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COVER STORY . . .

About the Author: Byron Myhre is a Medical Doctor with a Ph.D. as well. He is Professor of Pathology at the UCLA School of Medicine and Head of Immunopathology. An avid climber, he has scaled somewhere around 140 peaks himself, and is a member of the Sierra Club. He has been working with the TRS-80 for about two years.

Lifeboat Associates, specialists in microcomputer disk software, is proud to offer the first professional disk-based language and utility package for the Radio Shack TRS-80 computer. Written by Microsoft, creators of Level II BASIC, the package runs on a TRS-80 system with 32K RAM, one or more drives and TRSDOS. The software is supplied on diskettes and consists of:

FORTRAN a true relocatable machine code compiler for ANSI FORTRAN X3.9 (except COMPLEX variables).
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For uniformity, we have adopted the Radio Shack TRS-80 Level II BASIC as the BASIC dialect used within the pages of this magazine. It was chosen because it stands to become the most commonly used dialect among microcomputer users and because it shares a common heritage with the many microcomputer languages produced by Microsoft.

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Creative Director
Elaine Cheever

Copy Editor
Freida Day

Production
Sharon Demmerle
Lauri Miller
Sharon Horton
Alison Willis

Subscriptions
Diana Bishop, Mgr.
Brenda Cookinham
Karen Fissette
Jane Brunelle

Publisher
Roger W. Robitaille, Sr.

Office Manager
Rita Ellis

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Leslie Place

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Bette Keenan

Shipping
Bea Kimball, Mgr.
Donna Jean
Robin Caldwell

Printing
Memorial Press Group

The Software Exchange

Publishing Coordinator
Elizabeth Robitaille

Marketing Manager
Joseph Breton

Receptionist
Mary Edwards

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Lester Anderson
Gary Young, Asst.

Programming
Brian Berkebile
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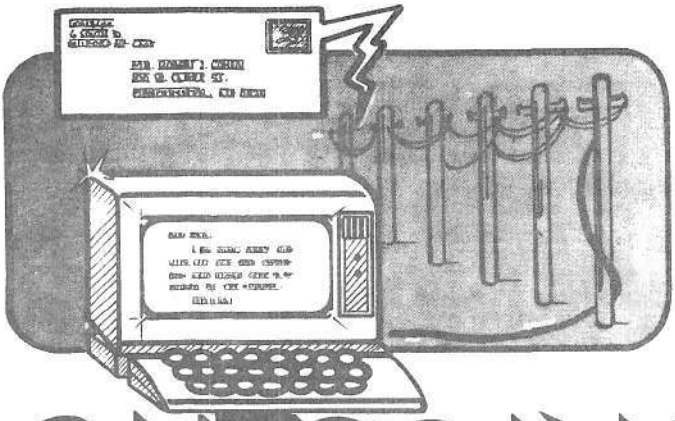
Copy Division
Donna McMahon



OUTGOING MAIL

Banned in Boston

Back in the Victorian era, a shrewd promoter took a rather modest nude painting and displayed it in a shop window, then induced a small boy to complain to the police. The shopowner was arrested, the case got national publicity, and thousands of prints of the painting, "September Morn", were sold nationwide. Ever since that time, it has become a status symbol for a publisher to be "banned in Boston". The Software Exchange achieved that dubious distinction at the Boston Computer Show.

As the staff of SoftSide Publications and Ramworks (Ramworks is a wholesale division of The Software Exchange) were setting up our booth at the show, we were served with an injunction from a local Radio Shack dealer forbidding us from using the name TRS-80 Software Exchange during the show. Ironically, we had already changed our name to The Software Exchange because we have started to distribute software for the Exidy Sorcerer and the Apple II, but most of our labels had the old name, and we had to relabel all our software at the show with RAMWARE™ labels. Despite the inconvenience, it was nice to be noticed instead of ignored by The Shack.

Notice on a national basis is inevitable now that our company has passed the million dollar mark in annual sales to become the country's largest independent supplier of personal computer software. We are working furiously to upgrade our product line and procedures appropriately to our success.

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Order related questions (Will it do this?) and problems with programs selling for $50 and more:
George Blank is usually available Monday thru Friday 9AM to 10AM
Roger Robitaille is usually available Monday thru Friday 5 PM to 6 PM
Any TRS-80 problem:
The whole programming staff is available on Tuesday nights from 7PM to 10PM. (All times are Eastern Time Zone.)

Programmer of the Month

Our TRS-80 programmer of the month for November is thirteen-year-old Roy Niederhoffer of Great Neck, NY. Roy is in the ninth grade at Great Neck Junior High School and plays the violin, cello, and piano, but his favorite keyboard is the TRS-80. At that keyboard he is a maestro.

Roy became interested in the TRS-80 when his brother bought one for his investment firm, and would stay up to 3 a.m. learning to program. With the help of his sister, who is studying psychology, Roy did an excellent version of ELIZA which had our staff in stitches, but we were reluctant to publish a program that was not fully original.

Another one of Roy's programs did score with our reviewers; Alien Invasion, with cute animated graphics, nifty sound, and arcade style action as you shoot down the alien invaders who are flying over earth and dropping bombs on your guns. You will be able to buy it soon from TSE.

Roy now has his own 16K Level II TRS-80, and hopes that his programming will buy him a disk drive. He wants to start his own software business, and we think he'll do well.

GWDD

NEW! utility package from NEPENTHE PROGRAMS

Programming utility for professional programming.

File Manager 80 will organize tape and disk file routines, print a dictionary of items specified by you, edit items already specified and create record layouts using the items you have described. It will even create the code for your input/output routines, including format, sub-record, get, and put routines, and store them as temporary files to merge into your programs. It will maintain a dictionary of the subroutines you create and the variables used.

Minimum configuration is one disk and 32K of memory, but two disks are strongly recommended. Comes on disk with manual for $14.95.

Editor's Recommendation: This is one of the most valuable programs I own. I have used it for tasks as varied as debugging, disassembling Level II, and storing my copy of Sargon II on disk for fast loading. The only other program I have that compares in value is NEWDOS. — **George Blank**

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RSM 2/2D

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B - BINARY ARITHMETIC:	Add/subtract in hex and decimal
C - CHECK TAPE:	Check cassette tapes for proper checksum
D - HEX DUMP:	Display Hex equivalent of memory block
E - EDIT:	Enter, examine, or modify memory in hex code
F - FIND 1 BYTE:	Find and display single-byte hex codes
G - GOTO:	Go to and execute program at specified address
H - HUNT 2 BYTES:	Find and display two-byte addresses
I - INITIALIZE/INPUT:	Initialize or input data from port
K - KEYBOARD ECHO:	Type directly to screen or terminal
L - LOAD AND GO:	Load a cassette tape and execute program
M - MOVE:	Move any block of memory to specified location
O - OUTPUT:	Output hex value to specified output port
Q - CHECKSUM:	Compute checksum of specified memory block
R - READ TAPE:	Read cassette tape (header or standard)
S - SYMBOLIC DUMP:	Display memory in ZILOG Z-80 mnemonics
T - TEST MEMORY:	Test memory block and display errors
U - USER:	Allows user to write and execute new commands
V - VERIFY MEMORY:	Compare any two blocks of memory
W - WRITE TAPE:	Write any memory block to cassette tape
X - EXCHANGE:	Interchange any two blocks of memory
Z - ZERO MEMORY:	Write zero or any hex code into memory
@ - BREAKPOINT:	Inserts breakpoint AT specified address
P - PUNCH:	Writes cassette tape in LEVEL-II SYSTEM format
R - READ:	Read SYSTEM tape, display name, start address
L - LOAD:	Loads specified disk sectors into memory block
$ - SAVE:	Saves memory block into specified disk sectors
Y - TRS232:	Set print parameters (baud, etc.) for TRS232
→ - PRINT:	Directs output to printer as well as screen

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and you want to do some serious machine language or assembly language programming?

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SARGON HANDBOOK

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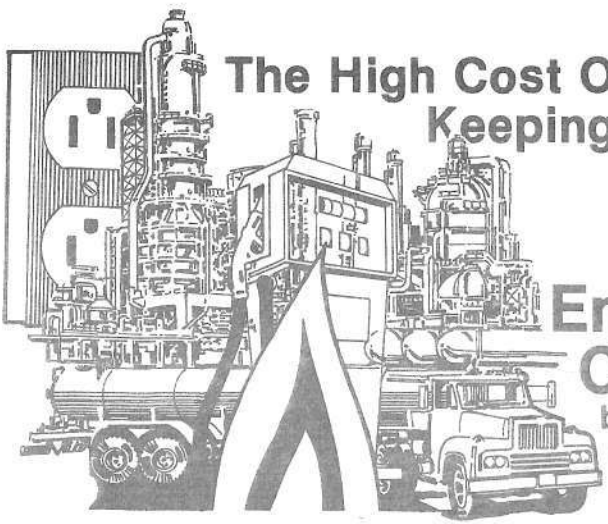

The High Cost Of Keeping Warm

Energy Cost

by George Blank

Few things make people hot under the collar like the cost of staying warm these days. The cost of every kind of heating fuel except sunshine seems to be rising rapidly. As the changes come day by day, how do you know if you are getting a good deal? Is it time to put a wood burning stove in the kitchen for heat? If you are planning to buy a house, what kind of heat should you look for? Should you convert your present heater to a different fuel?

This program will help you answer these questions. The program asks you to select one of the six fuels listed and enter the current or proposed price. Then it calculates the price at which each of the other five fuels would give equal value. If another fuel is available at a price cheaper than the price on the screen, that fuel is a better value.

The program calculates the price equivalent by converting the different measurements into equivalent British Thermal Units and then adjusting the figure received to allow for the differing efficiencies of various furnaces. The figures used to arrive at the comparison are easy to find in the data statements, if you wish to change them. Actually, only measurement equivalents in gallons of oil are used in the calculators, but the BTU's are listed if you want to make changes.

Some of the changes you might wish to make would be to allow for different qualities of fuel or different efficiencies of furnaces. For example, while the wood furnace is rated at 50% efficiency, a fireplace has a much lower efficiency. If you have an electric heat pump instead of resistance heating, that is more effective. While the figure varies from place to place, a figure of 160% efficiency for a heat pump in the midwest is appropriate.

You might want the ratings of various fuels. For example, dif-

ferent grades of coal range in value from 12,000 to 15,000 BTU's per pound, and different woods have an even wider range. The value for wood (one cord equals 150 gallons of oil) is appropriate for woods with a medium heat value like Elm or White Birch.

If you wish to change the BTU value of a fuel, place the equivalent number of gallons of heating oil in line 230. To change the furnace efficiency value, place the percent efficiency rating in line 240. Changes to line 220 will not affect the calculations. Those figures are provided for reference only. All DATA is given in the order listed in line 200.

This program obviously does not tell the whole story about various fuels. Many people would be willing to pay a significant amount not to have to chop wood, empty ashes, and stoke a furnace, while other people could save a hundred dollars a month by chopping wood instead of maintaining a tennis club membership. You will have to decide such values for yourself!

```
10 REM * ENERGY COST COMPARISON PROGRAM *
20 REM * GEORGE BLANK - EDITOR, SOFTSIDE *
100 CLEAR 500:DIM A$(6,2):DIM A(6,4)
110 FOR A=1TO6:READ A$(A,0):NEXT A
120 FOR A=1TO6:READ A$(A,1):NEXT A
130 FOR A=1TO6:READ A(A,0):NEXT A
140 FOR A=1TO6:READ A(A,1):NEXT A
150 FOR A=1TO6:READ A(A,2):NEXT A
160 FOR A=1TO6:READ A$(A,2):NEXT A
199 REM * ENERGY SOURCE *
200 DATA WOOD,COAL,OIL,GAS,ELECTRICITY,PROPANE
209 REM * STANDARD UNIT *
210 DATA CORD,TON,GALLON,MCF,KWH,GALLON
219 REM * BTU / UNIT *
220 DATA 21000000,25000000,143000,1021000,3412,91600
229 REM * UNIT EQUIVALENT IN GALLONS OF OIL *
230 DATA 150,175,1,.7,.024,.64
239 REM * SEASONAL EFFICIENCY OF A GOOD FURNACE (%) *
240 DATA 50,50,60,65,100,65
249 REM * PRINT USING SPECIFIER *
250 DATA $####.##,$###.##,3  #.##,$ ##.##,$  #.###,$ ##.##
300 CLS:PRINTTAB(5)"THIS PROGRAM ALLOWS YOU TO DETERMINE THE REL
ATIVE COST"
310 PRINT"OF VARIOUS FUELS FOR HEATING PURPOSES."
320 PRINT:PRINTTAB(5)"THE COMPARISON CONSIDERS AVERAGE HEAT OUTP
UT FOR EACH TYPE"
```

```
330 PRINT"OF FUEL AND THE AVERAGE SEASONAL EFFICIENCY OF A GOOD
FURNACE"
340 PRINT"FOR THAT TYPE OF FUEL."
350 PRINT:PRINTTAB(5)"THE FUELS AND UNITS USED ARE:"
360 PRINT"ONE CORD OF MEDIUM HEAT VALUE WOOD (ELM OR WHITE BIRCH)"
370 PRINT"ONE TON OF AVERAGE ANTHRACITE OR BITUMINOUS COAL"
380 PRINT"ONE GALLON OF REFINED HEATING OIL"
390 PRINT"ONE THOUSAND CUBIC FEET OF NATURAL GAS"
400 PRINT"ONE KILOWATT HOUR OF ELECTRICITY"
410 PRINT"ONE GALLON OF PROPANE GAS"
420 PRINT:INPUT"PRESS ENTER";X$
500 CLS:PRINT:PRINTTAB(5)"CHOOSE THE FUEL YOU WISH TO COMPARE"
510 PRINT:FOR A=1TO6:PRINTA;".) ";A$(A,0):NEXT
520 PRINT:INPUT"YOUR SELECTION";B
530 PRINT@672, A$(B,0)
600 PRINT:PRINT"WHAT IS THE COST IN DOLLARS OF ONE ";A$(B,1);" O
F ";A$(B,0);" ?"
610 INPUT C
620 M=C/A(B,1)*A(B,2)/100
630 FOR A=1TO6:A(A,3)=A(A,1)*M/A(A,2)*100:NEXTA
700 CLS:PRINT"A FUEL COST OF";
710 PRINTUSING A$(B,2);A(B,3);
720 PRINT" PER ";A$(B,1);" OF ";A$(B,0)
730 PRINT"IS EQUIVALENT IN HEATING COST TO:"
740 PRINT:FOR A=1TO6
750  IF A=B THEN 790
760  PRINT TAB(5)A$(A,0);" AT ";
770  PRINT TAB(25) USING A$(A,2);A(A,3);
780  PRINT" PER ";A$(A,1)
790 NEXT A
800 PRINT:PRINT"(ELECTRICITY FIGURE BASED ON RESISTANCE HEATING:
"
810 PRINT"  A HEAT PUMP MAY GIVE 40% TO 80% MORE HEAT AT SAME CO
ST)"
820 PRINT:PRINT TAB(5)"IF YOU CAN GET ANOTHER FUEL CHEAPER THAN
LISTED HERE"
830 PRINT"THAT FUEL IS A BETTER BUY THAN ";A$(1,0)
840 PRINT:INPUT"TYPE 1 FOR ANOTHER COMPARISON, 0 TO END PROGRAM"
;B
850 IF B=1THEN500
```

INPUT

A COLUMN OF YOUR LETTERS

Dear Editor:

You have a section entitled "Outgoing Mail" --well -- why not have a section entitled "Incoming Mail" -- many of us have some real good stuff and no one to tell it to. Give it some thought - OK?

Larry C. Martin, Tucson, AZ

Editors Reply;

I DON'T BELIEVE IN THOUGHT, LARRY, I BELIEVE IN ACTION!
GWB

Gentlemen:

Enjoyed the July issue of SoftSide immensely! Congratulations! We owners of TRS equipment beg for more software - why Radio Shack is reluctant to emphasize this area I do not comprehend.

I am interested in reviewing your TSE Catalog on TRS-80 software and accessories. Please forward to me. I feel certain that a subscription of SoftSide is imminent. Excellent material.

Kenneth I. Swanstrom
Eric Computer Systems
Green Bay, WI

Gentlemen;

Thank you for your quick response!

A tape I ordered from you came in one week - the tape I ordered on the same day from Creative Computing, which charged for shipping, has not yet arrived in 3½ weeks. Yours is thus the better service by a long-shot. Keep up the good work!

Robert E. Sanders
San Diego, CA

SoftSide;

I began taking your magazine in the first issue. Of all the magazines I take SoftSide has the most to offer my family. My 4 year old daughter waits for each issue and likes to look thru it. She asks me what games there are for her or the two of us to play. I just wanted to give you some words of encouragement.

Thank you.

J. G. Souter
Round Rock, TX

Dear Folks;

Can it be! Is SoftSide celebrating a birthday? It's hard to believe I saw your first issue little more than a year ago. SoftSide has become so much a part of my programming and my teaching that it seems I've been reading it for years. Congratulations on a great publication.

I guess it must be time to renew my subscription, so here's my check so I won't miss anything.

One final note. The documentation with "Treasure Dungeon 2" in the September, 1979 issue is unbelievable. Keep up the great work!

Jon C. Sherman
Mt. Pleasant, Iowa

ST80D

Lance Micklus' ST80-the Smart Terminal Program- just got SMARTER!!

ST80D contains extensions for disk drive systems to exchange files with a timesharing computer or another TRS-80.

USING ST80D, your TRS-80 can do all this and more:

- Gather and pre-format data, store it on disk, then transmit it to a timesharing computer for processing.
- Processed data from the timesharing computer can then be sent back to the TRS-80.
- One TRS-80 can generate a data base and share it with another TRS-80 thousands of miles away by telephone.
- Users may customize their terminal program by redefining the translation tables. Conversion from one set of tables to another takes only seconds.
- Auto logon feature sends your account name, number and password upon request.
- ST80D can transmit any type of TRS-80 ASCII file, including BASIC programs stored in ASCII format, and most BASIC data files. Binary files can also be transmitted from one TRS-80 to another, allowing even machine language programs to be sent over the phone.

ST80D is a practical, full-feature terminal program that has been used on a variety of timesharing systems. These include IBM 370, Honeywell Sigma/6, Harris/7, DECSYSTEM 20, Dartmouth Timesharing, CDC Cyber and HP 2000.

If you're looking for a professional quality product, **not an amateur program**, then order ST80D today!

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- Renumber BASIC programs
- End keyboard bounce

NEWDOS+

- Editor/Assembler for disk
- Disassembler (Z80 machine code)
- LM Offset-allows transfer of any system tape to a disk file (automatically relocated)
- BASIC1-Level one BASIC saved on disk
- LV1DSKSL - not a typo, this saves and loads BASIC1 programs to disk
- DIRCHECK-tests and lists disk directory
- SUPERZAP-display/print/modify any location in memory or on disk

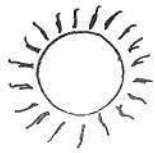
And, best of all, say goodbye to system crashes, lost data and wasted time caused by your old, bug-ridden system software.

Apparat's **NEWDOS** is fully documented and available for only **$49.95.**

NEWDOS+, Just $99.95

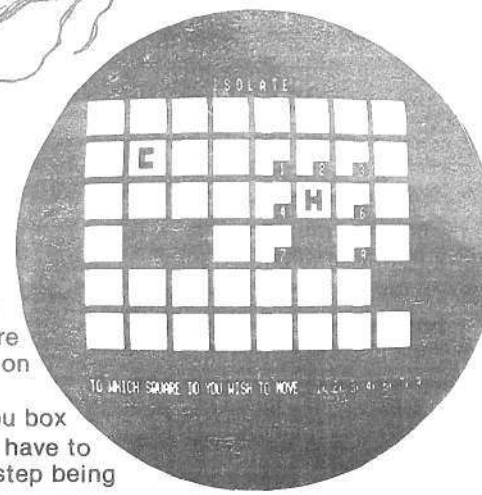
NOTE: Use of this software may require documentation available only with the purchase of Radio Shack TRSDOS 2.1 and/or the Radio Shack Editor/Assembler.

TSE **The Software Exchange**



ISOLATE

by James Garon



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

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

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

```
*** ISOLATE ***
BY: JAMES GARON
**************
5 CLEAR2E3:RANDOM:CLS:PRINTTAB(21)"I S O L A T E
10 DEFINTI-Z:DEFSTRA-H:D=CHR$(30):Q=476:FORX=1TO9:READN(X):NEXT:
DIMT(6,8),Q(9,1):FORI=1TO9:FORJ=0TO1:READQ(I,J):NEXT:NEXT:AA=CHR
$(26)+STRING$(6,24):GOSUB3000
20 A=STRING$(6,191)+AA+STRING$(6,143):C=CHR$(191)+CHR$(151)+CHR$
(163)+CHR$(179)+STRING$(2,191)+AA+CHR$(143)+CHR$(141)+STRING$(2,
140)+STRING$(2,143):CT=" "+CHR$(168)+CHR$(156)+CHR$(140)+"  "+AA
+" "+CHR$(130)+STRING$(2,131)+"  "
30 H=CHR$(191)+CHR$(151)+CHR$(139)+CHR$(135)+CHR$(171)+CHR$(191)
+AA+CHR$(143)+CHR$(141)+CHR$(142)+CHR$(141)+CHR$(142)+CHR$(143):
E=STRING$(6,32)+AA+STRING$(6,32):V=15360:GOSUB2000
40 G=STRING$(2,176)+CHR$(186)+CHR$(181)+STRING$(2,176)+AA+"  "+C
HR$(138)+CHR$(133)+"  "
50 Q=476:X2=4:Y2=1:X1=3:Y1=8:X0=4:Y0=5:FORI=1TO6:FORJ=1TO8:T(I,J
)=0:NEXT:NEXT:T(X1,Y1)=1:T(X2,Y2)=2:K=448:L=369:FORI=1TO6:FORJ=1
TO8:PRINTA" "CHR$(27);:NEXT:PRINTCHR$(29)STRING$(2,26);:NEXT:PRI
NTCHR$(31):PRINT@K,C;:PRINT@L,H;
60 PRINT@896,"LEVEL OF DIFFICULTY (1=EASY, 2=MEDIUM, 3=HARD) ?
65 IFRND(3)>1THEN5=USR(5E3+RND(128))ELSEFORI=1TO200+RND(99):NEXT
70 GOSUB950:IFZ<49ORZ>51THEN65ELSELV=Z-48
80 PRINT@896,D"DO YOU WISH TO MOVE FIRST?
85 IFRND(4)>1THEN5=USR(1E4+RND(99))ELSEFORI=1TO50+RND(50):NEXT
90 GOSUB950:IFB="Y"THEN100ELSEIFB<>"N"THEN85ELSE500
100 T=0:FORX=-1TO1:FORY=-1TO1:P=L+Y*7+X*128:S=X*3+Y+5:Z(S)=0:IFP
EEK(V+P+1)=191PRINT@P,"*";S;:Z(S)=1:T=T+1
110 NEXT:NEXT:Z(5)=1:M=L:PRINT@896,D;:IFTPRINT"TO WHICH SQUARE D
O YOU WISH TO MOVE (";:GOSUB850:PRINTCHR$(24)" )?"ELSEB=C:GOTO99
9
200 PRINT@L,A;:FORI=1TO25:NEXT:S=USR(11111):PRINT@L,H;:FORI=1TO1
5:B=INKEY$:IFB=""NEXT:GOTO200
210 Z=VAL(B):IFZ<1ORZ>9ORZ=5THEN200
220 L=L+N(Z):T(X1,Y1)=0:X1=X1+Q(Z,0):Y1=Y1+Q(Z,1):T(X1,Y1)=1:FOR
I=-1TO1:FORJ=-1TO1:IFZ(J*3+I+5)PRINT@M+I*7+J*128,A;
230 NEXT:NEXT:PRINT@L,H;
240 PRINT@896,D"USE THE ARROW KEYS TO SELECT ANY EMPTY SQUARE
THEN PRESS =ENTER= TO DESTROY IT.";:
250 POKE16444,0:IFPEEK(V+Q+1)=191THENF=RELSEIFPEEK(V+Q)=32THENF=
EELSEF="":FORI=0TOQ+5:F=F+CHR$(PEEK(V+I)):NEXT:F=F+AA:FORI=Q+64T
```

```
OI+5:F=F+CHR$(PEEK(V+I)):NEXT
260 PRINT@Q,G; :FORI=1TO25:NEXT:S=USR(11085):PRINT@Q,F; :FORI=1TO1
0:B=INKEY$:IFB=""THENNEXT:GOTO260
270 Z=ASC(B):IFZ=91ANDX0>1THENQ=Q-128:X0=X0-1
280 IFZ=10ANDX0<6THENQ=Q+128:X0=X0+1
290 IFZ=8ANDY0>1THENQ=Q-7:Y0=Y0-1
300 IFZ=9ANDY0<8THENQ=Q+7:Y0=Y0+1
310 IFZ=13ANDPEEK(V+Q+1)=191PRINT@892,CHR$(31):PRINT@Q,G; :FORI=5
915TOI+20:S=USR(I):NEXT:FORI=1TO16:PRINT@Q,A; :PRINT@Q,E; :NEXT:T(
X0,Y0)=-1:GOTO500
320 GOTO250
500 PRINT@896,D;
510 T=0:FORX=-1TO1:FORY=-1TO1:P=K+Y*7+X*128:S=X*3+Y+5:Z(S)=0:IFP
EEK(V+P+1)=191Z(S)=1:T=T+1
520 NEXT:NEXT:IFT=0B=H:K=L:GOTO999ELSEPRINT@K,CT; :PRINT@896,"MY
TURN..
530 GOSUB600:FORI=1TO20:PRINT@K,C; :PRINT@K,A; :NEXT:K=K+N(R):T(X2
,Y2)=0:X2=X2+Q(R,0):Y2=Y2+Q(R,1):T(X2,Y2)=2:FORI=USR(0)TO20:PRIN
T@K,A; :PRINT@K,C; :NEXT
540 FORLL=1TOLV:GOSUB560:FORQQ=0TO1STEP0:I=X1+RND(3)-2:J=Y1+RND(
3)-2:IFI<1ORI>6ORJ<1ORJ>8ORI=X1ANDJ=Y1ORI=X2ANDJ=Y2THENNEXT:GOTO
100ELSEIFT(I,J)<0THENNEXT:GOTO100
550 P=128*I+7*J-71:T(I,J)=-1:FORI=2032TO2080:S=USR(I):NEXT:FORI=
1TO20:PRINT@P,A; :PRINT@P,E; :NEXT:NEXTLL:GOTO100
560 RR=0:FORI=X1-1TOI+2:FORJ=Y1-1TOJ+2:IFI<1ORI>6ORJ<1ORJ>8ELSEI
FT(I,J)ELSERR=1
570 NEXT:NEXT:IFRRRETURNELSE100
600 JG=2:FORI=1TO9:M(I)=Z(I):NEXT
610 FORI=-1TO1:FORJ=-1TO1:S=3*I+J+5:IFZ(S)=0ORZ(S)=2THEN660
620 XP=X2+I:YP=Y2+J:IFXP<1ORXP>6ORYP<1ORYP>8THEN660
630 FORIP=-1TO1:FORJP=-1TO1:MP=XP+IP:NP=YP+JP:IFNP*MP=0OR(IP=0AN
DJP=0)ORMP<1ORMP>6ORNP<1ORNP>8THEN650
640 IFT(XP+IP,YP+JP)=0THENM(S)=M(S)+1
650 NEXT:NEXT
660 S=USR(5E3-30*(I+J+J)+RND(9)):JG=3-JG:IFJG=1PRINT@K,CT;ELSEPR
INT@K,C;
670 NEXTJ:NEXT:T=0:FORI=1TO9:IFM(I)>TTHENT=M(I)
680 NEXT
690 R=RND(9):IFM(R)=TTHEN690ELSERETURN
800 PRINT@846,B; :PRINT@K,B; :S=USR(-128):IFINKEY$<>CHR$(13)THENPR
INT@846,E; :PRINT@K,A; :FORI=1TO20:IFINKEY$<>CHR$(13)THENNEXT:GOT
```

```
0800
810 RETURN
850 FORI=1TO9:IFZ(I)IF5-IPRINTICHR$(24)",";
860 NEXT:RETURN
900 B=INKEY$:IFB=""THEN900ELSEZ=ASC(B):RETURN
950 Z=0:B=INKEY$:IFB>""THENZ=ASC(B)
960 RETURN
999 PRINT@917,"IS THE WINNER!!!":PRINTTAB(14)"PRESS =ENTER= TO P
LAY AGAIN";:GOSUB800:PRINT@64,;:GOTO50
1000 DATA-135,-128,-121,-7,,7,121,128,135
1010 DATA-1,-1,-1,,-1,1,0,-1,0,0,0,1,1,-1,1,,1,1
2000 PRINT"  THE OBJECT OF THE GAME IS TO ISOLATE YOUR OPPONENT.
 YOU DO
THIS BY DESTROYING THE SQUARES NEAR YOUR OPPONENT SO THAT THERE
IS NOWHERE FOR HIM TO MOVE ON HIS TURN.
2010 PRINT"  EACH PLAYER'S TURN IS IN TWO PARTS.  IN THE FIRST PA
RT, YOU
MOVE YOUR PIECE TO ANY ADJACENT SQUARE (IF IT HASN'T BEEN
DESTROYED YET!) - DURING THE SECOND PART OF YOUR TURN YOU WILL
SELECT ANY EMPTY SQUARE ON THE BOARD - AND * DESTROY * IT!
2020 PRINT"  THE COMPUTER'S TURN IS SIMILAR TO YOURS, EXCEPT THA
T THE COM-
PUTER WILL DESTROY 1, 2 OR 3 SQUARES EACH TURN--DEPENDING ON
THE LEVEL OF DIFFICULTY YOU SELECT.  THE PIECES LOOK LIKE THIS:":
PRINT@720,C:PRINT@740,H:PRINTTAB(15)"COMPUTER"TAB(36)"HUMAN
2030 PRINT"AUX WIRE GOES TO AMPLIFIER INSTEAD OF RECORDER FOR SO
UND EFFECTS";:PRINT@977,"PRESS =ENTER= TO BEGIN";
2040 FORI=0TO99:IFINKEY$<>CHR$(13)THENS=USR(11091+ABS(50-I)):NEX
T:GOTO2040ELSEPRINT@63,CHR$(31):RETURN
3000 M$="+_
MD>IORISA- .<IORISA- .
MKD$LPRINTORISAINKEY$"
3010 I=VARPTR(M$):J=PEEK(I+1)+256*PEEK(I+2)
3020 FORK=JTOJ+26:READX:POKEK,X:NEXT
3030 IFPEEK(16396)=201POKE16526,PEEK(I+1):POKE16527,PEEK(I+2)ELS
ECMD"T":DEFUSR0=PEEK(I+1)+256*PEEK(I+2):POKE14308,0
3040 RETURN
3050 DATA205,127,10,77,68,62,1,105,
 211,255,45,32,253,60,105,
 211,255,45,32,253,13,16,
 238,175,211,255,201
```

NOTE

TAKE A PART
ON PAGE 22!!!!!!

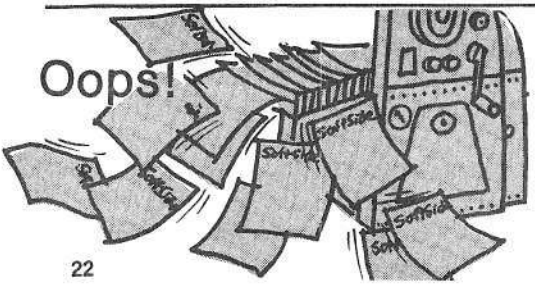
ISOLATE

If you tried to enter ISOLATE directly from the line listing, you probably received a shock when you came to line 3000. The line seems to be either super graphics or super garbage. Actually, it is James Garon's machine language sound routine.

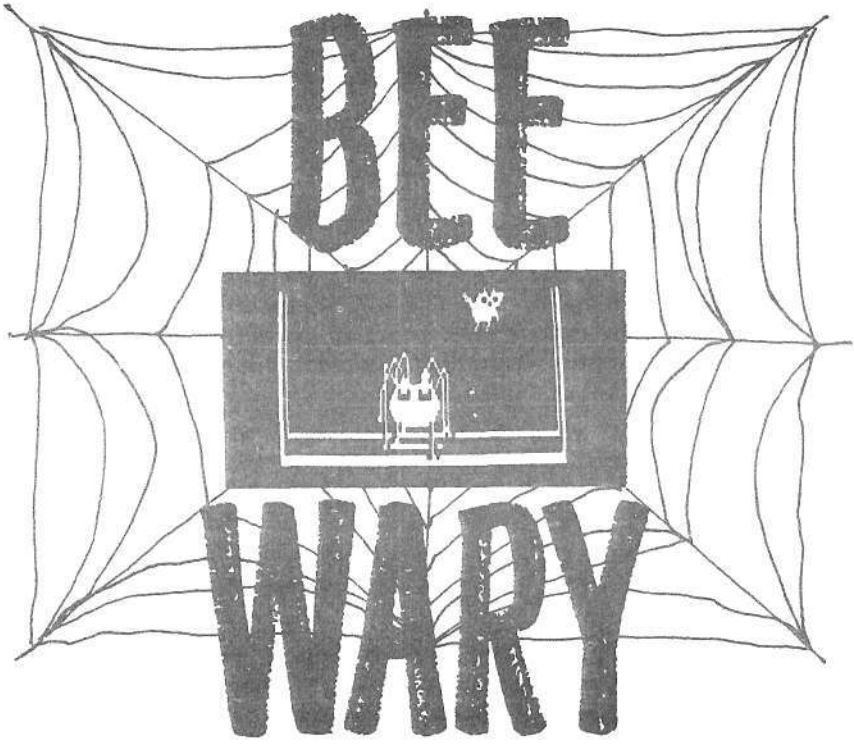
It doesn't really matter what you put in the line as the contents of M$, for the routine at 3010 to 3050 modifies the string to include the subroutine. Rather than try to duplicate the garbage, we suggest that you use this line:
3000 M$="////////////////////////////"
(Use 27 slashes.)

The routine works by using VAPTR in line 3010 to find M$, then READing the DATA in line 3050 and POKEing it into the reserved string space. This method allows you to use a machine language subroutine in Level II BASIC and DISK BASIC without worrying about where in memory to put it. (A routine at the top of memory in a 16K Level II program would be located in the middle of the BASIC code in a 32K Disk System.)

Time spent studying this routine and learning the commands used by studying the Level II BASIC Manual would be very productive in programming technique.



We slipped . . . and sent subscription notices twice to those whose subscriptions expired in November. Please forgive us for the paper avalanche!



(More Magic from Leo Christopherson)

Round One:

The Bee tried to sting the Spider
And wound up insider.

Round two:

Float like a butterfly, sting like a Bee
And the Spider dances to eternity.

This fast paced real time action game is a contest between a Bee operated by the player and a Spider operated by the computer. The Bee tries to sting the Spider in a vulnerable spot while the Spider tries to jump up and swallow the Bee. Fast paced animation, sound, and real time action. Machine language subroutines, but loads as Level II for easy operation. $14.95

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FASTGAMMON

Backgammon is a two-person game.
In FASTGAMMON the computer is one player
(its men are O's) and you are the other (your men are X's).

Whether you are a beginner or an experienced backgammon player, FASTGAMMON can help you improve your game. First of all, you now have an opponent that is always ready and willing to play. There is no substitute for experience — the more games you play the more you learn about backgammon. But there is another unique method by which FASTGAMMON can help you improve your game.

By selecting "2" when the starting message is displayed, the same sequence of rolls that occurred in the game just played (the last game for which you selected "1") will occur again.

HOW GOOD IS FASTGAMMON?

We make no claims that FASTGAMMON plays at an expert level. In fact, good players will notice obvious mistakes that the computer makes from time to time. The game of backgammon has many subtleties, and the algorithm programmed into version 1 of FASTGAMMON is a fairly simple one. There is an advantage that the computer has, however, over human players — the computer never forgets what it "knows". Due to oversights, distractions, or haste, human players often forget what they know. This fact is the edge that makes FASTGAMMON competitive against good players. Level II 16K $19.95

QS *Quality Software*

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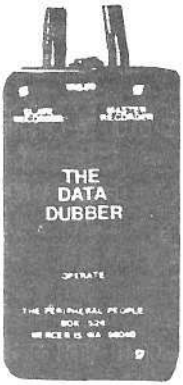

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"Data Dubber"

Yes, even those in machine language! Feed your cassette into the "Data Dubber" and get out exact replicas of the TRS-80 CSAVE data pulses. Obtain perfect CLOAD'S even from tapes with hum, distortion, or minor dropouts . . . and without constantly adjusting the volume. Connect a second cassette to the "Data Dubber" and make perfect reproductions just as if the data had come from the TRS-80.

The "Dubber" works with Level I or II and costs only $49.95 (plus $2.00 postage & handling). Pays for itself in time saved and reduced tape cost. Order the "Data Dubber" today! If you are not completely satisfied with its performance simply return it for full refund.

HARDSIDE™

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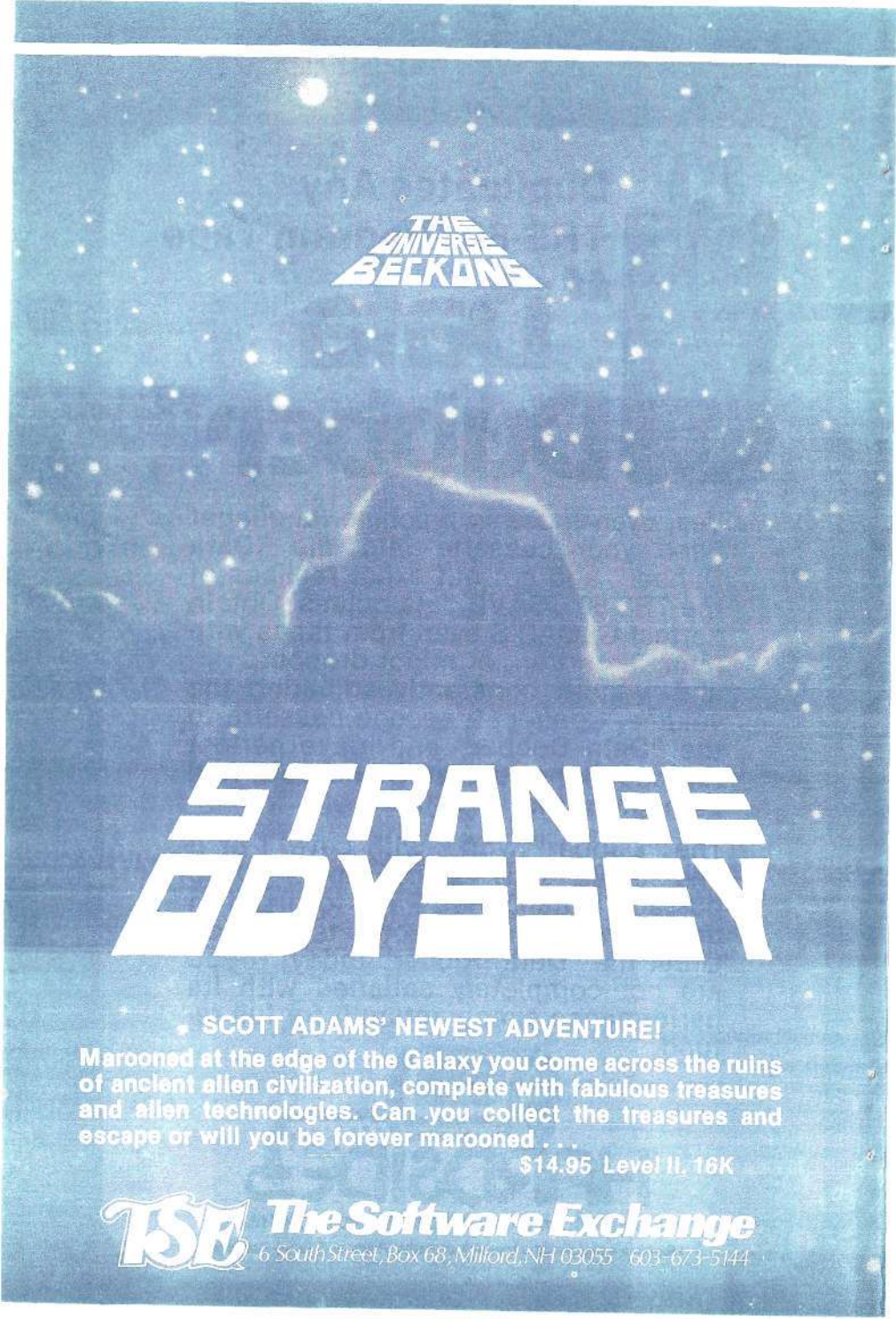
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SCOTT ADAMS' NEWEST ADVENTURE!
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$14.95 Level II, 16K
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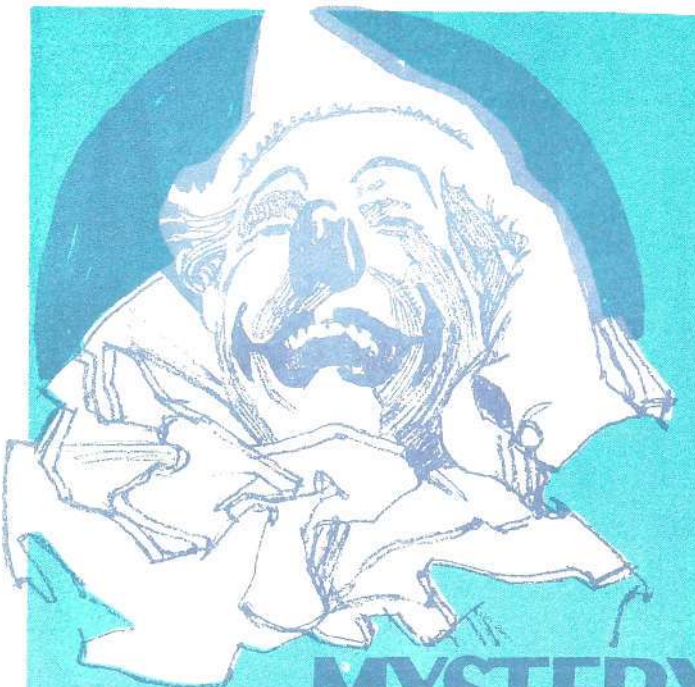

MYSTERY FUN HOUSE

A SCOTT ADAMS ADVENTURE

The lure of a Fun House is the unexpected when you least expect it, and this adventure is true to tradition. It takes all your ingenuity just to get past the ticket counter, so prepare yourself for many thrilling and challenging hours in Scott Adam's Fun House!

Level II, 16K $14.95

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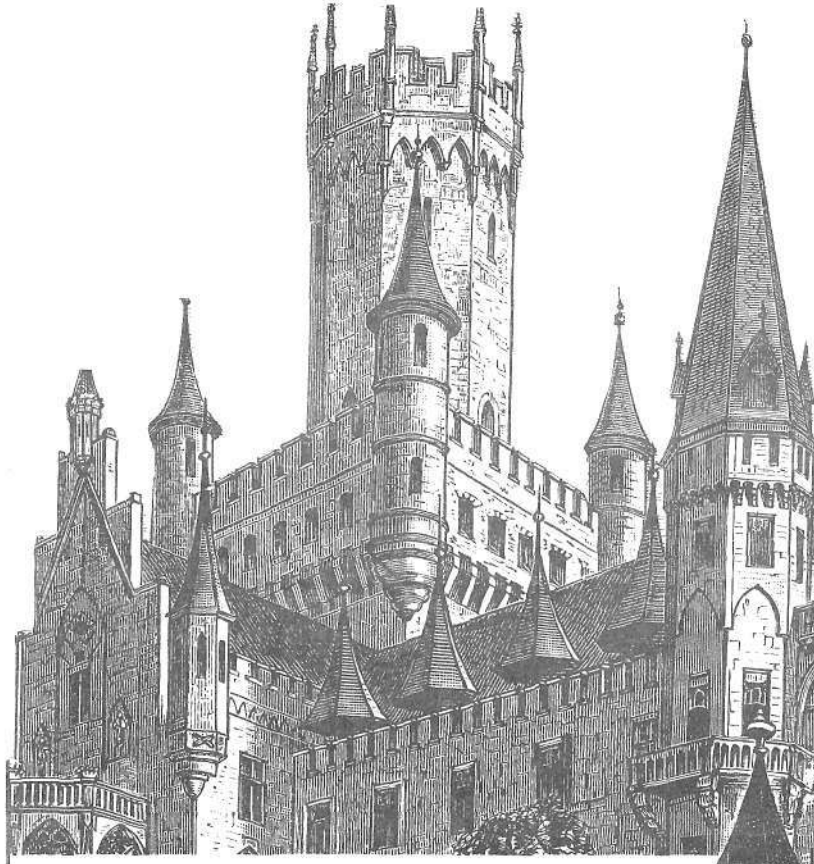

TWO ADVENTURES BY SCOTT ADAMS...

THE COUNT

You 're in Dracula's castle, and your mission is to destroy him and thereby rid the world of his evil.

VOODOO CASTLE

Remove a voodoo curse from Count Cristo and set him free forever!

Two adventures... (Level II, 16K)

$14.95; on disk $24.95

Now in machine language for instant responses and more excitement! Plus! New versions of these old favorites: Land Adventure; Pirate's Cove; and Mission Impossible.

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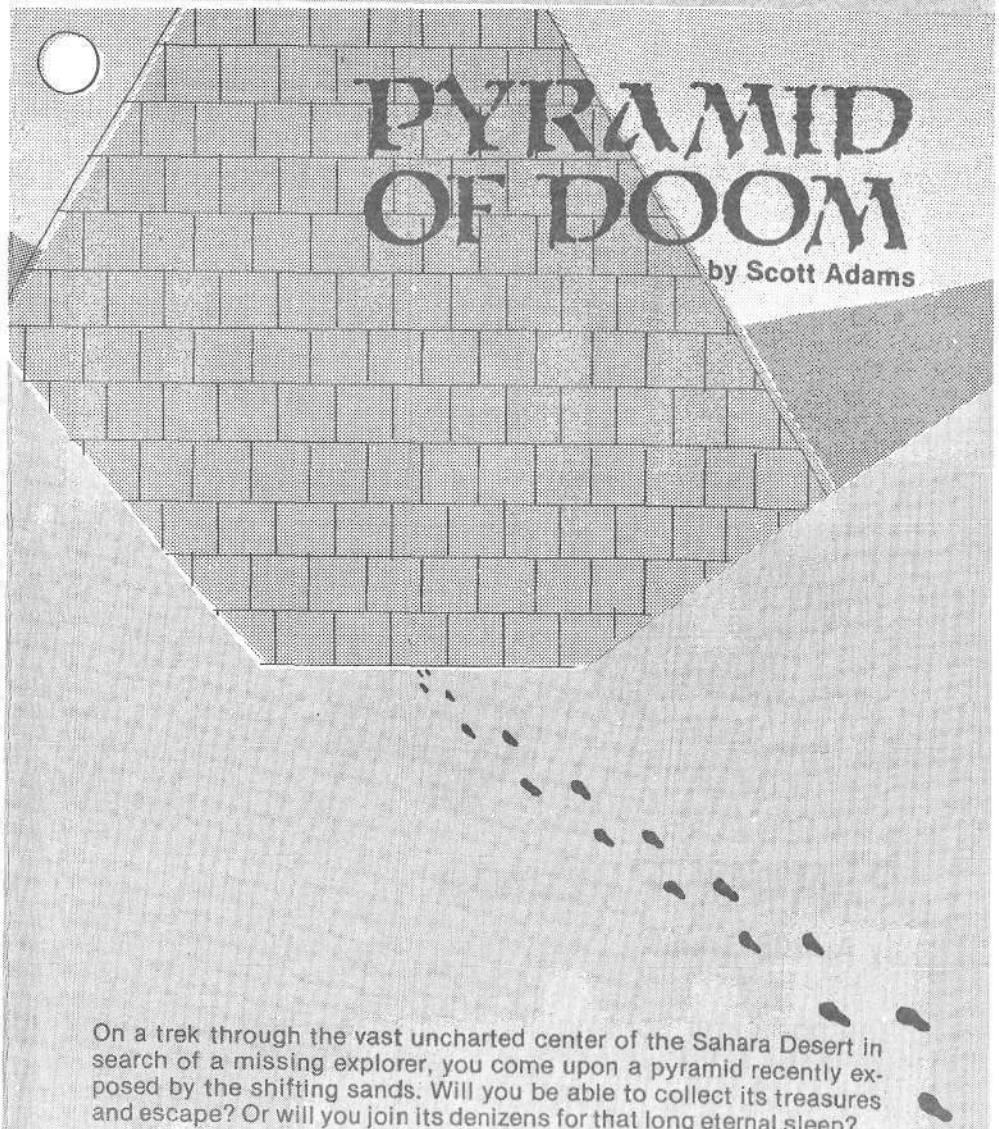

On a trek through the vast uncharted center of the Sahara Desert in search of a missing explorer, you come upon a pyramid recently exposed by the shifting sands. Will you be able to collect its treasures and escape? Or will you join its denizens for that long eternal sleep?

16K System Cassette $14.95

Want to know what adventure is before you part with that much money? Try the Adventure Sampler! Adventure 0 is a mini version of Adventure 1, offering hours (instead of weeks) of challenge for only $5.95.

Warning: This program may be addictive, leading to prolonged and habitual adventuring.

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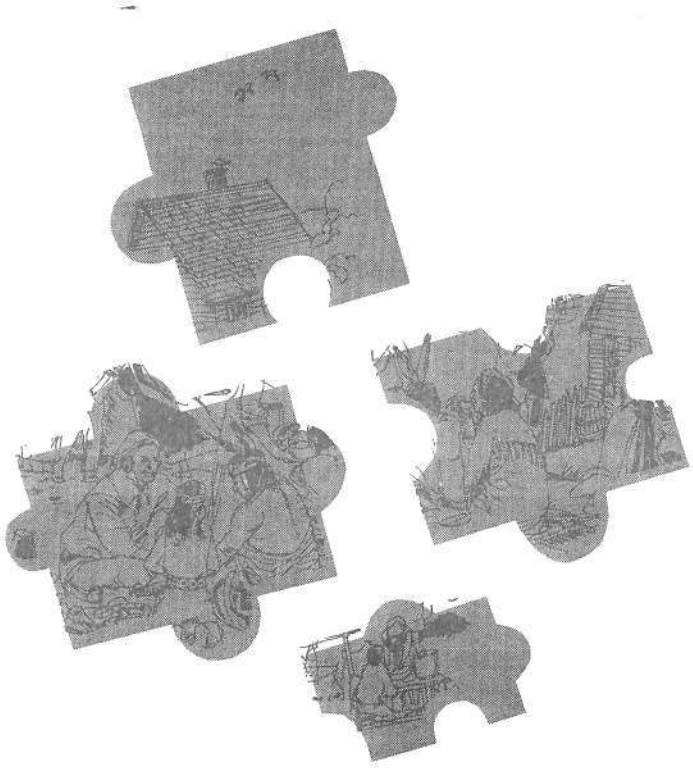
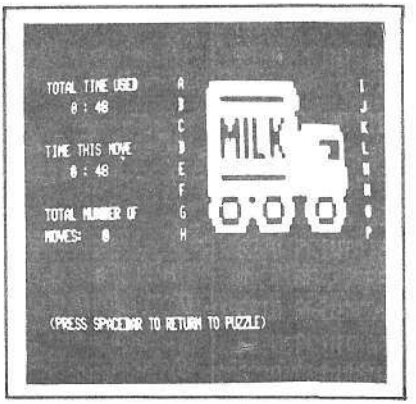


Picture Puzzles

by Arnold Gross

The computer scrambles the pieces. Then you can try it the hard way or get a tantalizing look at the whole picture, intact. Your job - get them back together again as they were meant to be.

Five puzzles, on five levels of play, from very easy to maddeningly, impossibly difficult. Something for everyone in the family, from little Joey to mad genius Uncle Sylvester!




```
10 '    PICTURE PUZZLES              ARNOLD GROSS
        8-1-79    (4.3)
20 CLEAR300:DEFSTRA,Q:A="      ":Q=CHR$(34)
30 RANDOM:CLS:FORX=1TO60:PRINT"LES  PICTURE PUZZ";
40 NEXT:PRINT"LES";:PRINT@337,CHR$(221);
50 PRINT@401,A+CHR$(188)+STRING$(17,140)+CHR$(188)+A;
60 PRINT@465,A+CHR$(191)+"  P I C T U R E  "+CHR$(191)+A;
70 PRINT@529,A+CHR$(191)+"  P U Z Z L E S  "+CHR$(191)+A;
80 PRINT@657,CHR$(221);:
   PRINT@593,A+STRING$(19,131)+A;:GOSUB1020
90 DIM A(16),X(16),CP(16),PP(16)
100 FORY=1TO8:CP(Y)=27+(64*Y).CP(Y+8)=39+(64*Y):NEXT
110 CLS:HG=0:TM=0:XG=1:U=0:XM=0:CLK=-1
120 PRINT@132,"#   TITLE OF PUZZLE                    SKILL LEVEL
130 PRINT@260,"1.  LETTER FROM CAMP              (BEGINNERS ONLY)
140 PRINT"    2.  DIAMOND                          (RATHER EASY)
150 PRINT"    3.  JIGSAW MAN                           (MEDIUM)
160 PRINT"    4.  MILK TRUCK                        (DIFFICULT)
170 PRINT"    5.  ABSTRACT                  (NEARLY IMPOSSIBLE)
180 PRINT@708,"WHICH PUZZLE WOULD YOU LIKE TO TRY ?
190 PRINT:PRINT"    (TYPE THE NUMBER OF YOUR CHOICE)
200 PZ$=INKEY$:IFPZ$=""ORPZ$)"5"ORPZ$<"1"THEN200
210 PZ=VAL(PZ$):CLS:GOSUB910:TS=-1:GOSUB1030
220 Z=0:GOSUB490:PRINT@915,"(PRESS SPACEBAR TO BEGIN)"
230 GOSUB1000:CLS:GOSUB690
240 PRINT@64,"TOTAL TIME USED";:PRINT@256,"TIME THIS MOVE";
```

```
250 PRINT@448,"TOTAL NUMBER OF";:PRINT@512,"MOVES:";
260 PRINT@832,
    "TYPE "Q"U"Q" IF YOU WANT TO SEE THE UNSCRAMBLED PUZZLE"
270 PRINT
    "TYPE "Q"X"Q" IF YOU WOULD RATHER CHOOSE ANOTHER PUZZLE"
280 FORR=1TO16:PRINT@PP(R),A(R);:NEXT:GOSUB710
290 IFXM>9PRINT@519,XM;ELSEPRINT@520,XM;
300 PRINT@704,CHR$(30);:PRINT@704,"SWITCH PIECE ?";:GOSUB790
310 IFK$="U"GOTO450
320 IFK$="X"THEN110
330 IFK$<"A"ORK$>"P"THENGOSUB790:GOTO310
340 Y$=K$:PRINT@717,Y$"  FOR PIECE ?";:GOSUB790
350 IFK$="U"GOTO450
360 IFK$="X"THEN110
370 IFK$<"A"ORK$>"P"THENGOSUB790:GOTO350
380 CLK=-1:Z$=K$:PRINT@730,Z$;
390 Y=ASC(Y$)-64:Z=ASC(Z$)-64
400 FORW=1TO16:X(W)=0:NEXT
410 FORW=1TO16:IFCP(Y)=PP(W)THENX(W)=CP(Z)
420 IFCP(Z)=PP(W)THENX(W)=CP(Y)
430 NEXT:FORZ=1TO16:IFX(Z)>0THENPP(Z)=X(Z):
    PRINT@PP(Z),STRING$(12,32);
440 NEXT:XM=XM+1:XG=1:TS=TS+2:CM=0:FORTIM=1TO250:NEXT:GOTO280
450 IFXG=0GOTO260
460 GOSUB690:FOR R=1 TO 16:PRINT@CP(R),A(R);:NEXT
470 GOSUB1010:PRINT@768,"(PRESS SPACEBAR TO RETURN TO PUZZLE)";:
     GOSUB1000
480 GOSUB1010:GOTO260
490 Z=Z+1
500 PP(Z)=RND(16):X(Z)=PP(Z):FORY=0TOZ-1:IFPP(Z)=X(Y)THEN500
510 NEXT:ONPP(Z)GOSUB530,540,550,560,570,580,590,600,610,620,
    630,640,650,660,670,680
520 IFZ<16THEN490ELSERETURN
530 PP(Z)=CP(1):RETURN
540 PP(Z)=CP(2):RETURN
550 PP(Z)=CP(3):RETURN
560 PP(Z)=CP(4):RETURN
570 PP(Z)=CP(5):RETURN
580 PP(Z)=CP(6):RETURN
590 PP(Z)=CP(7):RETURN
```

```
600 PP(Z)=CP(8):RETURN
610 PP(Z)=CP(9):RETURN
620 PP(Z)=CP(10):RETURN
630 PP(Z)=CP(11):RETURN
640 PP(Z)=CP(12):RETURN
650 PP(Z)=CP(13):RETURN
660 PP(Z)=CP(14):RETURN
670 PP(Z)=CP(15):RETURN
680 PP(Z)=CP(16):RETURN
690 FOR EN=1TO8:PRINT@22+EN*64,CHR$(64+EN);
700 PRINT@54+EN*64,CHR$(72+EN);:NEXT:RETURN
710 Z=0:FORX=1TO16:IFPP(X)=CP(X)THENZ=Z+1
720 NEXT:IFZ<>16RETURN
730 FORT=0TO12:PRINT@T*64,CHR$(214);:NEXT
740 TM$=STR$(TM):TS$=RIGHT$(STR$(TS),2):
    IFTS<10 TS$="0"+RIGHT$(TS$,1)
750 GOSUB1010:
    PRINT@704,"YOU FINISHED IN"XM"MOVES  ("TM$":"TS$" )."
760 PRINT:PRINT"WOULD YOU LIKE TO TRY ANOTHER PUZZLE (Y/N)";
770 GOSUB1000:IFK$="Y"THEN110ELSEGOSUB1010
780 PRINT@704,"THAT WAS FUN.  LET'S PLAY AGAIN SOON!":PRINT:END
790 K$=INKEY$:IFK$<>""RETURN
800 PS=PS+1:IFPS<4THEN900
810 PS=1:CLK=CLK+1:IFCLK=61THENCLK=1
820 CS=CLK:IFCS=60 CS=0:CM=CM+1
830 TS=TS+1:IFTS>59 TS=TS-60:TM=TM+1
840 PRINT@131,TM;TAB(6)":";
850 IFTS>9 PRINTTAB(7)TS; ELSE PRINTTAB(8)TS;
860 IFTS<10 PRINT@136,"0";
870 PRINT@323,CM;TAB(6)":";
880 IFCS>9 PRINTTAB(7)CS; ELSE PRINTTAB(8)CS;
890 IFCS<10 PRINT@328,"0";
900 FORRG=1TO120:NEXT:GOTO790
910 PRINT@68,"THE PIECES OF THE PUZZLE THAT YOU SELECTED ARE"
920 PRINT"NOW BEING SCRAMBLED.  WHEN I'M READY TO DISPLAY THEM"
930 PRINT"I WILL ASK YOU TO PRESS THE "Q"SPACEBAR"Q". ":PRINT
940 PRINT"    AS SOON AS THE PUZZLE HAS BEEN PRINTED I WILL"
950 PRINT"START THE CLOCK.  YOU DO NOT HAVE A TIME LIMIT - THIS"
960 PRINT"IS JUST FOR YOUR REFERENCE. ":PRINT
970 PRINT"    YOU MUST SWITCH ONE PIECE FOR ANOTHER UNTIL ALL"
980 PRINT"PIECES ARE IN THEIR CORRECT POSITIONS. ":PRINT
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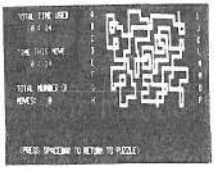

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990 PRINT"    DO NOT USE THE "Q"ENTER"Q" KEY FOR THIS PROGRAM.":
    RETURN
1000 K$=INKEY$:IFK$=""THEN1000ELSERETURN
1010 PRINT@640,CHR$(31);:RETURN
1020 FORTIM=1TO1000:NEXT:RETURN
1030 RESTORE:ONPZGOTO1060,1040,1050,1050,1050
1040 GOSUB1060:GOTO1080
1050 GOSUB1060:FORL=1TOPZ-2:GOSUB1070:NEXT:GOTO1080
1060 FORR=1TO16:READA(R):NEXT:RETURN
1070 FORR=1TO192:READD:NEXT:RETURN
1080 FORI=1TO16:A$(I)="":FORJ=1TO12:READD
1090 A$(I)=A$(I)+CHR$(D+100):NEXT:NEXT:RETURN
1100 DATA"DEAR MOM AND","   HOW IS EV","IN THE CITY?"
1110 DATA"HAS BEEN GOR","HAVE GONE SW","DAY SO FAR T"
1120 DATA"          LO","             ","  DAD:      "
1130 DATA"ERYBODY BACK"," THE WEATHER","GEOUS AND WE"
1140 DATA"IMMING EVERY","HIS WEEK.    "
1150 DATA"VE,          ","JOHNNY      "
1160 DATA 28,28,28,28,28,28,28,28,28,28,60,58
1170 DATA 28,28,28,28,28,28,28,28,28,84,35,28
1180 DATA 28,28,28,28,28,28,28,60,58,29,28,28
1190 DATA 28,28,28,28,28,28,84,35,28,28,28,28
1200 DATA 28,28,28,28,28,28,30,73,44,28,28,28
1210 DATA 28,28,28,28,28,28,28,28,39,80,28,28
1220 DATA 28,28,28,28,28,28,28,28,28,30,73,44
1230 DATA 28,28,28,28,28,28,28,28,28,28,28,39
1240 DATA 73,44,28,28,28,28,28,28,28,28,28,28
1250 DATA 28,39,80,28,28,28,28,28,28,28,28,28
1260 DATA 28,28,30,73,44,28,28,28,28,28,28,28
1270 DATA 28,28,28,28,39,80,28,28,28,28,28,28
1280 DATA 28,28,28,60,58,29,28,28,28,28,28,28
1290 DATA 28,28,84,35,28,28,28,28,28,28,28,28
1300 DATA 60,58,29,28,28,28,28,28,28,28,28,28
1310 DATA 35,28,28,28,28,28,28,28,28,28,28,28
1320 DATA 28,28,28,60,84,88,43,31,31,31,31,31
1330 DATA 28,76,76,91,76,28,28,56,40,40,48,28
1340 DATA 74,45,68,32,30,29,28,81,78,76,49,28
1350 DATA 28,39,80,29,84,32,28,28,28,28,60,58
1360 DATA 28,28,30,31,89,28,28,28,28,28,39,80
1370 DATA 28,28,28,28,71,48,28,30,73,76,76,76
1380 DATA 28,28,28,28,28,91,28,28,28,28,28,28
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```
1390 DATA 28,28,28,28,28,30,31,31,31,91,31,31
1400 DATA 31,31,31,31,31,43,88,80,44,28,28,28
1410 DATA 28,68,40,40,72,28,28,76,91,76,76,28
1420 DATA 28,70,76,77,86,28,30,29,36,48,62,57
1430 DATA 73,44,28,28,28,28,36,80,30,84,35,28
1440 DATA 84,35,28,28,28,28,28,90,31,29,28,28
1450 DATA 76,76,76,58,29,28,68,51,28,28,28,28
1460 DATA 28,28,28,28,28,28,91,28,28,28,28,28
1470 DATA 31,31,91,31,31,31,29,28,28,28,28,28
1480 DATA 84,88,88,88,88,88,88,88,88,88,88,88
1490 DATA 91,91,88,88,88,88,88,88,88,88,88,88
1500 DATA 91,91,28,39,29,70,28,49,70,91,49,38
1510 DATA 91,91,28,89,49,70,28,49,38,43,49,68
1520 DATA 91,91,43,43,43,43,43,43,43,43,43,43
1530 DATA 75,91,43,43,43,91,59,43,91,59,43,43
1540 DATA 75,81,38,43,33,86,59,38,91,44,43,43
1550 DATA 28,31,31,31,31,31,28,28,30,31,31,31
1560 DATA 88,88,88,44,28,28,28,28,28,28,28,28
1570 DATA 88,90,91,43,28,28,28,28,28,28,28,28
1580 DATA 61,90,91,49,84,88,88,88,88,88,88,44
1590 DATA 46,75,91,91,91,91,91,68,56,28,28,49
1600 DATA 43,75,91,91,91,91,91,91,91,91,91,89
1610 DATA 75,91,43,33,43,91,59,43,43,75,91,35
1620 DATA 60,91,33,28,38,91,44,43,43,60,91,33
1630 DATA 31,29,28,28,28,30,31,31,31,31,29,28
1640 DATA 56,40,48,28,28,28,70,31,31,31,81,76
1650 DATA 49,83,51,41,72,28,70,68,40,40,40,40
1660 DATA 49,28,56,48,30,31,71,31,68,40,40,40
1670 DATA 31,31,51,29,28,56,42,28,38,48,70,63
1680 DATA 28,76,79,79,79,51,49,28,51,51,71,79
1690 DATA 28,49,28,68,40,48,31,49,41,33,68,40
1700 DATA 28,41,35,71,31,29,28,31,49,28,78,79
1710 DATA 28,28,28,70,76,86,31,31,29,28,41,40
1720 DATA 76,68,40,40,40,40,40,40,48,70,28,28
1730 DATA 74,42,28,68,40,40,72,28,31,71,79,49
1740 DATA 42,28,70,71,79,71,70,28,28,68,72,28
1750 DATA 79,71,38,40,42,70,30,79,79,87,31,28
1760 DATA 86,70,70,31,79,79,76,81,76,76,76,76
1770 DATA 40,50,31,28,49,28,56,33,28,76,76,86
1780 DATA 49,31,63,79,83,49,41,40,40,57,48,28
1790 DATA 40,40,74,40,33,28,28,28,28,81,49,28
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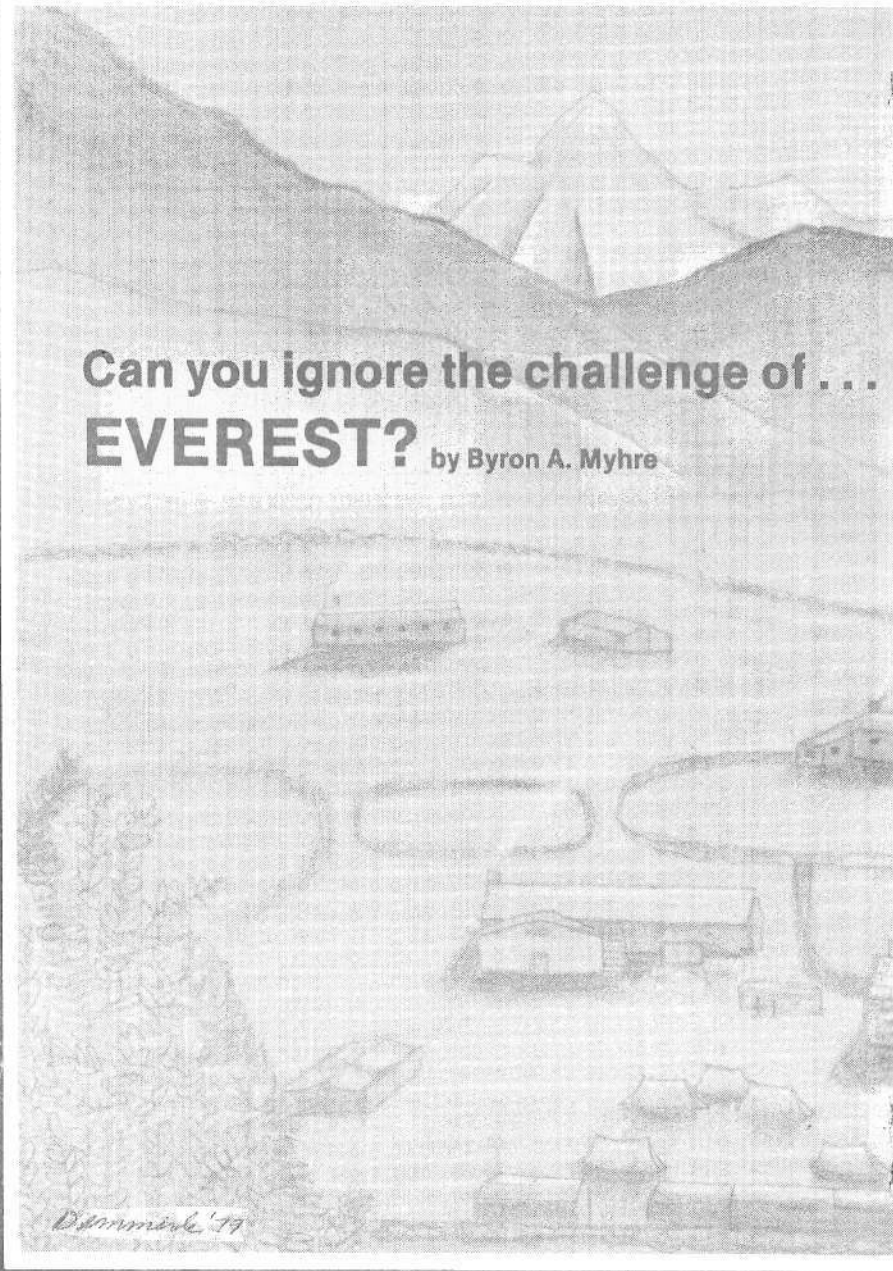
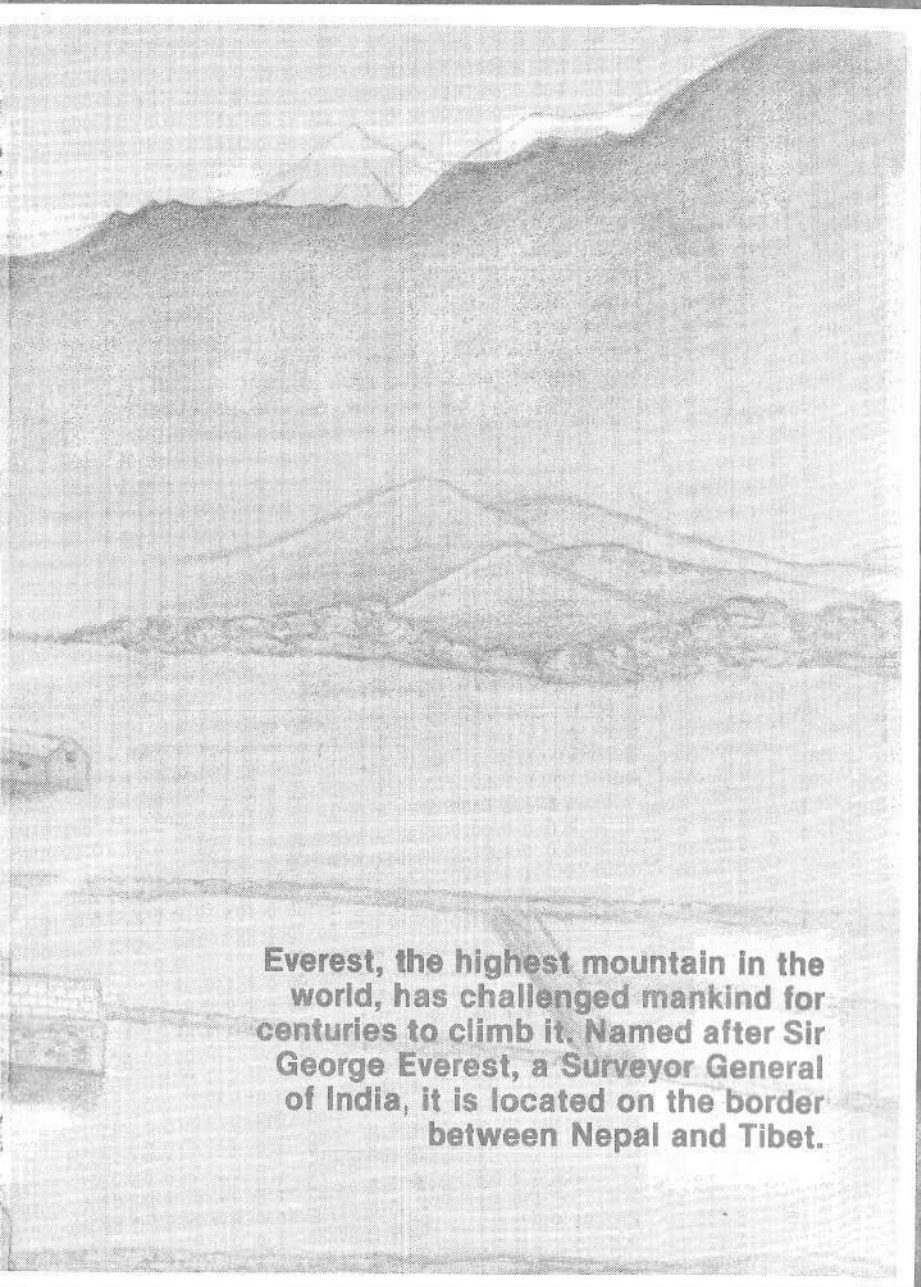


Can you ignore the challenge of . . .
EVEREST? by Byron A. Myhre



Everest, the highest mountain in the world, has challenged mankind for centuries to climb it. Named after Sir George Everest, a Surveyor General of India, it is located on the border between Nepal and Tibet.

Climbing expeditions have been started from both sides of the mountain, but the successful campaigns have almost all started in Nepal. The climbing of this mountain uses expeditionary siege techniques. Food and supplies are slowly advanced up the side of the mountain whenever the weather is fitting. Camps are established on the side of the mountain at intervals which have been found to be about one day's climb for the average climber carrying a load.

The climbers normally fly to Katmandu, Nepal. From here there is about a 185 mile trek through the lowlands in which all of the supplies are carried to the higher camps. This trek is through forests, swamps and jungles. On arriving at the higher areas (about 14,000 feet), local natives called Sherpas are hired to carry the supplies up the side of the mountain and to climb with the team. The climbing team is usually picked so that it includes individuals of various occupations, especially physicians, engineers, photographers, geologists and weather observers. However, all members of the team must have the ability and love to climb. Everest was first successfully climbed on May 29, 1958 by Edmund P. Hillary and Tensing Bhutia. It was first climbed by Americans on May 1, 1963.

This game is patterned somewhat after the American climb. The expedition begins in Katmandu, Nepal where supplies are purchased and packed. Food costs 50 rupees a pound, oxygen tanks cost 500 rupees each. Sherpas must be hired - they work at 50 rupees a day while on the mountain only. There are roughly ten rupees to the dollar.

The display of Everest shows the summit of Everest on the left (north) and Lhotse on the south (right). Nuptse, the third peak, would be west or toward the operator, but is not shown on the display. Seven camps are established. They are as follows:

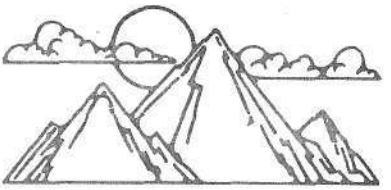
Camp	Elevation	Location
Base Camp	17,800 feet	Base of Khumbu glacier
Camp 1	20,200 feet	In the Khumbu ice fall
Camp 2	21,350 feet	Bottom of Western CWM
Camp 3	22,900 feet	Middle of Western CWM
Camp 4	24,900 feet	Near base of Nuptse and Geneva spur
Camp 5	26,200 feet	On edge of South Col.
Camp 6	27,450 feet	On side of Everest summit

Climbing begins at Camp 1. Each climber can carry a 40 pound load (20 pounds of gear and 20 pounds of food) up one camp. Each climber may instead carry four 10 pound tanks of oxygen up one camp. A third possibility is that a climber may go unloaded up one camp or down one or two. During the evening and the next morning each climber will eat two pounds of food per day and each Sherpa draws his pay. Water is obtained by melting snow and ice. This does not have to be carried. Oxygen is consumed only at Camp 6. Each climber uses one tank of oxygen each night. In order to make a successful summit attempt two climbers must be ready at Camp 5 the morning of the summit climb with two tanks of oxygen each and four pounds of food. One tank will be used to survive the night after the summit climb. Food is eaten in the same way. At least two climbers must make the summit - climbers never go alone.

The climb must be made within a 30 day period. There are only 30 days between the start of the climb season and monsoon time. Weather is acceptable for climbing four out of five days. On an average of every fifth day there can be no climbing and everyone must remain in their tents. If bad weather occurs in Camp 6, oxygen must also be consumed to survive. In late afternoon about every ten days an avalanche will strike one camp and destroy it. If there are any personnel in this camp, they are killed. Being civilized people, we always observe a day of mourning when any of our climbers have died. Therefore, no climbing is done on that day. Climbers are always killed instead of Sherpas - this also is civilized.

It is possible to survive one night in any camp without food or in Camp 6 without oxygen. However, supplies must be replenished or the camp evacuated the next day. If not, one climber will starve or die through the lack of oxygen. Again, being civilized people, we observe a day of mourning.

Good luck, and ration your supplies carefully!



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10 CLS
20 DIM CA(6,3),TC(6,3)
30 CLEAR 500
40 RANDOM
50 'A CLIMB OF MOUNT EVEREST USING ASSAULT TACTICS
60 'VERSION 3.4 BY BYRON MYHRE
70 ' PALOS VERDES , CALIF.
100 FOR N= 1 TO 6
110 READ CA$(N),CL(N),IN(N)
120 NEXT N
130 FOR N=1 TO 4
140 READ WD$(N)
150 NEXT N
160 FOR N=1 TO 9
170 READ AV$(N)
180 NEXT N
300 PRINT"GREETINGS OH GREAT EXPLORER-I UNDERSTAND IT IS YOUR WI
SH TO      CLIMB MT. EVEREST"
310 PRINT"WHAT NAME MAY I CALL YOU BY -OH MIGHTY ONE":INPUT NA$
320 PRINT" ALTHOUGH YOU ARE A GREAT AND WISE LEADER, ";NA$
325 PRINT" WOULD YOU LIKE INSTRUCTIONS ?"
330 INPUT"(Y/N)";Y$
335 IF Y$="Y" GOSUB 6000
340 CLS:PRINT" WELCOME, OH FEARLESS ";NA$ ;"  I AM AHANG GOMBU"
350 PRINT" WELCOME TO ANCIENT AND FAMOUS KATMANDU "
360 PRINT" HERE YOU MAY BUY ALL YOUR PROVISIONS AND HIRE YOUR SH
ERPAS ."
370 PRINT" FOOD SELLS FOR 50 RUPEES  A POUND"
380 INPUT" HOW MANY POUNDS DO YOU WANT";F1
390 CLS:PRINT" OF COURSE YOU WILL NEED OXYGEN TANKS FOR THE HIGH
EST CAMPS- THE TANKS COST 500 RUPEES EACH ."
410 INPUT" HOW MANY TANKS DO YOU WANT";O2
420 CLS:PRINT" AND NOW OH FAMOUS ";NA$
430 PRINT"YOU WILL NEED SHERPAS TO HELP CLIMB IN THE HIGH PLACES
 "
460 INPUT" HOW MANY WILL YOU NEED (THEY ARE PAID 100 RUPEES/DAY)
";SH
470 CLS:PRINT" ALL RIGHT THEN- FEARLESS  ";NA$
480 PRINT" HAVE A GREAT CLIMB - I WILL TAKE CARE OF THE MINOR DE
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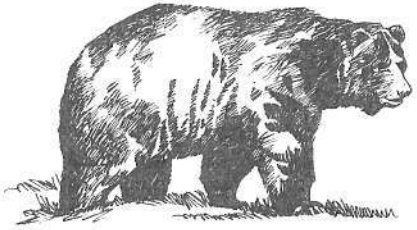

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TAILS SUCH AS HIRING THE LOW LEVEL BEARERS ";
485 PRINT"TO GET YOUR SUPPLIES TO CAMP 1"
510 INPUT" WHEN YOU HAVE PAID YOUR HOMAGE TO THE ANCIENT GODS, P
RESS ENTER TO START YOUR GREAT JOURNEY";E:CLS
520 PRINT @450," OH I FORGOT TO TELL YOU OH MARVELOUS ";NA$
530 PRINT" THE LOW LEVEL BEARERS WILL COST 40,000 RUPEES"
540 PRINT" I WILL ADD IT TO YOU BILL- IT IS OF NO CONSEQUENCE"
550 GOSUB 7080
555 MO=(F1*50)+(O2*500)+40000
558 GOSUB 6900
570 CLS:PRINT @ 450,"HERE IS YOUR FIRST VIEW OF THE MOUNTAIN"
575 PRINT:PRINT" FO= FOOD, O2=OXYGEN TANKS , P= PERSONNEL"
580 GOSUB 7070:CLS
590 GOSUB 6500
600 'WORK OUTLINE
610 CLS
620 PRINT" WELCOME TO BASE CAMP GREAT ";NA$
630 PRINT" I AM  INGTEMBA GOMBU"
650 PRINT" I HAVE MADE ARRANGEMENTS TO HAVE ALL YOUR EQUIPMENT S
ENT TO    CAMP 1."
670 PRINT"WHEN YOU ARE READY TO BEGIN YOUR CLIMB, PRESS ENTER TO
 CALL ME":INPUT E
675 DA=1:CA(1,1)=F1:CA(1,2)=O2:CA(1,3)=SH+10
680 CLS:WO=0
690 IF DE=1 THEN 4000
700 IF DA>30 THEN 4500
750 PRINT"    TODAY IS DAY ";DA;"  OF OUR  EXPEDITION"
760 GOTO 4100
790 CLS:WO=0
800 PRINT STRING$(60,"+")
810 PRINT" THE WORK TASKS AVAILABLE FOR TODAY ARE AS FOLLOWS:"
820 PRINT" 1=CARRY FOOD(20 LBS) AND GEAR (20 LBS) BETWEEN TWO CA
MPS"
830 PRINT" 2=CARRY 4-O2 TANKS BETWEEN TWO CAMPS"
840 PRINT" 3=MOVE CLIMBERS UP ONE OR DOWN ONE OR TWO CAMPS"
850 PRINT" 4=CHECK THE MOUNTAINSIDE FOR PROGRESS"
860 PRINT" 5=ASSAULT THE SUMMIT IF CAMP 6 IS READY"
870 PRINT" 6=STOP WORK AND REST OVERNIGHT"
890 PRINT STRING$(60,"+")
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900 PRINT:INPUT" WHICH TASK SHOULD BE DONE NOW , OH LEADER";WO
910 ON WO GOTO 1500,1700,1900,2100,2200,2800
920 PRINT" SORRY, BUT THAT IS AN UNACCEPTABLE WORK ASSIGNMENT":G
OSUB 7070:GOTO 790
1500 'ROUTINE FOR CARRYING FOOD
1520 CLS:PRINT" WE AWAIT YOUR ORDERS FOR CARRYING FOOD ";NA$
1530 GOSUB 6950
1550 INPUT" HOW MANY CLIMBERS SHOULD CARRY";PE
1560 IF ST=0 OR EN=0 OR PE=0 THEN PRINT"YOUR INSTRUCTIONS WERE U
NCLEAR-PLEASE REPEAT ":GOSUB7070:GOTO 1520
1570 IF EN=ST+1 OR EN=ST-1 THEN 1586
1574 IF ST=EN THEN PRINT" WE'RE ALREADY THERE OH LEADER":GOSUB70
70:GOTO 1520
1580 PRINT" SORRY, OUR SHERPAS UNION WILL ONLY LET US CARRY ONE
CAMP":GOTO 1520
1586 IF ST>6 OR EN>6 THEN PRINT" THERE IS NO SUCH CAMP ON THE MO
UNTAIN":GOSUB 7070:GOTO 790
1590 IF CA(ST,3)=0 OR CA(ST,3)-PE<0 THEN PRINT" THERE AREN'T THA
T MANY CLIMBERS HERE SIRE":GOSUB 7070:GOTO 790
1600 IF CA(ST,1)=0 OR CA(ST,1)-20*PE<0 THEN PRINT" THERE ISN'T
THAT MUCH FOOD AVAILABLE AT CAMP ";ST;
"  SIRE":GOSUB 7070:GOTO 790
1610 CA(ST,1)=CA(ST,1)-20*PE
1620 TC(EN,1)=TC(EN,1)+20*PE
1630 CA(ST,3)=CA(ST,3)-PE
1640 TC(EN,3)=TC(EN,3)+PE
1680 GOTO 790
1700 'CARRY O2 TANKS
1720 CLS:PRINT"OH LEADER ";NA$;" YOUR WISH IS OUR COMMAND - WE
WILL TRANSPORT OXYGEN TANKS "
1730 GOSUB 6950
1750 INPUT" HOW MANY PERSONNEL SHOULD CARRY 4 TANKS EACH ";PE
1760 IF EN=0 OR ST=0 OR PE=0 THEN PRINT" I DIDN'T UNDERSTAND ALL
 THOSE INSTRUCTIONS":GOTO 1720
1770 IF ST=EN THEN PRINT " WE ARE ALREADY AT THAT PLACE SIRE":GO
TO 1720
1780 IF ST>6 OR EN>6 PRINT" THERE IS NO SUCH CAMP ON THE MOUNTAI
N SIRE ":GOTO 1720
1790 IF EN=ST+1 OR EN=ST-1 THEN 1810
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```
1800 PRINT" WE DON'T HAVE THE STRENGTH TO CLIMB MORE THAN 1 CAMP
":GOSUB 7070:GOTO 790
1810 IF CA(ST,3)=0 OR CA(ST,3)-PE<0 THEN PRINT" NOT THAT MANY CL
IMBERS ARE HERE SIRE":GOSUB 7060:GOTO 790
1820 IF CA(ST,2)=0 OR CA(ST,2)-4*PE<0 THEN PRINT" THERE AREN'T T
HAT MANY OXYGEN TANKS AVAILABLE AT THIS CAMP":
GOSUB 7070.GOTO 790
1830 CA(ST,2)=CA(ST,2)-4*PE:TC(EN,2)=TC(EN,2)+4*PE
1840 CA(ST,3)=CA(ST,3)-PE:TC(EN,3)=TC(EN,3)+PE
1890 GOTO 790
1900 'TO MOVE PERSONNEL
1910 ST=0:EN=0:PE=0
1920 CLS:PRINT" WE ARE READY TO MOVE WHEN YOU COMMAND OH FEARLES
S LEADER"
1930 GOSUB 6950
1950 INPUT" HOW MANY OF US SHOULD GO";PE
1960 IF ST=0 OR EN=0 OR PE=0 THEN PRINT" YOUR ORDERS WERE UNCLEA
R-PLEASE GIVE THEM AGAIN":GOTO 1920
1970 IF ST=EN THEN PRINT" THAT IS NO WAY TO MAKE PROGRESS SIRE":
GOTO 1920
1980 IF ST>6 OR EN>6 THEN PRINT" THERE IS NO SUCH CAMP ON THE MO
UNTAIN":GOSUB 7060:GOTO 790
1990 IF  CA(ST,3)=0 OR CA(ST,3)-PE <0 THEN PRINT"THERE AREN'T TH
AN MANY CLIMBERS AT CAMP ";ST;
" GREAT  LEADER":GOSUB 7060.GOTO 790
2000 IF EN=ST+1 OR EN=ST-1 OR EN=ST-2 THEN 2020
2010 PRINT" SORRY ";NA$;" WE ARE ONLY ALLOWED TO CLIMB UP ONE CA
MP, OR DOWN ONE OR TWO":GOSUB 7070:GOTO 790
2020 CA(ST,3)=CA(ST,3)-PE:TC(EN,3)=TC(EN,3)+PE
2050 GOTO 790
2100 CLS: GOSUB 6500:GOTO 790
2200 'SUMMIT ASSAULT
2210 CLS
2220 AS=0
2230 IF CA(6,3)=>2 THEN 2250
2240 PRINT"2 OR MORE CLIMBERS MUST MAKE THE ASSAULT":AS=1
2250 IF CA(6,2)=>2*CA(6,3) THEN 2270
2260 PRINT" THERE IS NOT ENOUGH OXYGEN FOR THE ASSAULT":AS=1
2270 IF CA(6,1)=>2*CA(6,3) THEN 2290
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2280 PRINT" THERE IS NOT ENOUGH FOOD FOR THE ASSAULT":AS=1
2290 IF AS=1 THEN GOSUB 7070:GOTO 790
2300 'SUMMIT DISPLAY
2305 CA(6,2)=CA(6,2)-2*CA(6,3):CA(6,1)=CA(6,1)-2*CA(6,3)
2310 FOR K=1 TO 100
2320 PRINT @ RND(1023),"YOU MADE IT ! ! !"
2330 NEXT K
2340 CLS
2350 FOR A=16128 TO 16382:POKE A,191:NEXT
2360 POKE 16095,191:POKE 16096,191
2370 POKE 16031,191:POKE 16032,191
2380 POKE 15967,191:POKE 15968,191
2390 POKE 15903,191:POKE 15904,191
2400 FOR K1=1 TO 20:Y1=22-K1:SET(K1,Y1)
2410 K2=K1+19:Y2=K2-18:SET(K2,Y2)
2429 K3=K1+39:Y3=22-(K3-40):SET(K3,Y3)
2430 K4=K1+59:Y4=K4-58:SET(K4,Y4)
2440 K5=K1+79:Y5=22-(K5-80):SET(K5,Y5)
2450 K6=K1+99:Y6=K6-98:SET(K6,Y6)
2460 NEXT K1
2461 FOR K7=11 TO 20:Y7=2+K7:SET(K7,Y7)
2462  K8=K7+79:Y8=K8-77:SET(K8,Y8)
2463 NEXT K7
2470 PRINT @ 473," THE SUMMIT";
2480 GOSUB 7080
2490 CLS:SU=1:GOTO 5000
2800 'STOP WORK AND REST OVERNIGHT
2805 CLS:PRINT"       THE SUN IS SETTING-EVERYONE IN HIS TENT"
2810 REM*TRANSFER PERSONNEL AND SUPPLIES TO TENT
2820 FOR NA=1 TO 6
2830    FOR NB=1 TO 3
2840        CA(NA,NB)=CA(NA,NB)+TC(NA,NB):TC(NA,NB)=0
2850    NEXT NB,NA
2855 GOSUB 4700:'AVALANCHE
2860 'FEED THE CLIMBERS
2865 F3=0:04=0:P6=0
2870    FOR RO= 1 TO 6
2880      IF CA(RO,1)-2*CA(RO,3)<0 AND SP(RO)=0 THEN PRINT"EMERG
ENCY-OUT OF FOOD AT CAMP ";RO;
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PRINT"YOU MUST EITHER FEED THEM OR EVACUATE THEM TOMORROW".SP(RO
)=1:GOTO 2900
2890     IF CA(RO,1)-2*CA(RO,3)<0 AND SP(RO)=1 THEN PRINT" ONE C
LIMBER JUST STARVED TO DEATH
 IN CAMP ";RO:KI=KI+1:DE=1:CA(RO,3)=CA(RO,3)-1:GOTO 2900
2900 CA(RO,1)=CA(RO,1)-2*CA(RO,3)
2910 IF CA(RO,1)=>0 THEN SP(RO)=0 ELSE CA(RO,1)=0
2914 F3=F3+CA(RO,1)
2916 04=04+CA(RO,2)
2918 P6=P6+CA(RO,3)
2920  NEXT RO
2930   IF CA(6,2)-CA(6,3)<0 AND SQ=0THEN PRINT" INADEQUATE OXYGE
N FOR SURVIVAL AT
 CAMP 6.":PRINT" EITHER EVACUATE PERSONNEL OR BRING OXYGEN TOMOR
ROW":SQ=1:GOTO 2950
2940 IF CA(6,2)-CA(6,3)<0 AND SQ=1 THEN LACK OF OXYGEN".KI=KI+1:
DE=1:CA(6,3)=CA((6,3)-1:GOTO 2970
2950 CA(6,2)=CA(6,2)-CA(6,3):SQ=0
2965 IF CA(RO,1)=>0 THEN SQ(RO)=0 ELSE CA(RO,1)=0
2970 IF F3=0 THEN PRINT"NO MORE FOOD-EXPEDITION OVER":GOSUB 7080
:GOTO 5000
2980 IF 04=0 THEN PRINT"NO MORE OXYGEN-EXPEDITION OVER":GOSUB 70
80:GOTO 5000
2990 IF P6=0 THEN PRINT"NO MORE PERSONNEL-EXPEDITION OVER":GOSUB
 7080:GOTO 5000
3000 REM* PAY THE SHERPAS
3010 IF KI>10 THEN SI=SH+10-KI:GOTO 3030
3020 SI=SH
3030 MO=MO+50*SI
3040 GOSUB 7080
3050 'END THE NIGHT
3060 CLS:DA=DA+1:FOR CO=1 TO 20
3062 SET(55-2*CO,20):SET(55-CO,20-CO)
3064 SET(55,20-CO):SET(55+CO,20-CO)
3066 SET(55+2*CO,20)
3067 NEXT CO
3068 PRINT @ 650,"THE SUN IS RISING, A NEW DAY IS HERE"
3069 PRINT
3070 INPUT" WHEN YOU ARE READY TO GET UP, CLIMB OUT OF YOUR SLEE
PING BAG    AND PRESS ENTER";E:GOTO 680
```

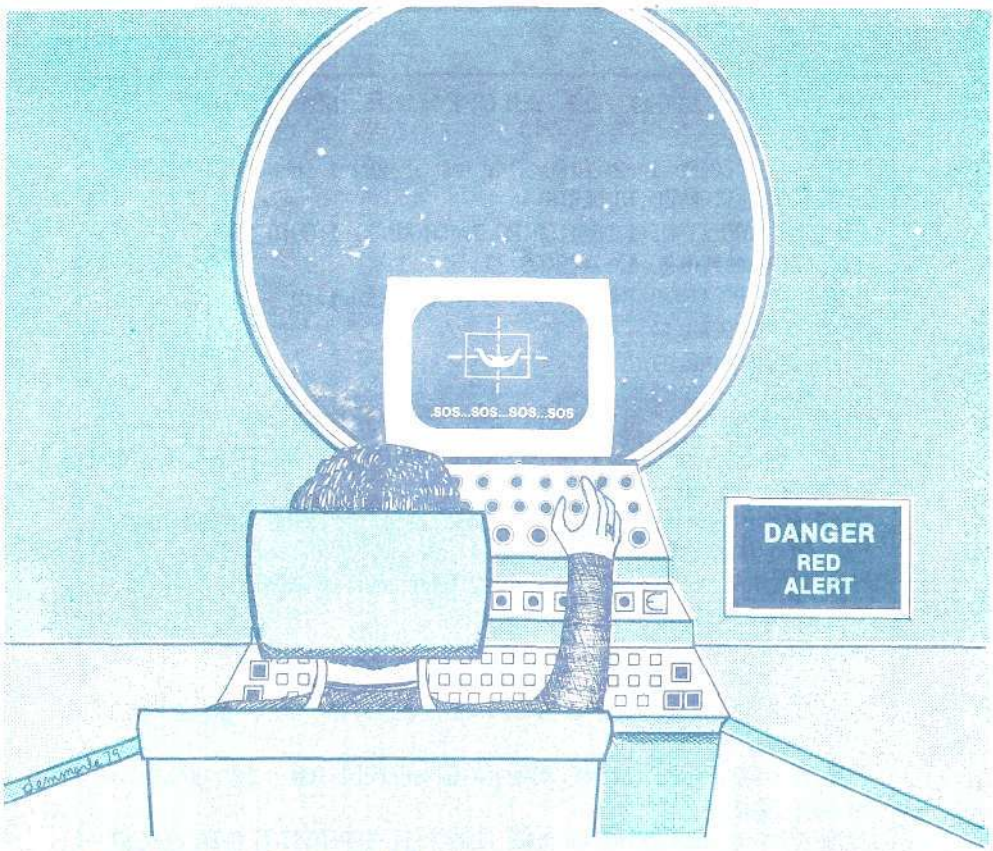

TIME TREK Joshua Lavinsky

-"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.

16K SYSTEM Tape (will load in Level I or II TRS-80) $14.95

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THE MEAN CHECKERS MACHINE

by Lance Micklus

Our resident wizard has done it again! Designed in FORTRAN, run as machine language, this program turns your TRS-80 into an unbelievably wicked checker player! Four levels of play; at the most difficult, the machine may take ten minutes per move, as it attempts to assess all possibilities. MEAN CHECKERS MACHINE is to checkers what SARGON is to chess. (Level 4 is an exercise in humility!)

Level II, 16K	$19.95
Disk	$24.95

```
4000 'DAY OF MOURNING
4010 CLS:FOR CO=10 TO 95:SET(CO,5):SET(CO,35):NEXT CO
4020 FOR RO=5 TO 35:SET(10,RO):SET(95,RO):NEXT RO
4030 PRINT @ 263," IN MEMORY OF OUR DEPARTED CLIMBERS";
4040 PRINT @ 328," THIS DAY WILL BE ONE OF MOURNING";
4050 PRINT @ 457," THERE WILL BE NO CLIMBING TODAY";
4060 PRINT @ 519," EVERYONE WILL REMAIN IN THEIR CAMPS";
4070 PRINT @ 649,STRING$(30,"+");
4080 GOSUB 7080:DE=0:CLS:GOTO 2810
4100 'WEATHER CHECK
4110 PRINT" THE WEATHER REPORT FROM BASE CAMP IS:":GOSUB 7070
4115 PRINT
4120 WE=RND(5)
4130 ON WE GOTO 4140,4150,4200,4160,4170
4140 PRINT"THE BAROMETER IS RISING-FAIR AND SUNNY":GOTO 4180
4150 PRINT"THE BAROMETER IS UNSTABLE-HIGH CLOUDS":GOTO 4180
4160 PRINT"THE BAROMETER IS STABLE-SCATTERED CLOUDS":GOTO 4180
4170 PRINT"THE BAROMETER IS STABLE-HIGH OVERCAST CLOUDS":GOTO 41
80
4180 PRINT" THE TEMPERATURE FOR TODAY IS ";RND(30)-20;" CELSIUS"
4190 PRINT"THE WIND IS FROM THE ";WD$(RND(4));" AT ";RND(50);"KI
LOMETERS/HR"
4195 INPUT"PRESS ENTER WHEN READY TO START WORK";E:CLS:GOTO800
4200 PRINT"THE BAROMETER IS FALLING, A SEVERE STORM IS  HITTING
 THE HIGHER CAMPS"
4210 PRINT" NO CLIMBING TODAY, EVERYONE WILL STAY IN THEIR TENTS
"
4220 GOSUB 7080:GOTO 2810
4500 'MONSOON
4510 CLS:PRINT"MONSOON  MONSOON   MONSOON"
4520 PRINT" HURRY  DANGER IS NEAR"
4530  FOR CO=1 TO 120
4540 SET(CO,10):SET(CO,30)
4550 NEXT CO
4560 PRINT@ 470,"MONSOON   MONSOON   MONSOON"
4570 PRINT@770,"MONSOON  MONSOON   MONSOON"
4580 FOR CO=120 TO 1 STEP -1
4590 SET(CO,20):SET(CO,40)
4600 NEXT CO
```

```
4610 PRINT@260,"MONSOON  MONSOON  MONSOON"
4620 FOR Y=1 TO 40
4630 X=Y
4640 SET(X,Y):SET(X+20,Y):SET(X+40,Y):SET(X+60,Y)
4650 NEXT Y
4660 CLS:PRINT@ 460,"THE CLIMBING SEASON IS OVER":GOSUB 7070:GOT
O 5000
4700 'AVALANCHE
4710 AV=RND(10)
4720 IF AV=5 THEN 4740
4730 RETURN
4740 CLS: FOR N=1 TO 9
4750 PRINT TAB(N)AV$(N);
4760 PRINT TAB(N*2)AV$(N);
4770 PRINT TAB(N*4)AV$(N);
4780 PRINT TAB(N*6)AV$(N);
4790 PRINT
4800 NEXT N
4810 PRINT @ 785,"RUN FOR YOUR LIVES";
4820 GOSUB 7070
4830 AQ=RND(6)
4840 CLS:PRINT" CAMP ";AQ;" IS DESTROYED"
4850 PRINT" YOU LOST ";CA(AQ,1);" POUNDS OF FOOD"
4860 PRINT CA(AQ,2);" TANKS OF OXYGEN , AND ";CA(AQ,3);" CLIMBER
S"
4870 IF CA(AQ,3)>0 THEN DE=1.KI=KI+CA(AQ,3)
4880 CA(AQ,1)=0:CA(AQ,2)=0:CA(AQ,3)=0
4885 GOSUB 7080
4890 RETURN
5000 'FINAL BOX SCORE
5010 CLS:PRINT"YOUR QUEST IS FINISHED , OH ";NA$;" OUR LEADER"
5020 PRINT" HERE IS THE ACCOUNTING OF YOUR EVEREST ADVENTURE"
5030 PRINT STRING$(60,"-")
5035 PRINT"YOUR ADVENTURE LASTED ";DA;" DAYS"
5040 PRINT"YOU BEGAN YOUR JOURNEY WITH ";F1;" POUNDS OF FOOD"
5050 PRINT"       AND ";O2;" TANKS OF OXYGEN"
5060 PRINT"YOU HAD A TEAM OF 10 CLIMBERS AND HIRED ";SH;" SHERPA
S"
5070 PRINT"YOUR JOURNEY COST $ ";MO/10
```

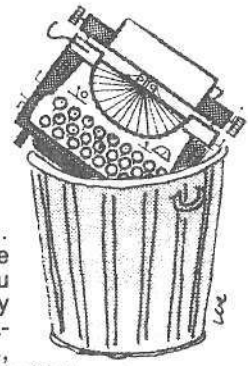
```
5080 IF MO>80000 THEN PRINT"YOU WILL BE GIVING FUND RAISING DINN
ERS FOR 5 YEARS"
5090 PRINT KI;" CLIMBERS DIED"
5100 IF KI>3 THEN PRINT"YOU WILL BE IN JAIL FOR 3 YEARS FOR NEGL
IGENT HOMICIDE"
5110 IF SU=1 THEN PRINT"YOU MADE THE SUMMIT":GOTO 5130
5120 PRINT"YOU DID NOT MAKE THE SUMMIT"
5130 FU=F1:FOR N=1 TO 6:FU=FU-CA(N,1):NEXT N
5140 PRINT"YOU USED ";FU;" POUNDS OF FOOD"
5150 O3=O2:FOR N=1 TO 6:O3=O3-CA(N,2):NEXT N
5160 PRINT"YOU USED ";O3;" TANKS OF OXYGEN"
5170 PRINT:PRINT"  I HOPE THE EXPERIENCE WAS WORTH IT":END
5900 END
6000 'INSTRUCTION SUB ROUTINE
6010 CLS:PRINT"YOU ARE IN CHARGE OF AN EXPEDITION TO CLIMB MT. E
VEREST"
6020 PRINT"YOUR PARTY CONSISTS OF 10 CLIMBERS INCLUDING YOURSELF
"
6030 PRINT"YOU WILL NEED TO HIRE SHERPAS TO HELP CLIMB-THEY WORK
 AT $10/DAY"
6040 PRINT"YOU WILL BUY FOOD AT KATMANDU-$5 /LB."
6050 PRINT"YOU ALSO WILL BUY OXYGEN TANKS-$50 EACH."
6055 PRINT"ALL BILLS ARE IN RUPEES-10 RUPEES = 1 DOLLAR"
6057 PRINT"ONCE YOU ARRIVE AT THE MOUNTAIN,THE WORK SCHEDULE IS
AS FOLLOWS:"
6060 PRINT"EACH CLIMBER CAN CARRY 20 LBS OF FOOD AND 20 OF GEAR
AS A SINGLE  LOAD, OR INSTEAD, 4 OXYGEN TANKS"
6070 PRINT"LOADS CAN BE CARRIED UP OR DOWN ONE CAMP EACH DAY"
6080 PRINT"AN UNLOADED CLIMBER CAN GO UP ONE CAMP, OR DOWN ONE O
R TWO."
6090 PRINT"A CLIMBER EATS 2 LBS. OF FOOD A DAY"
6095 GOSUB 6900:CLS
6100 PRINT"EACH CLIMBER NEEDS ONE OXYGEN TANK FOR EACH NIGHT AT
CAMP 6."
6110 PRINT"YOUR PURPOSE IS TO GET 2 OR MORE CLIMBERS TO CAMP 6"
6120 PRINT"IF THEY HAVE 2 OXYGEN TANKS EACH AND 4 LBS OF FOOD EA
CH, AND IF  THE WEATHER IS GOOD, THEY CAN REACH THE SUMMIT"
6130 PRINT"THE WEATHER IS BAD ONE OUT OF 5 DAYS"
6140 PRINT"AFTER ALL THE WORK IS DONE FOR THE DAY, EVERYONE GOES
 TO SLEEP."
```

```
6150 PRINT"DURING THE NIGHT, THERE IS A 1 IN 10 CHANCE OF AN AVA
LANCHE"
6160 PRINT"THIS WILL HIT ONE OF THE CAMPS, DESTROYING EVERYTHING
"
6170 PRINT"IF CLIMBERS ARE KILLED, A DAY OF MOURNING IS OBSERVED
"
6180 PRINT"DURING THIS TIME, EVERYONE STAYS IN CAMP"
6190 GOSUB 6900:CLS
6200 PRINT"IF YOU RUN OUT OF FOOD OR OXYGEN AT A CAMP, THE CAMP
MUST BE    RESUPPLIED, OR EVACUATED."
6210 PRINT"2 DAYS WITHOUT FOOD OR OXYGEN WILL KILL A CLIMBER"
6220 PRINT"AGAIN A DAY OF MOURNING WILL BE OBSERVED"
6230 PRINT"THE MONSOON SEASON STARTS 30 DAYS AFTER CLIMBING SEAS
ON STARTS-YOU MUST GET TO THE SUMMIT BY THEN"
6240 PRINT"YOU DO NOT NEED TO BRING THE CLIMBERS OR SUPPLIES DOW
N FROM THE SUMMIT"
6250 PRINT"WHEN THEY HAVE MADE IT, THEY WILL BE SO ECSTATIC, THE
Y WILL FLY DOWN"
6260 PRINT"BEST OF LUCK ON YOUR GREAT ADVENTURE"
6270 PRINT"PRESS ENTER TO START AT KATMANDU":INPUTE:CLS:RETURN
6500 ' MOUNTAIN GRAPHIC
6510 FOR X=1 TO 23:Y=INT(47-X*2):SET(X,Y):NEXT X
6520 FOR X=23 TO 44:Y=INT((X-12)/3):SET(X,Y):NEXT X
6530 FOR X=44 TO 70:SET(X,10):NEXT X
6540 FOR X=70 TO 80:Y=X-60:SET(X,Y):NEXT X
6545 FOR X=80 TO 85:Y=20-(X-79):SET(X,Y):NEXT X
6550 FOR X=85 TO 90:SET(X,14):NEXT X
6560 FOR X=90 TO 122:Y=X-76:SET(X,Y):NEXT X
6570 FOR N=1 TO 6
6580 PRINT @ CL(N),CA$(N);:PRINT @ IN(N),"FO=",CA(N,1);"O2=";CA(
N,2);"P=";CA(N,3);
6590 NEXT N
6600 PRINT @ 30,NA$"'S EVEREST EXPEDITION";
6605 PRINT@110,"DAY ";DA;
6610 PRINT @ 995,"PRESS ENTER TO CONTINUE";
6620 INPUT E:CLS:RETURN
6900 INPUT"PRESS ENTER TO CONTINUE";E:RETURN
6950 ST=0:EN=0:PE=0
6960 INPUT"FROM WHAT CAMP SHOULD WE START";ST
6970 INPUT"TO WHAT CAMP SHOULD WE GO";EN
```

```
6980 RETURN
7000 DATA CAMP 1,910,962,CAMP 2,800,861,CAMP 3,593,654
7010 DATA CAMP 4,485,546,CAMP 5,280,337,CAMP 6,90,151
7020 DATA NORTH,EAST,SOUTH,WEST
7030 DATA A,V,A,L,A,N,C,H,E
7060 FOR N= 1 TO 1000:NEXT:RETURN
7070 FOR N=1 TO 2000:NEXT: RETURN
7080 FOR N=1 TO 2500:NEXT:RETURN
```

ELECTRIC PENCIL!

Effortless typing is here!



The Electric Pencil by Michael Shrayer is a true word-processing program for the TRS-80. Enter your manuscript, and let your computer do the work. Editing? Just position the cursor with the arrow keys . . . one-key commands let you change, delete, or insert. Fully adjustable margins, left/right justification, variable spacing, page headings, and much more! Save and recall your text with tape or diskfiles. **Typing** everything from letters to reports is fast and incredibly easy using The Electric Pencil.

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by Lance Micklus Only $7.95

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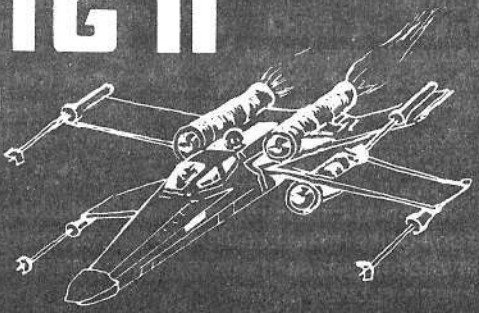
X-WING II

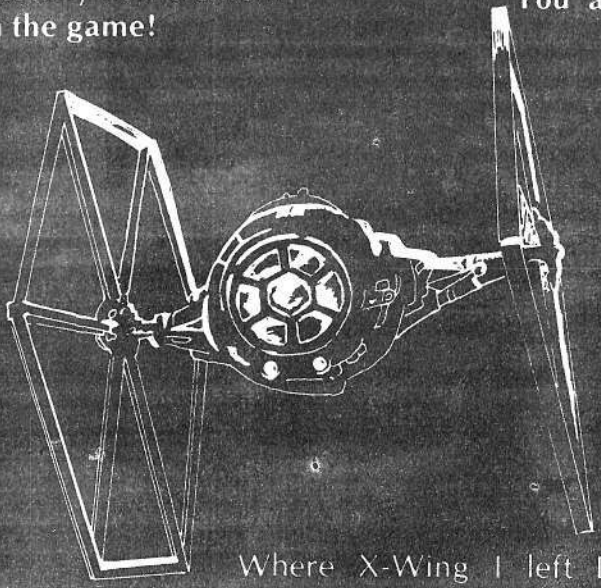
by Chris Freund



For the thousands who have enjoyed X-Wing Fighter, X-Wing II presents a totally new element in the game!

You are Pilot of an X-Wing fighter ...

Your Mission, Destroy the Death Star!



Where X-Wing I left Death Star looming on the screen, **X-Wing II** lets you guide your fighter into the trench, find the exhaust port, aim and fire — all the while avoiding enemy fighters. Excellent graphics, 12 levels of play, and extensive INKEY$ commands make this one of our most exciting "real-time" games.

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.... 16K	$448	$379/403	$245	$340
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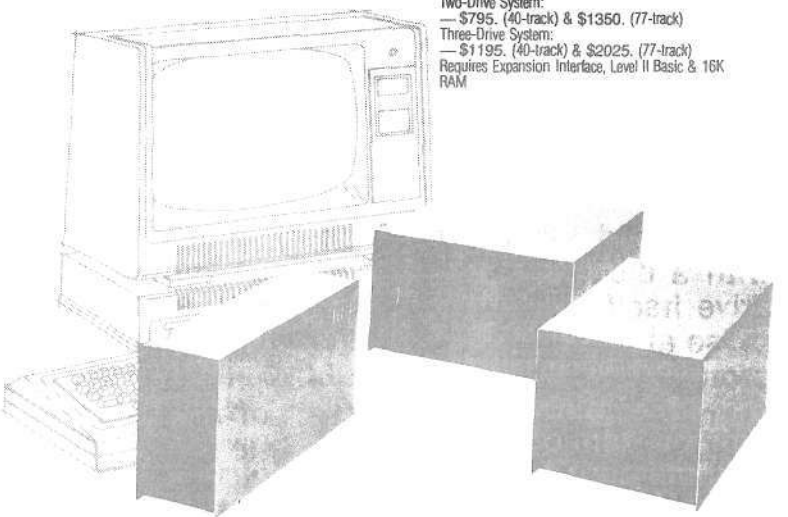

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by Kalman Bergen

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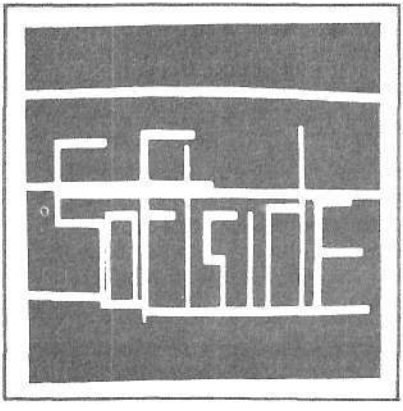
Doodle Pad

by R. B. Nottingham

Doodle Pad evolved when I read that someone had discovered that memory location 14400 changed value from 0 to 8, 16, 32, and 64, when the appropriate keyboard arrow was depressed. I quickly entered a program to PEEK at this location and print the value. Sure enough, it did. Then I went a bit farther and used a FOR-NEXT loop to print the entire keyboard memory area. Then I found that many locations adopted the same value when a key was depressed and that 14784 for example, gave the same values, for the arrows but increased them by one when the shift key was depressed.



I decided to play a little more, thinking that the process might be useful for writing a game program so that the arrows, rather than arbitrary letters; could be used to control direction. At first I used four IF statements, to increment or decrement the location for a SET spot. With the odd values it was easy to use a RESET command so that I could erase as well as write.

However, I had no way of telling where the spot was except by setting and resetting a location, so a flasher was added which SET and then RESET a spot when the shift key was depressed. The flash proved to be too brief, so a delay loop was added between the commands. I had looked at this up to this point as simply a programming exercise which might have future value, but then I let some children try it.

They were fascinated! It held their interest for a surprisingly long time. Some of them drew quite elaborate pictures. Houses and trees seem to be the favorites.

The program is liberally sprinkled with remarks so that it should be highly intelligible. Have fun!

```
10 CLS
20 'R. B. NOTTINGHAM,LIGHTHOUSE POINT, FL. WITH THANKS TO GREG
30 'PERRY OF TULSA OKLAHOMA, WHO DISCOVERED THE ARROW ADDRESS
40 PRINT"TO DRAW A LINE, PRESS THE APPROPRIATE ARROW."
50 PRINT"TO ERASE, HOLD DOWN THE SHIFT KEY WHILE PRESSING THE  A
RROW.     TO CLEAR THE SCREEN AND START OVER, TAP THE SPACE BAR.
60 INPUT"      (PRESS ENTER TO CONTINUE)";W$
70 CLS
80 X=64 : Y=23
90 P=PEEK(14784) : REM  EQUALS 0,8,16,32 OR 64 DEPENDING ON ARROWS
100 IF INKEY$=CHR$(32) THEN  GOTO 70   :REM CLEARS IF SPACE BAR
IS PRESSED
110 IF P < 8 GOTO 360  :REM FLASHES SPOT IF NO KEY DEPRESSED
120 Z1=INT(P/8)
130 Z2=P/8
140 IF Z1-Z2<>0 GOTO 170  :REM TESTS FOR SHIFT KEY
150 SET (X,Y)
160 ON Z1 GOTO 180  ,190  ,190  ,200  ,200  ,200  ,200  ,210   :
'WRITE
170 ON Z2 GOTO 270  ,280  ,280  ,290  ,290  ,290  ,290  ,300:'ERASE
180 Y=Y-1 : GOTO 220  :REM MOVES SPOT APPROPRIATELY
190 Y=Y+1 : GOTO 220
200 X=X-1 : GOTO 220
210 X=X+1 : GOTO 220
220 IF X<2 X=1 :REM LIMITS SPOT TO SCREEN
230 IF X>126 X=126
240 IF Y<2 Y=1
250 IF Y>46 Y=46
260  GOTO 90
270 Y=Y-1 : GOTO 310 :REM MOVES SPOT FOR ERASING
280 Y=Y+1 :GOTO 310
290 X=X-1 : GOTO 310
300 X=X+1 : GOTO 310
310 IF X<2 X=1
320 IF X>126 X=126
330 IF Y<2 Y=1
340 IF Y>46 Y=46
350 REM THE FOLLOWING LINE FLASHES SPOT AND LEAVES IT OFF, OR ERASES.
360 SET (X,Y) : FOR Q=1 TO 10 : NEXT Q : RESET (X,Y) : GOTO 90
370 END
```

PROGRAMMING HINTS

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CLEAR

It can be very important to place a CLEAR statement listing the amount of string space needed in every program. If CLEAR is not executed, or if CLEAR is executed without specifying a number as in CLEAR 500, then the computer clears the same amount of memory as the last previous CLEAR statement. To see the effect of this, try running some programs after executing the statement CLEAR when there is no CLEAR XXX in the program. If you have been getting OUT OF MEMORY errors, this may be the reason.

Cold Start

When running an important program, it may pay to turn the computer off and bring it up from a cold start. One user with subtle problems eventually traced the problems to a previous program that POKED changes into the BASIC scratchpad area (locations 12288 to 16870).

Thanks to George Lasseigne for this information.

Multiple USR Calls

Here is a hint for assembly language programmers. Level II says there is only one USR call permitted. The following heading in the machine program permits as many as memory allows. A call for USR(0) goes to program 0, a call for USR(1) goes to program 1, etc. As it stands it can be used for graphics. If data needs to be passed to the machine program, then Memory Size should be set to the appropriate number of bytes below the origin of the heading, the data poked into this "scratchpad" before calling USR(n), and program (n) then loads from the "scratchpad" as desired.

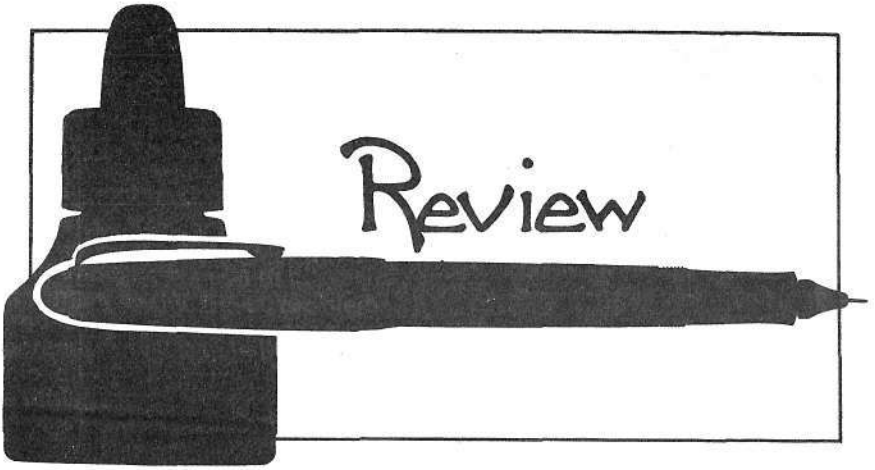
The first line of each program should bear the appropriate label - PRGO, PRG1, etc. It is, of course, imperative that no changes be made between CALL 2687 and JP PRGn.

Assembly language heading for multiple USR calls.

```
            ORG     nnnn
(LABELS)    EQU     (as desired)
            "       "
            CALL    2687
            XOR     A
            LD      B,3
DISPL       ADD     A,L
            DEC     B
            JP      NZ,DISPL
            LD      L,A
            LD      BC, $+5
            ADD     HL, BC
            JP      (HL)
            JP      PRGO
            JP      PRG1
            JP      PRG2


            JP      PRGn
```

Thanks to Ted Lindstrom, Bonners Ferry, ID



BRIDGE CHALLENGER

by Wynne Keller

This program lets the computer deal hands for you, or you may enter your own hands. You may then state your bid (looking at your own and the dummy hand), or you may ask to have the cards rotated such that the opponent's hand becomes yours, or you may pass to the next deal.

After your bid is made you play out of hand. When you are done you may play it again, with defense cards shuffled if you wish, to see if you can do better or can maintain your showing if the cards against you fall differently.

Interesting hands may be saved on tape, if desired. Also, hands may be dealt to meet your criteria for high card points, and saved on tape.

Initially I was disappointed because I wanted to be able to practice bidding as well as playing hands, and the program has no provision for this. On reflection, though, it is probably just too complicated to fit in a 16K machine. It would have to be done in two separate programs, at least if the present features of BRIDGE CHALLENGER were to be retained.

This program is excellent practice for a bridge player to sharpen his or her game. It is not for some one who doesn't already know the rules. Certainly a computer would be a good way to teach novices — anyone out there inspired to write the software? I love bridge and get to play only about once a year because none of our friends know it. Of course, the computer is not as much fun as a foursome, but it does play a good game and is not a bad substitute. Occasionally it plays a card which I feel a "real" player wouldn't have used, but then "real" players do that too, myself included.

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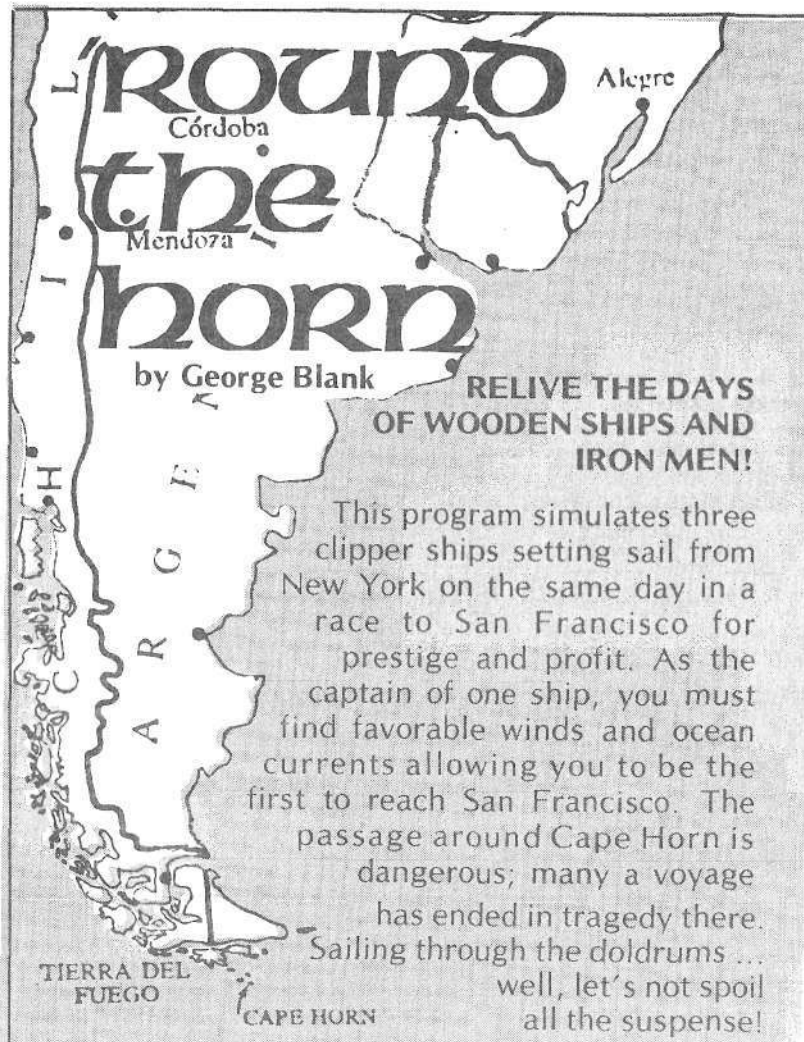

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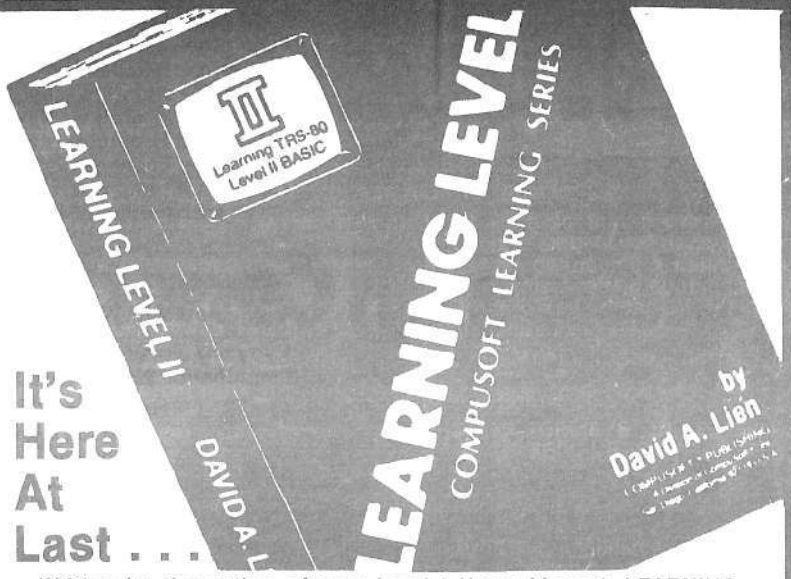

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