13}+
  %{20094}÷256RETURN
3 MU=M;R=R+1;RETURN
7 .146×10007000+60000 -11
  6000500400000
8 .11111103010÷60÷501000
  00003555550605030011-3-320
  1011-302010÷50100000302000
  003010000000
9 .6×1653212-321-302001-3
  21-302011000
10 .65535035030000 6550505
   3000000 366553211-302010÷6
   ÷53300202100000000
11 CLEAR;GOSUB 70
12 CLEAR;GOSUB 32
13 X=50;IF TR{J}=0GOTO 13
14 GOSUB 42;IF Q=1GOTO 26
15 D=1;GOSUB P;C=B-1;D=1;
   GOSUB P;GOSUB 78;R=-24479;
   NT=8;GOSUB 62
16 X=B;IF TR{J}=0GOTO 16
18 GOSUB 42;IF Q=1GOTO 26
20 D=2;GOSUB P;C=A-1;D=1;
   GOSUB P;GOSUB 78;R=-24389;
   NT=14;GOSUB 62
22 X=A;IF TR{J}=0GOTO 22
24 GOSUB 42;D=2;GOSUB P;C=X;
   D=2;GOSUB P;GOSUB 78;R=
   -24351;NT=9;GOSUB 62
26 J=K-J;GOSUB 80
28 IF TR{J}=0GOTO 28
30 FC=0;GOTO 12
32 GOSUB 80;FC=180;R=-24519;
   NT=45;FOR N=0TO -44STEP
   -1;LINE 28,0,3;LINE -80,N,
   1;GOSUB 2;NEXT N;BOX 60,
   -22,40,44,1
33 FOR N=40TO 50;XY=-5080;
   LINE N,-44,2;NEXT N
34 BOX -5,2,9,5,1;FOR N=-11
   TO 1;LINE -5,7,4;LINE N,
   4,1;NEXT N;BOX -7,3,1,1,3;
   BOX -4,3,1,1,3;BOX 0,1,1,
   1,1;BOX -8,7,1,3,1
36 BOX 45,5,10,11,1;BOX 45,
   10,14,2,1;BOX 38,1,4,7,1;
   BOX 38,1,3,5,3;BOX 38,1,3,
   3,3;BOX 43,7,2,2,2;BOX 46,
   7,2,2,2;BOX 43,3,2,2,2
38 FOR N=-65TO -53STEP 3;LINE
   -59,35,4;LINE N,-20,3;NEXT
   N;LINE -59,35,4;FOR N=1TO
   99;GOSUB 2;LINE RND {60}-
   80,RND {44},3;NEXT N
40 A=RND {10}-35;B=RND {10}+
   4;BOX A,-35,8,2,1;BOX B,-35,
   8,2,1;C=50;D=2;NT=0;GOSUB
   P;RETURN
42 E=0;F=0;FOR N=1TO 900;X=
   X-1;F=F+JY{J};H=F÷2;IF H<
   0IF N>30H=H×{N-30}
44 G=E+*{N}+H;Y=G-35;E=G-
   *{N};IF G<1GOSUB 52;RETURN
46 BOX X,Y,1,1,3;IF H F=0
48 NEXT N
50 LINE C-1,-31,4;LINE C,-31,
   D;LINE C-1,-34,D;LINE C-2,
   -32,4;LINE C+2,-32,D;LINE
   C+3,-33,D;LINE C-1,-33,D;
   LINE C+2,-34,D;LINE C+1,-34,
   D;RETURN
52 Q=0;IF X<-58RETURN
54 IF X<A+2IF X>A-3RETURN
56 IF X<B+2IF X>B-3RETURN
58 NT=-1;Q=1;&{23}=255;&{21}=
   255;LINE X,-40,4;FOR N=1
   TO 12;FC=12;LINE RND {50}
   -25+X,RND {40}-35,3;FC=BC;
   LINE RND {8}-4+X,RND {8}-
   38,3
60 NEXT N;FC=12;NT=0;↓;RETURN
62 FOR N=RTO 0;Z=%{N}÷256;
   IF Z=13N=0;GOTO 66
64 MU=Z;IF TR{J}N=0
66 NEXT N;NT=0;RETURN
70 NT=0;J=1;PRINT ♡ FROG LEAP♡;
   PRINT ♡ B&D IBACH  #PLYRS?
```

more . . .

Knob to detur 1 or 2 plrs
TR to set   *HOLD*   *A/B*
no tape

FROG LEAP {cont.}

```
72 CX=-30;PRINT I,;I=1;K=2;
   IF KN{1}>0I=2;K=3
74 IF TR{1}=0GOTO 72
76 P=50;*{51}=0;*{52}=0;
   RETURN
78 *{50+J}=*{50+J}+1
80 CX=-25;FOR N=1TO I;PRINT
   *{50+N},;NEXT N;CX=39;TV=
   93+2xJ;IF *{51}<1SIF *{52}
   <1SRETURN
82 CX=-25+Jx48;PRINT ▽*
```

SZ=104

Before making your final copy
on tape, enter the following
numbers into the first 44 loc-
ations of the *-string. Do it
with a direct command like
this: FOR N=1TO 44;INPUT *{N};
NEXT N

{read down}	30	-11
5	29	-19
9	29	-90
12	28	
14	28	
16	27	
18	27	
20	26	
21	25	
23	24	
24	23	
25	21	
26	20	
27	18	
27	16	
28	14	
28	12	
29	9	
29	5	
30 ↗	0 ↗	
30	-5	

How to play FROG LEAP

Use hand control 1, or, for 2
players, use hand controls 1 & 2.
When the frog appears on the
right bank, pull your trigger to
begin his leap. Your object is
to make him land on the first
rock. He must land right in the
middle of the rock or the poor
guy will slip off.
If you think he needs to go
higher to get there, push the
joystick forward. To bring him
down, pull it back. Motions to
the right or left have no effect.
Repeat the procedure to get to
the next rock, and then to the
left bank.
At this point player 2 should
trigger to set up his turn, or,
if playing alone, player 1
should trigger.
The game ends when a score of
15 is achieved.

Notes on the program

stmts 2-3 music player
      7-10 the tunes
      11-12 game and round initiation
      13-30 do the jumps
      32-40 draw the scene
      42-48 compute trajectory
         50 draw the frog
      52-60 decide the success of the
            leap and do splash
      62-66 another music player
      70-76 game initialization
      78-82 score updating
The music playing routine at stmts
2-3 seems to overlap music with line
drawing {stmts 32&38}. This is done
by looking in %{20094} to see if it
is time to load the next tone yet.
If %{20094}÷256 is non-zero, instead
of trying to issue "MU=" {which would
pause}, we RETURN to the line draw-
ing.