

# the SoftSide™ Sampler

TRS-80™ ENTERTAINMENT PROGRAMS

SOFTSIDE PUBLICATIONS

Edited by Joan Witham



HAYDEN

510

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SOFTSIDE™  
SAMPLER:**

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# INTRODUCTION

The book you hold in your hands is the first of a proposed series for the computer hobbyist. It contains exciting programs excerpted from *SoftSide* magazine. The programs are presented in a ready-to-type format, chosen to appeal to a wide range of programmers—from the beginner to the advanced computerist.

Herein lies a tantalizing, illustrated sample of short, simple programs and longer, more complex games and adventures from *SoftSide*.

*SoftSide* magazine is unique in both the publishing and computer business. From its humble beginnings in October 1978, when it consisted of two workers operating out of the basement of the publisher's home, it has grown to a magazine with over 15,000 subscribers and a staff of more than a dozen people. The original *SoftSide* was a digest-sized publication dedicated to TRS-80® programming. Now it is a full-sized, glossy-papered magazine that publishes programs and advice for owners of TRS-80s®, Apples, and Ataris, with occasional programs included for other micro-computer systems.

Now in its third year of publication, *SoftSide* is meeting the ever-growing demand for new software and programming information for the increasing market of microcomputer owners. Each issue offers a variety of stimulating game programs for the various microcomputers, plus a healthy dose of utility, educational, and business programs to meet the needs of all its readers. The serious programmer will find articles explaining the workings of his computer and how to make it do new and different tasks.

*SoftSide*'s subscribers come from all parts of the world, from Saudi Arabia to Switzerland. Some buy the magazine and type in the programs themselves, while others take advantage of the opportunity to receive the magazine not only in printed form but accompanied by either a disk or a cassette containing all the programs pertaining to their computer, ready to run.

This book should give you an idea of what *SoftSide* includes. It does not contain the advice and support for the learning programmer—beginner or advanced—that the magazine prints as a matter of course in each issue. If the programs that lie between the covers pique your interest, then the magazine itself should be an affair of fascination. But see for yourself. We feel the programs will do the talking.

# CONTENTS

<i>Around the Horn</i> .....	1
<i>Barrier</i> .....	11
<i>Battle Royal</i> .....	16
<i>Battleship</i> .....	20
<i>Bomber</i> .....	25
<i>Calculated Risk</i> .....	27
<i>Crazy Eights</i> .....	32
<i>Cyclejump</i> .....	39
<i>Digital Downs</i> .....	42
<i>Drag Race</i> .....	45
<i>Engineer</i> .....	47
<i>Entrapment</i> .....	50
<i>Goblins</i> .....	52
<i>Isolate</i> .....	61
<i>Jigsaw</i> .....	64
<i>Kaleidoscope</i> .....	67
<i>Kronen</i> .....	68
<i>Letter Crunch</i> .....	73
<i>Magical Journey</i> .....	77
<i>Match Game</i> .....	82
<i>Moving Maze</i> .....	88
<i>Nim</i> .....	91
<i>Parachute</i> .....	94
<i>Picture Puzzles</i> .....	97
<i>Play it Again, Sam</i> .....	101
<i>Sonic Torpedoes</i> .....	104
<i>Spelling Bee</i> .....	106
<i>Super Pachinko</i> .....	110
<i>Tenpin Bowling</i> .....	115

# AROUND THE HORN

*By Rev. George Blank*

The discovery of gold at Sutter's Mill in 1849 triggered a hurried migration to California that lasted for several years. While few prospectors struck it rich, many shippers did by shipping men and supplies to California. For instance, records show that flour sold for as high as \$44.00 a barrel. The highest freight and passenger rates went to the fastest ships, and three of the fastest were the *Surprise*, the *Flying Cloud*, and the *Challenge*.

The *Surprise* was owned by A. A. Low and Brother, and her captain was Phillip Dumaresq. This clipper, displacing 1,261 tons, sailed in December 1849 on a record-breaking run to San Francisco of 96 days, 15 hours.

The high demand for fast shipping, not only in the California trade but in the transatlantic trade to Liverpool and the China tea and spice trade as well, led to the golden age of the clipper ship. Two of the greatest were launched within weeks of each other in 1851 and raced to California amidst great publicity. They were the *Flying Cloud* and the *Challenge*.

The *Flying Cloud*, owned by Grinnel, Minturn and Company, was captained by Josiah Cressy. This ship of 1,782 tons left on June 2, 1851, and set a new record for the California trade of 89 days and 21 hours. This record stood for several years, partly due to stormy weather that moved the ship to record-breaking speeds of over 300 miles a day, several times. (The ship did suffer damage to her masts and rigging on the run.)

The *Challenge* sailed a few weeks later and ran into very calm weather, leading to a disappointing but still impressive time of 108 days. Captained by Bob "Bully" Waterman, the *Challenge* was the largest ship of her day at 206 tons and was owned by N.L. & G. Griswold.

This computer program tampers with history a little to allow the three ships to sail from New York on the same day in a race to San Francisco. [You will captain one of the ships and attempt to find favorable winds and currents that will allow you to get to San Francisco first. It is by no means certain you will arrive in San Francisco.] The passage around Cape Horn is dangerous, and many vessels were wrecked there. If you try to sail through the doldrums at an angle and have bad luck, you could spend months right there.

The computer will display a map of North and South America, with New England indicated by the letter *N* and San Francisco by the letter *S*. Your position will be indicated by an exclamation mark and that of the other vessels by the first letter of their names, assuming that they are not in the same square. To win, all you have to do is sail your ship into the square containing the *S* in the fewest days. As soon as you enter any point in that square, the computer will print an arrival notice.

You will begin each turn by indicating the course you wish to sail. While the computer asks for a number, it also will respond to *N*, *E*, *S*, and *W* for north, east, south, and west.

Once you have entered a course, the computer will display your ship, the ocean, any land in sight from the bow, and your topmast staysail. The size and position of your sail will indicate the tack you are on. The wind comes across the side of your ship opposite the sail. The three sizes of sail indicate that you are close hauled (sailing into the wind), on a reach (wind coming from the side), or running (wind at your back). The larger the sail, the faster you are going.

Ships cannot sail directly into the wind and yours is no exception. In fact, it will not sail closer than 45 degrees to the direction from which the wind is coming. The computer will automatically change your course if the wind shifts against you, and change it back when the wind changes back. Should you wish to make a course correction, you may press *Z* for a 22.5-degree turn to starboard (right for you landlubbers) or press */* for a turn to port. You will find it especially helpful to keep one finger on the *Z* and one on the */* when you are making the passage around Cape Horn.

In the center of the screen, directly above the waves, the computer will display any land that is in sight. Don't count on seeing land before you run aground! Sometimes you will see it in time and sometimes not. It is safer (but sometimes slower) to stay away from the coast completely.

There are some navigational aids provided by the computer. You have a compass in the center of the ship and a nameplate under it. When the computer accepts a course change, it will display "PORT" or "STARB'D" where the nameplate is. At the bottom left is information on the direction the wind is coming from and the wind speed. The bottom right displays the ship's calendar and your last navigational position. Expert players will want to depend on this latitude and longitude display extensively, for the map and land displays give only a rough indication. As a help to players, I have included a table of ocean currents, a table of climatic regions, and some notices to mariners, all of which relate to the latitude and longitude.

Landlubbers may assume that a ship will sail in the direction she is pointed, but "it ain't necessarily so." Two other factors affect your course: leeway and current. Leeway is the result of the wind blowing you off course in the direction it is blowing. Current carries you in the direction the water is flowing; most globes and atlases list ocean currents to give you an idea of the direction. The globe may be easier to understand than the table provided, as the simulation is reasonably accurate.

Weather also is a factor, but there is a trick to it: the computer only checks the region at the beginning of each turn. So you can wait just north or south of the doldrums for a good wind and possibly get completely across without getting stuck. If you think this is cheating, enter this line in your program:

```
1110 GOSUB 7000:GOSUB 7600
```



The region will then be checked on each half day, but the game may take longer.

Just in case some sharpy tries to compare my latitude and longitude with the atlas, remember that they don't make very accurate atlases these days! Besides, haven't you ever heard of the continental drift theory? Bon voyage!

### Notices to Mariners

1. Observe special caution in Long Island Sound, Eastern U.S. Coast at 40 degrees north latitude. Onshore current is treacherous, especially when combined with southerly winds.
2. The Cape Horn Passage is extremely dangerous. For safe passage, remain south of 55 degrees, 30 minutes, until longitude 72 degrees west and south of 46 degrees latitude until longitude 84 degrees west. Dangerous polar ice is virtually certain south of 64 degrees south latitude.
3. The Caribbean Sea contains many unmarked reefs and is especially hazardous without local knowledge.
4. Vessels are advised to maintain good distance from the Northeast Coast of South America. Light winds and flat calms, combined with unfavorable currents, make long delays likely.
5. Vessels bound for California are advised to set course well west of the Southern Coast of Mexico. Light winds make delays likely.
6. Beware of all capes. Reefs often project out from them and make sudden shipwreck likely. (Computer only checks for land due north, east, south, and west. If you approach a cape from the northeast, for example, you will run aground before any land is displayed.

#### *Ocean Currents*

<i>Name</i>	<i>North</i>	<i>South</i>	<i>West</i>	<i>East</i>
Japan Current	48N	-32N	132W	—
Japan Current	32N	-19.2N	129W	-114W
Gulf Stream	48N	-32N	—	39W
Gulf Stream	32N	-19.2N	—	63W
Canaries Current	48N	-28N	39W	—
N. Equatorial Current	19.2N	- 8N	—	—
Guinea Current	8N	- 0	24W	—
S. Equatorial Current	0	- 9.2S	—	—
Humbolt Current	9.2S	-27.6S	102W	—
Brazil Current	9.2S	-27.6S	—	48W
Benguela Current	9.2S	-27.6S	9W	—
West Wind Drift	44.2S	-64.4S	—	—



```

2000 R=N(C,4):T=0:N(C,0)=N(C,12)
2009 6"PORT TACK
2010 IF N(C,0)>N(C,11) THEN T=N(C,0)-N(C,11):T(C,2)=2:IF T=1 THE
N T=2:N(C,0)=N(C,0)+1
2019 6"STARBOARD TACK
2020 IF N(C,0)<N(C,11) THEN T=N(C,11)-N(C,0):T(C,2)=1:IF T=1 THE
N T=2:N(C,0)=N(C,0)-1
2025 IF N(C,0)>15 THEN N(C,0)=0
2030 IF T=0 THEN N(C,0)=N(C,0)-1:GOTO 2020
2035 IF N(C,0)<0 THEN N(C,0)=16+N(C,0)
2040 IF T>8 THEN T=16-T
2050 IF T>1 THEN M=.6:T(C,1)=1:IF T>3 THEN M=1:T(C,1)=2:IF T>5 T
HEN M=1.2:T(C,1)=3
2052 IF T(C,1)<>S(C,1) OR T(C,2)<>S(C,2) THEN GOSUB 2500
2055 M=M*N(C,5)*N(C,10)/8:GOTO 8050
2060 D=N(C,0):H=N(C,1):V=N(C,2):L=W(R,4)+8:IF L>15 THEN L=L-16
2070 H=H+(H(D)*M)/6+H(L)/600*N(C,10)+N(C,6)/30
2080 V=V+(V(D)*M)/10+V(L)/1000*N(C,10)+N(C,7)/50
2085 GOSUB 2400
2090 N(C,1)=H:N(C,2)=V:N(C,3)=INT(V)*64+INT(H)
2100 IF N(C,3)=145 THEN 2600
2190 RETURN
2200 CLS
2210 PRINT
2220 PRINT"SOS ...---... SOS ...---... SOS"
2230 PRINT
2240 PRINT" S H I P W R E C K I"
2250 PRINT
2260 PRINT"THE CLIPPER ";C$(C);" WAS LOST AT SEA WITH ALL HANDS"
2265 GOSUB 2700
2270 N(C,0)=-10:E(C,1)=2:E(C,2)=H:E(C,3)=V:E(C,4)=D(C):N(C,3)=99
2275 PRINT"LAST REPORTED POSITION "":PRINT USING F$;LA;:PRINT US
ING G$;LO
2280 FOR A=1TO2000:NEXT A
2290 WR=1:RETURN
2299 6"END OF GAME
2300 CLS:PRINT:PRINT" G A M E O V E R":PRINT
2310 FOR C=1TOP
2320 IF E(C,1)=2 THEN 2350
2330 PRINT"THE CLIPPER ";C$(C);" SAILED TO SAN FRANCISCO IN";E(
C,4);"DAYS"
2340 PRINT:GOTO 2370
2350 PRINT"THE ";C$(C);" WAS LOST AT SEA AFTER";E(C,4);" DAYS"
2360 H=E(C,2):V=E(C,3):GOSUB 2700:PRINT"NEAR "":PRINT USING F$;
LA;:PRINT USING G$;LO
2365 PRINT
2370 NEXT C
2380 INPUT"(PRESS ENTER FOR NEW GAME)";A$
2390 RUN
2400 B$="### DAYS ":PRINT@ 951,"";
2410 PRINT USING B$;D(C);
2420 GOSUB 2700
2430 PRINT@ 1005,"";
2440 PRINT USING F$;LA;
2450 PRINT USING G$;LO;
2490 RETURN
2500 IF S(C,2)=T(C,2) THEN 2540
2510 IF S(C,2)=2 THEN X=6*S(C,1)+1:FOR B=15392TO15904 STEP 64:FO
R A=B+1 TO B+X:POKE A,128:NEXT A:X=X+1:NEXT B
2520 IF S(C,2)=1 THEN X=6*S(C,1)+1:FOR B=15392TO15904 STEP 64:FO
R A=B-X TO B-1:POKE A,128:NEXT A:X=X+1:NEXT B
2530 GOTO 8050
2540 IF T(C,1)>S(C,1) THEN 2530
2550 IF T(C,2)=2 THEN X=6*S(C,1)+9:Y=6*T(C,1):FOR B=15392TO15904
STEP 64:FOR A=B+Y TO B+X:POKE A,128:NEXT A:Y=Y+1:NEXT B
2560 IF T(C,2)=1 THEN X=6*S(C,1)+9:Y=6*T(C,1):FOR B=15392TO15904
STEP 64:FOR A=B-X TO B-Y:POKE A,128:NEXT A:Y=Y+1:NEXT B

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THE *SOFTSIDE* SAMPLER

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2570 GOTO 8050
2600 CLS:PRINT
2610 PRINT"THE CLIPPER ";C$(C);" HAS JUST ARRIVED IN SAN FRANCIS
CO"
2620 PRINT"AND IS UNLOADING CHOICE EASTERN MERCHANDISE AT THE WH
ARF.":PRINT
2630 PRINT" THIS FAST SHIP,";D(C);" DAYS OUT OF NEW YORK, IS NO
W"
2635 PRINT"BOOKING PASSENGERS AND FREIGHT FOR NEW YORK."
2640 E(C,1)=1:E(C,4)=D(C):N(C,0)=-10
2650 PRINT:PRINT"TOUCH ANY KEY TO CONTINUE"
2660 A$=INKEY$:IF A$="" THEN 2660
2690 GOTO1000
2700 IF V>6 THEN 2740
2710 F$=" ##.## N "
2720 LA=(6-V)*8.2
2730 GOTO 2760
2740 F$=" ##.## S "
2750 LA=(V-6)*9.2
2760 G$=" ##.## W"
2770 LO=174-H*3
2790 RETURN
2999 ' INSTRUCTIONS
3000 CLS:PRINT
3010 PRINT" THIS GAME SIMULATES A CLIPPER SHIP RACE AROUND THE
HORN"
3020 PRINT"DURING THE CALIFORNIA GOLD RUSH. tHE FIRST PERSON TO
GO"
3030 PRINT"FROM NEW YORK (N) TO SAN FRANCISCO (S) WINS."
3040 PRINT:PRINT" TO SAIL YOUR SHIP, AT THE BEGINNING OF A TU
RN, ENTER"
3050 PRINT"YOUR INTENDED COURSE AS DIRECTED. IF YOU WANT TO CHAN
GE"
3100 PRINT"COURSE DURING A TURN, PRESS / (OR S) FOR A TURN TO"
3110 PRINT"STARBOARD (RIGHT) OR PRESS Z (OR P) TO TURN TO PORT
(LEFT).":PRINT
3230 PRINT" ANTARCTIC ICE BEGINS AT 64.4 DEGREES SOUTH. CAPE HO
RN"
3240 PRINT"EXTENDS FROM 69 DEGREES WEST TO 74 DEGREES WEST AT 55
.5"
3250 PRINT"DEGREES SOUTH. IF YOU TOUCH ANY OF THESE BOUNDARIES O
R ANY"
3260 PRINT"OTHER LAND MASS, YOU WILL SHIPWRECK.":PRINT:INPUT" (
PRESS ENTER)";A$
3270 CLS:PRINT:PRINT" THE DOLDRUMS EXTEND FROM 8.2 DEGREES NOR
TH TO 2.8 DEGREES"
3280 PRINT"SOUTH. IF YOU FINISH A TURN IN THE DOLDRUMS, IT MAY T
AKE"
3290 PRINT"MONTHS TO GET OUT BECAUSE OF LIGHT WINDS."
3300 PRINT:PRINT" THE COMPUTER CONSIDERS ANY POSITION BETWEEN
120 AND 123"
3310 PRINT"DEGREES WEST AND 24.6 TO 32.8 DEGREES NORTH TO BE A S
AFE"
3320 PRINT"ARRIVAL IN SAN FRANCISCO. YOUR POSITION IS AFFECTED B
Y"
3330 PRINT"WIND, CURRENT, LEEWAY, AND YOUR SAIL POSITION."
3520 PRINT"SEE AN ATLAS, GLOBE, OR NAVIGATION CHARTS FOR APPROXI
MATE"
3530 PRINT"DESCRIPTION OF WEATHER CONDITIONS AND CURRENT."
3540 PRINT:INPUT" (PRESS ENTER TO BEGIN)";A$
3550 RETURN
3999 'COMMANDS
4000 C$=INKEY$
4010 IF C$="Z" THEN C$="P"
4020 IF C$="P" THEN N(C,12)=N(C,12)-1
4030 IF N(C,12)<0 THEN N(C,12)=15

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## AROUND THE HORN

7

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4035 IF C$="/" THEN C$="S"
4040 IF C$="S" THEN N(C,12)=N(C,12)+1
4050 IF N(C,12)>15 THEN N(C,12)=0
4060 IF C$="P" THEN PRINT@ 985," PORT ";
4070 IF C$="S" THEN PRINT@ 985," STARBOARD ";
4090 RETURN
4999 'SHORELINE
5000 D=N(C,0)
5010 ON D+1 GOSUB 5100,5110,5120,5130,5140,5150,5160,5170,5180,5
190,5200,5210,5220,5230,5240,5250
5020 PRINT@ 576,A$;
5090 RETURN
5100 A=DW:U=2:GOSUB 5700:A=DN:U=32:GOSUB 5700:A=DE:U=61:GOSUB 57
00:RETURN
5110 A=DN:U=16:GOSUB 5700:A=DE:U=58:GOSUB 5700:RETURN
5120 A=DN:U=10:GOSUB 5700:A=DE:U=54:GOSUB 5700:RETURN
5130 A=DN:U=6:GOSUB 5700:A=DE:U=48:GOSUB 5700:RETURN
5140 A=DN:U=2:GOSUB 5700:A=DE:U=32:GOSUB 5700:A=DS:U=61:GOSUB 57
00:RETURN
5150 A=DE:U=16:GOSUB 5700:A=DS:U=58:GOSUB 5700:RETURN
5160 A=DE:U=10:GOSUB 5700:A=DS:U=54:GOSUB 5700:RETURN
5170 A=DE:U=6:GOSUB 5700:A=DS:U=48:GOSUB 5700:RETURN
5180 A=DE:U=2:GOSUB 5700:A=DS:U=32:GOSUB 5700:A=DW:U=61:GOSUB 57
00:RETURN
5190 A=DS:U=16:GOSUB 5700:A=DW:U=58:GOSUB 5700:RETURN
5200 A=DS:U=10:GOSUB 5700:A=DW:U=54:GOSUB 5700:RETURN
5210 A=DS:U=6:GOSUB 5700:A=DW:U=48:GOSUB 5700:RETURN
5220 A=DS:U=2:GOSUB 5700:A=DW:U=32:GOSUB 5700:A=DN:U=61:GOSUB 57
00:RETURN
5230 A=DW:U=16:GOSUB 5700:A=DN:U=58:GOSUB 5700:RETURN
5240 A=DW:U=10:GOSUB 5700:A=DN:U=54:GOSUB 5700:RETURN
5250 A=DW:U=6:GOSUB 5700:A=DN:U=48:GOSUB 5700:RETURN
5700 Q=A*A
5710 IF Q>3 THEN 5790
5720 B=SQR(4-Q)
5730 X=ATN(B/A)
5740 IF X>2 THEN X=2
5750 X=INT(X*32)
5780 GOSUB 5800
5790 RETURN
5800 Y=U-X:Z=U+X
5805 IF A<1 THEN AA=10-10*A:Y=Y-AA:Z=Z+AA
5810 IF Y>64 AND Z>64 THEN 5890
5820 IF Y<1 AND Z<1 THEN 5890
5830 IF Y<1 THEN Y=1
5840 IF Z>64 THEN Z=64
5850 IF U<32 AND Z>U+8 THEN Z=U+8
5860 IF U>32 AND Y<U-8 THEN Y=U-8
5870 L$="^":IF V>3 THEN L$="&":IF V>7 AND H<32 THEN L$="#"
5875 IF V>10 AND A=DS THEN L$="-"
5880 GOSUB 5900
5890 RETURN
5900 A=Z-Y:B$="":FOR B=1TOA:B$=B$+L$:NEXT:AL$="":AR$=""
5910 AL$=LEFT$(A$,Y-1)
5920 AR$=RIGHT$(A$,64-Z)
5930 A$=AL$+B$+AR$
5990 RETURN
6999 'DETERMINE REGION AND OCEAN CURRENTS
7000 H=N(C,1):V=N(C,2):N(C,6)=0:N(C,7)=0:IF V>2.5 THEN 7100
7010 N(C,4)=1
7020 IF V<2 AND H>30 AND H<45 THEN N(C,6)=1.9:N(C,7)=-.2
7030 IF H>45 THEN N(C,6)=-.4:N(C,7)=.8
7040 IF H>14 AND H<18 THEN N(C,7)=1
7090 GOTO 7490
7100 IF V>5 THEN 7200
7110 N(C,4)=2

```

```

7120 IF V>3.6 THEN N(C,6)=-1.2:GOTO 7190
7130 IF H>15 AND H<20 THEN N(C,7)=.7
7140 IF H>32 AND H<37 THEN N(C,7)=-1
7190 GOTO 7490
7200 IF V>6.3 THEN 7300
7210 N(C,4)=3
7220 IF H>45 THEN N(C,6)=1.3
7290 GOTO 7490
7300 IF V>9 THEN 7400
7310 N(C,4)=4
7320 IF V<7 THEN N(C,6)=-2.1:GOTO 7390
7330 IF H<42 AND H>32 THEN N(C,7)=1.5
7340 IF H>48 THEN N(C,7)=-2
7350 IF H>24 AND H<31 THEN N(C,7)=-1.8
7390 GOTO 7490
7400 N(C,4)=5
7410 IF V>10.8 THEN N(C,6)=2.2:GOTO 7490
7420 IF H>27 AND H<37 THEN N(C,7)=-1.8
7430 IF H>37 AND H<41 THEN N(C,7)=1.4
7490 RETURN
7499 'WEATHER BY REGION
7500 W(1,2)=RND(6)-1:IF W(1,1)>30 THEN W(1,2)=-W(1,2)
7510 A=ABS(W(1,2)):W(1,3)=RND(7)*RND(A+1)+RND(15)-1:W(1,4)=RND(16)-1
7520 W(2,2)=RND(6)-1:IF W(2,1)>29.5 THEN W(2,2)=-W(2,2)
7530 A=ABS(W(2,2)):W(2,3)=RND(5)*RND(A+1):IF W(2,3)<10 THEN W(2,3)=W(2,3)+RND(15)
7535 W(2,4)=2+RND(8)-RND(8):IF W(2,4)<0 THEN W(2,4)=W(2,4)+16
7540 W(3,2)=RND(3)-1:IF W(3,1)>29 THEN W(3,2)=NW(3,2)
7550 A=ABS(W(3,2)):W(3,3)=RND(3)*A+RND(3)-1:W(3,4)=RND(16)-1
7560 W(4,2)=RND(6)-1:IF W(4,1)>30 THEN W(4,2)=-W(4,2)
7570 A=ABS(W(4,2)):W(4,3)=RND(6)*A:W(4,4)=6+RND(8)-RND(8):IF W(4,4)<0 THEN W(4,4)=15
7575 IF W(4,3)<10 THEN W(4,3)=W(4,3)+RND(21)-1
7580 W(5,2)=RND(3)+2:IF W(5,1)>29.7 THEN W(5,2)=-W(5,2)
7590 A=ABS(W(5,2)):W(5,3)=(3+RND(7))*A:W(5,4)=11+RND(8)-RND(8):IF W(5,4)>15 THEN W(5,4)=W(5,4)-16
7595 FOR A=1TO5:W(A,1)=W(A,1)+W(A,2)/7:NEXT:RETURN
7599 'CURRENT PLAYER'S WEATHER
7600 R=N(C,4):N(C,8)=W(R,1)
7610 N(C,9)=W(R,2)/50
7620 N(C,10)=W(R,3)
7630 N(C,11)=W(R,4)
7690 RETURN
7699 'HOURLY CHANGE IN WEATHER
7700 N(C,8)=N(C,8)+N(C,9)
7710 N(C,10)=N(C,10)+RND(3)-2:IF N(C,10)<0 THEN N(C,10)=0
7720 IF N(C,8)<28 AND N(C,9)<-.09 THEN N(C,10)=N(C,1)+RND(5):A=RND(12):IF (A+CL)>10 THEN N(C,9)=-N(C,9)
7730 N(C,11)=N(C,11)+RND(3)-2
7740 IF N(C,11)>15 THEN N(C,11)=0
7750 IF N(C,11)<0 THEN N(C,11)=15
7790 RETURN
7999 'VIEW FROM BOW
8000 CLS
8010 FOR A=16128TO16382:POKE A,191:NEXT
8020 FOR A=16139TO16146:POKE A,128:POKE A+32,128:NEXT
8030 POKE 16095,190:POKE 16096,189
8040 GOTO 2000
8050 IF T(C,2)=1 GOSUB 8100
8060 IF T(C,2)=2 GOSUB 8150
8070 S(C,1)=T(C,1)
8080 S(C,2)=T(C,2)
8090 RETURN
8099 'SAIL FOR STARBOARD TACK
8100 X=6*T(C,1):FOR B=15392TO15904 STEP 64:FOR A=B-X TO B:POKE A

```

```

,191:NEXT A:X=X+1:POKE B-X,186
8110 NEXT B:RETURN
8149 'SAIL FOR PORT TACK
8150 X=6*T(C,1):FOR B=153 92TO15904 STEP 64:FOR A=B TO B+X:POKE A
,191:NEXT A:X=X+1:POKE B+X,181
8160 NEXT B:RETURN
8199 'WAVES
8200 W=W+1:IF W=4 THEN W=1
8210 PRINT@ 640,W$(W);W$(W);W$(W);W$(W);
8220 W$(0)=LEFT$(W$(W+1),15)
8230 PRINT@ 704,W$(W+1);W$(0);:PRINT@ 737,W$(0);W$(W+1);
8240 W$(0)=LEFT$(W$(W+2),8)
8250 PRINT@ 779,W$(0);:PRINT@ 811,W$(0);
8260 GOSUB 4000
8290 RETURN
8299 'DATA DISPLAY
8300 D=N(C,0):PRINT@ 862,D$(D);
8310 PRINT@ 985,C$(C);
8320 PRINT@ 896,"WIND ";
8330 PRINT@ 960,D$(N(C,1));
8340 B$="### KNOTS ";
8350 PRINT USING B$;N(C,10);
8390 RETURN
8399 'LAND TEST - C(0)=LAND NEARBY 1=N 2=E 3=S 4=W
8400 H=N(C,1):V=N(C,2):X=INT(H):Y=INT(V)
8410 DW=H:DN=V:DE=64-H:DS=13-V
8419 'NORTH BOUNDARY
8420 IF H<16 OR H>44 THEN 8550
8430 IF H<44 THEN DN=V-8
8435 IF H<42 THEN DN=V-9
8440 IF H<38 THEN DN=V-10
8450 IF H<35 THEN DN=V-12
8460 IF H<33.5 THEN DN=V-11
8465 IF X>30 AND X<34 THEN DN=V-11
8470 IF H<31 THEN DN=V-8
8475 IF H<29 THEN DN=V-6
8480 IF H<27 THEN DN=V-5
8485 IF H<20 THEN DN=V-(X-15)
8490 IF H<34 OR V>8 THEN 8550
8499 'EASTERN ATLANTIC
8500 IF X<44 THEN DN=V:DS=6-V
8505 IF X=39 THEN DN=V
8510 IF X<39 THEN DN=V-1
8520 IF X<35 THEN DN=V-2
8530 IF X>41 AND X<45 THEN DS=7-V
8549 'WEST COAST
8550 IF H>32 THEN 8600
8555 IF Y=12 THEN 8690
8560 IF Y<5 THEN DE=(15+Y)-H:GOTO 8690
8570 IF Y=11 THEN DE=33.5-H
8575 IF Y<11 THEN DE=31-H
8580 IF Y<8 THEN DE=29-H
8585 IF Y=5 THEN DE=27-H
8590 GOTO 8690
8599 'EAST COAST
8600 IF Y<12 THEN DW=H-36
8610 IF Y=9 THEN DW=H-38
8620 IF Y=8 THEN DW=H-42
8630 IF Y=7 THEN DW=H-44
8640 IF Y=6 THEN DW=H-43
8650 IF Y=5 THEN DW=H-36
8660 IF Y<5 AND Y>1 THEN DW=H-33.5
8665 IF Y=1 THEN DW=H-35
8670 IF Y=0 THEN DW=H-39
8680 GOSUB 8200
8690 FOR A=0TO4:C(A)=0:NEXT

```

THE *SOFTSIDE* SAMPLER

```

8700 IF DN<2 THEN C(1)=1:C(0)=1
8710 IF DE<2 THEN C(2)=1:C(0)=1
8720 IF DS<2 THEN C(3)=1:C(0)=1
8730 IF DW<2 THEN C(4)=1:C(0)=1
8740 A$="":FOR A=1TO64:A$=A$+" ":NEXT:IF C(0)=0 THEN 8790
8750 GOSUB 8200:GOSUB 5000
8760 IF DN<0 OR DE<0 OR DS<0 OR DW<0 THEN 2200
8790 RETURN
8999 'MAP
9000 CLS:A=15360
9010 POKE A+16,162:FOR B=A+17TOA+33:POKE B,191:NEXT:POKE A+34,15
1:FOR B=A+35TOA+37:POKE B,143:NEXT:POKE A+38,142
9020 A=A+64:POKE A+17,139:FOR B=A+18TOA+32:POKE B,191:NEXT:POKE A
+33,159:POKE A+34,159
9030 A=A+64:POKE A+18,162:FOR B=A+19TOA+32:POKE B,191:NEXT:POKE
A+33,157
9040 A=A+64:POKE A+19,131:FOR B=A+20TOA+25:POKE B,191:POKE B+6,1
43:NEXT:POKE A+20,175:POKE A+21,175:POKE A+28,135:POKE A+32,175>
POKE A+33,145
9050 A=A+64:POKE A+21,133:POKE A+22,143:POKE A+23,143:FOR B=A+24
TO A+26:POKE B,191:NEXT:POKE A+33,130
9060 A=A+64:POKE A+26,139:POKE A+27,173:FOR B=A+29TOA+38:POKE B,
176:NEXT
9070 A=A+64:FOR B=A+28TOA+41:POKE B,191:NEXT:POKE A+42,180:POKE
A+43,144
9080 A=A+64:POKE A+28,138:FOR B=A+29TOA+43:POKE B,191:NEXT
9090 A=A+64:FOR B=A+31TOA+36:POKE B,191:POKE B+64,191:POKE B+128
,191:POKE B+5,191:NEXT:POKE A+41,143:POKE A+42,135
9100 A=A+64:POKE A+37,131
9110 A=A+64:POKE A+36,128
9120 A=A+64:POKE A+31,131:POKE A+32,191:POKE A+33,191:POKE A+34,
181:POKE A+35,148
9130 PRINT@ N(1,3),"C";PRINT@ N(2,3),"F";PRINT@ N(3,3),"S";PR
INT@ 99,"N";PRINT@ 145,"S";
9140 PRINT@ N(C,3),"!";
9150 PRINT@ 832,"CLIPPER ";C$(C);" ";
9170 PRINT"WINDS ";D$(N(C,11));" AT";N(C,10);" KNOTS"
9230 PRINT@ 896,"1-N 2-NE 3-E 4-SE 5-S 6-SW 7-W 8-NW"
9240 PRINT@ 960,"CAPTAIN, WHAT HEADING DO YOU WISH (0-8)";
9250 A$=INKEY$:IF A$="" THEN 9250
9252 IF A$="N" THEN A$="1"
9253 IF A$="E" THEN A$="3"
9254 IF A$="S" THEN A$="5"
9255 IF A$="W" THEN A$="7"
9260 A=VAL(A$):IF (A<1)OR(A>8) THEN 9250
9270 N(C,12)=(A-1)*2
9490 RETURN
9999 GOTO 9999
10000 DATA " N ",0,-1,"NNE",.4,-.9," NE",.7,-.7,"ENE",.9,-.4
10010 DATA " E ",1,0,"ESE",.9,.4," SE",.7,.7,"SSE",.4,.9
10020 DATA " S ",0,1,"SSW",- .4,-.9," SW",- .7,-.7,"WSW",- .9,-.4
10030 DATA " W",-1,0,"WNW",- .9,-.4," NW",- .5,-.7,"NNW",- .4,-.9
10040 DATA " CHALLENGE ","FLYING CLOUD"," SURPRISE "

```



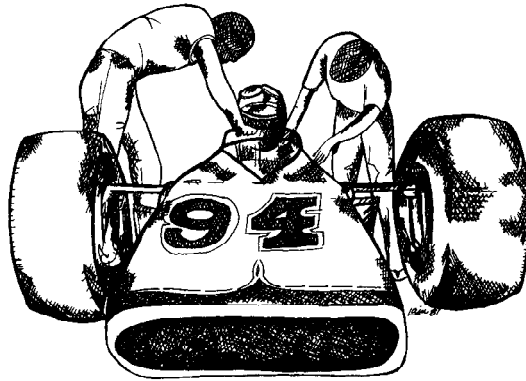
# BARRIER

*By Eric Gordon*

You hear the clap of the starting pistol. As you move out into the center of the track in your super race car, you see your opponent racing toward you. It's now a test of nerve: who will break away first?

Just as you see the whites of his eyes, he breaks away from the collision course but, to your dismay, he leaves a trail of nails behind. You try to steer wide of the deadly spikes, but it's too late. Your tires collapse and at 110 miles per hour your car quickly disintegrates, not to mention you.

Here's BARRIER . . .



```
5 '          *** B A R R I E R ***
          A REAL-TIME GRAPHICS GAME WRITTEN BY ERIC GORDON
          SOUND ROUTINE WORKS IN L.II BASIC AND DISK BASIC
10 CLEAR500:DIMA$(15):DEFINTA-Z:X=0:Y=0:X1=0:Y1=0:XP=0:YP=0:FORI
=1TO10:FORJ=1TO3:READZ:A$(I)=A$(I)+CHR$(Z):NEXTJ,I
20 DATA32,170,32,179,179,149,179,179,149,181,176,149,183,179,145
,183,179,145,131,131,149,183,179,149,183,179,149,151,131,149,32,
138,32,141,140,132,140,140,133,32,32,133,140,140,133,141,140,133
,32,32,133,141,140,133,32,32,133,141,140,133
30 B$(CHR$(26)+STRING$(3,24)):FORI=1TO10:A$(I)=A$(I)+B$:FORJ=1TO3
:READZ:A$(I)=A$(I)+CHR$(Z):NEXTJ,I:A$(0)=A$(10):GOSUB490:CLS:GOS
UB710:FORI=1TO100:NEXT:CLS:INPUT"PLAYER 1'S NAME";P1$:INPUT"PLAY
ER 2'S NAME";P2$:PRINT:PRINT
40 PRINT"DO YOU NEED INSTRUCTIONS?"
50 S=USR(8000):S=USR(7000):Q$=INKEY$:IFQ$=""THEN50ELSEIFQ$="Y"TH
EN50
60 PRINT:INPUT"DO YOU WANT THE INVISIBLE OPTION";I$:IFI$="Y"THEN
IN=1:IV=1
70 S=USR(1):INPUT"DO YOU WANT RANDOM OBSTACLES";I$:IFI$="Y"THENR
O=12
80 S=USR(800):INPUT"DO YOU WANT WRAP-AROUND";I$:IFI$="Y"THENW1=1
90 INPUT"DO YOU WANT DIAGONAL MOVEMENT";I$:IFI$="Y"THEN100ELSE11
0
100 DA=12:IFW1=1THENW1=0
```

```

110 S=USR(14356)
120 PRINT"WHICH TRACK DO YOU WANT ( 1 - 3 ) ???";
130 T$=INKEY$:IFT$=""THEN130ELSESET=VAL(T$):CLS
140 CLS:IFS1=10THEN470:IFS2=10THEN480
150 IFS2=10THEN480ELSEX=10:Y=24:X1=110:Y1=24:XX=0:YY=0:XP=0:YP=0
:ONTGOTO170,180,770
160 IFT<LORT>3THEN120
170 PRINT@131,STRING$(58,131);:PRINT@835,STRING$(58,176);:FORI=1
30TO834STEP64:PRINT@I,CHR$(191);:PRINT@I+59,CHR$(191);:NEXTI:GOT
O250
180 CLS:PRINT@22,CHR$(191);STRING$(9,131);CHR$(191);:PRINT@86,CH
R$(191);" ";CHR$(191);:PRINT@86+64,CHR$(191);" "
;CHR$(191);
190 PRINT@194,CHR$(191);STRING$(5,131);CHR$(191);STRING$(5,131);
CHR$(191);STRING$(8,131);" ";STRING$(8,131);:PRINTCHR$(1
91);STRING$(5,131);CHR$(191);STRING$(6,131);CHR$(191);
200 PRINT@258,CHR$(191)+" "+CHR$(191)+" "+CHR$(191)+STRI
NG$(25,32)+CHR$(191)+" "+CHR$(191)+" "+CHR$(191);:PRINT
@323,CHR$(191);:PRINT@374,CHR$(191);:PRINT@388,CHR$(191);:PRINT@
439,CHR$(191);:PRINT@453,CHR$(191);
210 PRINT@504,CHR$(191);:PRINT@518,CHR$(191);:PRINT@569,CHR$(191
);:PRINT@581,CHR$(191);:PRINT@632,CHR$(191);:PRINT@644,CHR$(191
);:PRINT@695,CHR$(191);:PRINT@707,CHR$(191);:PRINT@758,CHR$(191);
:PRINT@726,CHR$(191);
220 PRINTSTRING$(2,26)STRING$(10,176);:PRINT@770,CHR$(191);:PRIN
T@776,CHR$(191);:PRINT@782,CHR$(191);:PRINT@790,CHR$(191);:PRINT
@800,CHR$(191);:PRINT@808,CHR$(191);:PRINT@814,CHR$(191);:PRINT@
821,CHR$(191);
230 PRINT@834,CHR$(191);STRING$(5,176);CHR$(191);STRING$(5,176);
CHR$(191);STRING$(7,176);:PRINTCHR$(191);:PRINT@992-128,CHR$(191
);STRING$(7,176);CHR$(191);STRING$(5,176);CHR$(191);STRING$(6,17
6);CHR$(191);:IFW1=1THENW1=0
240 X=20:Y=25:X1=107:Y1=25
250 IFR0=12THENGOSUB430
260 PRINT@9,A$(S1);:PRINT@52,A$(S2);
270 SET(X,Y):SET(X1,Y1)
280 IFINKEY$=""THEN280ELSEIN=1:IV=1
290 M$=INKEY$:IFM$=""THEN330ELSEIFM$="E"THENXX=0:YY=-1:GOTO330EL
SEIFM$="O"THENXP=0:YP=-1:GOTO360ELSEIFM$="S"THENXX=-1:YY=0:GOTO3
30ELSEIFM$="K"THENXP=-1:YP=0:GOTO360ELSEIFM$="C"THENXX=0:YY=1:GO
TO330ELSEIFM$="."THENXP=0:YP=1:GOTO360
300 IFM$="F"THENXX=1:YY=0:GOTO330ELSEIFM$=";"THENXP=1:YP=0:GOTO3
60ELSEIFIN=0THEN310ELSEIFM$="D"THENIN=-IN:GOTO310ELSEIFM$="L"THE
NIV=-IV:GOTO310
310 IFDA=0THEN330ELSEIFM$="W"THENXX=-1:YY=-1:GOTO330ELSEIFM$="I"
THENXP=-1:YP=-1:GOTO360ELSEIFM$="R"THENXX=1:YY=-1:GOTO330ELSEIFM
$="P"THENXP=1:YP=-1:GOTO330ELSEIFM$="X"THENXX=-1:YY=1:GOTO330ELS
EIFM$=","THENXP=-1:YP=1:GOTO360
320 IFM$="V"THENXX=1:YY=1:GOTO330ELSEIFM$="/"THENXP=1:YP=1:GOTO3
60
330 IF(XX=0)ANDYY=(0)THEN340ELSEIFPOINT(X+XX,Y+YY)THEN390
340 X=X+XX:Y=Y+YY:SET(X,Y):S=USR(2100):IFIN=-1THENRESET(X,Y)
350 GOTO360
360 IF(XP=0)AND(YP=0)THEN370ELSEIFPOINT(X1+XP,Y1+YP)THEN410
370 X1=X1+XP:Y1=Y1+YP:SET(X1,Y1):IFIV=-1THENRESET(X1,Y1)
380 GOTO290
390 PRINT@960,STRING$(63," ");:KL=123:IFW1=1THEN460
400 PRINT@960,P1$;" LOST THIS TIME.";:FORBB=4618TO4368STEP-5:S=U
SR(BB):NEXTBB:S2=S2+1:GOTO140
410 KL=0:IFW1=1THEN460
420 PRINT@960,P2$;" LOST THIS TIME.";:S1=S1+1:FORBB=4618TO4368ST
EP-5:S=USR(BB):NEXTBB:GOTO140
430 FORI=1TORND(75):IFT=1THEN440ELSEW=RND(88)+15:Q=RND(18)+14:GO
TO450
440 W=RND(98)+11:Q=RND(35)+6
450 SET(W,Q):NEXTI:RETURN

```

```

460 IFX>=121THENX=6:GOTO270ELSEIFX<=6THENX=121:GOTO270ELSEIFX1>=
121THENX1=6:GOTO270ELSEIFX1<=6THENX1=121:GOTO270ELSEIFY>=40THENY
=7:GOTO270ELSEIFY1>=40THENY1=7:GOTO270ELSEIFY<=7THENY=40:GOTO270
ELSEIFY1<=7THENY1=40:GOTO270ELSEIFKL=123THEN400ELSE420
470 CLS:PRINTP1$;" WINS THE GAME !!!":FORKL=2300TO2500:S=USR(KL)
:NEXTKL:GOTO650
480 CLS:PRINTP2$" WINS THE GAME !!!":FORKL=2500TO2300STEP-1:S=US
R(KL):NEXTKL:GOTO650
490 MM$="ABCDEFGHIJKLMNPOQRSTUVWXYZ1":II=VARPTR(MM$):JJ=PEEK(II+
1)+256*PEEK(II+2):FORKK=JJTOJJ+26:READCD:POKEKK,CD:NEXT
500 IFPEEK(16396)=201POKE16526,PEEK(II+1):POKE16527,PEEK(II+2)EL
SECMCD"T":DEFUSRO=PEEK(II+1)+256*PEEK(II+2):POKE14308,0
510 RETURN
520 DATA205,127,10,77,68,62,1,105,211,255,45,32,253,60,105,211,2
55,45,32,253,13,16,238,175,211,255,201
530 GOTO530
540 CLS
550 PRINT"HERE ARE THE RULES OF BARRIER:

```

YOU AND YOUR OPPONENT WILL BE DRIVING DIFFERENT CARS BUT THE RULES APPLY TO BOTH OF YOU. YOUR CARS";

```

560 PRINT" WILL BE REPRESENTED
BY TWO SMALL DOTS. ";P1$;" WILL BE ON THE LEFT.
AS YOU MOVE, YOUR CARS WILL LEAVE A TRAIL BEHIND THEM. THE
OBJECT OF THE GAME IS TO DRIVE FOR AS LONG AS YOU CAN WITHOUT
HITTING YOUR OWN TRAIL, YOUR OPPONENTS";
570 PRINT" TRAIL, OR HITTING ONE
OF THE FOUR WALLS AROUND YOU. THE FIRST PERSON TO CRASH IS
THE LOSER. THE PLAYER WHO REACHES A SCORE OF 10 WINS.

```

TO LEARN HOW TO CONTROL YOUR CARS, HIT =ENTER="";:INPUTDUMMEYS:CLS  
580 PRINT"USE THESE KEYS TO MOVE YOUR CAR

```

PLAYER 1          PLAYER 2
W - E - R        I - O - P
S - - - F        K - - - ;
X - C - V        , - . - /

```

SOME OF THESE KEYS MAY ONLY BE USED FOR DIAGONAL MOVEMENT. THEY ARE SHOWN IN THE CORNERS.";

```

590 PRINT"
THESE KEYS ARE SHOWN IN THE PROPER ORDER . (I.E. E=UP,C=DOWN,
S=LEFT,F=RIGHT)
THE CONTROL OF YOUR CAR MAY SEEM DIFFICULT AT FIRST BUT IT WILL
BECOME MUCH EASIER WITH PRACTICE. KEEP TRYING !!!

```

PRESS =ENTER="";:INPUTDU\$:CLS  
600 PRINT"OPTIONS:

```

THERE ARE THREE OPTIONS AVAILABLE: INVISIBLE TRAILS
                                     RANDOM OBSTACLES
                                     WRAPAROUND WALLS

```

THESE OPTIONS MAY BE MIXED IN ANY WAY.

```

PRESS =ENTER="";:INPUTT:CLS
610 PRINT"INVISIBLE TRAILS :
WHEN THIS OPTION IS SELECTED, IT ALLOWS YOU TO DRIVE YOUR CAR
WITHOUT HAVING IT LEAVE A TRAIL. BOTH PLAYERS ARE INDEPENDENT
OF EACH OTHER AND MAY SELECT OR ELIMINATE THIS OPTION AT WILL.

```

```

";P1$;" , YOU";
620 PRINT" MUST PRESS 'D' TO ACTIVATE THIS OPTION.
";P2$;" , YOU MUST PRESS 'L' TO ACTIVATE THIS OPTION.

```

THE *SOFTSIDE* SAMPLER

PRESSING THOSE KEYS A SECOND TIME WILL DEACTIVATE THE INVISIBLE TRAIL OPTION.

```
HIT =ENTER=";:INPUTDU$:CLS
630 PRINT"IF YOU SELECT RANDOM OBSTACLES, THE COMPUTER WILL
PLACE UP TO 75 SMALL DOTS ON THE SCREEN. HITTING THEM RESULTS
IN A CAR CRASH AND A POINT TO YOUR OPPONENT.
```

```
WRAP AROUND ELIMINATES THE BOUNDRIES. WHEN YOU EXIT ON THE LEFT,
YOUR";
640 PRINT" CAR WILL REAPPEAR ON THE RIGHT. THE SAME IS TRUE
FOR UP AND DOWN.
```

```
PLEASE ANSWER WITH A 'Y' OR AN 'N' WHEN ANSWERING THE OPTION
QUESTIONS.          PRESS =ENTER= TO CONTINUE ?";:INPUTDU$:G
OTO670
```

```
650 CLS:INPUT"DO YOU WANT TO PLAY AGAIN ?????";N$:IFLEFT$(N$,1)=
"Y"THENRUNELSEPRINT"THANK YOU FOR PLAYING !!!!!
COME AGAIN !!!!!":END
660 CLS:PRINT"ANOTHER OPTION IS DIAGONAL MOVEMENT.
HERE YOU MAY MOVE IN ANY DIRECTION INSTEAD OF JUST VERTICALLY
OR HORIZONTALLY. WHEN THIS IS SELECTED, WRAP-AROUND IS WILL
AUTOMATICALLY BE CANCELED.
```

```
PRESS =ENTER=";:INPUTDU$:CLS
```

```
670 CLS
680 PRINT"YOU WILL HAVE A CHOICE OF THREE TRACKS TO COMPETE ON.
TRACK #1 IS THE 'STANDARD' TRACK FOR THIS TYPE OF GAME. ALL OF
THE OPTIONS MENTIONED WILL WORK ON THIS TRACK.
TRACK #2 IS A MORE DIFFICULT TRACK TO COMPETE ON & DUE TO IT'S
";
690 PRINT"IRREGULAR SHAPE, THE WRAP-AROUND OPTION WILL NOT WORK
ON THIS
TRACK. IF YOU SELECT WRAP AROUND, THE COMPUTER WILL CANCEL IT.
TRACK #3 IS MORE DIFFICULT THAN TRACK #1. WRAP-AROUND WON'T
WORK ON #3.
```

```
PRESS =ENTER= TO BEGIN ???";
```

```
700 INPUTDUMMEYS:GOTO60
710 PRINT@265,CHR$(191)+STRING$(6,143)+CHR$(140)+CHR$(176);:PRIN
T@329,CHR$(191)+STRING$(7,"")+CHR$(191):PRINT@329+64,CHR$(191)+
STRING$(6,"");CHR$(176);CHR$(143):PRINT@393+64,CHR$(191);STRING
$(6,131);CHR$(140);CHR$(176)
720 PRINT@457+64,CHR$(191);STRING$(8,32);CHR$(191);CHR$(32);CHR$(
176);CHR$(140);STRING$(3,131);CHR$(140);CHR$(176);" ";CHR$(176)
;CHR$(140);CHR$(131);CHR$(131);CHR$(140);CHR$(32);CHR$(176);CHR$(
140);STRING$(2,131);CHR$(140);" ";CHR$(179);" ";CHR$(176);
730 PRINTCHR$(140);STRING$(3,131);CHR$(140);CHR$(176);" ";CHR$(1
76);CHR$(140);CHR$(131);CHR$(131);CHR$(140);
740 PRINT@521+64,CHR$(191);STRING$(8,32);CHR$(191);" ";CHR$(152
);STRING$(3,131);CHR$(164);CHR$(191);" ";CHR$(191);STRING$(5,""
);CHR$(191);STRING$(5,"");CHR$(191);" ";CHR$(191);STRING$(5,140
);CHR$(143);" ";CHR$(191);
750 PRINT@585+64,CHR$(191);STRING$(6,176);CHR$(140);CHR$(131);"
";CHR$(165);STRING$(4,176);CHR$(191);" ";CHR$(191);STRING$(5,""
);CHR$(191);STRING$(5,"");CHR$(191);" ";CHR$(131);CHR$(140);S
TRINGS$(4,176);CHR$(140);" ";CHR$(191);:FORCD=1TO4
760 S=USR(CD):NEXTCD:RETURN
770 CLS:AL$=CHR$(176)+CHR$(140)+STRING$(9,131)+CHR$(140)+CHR$(17
6):A2$=CHR$(131)+CHR$(140)+STRING$(9,176)+CHR$(140)+CHR$(131):PR
INT@193,AL$;" ";AL$;" ";AL$;" ";AL$;:FORI=256TO896STEP64:P
RINT@I,CHR$(191);:PRINT@I+62,CHR$(191);:NEXTI
780 B1$=CHR$(131)+CHR$(188)+CHR$(131):PRINT@270,B1$;:PRINT@286,B
1$;:PRINT@302,B1$;:L=335:F$=CHR$(191):PRINT@L,F$;:PRINT@L+16,F$;
:PRINT@L+32,F$;:L=L+64:PRINT@L,F$;:PRINT@L+16,F$;:PRINT@L+32,F$;
:L=L+384:PRINT@L,F$;:PRINT@L+16,F$;:PRINT@L+32,F$;
```

BARRIER

15

```
790 L=L+64:PRINT@L,F$;:PRINT@L+16,F$;:PRINT@L+32,F$;:B2$=CHR$(17
6)+CHR$(143)+CHR$(176):PRINT@845+65,B2$;:PRINT@861+65,B2$;:PRINT
@877+65,B2$;:PRINT@961,A2$;" ";A2$;" ";A2$;" ";A2$;:PRINT@
1023," ";:W1=0:X=10:Y=25:X1=110:Y1=25:GOTO250
```

# BATTLE ROYAL

*By Robert F. Nicholas*

BATTLE ROYAL is a nine-man wrestling match puzzle complete with animation and sound!

Nine grapplers start out in the middle of the ring. They stomp their feet and wave their arms around in anticipation of the match. The battle continues until only one man is left standing in the middle of the ring.

Be sure to connect the auxiliary jack leading to your tape recorder to an amplifier/speaker so you will be able to enjoy the sound effects that have been included. Then begin solving the puzzle. See who can do it in the least number of moves.

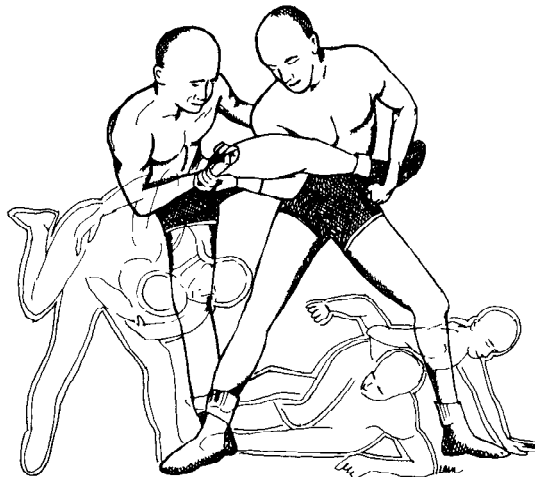
## Instructions

Enter RUN and read over the short set of instructions contained in the program. Then you'll be ready to enter the fracas.

The object is to remove eight of the wrestlers and leave the last one in the exact middle position in the ring (position #33). The computer will recognize that you have completed the puzzle once there is only one man left in 33. If you decide to quit sooner, enter QUIT as your move.

BATTLE ROYAL will prompt you all along and will point out any unacceptable moves to you. Appropriate error messages will be printed on the screen.

When you see the question "MOVING FROM?" and the block cursor appear on your monitor, enter in the two-digit position you wish to move a wrestler from (or enter QUIT if you give up). If you have a wrestler in that position, you will then be asked "MOVING TO?" followed by an-



other block cursor. Type in the position of the empty space you wish to move to.

You can save one space horizontally, vertically, or diagonally, or you may jump over one other wrestler at a time. If your move isn't legal, you will be requested to enter that move again.

But if it is a legal move, your wrestler will be placed in his new position. Should the move involve a jump over another man, the two of them will first engage in a rather noisy wrestling match, after which one of them will be moved to the new position and the other will leave the ring.

Once there is only one wrestler left and he has reached the center of the ring, the computer will give you your rating. One is low and ten is high. Of course, the idea is to finish the puzzle in the least number of moves.

So slip into your trunks and step into the ring. The BATTLE ROYAL is about to begin. May the best man or woman win!

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1 REM BATTLE ROYAL BY ROBERT F. NICHOLAS
5 CLS:POKE16561,0:IFPEEK(16562)<191THENPOKE16562,127:ELSECMD"T":
POKE16562,191
10 CLEAR1500:DEFINTA-Z:DIMB(55),W$(15):POKE16553,255
20 CU$=CHR$(143):C$=STRING$(6,32):CL$=STRING$(19,32)
30 GOSUB950
40 PRINT@140,"B A T T L E      R O Y A L";:PRINT@204,STR
ING$(34,131);:IN=34:GOSUB930 :PRINT@PO,W$(1);:PRINT@PO+65,W$(2)
;:FORQ=1TO10:IN=34:GOSUB930
50 ONRND(3)GOSUB870,890,910
60 NEXT:CLS
70 PRINT"  BATTLE ROYAL IS A NINE-MAN WRESTLING MATCH PUZZL
E! NINE
80 PRINT"GRAPPLERS START OUT IN THE CENTER OF THE RING. T
HE MATCH
90 PRINT"CONTINUES UNTIL THERE IS ONLY ONE MAN LEFT IN THE
MIDDLE.
100 PRINT:PRINT" WRESTLERS ARE ALLOWED TO MOVE ONE SPACE AT A
TIME OR TO JUMP
110 PRINT"OVER ANOTHER WRESTLER (AT WHICH TIME THEY DO BATT
LE). ALL
120 PRINT"HORIZONTAL, VERTICAL AND DIAGONAL MOVES ARE ALLOWED!
130 PRINT:PRINT" THE OBJECT IS TO WIN THE MATCH IN THE LEAST N
UMBER OF MOVES!
140 PRINT:PRINT"(CONNECT A SPEAKER TO HEAR FOOT STOMPIN', GRUNTS
AND GROANS!)
150 PRINT@896,"";:INPUT"HIT ENTER TO CONTINUE";IN$:CLS
160 REM SET UP BOARD
170 PRINT@3,"* * * B A T T L E      R O Y A L * * *";
180 FORX=11TO55:B(X)=-1:NEXT:FORA=2TO4:FORB=2TO4:B(A*10+B)=1:NEX
TB,A:FORB=1TO5:B(10+B)=0:B(50+B)=0:NEXT:FORA=2TO4:B(A*10+1)=0:B(
A*10+5)=0:NEXT
190 REM PRINT BOARD ON SCREEN
200 FORA=1TO5:FORB=1TO5:PRINT@64+(A-1)*192+(B-1)*8+131,A*10+B;:N
EXTB,A
210 FORA=2TO4:FORB=2TO4:PO=64+(A-1)*192+(B-1)*8+2:PRINT@PO,W$(1)
;:PRINT@PO+65,W$(2);:NEXTB,A
220 RESTORE:FORX=1TO9:READY:W(X)=Y:NEXT
230 DATA 22,23,24,32,33,34,42,43,44
240 MV=0:PRINT@108,"# OF MOVES =";MV:PRINT@172,STRING$(16,131);
250 WR=9:PRINT@236,"# OF WRESTLERS =";WR;:PRINT@300,STRING$(18,1
31);

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260 REM BEGIN SOLVING PUZZLE
270 FORCL=0TO6:PRINT@428+CL*64,CL$;:NEXT
280 M$="F":PRINT@428,"MOVING FROM?";:CU=441:GOSUB700:GOSUB610:F=
W
290 M$="T":PRINT@556,"MOVING TO?";:CU=567:GOSUB700:GOSUB610:T=W
300 REM IS MOVE A LEGAL ONE SPACE OR SINGLE JUMP MOVE
310 JU=0:AB=ABS(F-T):IFAB=1ORAB=-1ORAB=10ORAB=-10ORAB=9ORAB=-9OR
AB=11ORAB=-11THEN390
320 IFAB=2ORAB=-2ORAB=20ORAB=-20ORAB=18ORAB=-18ORAB=22ORAB=-22TH
EN340
330 PRINT@684,"ILLEGAL MOVE!";:FORTI=1TO500:NEXTTI:GOTO260
340 FORX=1TO3:IN=F:GOSUB930:GOSUB840:NEXT:IN=F:GOSUB930:PRINT@PO
+64,C$;:PRINT@PO,C$;
350 JU=(F+T)/2:IN=JU:GOSUB930:FORX=1TORND(5)+5:L1$="":FORY=1TO5:
L1$=L1$+CHR$(RND(53)+128):NEXTY:PRINT@PO,L1$;:POKEM1,RND(20)+50:
L=USR(0):L2$="":FORY=1TO5:L2$=L2$+CHR$(RND(53)+128):NEXTY:PRINT@
PO+64,L2$;
360 POKEM1,RND(20)+30:L=USR(0):NEXT:PRINT@PO,C$;:PRINT@PO+64,C$;
370 IN=T:GOSUB930:PRINT@PO,W$(1);:PRINT@PO+65,W$(2);:FORX=1TO3:I
N=T:GOSUB930:GOSUB840:NEXT:B(JU)=0
380 WR=WR-1:PRINT@252,WR;:FORX=1TO9:IFJU=W(X)THENW(X)=0:GOTO410
ELSENEXTX
390 REM MAKE A SINGLE MOVE
400 IN=F:GOSUB930:GOSUB840:IN=F:GOSUB930:PRINT@PO,C$;:PRINT@PO+6
4,C$;:IN=T:GOSUB930:PRINT@PO,W$(1);:PRINT@PO+65,W$(2);:GOSUB840

410 FORX=1TO9:IFF=W(X)THENW(X)=TELTENEXTX
420 B(F)=0:B(T)=1
430 MV=MV+1:PRINT@121,MV;:IFWR=1ANDB(33)=1THEN470
440 GOTO260
450 REM PLAYER QUILTS
460 PRINT@748,"SORRY YOU QUIT!";:GOTO590
470 PRINT@812,"YOU TOOK"MV"MOVES!";
480 PRINT@876,"RATING (1-10) =";
490 IFMV<=8THENPRINT10;:GOTO590
500 IFMV=9PRINT9;:GOTO590
510 IFMV=10PRINT8;:GOTO590
520 IFMV=11PRINT7;:GOTO590
530 IFMV=12PRINT6;:GOTO590
540 IFMV=13PRINT5;:GOTO590
550 IFMV=14PRINT4;:GOTO590
560 IFMV<17PRINT3;:GOTO590
570 IFMV<20PRINT2;:GOTO590
580 PRINT1;
590 PRINT@940,"PLAY AGAIN?";:CU=952:GOSUB700:W$=LEFT$(W$,1):CLS:
IFW$="Y"THEN170
600 IN=22:GOSUB930:PRINT@PO,W$(1);:PRINT@PO+65,W$(2);:PRINT@460,
"SO LONG FOR NOW!!!";:FORQ=1TO100:IN=22:GOSUB930:GOSUB840:NEXT:C
LS:END
610 REM CHECK TO SEE IF MOVE IS A LEGAL BOARD POSITION
620 IFW$="QUIT"THEN450
630 W=VAL(W$)
640 IFW<11ORW>55THENPRINT@684,"ILLEGAL MOVE!";:GOTO690
650 IFB(W)=-1THENPRINT@684,"ILLEGAL MOVE!";:GOTO690
660 IFM$="F"ANDB(W)<>1THENPRINT@684,"NO WRESTLER THERE!";:GOTO69
0
670 IFM$="T"ANDB(W)<>0THENPRINT@684,"SPACE OCCUPIED!";:GOTO690
680 RETURN
690 FORTI=1TO500:NEXTTI:GOTO260
700 REM INKEY$ ROUTINE FOR USER ENTRY
710 W$="":PRINT@CU,CU$;
720 I$=""
730 I$=INKEY$:IFLEN(I$)<>0THEN750
740 GOSUB810:GOTO730
750 I=ASC(I$):IFI=13THENPRINT@CU,CHR$(32);:RETURN
760 IFI<>8THEN790

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## BATTLE ROYAL

19

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770 IFW$=""THEN720
780 PRINT@CU,CHR$(32);:PRINT@CU,I$;:CU=CU-1:PRINT@CU,CU$;:W$=LEF
T$(W$,LEN(W$)-1):GOTO720
790 IFLEN(W$)>4THEN720
800 W$=W$+I$:PRINT@CU,I$;:CU=CU+1:PRINT@CU,CU$;:GOTO720
810 REM RANDOM MOVEMENT OF A RANDOM WRESTLER
820 IN=RND(9):IFW(IN)=0THENRETURN
830 IN=W(IN):GOSUB930
840 RN=RND(15):ONRNGOTO860,880,900,850,850,850,850,850,850,850,8
50,850,850,850,850
850 RETURN
860 REM WRESTLER WAVES HIS ARMS UP AND DOWN
870 FORX=1TORND(2):PRINT@PO,W$(5);:PRINT@PO+65,W$(6);:FORTI=1TO1
5:NEXTTI:PRINT@PO,W$(7);:PRINT@PO+65,W$(8);:FORTI=1TO15:NEXTTI,X
:PRINT@PO,W$(1);:PRINT@PO+65,W$(2);:RETURN
880 REM WRESTLER STOMPS HIS FEET
890 POKEM1,150:PO=PO+65:FORX=1TORND(2):PRINT@PO,W$(3);:FORTI=1TO
20:NEXTTI:PRINT@PO,W$(2);:L=USR(0):PRINT@PO,W$(4);:FORTI=1TO20:N
EXTTI:PRINT@PO,W$(2);:L=USR(0):NEXTX:RETURN
900 REM WRESTLER WAVES HIS ARMS OUT AND UP
910 PRINT@PO,W$(9);:PRINT@PO+65,W$(6);:FORTI=1TO10:NEXTTI:PRINT@
PO,W$(10);:PRINT@PO+65,W$(11);:FORTI=1TO10:NEXTTI:PRINT@PO,W$(12
);:PRINT@PO,W$(13);:FORTI=1TO10:NEXTTI
920 PRINT@PO,W$(14);:FORTI=1TO10:NEXTTI:PRINT@PO,W$(10);:FORTI=1
TO10:NEXTTI:PRINT@PO,W$(15);:PRINT@PO+65,W$(8);:FORTI=1TO10:NEXT
TI:PRINT@PO,W$(1);:PRINT@PO+65,W$(2);:RETURN
930 REM CONVERT BOARD POSITION TO SCREEN POSITION
940 A=INT(IN/10):B=IN-A*10:PO=66+(A-1)*192+(B-1)*8:RETURN
950 REM DEFINE GRAPHICS CHARACTERS
960 W$(1)=CHR$(32)+CHR$(176)+CHR$(187)+CHR$(177)+CHR$(144)+CHR$(
32):W$(2)=CHR$(129)+CHR$(151)+CHR$(149)+CHR$(129):W$(3)=CHR$(129
)+CHR$(135)+CHR$(149)+CHR$(129):W$(4)=CHR$(129)+CHR$(151)+CHR$(1
33)+CHR$(129)
970 W$(5)=CHR$(32)+CHR$(180)+CHR$(187)+CHR$(177)+CHR$(144)+CHR$(
32):W$(6)=CHR$(32)+CHR$(151)+CHR$(149)+CHR$(129):W$(7)=CHR$(32)+
CHR$(176)+CHR$(187)+CHR$(177)+CHR$(148)+CHR$(32):W$(8)=CHR$(129)
+CHR$(151)+CHR$(149)+CHR$(32)
980 W$(9)=STRING$(2,176)+RIGHT$(W$(1),4):W$(10)=LEFT$(W$(9),4)+C
HR$(176)+CHR$(144):W$(11)=LEFT$(W$(6),3)+CHR$(32):W$(12)=CHR$(32
)+CHR$(180)+RIGHT$(W$(10),4)
990 W$(13)=LEFT$(W$(12),4)+CHR$(148)+CHR$(32):W$(14)=LEFT$(W$(9)
,4)+CHR$(148)+CHR$(32):W$(15)=CHR$(32)+RIGHT$(W$(10),5)
1000 FORX=1TO9:READ Y:NEXT:IFPEEK(16562)=-191THENM1=-16638ELSEM1=
32514
1010 FORX=M1-1TOM1+18:READ Y:POKEX,Y:NEXT
1020 DATA 14,150,62,1,211,255,65,16,254,62,0,211,255,65,16,254,1
3,32,239,201
1030 IFM1<0THENDEFUSR0=-1+M1 ELSEPOKE16526,1:POKE16527,127
1040 RETURN

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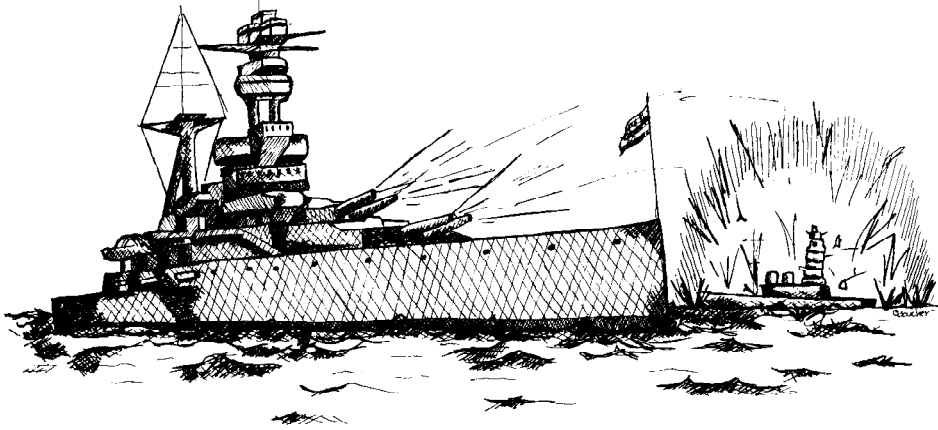
# BATTLESHIP

*By John M. Delaney, Jr.*

This is a single-player game of war in which the computer is a formidable opponent. It can be enjoyed by those aged ten or above.

Each side places its fleet of six warships of varying sizes on a 10-by-10 grid. With each turn, you enter horizontal and vertical coordinates and fire upon the enemy grid. If you make a hit on one of the enemy's ships, you try to zero in for the kill and keep hitting until it sinks. At all times the screen shows hits and misses for you and the enemy but of course doesn't reveal the position of any enemy ship until one is sunk.

The first one to send all six ships in the enemy fleet to Davy Jones's locker wins the game. So anchors aweigh. . .



```
10 CLS:PRINTTAB(12)"BATTLESHIP A DELANEY ENTERPRISE CREATION":PR
INT"DO YOU NEED INSTRUCTIONS (Y/N) -- NOTE DON'T PRESS ENTER KEY
!";
20 XX$=INKEY$
30 IFXX$=""THEN20
40 IFXX$="Y"GOSUB2000ELSEGOTO50
50 CLS:RANDOM:CLEAR500
60 PRINT"THIS IS THE LAST TIME YOU USE 'ENTER' KEY !!!"
70 INPUT"WHAT IS YOUR NAME";NAS
80 DIMD$(10,10,2),S$(10,10,2),SK(6),F(2)
90 DIM C9(10,10)
100 DIM H(6,2),GG$(10,10)
110 DIMUU(10,10)
120 SK(1)=3:SK(2)=3:SK(3)=2:SK(4)=2:SK(5)=4:SK(6)=5:F(1)=0:F(2)=
0
130 GOSUB200
140 K=1:GOSUB410
150 GOSUB870
160 GOSUB1070
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170 GOSUB820
180 GOSUB1390
190 GOTO160
200 CLS
210 FORJ=1TO11
220 FORI=1TO11
230 PRINT@64*(J)+4+2*(I-1),". ";
240 PRINT@64*(J)+36+2*(I-1),". ";
250 NEXTI,J
260 FORI=0TO9
270 PRINT@4+2*I,I;
280 PRINT@36+2*I,I;
290 PRINT@129+64*I,I;
300 PRINT@161+64*I,I;
310 NEXTI
320 UU=LEN(NA$):PRINT@781-(UU/2),NA$;
330 PRINT@811,"TRS-80";
340 RETURN
350 IFD$(X,Y,K)="THENIFK=1THENGG$(X,Y)="M"
360 IFD$(X,Y,K)="THEND$(X,Y,K)="M":C$="NS":GOTO390
370 IFD$(X,Y,K)="M"ORD$(X,Y,K)="*"THENC$="G":RETURN
380 C$=D$(X,Y,K):D$(X,Y,K)="*":IFK=1 GG$(X,Y)="*"
390 PRINT@69+32*(K-1)+64*(Y+1)+2*(X),D$(X,Y,K);
400 RETURN
410 GOSUB820:PRINT@832,"CRUISER COORDINATES - X,Y ";
420 GOSUB2450
430 B$="C":N=5:GOSUB660
440 IFE=1THEN410
450 GOSUB820:PRINT@832,"BATTLESHIP COORDINATES - X,Y ";
460 GOSUB2450
470 B$="B":N=4:GOSUB660
480 IFE=1THEN450
490 GOSUB820:PRINT@832,"SUBMARINE #1 COORDINATES - X,Y ";
500 GOSUB2450
510 B$="S1":N=3:GOSUB660
520 IFE=1THEN490
530 GOSUB820:PRINT@832,"SUBMARINE #2 COORDINATES - X,Y ";
540 GOSUB2450
550 B$="S2":N=3:GOSUB660
560 IFE=1THEN530
570 GOSUB820:PRINT@832,"DESTROYER #1 COORDINATES - X,Y ";
580 GOSUB2450
590 B$="D1":N=2:GOSUB660
600 IFE=1THEN570
610 GOSUB820:PRINT@832,"DESTROYER #2 COORDINATES - X,Y ";
620 GOSUB2450
630 B$="D2":N=2:GOSUB660
640 IFE=1THEN610
650 GOSUB820:RETURN
660 XS=X:YS=Y
670 FORI=1TON
680 IFX<0ORX>9ORY<0ORY>9THENE=1:RETURN
690 IFD$(X,Y,K)<>"THENE=1:RETURN
700 IFA$="H"THENX=X+1:GOTO730
710 IFA$="V"THENY=Y+1:GOTO730
720 E=1:RETURN
730 NEXTI
740 X=XS:Y=YS
750 FORI=1TON
760 D$(X,Y,K)=B$:S$(X,Y,K)=B$
770 IFK=1THENPRINT@69+64*(Y+1)+2*X,LEFT$(B$,1);
780 IFA$="H"THENX=X+1
790 IFA$="V"THENY=Y+1
800 NEXTI
810 E=0:RETURN
820 PRINT@832,"

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830 PRINT@896,"
      "
840 RETURN
850 X=RND(10)-1:Y=RND(10)-1:T=RND(2):A$="H":IFT=2THENA$="V"
860 RETURN
870 K=2
880 GOSUB850
890 B$="C":N=5:GOSUB660
900 IFE=1THEN880
910 GOSUB850
920 B$="B":N=4:GOSUB660
930 IFE=1THEN910
940 GOSUB850
950 B$="S1":N=3:GOSUB660
960 IFE=1THEN940
970 GOSUB850
980 B$="S2":N=3:GOSUB660
990 IFE=1THEN970
1000 GOSUB850
1010 B$="D1":N=2:GOSUB660
1020 IFE=1THEN1000
1030 GOSUB850
1040 B$="D2":N=2:GOSUB660
1050 IFE=1THEN1030
1060 RETURN
1070 K=2:GOSUB820:PRINT@896,NA$;" GUESS X,Y VALUES: ";
1080 X$=INKEY$:IFX$="ORVAL(X$)<0ORVAL(X$)>9THEN1080ELSEPRINTX$;
1090 U$=INKEY$:IFU$="ORU$<>",THEN1090ELSEPRINTU$;
1100 Y$=INKEY$:IFY$="ORVAL(Y$)<0ORVAL(Y$)>9THEN1100ELSEPRINTY$;
1110 X=VAL(X$):Y=VAL(Y$):IFX<0ORX>9ORY<0ORY>9THEN1070
1120 GOSUB350
1130 IFC$="G"THEN1070
1140 IFC$="NS"THEN RETURN
1150 GOSUB1320
1160 H(L,K)=H(L,K)+1
1170 IF H(L,K)>=SK(L) THEN 1190
1180 RETURN
1190 GOSUB1210
1200 RETURN
1210 REM *SUB SINK*
1220 FOR J=0TO9
1230 FORI=0TO9
1240 IFK=2THENIFSS(I,J,K)=C$THEN PRINT@101+64*(J+1)+2*I,LEFT$(C$
      ,1);
1250 IFK=1THENIFSS(I,J,K)=C$THENGGS(I,J)=C$
1260 NEXT I,J
1270 F(K)=F(K)+1:IFF(K)<>6THEN RETURN
1280 GOSUB820
1290 IFK=2THENGOSUB2310:GOTO1310
1300 GOSUB2390:GOSUB2350
1310 END
1320 IFC$="S1"THENL=1
1330 IFC$="S2"THENL=2
1340 IF C$="D1"THEN L=3
1350 IF C$="D2"THEN L=4
1360 IF C$="B"THEN L=5
1370 IF C$="C"THEN L=6
1380 RETURN
1390 K=1:GOSUB820
1400 GOTO1510
1410 X=RND(10)-1:Y=RND(10)-1
1420 IFY>0THENIFGG$(X,Y-1)=""THEN1470
1430 IFX<9THENIFGG$(X+1,Y)=""THEN1470
1440 IFY<9THENIFGG$(X,Y+1)=""THEN1470
1450 IFX>0THENIFGG$(X-1,Y)=""THEN1470
1460 GOTO1410

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## BATTLESHIP

23

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1470 GOSUB350
1480 IFC$="G"THEN 1410
1490 IFC$="NS"THENRETURN
1500 GOTO1150
1510 FORX1=0TO9
1520 GOSUB820:PRINT@896,"TRS-80 IS GUESSING !";
1530 FORY1=0TO9
1540 IFGG$(X1,Y1)="*"THENC9(X1,Y1)=C9(X1,Y1)+1:IFC9(X1,Y1)>15THE
N1560
1550 IFGG$(X1,Y1)="*"THEN GOTO1580
1560 NEXTY1,X1
1570 GOTO 1410
1580 X2=X1:Y2=Y1
1590 IFUU(X1,Y1)=0THEN1640
1600 IFUU(X1,Y1)=1THEN1730
1610 IFUU(X1,Y1)=2THEN1820
1620 IFUU(X1,Y1)=3THEN1910
1630 IFUU(X1,Y1)=4THEN1560
1640 Y2=Y2-1:IFY2<0THEN1720
1650 IFGG$(X2,Y2)="*"THEN1640
1660 IFGG$(X2,Y2)<>"*THEN1720
1670 X=X2:Y=Y2
1680 GOSUB350
1690 IFC$="G"THEN1720
1700 IFC$="NS"THENRETURN
1710 GOTO1150
1720 UU(X1,Y1)=1:GOTO1580
1730 X2=X2+1:IFX2>9THEN1810
1740 IFGG$(X2,Y2)="*"THEN1730
1750 IFGG$(X2,Y2)<>"*THEN1810
1760 X=X2:Y=Y2
1770 GOSUB350
1780 IFC$="G"THEN1810
1790 IFC$="NS"THENRETURN
1800 GOTO1150
1810 UU(X1,Y1)=2:GOTO1580
1820 Y2=Y2+1:IFY2>9THEN1900
1830 IFGG$(X2,Y2)="*"THEN1820
1840 IFGG$(X2,Y2)<>"*THEN1900
1850 X=X2:Y=Y2
1860 GOSUB350
1870 IFC$="G"THEN1900
1880 IFC$="NS"THENRETURN
1890 GOTO1150
1900 UU(X1,Y1)=3:GOTO1580
1910 X2=X2-1:IFX2<0THEN1990
1920 IFGG$(X2,Y2)="*"THEN1910
1930 IFGG$(X2,Y2)<>"*THEN1990
1940 X=X2:Y=Y2
1950 GOSUB350
1960 IFC$="G"THEN1990
1970 IFC$="NS"THENRETURN
1980 GOTO1150
1990 UU(X1,Y1)=4:GOTO1580
2000 CLS:PRINT:PRINT:PRINT" THIS IS THE GAME OF BATTLESHIP IN W
HICH YOU WILL PLAY AGAINST"
2010 PRINT"THE TRS-80 IN A GAME OF WAR. THE FIRST ONE TO SINK A
LL HIS "
2020 PRINT"OPPONENTS SHIPS WINS! THERE ARE 6 SHIPS - THE CRUISE
R (CCCC)"
2030 PRINT"THE BATTLESHIP (BBBB) - SUBMARINE #1 (SSS) - SUBMARIN
E #2 (SSS)"
2040 PRINT"DESTROYER #1 (DD) AND DESTROYER #2 (DD). THE PLAYING
BOARD"
2050 PRINT"CONSISTS OF TWO 10 X 10 GRIDS, YOURS AND THE TRS-80'S
. YOU"

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THE *SOFTSIDE* SAMPLER

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2060 PRINT"ENTER X (HORIZONTAL) AND Y (VERTICAL) COORDINATES - (
X,Y)."
2070 PRINT"TO CONTINUE PRESS 'ENTER' ";:INPUTXY
2080 NA$="PLAYER":GOSUB 200
2090 PRINT:PRINT"THIS IS WHAT THE GRIDS LOOK LIKE!"
2100 PRINT"TO CONTINUE PRESS 'ENTER' ";:INPUTXY
2110 CLS:PRINT:PRINT"THE FIRST THING YOU ARE TO DO IS POSITION Y
OUR 6 SHIPS ON YOUR"
2120 PRINT"ARRAY. YOU DO THIS BY PICKING THE TOP OR LEFTMOST PO
INT, WHERE"
2130 PRINT"YOU WISH TO ENTER THE SHIP, AND THEN ENTER WHETHER YO
U WISH IT"
2140 PRINT"ENTERED VERTICALLY (V) OR HORIZONTALLY (H) FORM THAT
POINT."
2150 PRINT"TO CONTINUE PRESS 'ENTER' ";:INPUTXY
2160 CLS:GOSUB200:B$="C":A$="H":X=0:Y=0:NA$="PLAYER"
2170 FORI=1TO5:PRINT@69+64*(Y+1)+2*X,LEFT$(B$,I);
2180 IFA$="H"THENX=X+1
2190 NEXTI
2200 PRINT@832,"AN EXAMPLE FOR CRUISER AT (0,0) H !";
2210 PRINT@896,"TO CONTINUE PRESS 'ENTER' ";:INPUTXY
2220 CLS:PRINT"AFTER YOU ENTER ALL YOUR SHIPS YOU BOTH EXCHANGE
FIRE, ONE"
2230 PRINT"AFTER THE OTHER, BY ENTERING A (X,Y) COORDINATE WHERE
YOU THINK"
2240 PRINT"THE TRS-80'S SHIP MIGHT BE. IF YOU MISS, NO SHIP IS
THERE AND"
2250 PRINT"A 'M' WILL APPEAR. IF YOU HIT A SHIP A '*' WILL APPE
AR. WHEN"
2260 PRINT"YOU SINK ONE OF THE TRS-80'S SHIPS IT WILL APPEAR ON
THE SCREEN"
2270 PRINT"AS LETTERS, I.E. (SSS). FIRST ONE TO SINK ALL THE EN
EMYS SHIPS"
2280 PRINT"IS THE WINNER!!"
2290 PRINT"TO CONTINUE PRESS 'ENTER' ";:INPUTXY
2300 RETURN
2310 FORX7=1TO1000
2320 PRINTNA$;" YOU WON ! ";
2330 NEXTX7
2340 RETURN
2350 CLS:FORX7=1TO1000
2360 PRINT" TRS-80 WINS !";
2370 NEXTX7
2380 RETURN
2390 PRINT@832,"GAME IS OVER";
2400 FORJ=0TO9
2410 FORI=0TO9
2420 PRINT@101+64*(J+1)+2*I,LEFT$(SS(I,J,2),1);
2430 NEXTI,J
2440 PRINT@896,"WHEN YOU HAVE SEEN ENOUGH PRESS 'ENTER' ";:INPUT
XY:RETURN
2450 REM*JOHNS SUB*
2460 X$=INKEY$:IFX$=""ORVAL(X$)<0ORVAL(X$)>9THEN2460ELSEPRINTX$;
2470 U$=INKEY$:IFU$=""ORU$<>,"THEN2470ELSEPRINTU$;
2480 Y$=INKEY$:IFY$=""ORVAL(Y$)<0ORVAL(Y$)>9THEN2480ELSEPRINTY$;
2490 X=VAL(X$):Y=VAL(Y$):IFX<0ORX>9ORY<0ORY>9THEN2450
2500 PRINT@896,"H OR V";
2510 A$=INKEY$
2520 IFA$=""THEN2510
2530 IFA$="H"THENRETURN
2540 IFA$="V"THENRETURN
2550 GOTO2500

```

# BOMBER

*By Chris Freund*

Everyone has a favorite canyon filled with debris, which must be cleared by bombing the daylights out of it. You say you don't have one? Astonishing. We'll remedy that right away.

This game begins with your selection of a canyon. Then you can fly over it, dropping bombs to clear the obstacles. Only one bomb can be dropped at one time, and you must wait for it to finish its destruction before dropping another. If you don't drop a bomb on a run, it counts as a miss.

```
4 'WRITTEN BY CHRIS FREUND
10 CLS
20 PRINT"BOMBER!
IN THIS PROGRAM, YOU ARE TRYING TO CLEAR A CANYON OF ITS
OBSTACLES BY DROPPING BOMBS ON THEM FROM A PLANE. THE
GAME CONTINUES UNTIL YOU MISS THREE TIMES."
30 PRINT"ONLY ONE BOMB CAN BE DROPPED AT ONE TIME, AND YOU MUST
WAIT FOR A BOMB TO FINISH ITS DESTRUCTION BEFORE FIRING AN-
OTHER. IF YOU DON'T DROP A BOMB ON A RUN, IT COUNTS AS A MISS."
40 INPUT"PRESS ENTER TO START THE GAME";A$
50 CLS
60 CLEAR500:A$=CHR$(141)+CHR$(140)+CHR$(174)+CHR$(140)
70 B$=CHR$(140)+CHR$(157)+CHR$(140)+CHR$(142)
80 INPUT"WHAT CANYON DO YOU WANT (1-4)";A:CLS:IFA=3THEN550
85 IFA=4THEN600
90 IFA=2THEN500
100 IFA<>1THEN80
110 FORX=0TO8:PRINT@X*64+384,STRING$(6+X*3,191);:NEXTX:PRINT@896
,STRING$(63,191);:PRINT@960,STRING$(63,191);:FORX=0TO1:PRINT@817
+X*64+(2-X)*3,STRING$(8+X*3,191);:NEXTX
120 FORX=442TO762STEP64:PRINT@X,STRING$(5,191);:NEXTX
130 FORX=-1TO8:FORY=1TO19:IFPEEK(15681+X*64+Y*3)<>191POKE15681+X
*64+Y*3,188:POKE15681+X*64+Y*3+1,188
140 NEXTY,X:PRINT@0,"HITS";0;:PRINT@32,"MISSES";0;
150 H=1
160 S=RND(0)+.5:IFD=1S=-S
170 FORX=0+D*60TO60-D*60STEPS:PRINT@H*64,CHR$(30);:IFD=0PRINT@H*
64+X,A$;:GOTO190
180 PRINT@H*64+X,B$;
190 '
200 IFINKEY$=" "AND0=0THENO=1:X1=X*2+4:Y1=H*3+2:S1=2*S:O1=1
210 IFO=1THEN280
220 '
230 NEXTX
240 PRINT@H*64,CHR$(30);:IFO1=0M=M+1:PRINT@38,M;:IFM=3THEN490
250 H=RND(3):D=D+SGN(.5-D)
260 IFO=0O1=0
270 GOTO160
280 X=X+S:X2=X1:Y2=Y1:RESET(X2,Y2):X1=X1+S1
290 G=G+.2:IFG<=0O=0:G=0:GOTO390
300 Y1=Y1+G:IFX1<0ORX1>127RESET(X2,Y2):O=0:G=0:O1=0:GOTO240 :IF
M=3THEN490
310 F=15360+INT(Y1/3)*64+INT(X1/2):IFPEEK(F)=191O=0:G=0:GOTO390
```

THE *SOFTSIDE* SAMPLER

```

320 IFPEEK(F)=188PRINT@INT(Y1/3)*64+INT(X1/2)-1," ";F1=F1+1:G
OTO340
330 SET(X1,Y1):GOTO220
340 S1=S1/2:K=INT((X1-2)/6):IFI=0THEN360
350 IFK(I-1)=KGOTO370
360 K(I)=K:I=I+1
370 G=G-1
380 GOTO330
390 PRINT@H*64,CHR$(30):FORZ=0TOI-1:P=0
400 FORZ1=1TO10:F2=15553+Z1*64+3*K(Z)
410 IFPEEK(F2)=188P=P+1
420 NEXTZ1:FORZ1=10TO1STEP-1:F2=15553+Z1*64+3*K(Z):IFPEEK(F2)=19
1GOTO450
430 IFP>0P=P-1:POKEF2,188:POKEF2+1,188:GOTO450
440 POKEF2,32:POKEF2+1,32
450 NEXTZ1
460 NEXTZ:I=0
470 IFF1=0M=M+1:PRINT@38,M;:IFM=3THEN490
480 HI=HI+F1:PRINT@4,HI;:F1=0:C$=INKEY$:O1=1:GOTO240
490 PRINT@0,"YOU HAVE 3 MISSES. YOU HAD"HI"HITS.
PRESS ENTER FOR ANOTHER RUN";:INPUTA:RUN
500 FORX=256TO960STEP64:READY:PRINT@X,STRING$(Y,191);:NEXT:DATA2
1,18,15,12,9,9,9,15,15,15,63,63
510 PRINT@738,STRING$(2,191);:FORX=802TO866STEP64:PRINT@X,STRING
$(8,191);:NEXTX
520 FORX=299TO567STEP67:READY:PRINT@X,STRING$(Y,191);:NEXT:DATA2
0,17,14,11,8
530 FORX=631TO887STEP64:PRINT@X,STRING$(8,191);:NEXT
540 GOTO130
550 FORX=1TO17:READY:NEXTX:FORX=384TO960STEP64:READY:PRINT@X,STR
ING$(Y,191);:NEXTX:DATA9,9,12,12,15,15,15,15,63,63
560 FORX=567TO931STEP64:PRINT@X,STRING$(8,191);:NEXTX:PRINT@506,
STRING$(5,191);:FORX=278TO546STEP67:READY:PRINT@X,STRING$(Y,191)
;:NEXTX:DATA20,17,11,5,2
570 FORX=610TO866STEP64:PRINT@X,STRING$(2,191);:NEXTX:GOTO130
600 FORX=1TO32:READY:NEXT:FORX=256TO960STEP64:READY:PRINT@X,STR
ING$(Y,191);:NEXT:DATA9,9,9,9,9,9,6,6,3,3,63,63
610 FORX=1TO7:READY,Y1:PRINT@Y1,STRING$(Y,191);:NEXT:DATA5,781,1
1,842,8,735,14,796,38,857,14,753,17,814
620 FORX=506TO698STEP64:PRINT@X,STRING$(5,191);:NEXT:FORX=1TO3:P
RINT@X*67+238,STRING$((4-X)*3+5,191);:NEXT:GOTO130

```



# CALCULATED RISK

*By Steven Wexler*

CALCULATED RISK is an exciting, fast-moving game of skill, strategy, and speculation for up to three players (optimally, including the computer). The subtle maneuvering, sudden turnabouts, and swift-paced action add to the addicting nature of this game. CALCULATED RISK is for those who delight in mastering the odds; for those who relish the competition between man and machine; and for those who enjoy living dangerously. It is a game for the bold at heart!

## **The Rules**

The rules are deceptively simple. The object of the game is to amass the most points after seven rounds of play. Points are scored by rolling a pair of dice as many times as a player chooses. The round total is equal to the sum of the rolls. However, if any roll matches the turn's first roll, the turn ends with a score of zero. At any time during his turn, the player has the option of terminating the turn. Upon completion of his turn, the player's round total is added to his cumulative total. Once points are added to the cumulative total, they cannot be forfeited.

Since it is a disadvantage to roll before the other player(s) in a round, the player with the highest total leads in a round, followed by the player with the next highest total.

If a player is dissatisfied with his initial roll in a round, he may elect to veto the roll. The roll will be replaced with a new roll. A player may elect the veto option only once per game.

## **Game Strategy**

There are three themes that dominate the game's strategy. The first concept is that some rolls are more common than others. For instance, a seven will occur six times more often than a two. Therefore, if a player gets a seven on the first roll, he should play more conservatively than if he gets a two. In more technical terms, the ratio of expected payoff to risk (round total) should be balanced against the probability of failure for an additional roll.

The second concept to recognize is that turn order is very important. A player who knows the results of all the preceding players can adjust his play accordingly.

The third concept is that a player's relative position in the cumulative totals should affect how conservatively he plays. For instance, if he is way behind he should throw caution to the wind.

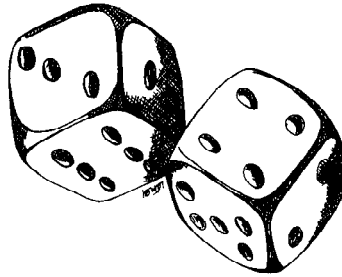
The first concept tends to dominate successful strategy early in the game, while concepts two and three become more important as the game progresses. The way these three factors are balanced separates the skilled player from the novice.

There are two philosophies on how to use the veto option. Some players prefer to veto the first seven that comes along. Other players like to save the veto option for critical late-round situations. Both philosophies have been used successfully.

### The Auto Move Option

After a roll is completed (including the veto option when applicable), the computer will ask, "(player's name), DO YOU WISH TO ROLL AGAIN (1=YES, 0=NO)? In addition to answering with 1 or 0, you may elect to type in a positive integer from 2 through 9. Doing this evokes the auto move option.

For example, if you type 5, the computer will give you five consecutive rolls. After five rolls (assuming no forfeit) you may terminate the turn, roll again, or select the auto move option again.



```

10 ' --- CALCULATED RISK ---
20 ' --- BY STEVE WEXLER ---
30 ' --- SEPTEMBER, 1979 ---
40 '
50 '
60 DATA 0,0,0,1,2,3
70 DATA 1,0,0,0,0,0,0
80 DATA 0,0,0,1,1,0,0
90 DATA 1,1,0,0,0,0,1
100 DATA 0,1,1,0,0,1,1
110 DATA 1,1,1,0,0,1,1
120 DATA 0,1,1,1,1,1,1
130 DATA 0,0,0
140 DATA 126,63,42,32,25,21,25,32,42,63,126
150 REM .... INITIALIZE FOR THE START OF THE GAME....
160 CLEAR(200)
170 CLS:PRINT CHR$(23)
180 PRINT@468,"CALCULATED"
190 PRINT@538,"RISK":GOSUB 1590
200 CLS:PRINT@24,"* INSTRUCTIONS *
210 PRINT@130,"THE RULES OF CALCULATED RISK ARE DECEPTIVELY SIMP
LE. THE
220 PRINT"OBJECT IS TO AMASS THE MOST POINTS AFTER SEVEN ROUNDS
OF PLAY.
230 PRINT"POINTS ARE SCORED BY ROLLING A PAIR OF DICE AS MANY TI
MES AS A
240 PRINT"PLAYER CHOOSES. THE ROUND TOTAL IS EQUAL TO THE SUM O
F THE
250 PRINT"ROLLS. HOWEVER, IF ANY ROLL MATCHES THE TURN'S FIRST
ROLL, THE

```

```

260 PRINT"TURN ENDS WITH A SCORE OF ZERO.  AT ANY TIME DURING HIS TURN,
270 PRINT"THE PLAYER HAS THE OPTION OF TERMINATING THE TURN.  UPON
280 PRINT"COMPLETION OF HIS TURN, THE PLAYER'S ROUND TOTAL IS ADDED TO HIS";
290 PRINT"CUMULATIVE TOTAL.  ONCE POINTS ARE ADDED TO THE CUMULATIVE TOTAL";
300 PRINT"THEY CAN NOT BE FORFEITED.
310 PRINT" SINCE IT IS A DISADVANTAGE TO ROLL BEFORE THE OTHER PLAYER(S)
320 PRINT"IN A ROUND, THE PLAYER WITH THE HIGHEST CUMULATIVE TOTAL LEADS
330 GOSUB 1720
340 CLS:PRINT"OFF THE ROUND, FOLLOWED BY THE PLAYER WITH THE NEXT HIGHEST
350 PRINT"TOTAL.
360 PRINT" IF A PLAYER IS DISSATISFIED WITH HIS INITIAL ROLL IN A ROUND,
370 PRINT"HE MAY ELECT TO VETO THE ROLL.  THE ROLL WILL BE REPLACED WITH A";
380 PRINT"NEW ROLL.  A PLAYER MAY ELECT THE VETO OPTION ONLY ONCE PER
390 PRINT"GAME.
400 PRINT" AFTER A ROLL IS COMPLETED (INCLUDING THE VETO OPTION WHEN
410 PRINT"APPLICABLE) THE COMPUTER WILL ASK ";CHR$(34);"<PLAYER'S NAME>, DO YOU
420 PRINT"WISH TO ROLL AGAIN (1=YES, 0=NO)?";CHR$(34);".  IN ADDITION TO ANSWERING
430 PRINT"WITH 1 OR 0 YOU MAY ELECT TO TYPE IN A POSITIVE INTEGER FROM 2
440 PRINT"THRU 9.  DOING THIS EVOKES THE AUTO MOVE OPTION.
450 PRINT" FOR EXAMPLE, IF YOU TYPE 5, THE COMPUTER WILL GIVE YOU FIVE
460 PRINT"CONSECUTIVE ROLLS.  AFTER FIVE ROLLS (ASSUMING NO FORFEIT) YOU
470 PRINT"MAY TERMINATE THE TURN, ROLL AGAIN, OR SELECT THE AUTO MOVE OPTION AGAIN.
480 GOSUB 1720
490 DEFINT A-Z
500 DIM A(63):DIM PL$(3):DIM N$(3)
510 CLS:PRINT@ 86,"* CALCULATED RISK *"
520 PRINT:PRINT:INPUT"DO YOU WANT THE COMPUTER TO PLAY (TYPE YES OR NO)";CE$
530 IF CE$<>"YES" OR CE$<>"NO THEN 1000
540 IF CE$="YES" THEN CE=1:CA$="AGAINST ME (1 OR 2)" ELSE CE=0:CA$="(2 OR 3)"
550 PRINT "HOW MANY PEOPLE ARE PLAYING ";CA$;:INPUT N$
560 IF CE=1 IF (N$<>"1")AND(N$<>"2") THEN 510
570 IF CE=0 IF (N$<>"3")AND(N$<>"2") THEN 510
580 N=VAL(N$)
590 N$(1)="ONE":N$(2)="TWO":N$(3)="THREE"
600 FOR I=1 TO N
610 PRINT"WHAT IS THE FIRST NAME OF PLAYER ";N$(I);:INPUT PL$(I)
620 IF LEN(PL$(I))>11 PRINT"FIRST NAME ONLY":GOTO 610
630 NEXT
640 IF CE=1 PL$(3)="COMPUTER" ELSE N=N-1
650 C1$=CHR$(191)+STRING$(7,131)+CHR$(191):C1$=C1$+" "+C1$
660 C2$=CHR$(191)+" "+CHR$(191):C2$=C2$+" "+C2$
670 C3$=CHR$(191)+STRING$(7,176)+CHR$(191):C3$=C3$+" "+C3$
680 RANDOM
690 FOR I=1 TO 62:READ A(I):NEXT I:RESTORE
700 IF N=1 AND CE=1 THEN A(5)=3
710 FOR I=1 TO 5:FOR J=4 TO 3+N
720 T=A(J):IF RND(2)=1 A(J)=A(J+1):A(J+1)=T
730 NEXT:NEXT

```

```

740 X=0
750 REM ....INITIALIZE FOR THE START OF THE ROUND....
760 P=162:C=3:X=X+1
770 FORI=1 TO N:FORJ=4 TO 3+N
780 IF A(A(J))<A(A(J+1)) T=A(J):A(J)=A(J+1):A(J+1)=T
790 NEXTJ:NEXTI
800 REM ....INITIALIZE FOR NEW PLAYER....
810 Z=0:Y=0:P=P+64:C=C+1:IF N+5=C THEN 760
820 G=0
830 RL=0:CLS
840 REM ....INITIALIZE FOR A NEW ROLL....
850 Y=Y+1::PRINT@ 86,"SCORE";:PRINT@ 100,"PLAYERS"
860 RL=RL+1
870 PRINT@726,CHR$(31);
880 IF X>7 THEN 900
890 PRINT@ 200,"ROUND";:PRINT@ 265,X;
900 FORI=4 TO 4+N:T=64*(I-4)+214
910 PRINT@ T,"";:PRINT USING "####";A(A(I));:PRINTTAB(36);"";
920 GOSUB 1620:NEXTI
930 IF X>7 THEN 1570
940 PRINT@ P,"^";:PRINT@ 456,"ROUND";
950 PRINT@ 520,"TOTAL";:PRINT@ 584,"=";Z;
960 PRINT@ 499,"FORFEIT";:PRINT@ 563,"VALUE";
970 PRINT@627,"=";:IF Y<>1 PRINTF;
980 PRINT@243,"ROLL";:PRINT@308,"";:PRINT USING "##";RL;
990 PRINT@468,C1$;
1000 PRINT@532,C2$;
1010 PRINT@596,C3$;
1020 REM ....GENERATE THE ROLL....
1030 U=RND(3)+1:V=RND(3)+1
1040 O=0:U=U-1:IF U<1 THEN 1060
1050 GOSUB 1640:D=R
1060 FORI=1 TO 35:NEXTI
1070 O=30:V=V-1:IF V<1 THEN 1090
1080 GOSUB 1640:W=R
1090 IF (U<1)AND(V<1) THEN 1110
1100 FORI=1 TO 35:NEXTI:GOTO 1040
1110 D=W+D:IF Y=1 F=D:PRINT@628,F
1120 PRINT@ 726,"THE ROLL RESULT IS";D
1130 REM ....TEST FOR FORFEIT....
1140 IF (Y=1)OR(D<>F) THEN 1210
1150 FORI=1 TO 19
1160 IF I=10 PRINT@ 586,"0 ";
1170 Y=0-Y:IF Y<0 PRINT@ 786,"GOT YOU, YOUR TURN IS OVER!";
1180 IF Y>0 PRINT@ 786," "
1190 FORJ=1 TO 150:NEXTJ:NEXTI:GOTO810
1200 REM ....VETO?....
1210 IF (A(A(C)+48)<>0)OR(Y<>1) THEN 1320
1220 PRINT@ 768,"";:GOSUB1610
1230 PRINT", DO YOU ELECT TO VETO THIS ROLL (TYPE YES OR NO)";
1240 IF CE=0 OR A(C)<>3 THEN 1300
1250 IF (D=7)OR(((D=6)OR(D=8))AND(1>RND(6)/X)) THEN 1280
1260 IF (X=7)AND((D=5)OR(D=9)) THEN 1280
1270 PRINT"? NO":GOSUB1590:GOTO1320
1280 PRINT"? YES":GOSUB1590:GOSUB1590
1290 Y=0:A(A(C)+48)=1:RL=0:PRINT@629," " :GOTO850
1300 INPUT T$:IF T$="YES"GOTO1290
1310 IF T$<>"NO"PRINT@796,CHR$(30):GOTO 1220
1320 Z=D+Z:PRINT@ 585,Z;
1330 PRINT@ 832,"";:GOSUB1610
1340 PRINT", DO YOU WISH TO ROLL AGAIN (1=YES, 0=NO)";
1350 REM ....COMPUTER'S TURN?....
1360 IF A(C)<>3 OR CE=0 THEN 1470
1370 IF Y<>1 THEN 1410
1380 H=A(50+D)+RND(A(50+D)):T=A(A(4)):IF A(A(5))>A(A(4)) T=A(A(5))
))

```

```
1390 T=(T-A(3))/(8-X)
1400 IF (T>H)OR((X=7)AND(C=N+4)) H=T
1410 IF Z>H PRINT"? NO":GOSUB1590:GOSUB1590:S=0:GOTO1520 ELSE146
0
1420 VL=PEEK(16416):VH=PEEK(16417)
1430 PRINT@982,G;" AUTO MOVE";:IF G>1 PRINT"S";
1440 PRINT" LEFT";
1450 POKE 16416,VL:POKE 16417,VH
1460 PRINT"? YES":GOSUB1590:GOTO850
1470 G=G-1:IF G>0 THEN 1420
1480 REM ....INPUT NEW ROLL ENABLE....
1490 INPUT S$:IF S$<"0" OR S$>"9"THEN 1550
1500 IF LEN(S$)<>1 THEN 1550
1510 S$=LEFT$(S$,1):S=VAL(S$):IF S=1 THEN 850
1520 IF S=0 THEN A(A(C))=A(A(C))+Z:GOTO810
1530 IF S<>INT(S) THEN 1550
1540 IF (S>1)*(S<10) G=S:GOTO850
1550 PRINT@ 860,CHR$(30):GOTO 1330
1560 REM ....GAME IS OVER....
1570 PRINT@ 200,"GAME ";:PRINT@ 264,"OVER";:PRINT@ 512,"^":END
1580 REM ....TIME DELAY SUBROUTINE....
1590 FOR I=1 TO 1100:NEXT I:RETURN
1600 REM ....PLAYER'S NAME SUBROUTINE....
1610 I=C
1620 PRINT PL$(A(I));:RETURN
1630 REM ....DICE SPIN SUBROUTINE....
1640 R=RND(6):T=0
1650 FORI=1 TO 5 STEP2:RESET(44+O,22+I):RESET(45+O,22+I)
1660 IF A(7*R+I+T)=1 SET(44+O,22+I):SET(45+O,22+I)
1670 NEXTI
1680 O=O+8:T=T+1:IF T=1 THEN 1650
1690 RESET(32+O,25):RESET(33+O,25):IF A(7*R)=1 SET(32+O,25):SET(
33+O,25)
1700 RETURN
1710 REM ....CONTINUE PROGRAM SUBROUTINE....
1720 PRINT@977,"(TO CONTINUE HIT SPACE BAR)";
1730 W$=INKEY$
1740 IF LEN (W$)=0 GOTO 1730 ELSE RETURN
```

# CRAZY EIGHTS

*By Richard Murillo*

Here is a good card game to play on a rainy day when no one wants to play cards. The computer is your opponent and a worthy one he can be.

Playing against the computer, you will be trying to get rid of your seven cards before it dispenses with its own. You must match the suit or number of the card face up on the screen. If you can't, you must pick up another card until you can play. Eights are wild and can be used at any time, and you may choose any suit.

Here is one game where you really do want to end up with nothing. All points in you hand go to your opponent if it can get rid of its cards first. The highest number of points win the game.

```
1 '
2 '          CRAZY EIGHTS
3 '          * * * * *
4 '          *          BY RICHARD MURILLO          *
5 '          *          NOVEMBER, 1979              *
6 '          * * * * *
7 PRINT
8 RANDOM:DEFSTRP
9 DIMX(52),SS(52),A(30),AS(30),R(44),RS(44),CRS(44)
10 CLS:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:INPUT"DO YOU WANT INSTRUCTIONS";HS
11 IFLEFT$(HS,1)="N"THEN80
12 IFLEFT$(HS,1)="Y"THEN25
13 GOTO14
14 CLS
15 PRINT"          CRAZY EIGHTS"
16 PRINT"THIS CARD GAME IS CALLED 'CRAZY EIGHTS', AND YOU WILL BE PLAYING AGAINST ME (AS FUTILE AS IT SEEMS). I WILL DEAL US BOTH 7 CARDS EACH AND 1 CARD FACE UP ON THE TABLE, BY THE DECK."
17 PRINT
18 PRINT"BOTH OF US THEN, TAKE TURNS AT MATCHING THE FACE-UP CARD (YOU CAN MATCH THE NUMBER OR THE SUIT OF THE CARD)."
19 PRINT
20 PRINT"IF YOU CAN'T MATCH THE FACE-UP CARD, YOU MUST PICK UP A CARD FROM THE STACK."
21 PRINT
22 PRINT"8'S ARE WILD, SO IF YOU HAVE ONE, YOU CAN THROW IT DOWN AT ANY TIME IN THE GAME EVEN IF IT DOESN'T MATCH THE FACE-UP CARD."
23 PRINT"AFTER YOU HAVE THROWN IT DOWN, YOU HAVE A CHOICE OF MAKING IT INTO ANY SUIT YOU WANT."
24 INPUT"          (PRESS ENTER FOR MORE INSTRUCTIONS)";QQ:CLS
25 PRINT"THE WINNER IS THE ONE WHO GETS RID OF ALL OF HIS (OR HER), "
26 PRINT"CARDS FIRST."
27 PRINT"IF THERE ARE NO MORE CARDS IN THE DECK TO PICK FROM, AND YOU CAN'T MAKE A PLAY, YOU MUST PASS."
28 PRINT"IF NEITHER OF US CAN MAKE A PLAY, THE GAME IS OVER."
29 PRINT"          SCORING:"
30 PRINT"THE WINNER WILL GET THE POINT VALUE OF ALL THE CARDS LEFT IN THE LOSER'S HAND."
31 PRINT"A'S ARE WORTH 15 POINTS. 8'S ARE WORTH 25 POINTS."
32 PRINT"10'S, J'S, Q'S, K'S ARE WORTH 10 POINTS."
```

## CRAZY EIGHTS

33

```

63 PRINT"NUMBER CARDS ARE WORTH THEIR NUMBER (EG 7 IS WORTH 7 PO
INTS). "
64 PRINT"                                HINTS:"
66 PRINT"NEAR THE END OF THE GAME, DON'T GET CAUGHT WITH HIGH VA
LUE CARDSIN YOUR HAND (LIKE A'S OR 8'S). "
67 PRINT
70 INPUT"                                (PRESS ENTER WHEN READY)";QQ:CLS:PR
INT:PRINT:PRINT"NOTE: YOU MAY TYPE THE FIRST LETTER OF A SUIT IN
STEAD OF WRITING      THE WHOLE THING."
71 PRINT"IF YOU CAN'T MATCH THE FACE-UP CARD TYPE 'NO' OR 'N'
72 PRINT"(TO PICK A CARD FROM THE STACK). "
75 PRINT:PRINT:PRINT
80 PRINT:PRINT"OK, HOW MANY POINTS DO YOU WANT TO PLAY TO?"
85 PRINT"(A GAME OF 100 POINTS WILL TAKE ABOUT 20 MINUTES). "
87 INPUTWW
88 IFWW<1THENCLS:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:GOTO75
90 LEFT=52:AH=0:RH=0:II=0:F6=0:U=0:D7$="":AA=0
92 CLS:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT"
      SHUFFLING....."
94 FORG=1TO52:X(G)=0:S$(G)="":NEXTG
96 FORG=1TO20:A(G)=0:A$(G)="":R(G)=0:R$(G)="":CR$(G)="":NEXTG
100 REM DEAL BOTH HANDS
109 CLS
110 FORX=0TO127STEP2:SET(X,15):NEXTX
112 PRINT@37,"CRAZY EIGHTS";
113 PRINT@165,"CARDS IN DECK:";
114 PRINT@180,LEFT;
115 PRINT@226,"CARDS IN MY HAND:";
116 PRINT@244,AH;
117 PRINT@288,"CARDS IN YOUR HAND:";
118 PRINT@308,RH;
120 FORX=10TO25:SET(X,2):SET(X,12):NEXT
123 FORY=2TO12:SET(10,Y):SET(11,Y):SET(24,Y):SET(25,Y):NEXTY
124 FORX=30TO45:SET(X,2):SET(X,12):NEXTX
125 FORY=2TO12:SET(30,Y):SET(31,Y):SET(44,Y):SET(45,Y):NEXTY
127 PRINT@71,"XXXX";
128 PRINT@135,"XXXX";
129 PRINT@199,"XXXX";
130 PRINT@244,AH;
131 GOSUB700
132 IFC>1AND<11THENPRINT@81,C;ELSEPRINT@82,P;
133 D=C:D$=S$
134 PRINT@146,"OF";
135 PRINT@208,S$;
140 GOSUB750:GOSUB581:REM TO DEAL ALICE'S HAND
165 FORZ=1TO7
170 GOSUB764
190 IFR(Z)>1ANDR(Z)<11THENPRINT@T+1+9*RH,R(Z);ELSEPRINT@T+2+9*RH
,CR$(Z);
192 PRINT@M+2+9*RH,"OF";
193 PRINT@B+9*RH,R$(Z);
196 NEXTZ
200 REM THE GAME BEGINS
202 GOSUB790:PP="":Z9=0:PRINT@896,"WANT TO PLAY A CARD";:INPUTPP
:GOSUB790
204 IFLEFT$(PP,1)="N"ANDLEFT=0THENU=U+1:GOSUB790:GOTO650
205 IFLEFT$(PP,1)="N"THEND7$=D$:F6=1:GOSUB700:RH=RH+1:PRINT@308,
RH;:GOSUB800:GOSUB790:GOSUB600:PP="":GOTO202
206 PRINT@896,"OF";:INPUTG$:GOSUB790
207 IFLEFT$(G$,1)="D"THENSU$="D'MNDS"
208 IFLEFT$(G$,1)="H"THENSU$="HEARTS"
209 IFLEFT$(G$,1)="S"THENSU$="SPADES"
210 IFLEFT$(G$,1)="C"THENSU$="CLUBS"
211 IFPP="A"THEN D1=1
212 IFPP="K"THEND1=13
213 IFPP="Q"THEND1=12

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214 IFPP="J"THEND1=11
215 IFPP="10"THEND1=10
216 IFPP="9"THEND1=9
217 IFPP="8"THEND1=8
218 IFPP="7"THEND1=7
219 IFPP="6"THEND1=6
220 IFPP="5"THEND1=5
221 IFPP="4"THEND1=4
222 IFPP="3"THEND1=3
223 IFPP="2"THEND1=2
224 IFD1=8THENGOSUB900:GOTO228
225 IFD1<>DANDSU$<>D$THENPRINT@896,"ILLEGAL PLAY- TRY AGAIN.":;F
ORK=1TO1000:NEXT:GOSUB790:GOTO202
226 IFD1=DOR SU$=D$THENGOSUB900
228 IFZ9=2THENGOSUB790:PRINT@896,"YOU DON'T HAVE THE":;IFD1>1AND
D1<11THENPRINTD1;ELSEPRINT" ";PP;
229 IFZ9=2THENPRINT" OF ";SU$;".":;FORK=1TO1000:NEXT:GOSUB790:GO
TO202
230 IFRH=0THENGOTO1000
250 FORX=1TO500:NEXT
255 U=0
299 REM ALICE'S PLAY
300 SP=0:HE=0:DI=0:CL=0:KK=0:KK$="":IFU=1THENPRINT@896,"GOOD.":;
FORG=1TO750:NEXTG
301 X=0
302 X=X+1
303 IFA$(X)=D7$ANDA(X)<>8THENZZ=X:IFA(ZZ)=DORA$(ZZ)=D$THEN380ELS
E304
304 IFX=AHTHEN306
305 GOTO302
306 X=0
307 X=X+1
308 IFA(X)=8ANDF6=1THENZZ=X:GOTO380
309 IFX=AHTHEN311
310 GOTO307
311 X=0
312 X=X+1
314 IFA(X)=DANDA(X)<>8THENZZ=X:GOTO380
315 IF X=AH THEN 341
320 GOTO312
341 X=0
342 X=X+1
345 IF A$(X)=D$ AND A(X)<>8 THEN ZZ=X:GOTO380
350 IF X=AH THEN 485
355 GOTO342
360 REM NO MATCHES FOR ALICE
362 IFLEFT=0THENU=U+1:GOSUB790:PRINT@896,"I MUST PASS.":;FORG=1T
O700:NEXT
363 IFU>1THENGOSUB790:PRINT@896,"SINCE NEITHER OF US CAN MAKE A
PLAY, THE GAME IS OVER.":;FORG=1TO2500:NEXTG:GOTO1220
364 IFU=1THEN202
365 GOSUB790:PRINT@896,"I WILL PICK ANOTHER CARD...":;AH=AH+1:PR
INT@244,AH;:IFAH<5THENFORJ0=1TO300:NEXT
367 GOSUB700:GOSUB581:A(AH)=C:A$(AH)=S$:GOSUB790:FORX=1TO500:NEX
TX
369 GOTO300
380 U=0:REM MATCH FOR ALICE
381 GOSUB790
383 PRINT@896,"I WILL PLAY THE ";
384 IFA(ZZ)=1 THEN PRINT"A":;GOTO395
385 IFA(ZZ)=11THEN PRINT"J":;GOTO395
386 IFA(ZZ)=12THEN PRINT"Q":;GOTO395
387 IFA(ZZ)=13THEN PRINT"K":;GOTO395
390 PRINTA(ZZ);
395 PRINT" OF ";
396 PRINTA$(ZZ);". ";

```



## CRAZY EIGHTS

35

```

399 KK$=A$(ZZ):KK=A(ZZ)
400 FORX=1TO1500:NEXT:GOSUB790
402 IFA(ZZ)=8THEN GOSUB 550
404 D=KK:D$=KK$
408 A(ZZ)=A(AH):A$(ZZ)=A$(AH)
410 A(AH)=0:A$(AH)="":AH=AH-1
412 PRINT@244,AH;
414 PRINT@80," ";:PRINT@208," ";
416 IFKK=1THENPRINT@82,"A";:GOTO421
417 IFKK=11THENPRINT@82,"J";:GOTO421
418 IFKK=12THENPRINT@82,"Q";:GOTO421
419 IFKK=13THENPRINT@82,"K";:GOTO421
420 PRINT@81,KK;
421 PRINT@208,KK$;
423 FORX=1TO3:PRINT@244," ";:FORB7=1TO30:NEXTB7:PRINT@244,AH;:
FORVV=1TO80:NEXTVV:NEXTX
424 IFAH=0THENGOTO1100
426 GOSUB581
450 GOTO202
485 REM CHECK FOR 8'S FOR ALICE
486 X=0
487 X=X+1
488 IFA(X)=8THENZZ=X:GOTO380
489 IFX=AHTHEN360
490 GOTO487
550 REM IF A(ZZ)=8-DETERMINE SUIT
555 GOSUB790:PRINT@896,"AND I WILL MAKE IT THE 8 OF ";
560 IFF6=1THENPRINTD7$;". ";:KK$=D7$:KK=8:FORG=1TO800:NEXTG:RETUR
N
562 FORX=1TOAH
563 IFA$(X)="SPADES"THENSP=SP+1
564 IFA$(X)="D'MNDS"THENDI=DI+1
565 IFA$(X)="HEARTS"THENHE=HE+1
566 IFA$(X)="CLUBS"THENCL=CL+1
567 NEXTX
568 E(1)=SP:E(2)=DI:E(3)=HE:E(4)=CL
569 E$(1)="SPADES":E$(2)="D'MNDS":E$(3)="HEARTS":E$(4)="CLUBS"
570 N=4: REM SORT FOR MOST SUITS- ALICE
571 FORI=1TON-1
572 FORJ=1TON-I
573 X=E(J):X6$=E$(J)
574 Y=E(J+1):Y6$=E$(J+1)
575 IFX>=YTHEN578
576 E(J+1)=X:E$(J+1)=X6$
577 E(J)=Y:E$(J)=Y6$
578 NEXTJ
579 NEXTI
580 GOTO675
581 FORI=1TOAH-1: REM SORT OF ALICE'S CARDS
582 FORJ=1TOAH-I
583 X=A(J):X3$=A$(J)
584 Y=A(J+1):X4$=A$(J+1)
585 IFX>=YTHEN588
586 A(J)=Y:A$(J)=X4$
587 A(J+1)=X:A$(J+1)=X3$
588 NEXTJ
589 NEXTI
590 RETURN
600 REM IFRH>7 (ADDING CARDS)
605 IFC>1ANDC<11THENR(RH)=CELSECR$(RH)=P:R(RH)=C
606 R$(RH)=S$
607 IFRH>14THEN1150
608 IFRH>7THENT=T+9*(RH-7):M=M+9*(RH-7):B=B+9*(RH-7)
609 IFRH<8THENT=T+9*RH:M=M+9*RH:B=B+9*RH
612 IFR(RH)>1ANDR(RH)<11THENPRINT@T+1,R(RH);ELSEPRINT@T+2,CR$(RH
);

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613 PRINT@M+2,"OF";
614 PRINT@B,R$(RH);
625 RETURN
650 REM
652 IFU>1THENGOSUB790:PRINT@896,"SINCE NEITHER OF US CAN MAKE A
PLAY, THE GAME IS OVER.":FORG=1TO2500:NEXTG:GOTO1220
654 GOTO300
675 REM FINISH OF REM 550
677 PRINT$(1);". ";
679 FORG=1TO1300:NEXTG
680 KK$=E$(1):KK=8:RETURN
691 REM IF R(ZZ)=8
692 GOSUB790:PRINT@896,"OK, WHAT SUIT DO YOU WANT":INPUTG$:GOSU
B790
693 IFLEFT$(G$,1)="H"THENSU$="HEARTS"
694 IFLEFT$(G$,1)="S"THENSU$="SPADES"
695 IFLEFT$(G$,1)="D"THENSU$="D'MNDS"
696 IFLEFT$(G$,1)="C"THENSU$="CLUBS"
698 RETURN
700 REM PICK A CARD
703 L=RND(52)
706 IFX(L)=1THEN700
709 X(L)=1
710 LEFT=LEFT-1:PRINT@180,LEFT;
712 IFL<14THENC=L:S$="HEARTS":GOTO724
715 IFL<27THENC=L-13:S$="SPADES":GOTO724
718 IFL<40THENC=L-26:S$="CLUBS":GOTO724
721 C=L-39:S$="D'MNDS"
724 IFC=1THENP="A"
726 IFC=11THENP="J"
728 IFC=12THENP="Q"
730 IFC=13THENP="K"
735 II=II+1
736 IFII=52THENGOSUB1200
740 RETURN
750 REM DEAL ALICE'S HAND
755 FORX=1TO7
756 GOSUB700:A(X)=C:A$(X)=S$
757 AH=AH+1:PRINT@244,AH;
760 NEXTX
762 RETURN
764 REM DEAL MY HAND
765 RH=RH+1:PRINT@308,RH;
767 GOSUB700
768 GOSUB800
770 IFC>1ANDC<11THENR(Z)=CELSECR$(Z)=P:R(Z)=C
772 R$(Z)=S$
775 RETURN
789 STOP
790 REM LINE ERASE
791 PRINT@896,"
";:RETURN
795 REM ERASE TOP CARD
796 PRINT@80," ";:PRINT@208," ";:RETURN
800 REM MY CARD OUTLINES
802 IFRH>7THEN X1=2:Y1=29:T=633:M=697:B=761:X1=X1+18*(RH-8)
803 IFRH<8THEN X1=2:Y1=17:T=377:M=441:B=505:X1=X1+18*(RH-1)
804 IFRH>14THENRETURN
805 FORX=X1TOX1+15:SET(X,Y1):SET(X,Y1+10):NEXTX
810 FORY=Y1TOY1+10:SET(X1,Y):SET(X1+1,Y):SET(X1+14,Y):SET(X1+15,
Y):NEXTY
815 RETURN
900 REM CHECK FOR LEGAL PLAY--DO I HAVE CARD?
905 FORX=1TORH
910 IFR(X)=D1ANDR$(X)=SU$THENZZ=X:Z9=1
911 NEXTX

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## CRAZY EIGHTS

37

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912 IFZ9=1THEN913 ELSE Z9=2:RETURN
913 IFD1=1THENP="A"
914 IFD1=11THENP="J"
915 IFD1=12THENP="Q"
916 IFD1=13THENP="K"
917 U=0
920 GOSUB795:GOSUB790:IFR(ZZ)>1ANDR(ZZ)<11THENPRINT@81,R(ZZ);ELSE
EPRINT@82,P;
921 IFR(ZZ)=8THENGOSUB691
922 PRINT@208,SU$;:D$=SU$:D=D1
923 IFRH<8THENT1=377:M1=441:B1=505:X1=2:Y1=17:X1=X1+(18*(RH-1)):
T2=377:M2=441:B2=505:T1=377+9*ZZ:M1=441+9*ZZ:B1=505+9*ZZ
924 IFRH>7THENT1=633:M1=697:B1=761:T2=633:M2=697:B2=761:X1=2:Y1=
29:X1=X1+18*(RH-8):IFZZ<8THENT1=377+9*ZZ:M1=441+9*ZZ:B1=505+9*ZZ
ELSEX1=2+18*(RH-8)
930 R(ZZ)=R(RH):R$(ZZ)=R$(RH):R(RH)=0:R$(RH)="":CR$(ZZ)=CR$(RH):
CR$(RH)=" "
931 IFZZ>7THENT1=T1+9*(ZZ-7):M1=M1+9*(ZZ-7):B1=B1+9*(ZZ-7)
932 IFRH>14ANDZZ>14THEN957
933 PRINT@T1," ";:PRINT@M1," ";:PRINT@B1," ";
934 IFZZ=RH AND R>14 THEN957
935 IFZZ=RH THEN 942
936 IFR(ZZ)>1 AND R(ZZ)<11 THENPRINT@T1+1,R(ZZ);ELSEPRINT@T1+2,C
R$(ZZ);
938 PRINT@M1+2,"OF";
940 PRINT@B1,R$(ZZ);
941 IFRH>14THEN957
942 IFRH<8THENPRINT@T2+9*RH," ";:PRINT@M2+9*RH," ";:PRINT@
B2+9*RH," ";
943 IFRH>7THENPRINT@T2+9*(RH-7)," ";:PRINT@M2+9*(RH-7),"
";:PRINT@B2+9*(RH-7)," ";
952 FORX=X1TOX1+15:RESET(X,Y1):RESET(X,Y1+10):NEXTX
954 FORY=Y1TOY1+10:RESET(X1,Y):RESET(X1+1,Y):RESET(X1+14,Y):RESE
T(X1+15,Y):NEXTY
957 RH=RH-1:PRINT@308,RH;
960 RETURN
999 STOP
1000 IFRH=0THENGOSUB790:PRINT@896,"CONGRATULATIONS...YOU WON!";:
FORG=1TO1500:NEXT
1010 GOTO1220
1100 REM ROUTINE IF ALICE WINS
1105 GOSUB790:FORG=1TO7:GOSUB790:PRINT@896,"I WON!";:FORL=1TO200
:NEXTL:GOSUB790:NEXTG
1110 GOTO1220
1150 REM IF RH>14
1152 GOSUB790
1155 IFC>1 AND C<11 THENPRINT@896,R(RH);ELSEPRINT@896,P;
1160 PRINT" ";S$;
1163 FORG=1TO1000:NEXTG:GOSUB790
1165 RETURN
1200 REM IF NO MORE CARDS
1201 PRINT@70," ";:PRINT@134," ";:PRINT@198," ";
1202 FORX=10TO25:RESET(X,2):RESET(X,12):NEXT
1203 FORY=2TO12:RESET(10,Y):RESET(11,Y):RESET(24,Y):RESET(25,Y):
NEXTY
1204 RETURN
1220 CLS:AG=0:RG=0
1230 PRINT@64,"I HAD: ";
1235 IFAH=0THENPRINT"NO CARDS LEFT (SINCE I WON).":GOTO1265
1240 CT=1
1241 IFA(CT)>1ANDA(CT)<11THENPRINTA(CT);
1242 IFA(CT)=1THENPRINT"A";
1243 IFA(CT)=11THENPRINT"J";
1244 IFA(CT)=12THENPRINT"Q";
1245 IFA(CT)=13THENPRINT"K";
1246 PRINT" ";A$(CT);". ";

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1247 IFA(CT)=8THEN RG=RG+25:GOTO1252
1248 IFA(CT)=1THEN RG=RG+15:GOTO1252
1249 IFA(CT)>9THEN RG=RG+10:GOTO1252
1250 RG=RG+A(CT)
1252 IFCT=AH THEN 1265
1255 CT=CT+1
1257 GOTO 1241
1265 PRINT@256,"YOU HAD: ";
1270 IF RH=0THENPRINT"NO CARDS LEFT (SINCE YOU WON).":GOTO1300
1273 CT=1
1275 IFR(CT)>1ANDR(CT)<11THENPRINTR(CT);
1277 IFR(CT)=1THENPRINT"A";
1279 IFR(CT)=11THENPRINT"J";
1281 IFR(CT)=12THENPRINT"Q";
1283 IFR(CT)=13THENPRINT"K";
1285 PRINT" ";R$(CT);". ";
1286 IFR(CT)=8THENAG=AG+25:GOTO1290
1287 IFR(CT)=1THENAG=AG+15:GOTO1290
1288 IFR(CT)>9THENAG=AG+10:GOTO1290
1289 AG=AG+R(CT)
1290 IFCT=RH THEN 1300
1291 CT=CT+1
1292 GOTO1275
1300 PRINT:PRINT:PRINT
1305 PRINT"MY SCORE: ";AG
1310 PRINT"YOUR SCORE: ";RG;
1311 PRINT@616,"TOTAL SCORE SO FAR:";
1312 SA=SA+AG:PRINT@686,"ME: ";SA;
1313 SR=SR+RG:PRINT@749,"YOU: ";SR;:PRINT
1314 IFSA>=WW AND SR>=WW THEN AA=1
1315 IFAA=1 AND SA=SR THEN PRINT"THE SCORE IS TIED.":PRINT"WE NE
ED A TIE BREAKING ROUND.":INPUT" (PRESS ENTER W
HEN READY)";QQ:GOTO90
1316 IFAA=1AND SA>SRTHENPRINT"THE GAME IS OVER. I WIN WITH";SA;"
POINTS."
1317 IFAA=1ANDSR>SA THENPRINT"THE GAME IS OVER. YOU WIN WITH";SR
;" POINTS."
1318 IFAA=1THEN1325
1320 IFSA>=WWANDSR<WWTHEN PRINT"THE GAME IS OVER. I WIN WITH";SA
;" POINTS.":GOTO1325
1322 IFSR>=WWANDSA<WWTHENPRINT"THE GAME IS OVER. YOU WIN WITH";S
R;" POINTS.":GOTO1325
1323 IFSA<WW AND SR<WWTHEN PRINT:PRINT"REMEMBER, ";WW;" POINTS WI
NS THIS GAME.":INPUT" (PRESS ENTER WHEN REA
DY)";QQ:GOTO90
1325 SA=0:SR=0:PRINT:INPUT"WANT TO PLAY AGAIN";H$
1327 IFLEFT$(H$,1)="N"THENPRINT"YOU'RE BETTER OFF. I'M TOO GOOD
FOR YOU.":GOTO1600
1329 IFLEFT$(H$,1)="Y"THENPRINT"GOOD FOR YOU!":FORG=1TO1000:NEXT
G:GOTO14
1340 PRINT
1345 INPUT"(PRESS ENTER WHEN READY)";QQ:GOTO90
1600 GOTO1600

```

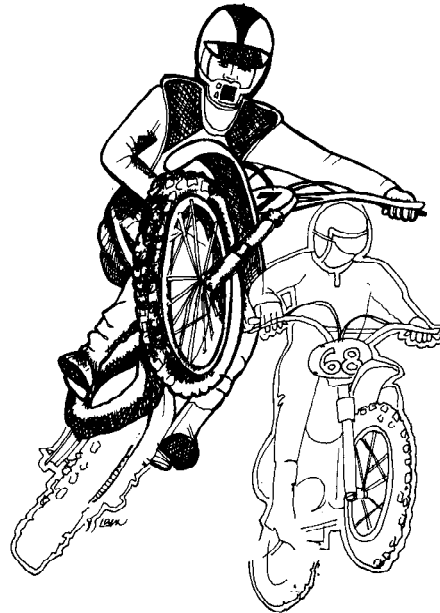
# CYCLEJUMP

*By James S. Schaefer*

You may "carry your teeth home in your pocket" or "have broken every bone in your body" after trying this program on your computer.

CYCLEJUMP puts you on your bike jumping over from one to ten barrels at a time. You can set the angle of the jump and adjust your speed to insure a good jump. The wind speed and direction is set by the computer each time and should be taken into account when you make your jump. If you feel up to it, take the expert's level of 0; otherwise you have a total of ten levels of skill from 0 (hard) to 9 (easy).

Your bike's all throttled up and ready to go. The barrels are waiting...



```
10 ' STEVE SCHAEFER
100 RANDOM: JL=-1:CLS:GOSUB825:PRINT@340,"C Y C L E":PR
INT@468,"J U M P":GOSUB950
110 PRINT"TYPE YOUR FIRST NAME & ENTER":INPUT N$:CLS
120 PRINT"TYPE SKILL LEVEL (0 TO 9) 0=HARD 9=EASY & ENTER":INPUT
N:CLS
125 IFINT(N)>=0ANDINT(N)<=9THEN130ELSE120
130 PRINT"IF YOU NEED INSTRUCTIONS TYPE (1) IF NOT TYPE (2)":GOS
UB800
150 IFA=2THEN170
160 IFA=1THEN610ELSE:GOSUB850:GOTO130
```

THE *SOFTSIDE* SAMPLER

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170 JL=JL+1:CLS:W=RND(360):WS=RND(25):PRINT@75,"WINDSPEED"WS;"MP
H";:PRINT@304,"GOOD JUMPS";GJ;:PRINT@368,"TOTAL JUMPS";JL
210 IFW>=0ANDW<90THENPRINT@100,"WIND OUT OF NORTH"
220 IFW>=90ANDW<180THENPRINT@100,"WIND OUT OF EAST"
230 IFW>=180ANDW<270THENPRINT@100,"WIND OUT OF SOUTH"
240 IFW>=270ANDW<=360THENPRINT@100,"WIND OUT OF WEST"
260 BO=RND(8):FORX=30TO30+(BO*10)STEP1.111:FORY=44TO47:SET(X,Y):
NEXT:NEXT:X1=X+N*3+3:GOSUB960
290 PRINT@130,"TYPE RAMP ANGLE (0 TO 90) & ENTER";:INPUTA
300 IFA>=0ANDA<=90THEN310ELSEPRINT@166," ";:GOTO290
310 PRINT@194,"TYPE RAMP SPEED (0 TO 125) & ENTER";:INPUTS
320 IFS>=0ANDS<=125THEN330ELSEPRINT@230," ";:GOTO310
330 S=S*1.46667:J=SIN(A*.0174533):K=COS(A*.0174533):KK=1
340 WP=-COS(W*.0174533):WD=WP*WS:S=S+WD
350 T=(2*S*J)/32:FORTT=0TOT
360 X1=S*K*TT:X2=20+X1*.1:X4=CINT(X2/2)
370 Y1=(16*TT^2)+(S*J*TT):Y2=46-Y1*.1:Y4=CINT(Y2/3)
380 SP=X4+Y4*64
385 IFSP<319CLS:GOSUB825:PRINT@460,"T O O   H I G H":GOSUB900:G
OSUB925:GOSUB825:BR=BR+16:GOTO1000
386 IFKK>1THEN390ELSEGOSUB860
390 PRINT@SP,"0V`";:FORM=1TO50:NEXT:PRINT@SP,". ";:NEXT
400 X1=X+N*3+3
410 GOSUB960
430 IFX2>XANDX2<X1THEN440ELSE470
440 CLS:GOSUB825:PRINT@340,"G O O D";:PRINT@468,"J U M P":GOSUB9
00
460 GJ=GJ+1:GOTO170
470 IFX2<XTHEN490
480 IFX2>X1CLS:GOSUB825:PRINT@460,"T O O   L O N G":GOSUB900:GO
SUB925:GOSUB825:BR=BR+8:GOTO1000
490 CLS:GOSUB825:PRINT@468,"C R A S H";:GOSUB900:GOSUB925:GOSUB8
25:GOTO1000
500 END
510 IFJL=10THENPRINT"WELL ";N$;" YOU DIDN'T DO TOO WELL THIS TI
ME. HOWEVER
I LIKE YOU, IF YOU WOULD LIKE ANOTHER CHANCE TYPE (1) IF NOT
TYPE (2)":GOSUB800ELSEGOTO170
560 IFA=1THEN170
570 IFA=2THENPRINT"WELL MAYBE NEXT TIME.":GOSUB900:GOTO3000
590 PRINT"ARE YOU STILL SHOOK-UP ..... YOU DIDN'T TYPE (1) OR (
2)
SO PLEASE TYPE ONE OR THE OTHER."
600 GOSUB800:GOTO560
610 CLS:PRINT:PRINT:PRINT
620 PRINT"YOU ARE JUMPING NORTH. THE DIRECTION THAT THE WIND
IS BLOWING OUT OF IS GIVEN AT THE TOP OF THE SCREEN. THE
WIND SPEED IS ALSO GIVEN. IT IS UP TO YOU TO SET THE
ANGLE OF THE RAMP AND ADJUST YOUR SPEED TO INSURE A GOOD
JUMP."
630 PRINT"BE SURE TO TAKE INTO ACCOUNT THE WIND WHEN SETTING
UP FOR THE JUMP. AS YOUR LEVEL OF SKILL INCREASES THE
IDEAL LANDING SPOT DECREASES. IN LEVEL (0) YOU HAVE
ONLY TWICE THE LENGTH OF YOUR CYCLE IN WHICH TO LAND."
640 PRINT"TYPE (1) TO START":GOSUB800
670 IFA=1THEN170ELSE640
800 A$=INKEY$:IFA$=""THEN800ELSEA=VAL(A$):RETURN
825 PRINTCHR$(23):RETURN
850 PRINT"YOU DIDN'T TYPE (1) OR (2)":FORTL=1TO500:NEXT:CLS:RETU
RN
860 FORO=1TO20STEP5:P=46:O1=CINT(O/2):P1=CINT(P/3):PL=O1+P1*64:P
RINT@PL,"0V@";:FORTL=1TO500:NEXT:PRINT@PL,". ";:NEXT:KK=KK+1:RET
URN
900 FORTL=1TO500:NEXT:CLS:RETURN
925 BR=RND(8):RETURN
950 FOR X=1TO2000:NEXT:CLS:RETURN

```

## CYCLEJUMP

41

```
960 IFX1<127THENX1=X1ELSEX1=127
963 FORJJ=XTOX1:SET(JJ,47):NEXT:RETURN
1000 GOTO1020
1020 IFBR=1THENPRINT"YOU HAVE BROKEN EVERY BONE
IN YOUR BODY!"
1030 IFBR=2THENPRINT"YOUR FRONT TIRE IS
IN YOUR ENGINE!"
1050 IFBR=3THENPRINT"SAINT PETER THIS IS ";N$:
PRINTN$;" THIS IS SAINT PETER"
1060 IFBR=4THENPRINT"ALL IS NOT LOST
WE FOUND YOUR TIMEX!"
1070 IFBR=5THENPRINT"YOU COULD ALWAYS START
FROM SCRATCH OR SCRAP!"
1080 IFBR=6THENPRINT"WELL ";N$;" I HOPE YOUR
INSURANCE COVERS EVERYTHING!"
1090 IFBR=7THENPRINT@468,"R. I. P."
1100 IFBR = 8THENPRINT"YOU MAY CARRY YOUR TEETH
HOME IN YOUR POCKET!"
2010 IFBR=9THENPRINT"YOU HAVE JUST MET YOUR FANS
FACE TO FACE --- NOSE TO NOSE --- CHEECK TO CHEECK!"
2020 IFBR=10THENPRINTN$;" SAY HELLO TO
MR. JONES. HIS LAYWER WILL
SAY HELLO TO YOU IN THE MORNING!"
2030 IFBR=11THENPRINT"OH NO! SMASHED FANS!"
2040 IFBR=12THENPRINT"THE GIRL IN THE FRONT
ROW -- W A S -- CUTE!"
2050 IFBR=13THENPRINT"IT'S OUT OF THE PARK
IT'S OVER THE PARKING LOT
IT'S GONE."
2070 IFBR=14THENPRINT"BOY! DID YOU LEAVE
A BIG MESS!"
2080 IFBR=15THENPRINT"PEANUTS! POPCORN! CYCLE PARTS!"
2100 IFBR=16THENPRINT"DID YOU EVER DO THIS
BEFORE YOU CAME HERE!"
2520 IFBR=17THENPRINT"FLOAT LIKE A BUTTERFLY --
DROP LIKE A 'ROCK!"
2530 IFBR=18THENPRINT"LOOK UP IN THE SKY
IT'S A BIRD...IT'S A PLANE
IT'S.....RUN! RUN!"
2540 IFBR=19THENPRINT@460,"WHAT A VIEW!"
2550 IFBR=20THENPRINT"THIS IS GROUND CONTROL
TO ";N$
2560 IFBR=21THENPRINT"NOT MUCH OXYGEN UP HERE!"
2570 IFBR=22THENPRINT"LOOK AT ALL THOSE LITTLE
PEOPLE DOWN THERE!"
2580 IFBR=23THENPRINT"EVERY DAY HAS ITS' UPS
AND DOWNS & DOWNS & DOWNS!"
2590 IFBR=24THENPRINT"DON'T WORRY ABOUT THE FALL
YOU WON'T FEEL A THING!"
2600 FORX=1TO2000:NEXT:CLS:GOTO510
3000 CLS:PRINT"DON'T SHUT ME OFF PLEEEEEEEEEEE EE E E E A
S."
3010 GOTO3010
```

# DIGITAL DOWNS

*By Al Ragsdale*

DIGITAL DOWNS is a simple simulation of a horse race including special graphics and sound effects. The rules for playing the game are included in the program. Up to ten players can play simultaneously, making it an interesting game for parties.

```
1 DEFINTA-Z:RANDOM:DIMNA(12):DIMBU(14):DIMCA(12)
2 CLS:PRINT@346,"AL RAGSDALE":PRINT@472,"WELCOMES YOU TO":PRINT@
595,"D I G I T A L   D O W N S" '(C) 1981 BY AL RAGSDALE---VER
SION 810105
3 FOR L=835TO886STEP3:GOSUB100:NEXT
5 GOSUB2000
6 FORK=0TO10:Z=USR(CA(K)):NEXT
10 GOTO 1000
100 PRINT @ L-1,"  -"; 'DRAW A HORSE AT L+3
101 PRINT @ L+3,CHR$(168);:A=48+H:PRINT @ L+4,CHR$(A);
102 PRINT @ L+5,CHR$(172);:PRINT @ L+6,CHR$(131);
105 FOR I=1 TO 3:OUT 255,1:OUT 255,0:FOR J=1 TO 40:NEXT:NEXT
106 RETURN
200 H=RND(6):IF(H=W(1))+(H=W(2)) THEN 200 'THE RACE!
210 P(H)=P(H)+RND(S)
212 IF P(H)>54 THEN W(F)=H:ONFGOSUB410,411,412:F=F+1
214 L=B(H)+P(H):GOSUB 100
215 IF F<4 THEN 200
400 FORK=0TO10:Z=USR(CA(K)):NEXT 'SCORING
401 GOSUB 410:GOSUB411:GOSUB412:GOTO 420
410 PRINT @ 128,"THE WINNER IS HORSE";W(1);"!";:RETURN
411 PRINT @ 156,"HORSE";W(2);"PLACES ";:RETURN
412 PRINT @ 176,"HORSE";W(3);"SHOWS";:RETURN
420 FOR N=1 TO NP
421 M(N)=M(N)-BM(N)
422 IF BE(N)=10*W(1)+1 THEN M(N)=M(N)+5*BM(N)
423 IF BE(N)=10*W(1)+2 THEN M(N)=M(N)+3*BM(N)
424 IF BE(N)=10*W(1)+3 THEN M(N)=M(N)+2*BM(N)
425 IF BE(N)=10*W(2)+2 THEN M(N)=M(N)+2*BM(N)
426 IF BE(N)=10*W(2)+3 THEN M(N)=M(N)+1.5*BM(N)
427 IF BE(N)=10*W(3)+3 THEN M(N)=M(N)+1.2*BM(N)
428 NEXT
440 FOR K=1 TO 2000:NEXT:CLS:PRINT"R A C E   R E S U L T S"
450 GOSUB 410:GOSUB411:GOSUB412:PRINT:PRINT
451 FOR N=1 TO NP
452 PRINT "PLAYER ";I$(N);" BET $";BM(N);"ON";BE(N);"-- NOW HAS
$";M(N);
453 IF M(N)>0 THEN PRINT " ":GOTO 455
454 PRINT "-- THANK YOU SUCKER!"
455 NEXT
460 H=0:L=886:GOSUB100
499 PRINT:INPUT "FOR ANOTHER RACE, HIT (ENTER)";ZZ:GOTO 1013
500 'INITIALIZATION FOR EACH RACE
501 FOR H=1 TO 6:B(H)=128+128*H:NEXT
502 F=1:W(1)=0:W(2)=0:W(3)=0:ZZ=0
503 CLS:S=1+RND(2)
548 GOSUB 1100
550 FOR N=1 TO NP:H=0:GOSUB100 'BETTING
551 PRINT @ 128,"PLAYER ";I$(N);" NOW HAS $";M(N)
552 PRINT " PLEASE PLACE YOUR BET"
```



```

553 Z=USR(25600):Z=USR(28928)
554 INPUT "      HOW MUCH MONEY DO YOU WISH TO BET";BM(N):IFM(N)<
=0THENPRINT@261,"OK--I'LL LOAN YOU $20, LOSER!      ":BM(N)=2
0:ELSEIFBM(N)>M(N)THENPRINT@261,"SORRY--NO CREDIT--BUT I'LL TAKE
WHAT YOU HAVE!":BM(N)=M(N)
555 INPUT "      WHICH HORSE DO YOU BET ON (1 TO 6)";BH(N):IFBH(N)
)>6ORBH(N)<1THENGOTO551
556 INPUT "      HOW WILL HE FINISH THE RACE (1 TO 3)";BP(N):IFBP
(N)<1ORBP(N)>3THEN551
557 BET(N)=10*BH(N)+BP(N)
558 PRINT @ 0,"BETS      ";;FOR K=1 TO N:PRINTI$(K);" =";BE(K);:NE
XT
559 PRINT @ 128,"":PRINT:PRINT:PRINT:PRINT:PRINT:NEXT N
560 CLS:FOR J=3 TO 123 STEP 30
561 FOR I=10 TO 47
562 SET(J,I):NEXT:NEXT
564 PRINT @ 0,"BETS      ";;FOR N=1 TO NP:PRINT I$(N);" =";BE(N);:
NEXT
565 FORK=0TO14:Z=USR(BU(K)):NEXT
567 FOR H=1 TO 6:P(H)=-1+RND(3):L=B(H)+P(H):GOSUB 100:NEXT
599 GOTO 200
1000 'INSTRUCTIONS & INITIALIZATION
1001 CLS:GOSUB100:PRINT@0,"":INPUT"NUMBER OF PLAYERS (1 TO 10) "
;NP
1002 PRINT"ENTER DIFFERENT INITIAL OR SYMBOL FOR EACH PLAYER"
1003 FORK=1TONP:INPUTI$(K):NEXT
1012 FOR N=1 TO NP:M(N)=100:NEXT
1013 CLS:GOSUB100:PRINT@0,"":INPUT"FOR INSTRUCTIONS HIT (1)(ENTE
R), ELSE HIT (ENTER)";ZZ
1014 IF ZZ=0 THEN 500
1015 CLS:PRINT "D I G I T A L   D O W N S---I N S T R U C T I O
N S":PRINT
1016 PRINT "YOU BET ON A HORSE AND HOW HE FINISHES THE RACE"
1017 PRINT "THE 1ST HORSE IN IS THE WINNER--2ND PLACES--3RD SHOW
S"
1019 PRINT "THE PAYOFFS IN THIS GAME ARE GIVEN BELOW"
1020 PRINT "      HORSE FINISHES"
1021 PRINT "YOUR BET      WIN PLACE SHOW      THE HORSE YOU BET ON
"
1022 PRINT "1ST (WIN)      5      0      0      MUST FINISH AS WELL
OR"
1023 PRINT "2ND (PLACE)   3      2      0      BETTER THAN YOUR BET
"
1024 PRINT "3RD (SHOW)    2      1.5  1.2      FOR YOU TO WIN"
1025 PRINT "FOR EXAMPLE, IF YOU BET $20 ON A HORSE TO PLACE AND
HE WINS"
1026 PRINT "      YOU WOULD GET BACK $60--3 TIMES $20--A GAIN OF $4
0"
1027 PRINT " IF YOU BET $10 ON A HORSE TO PLACE AND HE SHOWS"
1028 PRINT "      YOU LOSE YOUR $10":PRINT
1030 GOSUB100
1099 PRINT@960,"";:INPUT "HIT (ENTER) TO CONTINUE";ZZ:CLS:GOTO 5
00
1100 CLS      'HORSES NAMES
1101 PRINT @ 512,"H O R S E S   I N   T H I S   R A C E"
1102 FOR K=1 TO 12:NA(K)=0:NEXT
1103 FOR K=1 TO 6:PRINT "NUMBER";K;"IS ";
1104 R=RND(12)
1105 IF NA(R)=1 THEN 1104
1106 NA(R)=1
1107 ON (R) GOTO 1111,1112,1113,1114,1115,1116,1117,1118,1119,11
20,1121,1122
1111 PRINT"TANDY DANDY":GOTO 1123
1112 PRINT"LITTLE BIT":GOTO 1123
1113 PRINT"ELECT TRICK":GOTO 1123
1114 PRINT"BYTE SYZE":GOTO 1123

```

```
1115 PRINT "TRAN SISTER":GOTO 1123
1116 PRINT"LUCKY HEX":GOTO 1123
1117 PRINT"BLUE CHIPS":GOTO 1123
1118 PRINT"SEA MOSS":GOTO 1123
1119 PRINT"C R TEASE":GOTO 1123
1120 PRINT"DIGIT TAIL":GOTO 1123
1121 PRINT"FLIP FLOP":GOTO 1123
1122 PRINT"SLOW POKE":GOTO 1123
1123 NEXT K
1125 RETURN
2000 'SOUND ROUTINES
2001 MM$="":FORK=0TO20:READM:MM$=MM$+CHR$(M):NEXT
2002 FORK=0TO14:READBU(K):NEXT
2003 FORK=0TO10:READCA(K):NEXT
2004 ONERRORGOTO2005:K!=PEEK(VARPTR(MM$)+1)+256*PEEK(VARPTR(MM$)
+2):IFK!<32768THENDEFUSR=K!:GOTO2006:ELSEDEFUSR=- (65536-K!):GOTO
2006
2005 STOP:POKE16526,PEEK(VARPTR(MM$)+1):POKE16527,PEEK(VARPTR(MM
$)+2)
2006 ON ERROR GOTO 0:RETURN
2009 DATA205,127,10,68,62,1,211,255,16,254,68,62,2,211,255,16,25
4,45,32,239,201
2010 DATA32512,25600,21760,15872,16072,16072,16072,21760,21888,2
1888,21888,25600,21760,25600,32512
2020 DATA21760,21760,25600,21760,19200,21760,25600,25600,28928,2
5600,28928
```

# DRAG RACE

*By Chris Freund*

This is a very short skill game for those who want to test their dexterity and coordination. The player must coordinate shifting and accelerating to get the highest speed possible. The game starts out with the "car" in first gear. The player uses the space bar as an accelerator, and he shifts by using the numbered key of the gear he wants to shift into. The most important thing to remember is that you must let up on the space bar in order to shift. Once the car has been shifted (you can tell it's been shifted when the tachometer goes down), the player must accelerate quickly in order to keep from losing speed. This is done through the four gears. Time will eventually run out, and the final speed will be stated. Of course, if the player doesn't shift and his tachometer goes too high, he'll blow an engine. Because an engine blows at random at high RPMs, top speed can be unpredictable, but anything over 130 is good, and anything over 135 is grand prix stuff.

Note the following:

1. The car starts out in first gear; there is no need to shift into it.
2. Downshifting is not allowed, and although a player can skip gears, this is not good strategy.
3. To find out when the engine will blow, just experiment. It is partially random.
4. Being too quick in shifting can hurt since the program may "miss" the shift. Experiment to find the best shifting speed.

```
5 REM * * * * *
  * D R A G   R A C E *
  *   BY CHRIS FREUND *
  * * * * *
10 CLS:PRINTCHR$(23);"DRAG RACE!!
USE THE SPACE BAR AS AN AC-
CELERATOR, AND SHIFT GEARS
(FROM 1-4) BY USING THOSE
RESPECTIVE KEYS. DON'T SHIFT
WHILE ACCELERATING.

"
20 PRINT"ALWAYS WATCH YOUR TACH!

GOOD LUCK!!

YOU ARE ALREADY IN FIRST GEAR."
30 INPUT"PRESS ENTER TO BEGIN";A
40 CLS:CLEAR600:DEFSTRA-C
50 A=STRING$(61,191):PRINT@2,A;:PRINT@258,A;:PRINT@194,A;:PRINT@
450,A;:PRINT@514,A;:PRINT@706,A;
60 A=CHR$(191):FORX=1TO12:PRINT@62+X*5,X*20;:PRINT@575+X*5,X;:NE
XT:FORX=66TO126STEP5:PRINT@X,A;:PRINT@X+512,A;:NEXT:PRINT@130,A;
:PRINT@190,A;:PRINT@578,A;:PRINT@638,A;:PRINT@642,A;:PRINT@702,A
;
```

```
70 PRINT@346,"SPEEDOMETER";:PRINT@792,"TACHOMETER X 1000";
80 PRINT@547,"DANGER \";:PRINT@561,"BLOWOUT \";:PRINT@525,"]-SAFE-^";
90 PRINT@859,STRING$(11,191);:PRINT@987,STRING$(11,191);:PRINT@923,STRING$(4,191);" 1 ";STRING$(4,191);:PRINT@916,"GEAR :";
100 PRINT@1000,"PRESS ENTER TO START";
110 IFINKEY$<>CHR$(13)THEN110
115 PRINT@1000,CHR$(30);
120 G=1:S=0:T=5
130 PRINT@131,STRING$(59,32);:PRINT@131,STRING$(S,140);:PRINT@643,STRING$(59,32);:PRINT@643,STRING$(T,140);
140 IFPEEK(14400)=128THEN170ELSEONGGOSUB250,260,270,280:IFS<0S=0
150 IFT<5T=5
160 GOTO180
170 ONGGOSUB210,220,230,240:IFT>50+RND(5)GOTO290
180 PRINT@927,G;:A$=INKEY$:X=VAL(A$):IFPEEK(14400)=0ANDX>GTHENG=X:T=10
190 Y=Y+1:IFY=60THEN310
200 GOTO130
210 T=T+4:S=S+1:RETURN
220 T=T+3.3:S=S+.75:RETURN
230 T=T+2.5:S=S+.5:RETURN
240 T=T+2:S=S+.3:RETURN
250 T=T-2:S=S-.5:RETURN
260 T=T-1.5:S=S-.4:RETURN
270 T=T-1.2:S=S-.3:RETURN
280 T=T-1:S=S-.2:RETURN
290 PRINT@896,CHR$(30);"YOU HAD AN ENGINE BLOWOUT AT";T*200;"RPM";
300 GOTO310
310 PRINT@960,CHR$(30);"FINAL SPEED:";S*4;"MPH. PRESS ENTER FOR ANOTHER GAME";
320 IFINKEY$<>CHR$(13)THEN320
330 RUN
```

# ENGINEER

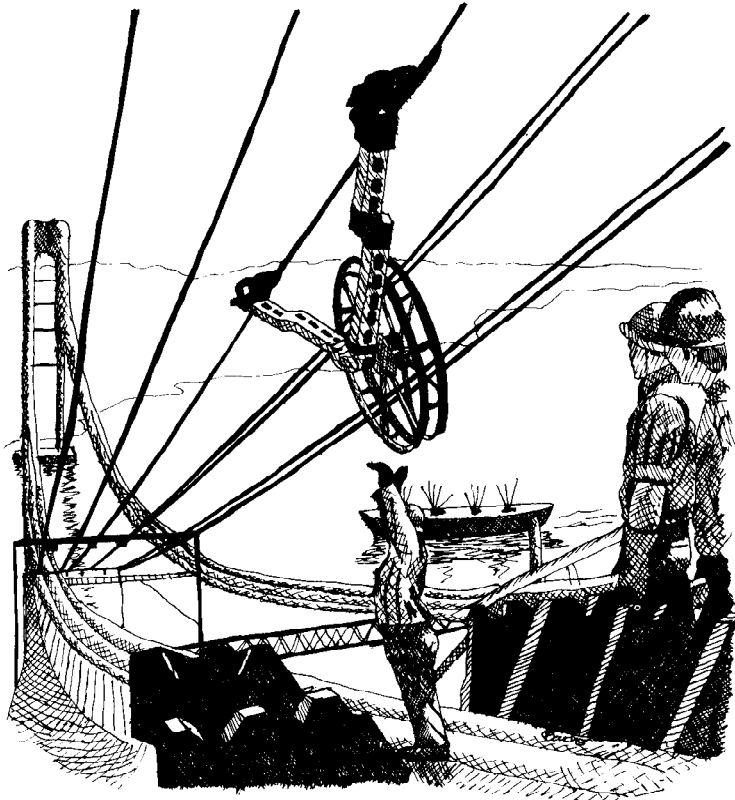
*By David Bohlke*

The object of this game is to construct a bridge connecting the two blocks at the top of the screen. To do this, you must place your beams in accordance with the inspector's specifications. You may work alone, or several players may compete to see who can construct the bridge in the fewest days.

You will discover a thing or two about construction (the right end of the beam must be supported) and inspectors (who mostly get in the way).

That bridge inspector is a pesky devil. The higher the bridge construction gets, the more he makes a nuisance of himself. No new beam can be placed above the level of his feet, and he tends to dislike heights. If you let him get you in a corner where you can't place a new beam, you have to give up and forget the game.

A relatively short, easy game but still very stimulating, it is unique, and we know of nothing else that is even similar.



```

10 ' * * * * *
    *   SOFTSIDE PRESENTS   *
    *     ENGINEER         *
    *   BY DAVID BOHLKE    *
    * * * * *

20 CLS:DEFINT A-Z
30 PRINT@22,"ENGINEER":PRINT
40 PRINT"TO BECOME AN ENGINEER, YOU MUST CONSTRUCT A TRESTLE BRIDGE"
50 PRINT"CONNECTING THE TWO BLOCKS AT THE TOP OF THE SCREEN. THIS IS"
60 PRINT"IS DONE BY PLACING BEAMS IN ACCORDANCE WITH THE INSPECTOR'S"
70 PRINT"SPECIFICATIONS. JUST MOVE THE BLINKING GUIDE TO THE POSITION"
80 PRINT"YOU WISH TO PLACE THE BEAM, THEN ENTER THE DIRECTION YOU WANT"
90 PRINT"TO SET THE BEAM. YOUR STARTING POSITION MUST BE BELOW THE"
100 PRINT"INSPECTORS' FEET. SEVERAL PLAYERS MAY COMPETE TO SEE WHO CAN"
110 PRINT"CONSTRUCT THE BRIDGE IN THE FEWEST DAYS.":PRINT
120 PRINT"DAVID J. BOHLKE   COGGON, IA   JAN 12, 1979":PRINT
130 PRINT"PRESS =ENTER= TO BEGIN . . .";INPUT Z$:CLS
140 PRINT@128,STRING$(4,191);:PRINT@188,STRING$(4,191);
150 REM *** SET CONYON ***
160 FOR X=0 TO 127:SET(X,43):NEXT X
170 Y=8:D=114:X=6
180 SET(X+2,Y):SET(X+3,Y):SET(X+D-2,Y):SET(X+D-3,Y)
190 SET(X,Y):SET(X+D,Y):SET(X+1,Y):SET(X+D-1,Y)
200 Y=Y+1:IF RND(9)>2 THEN X=X+1:D=D-2
210 IF Y=43 GOTO 220 ELSE GOTO 180
220 X=45+RND(30):Y=42
230 GOSUB 1030
240 M=RND(50)+40:N=0
250 PRINT@25,"ENGINEER";
260 IF POINT(M,N+1) GOTO 280
270 N=N+1:GOTO 260
280 N=N-10:IF N<0 THEN N=0
290 SET(M,N):SET(M+1,N)
300 REM *** POSITION BEAM ***
310 PRINT@960,"MOVE GUIDE : ";CHR$(93);" =LEFT ";CHR$(94);" =RIGHT ";CHR$(92);" =DOWN";
320 C$=INKEY$:IF C$="" THEN RESET(M,N):RESET(M+1,N):GOTO 290
330 IF ASC(C$)=9 GOTO 380
340 IF ASC(C$)=8 GOTO 400
350 IF ASC(C$)=10 GOTO 420
360 GOTO 290
370 REM *** SET BEAM ***
380 IF POINT(M+2,N) GOTO 440
390 RESET(M,N):RESET(M+1,N):M=M+2:GOTO 290
400 IF POINT(M-1,N) GOTO 440
410 RESET(M,N):RESET(M+1,N):M=M-2:GOTO 290
420 IF POINT(M,N+1) GOTO 440
430 RESET(M,N):RESET(M+1,N):N=N+1:GOTO 290
440 PRINT@960,CHR$(31);:A$=INKEY$
450 IF N<Y PRINT@960,"STICK MUST START BELOW INSPECTOR";:RESET(M,N):RESET(M+1,N):FOR I=1 TO 1000:NEXT I:GOTO 240
460 PRINT@960,"PRESS DIRECTION TO SET BEAM ( 1-3 ) ";
470 PRINT@761,"1 2";:PRINT@825,CHR$(140);" 3";:PRINT@887,"DIR.";
480 C$=INKEY$:IF C$="" THEN 480 ELSE D=VAL(C$)
490 IF D<1 OR D>3 GOTO 440
500 PRINT@761," ";:PRINT@825," ";:PRINT@886," ";
510 DA=DA+1:M1=M:N1=N

```

```

520 FOR I=1 TO 18
530 IF M>122 OR N<4 OR M<2 GOTO 620
540 SET(M,N):SET(M+1,N):SET(M+2,N)
550 IFPOINT(M+3,N) THEN 770
560 ON D GOTO 570,580,590,600
570 I=I+RND(2):N=N-1:I1=I1+1:GOTO610
580 M=M+2:N=N-1:GOTO 610
590 M=M+2:GOTO 610
600 M=M+2:N=N+1
610 NEXT I
620 IFPOINT(M+2,N-1)=1 OR D=1 GOTO 770
630 PRINT@960,CHR$(31);:M=M1:N=N1
640 REM *** ILLEGAL PLACEMENT ***
650 PRINT@960,"THE RIGHT END OF THE BEAM MUST BE SUPPORTED !";
660 FORI=1TO666:NEXT
670 FORI=1TO18:RESET(M,N):RESET(M+1,N):RESET(M+2,N)
680 ON D GOTO 690,700,710,720
690 N=N-1:GOTO730
700 M=M+2:N=N-1:GOTO730
710 M=M+2:GOTO730
720 M=M+2:N=N+1
730 IFN<2GOTO750
740 NEXTI
750 PRINT@832,"DAY ";DA;:PRINT@960,CHR$(31);
760 GOTO240
770 PRINT@960,CHR$(31);
780 REM *** MOVE INSPECTOR ***
790 PRINT@960,"INSPECTION . . .";
800 IF W=0 THEN W=1 ELSE W=0
810 FORI=1 TO RND(40)+10
820 GOSUB1050
830 IF W=1 GOTO 880
840 IFPOINT(X-2,Y+1)=0ANDPOINT(X,Y+1)=0ANDPOINT(X+2,Y+1)=0THENY=
Y+1:GOTO 910
850 IFPOINT(X-1,Y)=0THENX=X-1:GOTO 910
860 IFPOINT(X,Y-1)=0THENY=Y-1:GOTO 910
870 GOTO 910
880 IFPOINT(X,Y+1)=0ANDPOINT(X+3,Y+1)=0THENY=Y+1:GOTO 910
890 IFPOINT(X+3,Y)=0THENX=X+1:GOTO 910
900 IFPOINT(X,Y-1)=0THENY=Y-1:GOTO 910
910 GOSUB1030:IFY<6 OR X<8 OR X>122 GOTO 930
920 NEXT I
930 PRINT@960,CHR$(31);
940 PRINT@832,"DAY ";DA;
950 REM *** CHECK FOR COMPLETED BRIDGE ***
960 FORI=15TO115STEP5:FORJ=4TO8
970 IFPOINT(I,J)GOTO 990
980 NEXTJ:GOTO240
990 NEXTI
1000 PRINT@960,CHR$(31);
1010 PRINT@960,"YOU'VE FINISHED ! PRESS =ENTER= FOR ANO
THER GAME ";:INPUTZ$:RUN
1020 REM *** SET INSPECTOR ***
1030 SET(X,Y):SET(X+1,Y-1):SET(X+2,Y):SET(X+1,Y-3)
1040 SET(X,Y-2):SET(X+1,Y-2):SET(X+2,Y-2):RETURN
1050 RESET(X,Y):RESET(X+1,Y-1):RESET(X+2,Y):RESET(X+1,Y-3)
1060 RESET(X,Y-2):RESET(X+1,Y-2):RESET(X+2,Y-2):RETURN

```

# ENTRAPMENT

*By Robert C. Hall III*

This game looks deceptively simple. Actually, it's one of the best two-player games developed for the Z-80. It requires fast reflexes, quick thinking, and grand strategy. Skill determines the outcome, yet the range is so broad that a four-year-old can play and enjoy it, so long as he's matched with an opponent of similar skill.

The object is to use the appropriate keys to move your line so that it boxes in your opponent. If you run into your opponent, the boundaries, or even your own line, you lose. This can be as simple as inadvertently pushing the down button when you're going up.

For younger children, the keys can be marked with arrows using tape or stick-on labels. You may find it necessary to require a person to move before his opponent gets halfway across the screen, otherwise a player could just sit still until the other player makes a mistake.

<i>Movement Instructions</i>	<i>Left Player</i>	<i>Right Player</i>
UP	W	P
RIGHT	S	;
DOWN	Z	.
LEFT	A	L

```
1 CLS
2 REM **ROBERT C. HALL, III (12/31/78)**
4 REM **PRINT THE INSTRUCTIONS**
5 GOSUB1000
10 CLS:PRINTCHR$(23)
11 PRINT"INPUT PLAYER ONE'S NAME:"
12 INPUTB$
13 PRINT:PRINT"INPUT PLAYER TWO'S NAME:"
14 INPUTC$
15 CLS
16 REM **SET UP THE BOARD**
20 FORX=0TO127:SET(X,4):SET(X,47):NEXT
30 FORY=5TO46:SET(0,Y):SET(1,Y):SET(126,Y):SET(127,Y):NEXT
38 REM **PLAYER 1'S POSITION (X,Y): INCREMENTS A,B**
40 X=10:Y=10:A=0:B=0
44 REM **PLAYER 2'S POSITION (C,V): INCREMENTS D,E**
45 C=120:V=40:D=0:E=0
47 PRINT@1,B$;" HAS";RT;"WIN(S)";:PRINTTAB(23)"**ENTRAPMENT**";
48 PRINT@(50-LEN(C$)),C$;" HAS";RE;"WIN(S)";
49 A$=INKEY$:IF A$="" THEN 50 ELSE 49
50 A$=INKEY$
55 IFA$=""THEN 500
60 IFA$="A"THENA=-1:B=0:GOTO500
65 IFA$="L"THEND=-1:E=0:GOTO600
70 IFA$="Z"THENA=0:B=1:GOTO500
75 IFA$="."THEND=0:E=1:GOTO600
80 IFA$="S"THENA=1:B=0:GOTO500
```



## ENTRAPMENT

51

```

85 IFA$=";" THEN D=1:E=0:GOTO600
90 IFA$="W" THEN A=0:B=-1:GOTO500
95 IFA$="P" THEN D=0:E=-1:GOTO600
500 REM **MOVE THOSE PIECES**
513 IF(A=0)AND(B=0) THEN 515
514 IFPOINT(X+A,Y+B) THEN 540
515 SET(X+A,Y+B)
520 X=X+A:Y=Y+B
530 GOTO600
540 PRINT@540,C$;" WINS";
541 RE=RE+1
545 FORX=1TO1000:NEXT:GOTO15
550 GOTO550
600 IF(D=0)AND(E=0) THEN 620
610 IFPOINT(C+D,V+E) THEN 700
620 SET(C+D,V+E)
630 C=C+D:V=V+E
640 GOTO50
700 PRINT@540,B$;" WINS";
701 RT=RT+1
710 GOTO545
1000 REM **SUBROUTINE TO PRINT INSTRUCTIONS**
1005 CLS
1010 PRINTCHR$(23);
1020 PRINT" I N S T R U C T I O N S"
1030 PRINTSTRING$(30,"*")
1040 PRINT"THIS IS THE GAME OF ENTRAPMENT"
1045 PRINT
1050 PRINT"THE OBJECT IS TO ENCLOSE YOUR"
1060 PRINT"OPPONENT AND FORCE HIM TO HIT"
1070 PRINT"A WALL. COLLIDING WITH ANY"
1080 PRINT"LIT SPACE WILL RESULT IN THE"
1090 PRINT"LOSS OF THE GAME."
1100 PRINT
1110 PRINT"THE GAME CONSISTS OF TWO MOV-"
1120 PRINT"ING WALLS, EACH CONTROLLED BY"
1130 PRINT"A DIFFERENT PLAYER. A CHANGE"
1140 PRINT"IN DIRECTION IS ACCOMPLISHED"
1150 PRINT"BY PRESSING CONTROL KEYS"
1151 INPUT"PRESS 'ENTER' TO CONTINUE";C$
1152 CLS:PRINTCHR$(23)
1160 PRINT"THE CONTROL KEYS ARE AS"
1170 PRINT"FOLLOWS:"
1174 PRINT:PRINT
1180 PRINT"DIRECTION      PLYR.#1    PLYR.#2"
1185 PRINTSTRING$(30,"*")
1190 PRINT"  UP                W            P"
1200 PRINT"  DOWN               Z            ."
1210 PRINT"  RIGHT               S            ;"
1220 PRINT"  LEFT                A            L"
1230 PRINT:PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";H$
1240 RETURN

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# GOBLINS

*By Gary S. Breschini*

This program is designed to lead a reasonably good warrior (you) on a heroic quest to save the prince/princess. There are magic rings, swords, and wizards to aid you on your journey, but the woods also are full of bad guys and a few surprises. Your decisions influence the outcome of the game. You might be lucky enough to rescue the prince/princess, or you might be eaten by a dragon! Each time the game is played it will be different because there are so many routines and subroutines that it is possible to play for hours and even days without seeing all of the program.

## The Program

To enter the magic forest, you must first enter GOBLINS into your TRS-80®. This takes just over 4 minutes at normal speed, so be patient. As soon as the program has loaded RUN and ENTER, directions will appear on the screen. Remember, you need at least 15 victories, 75 luck points, and the enchanted sword in order to be eligible to save the prince/princess. It helps to avoid curses, which reduce your luck, and to try to get a magic ring, which adds to your luck. Don't run out of food, since you may starve to death. Good luck, you are about to enter the magic forest . . .

When you enter the forest, the first thing you will encounter is the scoreboard. This tells you how well you are doing and tests whether you have proven yourself a good enough warrior to attempt to rescue the prince/princess.

LUCK	10	CURSES	0	GOLD	15	SWORD	NO
FOOD	35	VICTORIES	0	RING	NO		

Immediately under the scoreboard you will encounter your first decision point. Which way will you go, EAST or WEST? Make your decision and press the appropriate key. The computer will take over—there is no need to press ENTER after the number since the program makes extensive use of the INKEY\$ function. Press the number of your choice and see where you end up.

As you progress on your journey through the forest you will encounter a number of obstacles—a river, lake, mountain, etc.—which will force you to make a decision. Each time you make a decision, it influences the outcome of the game. It pays to learn by your mistakes. Remember where different decisions lead you, and select the ones with the best odds. Certain choices at certain points will lead (on the average) to more favorable areas, while other choices will lead to areas that are downright nasty. Here are some hints:

1. Try to avoid fights unless you have the sword.
2. If you do have the sword, look for fights.
3. Remember where you have been.



Most of the decision points require that you input a number, but there are a few places where you must input a Y for yes or an N for no, so read the question carefully. Occasionally it may appear that the computer skipped over a decision point and went on without you. If this happens, the chances are that you hit the key more than once or the keys need debouncing. Unfortunately, there is not enough room in 16K for the KBFIX program and GOBLINS at the same time. Sometimes a routine will reappear several times in a row. This is due to random chance, and the odds are low that it will happen, so you should not see it often.

Eventually you will come to the end of your journey (unless you starve to death or end up as a dragon's lunch). Either way, the program will recycle to the beginning and give you another chance.

```
1 CLEAR25:L=10:F=50:G=15:S$="NO":R$="NO":REMGoblin (C) 1979 G S
BRESCHINI
20 CLS:PRINT@27,"GOBLINS":PRINT
HINT: REMEMBER WHERE YOU HAVE BEEN! IF YOU STAY ALIVE YOU MIGHT
RESCUE A . . .":PRINT,"PRINCE <1>":PRINT,"PRINCESS <2>"
22 PRINT:INPUT"WHICH DO YOU WISH TO RESCUE";T:IFT=1Y$=" PRINCE "
ELSEY$=" PRINCESS "
25 PRINT"
TO REACH THE"Y$"YOU MUST HAVE . . .
```

```
-- A MAGIC SWORD.
-- LUCK OF 75 OR MORE.
```

## THE SOFTSIDE SAMPLER

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-- AT LEAST 15 VICTORIES."
30 GOSUB5020:PRINT"
YOU ARE ABOUT TO ENTER THE FOREST.";GOSUB5020:CLS:PRINT@331,CHR
$(23)"ALL HOPE ABANDON":PRINT@394,"YE WHO ENTER HERE!":GOSUB5020
1000 IFC<0C=0
1010 L=L-C:IFL<0L=0
1011 IFR=1L=L+5
1021 IFG<0THENG=0
1022 CLS:PRINT"
LUCK "L,:PRINT"CURSES "C,:PRINT"GOLD "G,:PRINT"SWORD "S
$:PRINT"FOOD "F,:PRINT"VICTORIES "V,:PRINT"RING "R$:IFF<7PR
INT@176,"LOW ON FOOD"
1025 FORX=0TO127STEP3:SET(X,10):SET(X,0):NEXT:IFL=>75ANDV=>15AND
S=1GOTO10000
1028 IFF=<0PRINT"

YOU STARVED TO DEATH!!!":GOSUB5020:RUN
1030 PRINT"
THE PATH DIVIDES. DO YOU WANT TO GO <1> EAST OR <2> WEST?":GOSU
B2010
1035 IFA$="1"A=RND(5):ONAGOTO9000,7000,7000,6000,6000
1040 A=RND(5):ONAGOTO9000,9000,7000,7000,6000
2000 F=F-1:PRINT"WHAT IS YOUR CHOICE?"
2010 A$=INKEY$:IFA$=" "2010ELSE2020
2020 IFA$="Y"THENA=1
2030 IFA$="N"THENA=0
2040 RETURN
5000 FORX=1TO400:NEXT:RETURN
5020 FORX=1TO3000:NEXT:RETURN
6000 PRINT:A=RND(18):ONAGOTO6010,6015,6020,6030,6100,6210,6220,6
300,6350,6025,6035,6040,6535,6541,6546,6561,6045,6050
6010 PRINT"
YOU MEET A MEAN WIZARD. YOU ARE NOW A TOAD.":L=L-5:GOSUB5020:GO
TO7000
6015 PRINT"
YOU FIND A MAGIC WAND. IT REMOVES YOUR WARTS.":GOSUB5020:GOTO70
00
6020 PRINT"
YOU MEET A GOBLIN. HE'S OFF DUTY AND LEAVES YOU ALONE.":GOSUB50
20:GOTO7000
6025 PRINT"
YOU JUMP AN ORC SCOUT TROOP AND KICK THE STUFFINGS OUT OF THEM."
:L=L+5:V=V+1:GOSUB5020:GOTO7000
6030 PRINT"
YOU JUMP A CRIPPLED ORC AND BEAT HIM SENSELESS.":L=L+3:GOSUB5020
:GOTO7000
6035 PRINT"
TROLLS! BUT THEY MISS YOU AND YOU ESCAPE.":GOSUB5020:L=L+2:GOTO
7000
6040 PRINT"
YOU GET LUCKY AND FIND A MAP. TOO BAD YOU CAN'T READ.":GOSUB502
0:GOTO7000
6045 PRINT"
YOU FIND SOME FOOD. STOCK UP.":F=F+9:GOSUB5020:GOTO7000
6050 IFG>5PRINT"
YOU FIND A MARKET AND BUY SOME FOOD.":G=G-3:F=F+12:GOSUB5020:GOT
O1000
6051 PRINT"
YOU FIND A MARKET BUT CAN'T AFFORD ANY FOOD.":GOSUB5020:GOTO7000
6100 IFS=1GOTO6000ELSEPRINT"A MAGIC SWORD!
THIS WILL HELP IN BATTLES.":S$="YES":S=1:L=L+6:GOSUB5020:GOTO700
0
6210 PRINT"
YOU MEET A WIZARD. HE GIVES YOU A PAIR OF BRASS KNUCKLES.":L=L+
4:GOSUB5020:GOTO7000
6220 PRINT"

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WITH HIGH HOPES YOU KISS A FROG. YOU GET WARTS.":GOSUB5020:GOTO
7000
6300 PRINT"
YOU FIND GOLD!":G=G+9:GOSUB5020:GOTO6000
6350 IFC>0PRINT"
YOU FIND A CASTLE. THE WIZARD REMOVES A CURSE.":C=C-1:GOSUB5020
:GOTO7000
6360 PRINT"
YOU GET WALKED OVER BY A FLOCK OF TURKEYS.
NEW CLOTHES COST 3 BAGS OF GOLD.":G=G-3:GOSUB5020:GOTO7000
6400 PRINT"
YOU ARE IN A CAVERN INHABITED BY TERRIBLE CREATURES.
IT ALSO CONTAINS GOLD.
WILL YOU <1> GO IN <2> RETREAT, OR <3> TRY THE SECRET DOOR?":GOS
UB2000:IFA$="1"A=RND(5):ONAGOTO6424,6426,6430,6100,8430
6422 IFA$="2"A=RND(3):ONAGOTO6435,6440,6445
6423 A=RND(5):ONAGOTO6100,6460,6470,6480,6535
6424 PRINT"YOU JUMP A DOZING ORC AND TAKE 5 BAGS OF GOLD.":GOSUB
5020:V=V+1:G=G+5:GOTO1000
6426 PRINT"YOU ROB A BABY DRAGON. 3 MORE BAGS OF GOLD!":V=V+1:G
=G+3:L=L+2:GOSUB5020:GOTO7000
6430 IFS=0PRINT"YOU'RE BRAVE BUT UNLUCKY. YOU GET BEATEN AND RO
BBED BY A DWARF.":G=0:L=L-1:GOSUB5020:GOTO6000
6431 GOTO6423
6435 PRINT"YOU TRIP OVER YOUR FEET AND BREAK YOUR NOSE.":L=L-2:G
OSUB5020:GOTO7000
6436 PRINT"THEY TAKE YOUR RING BUT YOU ESCAPE.":R=0:R$="NO":GOSU
B5020:L=L-9:RETURN
6440 PRINT"YOU ARE AMBUSHED BY BATS. YOU SMELL FOR WEEKS.":L=L-
2:GOSUB5020:GOTO6000
6445 PRINT"YOU KEPT YOUR SKIN, AND FOUND 3 BAGS OF GOLD ON YOUR
WAY OUT.":G=G+3:GOSUB5020:GOTO7000
6460 PRINT"WHOOOPS!":GOSUB5000:GOTO8100
6470 PRINT"YOU OUTFLANK A DRAGON AND FIND GOLD.":GOSUB5020:G=G+9
:L=L+5:GOTO1000
6480 PRINT"TRAPPED!":GOSUB5000:GOTO8133
6535 IFR=1GOTO6000ELSEPRINT"
YOU FIND A RING.
YOU CAN <1> PUT IT ON, OR <2> TRADE IT FOR 5 BAGS OF GOLD.":GOSU
B2000:IFA$="2"G=G+5:GOTO1000
6538 A=RND(3):IFA=1PRINT"YOU ARE NOW A FROG. HOP ON.":GOSUB5020
:L=L-2:GOTO7000
6539 IFA=2PRINT"IT TURNS YOUR FINGER GREEN.":GOSUB5020:GOTO1000
6540 PRINT"A MAGIC RING! KEEP IT.":GOSUB5020:R=1:R$="YES":GOTO1
000
6541 PRINT"
YOU ROB A SLEEPING DRAGON AND GET AWAY!":G=G+9:L=L+5:GOSUB5020:V
=V+1:GOTO7000
6546 PRINT"
YOU MEET AN ELF WHO GIVES YOU A BAG OF GOLD.":L=L+5:G=G+1:GOSUB5
020:GOTO7000
6561 PRINT"
A WIZARD REMOVES YOUR CURSES.":GOSUB5020:C=0:GOTO7000
7000 A=RND(7):ONAGOTO7200,6400,8100,8310,8400,7600,8600
7200 PRINT"
YOU HAVE COME TO THE CASINO. YOU CAN TRY TO WIN A FORTUNE--BUT
YOU MIGHT LOSE YOUR PANTS! YOU HAVE"G"BAGS OF GOLD."
7210 PRINT"WILL YOU PLAY (Y OR N)?":GOSUB2010:IFA=1GOTO7222ELSE9
000
7222 IFG=<0PRINT"YOU'RE BROKE, TURKEY! YOU GET BOUNCED!":GOSUB5
020:GOTO9000
7223 IFF<8PRINT"
* * LOW ON FOOD * *":GOSUB5020
7225 CLS:PRINT"THE GAME IS ROULETTE. YOU CAN BET NUMBERS (1-36)
OR COLORS (REDAND BLACK). HOW MUCH WILL YOU BET (NO MORE THAN
9)?":GOSUB2010:B=VAL(A$):PRINT"TO BET COLORS PRESS <1>, NUMBERS

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THE *SOFTSIDE* SAMPLER

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<2>":GOSUB2010:IFA$="1"GOTO7250ELSE7235
7235 INPUT"INPUT YOUR LUCKY NUMBER AND PRESS <ENTER>";K:IFK>36GO
TO7235ELSEPRINT"
YOUR GUESS WAS"K:A=RND(36):PRINT"
THE NUMBER WAS"A:PRINT:IFA=KTHENG=G+(B*35):GOTO7245
7237 G=G-B:PRINT"YOU LOST. "G"BAGS OF GOLD. PLAY AGAIN? (Y OR
N)":GOSUB2010:IFA=1GOTO7222ELSE1000
7245 PRINT"YOU WON. "G"BAGS OF GOLD. PLAY AGAIN? (Y OR N)":GOS
UB2010:IFA=1GOTO7222ELSE1000
7250 PRINT"ENTER 1 FOR BLACK, 2 FOR RED":GOSUB2000:A=RND(2):IFA=
VAL(AS)GOTO7260ELSE7237
7260 G=G+B:GOTO7245
7600 PRINT"
YOU HAVE COME TO A LAKE. WILL YOU <1> GO AROUND,
<2> USE THE CANOE TO CROSS, OR <3> GO FISHING?":GOSUB2000:IFA$="
3"GOTO7630
7620 IFA$="2"GOTO7645
7625 A=RND(3):ONAGOTO8340,7627,6460
7627 PRINT"YOU FIND 9 BAGS OF GOLD.":GOSUB5020:G=G+9:GOTO6000
7630 A=RND(4):IFA=1PRINT"YOU CATCH A SUCKER..":GOSUB5020:GOTO700
0
7635 IFA=2PRINT"YOU SNAG A BAG OF GOLD.":G=G+1:GOSUB5020:GOTO700
0
7636 IFA=3PRINT"YOU CATCH A BATCH OF FISH. MORE FOOD.":F=F+9:GO
SUB5020:GOTO1000
7640 PRINT"YOU FALL IN. POOR LUCK.":L=L-3:GOSUB5020:GOTO1000
7645 A=RND(4):ONAGOTO7650,7660,7660,7670
7650 PRINT"IT HAS A HOLE IN THE BOTTOM AND SINKS. YOU ABANDON G
OLD AND
SWIM ASHORE.":G=0:GOSUB5020:GOTO6000
7660 PRINT"YOU FIND AN ISLAND. ON THE ISLAND...":GOSUB5000:PRIN
T"YOU FIND ";A=RND(16):IFA>1ANDA<11GOTO8138
7665 IFS=1PRINT"NOTHING."ELSEGOTO6100
7666 GOSUB5020:GOTO1000
7670 K=1:GOSUB8640:K=0:PRINT"DURING THE CLOUDBURST YOU SINK.":GO
SUB5020:L=L-3:GOTO6000
8100 PRINT"
YOU ARE IN A DEEP PIT. WILL YOU <1> CLIMB OUT, <2> YELL FOR
HELP, OR <3> TRY THE TUNNEL?":GOSUB2000:IFA$="1"GOTO8160
8110 IFA$="3"A=RND(3):ONAGOTO9000,6400,8600
8125 FORY=1TO3:PRINT"
! ! ! HELP ! ! !":GOSUB5000:NEXTY
8130 A=RND(2):IFA=1PRINT:PRINT"NO LUCK, TRY AGAIN":L=L-1:GOTO812
5
8133 PRINT"YOU ARE RESCUED BY ";A=RND(10):IFA=1PRINT"A WIZARD.
YOU'RE LUCKY.":L=L+2:GOSUB5020:GOTO1000
8138 IFA=2PRINT"A TROLL. THAT'S BAD.":GOSUB5020:GOTO9200
8140 IFA=3PRINT"THE GOBLINS.":GOSUB5020:GOTO9115
8145 IFA=4PRINT"A DWARF. HE BEATS AND ROBS YOU.":G=0:GOSUB5020:
GOTO1000
8147 IFA=5PRINT"BOY SCOUTS. YOU STEAL THEIR BROWNIES.":GOSUB502
0:V=V+1:GOTO1000
8150 IFA=6PRINT"THREE BABY ORCS. YOU BEAT AND ROB THEM.":GOSUB5
020:V=V+1:G=G+1:GOTO1000
8153 IFA=7PRINT"A TAX COLLECTOR. HE TAKES HALF YOUR GOLD.":G=IN
T(G/2):GOSUB5020:GOTO1000
8154 IFA=8PRINT"SUPERMAN. THE WOODS ARE FULL OF SURPRISES.":GOS
UB5020:GOTO1000
8155 IFA=9PRINT"CAPTAIN KIRK. YOU'RE IN THE WRONG GAME.":GOSUB5
020:GOTO1000
8159 PRINT"BATMAN AND ROBIN. THEY WERE IN THE AREA.":GOSUB5020
:GOTO1000
8160 A=RND(3):IFA=2GOTO8180ELSE8165
8165 PRINT"
YOU FALL TRYING TO CLIMB OUT.":GOSUB5000:L=L-1
8170 A=RND(3):IFA=1GOTO8175ELSE8165

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8175 PRINT"TOO DEEP-CAN'T GET OUT.":GOSUB5020:GOTO8133
8180 PRINT"YOU MAKE IT OUT BUT YOU ARE FILTHY.":G=G+4:GOSUB5020:
GOTO7000
8310 PRINT"
YOU COME TO A LARGE RIVER YOU MUST CROSS.
YOU CAN <1> TRY TO SWIM, <2> CROSS ON AN OVERHEAD ROPE,
<3> LOOK FOR A FORD, OR <4> TRY THE CANOE.":GOSUB2000
8320 IFA$="1"A=RND(4):ONAGOTO8360,8370,8380,6535
8325 IFA$="2"A=RND(4):ONAGOTO8385,8390,8395,9998
8328 IFA$="4"GOTO7645
8330 A=RND(3):IFA=1PRINT"YOU WALK 25 KM TO THE FORD. NEW BOOTS
COST 1 BAG OF GOLD.":G=G-1:GOSUB5020:GOTO6000
8335 IFA=2PRINT"YOU ARE AMBUSHED BY AMOROUS ELVES. THAT'S EXTRE
ME LUCK!":L=L+5:GOSUB5020:GOTO7000
8340 PRINT"YOU ARE AMBUSHED BY A GOBLIN. HE STEALS HALF YOUR FO
OD.":F=INT(F/2):GOSUB5020:GOTO7000
8360 PRINT"YOU ARE WASHED 99 KM DOWNRIVER. BAD LUCK.":GOSUB502
0:L=L-2:GOTO7000
8370 PRINT"YOU GET WASHED DOWNSTREAM AND LAND IN A ROUGH AREA.":
GOSUB5020:GOTO9000
8380 PRINT"YOU WALK ACROSS ON THE BACKS OF THE ALLIGATORS--LUCKY
.":GOSUB5020:L=L+2:GOTO1000
8385 PRINT"ROPE BROKE! YOU ARE WASHED DOWNSTREAM TO A NASTY ARE
A.":GOSUB5020:GOTO9000
8390 PRINT"YOU MEET A TROLL. HE THROWS YOU INTO THE RIVER. BAD
NEWS.":GOSUB5020:L=L-2:GOTO9000
8395 PRINT"YOU MEET A GOBLIN BUT GET LUCKY AND THROW HIM INTO TH
E RIVER.":V=V+1:L=L+1:GOSUB5020:GOTO7000
8400 PRINT"
YOU'VE COME TO A GREAT MOUNTAIN RANGE."
8415 PRINT"WILL YOU GO <1> AROUND, <2> OVER, OR <3> UNDER?":GOS
UB2000:IFA$="1"A=RND(6):ONAGOTO8436,8446,8456,8466,6535,6050
8425 IFA$="2"A=RND(4):ONAGOTO8476,8486,8496,9800
8430 A=RND(5):ONAGOTO8516,8526,8536,8546,6400
8436 PRINT"YOU ARE LOST FOR WEEKS AND USE A LOT OF FOOD.":F=F-8:
GOSUB5020:GOTO1000
8446 PRINT"MOUNTAIN RANGE TOO BIG TO GO AROUND. YOU TURN BACK.":
L=L-4:GOSUB5020:GOTO7000
8456 PRINT"YOU FIND AN ELF AID STATION. REST WEARY FEET.":L=L+4
:GOSUB5020:GOTO1000
8466 PRINT"YOU TRIP OVER A SLEEPING DWARF. HE CURSES YOU.":GOSU
B5020:C=C+2:GOTO6000
8476 PRINT"MOUNTAINS ARE HIGH. YOU GET A NOSEBLEED AND HAVE TO
GO BACK.":L=L-3:GOSUB5020:GOTO1000
8486 PRINT"YOU GET OVER SAFELY. LUCKY.":GOSUB5020:L=L+4:GOTO600
0
8496 PRINT"YOU'RE AMBUSHED BY A MOUNTAIN GOAT. BOUNCE DOWN THE
MOUNTAIN.":L=L-4:GOSUB5020:GOTO7000
8516 PRINT"YOU ARE ATTACKED BY SAVAGE MOLES. YOU FLEE.":GOSUB50
20:L=L-3:GOTO7000
8526 PRINT"YOU PASS BILBO BUT HE'S GOING THE OTHER WAY.":GOSUB50
20:GOTO6000
8536 PRINT"YOU GET LOST IN THE TUNNELS. SHORT ON FOOD.":F=F-6:
L=L-2:GOSUB5020:GOTO9000
8546 PRINT"
YOU FIND A TREASURE ROOM. STOCK UP ON GOLD.":L=L+4:G=G+9:GOSUB5
020:GOTO7000
8600 K=0:PRINT"
YOU COME TO A VAST DESERT.
WILL YOU <1> TRY TO CROSS, <2> GO AROUND, OR <3> TRY A NEARBY
TUNNEL?":GOSUB2000
8610 IFA$="1"A=RND(4):ONAGOTO8615,8620,8630,8640
8612 IFA$="2"A=RND(4):ONAGOTO8670,8675,8680,6050
8614 A=RND(4):ONAGOTO8100,6400,8710,8720
8615 PRINT"YOU FIND A CASTLE. BEG SOME FOOD AT THE BACK DOOR.":
F=F+5:GOSUB5020:GOTO7000
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THE *SOFTSIDE* SAMPLER

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8620 PRINT"YOU FIND AN OASIS AND MAKE IT ACROSS." :L=L+3:GOSUB502
0:GOTO1000
8630 PRINT"YOU'RE LOST! YOU GET SUNSTROKE AND DROP HALF YOUR GO
LD." :G=INT(G/2):GOSUB5020:GOTO7000
8640 CLS:PRINT@153,"CLOUDBURST!":GOSUB5000
8650 FORY=3TO40STEP2:SET(5,Y):SET(12,Y+3):SET(22,Y+1):SET(7,Y-3)
:SET(43,Y+7):SET(86,Y-3):SET(115,Y+4):SET(48,Y):SET(73,Y-2):SET(
95,Y-2):IFY>15SET(75,Y-10):SET(44,Y-8):SET(89,Y-12)
52 FORXX=1TO20:NEXTXX
8655 RESET(5,Y):RESET(12,Y+3):RESET(22,Y+1):RESET(7,Y-3):RESET(4
3,Y+7):RESET(86,Y-3):RESET(115,Y+4):RESET(48,Y):RESET(73,Y-2):RE
SET(95,Y-2):IFY>15RESET(75,Y-10):RESET(44,Y-8):RESET(89,Y-12)
8657 NEXTY:IFK=1RETURN
8660 PRINT"YOU MAKE IT ACROSS DURING THE STORM." :L=L+3:GOSUB5020
:GOTO6000
8670 PRINT"YOU MADE A WISE CHOICE. YOU FIND SOME GOLD." :G=G+5:G
OSUB5020:GOTO7000
8675 PRINT"YOU ACCIDENTLY STEP ON A DWARF. HE CURSES YOU." :C=C+
2:L=L-2:GOSUB5020:GOTO9000
8680 PRINT"YOU'VE COME TO A SIGNPOST. WILL YOU GO TO <1> THE CA
VERN,
<2> THE CASINO, OR <3> TAKE A CHANCE?":GOSUB2000:IFA$="1"GOTO640
0
8682 IFA$="2"GOTO7200
8685 A=RND(3):ONAGOTO6000,7000,9000,8686
8686 A=2:GOTO11105
8710 PRINT"YOU WANDER FOR DAYS AND EMERGE IN A NASTY AREA." :GOSU
B5020:GOTO9000
8720 PRINT"YOU MAKE IT UNDER THE DESERT--CONTINUE ON." :L=L+2:GOS
UB5020:GOTO6000
9000 A=RND(5):ONAGOTO9100,9200,9300,9410,7000
9100 PRINT"
YOU ARE CAPTURED BY GOBLINS." :GOSUB5020
9115 IFS=1PRINT"YOU ARE LUCKY TO HAVE A MAGIC SWORD--THE GOBLINS
FLEE." :V=V+1:GOSUB5020:L=L+5:GOTO7000
9120 PRINT"NO MAGIC SWORD--TOO BAD."
9122 A=RND(50):IFA=1 PRINT"YOU ARE KILLED BY THE GOBLINS. YOU L
OSE THE GAME." :GOSUB5020:RUN
9125 A=RND(5):ONAGOTO9130,9140,9150,9160,9170
9130 PRINT"THE GOBLINS TAKE YOUR GOLD." :G=0:GOSUB5020:GOTO6000
9140 PRINT"THE GOBLINS TOSS YOU IN A PIT." :GOSUB5020:GOTO8100
9150 PRINT"THEY CURSE YOU SOUNDLY." :C=C+5:GOSUB5020:GOTO9000
9160 PRINT"THE GOBLINS BEAT YOU SENSELESS AND LEAVE YOU FOR DEAD
." :GOSUB5020:GOTO8133
9170 PRINT"YOUAARE ENSLAVED. YOU ESCAPE YEARS LATER." :GOSUB50
20:L=L-5:GOTO7000
9200 PRINT"
A TROLL!!
WILL YOU <1> FIGHT, <2> RUN, OR <3> GIVE UP?":GOSUB2000:IFS=1GOT
O9260
9202 IFA$="1"A=RND(4):ONAGOTO9250,9170,9447,9210
9203 IFA$="2"A=RND(3):ONAGOTO9471,9220,9461
9205 A=RND(3):ONAGOTO9250,9230,8133
9210 PRINT"YOU BEAT THE TROLL AND TAKE"L"BAGS OF GOLD." :G=G+F:GO
SUB5020:GOTO7000
9220 PRINT"YOU RUN INTO THE GOBLINS." :GOSUB5020:GOTO9100
9230 A=3:GOTO11170
9240 PRINT"YOU ARE ENSLAVED"
9250 IFS=1PRINT"THE TROLL TAKES YOUR MAGIC SWORD." :S=0:S$="NO":G
OSUB5020:GOTO1000
9251 PRINT"THE TROLL TAKES EVERYTHING YOU HAVE AND LEAVES YOU WI
TH ONLY
THREE DAYS OF FOOD." :G=0:R=0:R$="NO":F=3:L=0:GOSUB5020:GOTO1000
9260 A=VAL(A$):ONAGOTO9490,9487,9270
9270 PRINT"GIVE UP? WITH THE SWORD? THAT'S DUMB." :GOSUB5020:GOT
O9000

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9300 PRINT"
YOU MEET A DRAGON. THAT'S VERY BAD!":GOSUB5020:IFS=1GOTO9359
9315 L=L-5:A=RND(20):IFA=3PRINT"YOU ARE EATEN BY THE DRAGON. TH
AT ENDS THE GAME.":GOSUB5020:RUN
9320 IFA<5PRINT"YOU GET LUCKY AND STEAL THE DRAGON'S GOLD.":G=G+
15:GOSUB5020:GOTO9000
9325 IFA<10GOSUB5020:GOTO8133
9330 PRINT"YOU FIGHT IT OUT WITH THE DRAGON.":GOSUB5020
9335 A=RND(5):IFA=1PRINT"YOU CRAWL AWAY A HOPELESS CRIPPLE.":L=L
-9:GOSUB5020:GOTO7000
9340 IFA=2PRINT"HE TAKES YOUR GOLD BUT LETS YOU GO.":G=0:GOSUB5
020:GOTO7000
9345 IFA=3PRINT"THE DRAGON BEATS YOU SILLY.":GOSUB5020:GOTO8133
9350 IFA=4PRINT"YOU CHICKEN OUT AND RUN LIKE MAD. HE GIVES YOU
SOME CURSES.":C=C+3:GOSUB5020:GOTO1000
9355 PRINT"THE DRAGON SELLS YOU TO THE GOBLINS.":GOSUB5020:GOTO9
115
9359 PRINT"YOU ARE SAVED BY YOUR MAGIC SWORD.":GOSUB5020:V=V+1:G
OTO1000
9410 PRINT"
YOU ARE JUMPED BY MILLIONS OF ORCS!
WILL YOU <1> FIGHT, <2> RUN, OR <3> HIDE?":GOSUB2000
9415 IFS=1GOTO9489
9422 IFA$="1"A=RND(4):ONAGOTO9431,9441,9446,9450
9424 IFA$="2"A=RND(3):ONAGOTO9461,9466,9471
9428 A=RND(3):ONAGOTO9481,9486,9487
9431 PRINT"FIGHT? ARE YOU CRAZY? THERE ARE MILLIONS OF THEM.
YOU GET YOUR TAIL WHIPPED!":L=L-9:GOSUB5020:GOTO7000
9441 PRINT"YOU KILL DOZENS OF ORCS AND HIDE UNDER THE BODIES. Y
OU ESCAPE.":L=L+9:GOSUB5020:GOTO9000
9446 A=RND(3):IFA=1PRINT"YOU DID A DUMB THING. THERE ARE MILLIO
NS OF THEM AND
YOU FIGHT???"
BOY DO YOU LOSE!":GOSUB5020:RUN
9447 PRINT"YOU'RE CAPTURED AND USED AS A DOORMAT FOR YEARS.":GOS
UB5020:GOTO7000
9450 IFR=1GOSUB6436ELSEGOTO9422
9451 GOTO7000
9461 PRINT"THAT IS THE SMARTEST THING YOU HAVE DONE LATELY! YOU
ESCAPE.":L=L+5:GOSUB5020:GOTO6000
9466 PRINT"THEY CATCH YOU AND DO TERRIBLE THINGS TO YOU. THAT'S
REALLY BADLUCK!":L=L-9:GOSUB5020:GOTO9000
9471 IFG>30PRINT"THEY CATCH YOU. YOU BUY YOUR WAY FREE WITH"G" B
AGS OF GOLD.":G=0:GOSUB5020:GOTO6000
9474 PRINT"THEY CATCH YOU. YOU CAN'T PAY THE RANSOM.":GOTO9170
9481 PRINT"THEY MISS YOU!! WHAT LUCK!!":L=L+5:GOSUB5020:GOTO100
0
9486 PRINT"THEY FIND YOU OF COURSE. (THERE ARE A MILLION OF THE
M)":GOTO9170
9487 PRINT"YOU GET AWAY. BUT YOU'RE STILL IN A BAD AREA.":GOSUB
5020:GOTO7000
9489 A=VAL(A$):ONAGOTO9490,9461,9495
9490 PRINT"YOUR MAGIC SWORD MAKES MINCEMEAT OF THEM!":V=V+1:GOSU
B5020:GOTO6000
9495 PRINT"YOU HIDE BUT THEY FIND YOU.":GOTO9490
9800 CLS:PRINT@15,"YOU GET TRAPPED IN A SNOWSTORM.":GOSUB5000:FO
RA=1TO99:Y=RND(48)-1:X=RND(128)-1:SET(X,Y):NEXTA:GOSUB5020:L=L-3
:CLS:GOTO7000
9998 PRINT"THE ROPE BREAKS.":GOSUB5020:GOTO8133
10000 PRINT"
YOU'VE FINALLY COME TO THE DUNGEON WHERE THE"Y$"IS HELD.
CAN YOU SAVE THE"Y$" (Y OR N)?:GOSUB2000:IFA=1GOTO11020ELSE10060
10018 GOSUB5020:PRINT"
YOU'VE RESCUED THE"Y$"!
10020 A=RND(3):ONAGOTO10030,10050,10055
10030 IFG<5PRINT"YOU'RE TOO POOR TO MARRY THE"Y$"

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THE *SOFTSIDE* SAMPLER

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START OVER, TURKEY!":GOSUB5020:GOSUB5020:RUN
10035 PRINT"
THE"Y$"IS 94 YEARS OLD. YOU TOOK TO LONG.
GO BACK TO PLAYING STAR TREK.":GOSUB5020:GOSUB5020:RUN
10050 PRINT"AFTER ALL THAT YOU'RE TOO BEAT UP.
THE"Y$"WON'T EVEN LOOK AT YOU.":GOSUB5020:GOSUB5020:RUN
10055 PRINT"FOR YOUR REWARD YQU ARE MADE PRESIDENT OF A LARGE CO
RPORATION.":GOSUB5020:GOSUB5020:RUN
10060 PRINT"COWARD!. START OVER.":GOSUB5020:GOSUB5020:RUN
11020 CLS:PRINT"TO RESCUE THE"Y$"YOU MUST GET BY THE GUARD.
THE GUARD IS BIG AND HAIRY.

WILL YOU <1> FIGHT THE GUARD, <2> TRY TO SNEAK AROUND THE BACK
WAY, OR <3> FORGET THE WHOLE THING?":GOSUB2000:PRINT:A=VAL(A$):O
NAGOTO11050,11100,11150
11050 A=RND(5):IFA=1PRINT"THE GUARD TURNS TAIL AND RUNS!":GOTO10
018
11055 IFA=2PRINT"THE GUARD TAKES YOUR SWORD AND USES IT FOR A TO
OTHPICK.
TRY ANOTHER LINE OF WORK.":GOSUB5020:RUN
11060 IFA=2PRINT"YOUR MAGIC SWORD COMES THROUGHG YOU WIN!":GO
TO10018
11065 IFA=4PRINT"YOU CHANGE YOUR MIND AND TRY TO SNEAK AROUND BA
CK.":GOSUB5020:GOTO11100
11070 PRINT"YOUR YEARS OF COMBAT HELP A LOT. SO DO YOUR BRASS
KNUCKLES.
YOU WIN!":GOTO10018
11100 A=RND(5):IFA=1PRINT"YOU CRAWL AROUND UNTIL YOUR KNEES ARE
HAMBURGER BUT YOU FIND
THE"Y$"AND GET AWAY.":GOTO10018
11105 IFA=2PRINT"YOU GET STEPPED ON BY THE JOLLY GREEN GIANT.
YOU LOSE.":GOSUB5020:RUN
11110 IFA=3PRINT"YOU CHANGE YOUR MIND AND DECIDE TO FIGHT.":GOS
UB5020:GOTO11050
11115 IFA=4PRINT"YOU SLITHER YOUR WAY TO THE DUNGEON AND RESCUE
THE"Y$"AND MANAGE TO GET AWAY.":GOTO10018
11120 PRINT"YOUR YEARS IN THE TUNNELS PAY OFF. YOU MAKE A DEAL
WITH
THE RATS AND SNEAK THE"Y$"OUT THE SIDE DOOR.":GOTO10018
11150 A=RND(5):IFA=1PRINT"YOU GET BRAVE AND DECIDE TO FIGHT.":GO
SUB5020:GOTO11050
11160 IFA=2PRINT"YOU ASKED FOR IT!":S=0:S$="NO":L=10:GOTO1000
11170 IFA=3PRINT"YOU SPEND THE REST OF YOUR YEARS IN A BAR TELLI
NG FOLKS WHAT A
HERO YOU COULD HAVE BEEN.":GOSUB5020:RUN
11180 IFA=4PRINT"YOU CHANGE YOUR MIND AND TRY SNEAKING AROUND.":
GOSUB5020:GOTO11100
11190 PRINT"YOU AND THE GUARD SET UP A USED MAGIC RING BUSINESS
ON THE SIDE.":GOSUB5020:RUN

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# ISOLATE

*By James Garon*

The object of this game is to isolate your opponent (the computer) so that there is nowhere for it to move on its turn; you do this by destroying squares until you box it in. At the same time, you have to keep moving about to sidestep being boxed in yourself.

When you have become proficient and cocky at level one, try going to levels two and three, where the computer destroys two or three squares at a time, while you get to destroy one!

The action is accompanied by lively sound effects to make winning all the more fun.

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0 '
*** ISOLATE ***
BY: JAMES GARON
*****

5 CLEAR2E3:RANDOM:CLS:PRINTTAB(21)"I S O L A T E
10 DEFINTI-Z:DEFSTRA-H:D=CHR$(30):Q=476:FORX=1TO9:READN(X):NEXT:
DIMT(6,8),Q(9,1):FORI=1TO9:FORJ=0TO1:READQ(I,J):NEXT:NEXT:AA=CHR
$(26)+STRING$(6,24):GOSUB3000
20 A=STRING$(6,191)+AA+STRING$(6,143):C=CHR$(191)+CHR$(151)+CHR$
(163)+CHR$(179)+STRING$(2,191)+AA+CHR$(143)+CHR$(141)+STRING$(2,
140)+STRING$(2,143):CT=" "+CHR$(168)+CHR$(156)+CHR$(140)+" "+AA
+" "+CHR$(130)+STRING$(2,131)+" "
30 H=CHR$(191)+CHR$(151)+CHR$(139)+CHR$(135)+CHR$(171)+CHR$(191)
+AA+CHR$(143)+CHR$(141)+CHR$(142)+CHR$(141)+CHR$(142)+CHR$(143):
E=STRING$(6,32)+AA+STRING$(6,32):V=15360:GOSUB2000
40 G=STRING$(2,176)+CHR$(186)+CHR$(181)+STRING$(2,176)+AA+" "+C
HR$(138)+CHR$(133)+" "
50 Q=476:X2=4:Y2=1:X1=3:Y1=8:X0=4:Y0=5:FORI=1TO6:FORJ=1TO8:T(I,J
)=0:NEXT:NEXT:T(X1,Y1)=1:T(X2,Y2)=2:K=448:L=369:FORI=1TO6:FORJ=1
TO8:PRINTA" "CHR$(27);:NEXT:PRINTCHR$(29)STRING$(2,26);:NEXT:PRI
NTCHR$(31):PRINT@K,C;:PRINT@L,H;
60 PRINT@896,"LEVEL OF DIFFICULTY (1=EASY, 2=MEDIUM, 3=HARD) ?
65 IFRND(3)>1THENS=USR(5E3+RND(128))ELSEFORI=1TO200+RND(99):NEXT
70 GOSUB950:IFZ<49ORZ>51THEN65ELSELV=Z-48
80 PRINT@896,D"DO YOU WISH TO MOVE FIRST?
85 IFRND(4)>1THENS=USR(1E4+RND(99))ELSEFORI=1TO50+RND(50):NEXT
90 GOSUB950:IFB="Y"THEN100ELSEIFB<>"N"THEN85ELSE500
100 T=0:FORX=-1TO1:FORY=-1TO1:P=L+Y*7+X*128:S=X*3+Y+5:Z(S)=0:IFP
EEK(V+P+1)=191PRINT@P+67,S;:Z(S)=1:T=T+1
110 NEXT:NEXT:Z(5)=1:M=L:PRINT@896,D;:IFTPRINT"TO WHICH SQUARE D
O YOU WISH TO MOVE (" ;:GOSUB850:PRINTCHR$(24)" )?"ELSEB=C:GOTO99
9
200 PRINT@L,A;:FORI=1TO25:NEXT:S=USR(11111):PRINT@L,H;:FORI=1TO1
5:B=INKEY$:IFB=" "NEXT:GOTO200
210 Z=VAL(B):IFZ<1ORZ(Z)=0ORZ=5THEN200
220 L=L+N(Z):T(X1,Y1)=0:X1=X1+Q(Z,0):Y1=Y1+Q(Z,1):T(X1,Y1)=1:FOR
I=-1TO1:FORJ=-1TO1:IFZ(J*3+I+5)PRINT@M+I*7+J*128,A;
230 NEXT:NEXT:PRINT@L,H;
240 PRINT@896,D"USE THE ARROW KEYS TO SELECT ANY EMPTY SQUARE
THEN PRESS =ENTER= TO DESTROY IT." ;:
250 POKEL6444,0:IFPEEK(V+Q+1)=191THENF=AELSEIFPEEK(V+Q)=32THENF=
EELSEF=" ":FORI=QTOQ+5:F=F+CHR$(PEEK(V+I)):NEXT:F=F+AA:FORI=Q+64T
```

## THE SOFTSIDE SAMPLER

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OI+5:F=F+CHR$(PEEK(V+I)):NEXT
260 PRINT@Q,G;:FORI=1TO25:NEXT:S=USR(11085):PRINT@Q,F;:FORI=1TO1
0:B=INKEY$:IFB=""THENNEXT:GOTO260
270 Z=ASC(B):IFZ=91ANDX0>1THENQ=Q-128:X0=X0-1
280 IFZ=10ANDX0<6THENQ=Q+128:X0=X0+1
290 IFZ=8ANDY0>1THENQ=Q-7:Y0=Y0-1
300 IFZ=9ANDY0<8THENQ=Q+7:Y0=Y0+1
310 IFZ=13ANDPEEK(V+Q+1)=191PRINT@892,CHR$(31):PRINT@Q,G;:FORI=5
915TOI+20:S=USR(I):NEXT:FORI=1TO16:PRINT@Q,A;:PRINT@Q,E;:NEXT:T(
X0,Y0)=-1:GOTO500
320 GOTO250
500 PRINT@896,D;
510 T=0:FORX=-1TO1:FORY=-1TO1:P=K+Y*7+X*128:S=X*3+Y+5:Z(S)=0:IFP
EEK(V+P+1)=191Z(S)=1:T=T+1
520 NEXT:NEXT:IFT=0B=H:K=L:GOTO999ELSEPRINT@K,CT;:PRINT@896,"MY
TURN..."
530 GOSUB600:FORI=1TO20:PRINT@K,C;:PRINT@K,A;:NEXT:K=K+N(R):T(X2
,Y2)=0:X2=X2+Q(R,0):Y2=Y2+Q(R,1):T(X2,Y2)=2:FORI=USR(0)TO20:PRIN
T@K,A;:PRINT@K,C;:NEXT
540 FORLL=1TOLV:GOSUB560:FORQQ=0TOSTEP0:I=X1+RND(3)-2:J=Y1+RND(
3)-2:IFI<LORI>6ORJ<LORJ>8ORI=X1ANDJ=Y1ORI=X2ANDJ=Y2THENNEXT:GOTO
100ELSEIFT(I,J)<0THENNEXT:GOTO100
550 P=128*I+7*J-71:T(I,J)=-1:FORI=2032TO2080:S=USR(I):NEXT:FORI=
1TO20:PRINT@P,A;:PRINT@P,E;:NEXT:NEXTLL:GOTO100
560 RR=0:FORI=X1-1TOI+2:FORJ=Y1-1TOJ+2:IFI<LORI>6ORJ<LORJ>8ELSEI
FT(I,J)ELSERR=1
570 NEXT:NEXT:IFRRRETURNELSE100
600 JG=2:FORI=1TO9:M(I)=Z(I):NEXT
610 FORI=-1TO1:FORJ=-1TO1:S=3*I+J+5:IFZ(S)=0ORZ(S)=2THEN660
620 XP=X2+I:YP=Y2+J:IFXP<LORXP>6ORYP<LORYP>8THEN660
630 FORIP=-1TO1:FORJP=-1TO1:MP=XP+IP:NP=YP+JP:IFNP*MP=0OR(IP=0AN
DJP=0)ORMP<LORMP>6ORNPN<LORNP>8THEN650
640 IFT(XP+IP,YP+JP)=0THENM(S)=M(S)+1
650 NEXT:NEXT
660 S=USR(5E3-30*(I+J+J)+RND(9)):JG=3-JG:IFJG=1PRINT@K,CT;ELSEPR
INT@K,C;
670 NEXTJ:NEXT:T=0:FORI=1TO9:IFM(I)>TTHENM(I)
680 NEXT
690 R=RND(9):IFM(R)-TTHEN690ELSERETURN
800 PRINT@846,B;:PRINT@K,B;:S=USR(-128):IFINKEY$<>CHR$(13)THENPR
INT@846,E;:PRINT@K,A;:FORI=1TO20::IFINKEY$<>CHR$(13)THENNEXT:GOT
O800
810 RETURN
850 FORI=1TO9:IFZ(I)IF5-IPRINTICHR$(24)",";
860 NEXT:RETURN
900 B=INKEY$:IFB=""THEN900ELSEZ=ASC(B):RETURN
950 Z=0:B=INKEY$:IFB>"THENZ=ASC(B)
960 RETURN
999 PRINT@917,"IS THE WINNER!!!":PRINTTAB(14)"PRESS =ENTER= TO P
LAY AGAIN";:GOSUB800:PRINT@64,;;:GOTO50
1000 DATA-135,-128,-121,-7,,7,121,128,135
1010 DATA-1,-1,-1,-1,1,0,-1,0,0,0,1,1,-1,1,,1,1
2000 PRINT" THE OBJECT OF THE GAME IS TO ISOLATE YOUR OPPONENT.
YOU DO
THIS BY DESTROYING THE SQUARES NEAR YOUR OPPONENT SO THAT THERE
IS NOWHERE FOR HIM TO MOVE ON HIS TURN.
2010 PRINT" EACH PLAYER'S TURN IS IN TWO PARTS. IN THE FIRST PA
RT, YOU
MOVE YOUR PIECE TO ANY ADJACENT SQUARE (IF IT HASN'T BEEN
DESTROYED YET!) - DURING THE SECOND PART OF YOUR TURN YOU WILL
SELECT ANY EMPTY SQUARE ON THE BOARD - AND * DESTROY * IT!
2020 PRINT" THE COMPUTER'S TURN IS SIMILAR TO YOURS, EXCEPT THA
T THE COM-
PUTER WILL DESTROY 1, 2 OR 3 SQUARES EACH TURN--DEPENDING ON
THE LEVEL OF DIFFICULTY YOU SELECT. THE PIECES LOOK LIKE THIS:"
PRINT@720,C:PRINT@740,H:PRINTTAB(15)"COMPUTER"TAB(36)"HUMAN

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## ISOLATE

63

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2030 PRINT"AUX WIRE GOES TO AMPLIFIER INSTEAD OF RECORDER FOR SO
UND EFFECTS";:PRINT@977,"PRESS =ENTER= TO BEGIN";
2040 FORI=0TO99:IFINKEY$<>CHR$(13)THENS=USR(11091+ABS(50-I)):NEX
T:GOTO2040ELSEPRINT@63,CHR$(31):RETURN
MD>iORIsA- .<iORIsA- .
MKD$LPRIORTORIsAINKEYS$
3010 I=VARPTR(M$):J=PEEK(I+1)+256*PEEK(I+2)
3020 FORK=JTOJ+26:READX:POKEK,X:NEXT
3030 IFPEEK(16396)=201POKE16526,PEEK(I+1):POKE16527,PEEK(I+2)ELS
ECMD"T":DEFUSRO=PEEK(I+1)+256*PEEK(I+2):POKE14308,0
3040 RETURN
3050 DATA205,127,10,77,68,62,1,105,
211,255,45,32,253,60,105,
211,255,45,32,253,13,16,
238,175,211,255,201
```

# JIGSAW

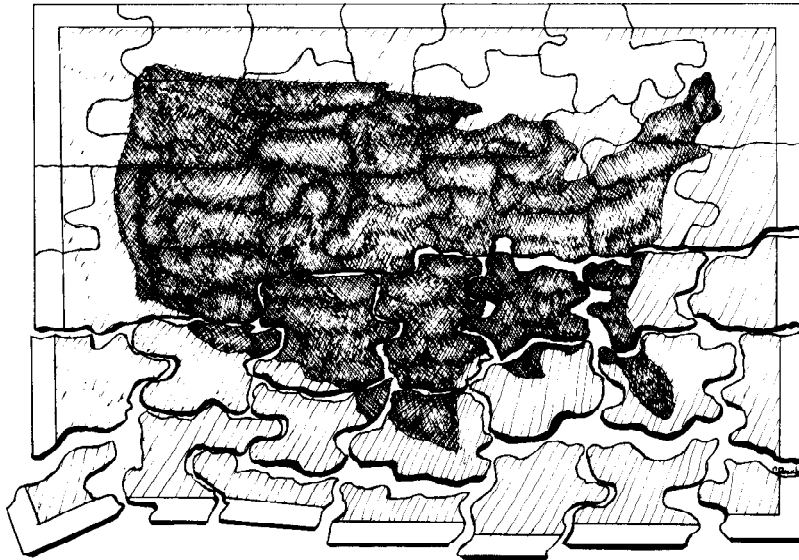
*By David Bohlke*

At last, here's a program for the person who's always going to pieces.

If getting yourself together seems to be something you never quite accomplish, now you can practice on a puzzle that has fewer pieces than the average person has problems. Exercise your problem-solving abilities, and get yourself ready for the big challenges such as what to do when the TRS-80® club meeting, a big football game, and your wife's class reunion all occur at the same time.

The pieces can be rotated to fit in upside down or sideways, and if you guess at any square that the piece will cover, your guess is correct. The computer will pick the puzzle—you must guess it. When playing in a group, each member can take certain pieces so that there is a guessing strategy for each piece. Or compete to assemble the puzzle in the fewest tries. Here's how you can score yourself:

- 5-7    Genius: President Reagan needs you to figure out inflation.
- 8-10   Expert: You could get away with dating four people at one time.
- 11-15   Good: Able to chew gum, walk, and think simultaneously.
- 16-20   Fair: Must chew, walk, or think, one thing at a time.
- Over 21   Try Again: After all, even Einstein didn't talk until he was 3.



```

1 DEFINT A-Z
2 DIMA(32):REM BY DAVID BOHLKE **** ** *
3 GOSUB 900
4 DATA 74,6,74,12,80,12,74,18,80,18,86,18,104,3,104,6,110,6
5 DATA 104,12,104,15,110,15,116,15,104,21,110,21,110,24,116,24
7 DATA 203,1403,2603,3803,209,1409,2609,3809
8 DATA 215,1415,2615,3815,221,1421,2621,3821
10 DATA 5,5,6,6,5,6,6,3,5,4,2,3,4,4,2,3
12 DATA 6,3,3,3,6,6,2,2,5,6,4,4,5,5,5,4
14 DATA 3,2,4,4,3,2,4,5,3,6,6,5,6,6,5,5
16 DATA 4,5,5,5,4,4,6,5,2,2,6,6,3,3,3,6
20 DATA 4,4,6,5,4,6,6,5,2,6,5,5,2,3,3,3
22 DATA 5,5,5,3,6,6,5,3,4,6,6,3,4,4,2,2
24 DATA 3,3,3,2,5,5,6,2,5,6,6,4,5,6,4,4
26 DATA 2,2,4,4,3,6,6,4,3,5,6,6,3,5,5,5
30 DATA 1,6,6,3,6,6,5,3,4,4,5,3,4,1,5,5
32 DATA 3,3,3,5,6,5,5,5,6,6,4,1,1,6,4,4
34 DATA 5,5,1,4,3,5,4,4,3,5,6,6,3,6,6,1
36 DATA 4,4,6,1,1,4,6,6,5,5,5,6,5,3,3,3
40 DATA 5,5,6,1,1,5,6,6,4,5,1,6,4,4,2,2
42 DATA 1,6,6,2,6,6,1,2,5,5,5,4,5,1,4,4
44 DATA 2,2,4,4,6,1,5,4,6,6,5,1,1,6,5,5
46 DATA 4,4,1,5,4,5,5,5,2,1,6,6,2,6,6,1
50 DATA 5,5,6,1,5,2,6,6,5,2,1,6,1,3,3,3
52 DATA 1,6,6,3,6,6,1,3,5,2,2,3,5,5,5,1
54 DATA 3,3,3,1,6,1,2,5,6,6,2,5,1,6,5,5
56 DATA 1,5,5,5,3,2,2,5,3,1,6,6,3,6,6,1
60 DATA 1,5,5,1,3,1,5,2,3,4,5,2,3,4,4,1
62 DATA 1,2,2,1,5,5,5,4,5,1,4,4,1,3,3,3
64 DATA 1,4,4,3,2,5,4,3,2,5,1,3,1,5,5,1
66 DATA 3,3,3,1,4,4,1,5,4,5,5,5,1,2,2,1
70 DATA 1,6,4,4,6,6,1,4,6,1,2,2,3,3,3,1
72 DATA 4,4,2,1,4,1,2,3,6,6,1,3,1,6,6,3
74 DATA 1,3,3,3,2,2,1,6,4,1,6,6,4,4,6,1
76 DATA 3,6,6,1,3,1,6,6,3,2,1,4,1,2,4,4
100 GOSUB 700
110 FORA=1TO16:READA(A):NEXTA
140 A=RND(28):IFA=28GOTO150
143 T=0
145 FORB=1TOA*16:READX:NEXTB
150 FORA=1TO16:READA(A+16):NEXTA
200 A=RND(16):S=A(16+A):IFS=OGOTO200
210 PRINT@704,"WHERE IN THE J I G S A W WOULD YOU LIKE"
220 PRINT"TO PLACE PIECE # ";S;" (ENTER 1-16) ";;INPUTP
230 PRINT@704,"";:PRINT:PRINT:IFP>16THEN 210
300 IFA(16+P)<>SGOTO390
310 PRINT@704," Y O U   G O T   I T   ! ! ! "
320 IFS=1A=P:GOSUB 750:A(16+A)=0:GOTO395
330 FORA=1TO16
340 IF A(16+A)=SGOSUB 750:A(16+A)=0
350 NEXTA:GOTO395
390 PRINT@704,"S O R R Y   --   I T   D O E S N ' T   F I T   T H E R E . "
395 FORA=1TO1000:NEXTA
410 T=T+1:PRINT@610,"TRIES ";T;
490 PRINT@704,"";:PRINT:PRINT
500 FORA=1TO16:IFA(A+16)<>OGOTO200
510 NEXTA
515 FORA=1TO200:RESET(RND(48)+1,RND(24)+2):NEXTA
520 PRINT@704,"";:INPUT"PRESS =ENTER= FOR ANOTHER PUZZLE";A$
530 CLS:RESTORE:GOTO100
700 CLS:PRINT@35,"J I G S A W   S H A P E S"
702 FORA=0TO25:PRINT@A,"=";;PRINT@A+576,"=";;NEXTA
705 FORA=64TO512STEP64:PRINT@A,"!";:PRINT@A+25,"!";:NEXTA
710 PRINT@131,"1      2      3      4";
712 PRINT@259,"5      6      7      8";
714 PRINT@387,"9     10     11     12";
716 PRINT@515,"13     14     15     16";

```

THE *SOFTSIDE* SAMPLER

```
730 PRINT@163,"1";:PRINT@291,"2";:PRINT@419,"3";
732 PRINT@178,"4";:PRINT@306,"5";:PRINT@498,"6";
736 FORC=1TO17:READX,Y:FORA=XTOX+5:FORB=YTOY+2
738 SET(A,B):NEXTB:NEXTA:NEXTC
739 RETURN
750 X=INT(A(A)/100):Y=A(A)-X*100
755 FORC=YTOY+5:FORB=XTOX+11
759 SET(B,C):NEXTB:NEXTC:RETURN
900 GOSUB700:PRINT@640,"";
910 PRINT"      TO PLAY, SIMPLY ENTER THE NUMBER (1-16) FROM THE"
920 PRINT"JIGSAW ON THE UPPER LEFT WHERE YOU BELIEVE THE PIECE"
930 PRINT"(1-6) THE COMPUTER HAS PICKED SHOULD FIT.  REMEMBER:"
940 PRINT"YOU MUST MATCH EXACTLY THE PUZZLE THE COMPUTER HAS"
950 INPUT"CHOSEN.  PRESS =ENTER= TO BEGIN";A$
960 CLS:RESTORE:GOTO100
```



# KALEIDOSCOPE

*By James Garon*

A constantly growing and shifting pattern fills the computer screen until you have a full-blown design reminiscent of your early days when you bought your first kaleidoscope at the corner 5 & 10. This short, efficient program brings you pleasure with its ever-changing patterns. When you tire of watching one, press **ENTER** to find another new and different pattern to watch and admire.

2 REM

KALEIDOSCOPE

BY JAMES GARON

```
5 CLS:Z=10:W=16:GOSUB800:RESTORE
10 FORX=14TO113:SET(127-X,0):SET(X,47):NEXTX
12 FORY=1TO46:SET(14,Y):SET(15,Y):SET(112,47-Y):SET(113,47-Y):NE
XTY
19 FORN=15TO219:F=1
20 GOSUB700:X=R+R+W:GOSUB700:Y=R:GOSUB500
80 NEXTN:PRINT@1,"":INPUTA$:GOTO5
500 IFPOINT(X,Y)=-1THEN600
502 FORA=XTOX+1:SET(A,Y):SET(A,47-Y):SET(127-A,Y):SET(127-A,47-Y
)
504 NEXTA:IFF=2RETURN
506 GOSUB900:GOTO502
600 FORA=XTOX+1:RESET(A,Y):RESET(A,47-Y):RESET(127-A,Y):RESET(12
7-A,47-Y)
605 NEXTA:IFF=2RETURN
610 GOSUB900:GOTO600
700 R=23+RND(INT(N/Z)+1):RETURN
800 DATA*,*,K,A,L,E,I,D,O,S,C,O,P,E,*,*
810 FORB=0TO960STEP64
820 READB$
822 FORC=BTOB+57STEP57
825 PRINT@C," * ";B$;" *";
830 NEXTC:NEXTB:RETURN
900 F=2:X=X-W:T=X:X=Y+Y+W:Y=T/2:RETURN
```

# KRONEN

*By Galen E. Hamilton*

This is a matching game complete with your own money to bet (kronen) and Darth Vader to be your adversary.

You are given ten kronen to start out the game. Each time three figures on your cards match, you win ten kronen. Each time two figures match, you win two kronen.

But watch out for Darth Vader. One Darth Vader on the cards will cost you two of your kronen. Two Darth Vaders will cost you five kronen. If three of them show up, you will lose the game. Each play costs you one kronen. Good luck and watch out for Darth Vader.



```
10 ' "KRONEN" A GAME BY GALEN E HAMILTON
30 ' 27 JANUARY 1980
40 CLS:PRINT:PRINT:PRINT:
50 INPUT"PLEASE TYPE YOUR NAME THEN PRESS <=ENTER=>";N$
60 CLS
70 PRINTN$:PRINT
80 PRINT"AT THE BEGINNING OF EACH GAME YOU WILL HAVE 10 KRONEN.
EACH TIMETHREE FIGURES MATCH YOU WIN 10 KRONEN. EACH TIME 2 FIGU
RES MATCHYOU WIN 2 KRONEN.
90 PRINT: PRINT"IF DARTH VADER SHOWS UP YOU LOSE. ONE DARTH VAD
ER AND YOU LOSE 2 KRONEN. TWO DARTH VADERS AND YOU LOSE 5 KRONEN
, THREE AND YOU LOSE EVERYTHING.
100 PRINT:PRINT"EACH PLAY COSTS YOU ONE KRONEN. LOTS A LUCK
110 PRINT:INPUT"WHEN READY PRESS <=ENTER=>";A$
120 K=10
130 CLS
140 PRINT@176,N$
150 PRINT@240,"YOU NOW HAVE"
```

## KRONEN

69

```

160 PRINT@303,K;" K R O N E N
170 PRINT@324,"PRESS <=ENTER=> TO PLAY":INPUT,A$
180 RANDOM
190 PRINT@0," "
200 GOTO2010
210 P=0:Q=0:R=0:S=0:T=0:L=0:U=0:V=0:X=6:Y=32
220 A=RND(7):B=RND(7):C=RND(7)
230 ON A GOSUB2210 ,1810 ,610 ,1110 ,1310 ,410 ,2510
240 ONBGOSUB2210 ,1810 ,610 ,1110 ,1310 ,410 ,2510
250 ONCGOSUB2210 ,1810 ,610 ,1110 ,1310 ,410 ,2510
260 IFU=1GOTO1580
270 IFU=2GOTO1510
280 IFU=3GOTO1650
290 IF(L=2)+(S=2)+(T=2)+(P=2)+(V=2)+(R=2)+(Q=2)GOTO1020
300 IF(L=3)+(S=3)+(T=3)+(P=3)+(V=3)+(R=3)+(Q=3)GOTO810
310 GOTO910
400 'LOP EARED DOG
410 FOR D=Y+0TOY+4:SET(X+5,D):NEXTD
420 SET (X+6,Y+2)
430 SET(X+6,Y+3)
440 FORD=X+9TOX+14:SET(D,Y+3):NEXTD
450 SET(X+6,Y+2):SET(X+6,Y+4):SET(X+17,Y+4)
460 FORD=X+5TOX+18:SET(D,Y+4):NEXTD
470 SET(X+6,Y+5):SET(X+7,Y+5):SET(X+16,Y+5):SET(X+17,Y+5)
480 FORD=X+10TOX+13:SET(D,Y+5):NEXTD
490 FORD=X+7TOX+15:SET(D,Y+6):NEXTD
500 SET(X+8,Y+7):SET(X+9,Y+7):SET(X+10,Y+7):SET(X+13,Y+7):SET(X+
14,Y+7):SET(X+15,Y+7)
510 SET(X+9,Y+8):SET(X+14,Y+8)
520 FORD=X+10TOX+13:SET(D,Y+9):NEXTD
530 SET(X+11,Y+10):SET(X+12,Y+10):SET(X+11,Y+11):SET(X+12,Y+11)
540 FORD=Y+4TOY+9:SET(X+18,D):NEXTD
550 SET(X+19,Y+9)
560 SET(X+4,Y):SET(X+3,Y):SET(X+2,Y):SET(X+2,Y+1)
570 Q=Q+1:X=X+46:RETURN
600 'DARTH VADER
610 SET(X+3,Y):SET(X+15,Y):SET(X+3,Y+1):SET(X+15,Y+1)
620 SET(X+4,Y+1):SET(X+14,Y+1)
630 FORD=X+6TOX+12:SET(D,Y+1):NEXTD
640 FORD=X+3TOX+5:SET(D,Y+2):NEXTD
650 FORD=X+13TOX+15:SET(D,Y+2):NEXTD
660 SET(X+3,Y+3):SET(X+15,Y+3)
670 SET(X+3,Y+4):SET(X+15,Y+4):SET(X+6,Y+4):SET(X+12,Y+4)
680 SET(X+4,Y+5):SET(X+6,Y+5):SET(X+7,Y+5):SET(X+11,Y+5):SET(X+1
2,Y+5):SET(X+14,Y+5)
690 SET(X+4,Y+6):SET(X+14,Y+6)
700 SET(X+5,Y+7):SET(X+9,Y+7):SET(X+13,Y+7)
710 SET(X+5,Y+8):SET(X+8,Y+8):SET(X+9,Y+8):SET(X+10,Y+8):SET(X+1
3,Y+8)
720 SET(X+6,Y+9):SET(X+9,Y+9):SET(X+12,Y+9)
730 SET(X+5,Y+10):SET(X+7,Y+10):SET(X+11,Y+10):SET(X+13,Y+10)
740 SET(X+4,Y+11):SET(X+9,Y+11):SET(X+10,Y+11):SET(X+8,Y+11):SET
(X+14,Y+11)
750 GOTO2410
760 U=U+1:X=X+46:RETURN
800 ' WINNINGS
810 FORS=1TO5
820 PRINT@70,"ALL THREE OF THEM ARE THE SAME YOU WIN TEN KRONEN
830 FORX=448TO493:PRINT@X,"YOU HAVE WON !":NEXTX
840 FORX=493TO448STEP-1:PRINT@X,"YOU HAVE WON !":NEXTX
850 FORS=1TO1
860 FORX=512TO550:PRINT@X,"10 KRONEN !":NEXTX:NEXTS
870 FORX=560TO512STEP-1:PRINT@X,"10 KRONEN !":NEXTX
880 FOR M=1TO500:NEXTM
890 K=K+10
900 GOTO130

```



```

1680 PRINT@512,"                Y O U   L O S E
1690 FOR T=1TO50:NEXTT
1700 PRINT@512,"                HA HA HA HA HA
1710 NEXTS
1720 K=0:GOTO970
1800 'DRAGON
1810 SET(X,Y):SET(X+1,Y):SET(X+6,Y):SET(X+7,Y):SET(X+12,Y):SET(X
+13,Y)
1820 SET(X-1,Y+1):FORD=X+2TOX+5:SET(D,Y+1):NEXTD:FORD=X+8TOX+11:
SET(D,Y+1):NEXTD:SET(X+14,Y+1)
1830 SET(X+4,Y+2):SET(X+6,Y+2):SET(X+7,Y+2):SET(X+9,Y+2)
1840 FORD=X+1TOX+4:SET(D,Y+3):NEXTD
1850 FORD=X+9TOX+12:SET(D,Y+3):NEXTD
1860 SET(X+4,Y+4):SET(X+9,Y+4)
1870 FORD=X+1TOX+4:SET(D,Y+5):NEXTD:FORD=X+9TOX+12:SET(D,Y+5):NE
XTD
1880 FORD=X+18TOX+24:SET(D,Y+5):NEXTD
1890 SET(X+4,Y+6):SET(X+9,Y+6):SET(X+24,Y+6)
1900 SET(X+4,Y+7):FORD=X+9TOX+24:SET(D,Y+7):NEXTD
1910 SET(X+4,Y+8):SET(X+24,Y+8)
1920 FORD=X+4TOX+24:SET(D,Y+9):NEXTD
1930 SET(X+6,Y+10):SET(X+9,Y+10):SET(X+13,Y+10):SET(X+16,Y+10):S
ET(X+19,Y+10):SET(X+22,Y+10)
1940 L=L+1:X=X+46:RETURN
2000 'BUILDING BOXES
2010 FORL=16000TO16063:POKEL,131:NEXTL
2020 FORL=16320TO16383:POKEL,176:NEXTL
2030 FORL=16000TO16383 STEP64:POKEL,191:NEXTL
2040 FORL=16018 TO 16383STEP64:POKEL,191:NEXTL
2050 FORL=16022TO16383STEP64:POKEL,191:NEXTL
2060 FORL=16041 TO16373STEP64:POKEL,191:NEXTL
2070 FORL=16045TO16383STEP64:POKEL,191:NEXTL
2080 FORL=16063TO16383STEP64:POKEL,191:NEXTL
2090 POKEL6019,32:POKEL6020,32
2100 POKEL6021,32:POKEL6042,32:POKEL6043,32
2110 POKEL6044,32:POKEL6340,32:POKEL6341,32:POKEL6339,32
2120 POKEL6363,32:POKEL6364,32:POKEL6362,32
2130 GOTO210
2200 'SQUIRREL
2210 SET(X+6,Y):SET(X+5,Y+1):SET(X+6,Y+1):FORD=X+18TOX+22:SET(D,
Y+1):NEXTD
2220 SET(X+3,Y+2):SET(X+4,Y+2):SET(X+7,Y+2):SET(X+8,Y+2):SET(X+1
6,Y+2):SET(X+17,Y+2):SET(X+23,Y+2)
2230 SET(X+1,Y+3):SET(X+2,Y+3):SET(X+4,Y+3)
2240 SET(X+8,Y+3):SET(X+16,Y+3):SET(X+20,Y+3):SET(X+21,Y+3)
2250 SET(X,Y+4):SET(X+9,Y+4):SET(X+17,Y+4):SET(X+19,Y+4)
2260 SET(X+1,Y+5):SET(X+10,Y+5):SET(X+17,Y+5):SET(X+19,Y+5)
2270 SET(X+2,Y+6):SET(X+3,Y+6):SET(X+11,Y+6):SET(X+12,Y+6):SET(X
+17,Y+6):SET(X+19,Y+6)
2280 SET(X,Y+7):SET(X+14,Y+7):SET(X+17,Y+7):SET(X+19,Y+7)
2290 SET(X-1,Y+8):SET(X+19,Y+8):SET(X+15,Y+8):SET(X+17,Y+8)
2300 SET(X,Y+9):SET(X+19,Y+9):SET(X+15,Y+9):SET(X+17,Y+9)
2310 SET(X+1,Y+10):SET(X+10,Y+10):SET(X+15,Y+10):SET(X+17,Y+10):
SET(X+19,Y+10)
2320 SET(X+2,Y+11):SET(X+9,Y+11):SET(X+11,Y+11):SET(X+14,Y+11):S
ET(X+16,Y+11):SET(X+18,Y+11)
2330 FORD=X-2TOX+8:SET(D,Y+12):NEXTD:SET(X+12,Y+12):SET(X+13,Y+1
2):SET(X+17,Y+12)
2340 T=T+1:X=X+46:RETURN
2400 'PRINTING "DARTH VADER"
2410 IFX=98THENM=51
2420 IFX=52THENM=28
2430 IF X=6THENM=X-1
2440 POKEL6000+M,68:POKEL6320+M,86
2450 POKEL6001+M,65:POKEL6321+M,65
2460 POKEL6002+M,82:POKEL6322+M,68

```

THE *SOFTSIDE* SAMPLER

```
2470 POKE16003+M,84:POKE16323+M,69
2480 POKE16004+M,72:POKE16324+M,82
2490 GOTO760
2500 'BUTTERFLY
2510 FORD=YTOY+4:SET(X-1,D):SET(X+23,D):NEXTD
2520 SET(X,Y):SET(X+1,Y):SET(X+21,Y):SET(X+22,Y)
2530 SET(X+2,Y+1):SET(X+3,Y+1)
2540 SET(X+4,Y+1):SET(X+18,Y+1):SET(X+19,Y+1):SET(X+20,Y+1)
2550 SET(X+5,Y+2):SET(X+6,Y+2):SET(X+16,Y+2):SET(X+17,Y+2)
2560 SET(X+2,Y+3):SET(X+3,Y+3):SET(X+7,Y+3):SET(X+8,Y+3):SET(X+1
4,Y+3):SET(X+15,Y+3):SET(X+19,Y+3):SET(X+20,Y+3)
2570 SET(X+3,Y+4):SET(X+4,Y+4):SET(X+8,Y+4):SET(X+14,Y+4):SET(X+
18,Y+4):SET(X+19,Y+4)
2580 FORD=Y+4TOY+11:SET(X+11,D):NEXTD
2590 SET(X,Y+5):SET(X+9,Y+5):SET(X+13,Y+5):SET(X+22,Y+5)
2600 SET(X+1,Y+6):SET(X+2,Y+6):SET(X+20,Y+6):SET(X+21,Y+6)
2610 SET(X+3,Y+7):SET(X+4,Y+7):SET(X+6,Y+7):SET(X+7,Y+7):SET(X+1
5,Y+7):SET(X+16,Y+7):SET(X+18,Y+7):SET(X+19,Y+7)
2620 SET(X+8,Y+8):SET(X+14,Y+8):SET(X+7,Y+9):SET(X+15,Y+9)
2630 SET(X+5,Y+10):SET(X+6,Y+10):SET(X+10,Y+10):SET(X+12,Y+10):S
ET(X+16,Y+10):SET(X+17,Y+10)
2640 SET(X+3,Y+11):SET(X+4,Y+11):SET(X+9,Y+11):SET(X+13,Y+11):SE
T(X+18,Y+11):SET(X+19,Y+11)
2650 SET(X+2,Y+12):SET(X+4,Y+12):SET(X+6,Y+12):SET(X+8,Y+12):SET
(X+14,Y+12):SET(X+16,Y+12):SET(X+18,Y+12):SET(X+20,Y+12)
2660 P=P+1:X=X+46:RETURN
```

# LETTER CRUNCH

*By David Bohlke*

*SoftSide* is proud to present a demonstration of how "bugs" survive inside your TRS-80®. As we all know, life is only possible if we have something to eat. We guessed that the bugs in our computers ate the contents of memory, but we weren't sure of this until David Bohlke actually managed to interview a bug.

He learned that eating is a major form of pleasure for bugs, so much so that they've turned dining into a game of strategy. The game played by the bugs was described in enough detail that we're able to present a simulation with the same strategy. Now, the next time a program bug eats up your computer memory, you'll know how the process works!

The bugs base their game on simple rules that tell how much memory they can gobble in one bite and how delicious that memory is. They love the taste of pluses (+++) but hate asterisks (\*\*). Spaces are tasteless and do not count. All other memory contents are nourishing and satisfying but have only one taste point per space occupied.

To play the game, you select a row and get to eat the letter directly to the right of the row number. In several cases, you also get to eat adjacent characters. If you select the letter *B*, you get to eat the memory cell directly below the one you select. These options are displayed graphically for you at the bottom of the screen when it's your turn. The letter *A* gives you only the cell that it is in, while letters *B-F* give you additional points if there are characters in those cells.

To win, you must not only select the option that gives you the best score but also avoid giving your opponent a good opportunity. That may be tougher than it looks!

```
5 DIM A(10,11)
10 CLS:PRINTTAB(10),"L E T T E R  CRUNCH":PRINT:PRINT
12 PRINT"=ENTER= YOUR OPTION (1-3)":PRINT
14 PRINT"1      PLAYER VS  PLAYER"
16 PRINT"2      PLAYER VS  COMPUTER"
18 PRINT"3      DIRECTIONS"
20 PRINT@220,"";INPUT OP
21 IFOP=3GOTO1000
22 CLS:PRINTCHR$(23)
25 INPUT"NAME OF PLAYER # 1";P$(1)
30 IFOP=2THENP$(2)="TRS-80":GOTO80
35 PRINT:INPUT"NAME OF PLAYER # 2";P$(2)
80 FORR=0TO10:FORC=0TO11:A(R,C)=32:NEXT:NEXT
90 CLS:GOSUB900:GOSUB950
95 PN=RND(2)
100 FOR TURN = 2 TO 21
110 PRINT@960,"TURN ";INT(TURN/2);"      ";
112 PRINT"SCORE:      ";P$(1);S1;"      ";P$(2);S2;
115 IF PN=2 AND OP=2 GOSUB500:GOTO150
120 PRINT@896,P$(PN);
```

```

130 PRINT" : =ENTER= ROW # YOU WISH TO CRUNCH (1-9) ";
140 INPUT R
145 IFR<1ORR>9ORR<>INT(R)PRINT@640,CHR$(31):GOSUB950:GOTO130
150 PRINT@640,CHR$(31);
155 GOSUB700
156 PRINT@640,CHR$(31)
160 GOSUB950
164 IFPN=1 THEN S1=S1+S ELSE S2=S2+S
165 IFS=0PRINT@640,CHR$(31):GOSUB950:GOTO110
170 IF PN=1 THEN PN=2 ELSE PN=1
190 NEXT TURN:PRINT@640,CHR$(31)
192 PRINT@768,"F I N A L S C O R E"
194 PRINTP$(1);" ";S1;" ";P$(2);" ";S2;
198 PRINT@960,"PRESS =ENTER= FOR ANOTHER 'GAME ";
199 INPUTA$:RUN
499 GOTO499
500 PRINT@640,CHR$(31):PRINT@725,"TRS-80'S BRAIN";
505 FORR=1TO9:P(R)=0:NEXT
520 FOR R=1 TO 9: FOR C=1 TO 10
525 PRINT@704+INT(R/2)*64+C*5.5+RND(5),CHR$(RND(62)+128);
530 IFA(R,C)=32GOTO590
535 IFA(R,C)=43THEN P(R)=5:GOTO595
540 IFA(R,C)=42THEN P(R)=-5:GOTO595
542 P(R)=1:
545 ON A(R,C)-64 GOTO 550,555,560,565,570,575
550 GOTO595
555 A=R+1:B=C:GOSUB690:GOTO595
560 A=R-1:B=C:GOSUB690:GOTO595
565 A=R+1:B=C:GOSUB690:B=C+1:GOSUB690:A=R:GOSUB690:GOTO595
570 A=R:B=C+1:GOSUB690:A=R-1:GOSUB690:B=C:GOSUB690:GOTO595
575 A=R-1:B=C:GOSUB690:A=R+1:GOSUB690:GOTO595
590 NEXT C
595 NEXT R
600 M=RND(2):R=1:FORI=2TO9
602 IFM=2GOTO605
603 IFP(1)>P(I)GOTO610
604 GOTO609
605 IFP(1)>P(I)GOTO610
609 R=I:P(1)=P(I)
610 NEXTI
620 IFP(R)=0THENP(R)=-30:GOTO600
630 RETURN
690 IFA(A,B)=43THENP(R)=P(R)+5:RETURN
691 IFA(A,B)=42THENP(R)=P(R)-5:RETURN
692 IFA(A,B)=32THEN RETURN
693 P(R)=P(R)+1:RETURN
700 P=R*64+9:PRINT@P,CHR$(94);:P1=P:S=0
720 PRINT@704,CHR$(31)
730 PRINT@P1," ";:P1=P1+3:IFP1=P+18GOTO740
735 PRINT@P1,CHR$(94);:GOTO730
740 P=P+18:C=1:PRINT@P,CHR$(94);
750 IFA(R,C)=32THENC=C+1:PRINT@P," ";:P=P+3:PRINT@P,CHR$(94);:
IFC<11THEN750ELSEPRINT@P," ";:RETURN
760 IFA(R,C)=43THENA(R,C)=32:S=5:PRINT@P+2,CHR$(149);"+";
CHR$(170);:PRINT@832,"EARN 5 POINTS";:FORI=1TO2000:
NEXT:PRINT@P," ";:RETURN
770 IFA(R,C)=42THENA(R,C)=32:S=-5:PRINT@P+2,CHR$(149);"*";
CHR$(170);:PRINT@832,"FORFEITS 5 POINTS";:FORI=1TO2000:
NEXT:PRINT@P," ";:RETURN
775 PRINT@832,"POINTS FOR CRUNCH ";
777 PRINT@P+2,CHR$(149);CHR$(A(R,C));CHR$(170);:S=S+1
780 I=A(R,C)-64:ON I GOTO 810,820,830,840,850,860
810 GOSUB880:PRINT@P," ";:A(R,C)=32:RETURN
820 A(R,C)=32:R=R+1:PP=P+66:GOSUB890:A(R,C)=32
822 GOSUB880:PRINT@P," ";:PRINT@P+66," ";:RETURN
830 A(R,C)=32:R=R-1:PP=P-62:GOSUB890:A(R,C)=32

```



## LETTER CRUNCH

75

```

832 GOSUB880:PRINT@P," ";:PRINT@P-62," ";:RETURN
840 A(R,C)=32:PP=P+5:C=C+1:GOSUB890:A(R,C)=32
842 R=R+1:C=C-1:PP=P+66:GOSUB890:A(R,C)=32
844 PP=P+69:C=C+1:GOSUB890:A(R,C)=32
846 GOSUB880:PRINT@P," ";:PRINT@P+66," ";:RETURN
850 A(R,C)=32:PP=P+5:C=C+1:GOSUB890:A(R,C)=32
851 R=R-1:PP=P-59:GOSUB890:A(R,C)=32
852 C=C-1:PP=P-62:GOSUB890:A(R,C)=32
855 GOSUB880:PRINT@P," ";:PRINT@P-62," ";:RETURN
860 A(R,C)=32:PP=P+66:R=R+1:GOSUB890:A(R,C)=32
862 PP=P-62:R=R-2:GOSUB890:A(R,C)=32
864 GOSUB880:PRINT@P," ";:PRINT@P-62," ";
866 PRINT@P+66," ";:RETURN
880 PRINT@852,S;:FORI=1TO2000:NEXT:RETURN
890 PRINT@PP,CHR$(149);CHR$(A(R,C));CHR$(170);
895 S=S+1:IFA(R,C)=42THENS=S-6
896 IFA(R,C)=43THENS=S+4
897 IFA(R,C)=32THENS=S-1
898 RETURN
899 GOTO899
900 PRINT@9,"L E T T E R CRUNCH";
902 FORI=1TO9:PRINT@I*64,"ROW ";I;CHR$(94);:NEXT
905 FOR I=1 TO 80
910 R=RND(9):C=RND(10):IF A(R,C)<>32 GOTO910
920 X=RND(8)+64:IFX=71THEN A(R,C)=43:GOTO934
925 IFX=72 THEN Z=Z+1:IFZ>5THEN910ELSEA(R,C)=42:GOTO935
930 A(R,C)=X
934 IFC<3AND A(R,C)=43 THENA(R,C)=32:GOTO910
935 PRINT@R*64+C*3+27,CHR$(A(R,C));
940 NEXT: RETURN
950 PRINT@704,CHR$(94);CHR$(149);"A";CHR$(170);" ";
962 PRINTCHR$(94);CHR$(149);"B";CHR$(170);" ";
964 PRINT" ";CHR$(149);" ";CHR$(170);" ";
966 PRINTCHR$(94);CHR$(149);"D";CHR$(170);CHR$(149);" ";CHR$(170);
);" ";
968 PRINT" ";CHR$(149);" ";CHR$(170);CHR$(149);" ";CHR$(170);" ";
";
970 PRINT" ";CHR$(149);" ";CHR$(170);
972 PRINT@779,CHR$(149);" ";CHR$(170);" ";
974 PRINTCHR$(94);CHR$(149);"C";CHR$(170);" ";
976 PRINT" ";CHR$(149);" ";CHR$(170);CHR$(149);" ";CHR$(170);" ";
";
978 PRINTCHR$(94);CHR$(149);"E";CHR$(170);CHR$(149);" ";CHR$(170);
);" ";
980 PRINTCHR$(94);CHR$(149);"F";CHR$(170);
982 PRINT@889,CHR$(149);" ";CHR$(170);
999 RETURN
1000 CLS:FORR=0TO10:FORC=0TO11:A(R,C)=32:NEXT:NEXT
1010 GOSUB900
1020 PRINT@704,"ABOVE IS THE -LETTER CRUNCH- GRID. TO PLAY, J
UST ENTER THE"
1022 PRINT"ROW NUMBER YOU WISH TO CRUNCH. THE CRUNCH WILL BE DI
RECTLY"
1024 PRINT"TO THE RIGHT. NOTICE THE SYMBOLS : A-F,*,+, AND A FE
W SPACES."
1025 PRINT
1026 INPUT"PRESS =ENTER= TO CONTINUE";A$:CLS
1030 GOSUB950:PRINT@0,"";
1032 PRINT" BELOW ARE THE CRUNCH INDICATORS. FOR EXAMPLE, I
F YOU"
1034 PRINT"ENTER ROW # 2 AND THE FIRST LETTER DIRECTLY TO THE
RIGHT IS"
1036 PRINT"A -F- ; THEN THAT LETTER, THE ONE DIRECTLY ABOVE, AN
D THE ONE"
1038 PRINT"DIRECTLY BELOW WILL BE CRUNCHED. YOU WILL RECEIVE ON
E POINT"
1040 PRINT"FOR EACH LETTER CRUNCHED."

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THE *SOFTSIDE* SAMPLER

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1042 PRINT"    ALSO, IF YOU CRUNCH A + ; YOU GET 5 EXTRA POINT
S."
1044 PRINT"AND, IF YOU CRUNCH A * ; YOU LOSE 5 POINTS. THE W
INNER"
1046 PRINT"IS THE ONE WITH THE MOST POINTS AT THE END OF THE GAM
E."
1048 PRINT"PLACE AN AM RADIO NEARBY FOR INTERESTING VIBES !"
1050 INPUT"PRESS =ENTER= TO BEGIN";A$:RUN
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# MAGICAL JOURNEY

*By Peter Kirsch*

You enter a world in which no mortal has ever set foot. It is filled with danger, puzzles, and many exotic treasures. Your magical trek has begun. You journey through three different lands, seeking the riches that lie in wait. There will be many roadblocks crossing your paths. Can you find the magical cave, guarded by a mean and hungry dragon, which will lead you safely back home? Watch out for the dreaded axman or killer frog. Or perhaps the giant chicken will mistake you for a kernel of corn.

This adventure has a total of 76 locations, 17 treasures, and seven monsters. There are many pitfalls and puzzles to solve.

Use two-word commands to communicate with the computer, such as GET AX, DROP AX, and OPEN DOOR. To move in a particular direction, type that direction or merely its first letter (N, E, S, W, U, D). To restore the display, if needed, type LOOK. To see a list of the items you're carrying, type INVENTORY or just I.

Now you're on your own.

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1 '  MAGICAL JOURNEY
    BY PETER KIRSCH
    FINAL VERSION
    FEB. 1980
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5 GOTO200
10 IFDT=1THEN320ELSEONAGOTO11,12,13,14,15,16,17,18,19,20,21,22,2
3,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44
,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,
66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86
11 PRINT"IN A FOREST.":W=1:N=3:E=1:S=1:GOTO350
12 PRINT"ON TOP OF A TREE.":D=1:GOTO350
13 PRINT"AT THE BASE OF A MOUNTAIN.":S=1:E=4:GOTO350
14 PRINT"ON AN OPEN PASTURE.":W=3:GOTO350
15 PRINT"ON TOP OF THE MOUNTAIN.":D=3:GOTO350
16 PRINT"IN AN UNDERGROUND CAVERN.":W=7:N=8:E=10:S=9:U=5:GOTO350
17 PRINT"IN A PASSAGEWAY.":W=13:E=6:S=9:GOTO350
18 PRINT"IN A TUNNEL.":E=12:S=6:GOTO350
19 PRINT"IN A TUNNEL.":W=7:N=6:E=10:GOTO350
20 PRINT"IN A TUNNEL.":W=6:S=9:GOTO350
21 PRINT"IN A ROOM. TUNNEL ENDS.":S=12:GOTO350
22 PRINT"IN A TUNNEL.":W=8:N=11:GOTO350
23 PRINT"AT A DEAD END.":E=7:GOTO350
24 PRINT"IN A STRANGE FOREST.":W=17:N=15:E=16:S=17:GOTO350
25 PRINT"IN A STRANGE FOREST.":W=17:N=19:E=16:S=14:GOTO350
26 PRINT"IN A STRANGE FOREST.":W=14:N=15:E=16:S=16:GOTO350
27 PRINT"IN A STRANGE FOREST.":W=14:N=15:E=14:S=14:GOTO350
28 PRINT"IN THE WOODSHED.":S=17:GOTO350
29 PRINT"AT A JUNCTION.":W=23:N=39:E=57:S=15:GOTO350
30 PRINT"ON TOP OF A RED TREE.":D=14:GOTO350
31 PRINT"ON TOP OF A BLUE TREE.":D=15:GOTO350
32 PRINT"ON TOP OF A GREEN TREE.":D=16:GOTO350
33 PRINT"J$ THE LAND OF OOZE.":W=24:E=19:GOTO350
34 PRINT"STANDING ON FARM LAND.":W=27:N=36:E=23:S=26:GOTO350
35 PRINT"IN A KITCHEN.":W=37:E=24:GOTO350
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36 PRINT"ON FARMLAND." :W=26:N=24:E=26:S=26:GOTO350
37 PRINT"IN A CORN FIELD." :W=27:N=28:E=24:S=27:GOTO350
38 PRINT"AT VALLEY JUNCTION." :W=29:N=30:E=31:S=27:GOTO350
39 PRINT"IN GOLDEN VALLEY." :E=28:GOTO350
40 PRINT"IN MEDIEVAL VALLEY." :S=28:GOTO350
41 PRINT"IN TERROR VALLEY." :W=28:GOTO350
42 PRINT"IN A HALLWAY." :W=33:S=30:U=34::GOTO350
43 PRINT"IN A SMALL CHAMBER." :E=32:GOTO350
44 PRINT"IN A TOWER." :D=32:GOTO350
45 PRINT"IN A VERY SMALL ROOM." :W=34:GOTO350
46 PRINT"ON A GREEN PASTURE." :S=24:GOTO350
47 PRINT"IN A LAUNDRY ROOM." :N=38:E=25:GOTO350
48 PRINT"IN A PANTRY." :S=37:GOTO350
49 PRINTJ$ THE LAND OF ZARTZ." :N=40:S=19:GOTO350
50 PRINT"AT WOODS JUNCTION." :W=41:N=45:E=49:S=39:GOTO350
51 PRINT"IN INSECT WOODS." :W=43:N=44:E=40:S=42:GOTO350
52 PRINT"NEAR A SMALL POND." :N=41:GOTO350
53 PRINT"IN A FOREST." :W=43:N=44:E=41:S=43:GOTO350
54 PRINT"IN A FOREST." :W=43:N=43:E=43:S=41:GOTO350
55 PRINT"IN TERROR WOODS." :W=46:N=47:E=48:S=40:GOTO350
56 PRINT"NEAR A SMALL PIT." :E=45:GOTO350
57 PRINT"IN A FOREST." :S=45:GOTO350
58 PRINT"NEAR THE ENTRANCE OF A CAVE." :W=45:GOTO350
59 PRINT"IN DARK WOODS." :W=40:N=50:E=51:S=52:GOTO350
60 PRINT"IN A FOREST." :W=50:N=50:E=51:S=49:GOTO350
61 PRINT"IN A FOREST." :W=49:N=50:E=50:S=50:GOTO350
62 PRINT"IN A FOREST." :W=50:N=49:E=51:S=52:GOTO350
63 PRINT"IN THE BOTTOM OF THE PIT." :W=55:U=46:GOTO350
64 PRINT"IN A SMALL STORAGE ROOM." :E=55:GOTO350
65 PRINT"IN A TUNNEL." :E=53:GOTO350
66 PRINT"INSIDE THE CAVE." :W=48:GOTO350
67 PRINTJ$ THE LAND OF OOLA." :W=19:GOTO350
68 PRINT"ON A PLAIN." :W=57:E=59:GOTO350
69 PRINT"ON RUGGED LAND." :W=58:N=60:E=65:GOTO350
70 PRINT"NEAR A MAGIC GARDEN." :W=75:S=59:GOTO350
71 PRINT"ON TOP OF THE HILL." :D=65:GOTO350
72 PRINT"IN A BLUE GARDEN." :S=60:GOTO350
73 PRINT"IN A GREEN GARDEN." :S=62:GOTO350
74 PRINT"AT A DEAD END." :S=68:GOTO350
75 PRINT"AT THE BOTTOM OF A HILL." :W=59:GOTO350
76 PRINT"IN THE DWARF HOUSE." :S=63:GOTO350
77 PRINT"NEAR SOME ANCIENT RUINS." :W=68:GOTO350
78 PRINT"IN ANCIEN' VALLEY." :N=64:E=67:S=69:GOTO350
79 PRINT"AT DRAGON CROSSING." :N=68:GOTO350
80 PRINT"IN A WELL-LIT TUNNEL." :W=71:E=69:GOTO350
81 PRINTCHR$(29)"TUNNEL CONTINUES." :W=72:E=70:GOTO350
82 PRINTCHR$(29)"END OF TUNNEL." :E=71:GOTO350
83 PRINT"IN A RED GARDEN." :S=66:GOTO350
84 PRINT"STANDING IN THE RUINS." :W=67:GOTO350
85 PRINT"OUTSIDE OF A TOOL SHED." :E=60:GOTO350
86 PRINT"INSIDE THE TOOL SHED." :E=75:GOTO350
200 CLEAR500:DIMA$(62),A(62),B(12),B$(33),C$(5),D(33),H$(62),I(62)
210 FORA=1TO56:READA$(A):READA(A):H$(A)=A$(A):NEXT:FORA=1TO33:RE
ADB$(A):NEXT:FORA=13TO33:READD(A):NEXT
220 A=1:G=1:G(4)=1:N$="LOWERED DRAWBRIDGE":J$="ON THE BORDER OF"
:W$="$$$ BOTTLE OF GOLDEN MILK"
300 N=0:W=0:E=0:S=0:U=0:D=0:Y=0:CLS:PRINT"YOU'RE ";:IF(DK=0)*(A>
5)DT=1
310 GOTO10
320 PRINTCHR$(29)"IT'S TOO DARK TO SEE CLEARLY! GET A LIGHT!":U
=5:DT=0
350 PRINT:IFN>0ORW>0ORE>0ORS>0ORU>0ORD>0THENPRINT"SOME EXITS ARE
: ";:FORB=1TO12:B(B)=0:NEXT
360 IFW>0PRINT" WEST";:B(1)=W:B(2)=W
361 IF(A=39)*(PF=0)THEN363ELSEIFN>0PRINT" NORTH";:B(3)=N:B(4)=N

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362 IFE>0PRINT" EAST";B(5)=E:B(6)=E
363 IFS>0PRINT" SOUTH";B(7)=S:B(8)=S
364 IFU>0PRINT" UP";B(9)=U:B(10)=U
365 IFD>0PRINT" DOWN";B(11)=D:B(12)=D
366 PRINT:PRINT
370 FORB=1TO62:IFABS(A(B))=ATHENC=C+1:GOTO372
371 NEXT:PRINT:GOTO374
372 IFC=1PRINT"THINGS YOU SEE HERE:"
373 PRINT"  "A$(B):GOTO371
374 IFGO=1GOTO6000
375 IFG=1PRINT"YOU ARE CARRYING A LARGE SACK FOR STORING
YOUR TREASURES.":G=0
376 IFA=1PRINT"GROUND IS VERY SOFT."
377 IF(A=31)*(AM=0)THEN1500ELSEIF(A=42)*(FR=0)THEN1510ELSEIF(A=3
9)*(DW=0)THEN1520ELSEIF(A=47)*(CH=0)THEN1530ELSEIF(A=56)*(RS=0)T
HEN1540ELSEIF(A=57)*(TR=0)THEN1550ELSEIF(A=69)*(DR=0)GOTO1560
380 ONERRORGOTO3000:C=0:PRINT:PRINT"WHAT DO YOU WANT TO DO";:INP
UTA$:IFA$="LOOK"THEN300ELSEPRINT:FORB=1TO12:IFA$=B$(B)THEN385ELS
ENEXT:GOTO387
385 IFB(B)<>0THENA=B(B):GOTO300ELSEPRINT"YOU CAN'T MOVE THAT WAY
.":GOTO380
387 IFA$<>"I"ANDRIGHT$(A$,3)<>"ORY"THEN400ELSEPRINT"YOU ARE CARR
YING.":PRINT"  A BAG WITH"NT"TREASURES";:FORK=1TO5:PRINTTAB(PO
S(0)+4)C$(K);:IFPOS(0)>45PRINT
388 NEXT:GOTO380
400 FORB=13TO33:F=LEN(B$(B)):IFLEFT$(A$,F)=B$(B)THEN450ELSENEXT:
PRINT"DON'T KNOW WHAT "CHR$(34)A$CHR$(34)" MEANS.":GOTO380
450 D$=RIGHT$(A$,LEN(A$)-F)-1:E$=RIGHT$(D$,3)
460 IFD(B)<>1THEN490
463 FORJ=1TO62:IFES=RIGHT$(A$(J),3)ANDA=ABS(A(J))THEN470
464 NEXT
465 PRINT"THERE'S NO "D$" HERE.":GOTO380
470 IFSGN(A(J))=-1PRINT"BE REASONABLE NOW. THAT'S IMPOSSIBLE.":
GOTO380
471 IF((A=31)*(AM=0))+((A=42)*(FR=0))+((A=56)*(RS=0))+((A=47)*(C
H=0)):MM=1:GOTO1000
472 IFLEFT$(A$(J),1)="$"NT=NT+1:A$(J)="$":A(J)=0:PRINT"OK!":GOTO5
000
473 IFI>4THENPRINT"YOU CAN'T CARRY ANYMORE.":GOTO380
474 IFA=44IFE$="IES"IFI(32)=0THEN1000ELSEPRINT"FLIES STICK LIKE
GLUE
TO FLYPAPER":AF=1:A$(31)="FLIES STUCK ON FLYPAPER":H$(60)=A$(31)
:A(31)=44:K3=32:R$="":GOSUB1100:M$="":GOSUB1200:GOTO5000
480 PRINT"OK!":FORK=1TO5:IFC$(K)=""THENC$(K)=A$(J):GOSUB3500:H(K
)=J:A$(J)="" :A(J)=0:I=I+1:GOTO5000ELSENEXT
490 IFD(B)<>2THEN600
500 FORJ=1TO5:IFE$<>RIGHT$(C$(J),3)ELSE520
510 NEXT:PRINT"YOU'RE NOT CARRYING IT.":GOTO380
520 FORK=1TO62:IFA$(K)=""THENA$(K)=C$(J):I=I-1:A(K)=A:H(J)=0ELSE
NEXT
530 PRINT"OK!":FORK1=1TO62:IFC$(J)=H$(K1)THENC$(J)="" :GOTO545ELS
ENEXT
545 IFA=31IFE$="DER"IFAM=0THENAM=1:PRINT"AXMAN DROPS HIS AX AND
SNEEZES WILDLY.
QUICK, GRAB THE COINS!":A(57)=-31:A$(57)="SNEEZING AXMAN":A(58)=
31:A$(58)="AX":H$(58)=A$(58):GOTO590
550 IFA=47IFE$="ORN"IFCH=0THENCH=1:PRINT"CHICKEN DEVOURS CORN, G
ETS UP,
AND WALKS AWAY.":A(K)=47:A$(K)="$ $$ $ GOLDEN EGG":GOTO590
555 IFA=56IFE$="OOD"IFRS=0THENRS=1:PRINT"SNAKES EAT FOOD AND SLI
THER
INTO A DARK CORNER TO SLEEP.":A(K)=0:A$(K)="" :GOTO590
560 IFE$="GAS"IFI(46)=0THENPRINT"WHERE'S YOUR "H$(46)"?
YOU FELL ASLEEP AND ARE EATEN BY A GIANT MOTH!":GOTO6100ELSEIFA=
69IFDR=0THENDR=1:PRINT"DRAGON FALLS ASLEEP.":A(K)=-69:A$(K)="SLE
EPING DRAGON":GOTO590

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565 IFA=39IFE$="PIE"DW=1:A$(K)="":A(K)=0:PRINT"DWARF GULPS THE P
IE
AND VANISHES.":PF=1:GOTO590
570 IFA=42IFE$="PER"IFFR=0THENIFAF=1THENFR=1:PRINT"FROG LICKS FL
IES ON PAPER
AND DISAPPEARS INTO THE POND.":A$(K)="LICKED FLIES ON PAPER":H$(
61)=A$(K):A(K)=A:GOTO5000
580 IFA=57IFE$="LAR"IFI(36)=1PRINT"TROLL GRABS YOUR BUCK,
TURNS A CRANK.":TR=1:K3=36:DB=1:A$(39)=N$:R$="":M$="":GOSUB1100:
GOSUB1200:GOTO5000
590 I(K1)=A:GOTO5000
600 IFD(B)<>3THEN620ELSEIFA=1ANDE$="REE"THENA=2:GOTO300ELSEIFA=3
ANDE$="AIN"THENA=5:GOTO300ELSEIF(A>13)*(A<17)*(E$="REE")A=A+6:GO
TO300ELSEIFA=65ANDE$="ILL"A=61:GOTO300
620 IFD(B)<>4THEN650ELSEIFI(3)=1IFE$="OLE"ORE$="UND"ORE$="NEL"IF
A=11THENPRINT"YOU DUG A TUNNEL AND CRAWLED UNDER THE DOOR.
HOLE MAGICALLY VANISHES.":A=14:GOTO5000ELSEPRINT"YOU FOUND NOTHI
NG OF VALUE":GOTO5000
650 IFD(B)<>11THEN700ELSEIFA=5ANDE$="OLE"THENA=6:Y=1ELSEIFA=17OR
A=75ANDE$="HED"THENA=A+1:Y=1ELSEIF((A=24)+(A=63))ANDE$="USE"THEN
A=A+INT(A/10)/2:Y=1ELSEIFA=30ANDE$="TLE"THENA=32:Y=1ELSEIFA=48AN
DE$="AVE"THENA=56:Y=1ELSEIFA=65ANDE$="ILL"THENA=61:Y=1
653 IFA=46ANDE$="PIT"THENA=53:Y=1ELSEIFA=67ANDE$="INS"A=74:Y=1
660 IFA=11ORA=34ORA=55ORA=60ORA=62ORA=66IFE$="OOR"IFG((A/10-INT(
A/10))*10)=0PRINT"THE DOOR'S LOCKED.":Z=1:GOTO5000ELSEIFD(B)=5TH
ENRETURNELSEIFA=60THENA=62:GOTO300ELSEIFA=66THENA=73:GOTO300ELSE
IFA=55THENA=54:GOTO300ELSEIFA=A+1:GOTO300
670 IFA=69IFE$="AVE"IFDR=1THENA=70:GOTO300ELSEPRINT"DRAGON WON'T
LET YOU. HE SURE LOOKS MEAN.":GOTO5000
672 IFA=57IFE$="DGE"THENIF(DB=1)*(TR=1)PRINT"YOU CROSS THE DRAWB
RIDGE":A=58:GOTO5000ELSEPRINT"DRAWBRIDGE IS UP!
TROLL SAYS, "CHR$(34)"PAY ME A BUCK!"CHR$(34):GOTO5000
674 IFA=61IFE$="DER"IFFA=0THENPRINT"GLIDER WON'T FLY!
THERE'S NO WIND!":GOTO5000ELSEPRINT"GLIDER SWOOPS YOU INTO THE V
ALLEY BELOW.
IT DROPS YOU OFF AND A GUST OF WIND CARRIES IT AWAY.":FORJ=1TO25
00:NEXT:A=68:GOTO300
680 IFY=1THEN300
700 IFD(B)<>5THEN800ELSEIFA=11ORA=55THEN660ELSEIF((I(10)=1)*(A=6
6))OR((I(13)=1)*(A=62))OR((I(14)=1)*(A=60))THENGOSUB4000:G((A/10
-INT(A/10))*10)=1:PRINT"DOOR'S OPEN.":GOTO5000ELSEIF(A=60)+(A=62
)+(A=66)PRINT"GET THE RIGHT KEY!":GOTO5000
800 IFD(B)<>9THEN830ELSEIFA=25IFE$="PIE"IFPE=0 IF((I(25)=1)+(I(2
5)=25))*((I(21)=25)+(I(21)=1))THEN810ELSE1000
805 GOTO830
810 PRINT"YOU HAVE JUST BAKED A RHUBARB PIE.":PE=1:A$(59)="RHUBA
RB PIE":H$(59)=A$(59):A(59)=25:K3=21:R$="":GOSUB1100:K3=25:GOSUB
1100:M$="":K3=21:GOSUB1200:K3=25:GOSUB1200:GOTO5000
830 IFD(B)<>6THEN850ELSEIF$="OTE"IFI(12)=AORI(12)=1OR(A=20)*(I(
12)=0)THENPRINT"NOTE SAYS:
"CHR$(34)"THERE ARE 17 TREASURES HIDDEN. CAN YOU FIND THEM ALL?
"CHR$(34):GOTO380
850 IFD(B)<>7THEN900ELSEIFA=36IFE$="COW"IFI(23)=36AND(I(24)=36OR
I(24)=1)THENIFI(19)=36PRINT"WOW! COW GIVES GOLDEN MILK.
FILL YOUR BOTTLE UP!":K3=24:R$="":GOSUB1100:K3=19:M$=W$:GOSUB120
0:K3=24:M$="":GOSUB1200:GOTO5000ELSEPRINT"COW IS HUNGRY!":GOTO50
00
900 IFD(B)<>10THEN930ELSEIFE$="PIE"IFI(59)=1ORI(59)=AOR((A=25)*(
I(59)=0))THENPRINT"YOU CAN'T STAND THE TASTE
OF RHUBARB! BESIDES,
YOU'RE NOT HUNGRY.":GOTO5000
930 IFD(B)<>13THEN950ELSEIF$="IGS"IFI(2)=1THENDK=1:R$="BURNING
TWIGS":K3=2:GOSUB1100:H$(2)=R$:PRINT"GOOD DEDUCTION!
YOU HAVE CREATED A SMALL FIRE
AND YOU CAN SEE!":GOTO5000
950 IFD(B)<>15THEN960ELSEIFA=55IFI(58)=1IFG(5)=0THENPRINT"WHACK!
!!!
DOOR SPLINTERS

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IT'S OPEN":G(5)=1:X=35:GOSUB4100:GOTO5000
960 IFD(B)<>12THEN970ELSEIF$="TON"IF(A=61)*(FA=0)THENFA=1:PRINT
"FAN SPINS.
IT'S GETTING WINDY!":A$(55)="SPINNING FAN":H$(55)=A$(55):GOTO500
0ELSEIFA=72THENA=1:GO=1:GOTO300
970 IFD(B)<>14THEN1000ELSEIF$="LAR"ORE$="OLL"IFI(36)=1IFA=57THE
NE$="LAR":GOTO580
1000 PRINT"YOU CAN'T DO THAT HERE."
1010 IFMM=1PRINT"YOU MIGHT GET KILLED!":MM=0
1020 GOTO380
1100 FORK2=1TO5:IFC$(K2)=H$(K3)THENC$(K2)=R$:GOSUB1150:RETURNELS
ENEXT:RETURN
1150 IFR$="THENI=I-1:I(K3)=0
1160 RETURN
1200 FORK2=1TO62:IFA$(K2)=H$(K3)THENA$(K2)=M$:IFM$<>"THENRETURN
ELSEA(K2)=0:I(K3)=0
1210 NEXT:RETURN
1499 GOTO5000
1500 PRINT"THERE IS AN AX-WIELDING MADMAN IN THE VALLEY
GUARDING THE COINS. HE IS SWINGING HIS AX MADLY.":GOTO380
1510 PRINT"THERE IS A GIANT KILLER FROG IN THE POND.":GOTO380
1520 PRINT"THERE IS A PATH NORTH, BUT
A WICKED PIE-EATING DWARF BLOCKS YOUR WAY.
HE SAYS, "CHR$(34)"GIMME A PIE."CHR$(34):GOTO380
1530 PRINT"THERE IS A GIANT CHICKEN IN THE FOREST.
HE SEEMS TO BE HIDING SOMETHING.
HE LOOKS HUNGRY.":GOTO380
1540 PRINT"A PAIR OF HISSING RATTLESNAKES GUARD THE STATUE.
WATCH YOUR STEP. THEY HAVEN'T EATEN TODAY YET.":GOTO380
1550 PRINT"A FAT TROLL STANDS GUARD."
CHR$(34)"PAY THE TROLL,"CHR$(34)" HE SAYS.":GOTO380
1560 PRINT"THE ENTRANCE TO THE CAVE IS GUARDED BY
A MEAN DRAGON. HE IS WIDE AWAKE.":GOTO380
2000 DATATREE,-1,2 SMALL TWIGS,2,SHOVEL,4,DARK HOLE,-5,LOCKED DO
OR,-11,RED TREE,-14,BLUE TREE,-15,GREEN TREE,-16,WOOD SHED,-17,R
ED KEY,18,$$$ VALUABLE COINS,31,PAPER NOTE,20,GREEN KEY,21,BLUE
KEY,22,FARMHOUSE,-24,GOLDEN COW,-36,SNEEZING POWDER,26
2010 DATAGIANT CORN,27,GOLDEN GRASS,29,CASTLE,-30,PIE SHELL,38,O
VEN,-25,MILKING STOOL,37,EMPTY BOTTLE,37,PIE FILLING,38,$$$ SILV
ER CROWN,33,OPEN DOOR,-34,$$$ PEARL NECKLACE,35,$$$ RARE BOOK,35
2020 DATA$$$ GOLDEN LILY PAD,42,SWARM OF FLIES,44,FLYPAPER,50,$$
$ EMERALD,51,SNAKE FOOD,52,LOCKED DOOR,-55,SILVER DOLLAR,54,$$$
BAR OF GOLD,54,$$$ GOLDEN STATUE,56
2030 DATA RAISED DRAW BRIDGE,-57,BLUE LOCKED DOOR,-60,$$$ RARE S
TAMPS,62,$$$ ANCIENT VASE,62,GREEN LOCKED DOOR,-62,DWARF'S HOUSE
,-63,$$$ GOLD WATCH,73,GAS MASK,64,SLEEPING GAS,64,CAVE,-69
2040 DATAPUSH BUTTON,-72,$$$ PEARL,66,$$$ DIAMOND,66,RED LOCKED
DOOR,-66,$$$ RARE FOSSIL,74,HANGGLIDER,-61,BIG FAN. PUSH BUTTON
ON FAN,-61,$$$ RING,76
2100 DATAWEST,W,NORTH,N,EAST,E,SOUTH,S,UP,U,DOWN,D,GET,TAKE,DROP
,PUT,GIVE,CLIMB,DIG,OPEN,READ,MILK,BAKE,EAT,GO,ENTER,PRESS,PUSH,
RUB,PAY,HIT,BREAK,SMASH
2110 DATA1,1,2,2,2,3,4,5,6,7,9,10,11,11,12,12,13,14,15,15,15
3000 PRINT"WHAT?":RESUME5100
3500 FORK4=1TO62:IFA$(J)=H$(K4)THENI(K4)=1ELSENEXT
3600 RETURN
4000 IFA=60THENX=40ELSEIFA=62THENX=43ELSEX=52
4100 A$(X)="OPEN DOOR":RETURN
5000 IF(Z=1)*(A=55)PRINT"BUT IT LOOKS LIKE IF AN AX MIGHT
SMASH THROUGH":Z=0
5100 FORV=1TO2000:NEXT:GOTO300
6000 PRINT"CONGRATULATIONS!
YOU'VE MADE IT ALL THE WAY THROUGH AND BACK.":IFNT=17PRINT"YOU F
OUND ALL 17 TREASURES.":GOTO6100
6050 PRINT"YOU ONLY FOUND"NT"TREASURES, HOWEVER.
THERE ARE"17-NT"STILL OUT THERE SOMEWHERE."
6100 INPUT"TO PARTAKE ANOTHER JOURNEY, HIT < ENTER >";A$:RUN

```

# MATCH GAME

*By Ralph G. White*

A reciprocal agreement seems to have been made between writers of game and educational programs not to invade each other's domain. The following program is designed to violate that agreement; its purpose is to encourage the learning of the states and their respective capitals in an entertaining way.

The program places two players in a game environment. They command opposing armies from Venus and Mars, simultaneously attempting to conquer the Earth. The format is based on the television game "Concentration." Earth is divided into 24 regions (a 6-by-4 playing grid) that must be captured. The player who has the most regions after all the spaces have been captured wins the planet. To win regions, players must match a state with its capital. A player chooses two squares. If a state is shown on one square and its capital on the other, the player wins the two squares and is allowed two more choices. If any other combination appears, then play passes to the other person.

Although the computer always requests the name of the Martian commander first, there is no advantage to commanding the army from Mars. At the beginning of each game, the computer randomly chooses which player will play first.

The program is written for two participants. The computer does not play: it referees, keeps score, and prevents illegal moves and cheating.

To initialize the game, the computer randomly selects 12 pairs of states and capitals from the list of 50 at the end of the program. These 12 pairs of data are then randomly positioned in the 24 squares on the playing grid. Each game uses a new set of states and capitals hidden in a different pattern.

When the squares are captured, the space is filled with the appropriate figure of a Martian or Venusian soldier. To maintain a high degree of interest in the display, the figures displayed in the captured regions constantly move their heads and look around in all directions. The constant movement provides an impression of real-time activity.

Since the display is highly formatted, each entry is thoroughly tested to ensure that the playing grid is not destroyed or damaged by allowing the computer to attempt to process a bad entry. Each entry is tested to be sure of the following:

1. The entry was a number and not a letter or symbol entered by mistake.
2. The square chosen exists on the grid.
3. The square chosen has not been matched with another square already.



4. The second square chosen is not the same location as the first square chosen.

All entries are processed through the INKEY\$ function; this allows the computer to make the figures move around while waiting for players to make decisions. During the actual playing of the game, the **ENTER** key is not used.

The program need not be dedicated only to states and capitals. Any pair of facts may be implemented by changing the four strings in the data statements beginning in line 25001. The data statement in line 25000 informs the computer how many pairs of facts are listed. Line 10 dimensions the variables to accept 50 pairs of data. To increase the number of possible matching pairs, redimension X, Q, W\$, X\$, and Z\$, and possibly clear additional string space. Each square is allowed two strings of eight characters each. If a second string is not needed, enclose one blank space in quotations.

The variable at the beginning of each data statement that contains the matching pairs identifies each pair. This procedure was used instead of generating a value so that two or more pairs may be interchangeably matched if desired.

Other possible topics that could be used for the game include foreign language vocabulary, countries and capitals, units of measurement, dates and events, elementary math problems, and historical names.

You can enjoy the program as it is or easily modify it to meet your needs.

```

5 CLEAR500:DIMP$(2,20)
7 TL$="%/%/%/%/%/%/%/"
10 DIMV(25),PL(25),N(25),T(25),C$(25),D$(25),P(25),Z(50),W$(50),
XS(50),YS(50),Z$(50),Q(50),A$(24),B$(24),M(25),R(25)
15 CLS:PRINTCHR$(23):PRINT:PRINT:PRINT
20 PRINTTL$;TL$
30 PRINTTAB(8)"I N V A S I O N":PRINTTAB(14)"O F":PRINTTAB(11)"E
A R T H":PRINT
40 PRINTTL$;TL$
100 GOSUB20000
101 CLS
110 PRINTTAB(22)"I N S T R U C T I O N S ":PRINT
120 PRINT"AN ARMY OF MARTIANS HAS LEFT MARS AT THE SAME TIME THA
T AN ARMY"
125 PRINT"OF VENUTIANS HAS LEFT VENUS. BOTH ARMIES WISH TO CONQ
UER THE"
130 PRINT"EARTH. YOU EACH WILL BE ASKED TO COMMAND ONE OF THE A
RMIES"
135 PRINT"ON THE EARTH.
140 PRINT:PRINT"TO LET YOU SEE WHO YOU ARE DEALING WITH LET ME S
HOW YOU PHOTOS"
145 PRINT"OF A MARTIAN AND A VENUTIAN."
150 PRINT:PRINTTAB(10);P$(1,2);TAB(40);P$(2,2)
155 PRINTTAB(10);P$(1,3);TAB(40);P$(2,3)
160 PRINTTAB(10);P$(1,1);TAB(40);P$(2,1)
165 PRINTTAB(10);"MARTIAN";TAB(40);"VENUTIAN"

```

```

170 PRINT:INPUT"PRESS <ENTER> FOR FURTHER INSTRUCTIONS";L$
175 CLS
180 PRINT"THE COMPUTER WILL DRAW A GRID OF 24 SQUARES. EACH SQU
ARE WILL"
190 PRINT"HAVE A STATE OR CAPITAL HIDDEN UNDER IT. YOU ARE TO L
OCATE"
195 PRINT"SQUARES THAT ARE A MATCHING PAIR OF STATE AND CAPITAL.
":PRINT
200 PRINT" YOU CHOOSE TWO SQUARES AT A TIME (TYPE THE NUMBER OF
THE"
205 PRINT"SQUARE YOU CHOOSE --<ENTER> WILL NOT BE NECESSARY). I
F THE TWO"
210 PRINT"SQUARES HAVE THE SAME VALUE, YOU WIN THE TWO SQUARES A
ND YOU"
220 PRINT"ARE ALLOWED TO GUESS AGAIN. IF THEY HAVE DIFFERENT VA
LUES,"
225 PRINT"IT BECOMES YOUR OPPONENT'S TURN. THE ARMY THAT HAS TH
E MOST"
230 PRINT"SQUARES AT THE END OF THE GAME WINS THE PLANET EARTH."
240 PRINT:INPUT"PRESS <ENTER> TO CONTINUE";L$
800 CLS:PRINT"NOW I NEED TO KNOW THE NAMES TO THE TWO PEOPLE WHO
WILL PLAY":PRINT
810 INPUT"NAME OF THE MARTIAN COMMANDER ";S$(1)
820 IFLen(S$(1))>20THENPRINT"NAME TOO LONG.":GOTO810
830 PRINT:INPUT"NAME OF THE VENUTIAN COMMANDER ";S$(2)
840 IFLen(S$(2))>20THENPRINT"NAME TOO LONG.":GOTO830
850 TN=RND(2)
860 CLS
900 FORI=0TO4:PRINT@194+192*I,STRING$(60,CHR$(140));:NEXT
920 FORI=10TO46:FORJ=0TO6:SET(3+20*J,I):SET(4+20*J,I):NEXT:NEXT
930 FORI=0TO5:P(1+I)=259+10*I:P(7+I)=451+10*I:P(13+I)=643+10*I:P
(19+I)=835+10*I:NEXT
940 FORI=1TO24:READN(I):V(I)=1:PRINT@P(I)+3,N(I);:NEXT
950 PRINT@23,"PLEASE WAIT WHILE";:PRINT@82,"I HIDE THE MATCHING
SQUARES";
1000 READN:FORJ=1TON:READZ(J),W$(J),X$(J),Y$(J),Z$(J):NEXT
1010 FORI=1TO12
1020 Q(I)=RND(N)
1030 IFI<2GOTO1070
1040 J=1
1050 IFQ(I)=Q(J)GOTO1020
1060 J=J+1:IFJ<IGOTO1050
1070 M(I)=Z(Q(I)):A$(I)=W$(Q(I)):B$(I)=X$(Q(I)):M(I+12)=Z(Q(I)):
A$(I+12)=Y$(Q(I)):B$(I+12)=Z$(Q(I))
1090 NEXT
1100 FORK=1TO24
1110 R(K)=RND(24)
1120 IFK<2GOTO1160
1130 J=1
1140 IFR(K)=R(J)GOTO1110
1150 J=J+1:IFJ<KGOTO1140
1160 T(K)=M(R(K)):C$(K)=A$(R(K)):D$(K)=B$(R(K))
1170 NEXT
1180 PRINT@23," ";:PRINT@82,"
";
1200 PRINT@30,"TURN";
1210 PRINT@0,S$(1);:PRINT@62-LEN(S$(2)),S$(2);
1220 PRINT@66,S(1);:PRINT@123,S(2);
1230 IFTN=1THENPRINT@37," ";:PRINT@22,"<----";
1240 IFTN=2THENPRINT@22," ";:PRINT@37,"---->";
1300 PRINT@86,"FIRST SQUARE";:PRINT@150,"SECOND SQUARE";
1310 A$=INKEY$:IFA$<>"GOTO1320
1315 GOSUB10000
1316 GOTO1310
1320 A=ASC(A$):IFA<49ORA>52GOTO1310
1325 A=A-48

```

## MATCH GAME

85

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1330 PRINT@104,A;
1340 B$=INKEY$:IFB$<>"GOTO1350
1345 GOSUB10000
1346 GOTO1340
1350 B=ASC(B$):IFB<49ORB>54GOTO1340
1355 B=B-48
1360 PRINT@104,A;B;
1370 I=(A-1)*6+B
1375 IFV(I)=0THENPRINT@104,"      "":GOTO1310
1377 PRINT@P(I)+3,"      ";
1380 PRINT@P(I),C$(I);:PRINT@P(I)+64,D$(I);
1400 A$=INKEY$:IFAS$<>"GOTO1410
1405 GOSUB10000
1406 GOTO1400
1410 A=ASC(A$):IFA<49ORA>52GOTO1400
1415 A=A-48
1420 PRINT@168,A;
1430 B$=INKEY$:IFB$<>"GOTO1440
1435 GOSUB10000
1436 GOTO1430
1440 B=ASC(B$):IFB<49ORB>54GOTO1430
1450 B=B-48
1455 PRINT@168,A;B;
1460 J=(A-1)*6+B
1470 IFV(J)=0THENPRINT@168,"      "":GOTO1400
1475 PRINT@P(J)+3,"      ";
1480 PRINT@P(J),C$(J);:PRINT@P(J)+64,D$(J);
1490 IFI=JTHENPRINT@168,"      "":GOTO1400
1500 IFT(I)=T(J)GOTO1600
1510 PRINT@86,STRING$(28,CHR$(128));:PRINT@150,STRING$(28,CHR$(1
28));
1520 PRINT@95,"NO";:PRINT@157,"MATCH";
1530 FORTM=1TO1500:NEXT
1540 PRINT@P(I),STRING$(8,CHR$(128));:PRINT@P(I)+64,STRING$(8,CH
R$(128));
1550 PRINT@P(J),STRING$(8,CHR$(128));:PRINT@P(J)+64,STRING$(8,CH
R$(128));
1560 PRINT@P(I)+3,N(I);:PRINT@P(J)+3,N(J);
1570 IFTN=1THENTN=2:GOTO1200
1580 TN=1:GOTO1200
1600 PRINT@86,STRING$(28,CHR$(128));:PRINT@150,STRING$(28,CHR$(1
28));
1601 PRINT@92,"YOU HAVE";:PRINT@156,"A MATCH";
1602 FORTM=1TO1500:NEXT
1605 PRINT@86,STRING$(28,CHR$(128));:PRINT@150,STRING$(28,CHR$(1
28));
1610 PRINT@P(I),P$(TN,2);:PRINT@P(I)+64,P$(TN,3);:PRINT@P(I)+128
,P$(TN,1);
1620 PRINT@P(J),P$(TN,2);:PRINT@P(J)+64,P$(TN,3);:PRINT@P(J)+128
,P$(TN,1);
1630 V(I)=0:V(J)=0:PL(I)=TN:PL(J)=TN
1640 PRINT@86,STRING$(24,CHR$(128));:PRINT@150,STRING$(24,CHR$(1
28));
1650 S(TN)=S(TN)+2:IFS(1)+S(2)=24GOTO5000
1660 GOTO1200
5000 FORTM=1TO500:NEXT:CLS:PRINTCHR$(23)
5010 PRINT:PRINT:PRINT
5020 PRINTTAB(14-INT(LEN(S$(1))/2));S$(1);"      ";S(1);:PRINT
5030 PRINTTAB(14-INT(LEN(S$(2))/2));S$(2);"      ";S(2);:PRINT
5040 IFS(1)>S(2)THENPRINT"THE MARTIAN ARMY, COMMANDED BY":PRINT"
GENERAL ";S$(1);",":GOTO5070
5050 IFS(1)<S(2)THENPRINT"THE VENUTIAN ARMY, COMMANDED BY":PRINT
"GENERAL ";S$(2):GOTO5070
5060 PRINTTAB(12);"TIE GAME":END
5070 PRINTTAB(28)"WINS!":END
10000 MV=RND(24):IFV(MV)=1THENRETURN

```

## THE SOFTSIDE SAMPLER

```

10010 CH=2*RND(9):PRINT@P(MV),P$(PL(MV),CH);:PRINT@P(MV)+64,P$(P
L(MV),CH+1);:RETURN
20000 FORI=1TO2:FORJ=1TO19
20010 FORK=1TO8:READG:P$(I,J)=P$(I,J)+CHR$(G):NEXT
20020 NEXT:NEXT
20030 RETURN
21001 DATA140,143,143,140,140,143,143,140
21002 DATA176,191,159,175,159,175,191,176
21003 DATA149,131,171,141,142,151,131,170
21004 DATA176,159,175,159,175,191,191,176
21005 DATA149,131,173,142,143,151,131,170
21006 DATA176,183,155,167,187,191,191,176
21007 DATA149,131,171,143,143,151,131,170
21008 DATA176,191,183,155,167,187,191,176
21009 DATA149,131,171,143,143,151,131,170
21010 DATA176,191,191,159,175,159,175,176
21011 DATA149,131,171,143,141,158,131,170
21012 DATA176,191,191,191,191,191,191,176
21013 DATA149,137,182,185,142,151,131,170
21014 DATA176,191,191,191,191,191,191,176
21015 DATA149,131,171,141,182,185,134,170
21016 DATA176,191,191,191,191,191,191,176
21017 DATA149,131,173,182,185,158,131,170
21018 DATA176,191,191,183,155,167,187,176
21019 DATA149,131,171,143,143,151,131,170
22001 DATA143,143,140,140,140,140,143,143
22002 DATA151,191,159,175,159,175,191,171
22003 DATA133,168,143,141,142,143,148,138
22004 DATA151,159,175,159,175,191,191,171
22005 DATA133,170,141,142,143,143,148,138
22006 DATA151,183,155,167,187,191,191,171
22007 DATA133,168,143,143,143,143,148,138
22008 DATA151,191,183,155,167,187,191,171
22009 DATA133,168,143,143,143,143,148,138
22010 DATA151,191,191,183,155,167,187,171
22011 DATA133,168,143,143,143,143,148,138
22012 DATA151,191,191,191,191,191,191,171
22013 DATA133,168,141,182,185,142,148,138
22014 DATA151,191,191,191,191,191,191,171
22015 DATA133,173,182,185,142,143,148,138
22016 DATA151,191,191,191,191,191,191,171
22017 DATA133,168,143,141,182,185,158,138
22018 DATA151,191,191,159,175,159,175,171
22019 DATA133,168,143,143,141,142,149,138
23001 DATA11,12,13,14,15,16,21,22,23,24,25,26
23002 DATA31,32,33,34,35,36,41,42,43,44,45,46
25000 DATA50
25001 DATA1,"ALABAMA",",",",",",MONTGOM-",",ERY"
25002 DATA2,"ALASKA",",",",",JUNEAU",", "
25003 DATA3,"ARIZONA",",",",",PHOENIX",", "
25004 DATA4,"ARKAN-",",SAS",",LITTLE",",ROCK"
25005 DATA5,"CALIFOR-",",NIA",",SACRA-",",MENTO"
25006 DATA6,"COLORADO",",",",",DENVER",", "
25007 DATA7,"CONNECT-",",ICUT",",HARTFORD",", "
25008 DATA8,"DELEWARE",",",",",DOVER",", "
25009 DATA9,"FLORIDA",",",",",TALLA-",",HASSEE"
25010 DATA10,"GEORGIA",",",",",ATLANTA",", "
25011 DATA11,"HAWAII",",",",",HONO-",",LULU"
25012 DATA12,"IDAHO",",",",",BOISE",", "
25013 DATA13,"ILLINOIS",",",",",SPRING-",",FIELD"
25014 DATA14,"INDIANA",",",",",INDIAN-",",APOLIS"
25015 DATA15,"IOWA",",",",",DES",",MOINES"
25016 DATA16,"KANSAS",",",",",TOPEKA",", "
25017 DATA17,"KENTUCKY",",",",",FRANK-",",FORT"
25018 DATA18,"LOUIS-",",IANA",",BATON",",ROUGE"
25019 DATA19,"MAINE",",",",",AUGUSTA",", "

```

## MATCH GAME

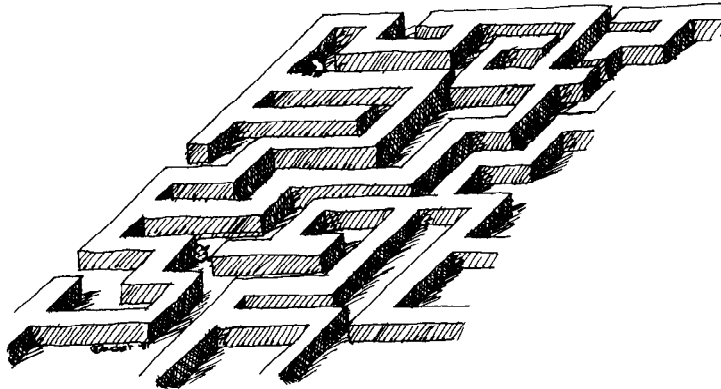
87

25020 DATA20,"MARYLAND"," "," ANN-","APOLIS"  
25021 DATA21,"MASSACH-","USETTS"," BOSTON"," "  
25022 DATA22,"MICHIGAN"," "," LANSING"," "  
25023 DATA23," MINN-"," ESOTA","ST. PAUL"," "  
25024 DATA24,"MISSISS-","IPPI","JACKSON"," "  
25025 DATA25,"MISSOURI"," ","JEFFER-","SON CITY"  
25026 DATA26,"MONTANA"," "," HELENA"," "  
25027 DATA27,"NEBRASKA"," ","LINCOLN"," "  
25028 DATA28," NEVADA"," "," CARSON"," CITY"  
25029 DATA29,"NEW HAM-","PSHIRE","CONCORD"," "  
25030 DATA30," NEW"," JERSEY"," TRENTON"," "  
25031 DATA31," NEW"," MEXICO","SANTA FE"," "  
25032 DATA32," NEW"," YORK"," ALBANY"," "  
25033 DATA33," NORTH","CAROLINA"," RALEIGH"," "  
25034 DATA34," NORTH"," DAKOTA","BISMARCK"," "  
25035 DATA35," OHIO"," ","COLUMBUS"," "  
25036 DATA36,"OKLAHOMA"," ","OKLAHOMA"," CITY"  
25037 DATA37," OREGON"," "," SALEM"," "  
25038 DATA38,"PENNSYL-","VANIA","HARRIS-","BURG"  
25039 DATA39," RHODE"," ISLAND","PROVID-","ENCE"  
25040 DATA40," SOUTH","CAROLINA","COLUMBIA"," "  
25041 DATA41," SOUTH"," DAKOTA"," PIERRE"," "  
25042 DATA42," TENN-","ESSEE"," NASH-","VILLE"  
25043 DATA43," TEXAS"," "," AUSTIN"," "  
25044 DATA44," UTAH"," "," SALT","LAKE CTY"  
25045 DATA45,"VERMONT"," "," MONT-","PELIER"  
25046 DATA46,"VIRGINIA"," ","RICHMOND"," "  
25047 DATA47,"WASHING-","TON","OLYMPIA"," "  
25048 DATA48," WEST","VIRGINIA","CHARLES-","TON"  
25049 DATA49,"WISCON-","SIN","MADISON"," "  
25050 DATA50,"WYOMING"," ","CHEYENNE"," "

# MOVING MAZE

*By Paul Klinger*

Navigate the blinking dot through three sections of constantly moving maze, from the top to the bottom of the screen. Direction of the dot is controlled by the arrow keys. Any time you bump a wall—in any direction—the computer says “OOPS,” and you start over at the beginning of the section you are attempting. Time is of the essence. You are battling against a clock that ticks off your seconds of play in a corner of the screen. There are three levels of play: beginner, advanced, and super expert. But we haven’t found any super experts around here yet.



```
5 REM * * * * *
  * MOVING MAZE *
  * BY PAUL KLINGER *
  * * * * *
10 CLS:RANDOM:CLEAR1500:DEFINTA-F,X-Z:PRINT@25,"MOVING MAZE"
15 GOSUB210:GOSUB20:GOSUB290:GOTO380
20 M$=STRING$(211,0)
22 R$=CHR$(26)+STRING$(5,24)
24 O$=CHR$(188)+STRING$(3,131)+CHR$(188)+R$+CHR$(191)+STRING$(3,
128)+CHR$(191)+R$+CHR$(143)+STRING$(3,176)+CHR$(143)
26 P$=CHR$(191)+STRING$(3,131)+CHR$(188)+R$+CHR$(191)+STRING$(3,
140)+CHR$(131)+R$+CHR$(191)+STRING$(4,128)
28 S$=CHR$(188)+STRING$(3,131)+CHR$(140)+R$+CHR$(131)+STRING$(3,
140)+CHR$(176)+R$+CHR$(140)+STRING$(3,176)+CHR$(143)
30 I=VARPTR(M$):A=0:B=1:C=15168:X=0:Y=0:Z=0:D=127:E=20:F=20:U=.3
3
35 J=PEEK(I+1)+256*PEEK(I+2)
39 IFJ>32767 THEN J=-(65536-J)
40 FORK=JTOJ+210:READX:POKEK,X:NEXT
50 DATA 58,127,60,245,33,126,60,17,127,60,1,63,0,237,184
60 DATA 58,128,60,50,64,60,33,129,60,17,128,60,1,63,0
70 DATA 237,176,58,255,60,50,191,60,33,254,60,17,255,60,1
80 DATA 63,0,237,184,58,0,61,50,192,60,33,1,61,17,0
90 DATA 61,1,63,0,237,176,241,50,63,61,58,191,61,245,33
```

## MOVING MAZE

89

```

100 DATA 190,61,17,191,61,1,63,0,237,184,58,192,61,50,128
110 DATA 61,33,193,61,17,192,61,1,63,0,237,176,58,63,62
120 DATA 50,255,61,33,62,62,17,63,62,1,63,0,237,184,58
130 DATA 64,62,50,0,62,33,65,62,17,64,62,1,63,0,237
140 DATA 176,241,50,127,62,58,255,62,245,33,254,62,17,255,62
150 DATA 1,63,0,237,184,58,0,63,50,192,62,33,1,63,17
160 DATA 0,63,1,63,0,237,176,58,127,63,50,63,63,33,126
170 DATA 63,17,127,63,1,63,0,237,184,58,128,63,50,64,63
180 DATA 33,129,63,17,128,63,1,63,0,237,176,241,50,191,63,201
190 POKEL6526,PEEK(I+1):POKEL6527,PEEK(I+2):RETURN:REM NON-DISK
195 ' 190 DEFUSRO=J:RETURN < USE FOR DISK BASIC
210 PRINT@133,"YOUR TASK WILL BE TO NAVIGATE THE BLINKING DOT TH
ROUGH"
220 PRINT"THE MOVING MAZE TO THE BOTTOM OF THE SCREEN."
230 PRINT@261,"HOLDING DOWN ANY OF THE ARROW KEYS (ONE AT A TIME
) WILL"
240 PRINT"MOVE THE DOT IN THE INDICATED DIRECTION; UP, DOWN, LEF
T, RIGHT."
250 PRINT@453,"THERE WILL BE THREE SECTIONS TO THE MAZE. IF YOU
BUMP"
260 PRINT"A WALL, YOU WILL START AGAIN AT THE TOP OF THE SECTION
THAT"
270 PRINT"YOU BUMPED. TRY TO GET THROUGH IN THE SHORTEST TIME P
OSSIBLE."
280 PRINT"YOUR TIME WILL BE DISPLAYED IN THE UPPER LEFTHAND CORN
ER.":PRINT@850,"PAUSE . . .":RETURN
290 A$(1)=STRING$(5,140)+STRING$(6,128)+STRING$(5,140)
300 A$(2)=CHR$(191)+STRING$(5,128)+STRING$(4,140)+STRING$(5,128)
+CHR$(191)
310 A$(3)=CHR$(143)+STRING$(4,131)+STRING$(6,176)+STRING$(4,131)
+CHR$(143)
320 A$(4)=CHR$(191)+STRING$(4,128):A$(4)=A$(4)+A$(4)+A$(4)+CHR$(
191)
330 A$(5)=CHR$(191)+STRING$(4,176)+STRING$(6,179)+STRING$(4,131)
+CHR$(191)
340 A$(6)=CHR$(191)+STRING$(4,176)+CHR$(179)+STRING$(4,131)+CHR$(
179)+STRING$(4,176)+CHR$(191)
350 A$(7)=CHR$(188)+CHR$(176)+CHR$(128)+CHR$(131)+CHR$(143)+CHR$(
128)+STRING$(4,176)+CHR$(128)+CHR$(143)+CHR$(131)+CHR$(128)+CHR
$(176)+CHR$(188)
360 A$(8)=CHR$(191)+STRING$(4,176)+CHR$(188)+CHR$(140)+STRING$(2
,143)+CHR$(140)+CHR$(188)+STRING$(4,176)+CHR$(191)
370 A$(9)=CHR$(191)+STRING$(6,140)+CHR$(143)+CHR$(140)+CHR$(188)
+STRING$(5,140)+CHR$(191):RETURN
380 PRINT@850,"HIT =ENTER= TO PLAY";:FORI=1TO40:X$=INKEY$:IFX$<>
""THEN410ELSENEXT
382 PRINT@854," ";:FORI=1TO20:X$=INKEY$:IFX$<>""THEN410ELS
ENEXT:GOTO380
410 CLS:PRINT@266,"1 = BEGINNER":PRINT@332,"2 = ADVANCED":PRINT@
398,"3 = SUPER-EXPERT"
420 W=0:PRINT:INPUT" WHICH LEVEL DO YOU WANT";S:IFS<0O
RS>3THEN420
430 CLS:PRINT@198,"PAUSE . . .":T=0:Y=1:A$="":B$="":C$="":ONSGOT
O440,470,500
440 FORI=1TO15:A$=A$+A$(RND(4)):NEXT:A$=A$+STRING$(15,128)
450 FORI=1TO15:B$=B$+A$(RND(4)):NEXT:B$=B$+LEFT$(A$(RND(3)+4),15
)
460 FORI=1TO15:C$=C$+A$(RND(4)):NEXT:C$=C$+LEFT$(A$(RND(2)+7),15
):GOTO600
470 FORI=1TO15:A$=A$+A$(RND(7)):NEXT:A$=A$+LEFT$(A$(RND(3)+4),15
)
480 FORI=1TO15:B$=B$+A$(RND(7)):NEXT:B$=B$+LEFT$(A$(RND(2)+7),15
)
490 FORI=1TO15:C$=C$+A$(RND(6)+1):NEXT:C$=C$+LEFT$(A$(RND(2)+7),
15):GOTO600
500 FORI=1TO15:A$=A$+A$(RND(6)+2):NEXT:A$=A$+LEFT$(A$(RND(4)+5),

```

## THE SOFTSIDE SAMPLER

```

15)
510 FORI=1TO15:B$=B$+A$(RND(6)+3):NEXT:B$=B$+LEFT$(A$(RND(2)+7),
15)
520 FORI=1TO15:C$=C$+A$(RND(5)+4):NEXT:C$=C$+LEFT$(A$(RND(3)+4),
15):GOTO600
600 CLS:PRINT@64,A$;:PRINT@384,B$;:PRINT@704,C$;
610 X=RND(80)+20:IFY>29THENY=31:SET(X,Y):GOTO700
620 IFY>14THENY=16:SET(X,Y):GOTO700
630 Y=1:SET(X,Y):GOTO700
700 PRINT@0,INT(T);:RESET(X,Y):Z=PEEK(C):IFZ<>AGOSUB 900ELSESET(X
,Y):FORQ=1TOE:NEXT
710 ONERRORGOTO1120:RESET(X,Y):L=USR(0):ONERRORGOTO0
720 IFPOINT(X,Y)THEN800ELSESET(X,Y)
730 RESET(X,Y):Z=PEEK(C):IFZ<>AGOSUB 900ELSESET(X,Y):FORQ=1TOE:NE
XT
740 T=T+U:RESET(X,Y):Z=PEEK(C):IFZ<>AGOSUB 900ELSESET(X,Y):FORQ=1
TOE:NEXT
745 RESET(X,Y):Z=PEEK(C):IFZ<>AGOSUB 900ELSESET(X,Y):FORQ=1TOE:NE
XT
750 GOTO700
800 W=W+1:FORI=1TO150:NEXT:CLS:PRINTCHR$(23):PRINT@200,O$+" "+O
$+" "+P$+" "+S$;
810 FORI=1TO800:NEXT:GOTO600
900 FORQ=1TOF:IFZ=16THEN 950
910 IFZ=32THEN 970
920 IFZ=64THEN 990
930 IFZ=8THEN1010
940 SET(X,Y):RETURN
950 Y=Y+B:IFY>44THEN1100
960 IFPOINT(X,Y)THEN800ELSESET(X,Y):RETURN
970 X=X-B:IFX<BTHENX=B
980 IFPOINT(X,Y)THEN800ELSESET(X,Y):RETURN
990 X=X+B:IFX>DTHENX=D
1000 IFPOINT(X,Y)THEN800ELSESET(X,Y):RETURN
1010 Y=Y-B:IFY<BTHENY=B
1020 IFPOINT(X,Y)THEN800ELSESET(X,Y):RETURN
1100 PRINT@0," ";:PRINT@960,FIX((34000-T*10-5*W)*S);"POINT
S:";INT(T);" SECONDS. (AND";W;:IFW=1THENPRINT" OOPS)";ELSEPRINT"
OOPSES)";
1105 PRINT" HIT =ENTER=";
1110 INPUTX$:CLS:GOTO410
1120 CLS:PRINT"YOU MUST REPLACE CURRENT LINE 190":
PRINT"TO USE THIS PROGRAM IN DISK BASIC":LIST 190-195

```



# NIM

By James Garon

On her honeymoon on the Italian Riviera in 1407, the Duchess of Santa Paravia invented a game of taking gold coins out of three plates. When her husband died the following year after a cold winter in a drafty castle, she returned to her native Britain, where she introduced the game NIM\* to the royal court, and it became the fad of the social season in 1409. The game didn't spread outside the royal court because the common people never even saw a gold coin, much less owned any. Therefore, when the court began to play Hunt the Wumpus in 1410, NIM was forgotten.

The game survived only in a brief description in the diary of one of the queen's ladies in waiting (who invented her job title after waiting for hours while the queen played NIM with the duchess). One hundred eighty-nine years later a descendant of the maiden, Pilfer Babbage, came upon the diary in an old trunk. The game fascinated the penniless boy of 12, and he invented a version using pebbles instead of gold coins. However, since he desperately longed to play the original, and since the game had taught him to take things, he embarked on a successful career as a pickpocket, stealing gold coins from the pockets of the nobility.

Pilfer was a friendly fellow, a natural leader among his cohorts. He introduced them to NIM, and they took to it with delight. Soon they merged the language of their hobby with that of their profession and the long-forgotten verb *nim* came back into fashion with a subtle change in meaning. However, when Pilfer Babbage was finally caught and hanged in 1671 at the ripe old age of 85, his fraternity honored him by changing the name of their vocation to *pilfering*.

Pilfer's great-great grandnephew, Charles, adapted the game to the analytical engine in 1833 as the second computer game (after Star Trek). Charles then went on to distinguish himself in the family tradition by inventing cost overruns in government contracts, and the game of NIM continued down to the present day in a myriad of forms.

```
2 CLEAR200:RANDOM:DEFSTRT-Z:W=CHR$(191):V=W+W:U=W+CHR$(188)+CHR$(188)+W:T=W+CHR$(143)+CHR$(143)+W:T1=CHR$(159)+CHR$(159)+CHR$(143)+CHR$(175):W1=CHR$(149):X=V+W1+W:U1=CHR$(189)+CHR$(189)+CHR$(188)+CHR$(190):Y=CHR$(170):DIMA(3,4),Y(1):CLS:DEFINTA-S:GOTO20
4 JAMES GARON (714) 533-4726 920 W ROMNEYA #6 ANAHEIM CA 92801
5 FORI=0TO2:A=A(I,4):FORJ=0TO3:B=INT(A/2):A(I,J)=A-B-B:A=B:NEXT:
NEXT:FORJ=0TO3:A(3,J)=0:FORI=0TO2:A(3,J)=A(3,J)+A(I,J):NEXT:NEXT:
S=-1:FORJ=3TO0STEP-1:A=A(3,J):IFA<>INT(A/2)*2S=J:RETURNELSENEXT:
RETURN
```

\*NIM (nym) Old English, verb, obsolete 1. to take, frequent use in 15th Century. 2. slang, after 1600, to steal.

## THE SOFTSIDE SAMPLER

```

6 Z=INKEY$:IFZ=""THEN6ELSEH=ASC(Z):RETURN
10 PRINT@28,"- N I M -":PRINT"INSTRUCTIONS ?
11 GOSUB6:IFH=89THEN1000ELSEIFH=78THEN12ELSE11
12 PRINT:PRINT"HUMAN AGAINST MACHINE (1) OR HUMAN AGAINST HUMAN
(2) ?
14 GOSUB6:IFH<>49ANDH<>50THEN14ELSEN=H-48:FORI=0TO1:PRINT"ENTER
NAME OF PLAYER";:IFN=2THENPRINTI+1;:INPUTY(I):NEXT:ELSEINPUTY(0)
15 E=0:IFN=2THENE=RND(2)-1
16 CLS:GOTO50
20 PRINT@84,CHR$(23)"- N I M -":PRINT@900,"(TAP THE SPACE-BAR TO
PLAY)
30 FORI=0TO2:A(I,4)=RND(15):NEXT:FORI=1TO400:NEXT:Z=STRING$(160,
127+RND(64)):PRINT@192,Z;Z;:GOSUB970:Z=INKEY$:IFZ<>" THEN30ELSE
CLS:GOTO10
50 CLS:PRINTCHR$(23):FORI=0TO2:A(I,4)=2+RND(13):NEXT:IFA(0,4)=A(
1,4)ORA(0,4)=A(2,4)ORA(1,4)=A(2,4)THEN50ELSEGOSUB5:IFS<1THEN50EL
SEGOSUB970:R=410:K=1
55 F=0:P=R:O=A(K,4):GOSUB960
56 PRINT@0,:PRINT@76,"YOUR TURN ";:IFN=1THENPRINTY(0);ELSEE=1-E:
PRINTY(E);
57 GOSUB6:IFH<>8THEN65ELSEIFK=0THEN57
61 IFF=1F=0:A(K,4)=O
62 GOSUB970:K=K-1:O=A(K,4):R=R-20:P=R:GOSUB960:GOTO57
65 IFH>9THEN70ELSEIFK=2THEN57
66 IFF=1F=0:A(K,4)=O
67 GOSUB970:K=K+1:O=A(K,4):R=R+20:P=R:GOSUB960:GOTO57
70 IFH>10THEN75ELSEIFA(K,4)=0THEN57
71 IFF=0F=1:O=A(K,4)
72 A(K,4)=A(K,4)-1:GOSUB970:GOTO57
75 IFH<>32ANDH<>13THEN80ELSEIFF=0THEN57ELSEGOSUB970:FORI=0TO2:IF
A(I,4)=0NEXT:GOTO100
76 IFN=1THENPRINT@0,:PRINT@76,"MY TURN:":GOSUB700:GOTO55ELSE55
80 IFH<>91THEN57ELSEIFF=0THEN57
81 IFA(K,4)=0THENF=0:GOTO57
82 A(K,4)=A(K,4)+1:IFA(K,4)=0THENF=0
84 GOSUB970:GOTO57
100 PRINT@0,:IFN=2THENPRINT@84,Y(E)" WINS!"ELSEPRINT@64,Y(0)" BE
AT THE COMPUTER!
105 FORI=1TO2E3:NEXT:PRINT@898,"(PRESS SPACE-BAR TO TRY AGAIN)":
GOTO30
200 PRINT@0,:PRINT@88,"I WIN":GOTO105
700 GOSUB5:IFS<0THEN750ELSEFORD=0TO2:IFA(D,S)=0THENNEXTTELSEA(D,S
)=0:FORC=0TOS-1:A=A(3,C):IFA=INT(A/2)*2THENNEXTTELSEA(D,C)=1-A(D,
C):NEXT
710 G=A(D,4):A(D,4)=0:FORJ=0TO3:A(D,4)=A(D,4)+A(D,J)*2^J:NEXT:M=
A(D,4)
720 R=390+20*D:P=R:K=D:GOSUB960:FORL=G-1TOMSTEP-1:A(D,4)=L:GOSUB
970:NEXT:FORI=0TO2:IFA(I,4)=0THENNEXT:GOTO200ELSERETURN
750 D=RND(3)-1:G=A(D,4):IFG=0THEN750ELSEM=G-RND(G):GOTO720
800 PRINT@P,T;:Z=W+Y+W1+W:PRINT@P+64,Z;:PRINT@P+128,Z;:PRINT@P+1
92,U;:RETURN
810 PRINT@P,V;CHR$(175);W;:Z=V+Y+W:PRINT@P+64,Z;:PRINT@P+128,Z;:
PRINT@P+192,V;CHR$(190);W;:RETURN
820 PRINT@P,T;:PRINT@P+64,W;CHR$(143);CHR$(133);W;:PRINT@P+128,W
;Y;V;:PRINT@P+192,U;:RETURN
830 PRINT@P,T;:PRINT@P+64,W;CHR$(159);CHR$(133);W;:PRINT@P+128,X
;:PRINT@P+192,U;:RETURN
840 PRINT@P,W;CHR$(175);CHR$(159);W;:PRINT@P+64,W;CHR$(138);CHR$(
133);W;:PRINT@P+128,X;:PRINT@P+192,V;CHR$(189);W;:RETURN
850 PRINT@P,T;:PRINT@P+64,W;CHR$(138);CHR$(143);W;:PRINT@P+128,X
;:PRINT@P+192,U;:RETURN
860 PRINT@P,T;:PRINT@P+64,W;CHR$(138);CHR$(143);W;:PRINT@P+128,W
;Y;W1;W;:PRINT@P+192,U;:RETURN
870 PRINT@P,T;:PRINT@P+64,X;:PRINT@P+128,X;:PRINT@P+192,V;CHR$(1
89);W;:RETURN
880 PRINT@P,T;:PRINT@P+64,W;CHR$(138);CHR$(133);W;:PRINT@P+128,W

```

```

;Y;W1;W;:PRINT@P+192,U;:RETURN
890 PRINT@P,T;:PRINT@P+64,W;CHR$(138);CHR$(133);W;:PRINT@P+128,X
;:PRINT@P+192,U;:RETURN
900 PRINT@P,T1;:Z=W1+W1+W+Y:PRINT@P+64,Z;:PRINT@P+128,Z;:PRINT@P
+192,U1;:RETURN
910 PRINT@P,W;CHR$(175);CHR$(159);W;:Z=W+Y+W1+W:PRINT@P+64,Z;:PR
INT@P+128,Z;:PRINT@P+192,W;CHR$(190);CHR$(189);W;:RETURN
920 PRINT@P,T1;:PRINT@P+64,W1;CHR$(159);CHR$(143);Y;:PRINT@P+128
,W1;W1;V;:PRINT@P+192,U1;:RETURN
930 PRINT@P,T1;:PRINT@P+64,W1;CHR$(159);CHR$(143);Y;:PRINT@P+128
,W1;V;Y;:PRINT@P+192,U1;:RETURN
940 PRINT@P,CHR$(159);CHR$(159);W;CHR$(175);:PRINT@P+64,W1;W1;CH
R$(143);Y;:PRINT@P+128,W1;V;Y;:PRINT@P+192,CHR$(189);V;CHR$(190)
;:RETURN
950 PRINT@P,T1;:PRINT@P+64,W1;W1;CHR$(143);CHR$(175);:PRINT@P+12
8,W1;V;Y;:PRINT@P+192,U1;:RETURN
960 Q=15360+P:FORI=0TO192STEP64:FORJ=0TO6STEP2:POKEQ+I+J,319-PEE
K(Q+I+J):NEXT:NEXT:RETURN
970 FORI=0TO2:P=390+20*I:ONA(I,4)+1GOSUB800,810,820,830,840,850,
860,870,880,890,900,910,920,930,940,950:NEXT:RETURN
1000 PRINT@64,CHR$(202)"NIM IS PLAYED WITH THREE PILES OF OBJECT
S. EACH PLAYER IN TURN SELECTS ONE PILE AND REMOVES AS MANY OBJEC
TS AS DESIRED (ALL OBJECTS MAY BE REMOVED FROM THE CHOSEN PILE,
OR ONLY SOME--BUT YOU MUST TAKE AT LEAST ONE OBJECT, AND ONLY FR
OM";
1002 PRINT" ONE PILE).":PRINT"THE PLAYER (OR MACHINE) WHO TAKES
THE LAST OBJECT IS THE WINNER.":PRINT"USE THE "CHR$(93)" AND "CH
R$(94)" KEYS TO SELECT YOUR PILE,AND THE "CHR$(92)" KEY TO REMOV
EOBJECTS. (THE "CHR$(91)" KEY IS FOR CHANGING YOUR MIND.) ";
1003 PRINT"YOU WILL KNOW
WHICH PILE YOU ARE DIMINISHING SINCE IT WILL BE SHOWN AS A WHITE
NUMBER ON A BLACK BACKGROUND. ";
1004 PRINT"WHEN THE PILE IS DECREASED TO YOURSATISFACTION, PRESS
THE SPACE-BAR. GOOD LUCK!":GOTO12

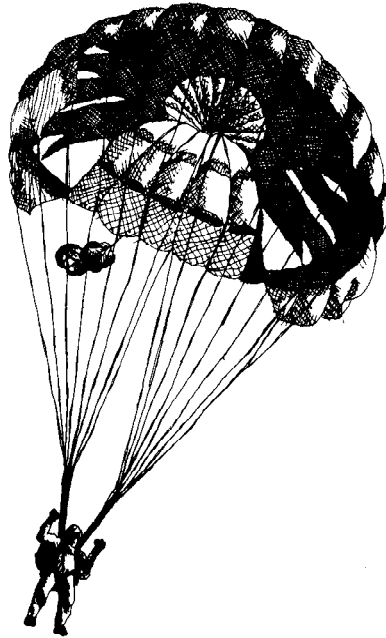
```

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# PARACHUTE

*By Norman McAllister*

The hum of the engines have almost lulled you to sleep, despite the excitement of the moment. Suddenly, the alarm bell rings. The jumpmaster motions for you to get into position. The wind roars past the open door. A tap on the shoulder and out you go. There is the illusion of floating even though you are falling at better than 90 miles per hour. Ripcord! You are snatched back into reality as the chute deploys. You steer toward the target area and land with a roll and twist. Ten feet from the center. Not a bad jump.



```
1 'PARACHUTE - TARGET JUMPING
2 '1979. N. MCALLISTER. 919 765-4580.
5 CLS
10 RESTORE
15 CLEAR200
16 'SET UP STRING VARIABLES
20 Y=0
25 JP=-1
30 READA
40 IFA=0 THEN 115
50 Y=Y+1
60 A$(Y)=" "
70 FORX=1 TO A
80 READB
```

```
90 A$(Y)=A$(Y)+CHR$(B)
100 NEXTX
110 GOTO30
115 'START
116 GOSUB6000:GOSUB5000
120 X=-1
130 X=X+1
140 IFX>55THEN1000
145 'PRINT PLANE
150 PRINT@X,A$(1);
155 IFJS=1THEN400
160 IFBS=1THEN200
165 IFX>47THEN300
166 IFX<5THEN300
170 B$=INKEY$
180 IFB$="J"THENBS=1:J=X-5:W=3:GOTO200
190 GOTO300
200 W=W+1
202 IFW<2THEN300
204 W=0
206 J=J+65
208 IFJ>895THEN2000
209 'PRINT FREE FALL CHUTIST
210 PRINT@J,A$(2);
300 IFJS=1THEN400
305 IFJ>512THEN130
310 B$=INKEY$
320 IFB$="P"THENJS=1:V=5:GOTO400
330 GOTO500
400 V=V+1
402 IFV<4THEN500
403 V=0
404 J=J+64+WD
406 IFJ>767THEN3000
408 'PRINT PARACHUTE WITH CHUTIST
410 PRINT@J,A$(3);
500 GOTO130
999 'START PLANE BACK AT LEFT OF SCREEN
1000 PRINT@55," ";
1010 PRINT@124," ";
1020 IFBS=0ANDJS=0THEN120
1100 GOTO155
1999 'JUMP FAILURE ROUTINE
2000 PRINT@J,A$(4);
2010 PRINT@J,A$(5);
2020 PT=0:JP=-1
2030 PRINT@0,CHR$(30);CHR$(10);CHR$(30);CHR$(29)
2040 PRINT"YOU WAITED TOO LONG TOO PULL THE RIPCORD!"
2050 PRINT:PRINT" DID YOU THINK YOU WERE A BIRD?"
2060 PRINT:INPUT"DO YOU WANT TO TRY AGAIN";A$
2070 IFLEFT$(A$,1)="Y"THEN2980
2080 END
2980 GOSUB5000
2990 GOTO120
3000 PRINT@0,CHR$(30);CHR$(10);CHR$(30);CHR$(29)
3010 T=T+3
3020 J=J+194
3030 K=J+1
3040 IFT=JORT=KTHEN3200
3050 IFT<JTHEN3300
3060 IFK<T-4THEN3400
3070 PT=PT+10
3080 GOTO3980
3200 PT=PT+25
3210 GOTO3980
3300 IFJ>T+4THEN3400
3310 PT=PT+10
```

```

3320 GOTO3 980
3400 PT=PT+1
3 980 GOSUB5000
3 990 GOTO120
4999 'SET UP DISPLAY
5000 CLS
5005 JP=JP+1
5010 JS=0:BS=0:WD=RND(3)-2
5020 T=RND(30)+975
5026 IFWD=-1PRINT@T-63,CHR$(168);CHR$(188);CHR$(188);
5027 IFWD=0PRINT@T-61,CHR$(168);
5028 IFWD=1PRINT@T-61,CHR$(168);CHR$(188);CHR$(188);
5030 FORX=TOT+7
5040 PRINT@X,CHR$(176);
5050 NEXTX
5060 PRINT@T+3,CHR$(186);
5070 PRINT@8 96,"JUMPS";JP;
5080 PRINT@960,"POINTS";PT;
5 990 RETURN
5 999 'PRINT INSTRUCTIONS
6000 PRINTCHR$(23)
6010 PRINT" P A R A C H U T E"
6020 PRINT:PRINT"THE SPORT OF TARGET JUMPING":PRINT
6030 INPUT"DO YOU NEED INSTRUCTIONS";X$
6040 IFLEFT$(X$,1)="N"THEN6 990
6050 CLS
6060 PRINT"YOU ARE A CONTESTANT IN A TARGET JUMPING EVENT."
6070 PRINT:PRINT"THE OBJECT OF THE SPORT IS TO LAND SAFELY AS CL
OSE TO THE TARGETFLAG AS POSSIBLE. YOU RECEIVE 25 POINTS FOR HIT
TING THE FLAG, 10POINTS FOR HITTING THE TARGET, AND 1 POINT FOR
LANDING SAFELY."
6110 PRINT:PRINT"AS IN REAL LIFE, THE GAME ENDS WHEN YOU FAIL TO
PULL THE RIPCORDERIN TIME."
6120 PRINT:PRINT"PUSH THE 'J' KEY TO JUMP FROM THE AIRPLANE AND
BEGIN YOUR FREE FALL. PUSH THE 'P' KEY TO PULL THE RIPCORDER."
6130 PRINT:INPUT"HIT ENTER WHEN READY TO BEGIN";X$
6 990 RETURN
10000 DATA16,32,18 9,176,176,184,188,188,176,26,24,24,24,24,32,13
0,129
10010 DATA32,32,32,32,32,32,32,26,24,24,24,24,24,24,32,137,184,1
52,129,32,26,24,24,24,24,24,24,32,152,131,137,144,32
10020 DATA53,32,32,32,32,32,32,26,24,24,24,24,24,24,24,32,32,184,18
8,144,32,26,24,24,24,24,24,24,32,138,147,131,155,32,26,24,24,24,
24,24,32,166,182,132,32,26,24,24,24,24,24,32,170,171,32
10030 DATA14,32,138,184,154,32,26,24,24,24,24,176,143,165,144
10040 DATA14,32,32,32,32,32,26,24,24,24,24,17 9,190,182,145
1 9900 DATA0

```

# PICTURE PUZZLES

*By Arnold Gross*

The computer scrambles the pieces. The object of the game is get them back together again. You can try it the hard way or get a tantalizing look at the whole picture.

The game has five puzzles, on five levels of play, from very easy to extremely difficult. There is something for everyone in the family, from little Joey to mad genius Uncle Sylvester!

```
100 '      PICTURE PUZZLES          ARNOLD GROSS
      8-1-79      (4.3)

102 CLEAR300:DEFSTRA,Q:A="          ":Q=CHR$(34)
104 RANDOM:CLS:FORX=1TO60:PRINT"LES  PICTURE PUZZ";
106 NEXT:PRINT"LES";:PRINT@337,CHR$(221);
108 PRINT@401,A+CHR$(188)+STRING$(17,140)+CHR$(188)+A;
110 PRINT@465,A+CHR$(191)+"  P I C T U R E  "+CHR$(191)+A;
112 PRINT@529,A+CHR$(191)+"  P U Z Z L E S  "+CHR$(191)+A;
114 PRINT@657,CHR$(221);:
    PRINT@593,A+STRING$(19,131)+A;:GOSUB302
116 DIM A(16),X(16),CP(16),PP(16)
118 FORY=1TO8:CP(Y)=27+(64*Y):CP(Y+8)=39+(64*Y):NEXT
120 CLS:HG=0:TM=0:XG=1:U=0:XM=0:CLK=-1
122 PRINT@132,"#      TITLE OF PUZZLE          SKILL LEVEL
124 PRINT@260,"1.  LETTER FROM CAMP          (BEGINNERS ONLY)
126 PRINT"      2.  DIAMOND          (RATHER EASY)
128 PRINT"      3.  JIGSAW MAN          (MEDIUM)
130 PRINT"      4.  MILK TRUCK          (DIFFICULT)
132 PRINT"      5.  ABSTRACT          (NEARLY IMPOSSIBLE)
134 PRINT@708,"WHICH PUZZLE WOULD YOU LIKE TO TRY ?
136 PRINT:PRINT"      (TYPE THE NUMBER OF YOUR CHOICE)
138 PZ$=INKEY$:IFPZ$=" "ORPZ$>"5"ORPZ$<"1"THEN138
140 PZ=VAL(PZ$):CLS:GOSUB280:TS=-1:GOSUB304
142 Z=0:GOSUB196:PRINT@915,"(PRESS SPACEBAR TO BEGIN)"
144 GOSUB298:CLS:GOSUB236
146 PRINT@64,"TOTAL TIME USED";:PRINT@256,"TIME THIS MOVE";
148 PRINT@448,"TOTAL NUMBER OF";:PRINT@512,"MOVES:";
150 PRINT@832,
    "TYPE "Q"U"Q" IF YOU WANT TO SEE THE UNSCRAMBLD PUZZLE"
152 PRINT
    "TYPE "Q"X"Q" IF YOU WOULD RATHER CHOOSE ANOTHER PUZZLE"
154 FORR=1TO16:PRINT@PP(R),A(R);:NEXT:GOSUB240
156 IFXM>9PRINT@519,XM;ELSEPRINT@520,XM;
158 PRINT@704,CHR$(30);:PRINT@704,"SWITCH PIECE ?";:GOSUB256
160 IFK$="U"GOTO188
162 IFK$="X"THEN120
164 IFK$<"A"ORK$>"P"THENGOSUB256:GOTO160
166 Y$=K$:PRINT@717,Y$"  FOR PIECE ?";:GOSUB256
168 IFK$="U"GOTO188
170 IFK$="X"THEN120
172 IFK$<"A"ORK$>"P"THENGOSUB256:GOTO168
174 CLK=-1:Z$=K$:PRINT@730,Z$;
176 Y=ASC(Y$)-64:Z=ASC(Z$)-64
178 FORW=1TO16:X(W)=0:NEXT
180 FORW=1TO16:IFCP(Y)=PP(W) THENX(W)=CP(Z)
182 IFCP(Z)=PP(W) THENX(W)=CP(Y)
```

```

184 NEXT:FORZ=1TO16:IFX(Z)>0THENPP(Z)=X(Z):
    PRINT@PP(Z),STRING$(12,32);
186 NEXT:XM=XM+1:YG=1:TS=TS+2:CM=0:FORTIM=1TO250:NEXT:GOTO154
188 IFXG=0GOTO150
190 GOSUB236:FOR R=1 TO 16:PRINT@CP(R),A(R);:NEXT
192 GOSUB300:PRINT@768,"(PRESS SPACEBAR TO RETURN TO PUZZLE)";:
    GOSUB298
194 GOSUB300:GOTO150
196 Z=Z+1
198 PP(Z)=RND(16):X(Z)=PP(Z):FORY=0TOZ-1:IFPP(Z)=X(Y)THEN198
200 NEXT:ONPP(Z)GOSUB204,206,208,210,212,214,216,218,220,222,
    224,226,228,230,232,234
202 IFZ<16THEN196ELSEReturn
204 PP(Z)=CP(1):RETURN
206 PP(Z)=CP(2):RETURN
208 PP(Z)=CP(3):RETURN
210 PP(Z)=CP(4):RETURN
212 PP(Z)=CP(5):RETURN
214 PP(Z)=CP(6):RETURN
216 PP(Z)=CP(7):RETURN
218 PP(Z)=CP(8):RETURN
220 PP(Z)=CP(9):RETURN
222 PP(Z)=CP(10):RETURN
224 PP(Z)=CP(11):RETURN
226 PP(Z)=CP(12):RETURN
228 PP(Z)=CP(13):RETURN
230 PP(Z)=CP(14):RETURN
232 PP(Z)=CP(15):RETURN
234 PP(Z)=CP(16):RETURN
236 FOR EN=1TO8:PRINT@22+EN*64,CHR$(64+EN);
238 PRINT@54+EN*64,CHR$(72+EN);:NEXT:RETURN
240 Z=0:FORX=1TO16:IFPP(X)=CP(X)THENZ=Z+1
242 NEXT:IFZ<>16RETURN
244 FORT=0TO12:PRINT@T*64,CHR$(214);:NEXT
246 TM$=STR$(TM):TS$=RIGHT$(STR$(TS),2):
    IFTS<10 TS$="0"+RIGHT$(TS$,1)
248 GOSUB300:
    PRINT@704,"YOU FINISHED IN"XM"MOVES ("TM$":"TS$")."
250 PRINT:PRINT"WOULD YOU LIKE TO TRY ANOTHER PUZZLE (Y/N)";
252 GOSUB298:IFK$="Y"THEN120ELSEGOSUB300
254 PRINT@704,"THAT WAS FUN. LET'S PLAY AGAIN SOON!":PRINT:END
256 K$=INKEY$:IFK$<>"RETURN
258 PS=PS+1:IFPS<4THEN278
260 PS=1:CLK=CLK+1:IFCLK=61THENCLK=1
262 CS=CLK:IFCS=60 CS=0:CM=CM+1
264 TS=TS+1:IFTS>59 TS=TS-60:TM=TM+1
266 PRINT@131,TM;TAB(6)":";
268 IFTS>9 PRINTTAB(7)TS; ELSE PRINTTAB(8)TS;
270 IFTS<10 PRINT@136,"0";
272 PRINT@323,CM;TAB(6)":";
274 IFCS>9 PRINTTAB(7)CS; ELSE PRINTTAB(8)CS;
276 IFCS<10 PRINT@328,"0";
278 FORRG=1TO120:NEXT:GOTO256
280 PRINT@68,"THE PIECES OF THE PUZZLE THAT YOU SELECTED ARE"
282 PRINT"NOW BEING SCRAMBLED. WHEN I'M READY TO DISPLAY THEM"
284 PRINT"I WILL ASK YOU TO PRESS THE "Q"SPACEBAR"Q".":PRINT
286 PRINT" AS SOON AS THE PUZZLE HAS BEEN PRINTED I WILL"
288 PRINT"START THE CLOCK. YOU DO NOT HAVE A TIME LIMIT - THIS"
290 PRINT"IS JUST FOR YOUR REFERENCE.":PRINT
292 PRINT" YOU MUST SWITCH ONE PIECE FOR ANOTHER UNTIL ALL"
294 PRINT"PIECES ARE IN THEIR CORRECT POSITIONS.":PRINT
296 PRINT" DO NOT USE THE "Q"ENTER"Q" KEY FOR THIS PROGRAM.":
    RETURN
298 K$=INKEY$:IFK$=" "THEN298ELSEReturn
300 PRINT@640,CHR$(31);:RETURN
302 FORTIM=1TO1000:NEXT:RETURN

```



PICTURE PUZZLES

```

304 RESTORE:ONPZGOTO310,306,308,308,308
306 GOSUB310:GOTO314
308 GOSUB310:FORL=1TOPZ-2:GOSUB312:NEXT:GOTO314
310 FORR=1TO16:READA(R):NEXT:RETURN
312 FORR=1TO192:READD:NEXT:RETURN
314 FORI=1TO16:A$(I)="":FORJ=1TO12:READD
316 A$(I)=A$(I)+CHR$(D+100):NEXT:NEXT:RETURN
318 DATA"DEAR MOM AND"," HOW IS EV","IN THE CITY?"
320 DATA"HAS BEEN GOR","HAVE GONE SW","DAY SO FAR T"
322 DATA" LO"," "," DAD:"
324 DATA"ERYBODY BACK"," THE WEATHER","GEOUS AND WE"
326 DATA"IMMING EVERY","HIS WEEK. "
328 DATA"VE,","JOHNNY "
330 DATA 28,28,28,28,28,28,28,28,28,28,60,58
332 DATA 28,28,28,28,28,28,28,28,28,28,84,35,28
334 DATA 28,28,28,28,28,28,28,28,60,58,29,28,28
336 DATA 28,28,28,28,28,28,84,35,28,28,28,28
338 DATA 28,28,28,28,28,28,30,73,44,28,28,28
340 DATA 28,28,28,28,28,28,28,28,28,39,80,28,28
342 DATA 28,28,28,28,28,28,28,28,28,30,73,44
344 DATA 28,28,28,28,28,28,28,28,28,28,39
346 DATA 73,44,28,28,28,28,28,28,28,28,28,28
348 DATA 28,39,80,28,28,28,28,28,28,28,28,28
350 DATA 28,28,30,73,44,28,28,28,28,28,28,28
352 DATA 28,28,28,28,39,80,28,28,28,28,28,28
354 DATA 28,28,28,60,58,29,28,28,28,28,28,28
356 DATA 28,28,84,35,28,28,28,28,28,28,28,28
358 DATA 60,58,29,28,28,28,28,28,28,28,28,28
360 DATA 35,28,28,28,28,28,28,28,28,28,28,28
362 DATA 28,28,28,60,84,88,43,31,31,31,31,31
364 DATA 28,76,76,91,76,28,28,56,40,40,48,28
366 DATA 74,45,68,32,30,29,28,81,78,76,49,28
368 DATA 28,39,80,29,84,32,28,28,28,28,60,58
370 DATA 28,28,30,31,89,28,28,28,28,28,39,80
372 DATA 28,28,28,28,71,48,28,30,73,76,76,76
374 DATA 28,28,28,28,28,28,91,28,28,28,28,28
376 DATA 28,28,28,28,28,30,31,31,31,91,31,31
378 DATA 31,31,31,31,31,43,88,80,44,28,28,28
380 DATA 28,68,40,40,72,28,28,76,91,76,76,28
382 DATA 28,70,76,77,86,28,30,29,36,48,62,57
384 DATA 73,44,28,28,28,28,36,80,30,84,35,28
386 DATA 84,35,28,28,28,28,28,28,90,31,29,28,28
388 DATA 76,76,76,58,29,28,68,51,28,28,28,28
390 DATA 28,28,28,28,28,28,91,28,28,28,28,28
392 DATA 31,31,91,31,31,31,29,28,28,28,28,28
394 DATA 84,88,88,88,88,88,88,88,88,88,88,88
396 DATA 91,91,88,88,88,88,88,88,88,88,88,88
398 DATA 91,91,28,39,29,70,28,49,70,91,49,38
400 DATA 91,91,28,89,49,70,28,49,38,43,49,68
402 DATA 91,91,43,43,43,43,43,43,43,43,43,43
404 DATA 75,91,43,43,43,91,59,43,91,59,43,43
406 DATA 75,81,38,43,33,86,59,38,91,44,43,43
408 DATA 28,31,31,31,31,31,28,28,30,31,31,31
410 DATA 88,88,88,44,28,28,28,28,28,28,28,28
412 DATA 88,90,91,43,28,28,28,28,28,28,28,28
414 DATA 61,90,91,49,84,88,88,88,88,88,88,44
416 DATA 46,75,91,91,91,91,91,68,56,28,28,49
418 DATA 43,75,91,91,91,91,91,91,91,91,91,89
420 DATA 75,91,43,33,43,91,59,43,43,75,91,35
422 DATA 60,91,33,28,38,91,44,43,43,60,91,33
424 DATA 31,29,28,28,28,30,31,31,31,31,29,28
426 DATA 56,40,48,28,28,28,70,31,31,31,81,76
428 DATA 49,83,51,41,72,28,70,68,40,40,40,40
430 DATA 49,28,56,48,30,31,71,31,68,40,40,40
432 DATA 31,31,51,29,28,56,42,28,38,48,70,63
434 DATA 28,76,79,79,79,51,49,28,51,51,71,79

```

436 DATA 28,49,28,68,40,48,31,49,41,33,68,40  
438 DATA 28,41,35,71,31,29,28,31,49,28,78,79  
440 DATA 28,28,28,70,76,86,31,31,29,28,41,40  
442 DATA 76,68,40,40,40,40,40,40,48,70,28,28  
444 DATA 74,42,28,68,40,40,72,28,31,71,79,49  
446 DATA 42,28,70,71,79,71,70,28,28,68,72,28  
448 DATA 79,71,38,40,42,70,30,79,79,87,31,28  
450 DATA 86,70,70,31,79,79,76,81,76,76,76,76  
452 DATA 40,50,31,28,49,28,56,33,28,76,76,86  
454 DATA 49,31,63,79,83,49,41,40,40,57,48,28  
456 DATA 40,40,74,40,33,28,28,28,28,81,49,28

# PLAY IT AGAIN, SAM

*By Alan J. Zett*

The computer plays a note, then two and three; soon it's playing a little tune, and you're trying to remember exactly how it goes, by the tones and the letters with them, so you can duplicate it. Did it go H, Y, Y, G, B, or was it H, G, Y, Y? . . .

The string of letters/tones goes on for 8 to 32 notes, depending on the level of difficulty you selected. Since the tones are chosen at random, it's a pleasant surprise when they seem to follow a familiar melody. But once in a while you'll hear a sequence of notes that might inspire you to write a new song—who knows, it could be in the Top 40!

By now, most of you will recognize the sound routine that is poked into line 2000. It will give you a strange listing after you run the program, so it is best to save it on tape or disk before running, or else retype line 2000 before saving the program.

```
0 CLS:PRINT"
NOTE: BECAUSE OF MY SOUND ROUTINE, WHEN YOU LIST THE PROGRAM,
PART OF IT WILL SCROLL FUNNY AND LOOK GARBLED. TO GET A BETTER
IDEA WHAT CAUSES THIS, EDIT 2000 AND STEP THROUGH IT 1 SPACE
AT A TIME.
1 PRINT"
FOLLOWING THIS LINE IS A ROUTINE WHICH POKES A MACHINE LANGUAGE
ROUTINE INTO A STRING VARIABLE SPACE. THIS ALLOWS YOU TO POWER
UP AND PRESS ENTER IN RESPONSE TO MEMORY SIZE.
2 PRINT"
THANKS TO SOFTSIDE FOR THE STRING ROUTINE.
SOUND ROUTINE AND PROGRAM BY ALAN J. ZETT.

TO START PROGRAM HIT ANY KEY
3 IFCNKEY$=""THEN3:REM DELETE 0 TO 5 IF NOT NEEDED
5 REM - 255 , 228 , 206 , 190 - USR NOTE NUMBERS (LOW TO HIGH)
10 REM REM 10
* * * * *
* * PLAY IT AGAIN, SAM * *
* * BY: ALAN J ZETT * *
* * * * *
10 REM REM 10

20 CLS:GOTO1000
30 N=VAL(W$):N=(N*8)-1:FORX=0TON:S(X)=RND(4):NEXT
40 FORX=0TON
50 IFS(X)=1THENS(X)=255
60 IFS(X)=2THENS(X)=228
70 IFS(X)=3THENS(X)=206
80 IFS(X)=4THENS(X)=190
90 NEXT
100 CLS:PRINT@24,Y$:PRINT@324,G$:PRINT@364,H$:PRINT@664,B$:PRINT
@472,"PLAY IT AGAIN, SAM";
105 PRINT@960,"PRESS ENTER TO BEGIN";:PRINT@0,;
110 A$=INKEY$:IFA$=CHR$(13)THEN120ELSEIFA$="P"THENC=0:GOTO3080EL
SE110
120 PRINT@960,"";:PRINT@0,;
```

```

200 A=0
210 IFS(A)=190 THEN OS=Y$:P=24
220 IFS(A)=206 THEN OS=H$:P=364
230 IFS(A)=228 THEN OS=B$:P=664
240 IFS(A)=255 THEN OS=G$:P=324
250 GOSUB 400:A=A+1:IFA>CTHEN 500 ELSE 210
400 PRINT@P,T$;:Z=USR(S(A)):PRINT@P,OS;:RETURN
500 PRINT@960,"YOUR TURN";:PRINT@0,;:A=0
505 A$=INKEY$:IFA$="" THEN 505
507 IFA$="R" GOTO 200
508 IFA$="P" THEN C=0:GOTO 3080
509 IFA$=CHR$(13) THEN 505
510 IFS(A)=190 AND A$="Y" THEN OS=Y$:P=24:GOSUB 400:GOTO 580
520 IFS(A)=206 AND A$="H" THEN OS=H$:P=364:GOSUB 400:GOTO 580
530 IFS(A)=228 AND A$="B" THEN OS=B$:P=664:GOSUB 400:GOTO 580
540 IFS(A)=255 AND A$="G" THEN OS=G$:P=324:GOSUB 400:GOTO 580
550 PRINT@471,STRING$(20,32);:PRINT@477,"W R O N G";:C=0
560 FORX=1TO5:FORY=130TO160STEP30:Z=USR(Y):NEXTY:NEXTX:FORX=1TO1
000:NEXT:GOTO 3080
580 A=A+1:IFA>CTHENC=C+1 ELSE 505
590 IFC>NTHEN 600 ELSE 105
600 FORX=1TO5:FORY=20TO1STEP-1:Z=USR(Y):NEXTY:FORY=1TO20:Z=USR(Y
):NEXTY:NEXTX
610 PRINT@476,"* YOU WIN *";:C=0
620 FORX=1TO1000:NEXT:GOTO 3080
1000 CLEAR1500:DIMS(32):C=0
1010 S$=CHR$(26)+STRING$(19,8)
1020 H$=STRING$(19,191)+S$+STRING$(6,191)+" "+STRING$(3,191)+"
"+STRING$(6,191)+S$+STRING$(6,191)+" "+STRING$(3,176)+" "+STR
ING$(6,191)+S$+STRING$(6,191)+STRING$(2,176)+STRING$(3,191)+STRI
NG$(2,176)+STRING$(6,191)+S$+STRING$(19,143)
1030 G$=STRING$(19,191)+S$+STRING$(6,191)+" "+STRING$(5,176)+ST
RING$(6,191)+S$+STRING$(6,191)+" "+STRING$(2,191)+CHR$(179)+STR
ING$(2,131)+STRING$(6,191)+S$+STRING$(6,191)+STRING$(7,176)+STRI
NG$(6,191)+S$+STRING$(19,143)
1040 B$=STRING$(19,191)+S$+STRING$(6,191)+" "+STRING$(3,176)+"
"+CHR$(131)+STRING$(6,191)+S$+STRING$(6,191)+" "+STRING$(2,176)
+CHR$(176)+" "+CHR$(138)+STRING$(6,191)+S$+STRING$(6,191)+STRING
$(6,176)+CHR$(188)+STRING$(6,191)+S$+STRING$(19,143)
1050 Y$=STRING$(19,191)+S$+STRING$(6,191)+CHR$(180)+" "+CHR$(139
)+CHR$(191)+CHR$(135)+" "+CHR$(184)+STRING$(6,191)+S$+STRING$(7,
191)+CHR$(189)+CHR$(144)+" "+CHR$(160)+CHR$(190)+STRING$(7,191)+
S$+STRING$(8,191)+CHR$(181)+CHR$(176)+CHR$(186)+STRING$(8,191)+S
$
1051 Y$=Y$+STRING$(19,143)
1060 T$=CHR$(191)+STRING$(17,131)+CHR$(191)+S$+CHR$(191)+STRING$
(17,32)+CHR$(191)+S$+CHR$(191)+STRING$(17,32)+CHR$(191)+S$+CHR$(
191)+STRING$(17,32)+CHR$(191)+S$+CHR$(143)+STRING$(17,140)+CHR$(
143)
2000 SOUND$="ABCDEFGHIJKLMNOPQRSTUVWXYZ".
2010 X=VARPTR(SOUND$):Y=PEEK(X+1)+256*PEEK(X+2)
2020 FORZ=YTOY+22:READD:POKEZ,D:NEXT
2030 IFPEEK(16396)=201POKE16526,PEEK(X+1):POKE16527,PEEK(X+2)ELS
ECMD"T":DEFUSR0=PEEK(X+1)+256*PEEK(X+2):POKE14308,0
2050 DATA 205,127,10,14,140,69,62,1,211,255,16,254,69,62,2,211,25
5,16,254,13,32,239,201
3000 PRINTTAB(15); "P L A Y I T A G A I N, S A M"
3005 PRINT"THIS IS THE GAME OF PLAY IT AGAIN, SAM. THE
COMPUTER WILL SELECT 1 OF 4 RANDOM SQUARES AND ITS
CORRESPONDING TONE. YOU MUST FOLLOW WITH THE SAME KEY
AND TONE, ELSE THE COMPUTER WILL TELL YOU YOU'RE
WRONG AND YOU MUST START OVER.
3010 PRINT"
IF YOU GET THE FIRST KEY/TONE RIGHT THE COMPUTER WILL ADD
ANOTHER KEY/TONE AND YOU WILL CONTINUE PLAYING BACK THE
SEQUENCE UNTIL A MAXIMUM OF 8,16,24 OR 32 TONES ARE

```

## PLAY IT AGAIN, SAM

103

COMPLETED. (DEPENDING ON THE LEVEL OF DIFFICULTY YOU  
CHOSE - 1,2,3 OR 4)

```
3020 PRINT"PRESS 'ENTER' TO CONTINUE.";
```

```
3030 IFINKEY$=""THEN3030
```

```
3040 CLS:PRINT"
```

THE KEYS USED ARE:

Y

G H

B

FOR SOUND, CONNECT THE AUX LEAD TO AN AMPLIFIER OR  
PUT A BLANK TAPE IN THE RECORDER, PRESS 'PLAY' AND  
'RECORD' BUTTONS, REMOVE THE EAR LEAD AND PLUG IN  
3050 PRINT"AN EARPHONE OR A SET OF HEADPHONES.

( ----NOTE:---- DON'T PUT ON THE HEAD PHONES OR  
PUT THE EARPHONE IN YOUR EAR. IT IS SO LOUD IT  
CAN BE HEARD BY SETTING IT NEXT TO THE COMPUTER!)

```
3060 PRINT"
```

PRESS ENTER TO CONTINUE.";

```
3070 IFINKEY$=""THEN3070
```

```
3080 CLS:PRINT"
```

WHEN PLAYING, PLEASE WAIT A MOMENT BEFORE  
PRESSING THE NEXT KEY IN THE SEQUENCE.

HINT:

IF YOU HAVE TROUBLE REMEMBERING THE SEQUENCE,  
TYPE 'R' FOR REPEAT OR  
TYPE 'P' FOR NEW GAME.

```
3090 PRINT"WHAT LEVEL OF DIFFICULTY (1 TO 4)
```

```
3100 W$=INKEY$:IFW$=""ORVAL(W$)<1ORVAL(W$)>4THENZ=USR(RND(50)):G
```

```
OTO3100ELSEGOTO30
```

# SONIC TORPEDOES

*By Phillip Case, Jr.*

SONIC TORPEDOES is a target game in which you have a fixed torpedo launcher. Three different types of alien spacecraft fly over your launcher. Your goal is to destroy as many of the spacecraft as possible, given the number of torpedoes and amount of time allotted. As you destroy more ships, your rating (displayed in the lower right-hand corner of the screen) will increase.

## Special Features

SONIC TORPEDOES is unique in two ways. First, it is one of the few programs with sound effects that work in 4K of RAM. Second, it makes use of Voice Input. You fire your torpedoes by saying the word "Fire" into a microphone that is plugged into the cassette recorder. This function is achieved by use of the INP (255) command.

*Note:* Because the cassette amplifier is used in the voice command, the sound effects require an external amplifier such as one sold by Radio Shack under the Archer name for \$12.00. Also, the program is designed to be compatible with both Level II and disk BASIC.

```
10 ' *****
    **                SONIC TORPEDOS                **
    **-----**
    **      WITH SOUND INPUT AND OUTPUT      **
    **-----**
20 ' **                (C) COPYRIGHT 1979                **
    **-----**
    **      BY WILLIAM PHILLIP CASE, JR.      **
    *****

25 ONERRORGOTO450
30 CLEAR500:DEFINTB-L,N-X:GOSUB410
40 A$(1)=STRING$(3,32)+CHR$(152)+CHR$(179)+CHR$(164)+CHR$(26)+ST
RING$(5,24)+CHR$(138)+CHR$(131)+CHR$(138)+CHR$(131)+CHR$(133)+CH
R$(131)+CHR$(133)
50 A$(2)=" "+CHR$(160)+CHR$(188)+CHR$(144)+CHR$(26)+STRING$(4,24
)+STRING$(5,131)
60 A$(3)=" "+CHR$(168)+CHR$(169)+CHR$(26)+STRING$(3,24)+CHR$(138
)+STRING$(3,139)
70 Z$=" "+CHR$(137)+CHR$(176)+CHR$(134)+CHR$(26)+STRING$(3,24)+C
HR$(152)+CHR$(131)+CHR$(164)
80 Y$=STRING$(2,24)+STRING$(9,32)+CHR$(26)+STRING$(8,24)+STRING$
(9,32)
90 Z1$=STRING$(2,176)+CHR$(191)+STRING$(2,176)+CHR$(26)+STRING$(
5,24)+STRING$(2,131)+CHR$(191)+STRING$(2,131)
100 A(1)=1:A(2)=7000:A(3)=4000
110 CLS:PRINTCHR$(23);"          SONIC TORPEDOS":FORA=1TO1000:NEX
T:CLS:INPUT"DO YOU NEED INSTRUCTIONS TO PLAY";A$:IFLEFT$(A$,1)="
Y"GOSUB280
120 CLS:FORX=0TO127:SET(X,41):SET(X,45):NEXT:FORY=42TO44:SET(0,Y
):SET(1,Y):SET(24,Y):SET(25,Y):SET(48,Y):SET(49,Y):SET(82,Y):SET
(83,Y):SET(126,Y):SET(127,Y):NEXT
130 PRINT@861,CHR$(184)+CHR$(191)+CHR$(186)+CHR$(189)+CHR$(27)+S
```

```

TRING$(3,24)+STRING$(2,160);:X=62
140 H=0:T=799:S=20:R$="GRANNY":Q=0
150 GOSUB220
160 GOSUB230
170 FORE=2TO55:GOSUB430:MU=USR(A(O)):PRINT@E,F$;:PRINT@915,T;
180 IFINP(255)=255ANDQ=0THENQ=40
190 IFQ<>0GOSUB430:GOSUB360:PRINTCHR$(28);
200 PRINT@E,Y$;:T=T-1:GOSUB260:PRINTCHR$(28);:NEXTE:GOTO160
210 GOTO210
220 GOSUB340:PRINT@898,"HITS:";H;:PRINT@910,"TIME:";T;:PRINT@922
,"SHOTS LEFT:";S;:PRINT@939,"RATING:";R$;:RETURN
230 O=RND(3):F$=A$(O):RETURN
240 IFS<1THENRETURN:ELSEFORY=40TOSTEP-1:SET(X,Y):IFPOINT(X,Y-1)
GOSUB270
250 RESET(X,Y):T=T-1:PRINT@915,T;:GOSUB260:NEXTY:S=S-1:GOSUB220:
RETURN
260 IFT<1THEN390ELSERETURN
270 GOSUB430:H=H+1:FORG%=1TO15:MU=USR(5000):PRINT@E+1,Z$;:FORI%=
1TO10:NEXT:MU=USR(9000):PRINT@E+1,Y$;:PRINT@E+1,Z1$;:T=T-1:PRINT
@915,T;:GOSUB260:NEXT:PRINT@E,Y$;:E=56:Q=0:RETURN
280 CLS:PRINTTAB(25);"SONIC TORPEDOS":PRINT"IN THIS GAME OF SKIL
L IT IS YOUR GOAL TO PROTECT THE EARTH FROM":PRINT"INVADING ALIE
NS. TO DO THIS YOUR FIRE YOUR SONIC TORPEDOS.":PRINT"YOUR TORPE
DOS ARE SONIC FOR 2 REASONS. FIRST THIS PROGRAM IS"
290 PRINT"DESIGNED FOR AUDIO OUTPUT BY USING AN AUDIO AMPLIFIER
SUCH AS":PRINT"THE MINI AMPLIFIER SOLD BY 'THE SHACK'."
SECONDLY, THE TORPEDOS ARE FIRED BY VOICE CONTROL. THATS RIGHT
YOU FIRE YOUR TORPEDOS WITH THE WORD 'FIRE'. TO MAKE THIS"
300 PRINT"PROGRAM WORK DO THE FOLLOWING:
1. RUN THE 'AUX' PLUG FROM THE COMPUTER INTO AN AMPLIFIER.
2. UNHOOK THE 'REM' PLUG FROM THE RECORDER AND LEAVE LOOSE.
3. PLUG A MICROPHONE INTO THE 'MIC' JACK."
310 PRINT" 4. PRESS IN THE TAPE TAB SENSOR, 'RECORD', & 'PLAY'
KEYS.
5. NOTE: THE VOLUME IS AUTOMATIC, PLAY AROUND FOR BEST PLAY."
320 PRINTTAB(25);"<PRESS ENTER>"
330 A$=INKEY$:IFA$=""THEN330ELSERETURN
340 IFH>7THENR$="FAIR":IFH>9THENR$="GOOD":IFH>13THENR$
="VERY GOOD":IFH>16R$="MARKSMAN":IFH>19R$="ACE SHOT"
350 RETURN
360 MU=USR(29954):RESET(X,Q):Q=Q-2:IFQ<1THENRETURNELSESET(X,Q):I
FPOINT(X,Q-1)ORPOINT(X,Q+1)GOSUB270
370 IFQ=38S=S-1:IFS<1THEN400:ELSEGOSUB220
380 RETURN
390 GOSUB220:PRINT@450,"YOU HAVE RUN OUT OF TIME, PRESS ENTER TO
PLAY AGAIN";:INPUTA:GOTO120
400 GOSUB220:PRINT@450,"YOU HAVE RAN OUT OF SHOTS, PRESS ENTER T
O PLAY AGAIN";:INPUTA:GOTO120
410 '
ASSEMBLY LANGUAGE MUSIC ROUTINE
420 MU$=CHR$(205)+CHR$(127)+CHR$(10)+CHR$(68)+CHR$(62)+CHR$(1)+C
HR$(211)+CHR$(255)+CHR$(16)+CHR$(254)+CHR$(68)+CHR$(62)+CHR$(2)+
CHR$(211)+CHR$(255)+CHR$(16)+CHR$(254)+CHR$(45)+CHR$(32)+CHR$(23
9)+CHR$(201)
430 M1=VARPTR(MU$):M2=PEEK(M1+1):M3=PEEK(M1+2):IFM3>127THENM3=M3
-256
440 IFPEEK(16396)=201THENPOKE16526,M2:POKE16527,M3ELSEDEFUSR0=M3
*256+M2:CMD"T"
445 RETURN
450 POKE16526,M2:IFM3>0POKE16527,M3ELSEPOKE16527,M3+256
460 RESUME445

```

# SPELLING BEE

*By James Garon*

Does your child hate spelling? Here's a program to transform your TRS-80® into a speaking, spelling fun machine.

The first step in using SPELLING BEE is to teach the S-80 how to spell the words. If possible, use the word list that your child brings home from school. The easiest way to enter the list (up to 20 words) is to type

RUN 1    **ENTER**

The computer will respond with instructions for entering the words, and a large cursor will appear at the left side of the screen. From this point on, every word you type will be displayed in giant letters (about 4 inches tall). Each word may be up to ten characters long and may contain apostrophes, hyphens, or blanks. Two editing keys are provided in case of error. The backspace key (←) works in the usual way, erasing one character each time it's pressed. The **CLEAR** key will erase the entire word, allowing you to begin that word again. When the word is spelled correctly, press **ENTER** and the computer will store the word in a special DATA statement at line 1000.

## **Programming Hint**

If you type in the program yourself, be sure to type as many slashes (/) as line 1000 will hold before running the program. This reserves space for the data. Never edit line 1000. Should you wish to type in your own DATA statement, use any vacant line number smaller than 999. If your list contains fewer than 20 words, the final entry must be XXX.

The second step is to give your computer a voice. When the final word has been entered, the computer will direct you through the process of creating an audio tape. The instructions that appear on the screen tell you which wires to pull, which buttons to press, and exactly how far to rewind a blank tape. Don't forget to remove the small plastic plug from the MIC jack. This will allow the built-in condenser microphone to pick up your voice. (Put the plug back after recording so that future CSAVEs will not be spoiled by room noise.) The first time through, you may wish to step through the procedure without actually making a recording. This way you can get used to pacing your voice so that you can comfortably say your "lines" during the time that the "on the air" light is traveling across the screen. When you are through rehearsing, hit **BREAK** and type RUN 2. This command tells the computer to help you with the audio tape from the beginning. Should you make an error while recording, simply hit **BREAK** and type RUN 2 again.

When the final word has been recorded, the computer will instruct you to rewind the tape. You do not need to unplug the remote wire. The computer has disconnected this wire in software. When the tape is rewound, pressing **ENTER** will effectively plug the remote wire back in.



Now it's time to test the program. This time, just type RUN and answer the question, "DO YOU WANT INSTRUCTIONS?" with the word "NO." Again the computer will tell you which wires to pull, which buttons to press, and how far to rewind your audio tape. (Notice that the tape is wound to one spot for recording and to a different spot for playback.) Pressing **ENTER** at this point begins the main program. The recorder should turn on automatically, speak the first word, and shut itself off. Wait for the giant cursor, and then type in your response. If you spell the word correctly, the computer will say so (on the screen), and the next word will be spoken by the recorder. If you spell the word incorrectly, press **CLEAR** and try again. If the second attempt is wrong, the correct spelling will be displayed (in giant letters). Press **ENTER** to hear the next word.

After your response to the final word, your score will be given, and the audio tape may be rewound (again without pulling the remote wire). Now **CSAVE** the program on a different tape from the audio, and it will be ready to use until the next word list arrives home from school.

```

0 CLEAR2E3:GOTO6000:
* * * * * * * * * *
*   SPELLING BEE   *
*         FROM     *
*ADVANCED GRAPHICS*
1 CLS:PRINT"ONE MOMENT PLEASE":CLEAR2E3:T%=1:GOTO10
2 CLEAR2E3:T%=2
10 DEFSTRA-H:DEFINTI-Z:DIMH(25):E=CHR$(34):D=CHR$(191):GOTO5100
50 CLS:PRINT:PRINTTAB(6)H(18)H(15)H(4)H(11)H(11)H(8)H(13)H(6):PR
INT:PRINTTAB(21)H(1)H(4)H(4):N=0:S=N
95 PRINT@384,"REWIND TAPE SO THE PLACE WHERE THE LEADER JOINS
THE TAPE APPEARS IN THE LEFT-HAND WINDOW AS SHOWN:
"TAB(18)STRING$(25,176):PRINTTAB(15)STRING$(5,D)"====="D;D;D"---
--"D--"D"-----"STRING$(5,D):PRINTTAB(18)STRING$(25,131)
96 V=16256:K=128:PRINT"REMOVE 'EAR' AND 'AUX' WIRES.
LEAVE OTHER WIRE IN.
PRESS 'PLAY'.
PRESS ENTER TO BEGIN...
97 PRINT@602,D,:FORI=1TO30:IFINKEY$=""NEXT:PRINT@602,"":;:FORI=1
TO30:IFINKEY$=""NEXT:GOTO97
98 PRINT@256,CHR$(31)
99 READD:IFLEFT$(D,3)="XXX"THEN300ELSEGOSUB10000:Y=0:N=N+1:GOSUB
5000
200 IFA=LEFT$(D,LEN(D))PRINT@704,H(2)H(14)H(17)H(17)H(4)H(2)H(19
):S=S+1:GOTO99ELSEY=Y+1:IFY<2PRINT"PRESS CLEAR AND TRY AGAIN":GO
SUB4000:GOTO200
210 E="":FORI=1TOLEN(D):M=ASC(MID$(D,I,1)):IFM>64THENE=E+H(M-65)
ELSEIFM=32THENE=E+CELSEIFM=45THENE=E+HELSEIFM=39THENE=E+APELSEIF
M=46THENE=E+F
215 NEXT
220 PRINT@576,"THE CORRECT SPELLING IS":PRINT
230 PRINTE:PRINT"PRESS ENTER...
240 B=INKEY$:IFB=""THEN240ELSEIFASC(B)-13THEN240ELSE98
300 PRINT@832,"YOUR SCORE IS"S"OUT OF"N"
REWIND TAPE - THEN PRESS ENTER":OUT255,4
310 IFINKEY$=""THEN310ELSEEND
999 G=""
1000 DATA //////////////////////////////////////
////////////////////////////////////
////////////////////////////////////

```

```

////////////////////////////////////
1500 V=VARPTR(G):L=PEEK(V+1)+256*PEEK(V+2)
1520 FORI=L+8TOL+238:POKEI,6:NEXT
1530 CLS:PRINT"SPELL EACH WORD CORRECTLY. PRESS ENTER AFTER EACH
WORD.
THERE IS ROOM FOR UP TO 20 WORDS.
IF YOU ENTER FEWER THAN 20 WORDS, THE LAST WORD MUST BE 'XXX'
1540 K=L+8
1550 FORW=1TO20
1560 PRINT@256,"WORD #"W"?":GOSUB5000:IFA=""THEN1560
1570 FORI=1TOLEN(A):POKEK,ASC(MID$(A,I,1)):K=K+1:NEXT
1580 IFA<>"XXX"THENPOKEK,44:K=K+1:NEXT:FORK=KTOK+2:POKEK,88:NEXT
2000 RESTORE:CLS:PRINT"REMOVE PLASTIC PLUG FROM 'MIC'
REMOVE 'AUX' WIRE AND 'EAR' WIRE.
LEAVE OTHER WIRE IN.
REWIND A BLANK TAPE SO THE PLACE WHERE THE LEADER JOINS THE
TAPE APPEARS IN THE SMALL RIGHT-HAND WINDOW (AS SHOWN):
2001 PRINTTAB(18)STRING$(25,176):PRINTTAB(15)STRING$(5,D)"====="
D="D"====="D;D;D"-----"STRING$(5,D):PRINTTAB(18)STRING$(25,131)
2005 PRINT"PRESS RECORD AND PLAY.
(IF YOU MAKE AN ERROR ON THE AUDIO TAPE, HIT BREAK THEN 'RUN 2')
PRESS ENTER TO BEGIN...
2007 PRINT@418,";";:FORI=1TO30:IFINKEY$=""NEXT:PRINT@418,D;:FORI
=1TO30:IFINKEY$=""NEXT:GOTO2007
2009 CLS:PRINT
2010 READA:IFLEFT$(A,3)="XXX"THEN3000ELSEPRINT"PRESS ENTER; WHEN
THE TOP OF THE SCREEN LIGHTS,
SAY, "E"SPELL THE WORD: "A;E
2020 B=INKEY$:IFB=""THEN2020ELSEIFASC(B)-13THEN2020
2030 K=191:V=15360:GOSUB10000:GOTO2010
3000 PRINT"
REWIND YOUR TAPE; PRESS ENTER WHEN TAPE IS REWOUND.":OUT255,4
3010 IFINKEY$=""3010
3020 OUT255,0:PRINT"YOU MAY NOW 'RUN' THE PROGRAM.":END
4000 IFINKEY$<>CHR$(31)4000
5000 P=448:A=""
5010 PRINT@P-64,CHR$(30);
5020 PRINT@P,CHR$(31);:IFLEN(A)<10PRINT" "STRING$(5,176)
5030 B=INKEY$:IFB=""THEN5030ELSEZ=ASC(B):IFZ=31THEN5000
5040 L=LEN(A):IFZ=8ANDL>0A=LEFT$(A,L-1):P=P-6:GOTO5010
5050 IFZ=32IFL<10PRINT@P,C:GOTO5090
5060 IFZ=45IFL<10PRINT@P-64,H:GOTO5090
5062 IFZ=39IFL<10PRINT@P,AP:GOTO5090
5065 IFZ=46IFL<10PRINT@P,F:GOTO5090
5070 IFZ=13PRINT@P,C:RETURN
5080 Z=Z-65:IFZ<0ORZ>25ORL>9THEN5020ELSEPRINT@P,H(Z)
5090 A=A+B:P=P+6:GOTO5020
5100 GOSUB 5200
5140 C=" "H=" "+STRING$(5,176)+CHR$(26)+STRING$(5,24)+"
":AP=CHR$(27)+" "+CHR$(175)+CHR$(26)+STRING$(5,24)+C:F=" "+
CHR$(140)+" "
5150 ONTGO999,2000:GOTO50
5200 CLS:PRINT"PLEASE WAIT ...":RESTORE:DEFSTRH
5202 READQ$:IFQ$<>"START XXX"THEN5202
5205 FORL1=0 TO 25:H(L1)=CHR$(25)+CHR$(27)
5210 FORL2=1TO5:READCH%:H(L1)=H(L1)+CHR$(CH%):NEXTL2
5220 H(L1)=H(L1)+CHR$(26)+STRING$(5,24)
5230 FORL2=1TO5:READCH%:H(L1)=H(L1)+CHR$(CH%):NEXTL2,L1
5240 RESTORE:RETURN
5250 PRINT:PRINT:INPUTA%:PRINT5300+A%*10%;CHR$(65%+A%);" ";:FOR
T=3TO18:PRINTASC(MID$(H(A%),T));:NEXTT:GOTO5250
5290 DATA "START XXX"
5300 DATA 191,179,179,179,191,143,32,32,32,143
5310 DATA 191,179,179,179,157,143,140,140,140,135
5320 DATA 191,131,131,131,131,143,140,140,140,140
5330 DATA 191,131,131,139,180,143,140,140,142,129

```

SPELLING BEE

109

```

5340 DATA 191,179,179,179,131,143,140,140,140,140
5350 DATA 191,179,179,179,131,143,32,32,32,32
5360 DATA 191,131,179,179,179,143,140,140,140,143
5370 DATA 191,176,176,176,191,143,32,32,32,143
5380 DATA 131,131,191,131,131,140,140,143,140,140
5390 DATA 131,131,131,191,131,143,140,140,143,32
5400 DATA 191,176,140,131,32,143,32,131,140,32
5410 DATA 191,32,32,32,32,143,140,140,140,140
5420 DATA 191,131,191,131,191,143,32,32,32,143
5430 DATA 191,140,176,32,191,143,32,32,131,143
5440 DATA 190,131,131,131,189,139,140,140,140,135
5450 DATA 191,179,179,179,191,143,32,32,32,32
5460 DATA 190,131,131,131,189,139,140,142,141,183
5470 DATA 191,179,179,179,191,143,32,32,131,140
5480 DATA 191,179,179,179,140,140,140,140,143
5490 DATA 131,131,191,131,131,32,32,143,32,32
5500 DATA 191,32,32,32,191,139,140,140,140,135
5510 DATA 143,176,32,176,143,32,131,140,131,32
5520 DATA 191,32,176,32,191,143,140,143,140,143
5530 DATA 131,140,176,140,131,140,131,32,131,140
5540 DATA 131,140,176,140,131,32,32,143,32,32
5550 DATA 131,131,179,143,131,140,143,140,140,140
6000 CLS:INPUT"
DO YOU NEED INSTRUCTIONS";A$:IFLEFT$(A$,1)<>"Y"10
6010 CLS:PRINT"
SPELLING BEE WAS CREATED TO GIVE SPELLING PRACTICE AT MANY
LEVELS OF DIFFICULTY. IT IS DESIGNED TO BE USED WITH THE
CASSETTE RECORDER. THE DESIRED WORDS ARE RECORDED ON TAPE
AND THE COMPUTER PLAYS THEM ONE AT A TIME WHILE THE USER
6020 PRINT"SPELLS THE WORD. IF THE SPELLING IS CORRECT, THE TAP
E
WILL AUTOMATICALLY ADVANCE TO THE NEXT WORD. IF THE SPELL-
ING IS NOT CORRECT, THE USER IS GIVEN ANOTHER OPPORTUNITY
TO SPELL THE WORD. IF THE SPELLING IS STILL INCORRECT, THE
6030 PRINT"COMPUTER WILL SPELL THE WORD CORRECTLY, WAIT UNTIL TH
E
USER PRESSES 'ENTER' AND THEN PROCEED WITH THE NEXT WORD.
THE SCORE IS KEPT, AND DISPLAYED AT THE END.
TO CORRECT ERRORS, USE ] OR 'CLEAR':GOSUB6999
6040 CLS:PRINT"
IF YOU HAVE ALREADY MADE AN AUDIO TAPE - REWIND IT AND
PRESS ENTER. INSTRUCTIONS FOR SETTING UP THE RECORDER
WILL BE GIVEN.
6050 PRINT"TO PREPARE YOUR OWN SET OF WORDS, HIT BREAK AND TYPE
'RUN 1'.
THE COMPUTER WILL ASSIST YOU. WORDS MAY BE UP TO 10
CHARACTERS IN LENGTH. THEY MAY INCLUDE SPACES (GRAND PRIX),
HYPHENS (GOOD-BY), APOSTROPHES (DON'T) AND PERIODS (MRS.).
6060 PRINT"
SOME FINAL NOTES: THIS PROGRAM USES SEVERAL NON-STANDARD
TECHNIQUES; THEREFORE, CERTAIN LINES WILL NOT LIST IN THE
USUAL FASHION. THE COMPUTER WILL WRITE ITS OWN DATA STATE-
MENT AT LINE 1000. DO NOT EDIT THIS LINE.";
6070 PRINT" IF YOU WISH TO USE
YOUR OWN DATA STATEMENTS, WE SUGGEST LINES 400 THRU 900.":GOSUB6
999:GOTO10
6999 PRINT@960,"(PRESS 'ENTER' TO CONTINUE)";
7000 A$=INKEY$:IF A$=""THEN7000ELSERETURN
10000 OUT255,4:FORI=1TO600:NEXT:FORI=VTOI+63:POKEI,K:NEXT:FORI=V
TOI+63:FORJ=1TO35:NEXT:POKEI,32:NEXT:OUT255,0:FORI=1TO400:NEXT:R
ETURN

```

# SUPER PACHINKO

*By James P. MacLennan*

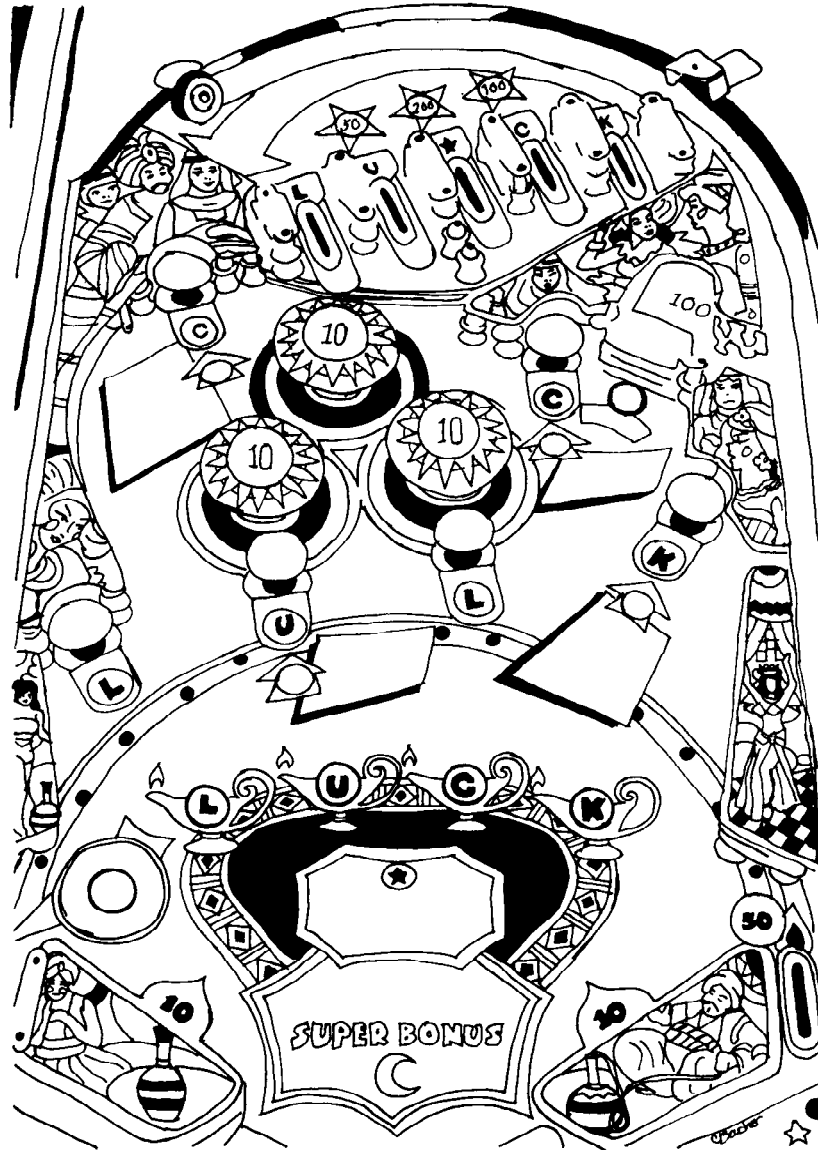
This game is patterned after the famous Pachinko machines imported from the Orient.

In this version, you are given 15 balls to shoot. To pull back the plunger, hold down the key, and to release and send the ball on its way, press the key. The farther you pull the plunger back, the farther the ball will travel across the top before starting down.

The targets will give you 10, 20, or 100 points, depending on which you hit. Three bonus balls are given for hitting one of the bottom targets. Total score is given at the top right of the screen. The number of balls left to shoot is found on the bottom of the screen.

For sound effects, plug the cassette auxiliary jack into an audio amplifier and get the feeling of being in an arcade with your computer as the PACHINKO game.

```
1000 ' *****
    ** SUPER PACHINKO **
    ** BY **
    ** JIM MAC LENNAN **
    *****
1005 ' VERSION 3.3 : 186 LINES : 6394 BYTES
1010 ' DEC 13,1979
1015 CLEAR200:RANDOM:DIMBR(15):XC=1:BR=15
1020 GOSUB1585:GOSUB1215:GOSUB1515:GOSUB1685
1025 ' *** DRAW THE BOARD ***
1030 CLS:FORX=5TO92:SET(X,0):NEXT:FORX=11TO73:SET(X,43):NEXT
1035 FORX=9TO73:SET(X,47):NEXT:FORX=72TO127:SET(X,44):SET(X,46):
NEXT
1040 FORX=72TO92:SET(X,42):NEXT:FORY=6TO38:SET(0,Y):NEXT
1045 FORY=14TO36:SET(4,Y):SET(5,Y):NEXT:Y=5:FORX=0TO4:SET(X,Y):S
ET(X+1,Y):Y=Y-1:NEXT
1050 FORY=14TO28:SET(105,Y):SET(106,Y):NEXT:FORX=13TO18:SET(X,6)
:NEXT
1055 Y=13:FORX=4TO11:SET(X,Y):SET(X+1,Y):Y=Y-1:NEXT
1060 Y=41:FORX=92TO105:SET(X,Y):SET(X+1,Y):Y=Y-1:NEXT
1065 Y=37:FORX=5TO11:SET(X,Y):SET(X+1,Y):Y=Y+1:NEXT
1070 Y=38:FORX=0TO9:SET(X,Y):SET(X+1,Y):Y=Y+1:NEXT
1075 Y=0:FORX=91TO105:SET(X,Y):SET(X+1,Y):Y=Y+1:NEXT
1080 FORX=100TO104:SET(X,25):SET(X,26):NEXT
1085 Y=26:SET(14,Y):SET(21,Y):SET(78,Y):SET(85,Y)
1090 Y=28:SET(36,Y):SET(43,Y):SET(56,Y):SET(63,Y)
1095 X=26:FORQ=1TO2:FORV=34TO37:SET(X,Y):SET(X+1,Y)
1100 SET(X+6,Y):SET(X+7,Y):NEXTY:X=66:NEXTQ
1105 FORY=36TO39:SET(46,Y):SET(47,Y):SET(52,Y):SET(53,Y):NEXT
1110 FORX=28TO31:SET(X,34):SET(X,37):SET(X+40,34):SET(X+40,37):N
EXT
1115 FORX=48TO51:SET(X,36):SET(X,39):NEXT
1120 FORX=14TO21:SET(X,27):SET(X+64,27):NEXT
1125 FORX=36TO43:SET(X,29):SET(X+20,29):NEXT
1130 FORY=1TO8:SET(78,Y):NEXT
1135 FORY=5TO8:SET(46,Y):SET(53,Y):SET(46,Y+11):SET(53,Y+11):NEX
T
```



```

1140 SET(47,8):SET(52,8):SET(47,19):SET(52,19):SET(36,27):SET(63
,27)
1145 FORX=47TO52:SET(X,9):SET(X,20):NEXT
1150 FORX=48TO51:SET(X,10):SET(X,21):NEXT
1155 Y=23:FORX=97TO100:SET(X,Y):SET(X+1,Y):Y=Y+1:NEXT
1160 Y=9:FORX=80TO90STEP2:SET(X,Y):Y=Y+2:NEXT
1165 Y=13:FORX=31TO39STEP2:SET(X,Y):Y=Y-2:NEXT
1170 Y=5:FORX=60TO68STEP2:SET(X,Y):Y=Y+2:NEXT
1175 Y=13:FORX=22TO32STEP2:SET(X,Y):Y=Y+2:NEXT
1180 Y=23:FORX=67TO77STEP2:SET(X,Y):Y=Y-2:NEXT
1185 Y=22:FORX=10TO16STEP2:SET(X,Y):Y=Y-2:NEXT
1190 PRINT@244,"TOTAL SCORE";:PRINT@567,"BALLS";:PRINT@634,"LEFT
";

```

```

1195 Y=20:FORX=34TO40STEP2:SET(X,Y):SET(X+3,Y+4):Y=Y-2:NEXT
1200 Y=14:FORX=59TO65STEP2:SET(X,Y):SET(X-3,Y+4):Y=Y+2:NEXT
1205 GOTO1370
1210 ' *** NUMBER CHR$ BUILDER ***
1215 R$=CHR$(26)+STRING$(3,24)
1220 N$(0)=CHR$(190)+CHR$(131)+CHR$(189)+R$+CHR$(191)+" "+CHR$(1
91)+R$+CHR$(175)+CHR$(176)+CHR$(159)
1225 N$(1)=CHR$(184)+CHR$(191)+" "+R$+" "+CHR$(191)+" "+R$+CHR$(
176)+CHR$(191)+CHR$(176)
1230 N$(2)=CHR$(142)+CHR$(131)+CHR$(189)+R$+CHR$(160)+CHR$(158)+
CHR$(129)+R$+CHR$(191)+STRING$(2,176)
1235 N$(3)=CHR$(142)+CHR$(131)+CHR$(189)+R$+CHR$(136)+CHR$(140)+
CHR$(183)+R$+CHR$(172)+CHR$(176)+CHR$(159)
1240 N$(4)=CHR$(191)+" "+CHR$(191)+R$+CHR$(143)+CHR$(140)+CHR$(1
91)+R$+" "+CHR$(191)
1245 N$(5)=CHR$(191)+STRING$(2,131)+R$+CHR$(131)+CHR$(139)+CHR$(
189)+R$+CHR$(172)+CHR$(176)+CHR$(159)
1250 N$(6)=CHR$(190)+CHR$(131)+CHR$(141)+R$+CHR$(191)+CHR$(140)+
CHR$(180)+R$+CHR$(175)+CHR$(176)+CHR$(159)
1255 N$(7)=STRING$(2,131)+CHR$(191)+R$+" "+CHR$(184)+CHR$(135)+R
$+CHR$(190)+CHR$(129)+" "
1260 N$(8)=CHR$(190)+CHR$(131)+CHR$(189)+R$+CHR$(187)+CHR$(140)+
CHR$(183)+R$+CHR$(175)+CHR$(176)+CHR$(159)
1265 N$(9)=CHR$(190)+CHR$(131)+CHR$(189)+R$+CHR$(139)+CHR$(140)+
CHR$(191)+R$+CHR$(172)+CHR$(176)+CHR$(159)
1270 RETURN
1275 ' *** PRINT THE SCORE ***
1280 C=INT(SC/100):X2=0:GOSUB1300
1285 C=INT(SC/10-(10*INT(SC/100))):X2=4:GOSUB1300
1290 C=SC-10*(INT(SC/10)):X2=8:GOSUB1300
1295 RETURN
1300 PRINT@52+X2,N$(C);:RETURN
1305 ' *** MOVE THE BALL ***
1310 X=X+XC:Y=Y+1
1315 SET(X,Y)
1320 IFPOINT(X+XC,Y+1)THENS=USR(11111):IFXC=1THENXC=-1ELSEXC=1
1325 IFPOINT(X+XC,Y+1)IFPOINT(X-XC,Y+1)THENRESET(X,Y):GOTO1335
1330 RESET(X,Y):IFY=40RETURNELSEGOTO1310
1335 ' *** JACKPOT !!! ***
1340 IFY=8ORY=19THENS=SC+20:FORQ=1TO5:S=USR(0):NEXT
1345 IFY=26ORY=28THENS=SC+10:FORQ=1TO3:S=USR(0):NEXT
1350 IFY=33ORY=35THENBR=BR+3:S=USR(0)
1355 IFY=24THENS=SC+100:FORI=1TO99:S=USR(11091+ABS(50-I)):NEXT
1360 GOSUB1280
1365 ' *** PULL BACK THE PLUNGER ***
1370 GOSUB1530:X=78:Y=45:XP=0:GOSUB1495:BR=BR-1
1375 FORQ=XTOX+5:SET(Q,Y):NEXT:S=USR(2000+X)
1380 IFPEEK(15100)=64THENX=X+1:XP=XP+1
1385 IFPEEK(15100)=32THEN1400
1390 IFX=120THEN1400
1395 RESET(X-1,Y):GOTO1375
1400 FORQ=XTO72STEP-1:S=USR(2000+Q)
1405 SET(Q,Y):RESET(Q+7,Y):NEXT
1410 FORQ=72TO77:RESET(Q,Y):SET(Q+6,Y):NEXT
1415 GOTO1425
1420 ' *** START THE BALL ON IT'S WAY ***
1425 FORX=71TO12STEP-2:SET(X,Y):FORW=1TO5:NEXTW:RESET(X,Y):NEXT
1430 S=USR(11111)
1435 FORX=11TO3STEP-1:SET(X,Y):FORW=1TO5:NEXTW:RESET(X,Y):Y=Y-1:
NEXT
1440 S=USR(11111)
1445 FORY=36TO10STEP-1:SET(X,Y):FORW=1TO5:NEXTW:RESET(X,Y):NEXT
1450 S=USR(11111)
1455 FORX=3TO8:SET(X,Y):FORW=1TO5:NEXTW:RESET(X,Y):Y=Y-1:NEXT
1460 S=USR(11111)
1465 FORX=10TO24STEP2:SET(X,Y):FORW=1TO5:NEXTW:RESET(X,Y):NEXT

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```

1470 R=RND(10)+26+XP
1475 FORX=26TORSTEP2:SET(X,Y):FORQ=1TO5:NEXTQ:RESET(X,Y):NEXT
1480 XC=1:GOSUB1310
1485 GOTO1370
1490 ' *** HOW MANY BALLS LEFT TO SHOOT ? ***
1495 IFBR<1THEN1560ELSEIFBR>15THENBR=15
1500 FORQ=1TO3:PRINT@(Q*64+629),STRING$(10,32);:NEXT
1505 FORC=1TOBR:PRINT@BR(C),CHR$(188);:NEXT:RETURN
1510 ' *** SPIN ARRAY FOR BALLS REMAINING DISPLAY ***
1515 FORQ=1TO15:READA:BR(Q)=A:NEXT:RETURN
1520 DATA821,823,825,827,829,757,759,761,763,765,693,695,697,699
,701
1525 ' *** CHANGE THE BOARD A BIT FOR INTEREST ***
1530 FORY=3TO5:RESET(78,Y):NEXT
1535 IFRND(5)>3THENX=49:FORY=5TO8:RESET(X,Y):SET(46,Y):X=X-1:NEX
T
1540 IFRND(5)>3THENX=49:FORY=16TO19:RESET(X,Y):SET(46,Y):X=X-1:N
EXT
1545 IFRND(5)>3THENX=49:FORY=5TO8:RESET(46,Y):SET(X,Y):X=X-1:NEX
T
1550 IFRND(5)>3THENX=49:FORY=16TO19:RESET(46,Y):SET(X,Y):X=X-1:N
EXT
1555 RETURN
1560 CLS:IFSC>100THENW$="WOW !!"ELSEW$="WELL DONE!"
1565 PRINT"YOU SCORED ";SC;" POINTS."
1570 PRINT"AT A NICKEL FOR EVERY 10 POINTS THAT'S $";:PRINTUSING
"##.##";SC/1000*5
1575 PRINT"DON'T SPEND IT ALL IN ONE PLACE ..."
1580 PRINT:INPUT"TO PLAY AGAIN HIT =ENTER=";X$:RUN
1585 CLS:PRINTCHR$(23):PRINT"SUPER PACHINKO !"
1590 PRINT"( PACHINKO 3.3 )"
1595 PRINT:PRINT"BY -- JIM MAC LENNAN "
1600 PRINT"DEC. 1979"
1605 PRINT:PRINT"DO YOU NEED INSTRUCTIONS":INPUT"( Y OR N)";X$
1610 IFLEFT$(X$,1)="N"THEN1675
1615 CLS:PRINTTAB(24);"SUPER - PACHINKO":PRINT
1620 PRINT" THIS GAME IS PATTERNED AFTER THE FAMOUS PACHINKO M
ACHINES"
1625 PRINT"IMPORTED FROM THE ORIENT. IN THIS VERSION, YOU ARE GI
VEN FIFTEEN";
1630 PRINT"BALLS TO SHOOT. TO PULL BACK THE PLUNGER, HOLD DOWN T
HE ";CHR$(94);" KEY,"
1635 PRINT"AND TO RELEASE AND SEND THE BALL ON IT'S WAY, PRESS T
HE ";CHR$(93);" KEY."
1640 PRINT"THE FARTHER YOU PULL THE PLUNGER BACK, THE FARTHER TH
E BALL WILL";
1645 PRINT"TRAVEL ACROSS THE TOP BEFORE STARTING DOWN."
1650 PRINT" SCORING IS SET AT 10, 20, OR 100 POINTS, DEPENDING
ON WHICH"
1655 PRINT"TARGET YOU HIT. IF ONE OF THE TARGETS AT THE BOTTOM A
RE HIT, YOU";
1660 PRINT"WILL GET 3 EXTRA BALLS TO SHOOT. THE MOST BALLS YOU C
AN HAVE AT"
1665 PRINT"ONE TIME IS ONLY FIFTEEN. YOU CAN SEE HOW MANY BALLS
YOU HAVE"
1670 PRINT"LEFT AT THE BOTTOM RIGHT OF THE SCREEN."
1675 PRINT"FOR SOUND EFFECTS, PLUG THE CASSETE AUX JACK INTO AN
AUDIO AMP."
1680 INPUT"TO BEGIN HIT =ENTER=";X$:CLS:RETURN

MD>iORIsA- .<iORIsA- .
MKD$LPRIORIsAINKEY$
1690 I=VARPTR(S$):J=PEEK(I+1)+256*PEEK(I+2)
1695 FORK=JTOJ+26:READX:POKEK,X:NEXT
1700 IFPEEK(16396)=201POKE16526,PEEK(I+1):POKE16527,PEEK(I+2)ELS
ECMD"T":DEFUSRO=PEEK(I+1)+256*PEEK(I+2):POKE14308,0

```

```
1705 RETURN
1710 DATA205,127,10,77,68,62,1,105,211,255,45,32,253,60,105
1715 DATA211,255,45,32,253,13,16,238,175,211,255,201
1720 GOTO1720
1725 REMARKABLE, WASN'T IT ?!?!
```

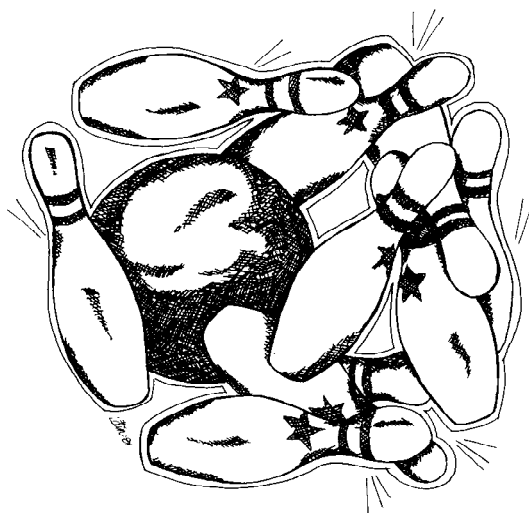


# TENPIN BOWLING

*By Frank B. Rowlett, Jr.*

Bowling, although its popularity seems to have diminished somewhat in recent years, is still the most popular participant sport in America. As the ad goes, there's just something about the thrill of "setting 'em up and knocking 'em down."

Although many bowling simulations have been written for the TRS-80®, this version, by far, comes closest of any to the real thing—this side of renting shoes! But, please, don't lob the ball!



```
10 REM * BOWLING * BY FRANK B. ROWLETT, JR. (10-7-78)
30 CLEAR300:DEFSTRB,G:DEFINTX-Z:GN="###":GA=CHR$(191):GP=GA+CHR$(
179)+GA:GL=STRING$(63,CHR$(140)):GB=CHR$(188):GT=CHR$(143):B1="
":B2=STRING$(5,CHR$(176)):B3=STRING$(5,GB):B4=STRING$(5,GA)
:B5=STRING$(5,GT):B6=STRING$(5,CHR$(131)):BP=" "
35 GOSUB400:INPUT"DO YOU WANT INSTRUCTIONS (YES OR NO):";G1:IFAS
C(G1)=89THENGOSUB1500
40 CLS:G2=CHR$(26):G1=G2+G2+CHR$(29):PRINT@22,CHR$(23);"BOWLING"
;G1;"USE THE ";CHR$(91);" TO ROLL BALL TO LEFT (UP)";G1;"USE TH
E ";CHR$(92);" TO ROLL BALL TO RIGHT (DOWN)";G1;"USE THE ";CHR$(
94);" TO ROLL BALL STRAIGHT AHEAD";G1;
50 INPUT"ENTER TO GO ON";G2:RANDOM
60 GOSUB900:FORX=0TO10:FORY=0TO1:XF(Y,X)=0:NEXTY:NEXTX:FORYP=1TO
10:FORYP=0TOYN:PRINT@64,CHR$(30);:IFYP=0PRINT@64,G1;:ELSEPRINT@6
4,G2;
70 PRINT" 'S TURN";:GOSUB200:PRINT@834," 'SPACE' BAR FOR NEXT BOWL
ER";:GX="":XY=0
90 GX=INKEY$:IFGX=""THEN90ELSEPRINT@834,STRING$(34," ");:NEXTYP:
NEXTYF:PRINT@64,"ENTER TO PLAY AGAIN";:INPUTG1:GOTO30
98 REM * SET MARK ON SCORE SHEET *
```

## THE SOFTSIDE SAMPLER

```

99 FORX=0TOXM:SET(X+24+10*YF,8+YP*6):NEXTX:RETURN
100 XP=10:IFPOINT(118,24)THENXP=XP-1
110 IFPOINT(108,27)THENXP=XP-1
120 IFPOINT(98,30)THENXP=XP-1
130 IFPOINT(118,30)THENXP=XP-1
140 IFPOINT(88,33)THENXP=XP-1
150 IFPOINT(108,33)THENXP=XP-1
160 IFPOINT(98,36)THENXP=XP-1
170 IFPOINT(118,36)THENXP=XP-1
180 IFPOINT(108,39)THENXP=XP-1
190 IFPOINT(118,42)THENXP=XP-1
192 RETURN
199 REM * PLAY *
200 GOSUB1100:XT=0:GOSUB800:XT=1:GOSUB100:IFPOINT(25+10*(YF-1),8
+YP*6)THEN350
220 IFPOINT(24+10*(YF-1),8+YP*6)=-1ANDPOINT(25+10*(YF-1),8+YP*6)
=0THENX=YF-1:GOSUB370:GOSUB380:GOSUB390
230 X=YF:GOSUB370:IFXP=10THENXM=1:GOSUB99:GOTO300
240 GOSUB800:Y=XP:GOSUB100:XP=XP-Y:X=YF:GOSUB370
250 IFPOINT(25+10*(YF-1),8+YP*6)THENX=YF-1:GOSUB370:GOSUB380:GOS
UB390
270 IFXP+Y<10THEN290ELSEXM=0:GOSUB99:IFYF<10THENRETURN
280 GOSUB1100:XT=0:GOSUB800:GOSUB100:X=YF:GOSUB370:IFXP=10THENFO
RY=0TO1:SET(122+Y,8+6*YP):NEXTY
290 X=YF:GOSUB380:IFYF=10THENRETURNELSEGOTO390
300 IFYF<10THENRETURNELSEGOSUB1100:XT=0:GOSUB800:XT=1:GOSUB100:X
=YF:GOSUB370
305 IFPOINT(25+10*(YF-1),8+YP*6)THENX=YF-1:GOSUB370:GOSUB380:GOS
UB390
307 IFXP=10THENFORY=0TO2:SET(122+Y,8+6*YP):NEXTY:GOTO330
310 GOSUB800:Y=XP:GOSUB100:XP=XP-Y:X=YF:GOSUB370:IFXP+Y=10THENSE
T(122,8+YP*6)
320 X=YF:GOTO380
330 GOSUB1100:XT=0:GOSUB800:XT=1:GOSUB100:X=YF:GOSUB370:IFXP<10T
HEN320
340 FORY=0TO1:SET(120+Y,8+6*YP):NEXTY:GOTO320
350 IFPOINT(25+10*(YF-2),8+YP*6)THENX=YF-2:GOSUB370:GOSUB380:GOS
UB390
360 X=YF-1:GOSUB370:GOTO220
370 XF(YP,X)=XF(YP,X)+XP:RETURN
380 PRINT@201+5*X+YP*128,,:PRINTUSINGGN;XF(YP,X);:RETURN
390 XF(YP,X+1)=XF(YP,X+1)+XF(YP,X):RETURN
399 REM * PRINT HEADING *
400 CLS:PRINT@26,"BOWLING":PRINT:RETURN
449 REM * GET AND ENTER KGY *
450 PRINTSTRING$(18," ");"(PRESS ";CHR$(34);"ENTER";CHR$(34);" T
O CONTINUE)";:INPUTG1:GOTO400
499 REM * BOUNCE BALL BACK AND FORTH *
500 X=ABS(Z)+1:Y=514
510 IFX>3THENX=X-3:Y=Y+64:GOTO510
530 ONXGOTO540,550:PRINT@Y,B2;:PRINT@Y+64,B4;:PRINT@Y+128,B6;:RE
TURN
540 PRINT@Y,B4;:PRINT@Y+64,B5;:IFZ=0RETURNELSEPRINT@Y-64,B1;:RET
URN
550 PRINT@Y,B3;:PRINT@Y+64,B4;:IFY=834THENRETURNELSEPRINT@Y+128,
B1;:RETURN
599 REM * ROLL BALL FIRST PART OF ALLEY *
600 FORX1=0TOX2:ONXGOTO620,630:GOSUB700:GOTO640
620 GOSUB710:GOTO640
630 GOSUB720
640 Y=Y+1:NEXTX1:RETURN
700 PRINT@Y," ";B2;:PRINT@Y+64," ";B4;:PRINT@Y+128," ";B6;:RETUR
N
710 PRINT@Y," ";B4;:PRINT@Y+64," ";B5;:RETURN
720 PRINT@Y," ";B3;:PRINT@Y+64," ";B4;:RETURN
799 REM * PREPARE BALL TO ROLL *
800 X2=34:GX="":FORZ=0TO16:GOSUB500:GX=INKEY$:IFGX=""THENNEXTZEL

```

```

SEGOTO830
810 FORZ=-16TO0:GOSUB500:GX=INKEY$:IFGX=""THENNEXTZELSEGOTO830
820 GOTO800
830 IFASC(GX)=91THEN1200
840 IFASC(GX)=10THEN1400
850 IFASC(GX)<>9THENNEXTZ
860 GOSUB600:X2=19:GOSUB600:PRINT@Y,B1;:PRINT@Y+64,B1;:IFX=3PRIN
T@Y+128,B1;
870 IFABS(Z)=2THENPRINT@758,BP;:PRINT@827,BP;ELSEIFABS(Z)=14THEN
PRINT@699,BP;:PRINT@758,BP;ELSEIFABS(Z)=5THENPRINT@571,BP;:PRINT
@827,BP;ELSEIFABS(Z)=11THENPRINT@955,BP;:PRINT@699,BP;
880 RETURN
899 REM * GET NAMES OF BOWLERS *
900 YN=0:G1="PLAYER":G2="":GOSUB400:INPUT"BOWLER NO. 1:";G1:IFLE
N(G1)>12THENG1=LEFT$(G1,12)
910 PRINT:PRINT"PLAYER NO. 2 (IF ONLY ONE PLAYER, HIT 'ENTER'):"
:INPUTG2:IFLEN(G2)>0THENYN=1:IFLEN(G2)>12THENG2=LEFT$(G2,12)
999 REM * SET SCREEN *
1000 GOSUB400:FORX=128TO384STEP128:PRINT@X,GL:NEXTX:PRINT@448,GL
:PRINT@960,GL;
1010 FORX=141TO191STEP5:PRINT@X,GB;:PRINT@X+64,GA;:PRINT@X+128,G
A;:PRINT@X+192,GA;:PRINT@X+256,GT;:NEXTX
1020 PRINT@448,GB;:PRINT@511,GB;:PRINT@960,GT;:POKE16383,143:FOR
X=512TO896STEP64:PRINT@X,GA;:PRINT@X+63,GA;:NEXTX
1040 FORX=1TO9:PRINT@395+5*X,RIGHT$(STR$(X),1);:NEXTX:PRINT@444,
"10";:PRINT@192,G1;:PRINT@320,G2;:RETURN
1099 REM * SET PINS UP *
1100 PRINT@571,GP;:PRINT@630,GP;:PRINT@689,GP;:PRINT@699,GP;:PRI
NT@748,GP;:PRINT@758,GP;:PRINT@817,GP;:PRINT@827,GP;:PRINT@886,G
P;:PRINT@955,GP;:RETURN
1199 REM * BALL TO BREAK LEFT *
1200 GOSUB600:FORX1=0TO9:X=X-1:IFX=0THENX=3:Y=Y-64:IFY<514PRINT@
Y+64,B1;:PRINT@Y+128,B1;:GOTO1280
1210 FORX2=0TO1:ONXGOTO1220,1230:GOSUB700:GOTO1240
1220 GOSUB710:GOTO1240
1230 GOSUB700:PRINT@Y+128," ";B1;
1240 Y=Y+1:NEXTX2:NEXTX1:PRINT@Y,B1;:PRINT@Y+64,B1;:IFX<3THEN125
0ELSEPRINT@Y+128,B1;
1250 IFXT=0ANDABS(Z)=13PRINT@886,BP;:PRINT@571,BP;:PRINT@827,BP;
:PRINT@955,BP;
1260 IFXT=0ANDABS(Z)=15PRINT@886,BP;:PRINT@827,BP;:PRINT@955,BP;
1270 IFXT=0ANDABS(Z)=14PRINT@827,BP;:PRINT@886,BP;:XY=1
1280 IFXY=1ANDABS(Z)=9ANDRND(3)=1THENPRINT@955,BP;
1299 REM * TEST FOR PINS DOWN *
1300 IFPOINT(118,25)ANDPOINT(123,25)THEN1310ELSEPRINT@571,BP;
1310 IFPOINT(108,28)ANDPOINT(113,28)THEN1320ELSEPRINT@630,BP;
1320 IFPOINT(98,31)ANDPOINT(103,31)THEN1330ELSEPRINT@689,BP;
1330 IFPOINT(118,31)ANDPOINT(123,31)THEN1340ELSEPRINT@699,BP;
1340 IFPOINT(88,34)ANDPOINT(93,34)THEN1350ELSEPRINT@748,BP;
1350 IFPOINT(108,34)ANDPOINT(113,34)THEN1360ELSEPRINT@758,BP;
1360 IFPOINT(98,37)ANDPOINT(103,37)THEN1370ELSEPRINT@817,BP;
1370 IFPOINT(118,37)ANDPOINT(123,37)THEN1380ELSEPRINT@827,BP;
1380 IFPOINT(108,40)ANDPOINT(113,40)THEN1390ELSEPRINT@886,BP;
1390 IFPOINT(118,43)ANDPOINT(123,43)THENRETURNELSEPRINT@955,BP;:
RETURN
1399 REM * BALL TO BREAK RIGHT *
1400 GOSUB600:FORX1=0TO9:X=X+1:IFX=4THENX=1:Y=Y+64
1405 IF(X=1ANDY>893)OR(X=3ANDY>833)PRINT@Y-64,B1;:PRINT@Y,B1;:PR
INT@Y+64,B1;:GOTO1480
1410 FORX2=0TO1:ONXGOTO1420,1430:GOSUB700:GOTO1440
1420 GOSUB710:PRINT@Y-64,B1;:GOTO1440
1430 GOSUB720
1440 Y=Y+1:NEXTX2:NEXTX1:PRINT@Y,B1;:PRINT@Y+64,B1;:IFX<3THEN145
0ELSEPRINT@Y+128,B1;
1450 IFXT=0ANDABS(Z)=3PRINT@630,BP;:PRINT@571,BP;:PRINT@699,BP;:
PRINT@955,BP;
1460 IFXT=0ANDABS(Z)=1PRINT@630,BP;:PRINT@571,BP;:PRINT@699,BP;

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1470 IFXT=0ANDABS(Z)=2PRINT@699,BP;:PRINT@630,BP;:XY=1
1480 IFXY=1ANDABS(Z)=7ANDRND(3)=1THENPRINT@571,BP;
1490 GOTO1300
1499 REM * INSTRUCTIONS *
1500 GOSUB400:PRINT"THIS GAME SIMULATES TEN-PIN BOWLING. IT ALL
OWS ONE BOWLER TO":PRINT"PLAY A PRACTICE GAME OR FOR TWO BOWLERS
TO COMPETE AGAINST EACH OTHER.":PRINT
1510 PRINT"A GAME CONSISTS OF TEN FRAMES (TURNS) FOR EACH BOWLER
. IF":PRINT"THERE ARE TWO BOWLERS, EACH GETS TO BOWL A FRAME BE
FORE GOING":PRINT"TO THE NEXT SET OF FRAMES.":PRINT
1520 PRINT"EACH BOWLER GETS UP TO TWO BALLS TO KNOCK ALL THE PIN
S DOWN":PRINT"DURING HIS FRAME. IF THE BOWLER KNOCKS ALL THE PI
NS DOWN WITH":PRINT"THE FIRST BALL IN THE FRAME, THIS IS CALLED
A ";CHR$(34);"STRIKE.":CHR$(34);" A"
1530 PRINT"STRIKE IS SCORED IN THE FRAME AS 10 PLUS THE NUMBER O
F PINS":PRINT"KNOCKED DOWN BY THE BOWLER WITH HIS NEXT TWO BALLS
. A STRIKE":GOSUB450
1540 PRINT"IS INDICATED IN A FRAME IN THE FOLLOWING MANNER: ";C
HR$(191);STRING$(3,CHR$(131));CHR$(143);CHR$(191);CHR$(26);STRIN
G$(6,CHR$(24));CHR$(191);" ";CHR$(191);CHR$(26);STRING$(6,CHR
$(24));STRING$(6,CHR$(131))
1550 PRINT:PRINT"IF THE BOWLER KNOCKS ALL THE PINS DOWN WITH TWO
BALLS IN THE":PRINT"FRAME, THIS IS CALLED A ";CHR$(34);"SPARE."
;CHR$(34);" A SPARE IS SCORED AS 10 PLUS":PRINT"THE NUMBER OF P
INS KNOCKED DOWN WITH THE BOWLER'S NEXT BALL."
1560 PRINT"A SPARE IS INDICATED IN A FRAME IN THE FOLLOWING MANN
ER: ";CHR$(191);STRING$(3,CHR$(131));CHR$(135);CHR$(191);STRIN
G$(6,CHR$(24));CHR$(191);" ";CHR$(191);STRING$(6,CHR$(24));STR
ING$(6,CHR$(131))
1570 PRINT"IF THE BOWLER DOESN'T KNOCK DOWN ALL THE PINS WITH HI
S TWO":PRINT"BALLS IN THAT FRAME, IT IS AN OPEN FRAME AND HE GET
S THE SCORE":GOSUB450
1580 PRINT"OF THE NUMBER OF PINS HE KNOCKED DOWN WITH THE TWO BA
LLS.":PRINT"IF A BOWLER GETS A STRIKE OR A SPARE IN HIS LA
ST FRAME, HE IS":PRINT"ALLOWED TO ROLL THE REMAINING BALLS TO GE
T HIS FINAL SCORE":PRINT"BEFORE THE NEXT BOWLER'S TURN."
1590 PRINT:PRINT"SCORING AND POSTING OF THE SCORE IS HANDLED BY
THE COMPUTER.":PRINT"THIS INFORMATION IS GIVEN ONLY TO ACQUAINT
YOU WITH THE":PRINT"SCORING METHODS.":PRINT
1600 PRINT"WHEN THE BALL IS READY TO BE THROWN, IT MOVES FROM SI
DE TO SIDE":PRINT"IN THE ALLEY. TO THROW THE BALL, YOU WAIT UNT
IL IT IS IN THE":PRINT"POSITION ACROSS THE ALLEY YOU WANT, AND T
HEN YOU PRESS ONE OF":GOSUB450
1610 PRINT"THE THREE ARROW KEYS THAT CONTROLS HOW YOU THROW THE
BALL DOWN":PRINT"THE ALLEY. WHEN THE ARROW KEY YOU SELECT IS PR
ESSED, THE BALL":PRINT"WILL THEN TRAVEL DOWN THE ALLEY TOWARDS T
HE PINS.":PRINT
1620 PRINT"THE THREE ARROW KEYS USED ARE:":PRINT:PRINT" ";CHR$
(94);" TO THROW THE BALL STRAIGHT DOWN THE ALLEY":PRINT:PRINT"
";CHR$(91);" TO CAUSE THE BALL TO BREAK TO THE LEFT (UP) AS I
T TRAVELS":PRINT" DOWN THE ALLEY"
1630 PRINT:PRINT" ";CHR$(92);" TO CAUSE THE BALL TO BREAK TO
THE RIGHT (DOWN) AS IT":PRINT" TRAVELS DOWN THE ALLEY":GOSU
B450
1640 PRINT"THE BOWLERS SCORE IS BASED ON HIS SKILL AT THROWING T
HE BALL":PRINT"IN THE RIGHT DIRECTION AT THE RIGHT TIME (THE SAM
E AS IN REAL":PRINT"BOWLING). THE ONLY CHANCE INTRODUCED IS WHE
N THE BOWLER HAS"
1650 PRINT"A ";CHR$(34);"7-10 SPLIT";CHR$(34);" (THE RIGHTMOST A
ND THE LEFTMOST PIN LEFT AFTER":PRINT"THE FIRST BALL). IF THE B
OWLER THROWS THE BALL CORRECTLY,":PRINT"HE HAS ONE CHANCE IN THR
EE OF KNOCKING BOTH PINS DOWN TO GET":PRINT"A SPARE IN THAT FRAM
E."
1660 PRINT:PRINT"ONE THING YOU SHOULD BE AWARE OF--AS IN REAL BO
WLING, A":PRINT"BOWLER CANNOT GET A STRIKE BY THROWING THE BALL

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TENPIN BOWLING

119

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STRAIGHT AHEAD.":PRINT"TO GET A STRIKE, THE BALL MUST BREAK TO T  
HE LEFT OR THE RIGHT.":PRINT  
1670 PRINT"--GOOD LUCK!":GOTO450
```

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