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About the Author

Having spent the last 10 years working as a stage electrician and audio technician for numerous Broadway shows, Mr. Saturn wanted to combine his firsthand knowledge of the workings of the world of professional Broadway theatre with his interest in personal computers. The result is "BROADWAY", a true-to-life simulation of the production of a Broadway musical.

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SoftSide Magazine is continually seeking original articles and software for publication. Imagination and variety in concept and content are our primary criteria for acceptance. Payment varies with length, suitability, ease of editing and quality.

Our policies with respect to software purchase are highly individualized, and offer the programmer several options, including one-time publication rights, outright purchase, and royalties on sale of prerecorded cassettes. Program submissions should use Radio Shack Level II Basic, should run in Level II and Disk BASIC, and may not employ coding techniques that cannot be accurately presented in a line listing, such as SYSTEM modules and "super graphics" or other hybrid methods. For more information, please write: **SoftSide**, PO Box 68, Milford, NH 03055.

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OUTGOING MAIL

It is beginning to become apparent that without significant advances in the protection of software against copying, top quality programs will be unavailable. We know of an outstanding machine language data base manager by one of the best known micro-computer programmers that will probably never be released for the TRS-80 due to the copying problem. Instead, it will be sold to business computer manufacturers to be included in the price of their system.

This has become a special problem for The Software Exchange as many of our best programmers have learned that the only way to get a fair return on their effort is to do custom programming or work on other computer systems. It is a terrible shame that the most popular computer in the world cannot offer a fair return to qualified programmers. For example, as one of the largest publishers of TRS-80 software, TSE paid only \$45,000 in royalties last year. Compared to our TSE payroll of \$60,000 last year, that seems significant, but we have an author whose typical fee for a single OEM program is \$50,000!

In our own case, copying of software reduces sales to the point that we have to turn down many programs because of reduced sales potential. In other cases, we must strictly limit the amount of time we spend checking for errors, with the result that a few of our programs go out with significant bugs.

We are investigating various methods of making tapes and disks hard to copy, although we hate to do it. It is a nuisance to load such tapes and the lack of a backup means that we would need to make provisions for replacements.

Probably the market that hurts the most is the educational market. Educators complain that most of the educational programs on the market are junk, but then a school with 34 computers buys one copy of a \$14.95 program, makes a copy for each machine, and several of the students make copies to take home. For that, the average school we have dealt with asks for a letter of specifications, and then asks for an educational discount and 90 day credit terms. Two weeks later we get a complaint from the school because the program won't do something that they wanted to do with it. The result is that we avoid educational applications like the plague, and the people who do deal with schools have to charge 20 times as much for a program to pay their costs. That is why you see Bell and Howell selling Apple computers under their own name: they have to charge more to make up for the selling costs of the educational market.

Another arena for concern is the local computer club. One of our authors told us of selling 5 copies of his program at one of the largest clubs in the country, and finding it all over the state a month later. We appreciate the fine features of the clubs. In fact, the same club just referred to has benefited TRS-80

users tremendously through its newsletter. To encourage clubs to work toward reducing misappropriation of software, we are offering clubs a 20% discount on purchases of TSE software. The only restriction is that at least five copies of each program must be purchased at the same time. Orders for 4 or fewer copies of a program on the same order must pay full price, but you still save a little on the handling charge.

My authorship of the Automated Diskette Directory has brought me into contact with a special breed of person that we call "The Collector". One person called me to complain that it took my program three days to sort his titles. After talking further, I discovered that he had two thousand programs acquired by copying anything brought into his store. We must be doing something wrong, for we have only half as many programs! We have met other collectors who make it a point of pride never to pay for software, or at least never to pay full price. The real damage of the collector is not in stealing the software, for just how many programs can one person become familiar with and use? The damage comes when these people act as a warehouse and give away (some even have the gall to sell it for their own profit) the pirated software.

The one practice that upsets me most about pirated software is when people manage to sell it to me as their own program. Many things I catch: for example, about once a month someone submits in Pillbox, which we published in October 1978. But sometimes I miss. We have gotten several complaints that January's Dante's Inferno is an only slightly modified copy of Roger Chafee's "Quest" from the July 1979 Byte. Also,

about the same time that I was criticizing the TRS-80 version of 101 Basic Computer Games, someone managed to sell me an unchanged version of a game from the original for SoftSide: Apple Edition. (Note to Dave Ahl — poetic justice?)

Of course, I realize that I am vainly protesting against human nature. Given a choice between short term personal profit and the long term interest of society, most people opt for themselves. These are the same people who loudly proclaimed last year that there was no energy crisis, the people who instead of raising taxes, borrow money to run the government so their children can pay the bills, and the politicians who are totally incapable of thinking past the next election.

I have come to the point where I have a deep appreciation for, and feel profound gratitude toward almost every one of our regular customers. Surely these must be a cut above the rest of humanity, the last bastion of integrity in a morass of egomania and advantage-seeking.

qwb



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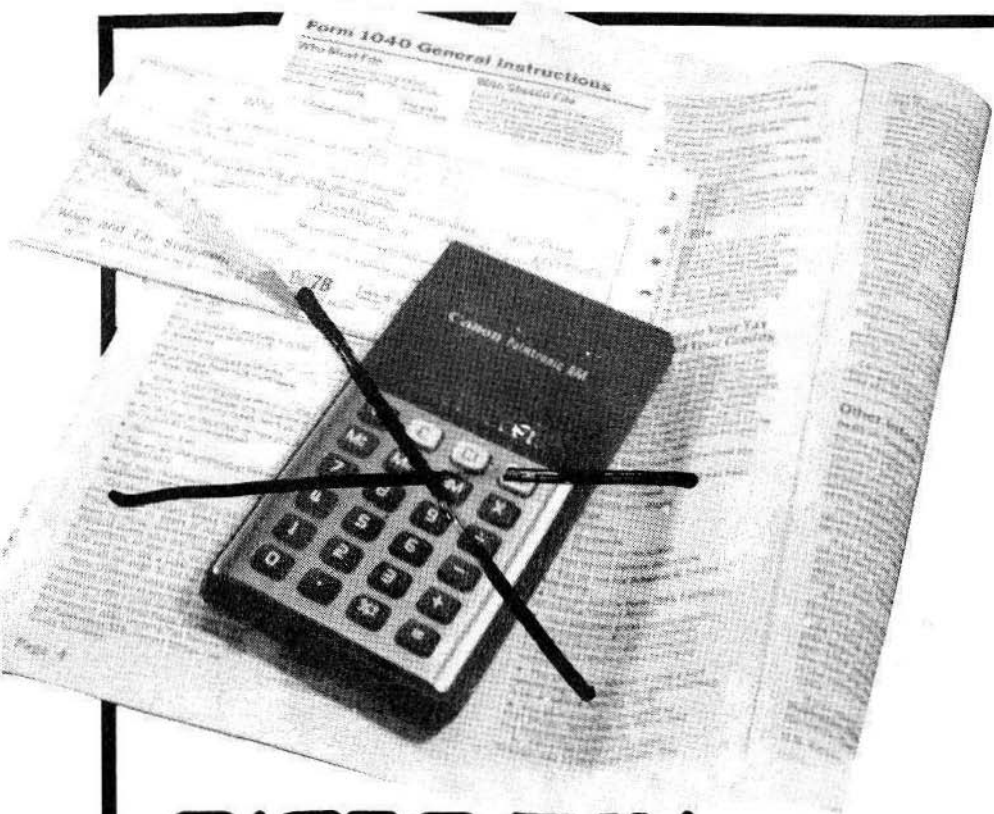


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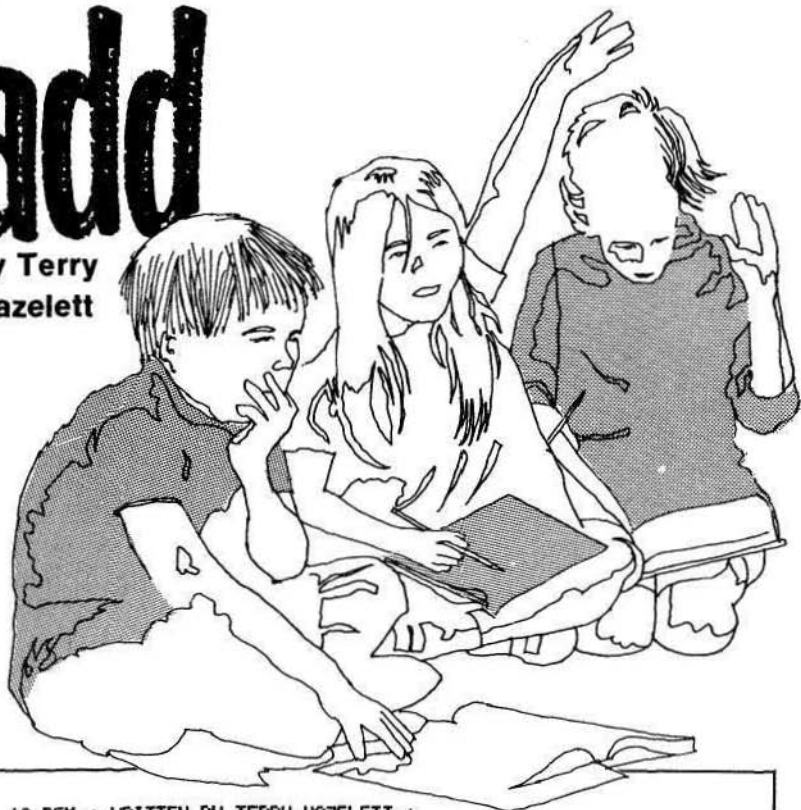
The Software Exchange

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On a rainy afternoon, put two of your little friends together. The TRS-80* will get right down to your youngster's level and beguile the child into learning some painless arithmetic, while under the impression he/she is having fun. Look at line 120. How's that for psychology?

add

by Terry
Hazelett



★

```
10 REM * WRITTEN BY TERRY HAZELETT *
30 REM * NOV 1979 *
40 W=0:R=0
50 DEFINT W
60 CLS:PRINTCHR$(23)
70 INPUT"WHAT IS YOUR NAME";N$
80 CLS:PRINTCHR$(23):INPUT"DO YOU WANT INSTRUCTIONS (Y/N)";Z$
90 IF Z$="N" GOTO 140
100 CLS:PRINTCHR$(23)
110 PRINT"HELLO ";N$:PRINT
```

```
120 PRINT"  
CAN YOU HELP ME? TODAY I HAVE  
LOST SOME OF MY NUMBERS AND I  
CAN'T FIND THEM. I DO HAVE THE  
ANSWERS BUT NOT THE PROBLEMS.  
PLEASE FILL IN THE RIGHT NUMBERSTO MAKE MY ANSWER CORRECT.  
THANK YOU!"
```

```
130 PRINT:INPUT"PRESS =ENTER= TO START";Z#  
140 RANDOM  
150 CLS:PRINTCHR$(23)  
160 PRINT:INPUT"WHAT IS THE HIGHEST NUMBER  
THAT YOU CAN HELP ME WITH";A1  
170 PRINT:INPUT"HOW MANY TIMES CAN YOU HELP ME";M  
180 CLS:PRINTCHR$(23)  
190 C=0  
200 A=RND(A1)  
210 B=RND(A)  
220 D=RND(2)  
230 Q=0  
240 ON D GOSUB 270 ,310  
250 P=524:GOSUB 410  
260 GOSUB 340  
270 PRINT@524," ? + ? + ? =";A  
280 PRINT@68," # ";C+1  
290 Q=1  
300 RETURN  
310 PRINT@524," ? + ? =";A  
320 PRINT@68," # ";C+1  
330 RETURN  
340 FOR I=1 TO 5  
350 PRINT@P," "  
360 FOR N=1 TO 50:NEXTN  
370 PRINT@P," ? "  
380 FOR N=1 TO 50:NEXT N  
390 NEXT I  
400 RETURN  
410 PRINT@640,"WHAT IS THE 1ST NUMBER";:GOSUB 340 ;  
420 PRINT@688,"";:INPUT E  
430 PRINT@P-2,E
```

```

440 P=P+12
450 PRINT@688, "      ":PRINT@640, "WHAT IS THE 2ND NUMBER":GOSUB
340 ;
460 PRINT@688, "      ":INPUT F
470 PRINT@P-2, F
480 P=P+12
490 IF D=1 GOTO 510
500 IF D=2 THEN H=E+F: GOTO 550
510 PRINT@688, "      ":PRINT@640, "WHAT IS THE 3RD NUMBER":GOSUB
340 ;
520 PRINT@688, "      ":INPUT G
530 PRINT@P-2, G
540 H=E+F+G
550 FOR I=1 TO 1000:NEXT I
560 IF H=R GOTO 640
570 PRINT:PRINT"I'M SORRY ";N$;"
BUT THAT IS WRONG!
PLEASE TRY AGAIN":FOR I=1 TO 1000:NEXT I
580 M=M+1: S=S+1
590 IF S>1 THEN M=M-1
600 IF S>1 PRINT:PRINT"YOU HAVE MISSED ";S;" TIMES
MAY I HELP YOU (Y/N)": INPUT Y$
610 IF Y$="Y" GOSUB 960
620 CLS: PRINTCHR$(23)
630 GOTO 240
640 S=0:CLS:PRINTCHR$(23)
650 R=R+1
660 RANDOM
670 G=RND(4): ON G GOSUB 880 ,900 ,920 ,940
680 FOR N=256 TO 319
690 PRINT@N,R$
700 NEXT N
710 FOR N=384 TO 447
720 PRINT@N, "-";N$
730 NEXT N
740 FOR I=1 TO 1000:NEXT I
750 CLS:PRINTCHR$(23)
760 C=C+1: IF C=H GOTO 200
770 CLS:PRINTCHR$(23)
780 R=R-M

```

```

790 PRINT#
800 PRINT"YOU HELPED ME WITH ";M;" PROBLEMS"
810 PRINT:PRINT"YOU GOT ";R;" RIGHT AND ";W;"WRONG"
820 W=(R/M)*100
830 PRINT:PRINT"YOUR SCORE IS ";W;" %"
840 PRINT:INPUT"DO YOU WANT TO TRY AGAIN (Y/N)";Z$
850 IF Z$="N" PRINT"BYE FOR NOW":END
860 W=0:R=0:IF Z$="Y" CLS:PRINTCHR$(23):GOTO 160
870 IF Z$<"Y" OR Z$>"N" PRINT"INPUT ERROR":GOTO 840
880 R$="-ALL RIGHT"
890 RETURN
900 R$="-WAY TO GO"
910 RETURN
920 R$="-MURRAY FOR"
930 RETURN
940 R$="-THAT'S RIGHT"
950 RETURN
960 CLS:PRINTCHR$(23)
970 PRINT"NOW I REMEMBER!"
980 PRINT"LET ME SHOW YOU HOW ";N$
990 T=0:IF 0=1 THEN 1030
1000 J=RND(A):K=RND(A)
1010 IF J+K=A GOTO 1060
1020 GOTO 1000
1030 J=RND(A):K=RND(A):L=RND(A)
1040 IF J+K+L=A GOTO 1100
1050 GOTO 1030
1060 U$="      ### : ### = ###"
1070 PRINTUSING U$;J,K,A
1080 T=T+1
1090 IF T=4 GOTO 1130 ELSE 1000
1100 U$="### + ### + ### = ###"
1110 PRINTUSING U$;J,K,L,A
1120 T=T+1:IF T=4 GOTO 1130 ELSE 1030
1130 PRINT"
HERE ARE FOUR WAYS TO FIND MY
NUMBERS. STUDY THEM REAL HARD
AND THEN I'LL LET YOU TRY AGAIN"
1140 PRINT:INPUT"PRESS =ENTER= TO TRY AGAIN";Z$
1150 RETURN

```

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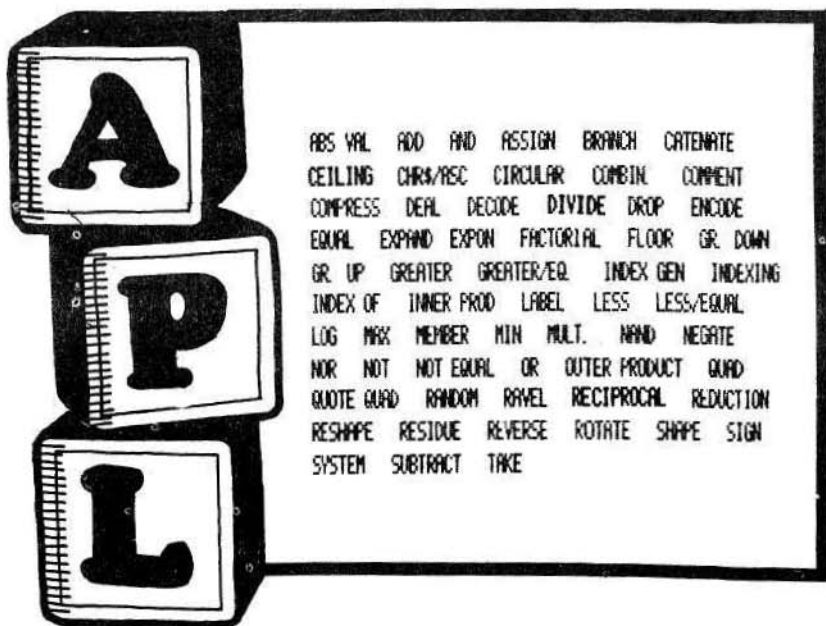
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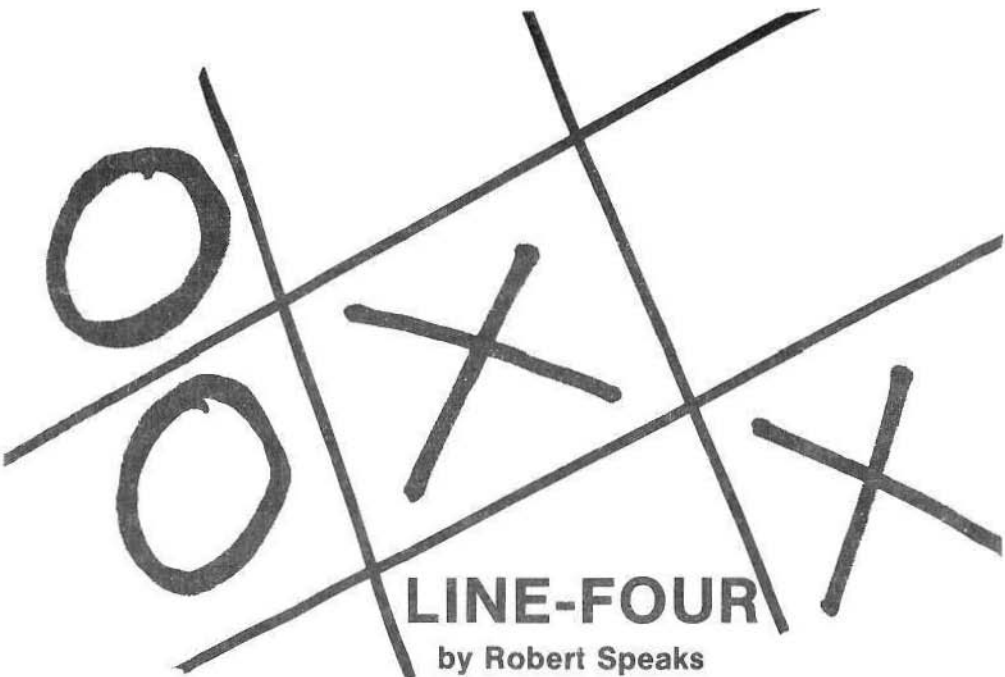
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LINE-FOUR

by Robert Speaks

LINE-FOUR is a two player game of "tic-tac-toe" style strategy which can be enjoyed by kids and adults alike. The object is simply to line four of your pieces up in a straight row either vertically, horizontally or diagonally at any location on the board. You must, of course, keep a watchful eye on your opponent as he will be trying desperately to get four in a row before you.

To move you must first decide whether your move is to be defensive or offensive. Your offense must be carefully planned out in advance, but flexible in case of unexpected events. Presumably your opponent is not going to simply let you line four men up in a row without some attempt to sabotage your plans, so you must force your opponent to place his men where you need them. You do this by lining up three of your men, leaving your opponent no choice but to fill the fourth spot to block

you from winning. If you can be subtle and clever in doing this you stand a good chance of succeeding. As the game progresses into the upper levels watch out for possible two-way runs for yourself and by your opponent — they end a game quickly!

Defensively you must try to anticipate your opponents plans and thwart them at the last minute. This not only results in wasted moves for your opponent, but allows you time to build on your own master plans while your opponent thinks he's getting away with something. (Hopefully he hasn't figured out what you're up to yet and is not waiting to pounce on you.)

When it's your turn you must enter a number one to nine which corresponds to the column in which you want your man placed. Your man will appear at the top of that column and move downward

until at the bottom or until its path is blocked by another man. If you attempt to place a man in a row which is already full, a message to that effect will be displayed and you will be given another chance. Plays continue alternately until someone gets four in a row or all the board positions have been played and the game declared a tie. After each player's turn the computer will check for a win, and if there is one, the victorious player is announced and the scores updated.

At this point you are given a choice between depressing the CLEAR key which resets the scores and begins the match over with 0 going first, or, depressing the ENTER key thus continuing the match and keeping the scores. The computer will automatically rotate the player going first with each game to minimize the advantage to either player; thus you use the same pieces (X's or O's) for the entire match. You may play as many games in a match as you wish — there is no set limit.



```

1 REM *****
  * LINE - FOUR *
  * BY ROBERT SPEAKS *
  *****
5 'VARIABLE LISTING -
      A,B          = LOOPS
      K            = 15360 (POINTER)
      L            = TIMING LOOP
      H            = HORIZONTAL INCREMENT
6 '  V            = VERTICAL INCREMENT
      P            = CURRENT PLAYER POINTER
      O            = ORDER OF FIRST PLAYER
      T            = # TURNS USED EACH GAME
      C,M,X,Y      = TEMPORARY WORKING STORAGE
7 '  P(1,1)-P(6,9) = PLAYING BOARD POSITIONS
      S(1),S(2)    = PLAYERS SCORES
      C$           = CLEAR STRING
      I$, I        = TEMPORARY INPUT STORAGE
      M$(1),M$(2) = GAME PIECES

10 '
                                ** HOUSEKEEPING **

20 CLS
30 DEFINT A-Z : DIM P(6,9),S(2),M$(2)
40 O=0 : K=15360
50 C$=STRING$(3,32)

```

```
60 M$(1)=CHR$(191)+CHR$(179)+CHR$(191)
70 M$(2)=CHR$(179)+CHR$(140)+CHR$(179)
80 '
```

**** INSTRUCTIONS ****

```
90 PRINT"
```

LINE-FOUR IS A TWO PLAYER GAME OF STRATEGY WHICH CAN BE ENJOYED BY KIDS AND ADULTS ALIKE. THE OBJECT IS SIMPLY TO LINE FOUR OF YOUR PIECES UP IN A ROW HORIZONTALLY, VERTICALLY OR DIAGONALLY BEFORE YOUR OPPONENT DOES.

```
100 PRINT"
```

THE GAME IS PLAYED ON A GRID OF SIX ROWS AND NINE COLUMNS. TO MOVE YOU ENTER ONE OF THE NINE (1-9) COLUMN NUMBERS. YOUR MAN WILL APPEAR AT THE TOP OF THAT COLUMN AND MOVE DOWNWARD UNTIL AT THE BOTTOM OR STOPPED BY ANOTHER MAN.

```
110 PRINT"
```

PLAY ALTERNATLY CONTINUES UNTIL SOMEONE GETS FOUR IN A LINE OR ALL THE POSITIONS HAVE BEEN PLAYED AND A TIE IS DECLARED. THE COMPUTER WILL ROTATE THE PLAYER GOING FIRST EACH GAME SO YOU USE THE SAME PIECE (X OR O) THROUGHOUT. "

```
120 PRINT@22,CHR$(34)"LINE-FOUR"CHR$(34);
```

```
130 PRINT@1003,"=ENTER= TO RESUME...";
```

```
140 I$=INKEY$ : IF I$<>CHR$(13) THEN 140
```

```
150 '
```

**** DRAW GAME BOARD ****

```
160 PRINT@64,CHR$(31);
```

```
170 FOR A=65TO897 STEP128
```

```
180 FOR B=ATO A+52
```

```
190 POKE K+B,140
```

```
200 NEXT B, A
```

```
210 FOR A=64TO118 STEP6
```

```
220 POKE K+A,188
```

```
230 FOR B=A+64TO A+704 STEP64
```

```
240 POKE K+B,191
```

```
250 NEXT B
```

```
260 POKE K+B,143
```

```
270 NEXT A
```

```
280 FOR A=1TO9
```

```
290 PRINT@60+A*6,;A;
```

```
300 NEXT
```

```
310 PRINT@249,"SCORE";
```

```

320 PRINT@312,STRING$(7,131);
330 PRINT@378,M$(1); : PRINT@570,M$(2);
340 /

          ** SET-UP NEW GAME **
350 PRINT@442,USING"##",5(1);
360 PRINT@634,USING"##",5(2);
370 PRINT@960,CHR$(31),M$(0+1)", GOES FIRST THIS GAME...";
380 GOSUB 910
390 P=0 : T=0
400 /

          ** NEXT PLAYER'S TURN **
410 P=P+1 : IF P>2 P=1
420 T=T+1 : IF T=55 PRINT@960,CHR$(31);"THIS GAME HAS ENDED IN
  A TIE..."; : GOSUB 910 : GOTO 820
430 /

          ** INPUT MOVE & POSITION MAN **
440 PRINT@960,CHR$(31),M$(P)", WHAT IS YOUR MOVE ?";
450 I$=INKEY$
460 I$=INKEY$
470 I=VAL(I$) : IF I=0 THEN 460
480 FOR A=1TO6
490 IF P(A,I)>0 AND A=1 PRINT@960,CHR$(31);"SORRY, THAT ROW I
  S FULL..."; : GOSUB 910 : GOTO 440
500 IF P(A,I)>0 THEN 550
510 IF A<1 PRINT@I*6+(A-1)*128-4,C$;
520 PRINT@I*6+A*128-4,M$(P);
530 GOSUB 920
540 NEXT
550 W=A-1
560 P(W,I)=P
570 /

          ** CHECK FOR WIN **
580 FOR A=1TO4
590 IF A=1 H=1:V=-1
600 IF A=2 H=1:V=0
610 IF A=3 H=1:V=1
620 IF A=4 H=0:V=1
630 FOR B=3TO0 STEP-1
640 X=W-V*B : Y=I-H*B : C=-1

```

```

650 IF X<1 OR X>6 OR Y<1 OR Y>9 THEN 690
660 C=C+1
670 IF X+C*Y<1 OR X+C*Y>6 OR Y+C*H<1 OR Y+C*H>9 THEN 690
680 IF P(X+C*Y, Y+C*H)=P THEN IF C=3 THEN 720 ELSE 660
690 NEXT B, A
700 GOTO 410
710 '

** THE WINNER !!! **
720 PRINT@960, CHR$(31); "+++ CONGRATULATIONS "M$(P)" !!! ***
THE WINNER !!!";
730 S(P)=S(P)+1 : PRINT@442, USING"##"; S(1);
740 PRINT@634, USING"##"; S(2); : GOSUB 910
750 '

** OFFER NEXT GAME **
760 PRINT@960, CHR$(31); "=ENTER= TO CONTINUE / =CLEAR= TO RESET
SCORES";
770 I$=INKEY$
780 I$=INKEY$
790 IF I$=CHR$(31) S(1)=0 : S(2)=0 : O=-1 : GOTO 820
800 IF I$<>CHR$(13) THEN 780
810 '

** CLEAR GAME BOARD **
820 FOR A=1TO6
830 FOR B=1TO9
840 PRINT@B*6+A*120-4, C$;
850 P(A, B)=0
860 NEXT B, A
870 '

** ROTATE FIRST PLAYER **
880 O=O+1 : IF O>1 O=0
890 GOTO350
900 '

** TIMING SUBROUTINE **
910 FOR L=@TO2500 : NEXT
920 PRINT@960, CHR$(31);
930 FOR L=@TO100 : NEXT : RETURN
999 'END

** END OF PROGRAM **

```

ROS

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JANE

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INPUT

A COLUMN OF YOUR LETTERS

The Scott Adams Backgammon is one of the best I have played. It is a little slow in making its moves but its moves are much more logical than the other backgammon versions I have seen.

There is only one slight problem. The location of the break key is right next to the dash key which is used in entering moves and it is very distracting, in the middle of a tight game, when the break key is hit by mistake.

The solution I have used came from your January 1980 edition under Programming Hints. I added the following line: 4 POKE 16396, 23

This line disables the break key and eliminates the grief and hair-pulling of an interrupted game. Now the only grief and hair-pulling comes when the computer rolls itself double sizes!

Howard S. Gilman, Jr.
College Park, Maryland

I am amazed that no one has yet applauded David White's Treasure Dungeon II for the ease with which it lends itself to the formation of "new" adventures.

I now have **four** running adventures (counting the original). In fact I drab out of monsters and had to go out and buy E. Gary Gygax's "Monster Manual" (from the famed DRAGONS & DUNGEONS).

John D. Williams
Tampa, FL

I only yesterday received the back issue of SoftSide dated September 1979, and had not seen previously the article TREASURE DUNGEON-TUTORIAL. It is as fine an example of a well written, documented program as I've ever seen in this or any other magazine. The section oriented routine/purpose/process documentation is the mark of not only a good writer (and I suspect a professional), but of damn good design. Not only are the variables listed and named, but the naming (PA for player attack factor, NM for number of monsters, etc) is clear and easily remembered. It is a joy to find such a well thought-out, easily understood program. My hat's off to the author and the magazine.

Ian Chadwick
Toronto, Ontario, Canada

Gentlemen:

I have a few suggestions which may improve your magazine. One of these ideas is "programming puzzles". The one you had was very good, although you neglected to publish the answer. Another idea might be a monthly contest. A graphics contest (draw the best picture) or a program contest (best submitted program of the month) would improve your already excellent magazine. Suggested prizes would be free or discounted software or subscription rates.

Alan Simon
Bergenfield, NJ

Dear Sirs:

In your November 1979 issue of **SoftSide**, you mentioned that "...we were reluctant to publish a program that was not fully original." In keeping with this sentiment, I feel obliged to tell you that your "Dante's Inferno" program, January 1980 **SoftSide** issue, was in a large part stolen from Roger Chaffee's "Quest", **Byte** magazine, July 1979. All but a few of the descriptions have been changed, and the program suitably modified for the TRS-80, but it's still obviously the same material. The very least that could have been done would be to have credited Mr. Chaffee for his work, considering that the greater portion of the program is his.

Thomas Hanlin III
Springfield, Virginia

I have a helpful hint for disk users: If your disk drive turns on for no explainable reason, for example, if you are programming in Disk Basic and the computer locks up and turns on the drive, make sure that the cable that connects the CPU to the expansion interface is securely in place.

I also have a comment about your magazine. It is terrific. I await each issue eagerly to find out what you put in it this month. Keep up the good work!

Matt Proudfoot
A 13 year old programmer
Munster, IN

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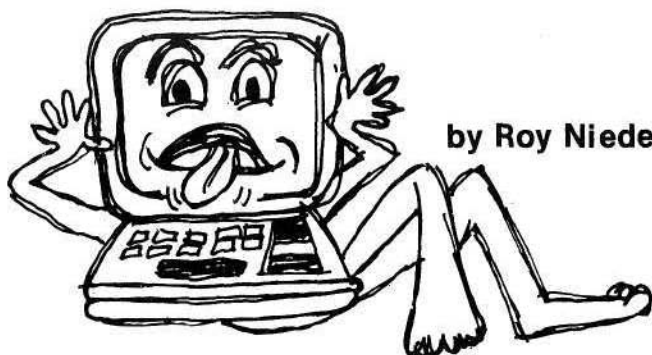
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SYSTEM EMULATOR



by Roy Niederhoffer

Are you looking for a good April Fool's day gag to play upon your fellow programmers? This program will drive them nuts—if they haven't read this month's SoftSide. Even then, it is a great deal of fun to play with, though typing it in does take away most of the mystery.

The lines that look like super graphics or hybrid programming are phony. Just type them in, letter by letter, from the keyboard.

Now you too can have a computer that works just like the new IBM 4341!



```
0 CLEAR2000:DEFINT A-Z:RANDOM.CLS
1 RANDOM.M2=RND(15572)
2 POKE16396,23
3 P1$=STRING$(2,27)+CHR$(29):A2$=CHR$(8):R=21:DIMR$(R):Q$(1)="THE
SUN SHINE... LET THE SUN SHINE... THE SUN...
SHINE IN...":Q$(2)="IT BE... LET IT BE... LET IT BE.":ONERRORG
OTO61000
4 DIMS$(100):A$="IT HAS BEEN THOROUGHLY DEBUGGED ANSAVE":B$="LOAD
LOADGETKILLCCSAVELOADMKDEFUSRDEFININIRUNRUNRUHRUNRUNRUNCVI
CVIALDCJD
5"
5 READS$(W).IFS$(W)="+*"THEN 6ELSEW=W+1:GOTO5
6 PRINT@,STRING$(64,191):PRINT@960,STRING$(63,191):POKE16383,
191:FOR T=64 TO 896 STEP 64:PRINT@T,CHR$(191):CHR$(254):CHR$(191):NE
XT:PRINT@79,"A L I E N          I N V A S I O N":PRINT@330,"A RE
```

```

AL TIME GRAPHICS GAME BY ROY NIEDERHOFFER";
7 FORT=1T02000:NEXT:PRINT@399,"THIS GAME FEATURES SOUND EFFECTS,
  ANIMATION";:PRINT@463,"AND MANY OTHER PROGRAMMING TECHNIQUES, ";
PRINT@527,"DESIGNED TO MAKE THIS GAME BOTH FUN AND EXCITING. ";:P
RINT@591,A#:B#:FORT=1T01000:NEXT:FORW=1T010:READ#(W):NEXTW:N=RN
8 M=RND(552)*02:N=RND(10):FORU=1T010:S$(U)=CHR$(RND(59)+32):NEXT
U:FORT=1TOR:READR$(T):NEXT:FORT=0T09:READH$(T):NEXT
9 PRINT"?":A#(N):" ERROR IN ";M
10 N=RND(10):M=RND(3270*10):IFRND(10)=1GOTO9ELSE#="" :PRINT"READ
Y
>":CHR$(127);
11 D$=""
12 B$="PRINT"+CHR$(34)
13 A$="" :D$=""
20 A#=INKEY$:IFAL$@*" ANDPEEK(14537)=4THENGOSUB7000ELSEIFA#=""T
HENZ0ELSEIFA#=CHR$(9)PRINTCHR$(8);:GOTO20ELSEIFA#=CHR$(9)PRINTS
TRING$(2,8):CHR$(127):D$=LEFT$(D$,LEN(D$)-1):GOTO20ELSEIFA#=CHR
$(13)GOTO100ELSEPRINTA$#CHR$(95);
22 IFA#=CHR$(31)ORA$=CHR$(30)CLS:PRINTCHR$(95):GOTO20
29 IFA#<"2"ANDA$#" "D$=D#+A#ELSE#=""
30 A1$="" :GOTO20
100 IFD$=""PRINTCHR$(8);"
>":CHR$(95),D$="" :GOTO20
101 ILEFT$(D$,1)=""?"D$="PRINT"+RIGHT$(D$,LEN(D$)-1)
102 PRINTA2#:D2#=LEFT$(D$,2):D3#=LEFT$(D$,3):D4#=LEFT$(D$,4):D5#
=LEFT$(D$,5):D6#=LEFT$(D$,6)
111 TFD$="LIST"ORD$="LIST0"OK$="LIST 0"THENGOSUB5000:PRINTCHR$(
8);"
":PRINT"CLS:LOADMERGEKILLCNDCHDILKEYFRECHLSETCLOSEFIELDGETKIL
LNAMEDOPENPRINTPUTRESEMERGELORDSAVE
1STRINGPEEKPOKETRONTRON":CHR$(131),"GET":CHR$(132):"KILL".PRINT"
45767PEEKPEEK
"ELSE117
112 IFRIGHT$(D$,1)@ "T"THENPRINT.GOTO10ELSEFORT=1TORND(40)STEPND
D(3)
113 PRINTT+RND(400);
114 FORX=1TORND(50):PRINTS$(RND(34));:NEXTX:IFPEEK(14537)=4PRINT
"
BREAK":GOTO10

```

```

115 IFRND(85)=4THENPRINT@RND(3)*64,"",ELSEIFRND(8)=3THENPRINT@
HR$(28)ELSEIFRND(5)=5THENPRINTCHR$(28);
116 PRINT.NEXTT.GOTO10
117 REM
180 IFD$="CLOAD"GOSUB50000.PRINTCHR$(8):GOSUB55000:OUT255,243:GO
TOL0GOTO10
182 F=LEN(D$):IFD$="?MEM"ORD$="?" MEM"ORD$="PRINTMEM"ORD$="PRINT
MEM"THEMGOSUB50000:PRINTCHR$(8):PRINT:PRINTM2:GOTO10
183 P4$="PRINT"+CHR$(34):IFD6$=P4$PRINTMID$(D$,7,LEN(D$)-7):GOTO
10
200 IFD3$="NEW"THEN400ELSEONRND(15)GOTO210,220,230,240,250,260,
270,280,290,300,310,320,330,340,350
210 PRINT"

```

ANDROID: NVM

BY LEO CHRISTOPHERSON

NOTICE: IT IS ILLEGAL, UNLAWFUL AND UNFAIR TO COPY THIS PGM.
IT CHEATS THE AUTHOR OUT OF NEEDED ROYALTIES AND IS
AGAINST THE LAW."

```

212 INPUT"HIT ENTER TO CONTINUE":A#:CLS:RUN
220 CLS:PRINT"          COMMODORE BASIC 7167 BYTES FREE":FOR
T=1T09:PRINT@64,CHR$(143),.FORY=1T0300:NEXT,PRINT@64,CHR$(30),.F
ORY=1T0300:NEXTY,T:CLS:GOTO10
230 CLS:PRINT"          SARGON CHESS

```

BY KATHE AND DAN SPRACKLEN
TRS-80 ADAPTION BY PAUL LOHNES

```

CARE FOR A GAME?":INPUT#
232 INPUT"WOULD YOU LIKE TO PLAY WHITE OR BLACK";A#:INPUT"SELECT
DIFFICULTY LEVEL (1-6)":A#:CLS:PRINT"DO YOU THINK SARGON IS A G
OOD PLAYER???"
IF YOU DO...      THERE IS A NEW ALTERNATIVE...
  YES...          IT'S...
234 PRINT"          R A N D O M          C H E S S!"
THIS NEW PROGRAM FROM T.S.E. FEATURES RANDOM CHESS MOVES. ON THE
USCF RATING SCALE OF 1 (TERRIBLE) TO 2800 (GRANDMASTER), RANDOM
CHESS IS RATED 76. THIS STRONG PLAY ALLOWS ANY AVERAGE SECOND
GRADER":

```

```

236 PRINT" TO HAVE A CHALLENGING GAME. GREAT FOR PEOPLE WHO
NEHAVE NEVER SEEN A CHESS BOARD. IT IS A GREAT EGO BOOSTER AS
IT NEVER! THATS RIGHT NEVER WILL ATTACK, PROTECT ITS KIUNG,
TAKE YOUR PIECES, OR CAPITALIZE ON YOUR BLUNDERS. ".PRINT
238 PRINT"ONLY $45.37 FROM T. S. E".GOTO10
240 PRINT$(RAND(R)):GOTO10
250 PRINT"OLD".GOTO10
260 CLS.GOTO10
270 CLS.GOTO10
280 CLS:REMEND
290 CLS:PRINT"YOU ARE IN A FOREST
VISIBLE ITEMS - TREES
OBVIOUS EXITS: NORTH EAST SOUTH WEST
=====
***** TELL ME WHAT TO DO?":INPUTA$:PRINT"I'M NOT SURE I UND
ERSTAND WHAT YOU MEAN"
292 PRINT"***** TELL ME WHAT TO DO?":INPUTA$:PRINT"GOOD JOB
. YOU HAVE COMPLETED YOUR ADVENTURE".GOTO10
300 CLS:INPUT"MEMORY SIZE":A$:GOTO10
310 PRINT$(RAND(R)):GOTO10
320 GOSUB8000.PRINT"ARE YOU CRAZY? I CERTAINLY WILL NOT NEW TH
IS PROGRAM!":GOTO10
330 CLS:GOTO10
340 PRINT"THE ALIEN INVASION HAS BEGUN!!!":GOTO10
350 GOTO10
400 IFD3$="AND"PRINT$(RAND(R)):GOTO10
410 IFD5$="CLEAR"PRINT" ".CHR$(27):" TONIGHT, LOW AROUND 50
SUNNY AND WARM
TOMORROW MORNING BUT CLOUDS MOVING IN TOWARD EVENING.
HIGH AROUND 75. SHOWERS TOMORROW NIGHT.
- THIS HAS BEEN A TRS-ACCUEATHERPER FORECAST
":GOTO10
420 IFD5$="CLOSE"PRINT" ".CHR$(27):" THE DOOR OR THE WINDOW
?":GOTO10
430 IFD3$="CLS"FORT=1T016:PRINTSTRING$(64,191).NEXT.GOTO10
432 IFD5$="CSAVE"FORT=1T02000:OUT255,247:NEXT:GOTO10
434 IFD3$(">")"RUN"THEN40ELSEONRND(5)GOTO435,436,437,438,439
435 PRINT"WHY NOT WALK".GOTO10
436 PRINT"NO. MY FEET HURT. ":GOTO10

```



```

V MOUTH. BLESS MAH EARS. I AIN'T BE LIKIN DIS. I BE GON STOP.
  :GOTO10
720 IFD4$="KILL"PRINT"SAOIST":GOTO10
730 IFD3$="LET"PRINT"  ",CHR$(27);"  ",0$(RND(2)).GOTO10
740 IFD4$="LSET"PRINTR$(RND(R)):GOTO10
750 IFD4$="LINE"PRINT"?ID ERROR":GOTO10
760 IFD2$="MK"GOSUB8000.PRINT"WHEW. ":GOTO10
770 IFD4$="NAME"PRINT"  ",CHR$(27);"  "RANK AND SERIAL NUMBER!!
ACH TUNG!":GOTO10
780 IFD4$="NEXT"PRINT"?NF ERROR":GOTO10
790 IFD3$="NOT"PRINTSTRING$(2,27);CHR$(29);"TO BE OR
>NOT
TO BE... THAT IS THE QUESTION.":GOTO10
800 IFD2$="ON"PRINT"OFF";RIGHT$(D$,LEN(D$)-2):GOTO10
810 IFD4$="OPEN"IFRND(2)=1PRINT"  ",CHR$(27);"YOUR MOUTH AND
CLOSE YOUR EYES AND I
WILL GIVE YOU A ROUSING 20,000 VOLT ELECTRIC SHOCK!":GOTO10ELSEP
RINT"GOOD IDEA. IT'S KIND OF STUFFY IN HERE.":GOTO10
820 IFD3$="OUT"PRINTR$(RND(R)):GOTO10
830 IFD4$="PEEK"PRINT"YOU PERVERT! DO I PEEK INSIDE YOU?":GOTO1
0
840 IFD4$="POKE"GOSUB8000.PRINT"HEY! I'M TICKLISH.":GOTO10
850 IFD5$="POINT"PRINTR$(RND(3)+3);"
POINTING IS RUDE. "
860 IFVAL(D5$)>0GOTO10
870 IFD3$="PUT"PRINTR$(RND(R)):GOTO10
871 IFLEFT$(D$,10)="WHO IS THE"PRINT"APPLE II . . . . OF COURS
E!":GOTO10
872 IFLEFT$(D$,10)="WHAT IS YO"PRINT"COMMODORE PET!":GOTO10
873 IFD4$="HELP"PRINT"HINT - TRY LOOK, JUMP, SWIM, CLIMB OR ANY OTH
ER VERB YOU CAN
THINK OF. ":GOTO10
874 IFLEFT$(D$,8)="WHO PROG"PRINT"SOME INCOMPETENT FOOL . . . CA
N'T YOU TELL?"
880 IFD6$="RANDOM"PRINTR$(RND(R)):GOTO10
890 IFD4$="READ"PRINT"YOU SHOULD READ BOOKS, NOT DATA.":GOTO10
900 IFD3$="REM"PRINT"THAT REMARK WAS UNNECESSARY":GOTO10
910 IFD5$="RESET"PRINTR$(RND(R))
920 IFD3$<>"SET"THEN930ELSEFORT=1TOLEN(D$):IFMID$(D$,T,1)<>"NE
XT

```

```

922 SET(VAL(MID$(D$, 5, 3)), VAL(MID$(D$, T+1, 3))):GOTO10
930 IFD$="RESTORE"PRINT"ALL DATA IS NOW RESTORED." :GOTO10
940 IFD6$="RESUME"PRINT"WAS I DOING ANYTHING IN THE FIRST PLACEP
RINT":GOTO10
950 IFD6$="RETURN"PRINTSTRING$(2, 27); CHR$(29); "WHAT TO DO AFTER
YOU HIT
)RETURN
IS A POPULAR BOOK FROM CREATIVE COMPUTING!":GOTO10
960 IFD4$="STOP"PRINTP1$; CHR$(29); " "; CHR$(152); STRING$(2, 140); C
HR$(164); "
"; CHR$(170); "STOP"; CHR$(149); "
"; CHR$(137); STRING$(2, 140); CHR$(134); :PRINTCHR$(29); :PRINTSTRIN
G$(2, 25); CHR$(172); CHR$(156); :P$=STRING$(2, 25)+CHR$(170)+CHR$(14
9)
962 IFD4$="STOP"PRINT :FORT=1T03 :PRINTP$:NEXT :PRINTSTRING$(6, 131)
:GOTO10
970 IFVAL(MID$(D$, 5, 3))@PRINTVAL(MID$(D$, 5, 5)); "LOADMERGEGETEGETE
TGETGETKILGEGGETKVIKIVINKINKILOADLOADLOADLOADLOADLOADLOADLOADLOA
DLOADLOADLOADLOADLOADLOADLOADLOADLOADLOADLOADLOADLOADLOADLOADLOA
DDEVICVICVICVICVICVICVICVKVCVICVICKVICVICVICVICVICVICVICVICVICMD":GOTO1
0
980 IFD5$="TROFF"PRINTR$(RND(R)):GOTO10
985 IFD4$<"TRON"THEN990
986 FORT=0T0300+RND(300):STEP10+RND(30):PRINT"<"T"> "; :NEXT
990 IFD4$="TRON"GOTO10
1000 IFD4$="LOAD"ORD4$="SAVE"ORD5$="MERGE"THEN1100ELSEPRINT"?SN
ERROR":GOTO10
1100 PRINT"WAIT! YOU'RE NOT IN DISK OPERATING SYSTEM":PRINT"WAI
T A SEC...
I'LL DO IT FOR YOU ":FORT=1T05000:NEXT:CLS:PRINT"TRSDOS - DISK O
PERATING SYSTEM - VER 0.1
DOS READY
"; CHR$(95); :FORT=1T0LEN(D$):FORY=1T0400:NEXTY:PRINTCHR$(8); MID$(
D$, T, 1); CHR$(95);
1110 NEXTT:FORY=1T0400:NEXT:PRINTCHR$(8); :FORT=1T02000:NEXT:PRINT
"
DOS READY
"; CHR$(95); :FORT=1T05:PRINTCHR$(8); MID$("BASIC", T, 1); CHR$(95); :F

```

```

ORY=1T0500:NEXTY,T:PRINTCHR$(8):FORT=1T02000:NEXT:CLS:INPUT"MEM
ORY SIZE";A#:PRINT"YOU KNOW I CAN'T REMEMBER THAT MUCH!
1120 INPUT"MEMORY SIZE";A#:GOTO10
7000 IF A#="B"PRINTCHR$(8);A#:CHR$(95);:A1#="*":GOTO22
7001 PRINTCHR$(29);CHR$(30);CHR$(29);"
);CHR$(95);:A1#="*":GOTO20
8000 FORT=1T040:PRINT$(RND(10)-1);" ";:FOR Y=1T040:NEXTY:IF POS(0
)>57PRINT:NEXT ELSE NEXT
8010 PRINT"
":RETURN
30000 GOTO10
40000 DATA " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", " ", "LOAD", "MERGE"
,"GET", "KILL", "CLOSE", "FIELD", "LSET", "NAME", "OPEN", "PUT", "PUT", "
MERGE", "LOAD", "LOAD", "SAVE", "SAVE", "PEEK", "POKE", "CVI", "CVD", "EO
F", "USR", "USR", "TIME", "
", "
", "DEFFN", "MERGE", "INKEY", "INKEY", "MERGE"
40001 DATA "FOR", "R(1231-134", "RETURN", "123120W", "SADASO", "JQ!##
?"
40009 DATA "*"
50000 RETURN
50001 GOSUB 60000:RETURN
55000 FOR Q=1T0200:OUT255,247:NEXT Q:POKE15360+62,ASC("*"):FOR Q=1T
0100+RND(100):OUT255,247:NEXT Q:V=(70)+20:FOR G=1T0V:POKE15360+62,
ASC("*"):IF PEEK(15360+63)=32 THEN POKE15360+63,ASC("*") ELSE POKE153
60+63,32
55010 FOR H=1T0RND(500)/4:OUT255,247:NEXT H,G
55020 RETURN
60000 FORT=1T0900:NEXT:RETURN
61000 IF ERL=20 AND ERR/2+1=5 PRINT CHR$(8);">";:PRINT:PRINT">";CHR$(
95);:RESUME 20 ELSE ON ERROR GOTO 0
65526 DATA "L3", "UL", "DD", "L3", "L3", "RG", "NF", "MO", "BS", "ON"
65527 DATA SORRY - THAT COMMAND IS OUT OF ORDER. TRY AGAIN LATER
,NOT TODAY, ONLY ON WEEKENDS, NO, NO CHANCE, NO WAY, LEAVE ME ALONE.
I'M BUSY, I CAN'T. I HAVE A DATE, O.K., IF YOU INSIST, ANYTHING Y
OU SAY, YES MASSUH, HELLO FELLOW COMPUTERIST
65528 DATA PLOP PLOP FIZZ FIZZ OH WHAT A RELIEF IT IS, WHAT?, HOW?,
SORRY, ##%&!, I'M NOT SURE I UNDERSTAND WHAT YOU MEAN, WAAZ2AT?, HUH
,HEE, HA, HO, CHUCKLE, LAUGH, GUFFAW, SNICKER, HA, HO, LAUGH
65529 FORT=1T0400:NEXTT:RETURN

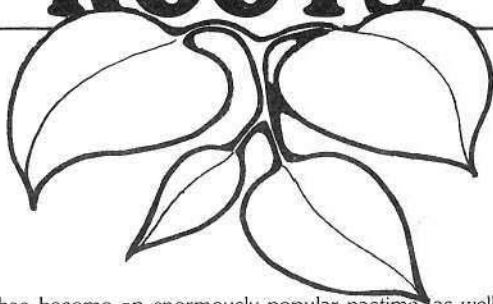
```



The Software Exchange would like to announce that Microcomputer Applications is an authorized dealer of their software in England. Contact: William F. Jupp, 11 Riverside Court, Caversham, Reading, RG4 8AL, England. Telephone (0734) 470425

Sooner or later someone had to write it! ★

ROOTS



Genealogy has become an enormously popular pastime (as well as a lucrative profession for some) in the last few years.

The fascination is endless. Once you've come across your first amazing revelation — that you have a colorful ancestor who was a famous Indian Chief, or an advisor to an English King, or what-have-you — you're hooked, my friend, and as these people who were your progenitors come alive for you, like characters in a play, so does history itself light up like a stage.

ROOTS is an indispensable aid for all genealogists, whether amateur or professional. Up to nine generations of data may be placed into memory per file. Allows display of known data concerning a given individual; display of four-generation pedigree; searches for specific information within a given category (finds all "Smith" last names, or all births in the 1890's, for example); sorts by any selected category; gives printed reports.

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ug e ort



DEADSTIK (FEBRUARY 1980 SOFTSIDE ON CASSETTE ONLY)

A FLAW IN THE DUPLICATION MASTER PUT LINE 648 IN THE PROGRAM TWICE CONSECUTIVELY. THE FIRST TIME IS BAD AND TRANSFERS CONTROL TO LINE 6, GIVING A RETURN WITHOUT GOSUB ERROR IN 10.

SOLUTION: AFTER LOADING, TYPE 648 <ENTER> TO GET RID OF THE FIRST LINE 648. LIST 648 TO MAKE SURE THE SECOND ONE IS CORRECT, THEN SAVE CORRECTED PROGRAM.



BACKGAMMON FEBRUARY 1980 PAGE 18 LINE 9130

PROBLEM : GARBAGE IN LISTING

SOLUTION: LAST FIVE CHARACTERS EK*\$\$ ARE UNNECESSARY AND SHOULD BE DELETED.

NOTE: THIS PROBLEM APPARENTLY OCCURS BECAUSE NEWDOS CANNOT HANDLE A LINE THIS LONG. NEWDOS USERS SHOULD SHORTEN THE LINE BY REMOVING SOME OF THE SPACES.



BACKGAMMON FEBRUARY 1980 PAGE 12,

LINE 1245 IS UNNECESSARY - OMIT



DANTE'S INFERNO JANUARY 1980 PAGE 40

LINE 2030 - "PRINT" NOT "CSAVE"



MICRO CHESS 1.5

by Peter Jennings

Offers 3 levels of play. Every move checked for legality and current position displayed on a graphic chessboard. Play White or Black, set up and play from special board positions, or watch the computer play against itself!

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* Basic formulae derived from **ELEMENTARY STATISTICS** by Spencer/Underwood/Duncan/Cotton. Appleton-Century-Crofts Psychology Series, N.Y. 1968.

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by Scott Adams

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Broadway

by Robert Saturn



This simulation begins with a flashing Broadway marquee. The player (henceforth called the producer) is then asked to name the production company. This name will appear on the weekly report and on the closing notice at the end of the simulation. The program will accept any string (no commas, no double quotes) up to 15 characters and spaces.

After a basic introduction and some instructions, the producer attempts to raise \$1,000,000 to produce the show. As in the real world, past performance (as shown by a randomly generated "track record") controls the ease with which the money is raised. The names entered in this section have no bearing on the amount of money raised (that is controlled by a random number in conjunction with the "track record") but do add to the fun of the simulation when the names of friends and relatives are used. If the money is not raised within 8 tries, the simulation ends and the producer can try again with a new "track record". If the

money is raised, it will be more than the needed \$1,000,000. The method used to lose the excess money is as true to life as any.

The program then explains to the producer about some assumed payroll expenses that will be deducted each week and then using 'read' and 'data' statements, lets the producer "hire" one of three people for each of 10 key jobs. As each person is "hired", their respective fees are added to a running total to be deducted before opening night and their weekly salary or royalty is added to a running total that is deducted each week. Each choice also assigns a certain number of quality points to a running total. These point values were assigned in accordance with the relative importance of the job. Choosing a high-priced employee tends to result in higher quality but too large a payroll can bankrupt the producer. A #1 employee raises the quality point total, #2 is neutral and does not affect the total while

a #3 employee reduces the quality point total.

A theatre is then chosen: the larger the theatre (with a larger potential gross) the greater the expenditures both in rental and the cost of the staff employed by the theatre.

Each of the producer's four designers have submitted three designs in their respective departments. Each design differs in quality and therefore in cost. The one-time fee (for items purchased) and the weekly cost (for items rented) will be added to the respective totals on opening night. Technical appearance quality points are compiled as each selection is made.

The rehearsal period is five weeks long. The weekly payroll total is deducted for five weeks before opening. The one-time fees are deducted after the rehearsal period is over. At this point, the director has the option to have further rehearsals (a random function). Each extra week of rehearsal will cost the producer one week's payroll (here's where a high payroll and high technical expenses coupled with a few extra weeks of rehearsal can put the producer out of business).

On opening night, the producer will get a report of the total weekly cost figures. These figures, of course, are minimums. Salary changes and advertising will add to the weekly costs.

The reviews are generated as follows: each of the five reviewers have five reviews to draw upon ranging from great to very poor (Simon of New York Magazine will always give a bad review — a little humor for those familiar with the New York theatre scene). The quality points earned for personnel are doubled and the

quality points earned for technical appearance are added and the total figure is multiplied by a random number between 1 and 10 (the random number simulates the reviewer's personal mood). This determines which of the five reviews will be selected. This process is repeated for each reviewer. Thus five different people can see the same show and write five different reviews, a frequent occurrence on Broadway. As each review is chosen and printed, box office points are earned. Better reviews earn more points. More points mean more tickets sold. Box office points are also affected by advertising (1 point for each \$10,000 spent per week), ticket price (high prices keep people away), aging of the show (the longer a show runs, the harder it is to get an audience) and random events which will be explained later.

After seeing the reviews, the producer has the option of closing the show and returning what is left of the original \$1,000,000 to the investors. This option may also be exercised after getting the report each week.

If the show remains open, the producer must then decide on how much to spend on advertising that week. Any amount from \$0 and up can be spent limited only by the amount of money still available after the current week's expenses are paid. The money spent for advertising that week becomes part of the weekly expenses for that week only. No dollar signs or commas are used to input the amount spent.

The current ticket price is then displayed and can be changed in either direction using whole dollar amounts.

At this point a random event may

occur (usually every 3rd or 4th week). There are both good and bad events and all will affect the box office action in one way or another. The 2 events dealing with pay raises will increase your weekly payroll. The other events add to or subtract from the current total of box office points.

At this point, the weekly report will be displayed. The number of tickets sold for the week is figured using the box office points, the original quality points of the show (before the critics influenced the public), a random number (to simulate the public mood) and the seating capacity of the theatre. The number of tickets sold is then multiplied by the current ticket price and the gross is displayed. The expenses for the week are displayed and deducted from the gross and the net profit or loss is

then displayed. Any loss is deducted from previous profits. If there are no previous profits available, the loss is deducted from what is left of the original \$1,000,000. If the front money is exhausted, the producer is out of business. In addition, every 13 weeks, a quarterly payment of 98% of the current profits is distributed to the investors and will not be available to the producer to spend on advertising or to cover losses.

The show may be closed after the report for any week is printed. When the producer decides to close the show, the closing notice is posted, the salaries for the final 2 weeks are paid by the salary bonds that were posted before opening, and the final totals are displayed showing among other things, the percentage of return to the investors on their investments.

```

10 "BROADWAY" A COPYRIGHTED PROGRAM BY ROBERT SATURN
20 GOSUB100
30 GOTO220
100 A$="*****"
    B R O A D W A Y
    *****"
110 B$="*****"
    * B R O A D W A Y *
    *****"
120 CLS:PRINT CHR$(23)
130 FOR ZA=1TO10
140 PRINT@128, A$
150 FORZB=1TO100:NEXT
160 PRINT@128, B$
170 FORZC=1TO100:NEXT
180 NEXTZA
190 RETURN
220 DEFINTA-Z:DEFSNGR,F,I,T,P,S:RANDOM:IT=1:AT=16:IU=1:SP=16:TT=
10000
230 ON ERROR GOTO3190

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```

240 'NAME PRODUCTION COMPANY
250 CLS:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT"THIS PRODUCTION COMPANY WI
LL BE KNOWN AS ";STRING$(10,95);:INPUT" PRODUCTIONS",PR$
260 'INTRO
270 CLS:PRINT"HERE IS YOUR CHANCE TO PRODUCE A BROADWAY MUSICAL
SHOW WHILE
THE SCENERIO IS SOMEWHAT SIMPLIFIED, YOU WILL FACE MANY OF THE"
280 PRINT"SAME PROBLEMS AND TAKE MANY OF THE SAME CHANCES THAT A
NY
BROADWAY PRODUCER DOES:
YOU WILL HAVE TO RAISE THE FRONT MONEY WHICH WILL PAY YOUR
EXPENSES UNTIL THE SHOW OPENS, DECIDE WHO TO HIRE AND HOW MUCH
TO PAY THEM, ENDURE CRITICS ";
290 PRINT"AND FEEL THE INFLUENCE THAT THEY
HAVE, AND PLAY THE WEEK TO WEEK GAME OF COUNTING THE AUDIENCE,
THE TICKETS, THE MONEY AND THE PROFITS (OR LOSSES). "
300 PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E:CLS
310 GOSUB120:PRINT@448,"BREAK A LEG & BRING IN A HIT"
320 GOSUB130:PRINT@580,"BUT REMEMBER..... "
330 GOSUB130:PRINT@704,"THERE'S A BROKEN HEART ";:GOSUB130:PRINT
@770,"(AND BANK ACCOUNT) ";:GOSUB130:PRINT@836,"FOR EVERY LIGHT
ON BROADWAY. ";:GOSUB130
340 CLS:FM=1000000:X=10000:R=RD(100):TR=R/50:P$="#####,#"
350 'RAISE THE MONEY
360 PRINT"FOR THE PURPOSES OF THIS SIMULATION, YOU WILL GET 8 CH
ANCES
TO RAISE A TOTAL OF $ 1,000,000 TO FINANCE YOUR SHOW. "
370 'TRACK RECORD IS RANDOM
380 PRINT"YOUR TRACK RECORD ON PREVIOUS SHOWS IS";R,"% THIS WIL
L
DETERMINE HOW EASY IT IS FOR YOU TO RAISE MONEY. ":AI=0:C=1
390 PRINT:PRINT"INVESTOR #";C
400 INPUT"WHO WILL YOU ASK (TYPE THE NAME)";I$:CLS:I=RD(25)*TR
410 IFI<2PRINTI$;" SAID, 'I'M SORRY BUT, NO. '":PRINT:I=0:GOTO52
0
420 IFI<5PRINTI$;" THINKS YOU'RE CRAZY,
BUT WILL INVEST";:GOSUB690:GOTO520
430 IFI<7PRINTI$;" CAN'T REALLY AFFORD MUCH BUT,
WANTS TO HELP WITH";:GOSUB690:GOTO520
440 IFI<10PRINTI$;" NEEDS A TAX WRITE-OFF AND WILL INVEST";:GOSU
B690:GOTO520

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450 IF(12PRINTI$;" WHO IS STILL WORKING ON THAT FIRST
MILLION INVESTS";:GOSUB690:GOTO520
460 IF(15PRINTI$;" (WHO INVESTS IN ANYTHING) THINKS
YOU HAVE A WINNER AND INVESTS";:GOSUB690:GOTO520
470 IF(17PRINTI$;" LOVES TO THROW MONEY AWAY,
AND INVESTS";:GOSUB690:GOTO520
480 IF(20PRINTI$;" (WHO HAS NO TASTE) HAS FAITH IN YOU
AND YOUR SHOW AND INVESTS";:GOSUB690:GOTO520
490 IF(22PRINTI$;" WHO HAS TURNED DOWN EVERY OTHER
PRODUCER ON BROADWAY SAYS 'YES' AND INVESTS";:GOSUB690:GOTO520
500 IF(24PRINTI$;" , A NOTED PATRON OF THE ARTS, INVESTS";:GOSUB
690:GOTO520
510 IF(I>=24PRINTI$;" WHO HAS MORE MONEY THAN GOD, INVESTS";:GOSU
B690
520 PRINT:PRINT"SO FAR YOU HAVE RAISED ";
530 PRINT USINGP$;A1
540 IF A1<FM THEN C=C+1:GOTO580
550 IF(A1)=FMPRINT:PRINT"THAT'S";
560 PRINTUSINGP$;A1-FM:PRINT" EXTRA !":GOTO610
570 'IF MONEY IS NOT RAISED IN 8 TRIES, TRY AGAIN WITH DIFFERENT
TRACK RECORD
580 IF C=9GOSUB120:PRINT"SORRY, YOU COULDN'T RAISE THE MONEY.":G
OSUB130:PRINT@256,"THAT'S SHOW BIZ!!!!":PRINT:PRINT:INPUT"WANT T
O TRY AGAIN";TA$:IFLEFT$(TA$,1)="Y"THEN340ELSEEND
590 PRINT"YOU STILL NEED ";
600 PRINT USING P$;FM-A1:GOTO390
610 FORB=1TO3000:NEXT:C=0
620 GOSUB120
630 PRINT@450,"YOU HAVE RAISED THE MONEY"
640 GOSUB130
650 'REDUCE MONEY TO $1,000,000 EVEN
660 CLS:PRINT"YOUR GENERAL MANAGER WILL STEAL THE EXTRA";
670 PRINT USING P$;(A1-FM)
680 GOTO730
690 I1=J*X
700 PRINT:PRINT USING P$;I1
710 A1=A1+I1:RETURN
720 FORB=1TO5000:NEXT:CLS
740 PRINT"NOW THAT YOU HAVE RAISED THE MONEY, YOU MUST DECIDE HO
W

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TO SPEND IT. FOR EACH OF THE MAJOR EXPENSES PRESENTED TO YOU, DECIDE ON HOW MUCH YOU WILL SPEND INITIALLY AND WEEKLY. DURING THE FIRST FIVE WEEKS (WHILE YOU ARE REHEARSING) THERE WILL " 750 PRINT"BE NO INCOME, SO MAKE SURE THAT YOUR EXPENSES DO NOT EXCEED \$1,000,000 OR YOU'LL HAVE NOTHING LEFT FOR DELAYED OPENINGS, ADVERTISING, ABSORBING A LOSS FOR A WEEK OR TWO, AND THE FACT THAT A FULL HOUSE EVERY NIGHT WILL ONLY GROSS BETWEEN" 760 PRINT"\$150,000 AND \$225,000. YOUR OBJECT OF COURSE, IS TO SH ON

A PROFIT EACH WEEK. REMEMBER, OUT OF YOUR 'FRONT MONEY' YOU MUST PAY ALL OF YOUR PRE-OPENING EXPENSES (E. G. SETS, COSTUMES, ETC.)"

770 PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E:CLS:PRINT"FIRST YOU MUST HIRE A COMPANY.

CERTAIN WEEKLY PAYROLL EXPENSES ARE ASSUMED:

\$ 5,000 FOR CONTRACT STAGEHANDS

\$ 3,000 FOR WARDROBE DEPT. "

780 PRINT"\$ 3,000 FOR CONTRACT MUSICIANS

\$ 750 FOR PRESS REPS.

\$ 6,000 FOR MANAGEMENT STAFF

\$ 2,500 FOR STAGE MANAGEMENT

\$17,500 FOR NON-STARING ACTORS

\$37,950":P=37950

790 'P=WEEKLY EXPENSES

800 'HIRE KEY PERSONEL

810 PRINT:PRINT"WE WILL NOW DEAL WITH THE SALARIES THAT CAN BE NEGOTIATED. ":INPUT"PRESS 'ENTER' TO CONTINUE";E

820 CLS:PRINT"FOR EACH JOB YOU WILL BE GIVEN 3 ALTERNATIVES. IN GENERAL, THE MORE YOU SPEND, THE HIGHER THE CALIBER OF PERSON YOU WILL HIRE AND THE BETTER THE RESULTS (MAYBE).

OF COURSE, THE MORE YOU SPEND, THE HIGHER YOUR WEEKLY PAYROLL WILL BE. SPEND"

830 PRINT" MONEY WHERE YOU THINK IT'S IMPORTANT. ":PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E

840 'J#=JOB, F=ONE-TIME FEE, N=WEEKLY FEE, I=QUALITY POINTS

850 FORC=1TO12:CLS:READJ#,F1,W1,F2,W2,F3,W3,I(1),I(2),I(3):PRINT "JOB - ";J#:PRINT:PRINT:PRINTTAB(8)"INITIAL FEE";TAB(30)"WEEKLY ROYALTY (OR SALARY)"

860 PRINT:PRINTTAB(0)"1";TAB(12)F1:TAB(35)W1

870 PRINTTAB(0)"2";TAB(12)F2:TAB(35)W2

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880 PRINTTAB(8)"3";TAB(12)F3;TAB(35)W3
890 PRINT:PRINT"WHICH ";J$;" WILL YOU HIRE (1, 2, OR 3)":INPUTH
900 IFH=1THENPX=PX+F1:P=P+W1:GOTO940
910 IFH=2THENPX=PX+F2:P=P+W2:GOTO940
920 IFH=3THENPX=PX+F3:P=P+W2:GOTO940ELSE890
930 'TOTAL QUALITY POINTS
940 IT=IT*I(H)
950 NEXT
960 'REDUCE QUALITY POINTS TO SINGLE PRECISION NUMBER
970 IT=IT/1000
980 'REDUCE QUALITY POINTS TO AMOUNT BETWEEN 2 AND .5
990 IFIT>500THENIT=.2:GOTO1060
1000 IFIT>200THENIT=.15:GOTO1060
1010 IFIT>70THENIT=.1:GOTO1060
1020 IFIT<.1THENIT=.5:GOTO1060
1030 IFIT<.1THENIT=.75:GOTO1060
1040 IT=.1
1050 'CHOOSE THEATRE - CP=SEATING CAPACITY, TX=% OF GROSS FOR
THEATRE RENTAL, PR=PAYROLL FOR THEATRE'S EMPLOYEES
1060 CLS:PRINT"YOU NOW HAVE A COMPANY TO WORK WITH.
NOW DECIDE ON YOUR OTHER EXPENSES.
THE MOST IMPORTANT IS THE THEATRE. AGAIN WE HAVE A CHOICE
OF THREE. THEY DIFFER IN CAPACITY AND THEREFORE IN COST."
1070 PRINT"ASSUME A TICKET PRICE OF $16 AT THIS TIME.":PRINT:PRI
NTTAB(8)"THEATRE";TAB(9)"CAPACITY";TAB(22)"POSSIBLE WEEKLY GROSS
";TAB(47)"COST (% OF GROSS)"
1080 PRINTTAB(49)"HOUSE PAYROLL"
1090 PRINTTAB(8)"1";TAB(10)"1400";TAB(23)"179,200";TAB(48)"22%+$
19,000
";TAB(8)"2";TAB(10)"1500";TAB(23)"192,000";TAB(48)"25%+$20,000
";TAB(8)"3";TAB(10)"1600";TAB(23)"204,800";TAB(48)"28%+$21,000"
1100 PRINT:INPUT"WHICH THEATRE (1, 2, OR 3)":H
1110 IFH=1THENCP=1400:TX=.22:PR=19000:GOTO1150
1120 IFH=2THENCP=1500:TX=.25:PR=20000:GOTO1150
1130 IFH=3THENCP=1600:TX=.28:PR=21000:GOTO1150ELSE1100
1140 'CHOOSE DESIGN VERSION FOR EACH DEPARTMENT - J$=DEPARTMENT,
F=ONE-TIME FEE, W=WEEKLY FEE, I=TECHNICAL QUALITY POINTS
1150 CLS:PRINT"NOW DETERMINE YOUR OTHER PRE-OPENING EXPENSES."
1160 FORC=1TO5:READJ$,F1,W1,F2,W2,F3,W3,I(1),I(2),I(3)
1170 PRINT:PRINT"EXPENSE - ";J$
1180 PRINT:PRINTTAB(15)"INITIAL";TAB(30)"WEEKLY"

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1190 PRINTTAB(0)"1";TAB(16)F1;TAB(31)W1
1200 PRINTTAB(0)"2";TAB(16)F2;TAB(31)W2
1210 PRINTTAB(0)"3";TAB(16)F3;TAB(31)W3
1220 PRINT:INPUT"WHICH DESIGN VERSION WILL YOU USE";H
1230 IFH=1THENPX=PX+F1;PY=PY+W1;GOTO1270
1240 IFH=2THENPX=PX+F2;PY=PY+W2;GOTO1270
1250 IFH=3THENPX=PX+F3;PY=PY+W3;GOTO1270ELSE1220
1260 'TOTAL TECHNICAL QUALITY POINTS
1270 IU=IU*I(H)
1280 CLS:NEXT
1290 'REDUCE TECHNICAL QUALITY POINTS TO AMOUNT BETWEEN 2 AND .8
1300 IFIU>7THENIU=2;GOTO1330
1310 IFIU>1THENIU=.5;GOTO1330
1320 IFIU<1THENIU=.8
1330 CLS:PRINT"THE REST OF THE PRE-OPENING EXPENSES ARE AS FOLLO
MS:
TAKE-IN AND SET-UP OF SHOW $ 33,000
PRE-OPENING ADVERTISING";CHR$(199);"30,000
OPENING NIGHT PARTY";CHR$(203);"5,000
TRAVEL EXPENSES";CHR$(207);"3,000"
1340 PRINT"TICKET PRINTING";CHR$(207);"1,500
REHEARSAL SPACE";CHR$(207);"3,000
SALARY BONDS"CHR$(210);"10,000
";TAB(28)"-----
";TAB(28)"$ 85,500":PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E:PX=
PX+85500
1350 'REHEARSAL PERIOD
1360 CLS:PRINT"YOU ARE NOW READY TO BEGIN THE FIVE WEEK REHEARSA
L PERIOD. YOUR
PAYROLL EXPENSES WILL BE DEDUCTED AFTER EACH WEEK OF
REHEARSALS. AFTER THE LAST WEEK, THE OTHER PRE-OPENING EXPENSES
WILL BE DEDUCTED. ":PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E
1370 FORN=1TO5:GOSUB120:PRINT:PRINT"END OF WEEK";W;"OF REHEARSALS
"
1380 PRINT:PRINT"EXPENSES THIS WEEK -";:PRINTUSINGP%;P
1390 FM=FM-P:PRINT:IFFNK0GOTO2700
1400 PRINT"LEFT FROM FRONT MONEY";:PRINTUSINGP%;FM:GOSUB130:NEXT
1410 'DEDUCT ONE-TIME PAYROLL EXPENSES - IF FRONT MONEY RUNS OUT
SHOW IS OUT OF BUSINESS
1420 FM=FM-PX:IFFNK0GOTO2700

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1430 CLS:PRINT"NOW THAT REHERSALS ARE OVER AND YOUR PRE-OPENING
EXPENSES ARE PAID, YOU HAVE";
1440 PRINTUSINGP$;FM:PRINT" LEFT IN AN
EMERGENCY ACCOUNT. ":PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E
1450 'RANDOM FUNCTION TO DETERMINE EXTRA REHERSALS
1460 CLS:R=RND(10):IFR<6PRINT"THE DIRECTOR WANTS ANOTHER WEEK OF
REHERSALS BEFORE OPENING"ELSEGOTO1540
1470 PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E
1480 'IF FRONT MONEY RUNS OUT SHOW IS OUT OF BUSINESS
1490 FM=FM-P:IFFMK<0GOTO2780
1500 PRINT:PRINT"YOU NOW HAVE";
1510 PRINTUSINGP$;FM:PRINT" LEFT IN EMERGENCY RESERVE. "
1520 PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";E:GOTO1460
1530 'OPENING NIGHT
1540 FORJ=1TO4:CLS:PRINTCHR$(23):PRINT@268,"I T ' 5":PRINT@402,"
O P E N I N G":PRINT@548,"N I G H T":FORB=1TO200:NEXT:CLS:FORB=1
TO100:NEXT:NEXT:P=P+PY
1550 PRINT"HELL, HERE WE GO. LET'S HAVE A DRINK BEFORE THE REVIE
WS COME IN. "
1560 PRINT:PRINT"OH BY THE WAY, YOUR REGULAR WEEKLY EXPENSES (IN
CLUDING"
1570 PRINT" THE WEEKLY TECHNICAL EXPENSES THAT BEGIN TONIGHT) AN
D"
1580 PRINT"THE THEATRE RENTAL ARE : "
1590 'DEDUCT ONE TIME TECHNICAL EXPENSES
1600 P=P+PR
1610 PRINTUSINGP$;P:PRINT" PLUS";TX*100:"% OF THE GROSS. "
1620 PRINT:INPUT"PRESS 'ENTER' TO CONTINUE";EN
1630 'REVIEWS
1640 CLS:PRINT"HERE COMES THE PRESS AGENT WITH THE REVIEWS"
1650 'TWO TIMES THE PERSONEL QUALITY POINTS PLUS THE TECHNICAL
QUALITY POINTS REDUCED TO A NUMBER BETWEEN 1 AND 2 (IX)
1660 IV=IT*IT+IU
1670 IFIV>5IX=2:GOTO1720
1680 IFIV>3THENIX=1.5:GOTO1720
1690 IFIV>2THENIX=1.25:GOTO1720
1700 IFIV>1THENIX=1.1:GOTO1720
1710 IFIV<=1THENIX=1
1720 GOSUB2830:PRINT:PRINT"KERR - THE TIMES- ";ONR1GOTO1740,175
0,1760,1770,1780,1780

```


1730 'P9=BOX OFFICE POINTS
 1740 PRINT"THE WORST THING I EVER SAW":P9=P9+1:GOTO1790
 1750 PRINT"HEBK SHOW: POOR ACTING, POOR DIRECTING POOR, ";CHR\$(2
 13); "POOR INVESTORS":P9=P9+2:GOTO1790
 1760 PRINT" I LIKED IT - WITH RESERVATIONS":P9=P9+3:GOTO1790
 1770 PRINT" A THROUGHLY ENJOYABLE EVENING":P9=P9+4:GOTO1790
 1780 PRINT" A FINE PIECE OF THEATRE":P9=P9+5
 1790 GOSUB2830:PRINT"BARNES - THE POST -":ONR1GOTO1800,1810,182
 0,1830,1840,1840
 1800 PRINT" A TERRIBLE SHOW":P9=P9+1:GOTO1850
 1810 PRINT" I WAS BORED DURING TH 1ST ACT AND GONE";CHR\$(217); "D
 URING THE 2ND":P9=P9+2:GOTO1850
 1820 PRINT" A PLEASANT EVENING":P9=P9+3:GOTO1850
 1830 PRINT" MUCH FUN - GO SEE IT. ":P9=P9+4:GOTO1850
 1840 PRINT" A MUST SEE! RUN, DO NOT WALK TO THIS. ":P9=P9+5:GOTO
 1850
 1850 GOSUB2830:PRINT"WATT - THE NEWS -":ONR1GOTO1860,1870,1880,
 1890,1900
 1860 PRINT" THE WORST PLAY IN MY 80 YEARS OF REVIEWING":P9=P9+1
 :GOTO1910
 1870 PRINT" THE LAST PLAY I SAW THAT WAS THIS BAD WAS IN";CHR\$(2
 12); "1904":P9=P9+2:GOTO1910
 1880 PRINT" NICE. BROUGHT BACK MEMORIES OF";CHR\$(226); "-THE BLAC
 K CROOK-":P9=P9+3:GOTO1910
 1890 PRINT" FUN FOR ALL AGES. BRING YOUR GRANDPARENTS":P9=P9+4:
 GOTO1910
 1900 PRINT" THE BEST THING I'VE SEEN THIS CENTURY":P9=P9+5
 1910 GOSUB2830:PRINT"SHALIT - NBC NEWS -":ONR1GOTO1920,1930,194
 0,1950,1960,1960
 1920 PRINT" SHOULD NOT BE ALLOWED ANY CLOSER TO NEW YORK";CHR\$(2
 12); "THAN BOISE, IDAHO. ":P9=P9+1:GOTO1970
 1930 PRINT" I'VE SEEN HORSE, BUT NOT MANY":P9=P9+2:GOTO1970
 1940 PRINT" IT WON'T RUN LONGER THAN -GOLLY- BUT MAYBE";CHR\$(216
); LONGER THAN -KELLY-":P9=P9+3:GOTO6025
 1950 PRINT" A HOOT":P9=P9+4:GOTO1970
 1960 PRINT" IF YOU HURRY YOU CAN GET TICKETS FOR LATE IN 1982. ":
 P9=P9+5
 1970 GOSUB2830:PRINT"SIMON - NEW YORK MAG -":ONR1GOTO1980,1990,
 2000,2010,2020,2020
 1980 PRINT" I HATED IT":P9=P9+1:GOTO2040

```

1990 PRINT"A TERRIBLE SHOW":P9=P9+2:GOTO2040
2000 PRINT"IT'S THE PITS":P9=P9+3:GOTO2040
2010 PRINT"THE WORST THIS YEAR":P9=P9+4:GOTO2040
2020 PRINT"I COULDN'T STAND IT":P9=P9+5
2030 'KEEP THE SHOW OPEN AFTER THE REVIEWS?
2040 GOSUB2850
2050 CLS:PRINT"ALL RIGHT, THE SHOW IS OPENED.
AFTER EACH WEEK YOU WILL GET A REPORT AS TO HOW
MANY TICKETS WERE SOLD AND HOW MUCH MONEY WAS TAKEN IN. YOU
WILL ALSO BE ASKED HOW MUCH YOU WANT TO SPEND ON ADVERTISING
AND IF YOU WANT TO CHANGE THE TICKET PRICE. "
2060 PRINT"REMEMBER, CHEAPER PRICES = HIGHER VOLUME. ":PRINT:INPU
T"PRESS 'ENTER TO CONTINUE":E:WK=0
2070 PRINT:PRINT"YOU HAVE";USINGP$;FM:PRINT" LEFT IN FRONT MONE
Y ACCOUNT"
2080 'HOW MUCH FOR ADVERTISING THIS WEEK?
2090 GOSUB2880
2100 'CHANGE TICKET PRICE?
2110 GOSUB2900
2120 WK=WK+1:GOSUB120
2130 'AS THE SHOW RUN LONGER IT BECOMES HARDER TO GET AN
AUDIENCE
2140 IFWK/3=INT(WK/3)THENP9=P9-2
2150 IFWK/10=INT(WK/10)THENP9=P9-2
2160 IFWK/18=INT(WK/18)THENP9=P9-2
2170 'EVERY 13 WEEKS PAY OUT 90% OF PROFITS TO INVESTORS
2180 IFWK/13=INT(WK/13)GOSUB2980
2190 '1 BOX OFFICE POINT FOR EACH $10,000 OF ADVERTISING EACH
WEEK
2200 P9=P9+AD/TT
2210 'RANDOM EVENTS OCCUR EVERY 3 OR 4 WEEKS
2220 R=RND(10):IFR<6THENR=RND(12):PRINT:ONRGO2240,2250,2260,22
70,2280,2290,2300,2310,2320,2330,2340,2350
2230 GOTO2380
2240 PRINT"STAR GETS SICK - MUST BE REPLACED":P9=P9-2:GOTO2360
2250 PRINT"UNIONS GET PAY HIKE":P=P+(P*.03):P=INT(P):GOTO2360
2260 PRINT"STAR'S CONTRACT ENDS-WANTS MORE $$$":P=P+(P*.03):P=IN
T(P):GOTO2360
2270 PRINT"SHOW WINS 3 TONYS":P9=P9+2:GOTO2360
2280 PRINT"FREE PUBLICITY DUE TO GOOD PRESS AGENT":P9=P9+1:GOTO2
360
360

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```

2290 PRINT"SHOW WINS CRITIC CIRCLE AWARD":P9=P9+1:GOTO2360
2300 PRINT"HEAVY SNOW FOR 5 WEEKS":P9=P9-1:GOTO2360
2310 PRINT"NEWSPAPER STRIKE IN IT'S 2ND MONTH":P9=P9-1:GOTO2360
2320 PRINT"T. V. REPORTS ON HIGH CRIME IN THE BROADWAY AREA":P9=P
9-1:GOTO2360
2330 PRINT"CITY REPORTS CONVENTION BUSINESS UP":P9=P9+1:GOTO2360
2340 PRINT"GOOD WORD OF MOUTH ON THE SHOW":P9=P9+1:GOTO2360
2350 PRINT"BAD WORD OF MOUTH ON THE SHOW":P9=P9-1:GOTO2360
2360 FORB=1TO2000:NEXT
2370 'WEEKLY REPORT PRINTOUT
2380 CLS:PRINTPR$;" PRODUCTIONS";CHR$(201);"WEEKLY REPORT":PRINT
"WEEK";WK:CHR$(210);WK*8;"PERFORMANCES":PRINT:PRINT"THEATRE CAPA
CITY (PER PERF)";CP
2390 PRINT"TICKET PRICE":PRINTUSINGP$;SP
2400 PRINT"MAXIMUM GROSS (PER WEEK)":PRINTUSINGP$;SP*CP*8:IFP<
0THENP9=1
2410 PRINT:PRINT"TICKETS SOLD THIS WEEK":TS=0:TS=((IX*P9)/60)*C
P*8:IFTS>CP*8THENTS=CP*8
2420 PRINTINT(TS)
2430 PRINT"GROSS THIS WEEK";TG=TS*SP:PRINTUSINGP$;TG
2440 PRINT"EXPENSES THIS WEEK":P5=P+(TG*TX)+AD:PRINTUSINGP$;P5
2450 PRINT:ST=TG-P5:PRINT"NET ";:IFST<0PRINT"LOSS ";
2460 IFST>0PRINT"PROFIT ";
2470 PRINT"THIS WEEK ";USINGP$;ST
2480 IFST<0THENS0=SD-ABS(ST)
2490 IFSD<0THENFM=FM-ABS(SD):SD=0
2500 IFST>0THENS0=SD+ST
2510 PRINT"NET PROFIT TO BE PAID TO INVESTORS ";:PRINTUSINGP$;SD
2520 PRINT"LEFT FROM FRONT MONEY";USINGP$;FM
2530 'IF FRONT MONEY RUNS OUT SHOW IS OUT OF BUSINESS
2540 IFFM<0GOTO2780
2550 'CLOSE THE SHOW?
2560 GOSUB2850
2570 'NEXT WEEK
2580 GOTO2090
2590 'DATA STATEMENTS FOR KEY JOBS AND DESIGN VERSIONS
2600 DATA"DIRECTOR",15000,500,7500,250,2500,100,10,1,25
2610 DATA"MALE STAR",0,20000,0,10000,0,2500,10,1,5
2620 DATA"FEMALE STAR",0,16000,0,8000,0,2000,7,1,75
2630 DATA"SET DESIGNER",10000,300,5000,200,1500,50,3,1,85

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2640 DATA"COSTUME DESIGNER",10000,300,5000,200,1500,50,2,1,9
2650 DATA"LIGHTING DESIGNER",8000,300,4000,200,1000,50,1,5,1,8
2660 DATA"SOUND DESIGNER",4000,200,2000,100,750,25,2,1,75
2670 DATA"CHOREOGRAPHER",10000,300,6000,150,2000,75,3,1,7
2680 DATA"COMPOSER",20000,800,10000,400,5000,150,8,1,7
2690 DATA"LYRICIST",15000,600,7500,300,3000,150,7,1,8
2700 DATA"BOOK AUTHOR",15000,600,7500,300,3000,150,7,1,8
2710 DATA"ARRANGER",8000,600,5000,400,1500,100,4,1,85
2720 DATA"SETS",150000,200,75000,100,50000,75,2,1,75
2730 DATA"LIGHTS",3000,750,1500,500,1000,200,2,1,75
2740 DATA"COSTUMES",100000,2000,50000,1000,15000,250,2,1,75
2750 DATA"SOUND",3000,1000,1500,500,1000,200,2,1,75
2760 DATA"PROPS",40000,1000,20000,500,5000,150,1,75,1,9
2770 'YOU'VE SPENT MORE MONEY THAN YOU HAVE AVAILABLE
2780 CLS:PRINT@192,"YOU HAVE SPENT MORE MONEY THAN YOU HAVE
THE STATE ATTORNEY GENERAL'S OFFICE WILL CONTACT YOU BY THE
FIRST OF THE MONTH. THEY ASK THAT BEFORE THEN YOU TAKE THE TIME
TO SEE 'THE PRODUCERS' WITH ZERO MOSTEL TO SEE WHERE YOU WENT
WRONG. "
2790 'AGAIN?'
2800 PRINT:PRINT:INPUT"SHOW-BIZ STILL IN YOUR BLOOD";TA#:IFLEFT$(
(TA#,1)="Y"RUN
2810 CLS.END
2820 'ROUTINE TO CHOOSE REVIEW BASED IN QUALITY OF SHOW AND A
RANDOM NUMBER
2830 R=AND(10):R1=R*IV:R1=INT(R1/9):FORTI=1TO1500:NEXT:RETURN
2840 'ROUTINE TO DECIDE TO CLOSE THE SHOW
2850 PRINT:INPUT"DO YOU WANT TO CLOSE THE SHOW";C9#
2860 IFLEFT$(C9#,1)="Y"THEN3000ELSERETURN
2870 'ROUTINE TO SPEND MONEY FOR ADVERTISING THIS WEEK
2880 PRINT:INPUT"HOW MUCH DO YOU WANT TO SPENT ON ADVERTISING TH
IS WEEK (DO NOT USE DOLLAR SIGN OR COMMAS)";AD:RETURN
2890 'ROUTINE TO CHANGE TICKET PRICE - HIGHER PRICES=SMALLER
AUDIENCES - LOWER PRICES=LARGER AUDIENCES
2900 PRINT"THE CURRENT TICKET PRICE IS";USINGP$;SP:INPUT"DO YOU
WANT TO CHANGE THE TICKET PRICE";YN#
2910 IFLEFT$(YN#,1)="N"THENRETURN
2920 INPUT"TO WHAT PRICE";SN
2930 IFSN=SPPRINT"THAT'S THE CURRENT TICKET PRICE":GOTO2900
2940 IFSN>SPTHEN=(SN-SP)*2:P9=P9-D

```

```

2950 IFSNCSPTEND=(SP-SN)*2:P9=P9+D
2960 SP=SN:RETURN
2970 'ROUTINE TO PAYOUT 90% OF THE PROFITS AND KEEP A RECORD
OF AMOUNT PAID OUT
2980 SE=SD* .9:SD=SD-SE:SF=SF+SE:PRINT"90% OF PROFITS DISTRIBUTED
TO INVESTORS":FORB=1TO1500:NEXT:RETURN
2990 'CLOSING NOTICE
3000 CLS:FORX=0TO127:SET(X,0):SET(X,47):NEXT
3010 FORY=0TO47:SET(B,Y):SET(127,Y):NEXT
3020 PRINT@86,PR$;" PRODUCTIONS INC.";
3030 PRINT@196,"C L O S I N G   N O T I C E";
3040 PRINT@324,"IT IS WITH GREAT REGRET THAT WE POST THIS NOTICE
.";
3050 PRINT@388,"WE WANT TO THANK ALL OF YOU FOR ALL OF YOUR HARD
.";
3060 PRINT@452,"WOK. PLEASE BE ADVISED THAT THIS PRODUCTION WILL
L.";
3070 PRINT@516,"CLOSE TWO WEEKS FROM TONIGHT. AGAIN THANK YOU.";
3080 PRINT@670,"SINCERELY YOURS.";
3090 PRINT@734,PR$;" PRODUCTIONS";
3100 PRINT@836,"P. S. YOUR FINAL TOTALS TO FOLLOW";
3110 FORTI=1TO7000:NEXT
3120 'FINAL TOTALS
3130 CLS:PRINT"FINAL TOTALS:":PRINT:PRINT"YOUR SHOW RAN FOR";WK;
" WEEKS BEFORE CLOSING.
THAT'S";WK*8;"PERFORMANCES.
OUT OF YOUR ORIGINAL $1,000,000 YOU HAD";
3140 PRINTUSINGP$;FM;:PRINT" LEFT WHICH HAS BEEN GIVEN BACK TO
YOUR INVESTORS. "
3150 PRINT"TOTAL AMOUNT PAID TO INVESTORS":PRINTUSINGP$;SD+SF+FM
3160 PRINT"THAT MAKES A ";((SD+SF+FM)-1000000)/10000;"% RETURN ON
THEIR INVESTMENT. "
3170 PRINT"(A 0% RETURN IS THE BREAK-EVEN POINT FOR YOUR INVESTORS
A NEGATIVE RETURN IS A LOSS)
DO YOU WANT TO PRODUCE ANOTHER SHOW";:INPUTYNS:IFLEFT$(YNS,1)="Y
"THENRUNELSEND
3180 'ERROR TRAPPING ROUTINE
3190 PRINT(ERR/2)+1;"ERROR IN LINE";ERL:FORTI=1TO2500:NEXT:RESUM
ENEXT

```

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- Elements Quiz

MARCH Monitor ● Jigsaw

- Tarot ● Check Balance ● Dive Bomber

APRIL

- Safari ● Rabbits and Foxes
- Personal Finance (Checkfinder)
- Series Circuits ● Don't It Make My Brown Eyes Blue ● Metric/English

MAY

Converter

- Dog Star Adventure ● Awari ● Letter Crunch ● Math ● Super Sub

JUNE

- Atlantic Ballon Crossing ● German Word Quiz ● Nim ● Home Appliance Record System ● Entrapment

JULY

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AUGUST

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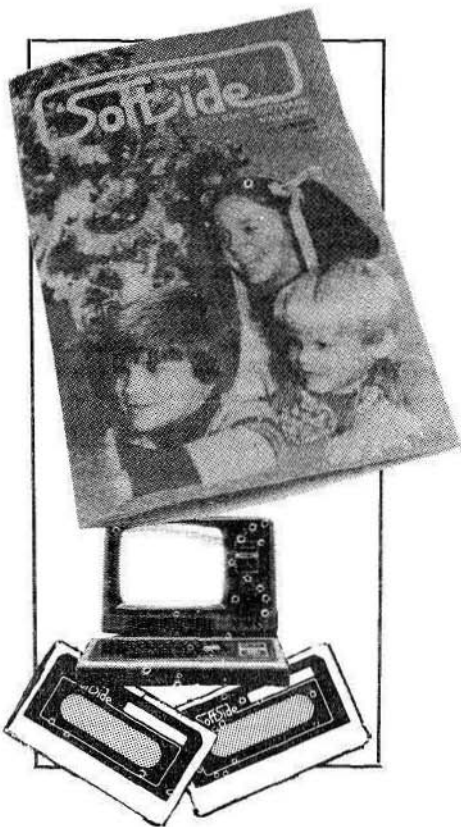
1980

JANUARY

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- Reflection ● Dante's Inferno
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- Scott Adam's Backgammon
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A GAME DESIGNER'S VIEW

by Ian Chadwick

What Makes A Computer Game Appealing

George Blank's article in the January and February 1979 issues of Softside classified the four desirable qualities of games as: challenge, creativity, imagination and social interaction. This is a fair but incomplete generalization. Neglected was the very real appeal of visual or tactile stimulation. While Sargon may fulfill certain intellectual criteria as a game program, it cannot give me the pleasure of manipulating my wooden Staunton set around the board. The Orion series of games are very similar; good games perhaps, but distinctly boring as graphics go.

On the other hand, while race type games usually bore me in board form, I enjoy playing Round

the Horn or Atlantic Balloon Race particularly because of the graphic ingenuity shown (especially in the maps).

Endgame

Another neglected appeal is the attraction of the endgame. Games done by computer designers so often show talent with program manipulation, but often lack game sensitivities by failing to generate a sense of purpose. The authors may be brilliant programmers, but they seldom come across as experienced gamers. What many games lack is a defined, limited set of objectives which encourage certain types of play, interaction, and produce measured reward.

Thus while the game Safari may be appealing in the opening, it rewards senseless, unrealistic risk-play by allowing a player to gain immediate points, be forced out of the game early, and still win by points! The game lacks any depth of strategy or tactics.

Santa Paravia, for example, allows an easy, early win by the reckless player. By engaging in heavy deficit spending on cathedrals and palaces, as well as mills and markets, the player may create a large base of nobles, clergy, and merchants who do not disappear when creditors repossess your property and edifices. Thus the player is encouraged to overspend enormously in order to obtain the taxable base necessary for immediate growth. This is the kind of error that a programmer may not foresee while a gamer would expect to occur, especially one used to the multi-player war/economic/diplomacy games that abound these days (Diplomacy, A mighty Fortress, Conquistador, Machiavelli, Mercenary, etc.).

Shooting gallery games, under no matter what disguise, be it a Star Wars mask, or a torpedo/tank/gun cover, are prime examples of the limited objective game. The level of boredom generated by these games rises proportionately with the number of times they are played. There is just not sufficient interest generated by their objectives to make them perennial favorites on the computer. (By this I assume that anyone with enough intelligence to operate a computer is intelligent enough to become easily bored by what is better and more often played in a pin ball gallery).

Drives and Outlets

Too, games must provide an outlet for a certain aggressive drive. This comes under the category of challenge. I credit those who purchased computers with the need for greater, more complex stimulation than that provided by say, a jigsaw or tiddley winks. This means that games such as Golf, which in reality only represent guessing games of a more sophisticated nature, will have a short life as a run program, while Air Traffic Controller or Melt Down will have much longer life. It is my observation that games with a military framework (be it Star Trek or Kriegspiel or the like) have a greater appeal because the military aspect provides its own justification for aggressive activity..the *raison d'etre* so to speak.

"Chrome"

Imagination is far more critical in a computer game than in a board game where playing surface and pieces help extend the game's universe into the player's conscious. The asterisks, light spots, and symbols of such games as Invasion Force or Starfleet Orion convey no real, visible image to help the 'suspension of belief' leap the gamer needs to really appreciate the game, so there must be a greater emphasis on imaginative movement, play, or 'chrome'. However, imagination only holds the players' attentions for a limited time.

In the "compunovel" games such as Adventure, Voodoo Castle, etc., imagination makes the game acceptable, but once the puzzle is solved, the game immediately loses interest. The lack

of continual challenge, changing conditions, or different scenarios make these games while no "one-shot" efforts, of limited interest after their solution. Don't get me wrong—I loved solving these two mentioned games, but they only took 6 or 8 tries each to unravel. Now what do I do with them?

The problem side of the computer novels, it seems to me, is the utter lack of supportive graphics to help the role-playing aspect and the suspension of belief, but suggestive graphics such as those found in Tunnel Vision can heighten the effect considerably.

While I enjoy gaming solitaire against the machine, I feel that more is required when playing with other players, mostly in real player interaction, but also in game "chrome". The great joy in playing Santa Paravia comes from watching one's kingdom grow and flourish, visibly and not just in numbers or graphs.

Action and Interaction

Returning momentarily to the question of continuity of action; when a number of players are involved in any game (say 4 to 6), and there is no interaction between them, the time spent awaiting one's turn can seriously dilute the continuity between actions. A good way to increase the interest level is to make the player sequence random every turn. This can radically change play, especially in the endgame of such a game as Round the Horn where two or more players are nearing their objectives. Another useful inclusion is a random events table which, while not interfering continually, does

not guarantee the success of even the most carefully considered plan of action. This improves Santa Paravia considerably, for example, and also Safari, as well as giving the random penalties in End Zone a realistic touch.

Bold action, it must be remembered, ought to be tempered by severe restrictions against foolishness and unrealistic play. This is a hard line to draw, and it takes a sophisticated, experienced game player to recognize the parameters involved in a particular game. One must be careful not to place too much emphasis on challenge as continuity unless one has accounted for the spectrum of possibilities for over-reaction.

Social interaction is sorely missing from most of the computer games I have played. The vast majority of the games are multi-player solitaire games. Santa Paravia, Safari, Round the Horn, Balloon Crossing...all despite the number of players have no functional player interaction. There are no conditions for war between players, for action if players occupy the same locale, for economic or diplomatic maneuver. Santa Paravia has an undefined, infinite pool of land, serfs, and wheat which adds to the lack of realistic play it should encourage.

Those Pesky Bugs

This brings me to a point which is perhaps more subjective than other areas previously discussed: that of the errata, or 'bugs' so often found in both written and taped programs.

As a wargamer, I have become accustomed to the almost obligatory errata sheet in my games. I am not so ready to accept errata in my computer programs. It is far more difficult to debug a program than to do the same for a wargame.

There are, it seems, two kinds of bugs to deal with; those of program nature, syntax errors, undefined lines, any of the error codes, and those caused by the improper application of the English language. Now while the latter may not affect program running, it offends me to find such glaring grammatical and/or spelling mistakes as 'your' instead of you're (Treasure Hunt intro.), as 'ridiculous' instead of ridiculous (Dog Star, line 6800), 'waring' instead of warring in Safari (line 699), 'nember' instead of number in Super Sub (line 25163), 'affects' instead of effects in the same program (25161, the instructions of Super Sub suffer from more than their fair share of grammatical errors, ie; lines 32767, 25164, 34040, 34060 to name a few). The point is that although typos do exist and one may expect a few to slip through past even the most conscientious editor, there exist enough to draw the conclusion that brilliant in their field these authors may be, they lack comprehension and capabilities in the English language.

The former bugs are also common—enough to suggest improper design and/or playtesting. It is hard to fathom a designer's intent when coming across an undefined line (example; line 1517 in End Zone says GOTO01502. Fine but 1502 does not exist!). I had encountered so

many errors in my taped edition of Treasure Hunt that I had to save a significantly changed copy on another tape after hours of rewriting. In Population Stimulation, goods are not traded between both planets, only Techno receives the benefits...a rather lopsided game! I encountered various errata with End Zone. Isolate will not work after two typings (which may be some unrecognizable syntax error on my part but immediately after entering who is to go first, the computer says that side wins..without making a move).

My view is a little different, since I purchased my TRS-80 with the intent to expand my game design and gaming horizons, not merely to enjoy games as a secondary or even tertiary pastime. When I talk about game principles or make these criticisms it is from either past experience or design intent that I speak.

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Mr. Chadwick says of himself, 'Although relatively new to the field of computers, I have had a long affair with games and game design (which includes six years of wargames and fantasy role playing games).'

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18 machine language subroutines with easy access for BASIC users. Sort 1000 element arrays in 9 seconds, read and write arrays to tape, compress and uncompress data, move arrays in memory, duplicate memory, fast horizontal and vertical lines, 5 routines for screen control. Specify 16K, 32K, or 48K version, order **TS25C** for **\$24.95**.

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BASIC program utility allows you to renumber portions of a program, move portions from one location to another, delete, merge, save and verify combined and changed programs, and create your own library of programs, subroutines, and even data statements. Works on tape or disk systems. Two programs on one tape. Specify 16K, 32K, or 48K (unspecified orders receive 16K) order tape **TS22C** **\$34.95**

TIMSER

Time series analysis program fits data to 9 different 1st, 2nd, and 3rd order curves. Goodness of fit data, tables, projected data, confidence limits, curve fit, variance, correction factor, seasonal and cyclical variations, inflation corrections are all implemented. Detailed user manual with illustrated examples. Order tape **RD11C** at **\$14.95**.

Y-YBAR

Optical system design program allows manipulation of ray heights at lens surfaces using Y-Y Bar diagram method. With documentation on tape for **\$14.95**.



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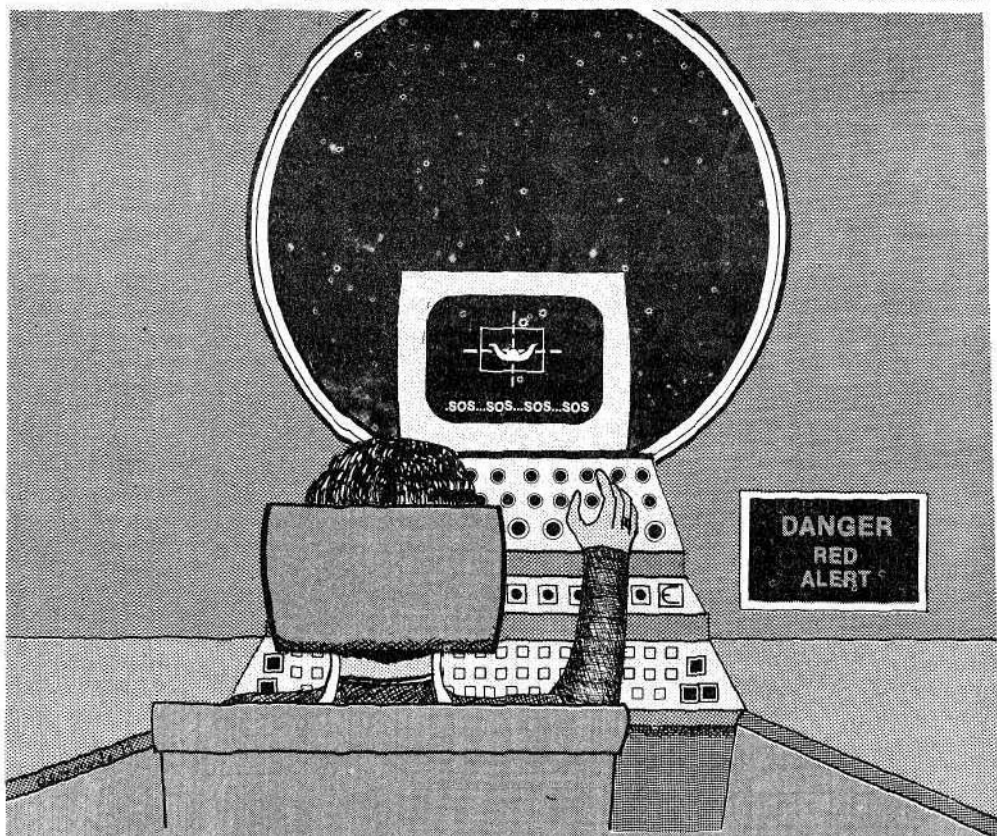
KAMIKAZE

by Russell Starkey

You command the anti-aircraft guns as suicide planes dive toward your ship in this exciting game of skill!

A live-action game with machine language graphics (plane and ship) for fast-paced fun. Three levels of play: Beginner, Amateur, and Professional.

For Level II, 16K Price, \$7.95



TIME TREK Joshua Lavinsky

"If I had to choose only one Star Trek program, it would certainly be TIME TREK." - 80-US Comparative Review, July, 1979.

Your mission: Destroy from 8 to 80 Klingons (Skill level 1-10) before they destroy your 7 or 8 starbases.

Real Time! (in FAST machine language)

You can maneuver even when being fired on! Dodge enemy fire!

You have only seconds to respond when you get an SOS from a starbase! Yet in 5 seconds in this game you can move from one quadrant to another, maneuver into position for battle, and destroy the enemy, or if you are not careful, be destroyed yourself. If you wait longer, you will arrive just in time to see your starbase explode and the Klingons move off the edge of the screen.

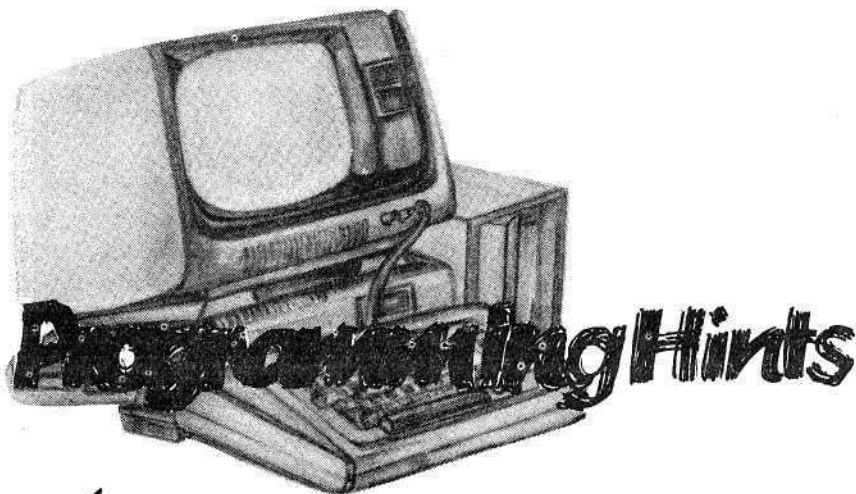
4K SYSTEM Tape (will load in Level I or II TRS-80)

\$14.95

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1

BREAK KEY DISABLE

LEVEL II BASIC POKE 16396, 23

DISK BASIC POKE 17170, 175
 POKE 17171, 201

2

Keyboard Access

Location	1	2	4	8	16	32	64	128
14337	@	A	B	C	D	E	F	G
14338	H	I	J	K	L	M	N	O
14342	P	Q	R	S	T	U	V	W
14346	X	Y	Z					
14352	0	1	2	3	4	5	6	7
14368	8	9	:	;	=			?
14400	enter	cl	bk	[]		spc bar
14464	Left and Right shift are #1							

To use this chart simply find the character you want to use; note the number to the far left under the **location** heading and also note the number above your character. This will function (when used in the form: IF PEEK(LOCATION)=INPUT # THEN etc. where Input # is the number directly above your character) just like an INKEY\$ except that the PEEK statement will always read that input # while the key is being pressed. Therefore, one doesn't have to keep punching at the keyboard. If you use a RND statement to go to either input location randomly, games no longer become a battle of the INKEY\$'s. This adds to the game and saves your keyboard.

3

Part of our livekey routine was missing in the January SoftSide, so we reprint our updated version. Try it for your keyboard entry routines.

```
10 REM * LIVE KEY BY ROGER ROBITAILLE *
    * PUBLIC DOMAIN - NO COPYRIGHT *
100 REM * ENTRY INTO THE SUBROUTINE REQUIRES: *
    * CU = CURSOR POSITION *
    * SZ = MAX NUMBER OF CHARACTERS *
200 REM * OUTPUT OF SUBROUTINE *
    * STRING = E$ VALUE = E *
300 REM * FOR DOUBLE PRECISION *
    * CHANGE TO E#=VAL(E$) *
400 REM * NOTE: IF MD=5 NO CARRIAGE RETURN IS *
    * REQUIRED WHEN MAXIMUM SIZE IS REACHED *
2000 CU=P:SZ=X:MJ$=STRING$(SZ,136):E$=""EH$=""CZ=CU
2010 PRINT@CU,MJ$:PRINT@CU,E$:IF(MD=5)*(LEN(E$)=SZ)THENE=VAL(E
$):RETURN
2020 PRINT@CZ," ";FORH=1TO25:EH$=INKEY$:IFEH$=""THENNEXTH:PRINT
@CZ,CHR$(136):FORH=1TO25:EH$=INKEY$:IFEH$=""THENNEXTH:GOTO2020
2030 EV=ASC(EH$):IFEV=13THENDS=VAL(E$):OS$=E$:PRINTCHR$(30):RET
URNELSEIF(EV=8)*(LEN(E$)>0)THENE$=LEFT$(E$,LEN(E$)-1):CZ=CZ-1:
GOTO2010ELSEIFLEN(E$)=SZTHENGOTO2010ELSEE$=E$+EH$:PRINT@CZ,EH$:
CZ=CZ+1:GOTO2020
```

4

PROGRAMMING HINT: (Level II only)

How do you recover a BASIC program which has been destroyed by command NEW? This method is particularly useful when you have just finished entering a long program and then accidentally typed NEW:

1. POKE 17130,1
2. SYSTEM
*/11395
3. LIST (you should see your program on the video display)

thanks to —
Diem-Lan Ton Nu
Glendale, CA.



THE AUTOMATED DISKETTE DIRECTORY

by George Blank

All you do is insert the diskette in the drive and type the name or number you use for that diskette. The program automatically reads the directory of the diskette, ignoring invisible files like BASIC/CMD and normal DOS files like DISKDUMP/BAS, and stores it in a disk file.

DISPLAY OPTIONS INCLUDE:

\$14.95

BASIC
cassette

Printout to screen or line printer

Alphabetic sort

Search for single program using INSTR

(A search for TRE would find STARTREK and TREES)

Index to a single disk

Search and RUN program

Three programs with instructions for loading on a NEWDOS diskette and instruction manual.

IMPORTANT: This program requires the following minimum system:

At least **TWO** disk drives
32K of memory

NEWDOS by Apparat(Uses CMD:"DIR"and OPEN:"E")

PR Dogfight

by David Bohlke

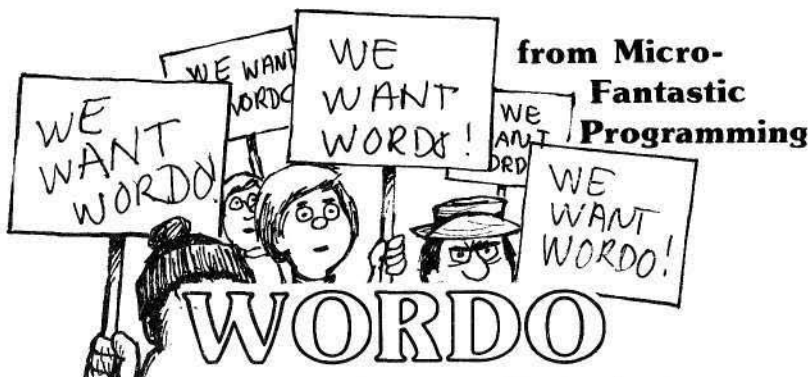


Level II, 16K \$7.95

A challenging game of aerial battle - you climb, dive, fire at the enemy forces, and with every hit you gain more points toward becoming an ace. But if you get too close, they'll shoot you down! Between raids, you land to replenish your fuel supply at friendly airstrips (but don't crash into the tree). You have seven missions to score 1,000 points. Total point accumulation chart, bar graph showing progress of each player, intelligence report of entire Battle Zone. 1-5 players. Excellent graphics.

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The computer has 1000 five letter words in memory. The player's task is to guess the one the computer selects. The player picks a word; the computer tells the player how many of the letters in the chosen word are in the computer's word; the player picks another word; and so on until the player guesses right. An absorbing one or two player word game that is also a great vocabulary and spelling tool.

80 *SOFTWARE CRITIQUE* recently recommended it highly, calling it 'much more fun and more of a challenge than Hangman and similar word games.'

Level II,

16K

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\$14.95

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Lost Dutchman's Gold

by Teri Li

This unique CompuNovel combines the best features of **Adventure** with the thrill of the old west. There is an old prospector, a stubborn mule, a ghost town, a cave in the fabled Superstitions mountains, Indians, a burning desert, and the fabulous treasure of the **Lost Dutchman's Gold**. So grab your rifle and your saddlebags 'pardner' and get ready for the **Adventure** of a lifetime!

16K, Level II

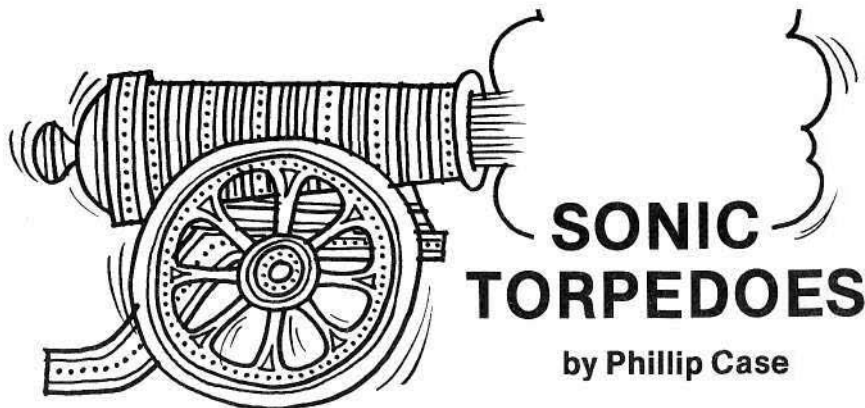
\$9.95



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SONIC TORPEDOES

by Phillip Case

Sonic Torpedoes is a targeter game in which you have a fixed torpedo launcher. Three different types of alien space craft 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 which work in 4K of RAM. Second it makes use of VOICE INPUT. You fire your torpedoes by saying the word 'FIRE' into a microphone which 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 that sold by Radio Shack under the Archer name for \$12.00.

Also the program is designed to be both Level II and disk compatible.

```

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$(2, 131)
100 R(1)=1:R(2)=7000:R(3)=4000
110 CLS:PRINTCHR$(23); "          SONIC TORPEDOS":FORA=1TO1000:NEX
T:CLS:INPUT"DO YOU NEED INSTRUCTIONS TO PLAY";A$:IFLEFT$(A$,1)="
Y"GOSUB200
120 CLS:FORX=0TO127:SET(X, 41):SET(X, 45):NEXT:FORY=42TO44:SET(0, Y
):SET(1, Y):SET(24, Y):SET(25, Y):SET(48, Y):SET(49, Y):SET(82, Y):SET
(83, Y):SET(126, Y):SET(127, Y):NEXT
130 PRINT@061, CHR$(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$="GRANNY":Q=0
150 GOSUB200
160 GOSUB230
170 FORE=2TO55:GOSUB430:MU=USR(R(0)):PRINT@E, F$;: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 Q=AND(3):F$=A$(0):RETURN
240 IFS<1THENRETURN:ELSEFORY=40TO1STEP-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. UNHACK 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 NU=USR(29954):RESET(X,0):0=0-2:IFA<1THENRETURNELSESET(X,0):I
FPOINT(X,0-1)ORPOINT(X,0+1)GOSUB270
370 IF0=385-5-1: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

```



VOICE CONTROL

by Phillip Case

Recently the latest rage in programming has been the use of sound effects in games. In this issue of SoftSide is a program titled SONIC TORPEDOS which has a unique method of permitting you to control the program by voice input. This article will show you how to use this technique in your programs.

Believe it or not, this technique was accidentally discovered by myself and Chris Freund (familiar name among SoftSide readers) while working on another program.

First, a microphone is required for voice input. It is to be plugged into the MIC jack of your cassette recorder. Then unplug both the AUX and REM plugs and leave them loose. When this is done, depress the tab sensor in the cassette bay, the RECORD and the PLAY keys all together.

The program commands themselves are relatively simple.

The microphone causes the value of the cassette to change whenever sound is sensed. To check the value of the cassette port use the INP(255) command. This will give you a value to work with in your program. The value of the port will be 255, if sound has been detected, and 127 if not. Use the INP(255) function as you would the INKEY\$, i.e., within a loop.

Once sound has been detected, the value of the cassette port will remain at 255 until you either clear the screen (CLS) or home the cursor (PRINTCHR\$(28)). This must be done to reset the cassette port for receiving sound. It is suggested that this be done just prior to checking the port so that no background sound be picked up.

There is a little problem that arises if you are in the character mode and you are trying to use this technique. Because the 32

character mode is controlled via the same port as the cassette recorder, the values of the port are different when you are in that mode. For the same reason it is possible to get double size letters on Level I with a little work.

Below is a table showing the various values under different conditions:

MODE	64Char.	32Char
No		
Sound	127	63
Sound	255	191

Here are two examples of how to use sound input in your programs.

The following program will print 'SOUND!!!' in the upper-left hand corner of your screen

whenever the computer is picking up input from the microphone.

```
10 CLS:PRINTCHR$(28):IF INP(255)=255 THEN PRINT"SOUND!!!":GOTO10  
ELSE 10
```

The following program will display a graphic representa-

tion of your voice.

```
10 CLS:FORX=0TO127:PRINTCHR$(28):IF INP(255)=255 THEN Y=22 ELSE  
Y=23  
20 SET(X,Y):NEXT:RUN
```

If you are interested in seeing how to incorporate this technique into your games, refer to

SONIC TORPEDOS elsewhere in this issue.



Please Note:

The credits for Mail List II go to Small Business Systems Group from Dunstable, Massachusetts. Our sincere apologies for our typographical error that has given the program miscredits in the past.

The MAGIC of Leo Christopherson

Android Nim

The newest version of TRS-80's first animated graphics game - Android NIM - now with more animation and **sound!**

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Program You Own!** By Ken Knecht

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by Microcomputer Specialists

Form letter generator for use with the Electric Pencil by Michael Schraye. You can use a mailing list maintained as a PENCIL file, print letters selectively using selection codes, use custom greetings for each account, and print labels. Requires 32K 1 Disk System, Electric Pencil, and lower case modification kit. (Program 121 lines 5600 Bytes) **\$35.**



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A powerful monitor for the TRS-80 with special ability in Tracing and Debugging. Single Step through machine language programs or set up to three breakpoints, and look at this display format!

```

AF BC DE HL IX IY AF' BC' DE' HL' SP PC
0044 0000 C000 B77C 6433 FFFF 0102 0000 4000 3FC0 41FC 4400
4400 LD R, 93
  
```

All the power of regular monitors as well. Look at these commands:

A FIRST(0) LAST(FFFF)	ASCII dump
A FIRST 0	formatted ASCII dump
B	start of branch table
B VALA	display in decimal
B VALA VALB(0)	hex arithmetic
C	check system tape
D FIRST(0) LAST(FFFF)	dump hex
E FIRST(0)	edit memory
F FIRST LAST VALUE	find byte
G BRKPTS (3 max.)	set breakpoints, continue
H FIRST LAST VALUE	find word
I PORT	read port
K	keyboard echo
L	load system tape
L SECTOR MEMORY COUNT(1)	load from disk
M FIRST LAST BLOCK	move memory
N	display symbol table
N 0	symbol table to tape
N VALUE	define value for symbol table
N FIRST 0	define start symbol table
O PORT VALUE	write to port
P	initialize memory blocks
P ENTRY	write memory blocks and start
P FIRST LAST	define a memory block
Q FIRST LAST	calculate checksum
R	display / modify registers
S FIRST LAST OPTION(0)	disassembler
T COUNT OPTION(0)	trace instructions
U FIRST COUNT OPTION(0)	unformatted tape I/O
V FIRST LAST BLOCK	verify memory
W SECTOR MEMORY COUNT(1)	write to disk
X FIRST LAST BLOCK	exchange memory
Z FIRST LAST VALUE(0)	zero memory

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Level II, 16K \$19.95

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With sound

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With sound.

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With sound

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