SoftSide™
YOUR BASIC SOFTWARE MAGAZINE
DECEMBER 1979

The Software Exchange

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IN THIS ISSUE . . .

OIL BARON By Paul Knechtel.....8
DRAG RACE By Chris Freund.....28
CHRISTMAS SHOW AND TELL
By Randy Hawkins.....33
INDEX TO BASIC REFERENCE MANUAL
By Kemp J. Beaty.....39
TOWERS OF HANOI By Chet Kaczneski.....44
SLALOM By Denslo Hamlin.....50

REGULAR FEATURES . . .

OUTGOING MAIL By George Blank.....6
PROGRAMMING HINTS.....62
TRS-DOS 2.3, IF. . .THEN . . .ELSE, Clear Portion of Screen, Extended Tab, DELETE
BUG REPORT.....65
INPUT - A COLUMN OF YOUR LETTERS.....71
MARKET BASKET.....75
CONVENIENT ORDER FORMS.....78 & 79

COVER STORY

The cover shows three members of the computer generation, children of our staff. Kelly Bishop, Roger Robitaille, Jr. and Robbie Blank, all use computers at home. The first word Robbie ever learned to spell was RUN!

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:
Printout to screen or line printer
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(A search for TRE would find STARTREK and TREES)
Index to single disk
Search and RUN program

Three programs on BASIC tape with instructions for loading on a NEWDOS diskette and instruction manual. $14.95

IMPORTANT: This program requires the following minimum System:
NEWDOS by Apparat (Uses CMD"DIR" and OPEN"E")
32K of Memory
At least TWO Disk Drives

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YOUR BASIC SOFTWARE MAGAZINE

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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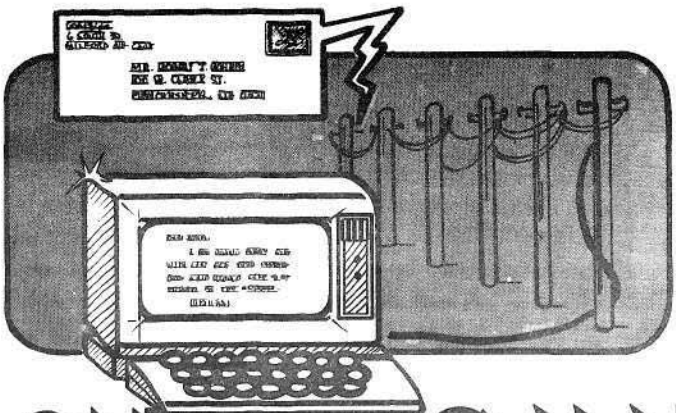


OUTGOING MAIL

We feel an obligation to share with our customers some of the lessons we have learned the hard way. Why should you have to go through the expense of testing several products to find good ones and bad ones, when others have already done so?

One area in which we have had a great deal of experience is in the use of mini diskettes. After using thousands of them, here are our ratings: Excellent: Dysan; Very Good: BASF, Georgia Magnetics; Good: Verbatim, Scotch (3M), Radio Shack; Poor: Memorex. Out of that experience, we have chosen the lines that we carry.

Another area that concerns us is the input/output difficulties of the Radio Shack TRS-80. Almost all of the problems we have found are linked to communication between devices or to the outside world.

The first and most obvious is the lack of lower case letters. There are three solutions that I know about. You can buy another computer like the Heathkit, you can modify it yourself, or you can believe the rumor and wait for Radio Shack to offer it.

The next thing that most people discover is the difficulty involved in loading tapes. Radio Shack does offer modifications that help a little, but not enough. We routinely use either The Data Dubber or the AlphaNetics Acu-Data tape digitizers. Even these do not absolutely solve the problem, but they make it livable.

One problem that should be largely solved by now is the CTR-80 dropout problem, where the tape recorder erases little pieces of your tape, destroying it in the process. If you suspect that you have this problem, take your recorder to your local Shack for modification.

Another problem that was supposedly solved was inadequate refresh signals to the expansion interface, causing loss of data in high memory. Radio Shack has tried a half dozen solutions to this one. I have the buffered cable and the "umbilical cord". The newer models are supposed to have solved the problem. If you often lose data in high memory,

take the expansion interface to the Shack.

The ribbon cables, especially to the disk drives, but also to the expansion interface and the line printer, are another source of grief. They make excellent antennas for high frequency radiation. That means that the computer picks up information from fluorescent lights, power supplies and radio stations, and sends interference to your television set. Since moving an antenna affects its radiation pattern, you can try shifting the parts of your system around on the desk and in different parts of the house, but the only solution I know for TV interference is to turn off either the computer or the television.

There are several more woes for Disk users. The Radio Shack Disk Operating System (Version 2.3 has been out since August) is still woefully inadequate. We use NEWDOS from Apparat in-house, but also plan to look closely at VTOS 3.1 from Randy Cook when it comes out. NEWDOS and VTOS are both good systems.

Another disk headache is the incompatibility between the real time clock and the Radio Shack disk drives. The clock interrupts are almost perfectly synchronized with the speed of the disk drives, causing your system to spin and spin and finally give up looking for data. The solutions are to use the VERIFY command from DOS, which cuts your access speed in half, to change the speed of your drive with software (see the September PROG-80), or to buy a better quality drive like the Percom.

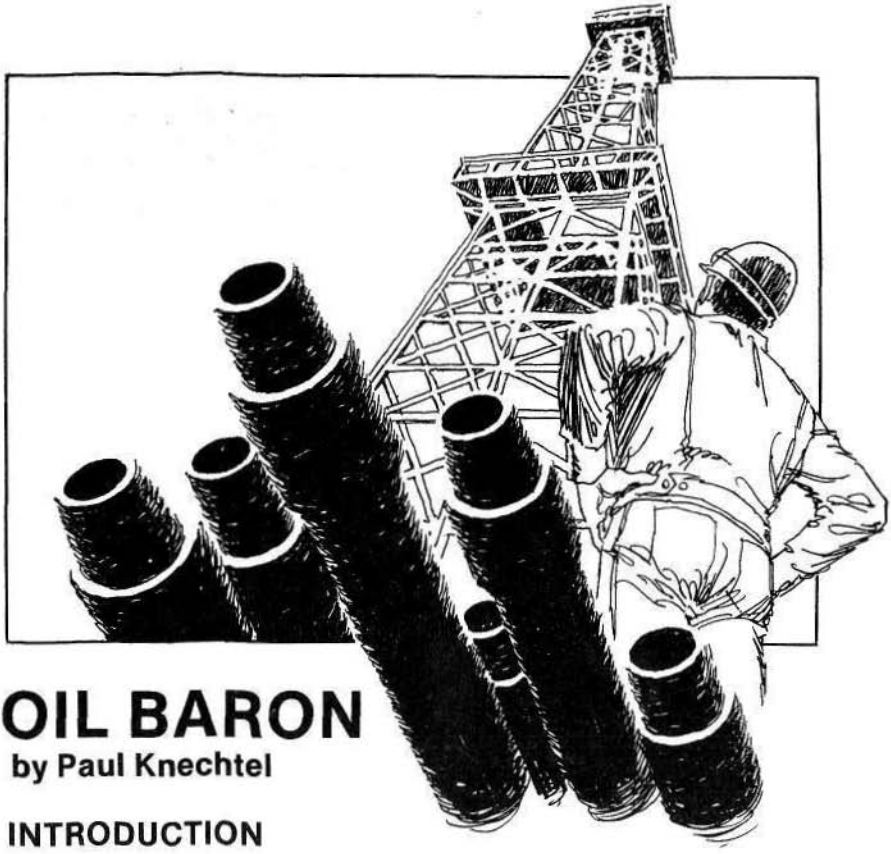
My final input/output complaint seriously affects the TRS-80 in business use. In order to save a few bucks, Radio Shack neglected to install a data separator in the floppy disk controller, blatantly ignoring a warning on the data sheet that applies to the controller chip they use. Most problems with unreliable transfer of information to and from disk come from this shortcut. Percom does offer a data separator, but if you install it, you void the warranty. Personally, I prefer the separator.

When we offer a business system through HARDSIDE, we encourage people to get the Percom drives, data separator, and NEWDOS, and we don't do it to raise the price: in fact, we would be willing to sell an all-Radio Shack System for less than Radio Shack list price, yet the recommended system is even less expensive than that. We do it because we believe that anyone spending two to three thousand dollars for a computer ought to get one that works.

Those of you who are not willing to put up with these problems may be interested in the following announcement. But be careful; IBM BASIC is MUCH less powerful than Radio Shack Level II BASIC.

Bargain Sale!

Those of you who have been looking for an opportunity to upgrade from a TRS-80 to a slightly more powerful computer will be happy to know that IBM has just announced a 20% price cut on the minimum configuration of one of its smallest mainframes. You can now buy a new IBM 3031 with 2 megabytes of main memory for only $800,000, or $26,681 a month on a four year lease. Price does not include Blackjack and Backgammon.



OIL BARON

by Paul Knechtel

INTRODUCTION

We are all suffering from the high cost of energy these days. Every kind of energy is costing us more and more daily and we are caught in the middle, unable to do anything about it.

Here's your chance to strike back! As Chairman of the Board of your own oil company, you will control your own energy destiny in an attempt to become the first Oil Baron.

Timely investments and sales will increase your company's working capital and allow you to invest in more research and development, and purchase more real estate. Rapid development could mean a shortage of supplies and bring financial instability, while slow development might result in your removal as Chairman of the Board.

The game can be played by two to four players. An average game involving two players requires about one and one-half hours to complete. The game requires strategy, risk-taking, good business sense, and a certain amount of luck.

There are 10 phases to the game as follows:

PHASE 1: Oil Purchases and Disbursements.

Three options are possible 1) Buy domestic oil: 2) Buy foreign oil: 3) Release oil to

refineries. First you should examine and compare your oil reserves against your oil requirement. If you find that you need oil, do the following:

A) enter '1' and buy as much of the lower priced domestic oil as you need. The domestic oil availability may or may not be enough to cover your requirements. In the event that you need more oil than your domestic sources can offer, you must buy the higher priced foreign oil. Avoid buying more oil than your stations need or than your refineries can refine unless you get an excellent price per barrel.

B) Once you have purchased all the oil you need, enter '3' and release what your stations require.

PHASE II: Station Profits and Wholesale Gas Reserves Sales

Station profits from the sale of gas at the pump are reported and you are allowed to sell your reserve oil at wholesale prices to generate quick cash if needed.

PHASE III: Pollution Control and Research

As with any large refinery, pollution is a constant problem. Here you are allowed to purchase smog control devices which eliminate or reduce damage to the environment. The price of smog units is randomly calculated in each turn sequence. You may however, elect not to buy pollution units if the political atmosphere is favorable. Lobby effort provides more latitude depending on its strength (that is, the more you spend on domestic lobbies, the greater the political influence with the E.P.A. and the less likely you are to be checked.) Be careful, because if your smog unit need is too great, heavy fines by the E.P.A. (Environmental Protection Agency) and mandatory purchase of smog equipment may be imposed.

PHASE IV: Bar Graphs

This phase graphically represents profits and present values on a bar graph of the following factors:

1) Stock Values: may fluctuate according to the present mood of the stock market.
2) Cash Reserves: reports cash on hand.
3) Research Investments: reports the total amount spent on research to date.
4) Station Profits: shown separately but included in your cash reserves.
5) Real Estate Values: the value of all service stations, oil wells and refineries.

PHASE V: Stock Splits

When a stock splits, you will be notified of the split only if you own that stock. In this case, the price of the stock is cut in half and the number of shares you own is doubled.

PHASE VI: Investments

This phase allows you to purchase any number of stations, refineries, oil wells, lobbyists, or stocks. Keep a careful eye on the stock market status (the upper right-hand corner of the screen).

PHASE VII: Smog Equipment Failure
Smog equipment will fail at times. You may lose a portion or all of your pollution control devices. Replacements must be purchased at the next possible turn to avoid E.P.A. investigation, and heavy fines. However, depending on the number of units lost and the political climate at the time, you may be investigated by the E.P.A. before you have a chance to buy replacement smog units. If this occurs, quite heavy fines result along with mandatory purchase of smog units.

PHASE VIII: Refinery & Smog Graphics
This phase presents a graphic display of the number of refinery units you own and the number of smog units you currently need to purchase. The solid bar which is interrupted by black boxes across the lower part of the screen indicates your capacity for refinery expansion. The solid vertical lines above it represent the number of refinery units you currently own. In line with each of the refinery units will be a vertical column of four arrows pointing upward. (Some computers may substitute the bracket for exponential notation for this character. If this occurs simply change the ASCII character code in line 9565 to whatever character code looks best to you.) Each refinery unit which is lacking a smog control unit will have a line of arrows directly above it. Thus at a glance, a person can tell how many refinery units he owns and how many of those units currently require pollution control units. If a player desires, a comparison of all player standings can be obtained by entering the number '6'.

PHASE IX: Environmental Protection Agency Check
After Phase VIII, the E.P.A. automatically checks domestic lobby effort. If the lobby effort surpasses a randomly generated number, no smog check will be made. In the event that a check is made, several things can happen based on the political atmosphere. You may be found to have adequate protection, in which case the program goes on to Phase X, or you may be found to be a major pollutor, and heavy fines and mandatory purchases of smog equipment occur.

PHASE X: Assets Liquidation
This is the last phase in the player's turn. If at this point for any reason your cash reserves are below zero, you are automatically charged 50% interest. In addition, if your debts are greater than a randomly generated value, you will go bankrupt and liquidation of your assets ensues.

End of Game Determination
Each turn sequence represents a 6 month period. As Chairman of the Board of your company, you are assigned (randomly) a term of office. The length of the term varies from player to player. If you do not succeed in achieving the title of "Oil Baron" by the end of your term, you are removed from the game. If all players are removed from the game in this manner, no one wins and the game obviously ends. The following criteria are necessary to become an Oil Baron:

1) Cash reserves of at least $10,000,000
2) At least 31 refinery units

```
5 REM  ****************************
       **   OIL  BARON            **
       **    BY PAUL KNECHTEL     **
       ****************************
10 FORA=1TO4:AG(A)=RND(5)+15:CR(A)=.6:R(A)=1:CBS(A)=10:CAS(A)=3:
RC(A)=800000:FLOB(A)=0:DLOB(A)=0:BR(A)=20000:NEXT
100 CLS:PRINT@593,"<<<<< O I L   B A R O N >>>>>":FORX=1TO750:NE
XTX:PRINT@719,"PROGRAMMED BY    ":GOSUB1202:PRINT@852,"COPYRIGHT
 APRIL 1, 1979":FOR X=1TO1200:NEXTX
150 SA=30:SP=16:ST=7:SL=25:GOSUB2200:SJ=SJ-62.5:SK=SK-60.5:G=G-8
4.6:WH=WH-75.8
200 A=0:CLS:INPUT "HOW MANY PLAYERS (1-4)";X:IFX<1ORX>4GOTO200:C
LS
202 FORW=1TOX
203 A=A+1
204 PRINT "PLAYER #";W;", WHAT IS YOUR COMPANY NAME";:INPUTN$(A)
205 OG$(W)="IG":NEXT
300 'GAME
399 B=A:VG=A
400 GOSUB12000
401 FORA=1TOB
403 IFA=1THENDE=DE+1
405 IFOG$(A)="OOG"GOTO590
410 GOSUB605:GOSUB952:GOSUB1600:GOSUB8800:GOSUB3000:GOSUB5600:GO
SUB9400:GOSUB9975:GOSUB9605:GOSUB9930
590 NEXT
595 'LOBBY
596 IFCC<>4GOTO400
597 CC=0:X=RND(3):IFX=2GOTO400
598 FORX=1TO4:DLOB(X)=0:FLOB(X)=0:NEXTX:GOTO400
605 'OIL
615 TB=0:TA=0
620 FORX=1TOCBS(A):TB=TB+(RND(550)+649):NEXT
630 FORX=1TOCRS(A):TA=TA+(RND(501)+1199):NEXT
640 BT=(((TA+TB)*100)/50)/CR(A):BT=INT(BT)
650 FBL=FLOB(A)/10000:IFFBL>15THENFBL=15:FBL=FBL/100
680 DBL=DLOB(A)/5000:IFDBL>15THENDBL=15:DBL=DBL/100
700 'PRICES
710 IF FBL>0GOTO730
720 FP=RND(8)+11:GOTO740
730 FP=(RND(8)+11)*((100-FBL)/100)
```

The Best Has Gotten Better!

Sargon, the program that came in first in the Creative Computing Microcomputer Chess Tournament, has become Sargon II - **$29.95**

- A vastly improved game
- Faster response time
- New level 0 for beginners
- Easier to pre-set board
- Hint mode - What does the computer suggest

Sargon II is the program that took on the maxi-computers in the West Coast tournament, and finished in the money! More thinking power than you ever expected in a TRS-80.

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ATTENTION ALL WAR GAMERS

The war games you have come to love have come to the TRS-80!

River ●
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Terrain Obstacles ●
Armor, Infantry, and Engineers ●
Computer determined combat results ●

This Two Player game is an elementary war game (Kriegspiel is German for "war game") giving a battle between two countries located in opposite corners of the screen. The object is to capture the enemy capital. During play, each piece flashes in turn, displaying the number of moves left. You can move it, wait until you have moved other pieces, skip it, or even go directly to combat after moving only some of your pieces. You must stop and do battle whenever you are adjacent to an enemy piece. In battle, you can be eliminated, the other player can be eliminated, an exchange can take place, or a retreat may be required. You do the brainwork, General; the computer carries out your orders. Strategy and fate determine the battle!

$7.95 Level II Cassette

Kriegspiel

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```
740 IF DBL>0GOTO760
750 DP=RND(3)+4:GOTO763
760 DP=(RND(3)+4)*((100-DBL)/100)
763 DA=0:IF O(A)=0GOTO765
764 FORX=1TOO(A):DA=DA+RND(10000)+5000:NEXT:OO=DA
765 DA=DA+((RND(21)+34)/100)*BT:DA=INT(DA)
766 FA=((RND(21)+39)/100)*BT:FA=INT(FA)
775 A$="$$#########,#":B$="$$,#.#":C$="##.##"
780 CLS:PRINT@4,N$(A)," OIL PURCHASES & DISBURSEMENT":X=64:GOSUB
5910:PRINT@131,"OIL (IN BARRELS)":PRINT@158,"PRICE/BARREL"
790 PRINT"REQUIRED","RESERVES":PRINT@218,"FOREIGN":PRINT@231,"DO
MESTIC  CASH RESERVES"
810 PRINTBT,BR(A):PRINT@282,"";:PRINTUSINGC$,FP:PRINT@295,"";:PR
INTUSINGC$,DP:PRINT@304," ";:PRINTUSING A$,RC(A)
811 X=320:GOSUB5910
812 PRINT@407,"OIL AVAILABILITY":PRINT@458,"DOMESTIC":PRINT@432,
"FOREIGN"
814 PRINT@521,DA," BARRELS":PRINT@555,FA," BARRELS"
816 X=576:GOSUB5910
820 PRINT"1.  BUY DOMESTIC OIL","2.  BUY FOREIGN OIL","3.  RELEASE
OIL TO REFINERIES"
830 GOSUB7400:IFOP<1OROP>3GOTO830
835 ONOPGOTO840,860,940
840 INPUT "HOW MANY BARRELS OF DOMESTIC OIL";BD:IF BD<0ORBD>DATH
ENGOSUB1100 ELSE890
850 GOTO840
860 INPUT "HOW MANY BARRELS OF FOREIGN OIL";BF:IF BF<0ORBF>FATHE
NGOSUB1100 ELSE890
870 GOTO860
890 FA=FA-BF:DA=DA-BD:BR(A)=BR(A)+BD+BF:RC(A)=RC(A)-((FP*BF)+(DP
*BD)):BF=0:BD=0
900 GOTO780
940 INPUT "HOW MANY BARRELS WILL YOU RELEASE";RE(A):IFRE(A)<0GOT
O940
941 IF RE(A)>BR(A)THEN942 ELSE944
942 PRINT"YOU CANNOT RELEASE MORE THAN YOU HAVE IN RESERVE...TR
Y AGAIN":FORX=1TO500:NEXT:GOTO940
944 IF RE(A)>R(A)*100000THEN945 ELSE947
945 PRINT"REFINERY OUTPUT LIMITS RELEASE TO ";R(A)*100000:GOTO94
0
```

```
947 IFRE(A)>INT(BT) THENPRINT"YOU CANNOT RELEASE MORE THAN YOU N
EED"ELSE950
948 GOTO940
950 BR(A)=BR(A)-RE(A)
951 RETURN
'GAS SALES
953 IFA=1THENWH=WH*1.006
954 IFA=1THENG=G*1.004
955 WH=((INT(WH*1000))/1000):G=((INT(G*1000))/1000):PS=G*((RE(A)
*50)*CR(A)):IFRC(A)<0THENRC(A)=RC(A)*1.1
956 RC(A)=RC(A)+PS
957 IFBR(A)=0RETURN
958 CLS:PRINTN$(A);" GAS PROFITS AND SALES"
960 X=64:GOSUB5910
962 PRINT@148,"GAS PRICE/GALLON      STATION      CASH"
964 PRINT"CRUDE OIL RESERVE   WHOLESALE  RETAIL     PROFITS
RESERVES"
966 PRINTBR(A);" BARRELS":PRINT@277,WH:PRINT@287,G;:PRINTUSINGA$
;PS:PRINT@306,"";:PRINTUSINGA$;RC(A)
968 PRINT:PRINT:PRINT"OPTIONS :   1. SELL OIL WHOLESALE FOR QUIC
K CASH"
969 OP=0
970 PRINT:PRINT"(HIT ENTER TO CONTINUE)  ";:GOSUB7400:IFOP<>1RET
URN
976 INPUT "HOW MANY BARRELS WILL YOU SELL";X:IFX>BR(A)PRINT"YOU
DON'T HAVE THAT MUCH.....TRY AGAIN"ELSE980
978 GOTO976
980 BR(A)=BR(A)-X:RC(A)=RC(A)+X*50*WH:GOTO958
1100 PRINT"YOU CANNOT BUY MORE OIL THAN IS AVAILABLE.......TRY A
GAIN"
1101 FOR X=1TO780:NEXT:RETURN
1202 PRINT@735,"";:FORX=1TO16:READA:PRINTCHR$(A);:NEXT:RETURN
1600 'SMOG NEEDS
1605 IF A=1GOSUB2000
1610 SN=(R(A)*10)-SM(A):SN=INT(SN+.05)
1615 IFSN<1THENSN=0
1620 SC=(RND(3001)+6999)
1630 CLS:PRINT@4,N$(A);" POLLUTION CONTROL AND RESEARCH"
1640 X=64:GOSUB5910
1650 PRINT@142,"CURRENT":PRINT@164,"SMOG UNITS"
```

```
1660 PRINT@192,"REFINERY UNITS":PRINT@213,"VALUE":PRINT@226,"NEE
D  INSTALLED    CASH RESERVE"
1670 PRINT@260,R(A):PRINT@272," ":PRINTUSINGA$,R(A)*1000000
1680 PRINT@290,SN:PRINT@299,SM(A):PRINT@307," ":PRINTUSING A$,R
C(A)
1685 X=320:GOSUB5910
1686 PRINT@384,"POLITICAL ATMOSPHERE = ";PC$
1690 PRINT@526,"1.  POLLUTION CONTROL AT $ ";SC;"PER UNIT."
1700 PRINT@590,"2.  RESEARCH AT MINIMUM OF 2% OF CASH RESERVES.";
1710 PRINT@657,"HIT ENTER TO CONTINUE ":OP=0:GOSUB7400
1715 ONOP+1GOTO1717,1740,1760
1717 RETURN
1740 PRINT:INPUT "ENTER # OF UNITS YOU WISH TO BUY";UN:IF UN<0GO
TO1740
1742 UN=INT(UN):IFUN>SNTHEN1745 ELSE1750
1745 PRINT"YOU CAN'T BUY MORE THAN YOU NEED . . .RETRY":GOTO1740
1750 SM(A)=SM(A)+UN:SN=SN-UN:RC(A)=RC(A)-(SC*UN):GOTO1630
1760 PRINT "HOW MUCH DO YOU WANT TO SPEND ($";ABS(RC(A)*.02);" M
INIMUM)":INPUT RS
1770 IF RS<ABS(.02*RC(A))GOTO1780,ELSEGOTO1790
1780 PRINT"YOU MUST SPEND AT LEAST 2% OF YOUR CASH RESERVES":GOT
O1760
1790 RC(A)=RC(A)-RS:RH(A)=RH(A)+RS
1805 IF CR(A)>.94GOTO1630
1810 IF RH(A)>(RND(32700)+32000)THEN1815 ELSE1630
1815 X=RND(3):IFX<>3GOTO1630
1820 BK=RND(5)/100:CR(A)=CR(A)+BK
1830 PRINT"RESEARCH AND DEVELOPMENT HAS SCORED A MAJOR BREAKTHRO
UGH !!"
1840 PRINT"NEW TECHNIQUE INCREASES CRUDE TO REFINED % TO ";CR(A)
*100;"%"
1850 GOSUB9800:GOTO1630
2000 CX=RND(3):ONCXGOTO2010,2020,2030
2010 PC$="LIBERAL":RETURN
2020 PC$="CONSERVATIVE":RETURN
2030 PC$="MIDDLE ROAD":RETURN
2200 RESTORE:READSJ,SK,G,WH:RETURN
3000 'STOCK SPLIT
3010 CLS:DZ=0:IFSA>90THENSA=SA/2ELSE3030
3020 FORL=1TOB:AB(L)=AB(L)*2:NEXT:D$="AMERTEX":GOSUB3130
```

```
3030 IFSL>80THENSL=SL/2ELSE3050
3040 FORL=1TOB:AP(L)=AP(L)*2:NEXT:D$="PCG&E":GOSUB3130
3050 IFSJ>65THENSA=SA/2ELSE3070
3060 FORL=1TOB:GC(L)=GC(L)*2:NEXT:D$="COLECTRO":GOSUB3130
3070 IFSP>60THENSP=SP/2ELSE3090
3080 FORL=1TOB:GT(L)=GT(L)*2:NEXT:D$="TRANSPEK":GOSUB3130
3090 IFST>55THENST=ST/2ELSE3110
3100 FORL=1TOB:PJ(L)=PJ(L)*2:NEXT:D$="JGM INC.":GOSUB3130
3110 IFSK>50THENSK=SK/2ELSE3125
3120 FORL=1TOB:PP(L)=PP(L)*2:NEXT:D$="PAKNOS":GOSUB3130
3125 IFDZ=0RETURNELSEGOSUB9800
3126 RETURN
3130 PRINT"STOCK SPLIT !!!"
3140 PRINTD$;" DECLARES 2 FOR 1 SPLIT"
3150 DZ=DZ+1:RETURN
5600 '
5605 IF A=1GOSUB7100
5610 CLS:PRINT@4,N$(A);" INVESTMENTS":PRINT@34,"STOCK MARKET STA
TUS = ";ST$
5620 X=64:GOSUB5910
5630 PRINT@128,"SERVICE STATIONS":PRINT@175,"LOBBY EFFORT"
5640 PRINT@192,"CLASS A  CLASS B   REFINERIES   OIL WELLS   FORE
IGN   DOMESTIC"
5650 PRINT@258,CAS(A):PRINT@267,CBS(A):PRINT@279,R(A):PRINT@289,
O(A):PRINT@295," ";:PRINTUSINGA$;FLOB(A):PRINT@308," ";:PRINTUSI
NGA$;DLOB(A)
5660 PRINT@320,"CASH RESERVES  BLUE CHIPS       GROWTH
  SPECULATIVE"
5670 PRINTUSINGA$;RC(A):PRINT@398,AB(A)+AP(A);" SHARES";:PRINT@4
15,GC(A)+GT(A);" SHARES";:PRINT@433,PJ(A)+PP(A);" SHARES"
5680 X=448:GOSUB5910
5690 PRINT@512,"BLUE CHIP STOCKS     GROWTH STOCKS";:PRINT@555,"
SPECULATIVE STOCKS"
5700 PRINT"1. AMERTEX @ ";:PRINTUSINGB$;SA:PRINT@597,"3. COLECTRO
@ ";:PRINTUSINGB$;SJ:PRINT@619,"5. JGM INC.  @ ";:PRINTUSINGB$;ST:
PRINT"2. PCG&E   @ ";:PRINTUSINGB$;SL:PRINT@661,"4. TRANSPEK @ ";:
PRINTUSINGB$;SP:PRINT@683,"6. PAKNOS   @ ";:PRINTUSINGB$;SK
5710 X=704:GOSUB5910
5720 PRINT@768,"1. CLASS 'A' ====== $65,000  5. STOCKS"
5730 PRINT"2. CLASS 'B' ====== $40,000  6. REFINERY UNITS = $100
,000/UNIT"
```

```
5740 PRINT"3. DOMESTIC LOBBY = $5,000   7. OIL WELLS ====== $150
,000/WELL"
5750 PRINT"4. FOREIGN LOBBY = $10,000  ";:INPUT "ENTER OPTION (0
 TO CONTINUE) :";OP:PRINT"";
5755 IF OP<0OROP>7INPUTOP
5759 IFOP=0RETURN
5760 ONOPGOTO5770,5790,5900,5870,6000,5810,5840
5770 CAS(A)=CAS(A)+1:RC(A)=RC(A)-65000:GOTO5610
5790 CBS(A)=CBS(A)+1:RC(A)=RC(A)-40000:GOTO5610
5810 R(A)=R(A)+.1:RC(A)=RC(A)-100000:GOTO5610
5840 O(A)=O(A)+1:RC(A)=RC(A)-150000:GOTO5610
5870 FLOB(A)=FLOB(A)+10000:RC(A)=RC(A)-10000:GOTO5610
5900 DLOB(A)=DLOB(A)+5000:RC(A)=RC(A)-5000:GOTO5610
5910 FORL=XTOX+63STEP8:PRINT@L,"********":NEXT
5920 RETURN
6000 'STOCKS
6017 PRINT@704,"1. BUY AMERTEX   2. SELL AMERTEX   3. BUY PCG&E
4. SELL PCG&E"
6019 PRINT"5. BUY COLECTRO  6. SELL COLECTRO  7. BUY TRANSPEK 8. SEL
L TRANSPEK"
6021 PRINT"9. BUY JGM INC.  10. SELL JGM INC  11. BUY PAKNOS  12. SEL
L PAKNOS"
6023 INPUT "ENTER OPTION (0 TO CONTINUE)",OP:IFOP<0OROP>12GOTO60
17
6024 IF OP=0GOTO5610
6025 ONOPGOTO6030,6040,6050,6060,6070,6080,6090,6100,6110,6120,6
130,6140
6030 GOSUB7005:AB(A)=AB(A)+BX:RC(A)=RC(A)-(BX*SA):GOTO5610
6040 X=AB(A):GOSUB7020:GOSUB7010:AB(A)=AB(A)-SX:RC(A)=RC(A)+(SX*
SA):GOTO5610
6050 GOSUB7005:AP(A)=AP(A)+BX:RC(A)=RC(A)-(BX*SL):GOTO5610
6060 X=AP(A):GOSUB7020:GOSUB7010:AP(A)=AP(A)-SX:RC(A)=RC(A)+(SX*
SL):GOTO5610
6070 GOSUB7005:GC(A)=GC(A)+BX:RC(A)=RC(A)-(BX*SJ):GOTO5610
6080 X=GC(A):GOSUB7020:GOSUB7010:GC(A)=GC(A)-SX:RC(A)=RC(A)+(SX*
SJ):GOTO5610
6090 GOSUB7005:GT(A)=GT(A)+BX:RC(A)=RC(A)-(BX*SP):GOTO5610
6100 X=GT(A):GOSUB7020:GOSUB7010:GT(A)=GT(A)-SX:RC(A)=RC(A)+(SX*
SP):GOTO5610
6110 GOSUB7005:PJ(A)=PJ(A)+BX:RC(A)=RC(A)-(BX*ST):GOTO5610
```

```
6120 X=PJ(A):GOSUB7020:GOSUB7010.PJ(A)=PJ(A)-SX:RC(A)=RC(A)+(SX*
ST):GOTO5610
6130 GOSUB7005:PP(A)=PP(A)+BX:RC(A)=RC(A)-(BX*SK):GOTO5610
6140 X=PP(A):GOSUB7020:GOSUB7010:PP(A)=PP(A)-SX:RC(A)=RC(A)+(SX*
SK):GOTO5610
7005 INPUT "HOW MANY SHARES DO YOU WANT TO BUY";BX:RETURN
7010 INPUT "HOW MANY SHARES DO YOU WANT TO SELL";SX
7012 IF SX>X THENPRINT"YOU CAN ONLY SELL ";X;" SHARES....TRY AGA
IN"ELSE RETURN
7014 GOTO7010
7020 IFX>0RETURN
7030 PRINT"YOU DON'T OWN ANY OF THAT STOCK....TRY AGAIN".FORQQ=1
TO800:NEXTQQ.GOTO5610
7100 'MARKET
7110 X=RND(3):ONXGOSUB7130,7180,7230
7120 RETURN
7130 'BEAR
7140 X=((100-(RND(6)+2))/100):SA=SA*X:SL=SL*X
7150 X=((100-(RND(26)+24))/100):SJ=SJ*X.SP=SP*X
7160 X=((100-(RND(46)+49))/100):ST=ST*X:SK=SK*X
7165 IFST<1.5THENST=1.5
7167 IFSK<1.2THENSK=1
7170 ST$="BEAR".RETURN
7180 'STABLE
7190 X=((100+(RND(3)+2))/100).SA=SA*X:SL=SL*X
7200 X=((100+(RND(19)+1))/100):SJ=SJ*X:SP=SP*X
7210 X=((100+(RND(81)-16))/100):ST=ST*X:SK=SK*X
7220 ST$="STABLE".RETURN
7230 'BULL
7240 X=((100+(RND(11)+4))/100):SA=SA*X:SL=SL*X
7250 X=((100+(RND(31)+19))/100):SJ=SJ*X:SP=SP*X
7260 X=((100+(RND(101)+50))/100).ST=ST*X:SK=SK*X
7270 ST$="BULL".RETURN
7300 DATA80,65,85,76,32,76,46,32,75,78,69,67,72,84,69,76
7400 INPUT"ENTER OPTION";OP:RETURN
8800 CLS
8900 Y=70:FORX=1T0896STEP64:Y=Y-5:PRINT@X,Y:NEXT
9000 FOR X=15365TO16201STEP64:POKE X,149:NEXT
9010 FORX=16198T016255:POKE X,188:NEXT
```

```
9020 PRINT@902,"STOCKS   CASH    RESEARCH   STATION PROFIT   REA
L ESTATE"
9022 Z=0:V=17:N=19:Z=(AB(A)*SA)+(AP(A)*SL)+(GC(A)*SJ)+(GT(A)*SP)
+(PJ(A)*ST)+(PP(A)*SK)
9023 IF Z<6500000GOTO9025
9024 Z=65:GOTO9026
9025 Z=ABS((Z)/100000):IF0<ZANDZ<1THENZ=1
9026 GOSUB9300
9027 IFRC(A)<6500000GOTO9033
9028 Z=65:GOTO9040
9033 Z=ABS(RC(A)/100000):IF0<ZANDZ<1THENZ=1
9035 IFRC(A)<0THENZ=0
9040 V=33:N=35:GOSUB9300
9110 IFRH(A)<6500000GOTO9125
9120 Z=65:GOTO9130
9125 Z=RH(A)/100000:IF0<ZANDZ<1THENZ=1
9130 V=53:N=55:GOSUB9300
9200 Z=(G*((RE(A)*50)*CR(A))/100000)
9202 IFZ<1ANDZ>0THENZ=1
9204 IFZ<65GOTO9208
9206 Z=65
9208 V=83:N=85:GOSUB9300
9240 Z=CBS(A)*40000+CAS(A)*65000+O(A)*150000+R(A)*1000000
9244 IFZ=0GOTO9250
9246 IF0<ZANDZ<1THENZ=1
9248 IFZ<6500000GOTO9250
9249 Z=65.GOTO9252
9250 Z=Z/100000
9252 V=114:N=116:GOSUB9300
9290 PRINTN$(A);" PROFIT & LOSS GRAPH     ";:GOSUB9800:RETURN
9300 TR=40-.58*Z:IFTR<0THENTR=0
9302 FORX=VTON:FORY=TRTO40:SET(X,Y):NEXTY:NEXTX
9310 RETURN
9400 'REFINERY/SMOG GRAPHICS
9403 CLS:IFINT(SM(A))=0GOTO9500
9406 X=RND(20):IFX<8ORX>14GOTO9500
9408 X=RND(SM(A))
9410 PRINT@10,"E Q U I P M E N T    F A I L U R E !!!!"
9412 PRINT:PRINT"FOREMAN REPORTS LOSS OF ";X;" SMOG UNITS."
```

```
9414 PRINT"REPLACEMENTS NEEDED TO AVOID ENVIRONMENTAL DISASTER A
ND HEAVY   FINES.":PRINT:GOSUB9800
9416 SM(A)=SM(A)-X
9500 CLS:FORX=16320TO16383:POKE X,191.NEXT
9502 FOR X=16256TO16318STEP2:POKE X,156:NEXTX
9503 FOR Y=16257TO16319STEP2.POKE Y,172:NEXTY
9510 X=1:QW=R(A)
9512 IFQW>6.4THENQW=6.4
9515 YR=15871:RY=16191+(QW*10)
9520 FORW=1TOQW*10
9535 YR=YR+1
9540 FORZ=YRTORYSTEP64:POKE Z,170
9545 NEXTZ
9550 NEXTW
9555 SN=INT(R(A)*10-SM(A))
9558 IFINT(SN+.005)=0GOTO9580
9560 DD=15552
9562 FORW=1TO5
9565 FORX=DDTODD+SN*.9:POKE X,91:NEXTX
9568 DD=DD+64
9570 NEXTW
9580 PRINT@1,"";:PRINTN$(A);" REFINERY EMISSIONS AND CONTROL
  YEAR = ";DE/2
9585 PRINT:INPUT "HIT ENTER TO CONTINUE OR 6 FOR PLAYER COMPARIS
ON";OP:IFOP=6GOTO9900
9600 RETURN
9605 'INTEREST AND LIQUIDATION
9606 ZX=0
9607 IFRC(A)>=0RETURN
9609 RC(A)=RC(A)*1.5
9610 ZZ=RC(A):ZZ=ABS(ZZ)
9611 IFRC(A)<-300000GOTO9617
9615 IFZZ<RND(32700)+149000RETURN
9617 CLS:PRINT@14,"F I N A N C I A L   C R I S I S !!!"
9619 PRINT:PRINT"IRRESPONSIBLE MANAGEMENT CAUSES BANKRUPTCY !"
9621 PRINT"LIQUIDATION OF ASSETS NECESSARY TO COVER"
9623 PRINT"LOSSES OF $";ABS(RC(A))
9625 PRINT:IFAB(A)=0GOTO9639
9627 PRINT"SELLING AMERTEX":FORX=1TOAB(A)STEP100:ZX=ZX+100*SA:IF
ZX>ZZGOTO9633
```

```
9629 NEXT
9631 AB(A)=0:IFZX<ZZGOTO9639
9633 AB(A)=AB(A)-X:IFAB(A)<0THENAB(A)=0
9634 GOTO9697
9639 IFAP(A)=0GOTO9647
9641 PRINT"SELLING PCG&E":FORX=1TOAP(A)STEP100:ZX=ZX+100*SL:IFZX
>ZZGOTO9645
9643 NEXT
9645 AP(A)=AP(A)-X:IFAP(A)<0THENAP(A)=0
9646 IFZX>ZZGOTO9697
9647 IFGC(A)=0GOTO9655
9649 PRINT"SELLING COLECTRO":FORX=1TOGC(A)STEP100:ZX=ZX+110*SJ:I
FZX>ZZGOTO9653
9651 NEXT
9653 GC(A)=GC(A)-X:IFGC(A)<0THENGC(A)=0
9654 IFZX>ZZGOTO9697
9655 IFGT(A)=0GOTO9663
9657 PRINT"SELLING TRANSPEK":FORX=1TOGT(A)STEP100:ZX=ZX+100*SP:I
FZX>ZZGOTO9661
9659 NEXT
9661 GT(A)=GT(A)-X:IFGT(A)<0THENGT(A)=0
9662 IFZX>ZZGOTO9697
9663 IFPJ(A)=0GOTO9671
9665 PRINT"SELLING JGM INC.":FORX=1TOPJ(A)STEP100:ZX=ZX+100*ST:I
FZX>ZZGOTO9669
9667 NEXT
9669 PJ(A)=PJ(A)-X:IFPJ(A)<0PJ(A)=0
9670 IFZX<ZZGOTO9697
9671 IFPP(A)=0GOTO9679
9673 PRINT"SELLING PAKNOS":FORX=1TOPP(A)STEP100:ZX=ZX+100*SK:IFZ
X>ZZGOTO9677
9675 NEXT
9677 PP(A)=PP(A)-X:IFPP(A)<0PP(A)=0
9678 IFZX>ZZGOTO9697
9679 IFCAS(A)=0GOTO9687
9681 PRINT"SELLING CLASS A STATIONS":FORX=1TOCAS(A):ZX=ZX+65000:
IFZX>ZZGOTO9685
9683 NEXT
9685 CAS(A)=CAS(A)-X:IFCAS(A)<0CAS(A)=0
9686 IFZX>ZZGOTO9697
```

```
9687 IFCBS(A)=0GOTO9699
9689 PRINT"SELLING CLASS B STATIONS":FORX=1TOCBS(A):ZX=ZX+40000:
IFZX>ZZGOTO9695
9691 NEXT
9693 IFZX<ZZGOTO9699
9695 CBS(A)=CBS(A)-X:IFCBS(A)<0CBS(A)=0
9697 RC(A)=0:PRINT"LIQUIDATION COMPLETED":GOSUB9800:RETURN
9699 PRINT:PRINT"ASSETS CANNOT SATISFY CREDITORS."
9701 PRINTN$(A)," OIL CO. GOES BANKRUPT..... YOU'RE OUT OF THE GA
ME."
9703 GOSUB9800:OG$(A)="OOG":GOTO9968
9800 INPUT "HIT ENTER TO CONTINUE",OP:RETURN
9900 CLS
9902 X=2:FORL=1TO8:PRINT@X+13,N$(L);:X=X+13:NEXT
9904 PRINT:PRINT"CASH":X=130:FORL=1TO8:PRINT@X+12,"";:PRINTUSING
A$,RC(L):X=X+12:NEXT
9906 PRINT"LOBBY:"
9908 PRINT" FOREIGN":X=258:FORL=1TO8:PRINT@X+12,"";:PRINTUSINGA$
;FLOB(L):X=X+12:NEXT
9910 PRINT" DOMESTIC":X=322:FORL=1TO8:PRINT@X+12,"";:PRINTUSINGA
$;DLOB(L):X=X+12:NEXT
9912 PRINT"REFINERIES":X=388:FORL=1TO8:PRINT@X+12,R(L):X=X+12:NE
XT
9914 PRINT"CLASS A":X=452:FORL=1TO8:PRINT@X+12,CAS(L):X=X+12:NEX
T
9916 PRINT"CLASS B":X=516:FORL=1TO8:PRINT@X+12,CBS(L):X=X+12:NEX
T
9918 PRINT"STOCKS"
9920 PRINT" BLUE CHIP":X=644:FORL=1TO8:PRINT@X+12,AB(L)+AP(L):X=
X+12:NEXT
9922 PRINT" GROWTH":X=708:FORL=1TO8:PRINT@X+12,GC(L)+GT(L):X=X+1
2:NEXT
9924 PRINT" SPECULATIVE":X=772:FORL=1TO8:PRINT@X+12,PJ(L)+PP(L):
X=X+12:NEXT
9926 PRINT"OIL WELLS":X=836:FORL=1TO8:PRINT@X+12,O(L):X=X+12:NEX
T
9928 GOSUB9800:RETURN
9930 'GAME END
9934 IFAG(A)<DEGOTO9960
9936 IFRC(A)>10000000ANDR(A)>RND(3)+3.1ANDCBS(A)>RND(20)+20ANDCA
```

Accounts Receivable II

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- Print mailing labels
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Package includes one master diskette, one data diskette, and in depth instruction manual. Requires TRS-80 with 16K memory, two disk drives, and line printer. **$79.95**

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ADVANCED Personal Finance

by Lance Micklus

First, we took the tape version of PERSONAL FINANCE and converted it for use under DOS. Then many new features were added such as self-verifying files which protect themselves from most common hardware faults, and the BUDGET program which collects data - automatically from the CHECKING program, and manually from the keyboard. Advanced Personal Finance will produce a 30-page report that gives you the total picture of your financial posture. To complete the package, a SAVINGS account program lets you use the one savings account as if it were ten individual accounts. This way you can set a certain amount of money aside for Christmas, save an additional amount for a rainy day, and keep track of how much is for what.

Also included are programs to convert the data file on tape from the regular personal finance program to disk.

On a 32K disk system, the package will handle about 200 checks per month and 900 checks per year. There are 33 different account names which are set up with DATA statements in each program on the disk.

The minimum system required is 32K Disk BASIC with one drive. The addition of a line printer, a second drive, and upper/lower case video display all enhance the features. A second disk (not supplied) is required to store your data, as the program disk is very full. Price, **$24.95.**

Original Tape Version: **Personal Finance** $9.95

The Software Exchange

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```
S(A)>RND(15)+15ANDFLOB(A)>150000ANDDLOB(A)>75000ANDCR(A)>.9ANDSM
(A)>R(A)*8ANDO(A)>RND(20)+20THEN9940
9938 RETURN
9940 CLS:PRINT@17,"C O N G R A T U L A T I O N S !!!!"
9942 PRINT:PRINT"THE BOARD OF DIRECTORS OF ";N$(A);" HAVE JUST D
ECLARED""
9944 PRINT"YOU AN OIL BARON !!    YOU WIN THE GAME...."
9946 PRINT:INPUT "HIT ENTER FOR FINAL STATISTICS";OP:GOSUB9900:F
ORF=1TO1023STEP3:PRINT@F,"END":NEXT:END
9960 CLS:PRINT"AFTER ";DE/2;" YEARS AS DIRECTOR OF ";N$(A);", TH
E"
9962 PRINT"BOARD OF DIRECTORS HAS DECIDED ADEQUUATE PROGRESS HAS
"
9964 PRINT"NOT BEEN MADE BY THE COMPANY UNDER YOUR DIRECTION."
9966 PRINT"YOU ARE FIRED....":GOSUB9800
9968 OG$(A)="OOG":VG=VG-1:IFVG<=1GOTO9970ELSERETURN
9970 FORL=1TO8:IFOG$(L)="OOG"THENNEXT ELSEGOTO9972
9971 CLS:PRINT"NO MORE ACTIVE PLAYERS....GAME ENDS":END
9972 A=L:GOTO9940
9975 'SMOG CHECK
9980 XC=R(A)*10
9982 IFINT(XC)-SM(A)=0THENRETURN
9985 IFDLOB(A)>RND(32000)+RND(32000)+RND(32000)+63000THENRETURN
9990 ONCXGOTO9995,10000,10005
9995 IFSM(A)>XC-RND(XC)+XC/2THENRETURNELSEGOTO10010
10000 IFSM(A)>XC*((RND(2)+7)/10)THENRETURNELSEGOTO10010
10005 IFSM(A)>XC*((RND(3)+3)/10)THENRETURN
10010 FX=RND(500)+10000
10015 CLS:PRINT"E.P.A.  INVESTIGATION FINES YOU $";FX*SN;" FOR"
10020 PRINT"INSUFFICIENT POLLUTION CONTROL."
10025 PRINT"IN ADDITION YOU ARE FORCED TO BUY ";SN;" POLLUTION"
10030 PRINT"CONTROL UNITS AT $";SC;"PER UNIT."
10035 GOSUB9800:RC(A)=RC(A)-(FX*SN+SC*SN):SM(A)=SM(A)+SN:SN=0:RE
TURN
12000 FORAZ=1TO8:IFOG$(AZ)="OOG"THENGX=GX+1:NEXT
12002 IFGX=8GOTO9971ELSERETURN
```

TYPING TUTOR by Roy Groth

You probably have often thought that it would be a lot easier if you didn't have to "hunt and peck" at the typewriter or computer keyboard. If you could only double your typing speed, the job would be done in half the time! And, with increased speed and confidence comes increased accuracy.

Level II, 16K — $19.95

Typing Tutor is a set of programs designed to teach you touch typing — from the basics of learning where the keys are, to practice drills at speeds that would make a Selectric shudder! Each lesson is displayed on the screen, including, at the early stages, a keyboard diagram. You are quizzed and graded, and you progress at your own pace. When you have mastered a lesson, the computer advances to the next, using CAI (computer aided instruction). Progress is fast, painless, and even fun as you keep pushing to break your own record.

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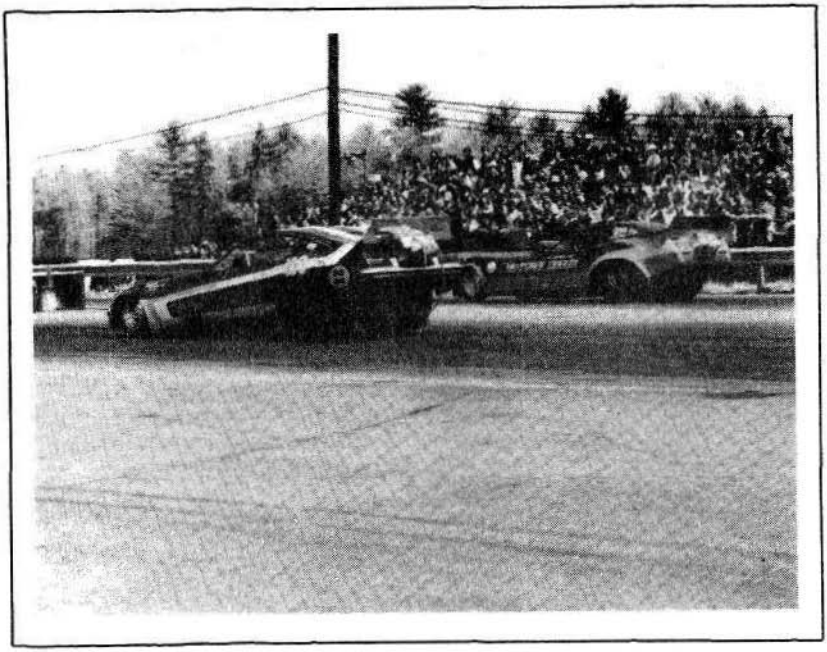
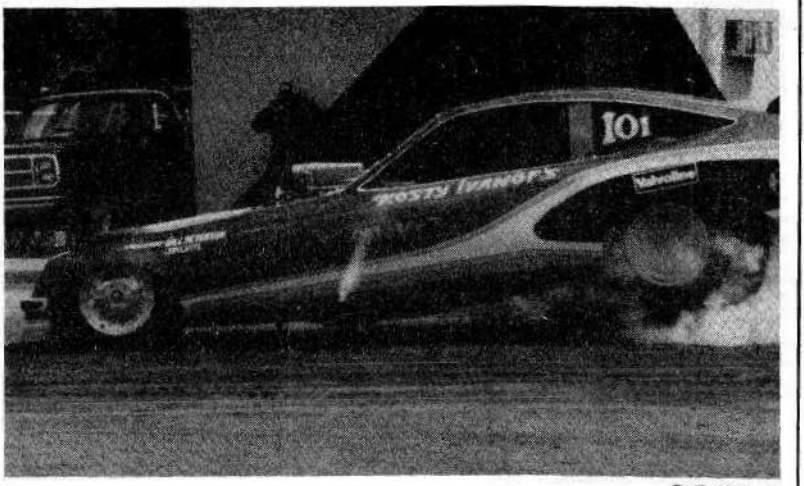


DRAG RACE

by Chris Freund

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

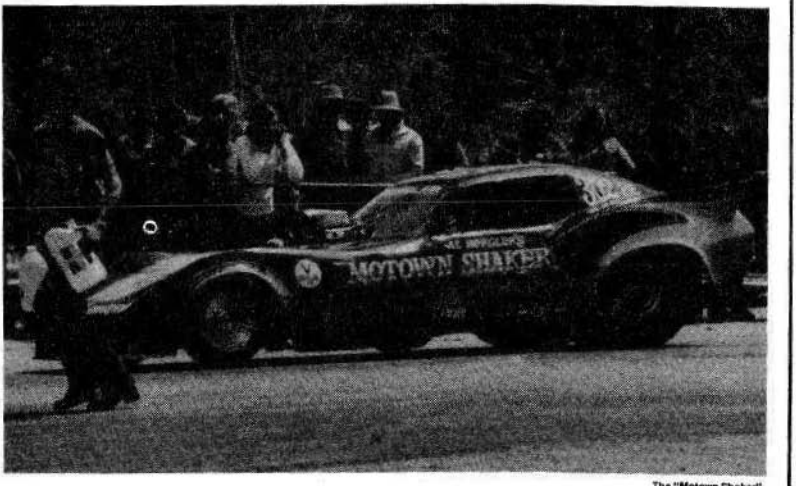
All-Pro, Top-Fuel, Funny Cars - the "Motown Shaker," and "King Marshall" battle to the finish (which doesn't lie far ahead, considering these cars do the quarter mile at an average speed of 240 mph and 6.0 seconds!) Photographs of New England Dragway by Sharon Demmerle.



The "Boston Shaker"

Things to note in the game:

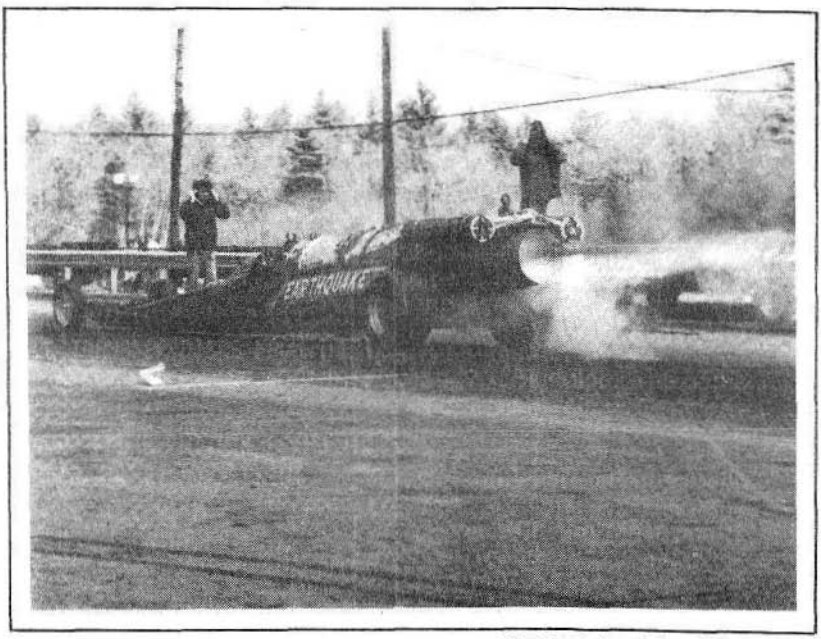
- the car starts out in first gear, no need to shift into it.
- downshifting is not allowed, although a player can skip gears (this is not good strategy).
- to find out when an engine will blow, just experiment. It is partially random.
- being too quick in shifting can hurt since the program may "miss" the shift. Experiment around for the best speed.



The "Motown Shaker"

```
5 REM  * * * * * * * * * * * *
       * D R A G   R A C E  *
       *    BY CHRIS FREUND  *
       * * * * * * * * * * * *
10 CLS:PRINTCHR$(23);"DRAG RACE!!
USE THE SPACE BAR AS AN AC-
CELERATOR, AND SHIFT GEARS
(FROM 1-4) BY USING THOSE
RESPECTIVE KEYS.  DON'T SHIFT
WHILE ACCELERATING.
"
20 PRINT"ALWAYS WATCH YOUR TACH!
GOOD LUCK!!
YOU ARE ALREADY IN FIRST GEAR."
30 INPUT"PRESS ENTER TO BEGIN";A
40 CLS:CLEAR600:DEFSTRA-C
50 A=STRING$(61,191):PRINT@2,A;:PRINT@258,A;:PRINT@194,A;:PRINT@
450,A;:PRINT@514,A;:PRINT@706,A;
60 A=CHR$(191):FORX=1TO12:PRINT@62+X*5,X*20;:PRINT@575+X*5,X;:NE
XT:FORX=66TO126STEP5:PRINT@X,A;:PRINT@X+512,A;:NEXT:PRINT@130,A;
:PRINT@190,A;:PRINT@578,A;:PRINT@638,A;:PRINT@642,A;:PRINT@702,A
;
70 PRINT@346,"SPEEDOMETER";:PRINT@792,"TACHOMETER X 1000";
80 PRINT@547,"DANGER \";:PRINT@561,"BLOWOUT \";:PRINT@525,"]-SAF
E-^";
90 PRINT@859,STRING$(11,191);:PRINT@987,STRING$(11,191);:PRINT@9
23,STRING$(4,191);" 1 ";STRING$(4,191);:PRINT@916,"GEAR :";
100 PRINT@1000,"PRESS ENTER TO START";
110 IFINKEY$<>CHR$(13)THEN110
115 PRINT@1000,CHR$(30);
120 G=1:S=0:T=5
130 PRINT@131,STRING$(59,32);:PRINT@131,STRING$(S,140);:PRINT@64
3,STRING$(59,32);:PRINT@643,STRING$(T,140);
140 IFPEEK(14400)=128THEN170ELSEONGGOSUB250,260,270,280:IFS<0S=0
150 IFT<5T=5
160 GOTO180
170 ONGGOSUB210,220,230,240:IFT>50+RND(5)GOTO290
180 PRINT@927,G;:A$=INKEY$:X=VAL(A$):IFPEEK(14400)=0ANDX>GTHENG=
X:T=10
190 Y=Y+1:IFY=60THEN310
```

```
200 GOTO130
210 T=T+4:S=S+1:RETURN
220 T=T+3.3:S=S+.75:RETURN
230 T=T+2.5:S=S+.5:RETURN
240 T=T+2:S=S+.3:RETURN
250 T=T-2:S=S-.5:RETURN
260 T=T-1.5:S=S-.4:RETURN
270 T=T-1.2:S=S-.3:RETURN
280 T=T-1:S=S-.2:RETURN
290 PRINT@896,CHR$(30);"YOU HAD AN ENGINE BLOWOUT AT";T*200;"RPM
";
300 GOTO310
310 PRINT@960,CHR$(30);"FINAL SPEED:";S*4;"MPH.  PRESS ENTER FOR
 ANOTHER GAME";
320 IFINKEY$<>CHR$(13)THEN320
330 RUN
```



Mike Evegen's rocket car "Earthquake.

STAD

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```
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     A,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(6)	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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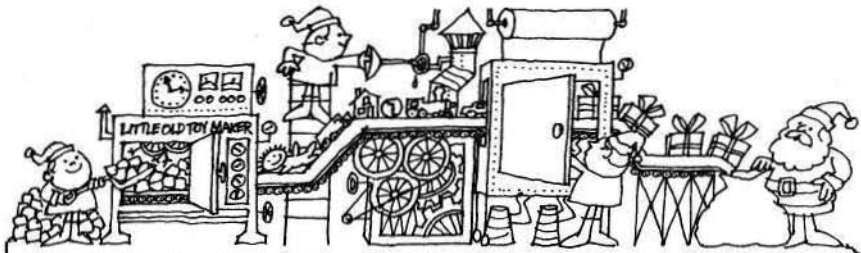
CHRISTMAS "SHOW AND TELL"

A Fun Game of Quick Recall for the TRS-80

by Randy Hawkins



SHOW AND TELL is a game for the TRS-80 which tests your ability to remember a series of short phrases and also provides some humorous results. The game program is written for two players, takes slightly less than 4K of memory, and is in Level II BASIC. In some ways, SHOW AND TELL is similar to other memory quiz games (such as Concentration), but it is a challenging and entertaining game in its own right.

After entering your names, a screen of 9 words or phrases will flash on the game board for a few seconds. Try your best to memorize the phrases and their positions on the board. After the board is cleared, a question will be directed to one of the two players. That player will try to remember the correct answer and respond with the number corresponding to that answer. If he is correct, he receives one point and the right to continue. If he is wrong, he may come up with a hilarious answer. (Q: Who said Humbug? A: Rudolph). The game continues until all 9 questions have successfully been answered, and goes on to a second round where all questions are worth 2 points. The winner is the player with the most points after two rounds.

Because of the random number function in the program, no two games will be exactly alike. Even though the questions and answers will be the same, their position on the board and the order in which the the questions are asked will always be different. If you do tire of the questions and answers provided, however, it is a simple matter to make up your own series. Just remember to keep all the answers similar in nature (for example, places, things, people's names, actions, etc.) so that those funny combinations of questions and answers will always turn up. The questions and answers are placed in the data statement of lines 470-550 for round one, and lines 560-640 for round two. (Editor's note: as you can see, we altered the data to create a Christmas game.)

As you become more adept at memorizing the phrases, you might wish to shorten the time the phrases are displayed at the beginning of the game. This is done by changing the upper limit of the FOR-NEXT loop of line 1040.

An alternative to the DATA statements might be reading the data off a file from the cassettes. In this way, many sets of questions and answers could be held so that a completely new game could be played with each execution.

Except for the optional changes suggested above, the program should be ready to run. So find a friend, and play "SHOW AND TELL", and see how good your memory really is.

```
5 REM * * * * * * * * * * * * * * * *
      * CHRISTMAS SHOW AND TELL   *
      *   BY RANDY HAWKINS        *
      *    MODIFIED BY FREIDA DAY *
      * * * * * * * * * * * * * * * *
9 CLS:CLEAR600:B$=STRING$(40," "):RANDOM
10 INPUT"WHO IS PLAYER #1";N$(1)
20 INPUT"WHO IS PLAYER #2";N$(2)
21 PRINT"TRY TO MEMORIZE THE FOLLOWING SCREEN" PRINT"ANSWER THE
QUESTIONS WITH THE CORRECT NUMBER" FORI=1TO1500:NEXT
25 S(1)=0:S(2)=0:U=0
30 FORI=1TO9:READQ$(I),A$(I):NEXTI
35 U=U+1
40 FORM=1TO9
50 J=RND(9)
60 K=RND(9):IFK=JTHEN60
70 Q$(10)=Q$(K):Q$(K)=Q$(J):Q$(J)=Q$(10)
80 A$(10)=A$(K):A$(K)=A$(J):A$(J)=A$(10)
90 NEXTM
100 FORM=1TO9:L(M)=M:NEXTM
110 FORZ=1TO5:J=RND(9)
120 K=RND(9):IFK=JTHEN120
130 L(10)=L(K):L(K)=L(J):L(J)=L(10):NEXTZ
200 P=RND(2):GOSUB1000:A1=0
260 FORG=1TO9
270 FORI=1TO9:IFQ$(I)<>""THEN290
280 NEXTI:GOTO429
290 IFQ$(G)=""THEN420
291 PRINT@770,CHR$(30)
310 PRINT@910,N$(1);"   ";S(1),N$(2);"   ";S(2)
311 PRINT@772,N$(P);", ";Q$(G);
312 INPUTQ:IFQ<10RQ>9THEN311
330 PRINT@Q*64+7,A$(L(Q));
340 FORI=1TO1500:NEXTI
345 PRINT@Q*64+7,B$;
350 IFL(Q)<>GTHEN410
360 S(P)=S(P)+U
370 PRINT@910,N$(1);"   ";S(1),N$(2);"    ";S(2)
```

```
380 Q$(G)=""
385 GOTO420
410 IFP=2THENP=1:GOTO430
411 P=2
420 NEXTG
425 GOTO260
429 IFS(1)+S(2)=9GOSUB3000:GOTO30
430 PRINT@772,"GAME OVER!  =======  ";
440 IFS(1)>S(2)W$=N$(1)ELSEW$=N$(2)
450 PRINT"    ";W$;" WINS!";CHR$(30);
460 GOTO460
470 DATA"RED NOSED REINDEER","RUDOLPH"
480 DATA"FAT GUY WITH BEARD","SANTA CLAUS"
490 DATA"FAT GUY WITHOUT BEARD","FROSTY"
500 DATA"WHO STOLE CHRISTMAS","GRINCH"
510 DATA"JESUS' MOTHER","MARY"
520 DATA"NOT EVEN HE WAS STIRRING","MOUSE"
530 DATA"WHO SAID HUMBUG","SCROOGE"
540 DATA"GAVE FIRST CHRISTMAS GIFTS","WISE MEN"
550 DATA"RUM TA TA TUM","LITTLE DRUMMER BOY"
560 DATA"WHERE JESUS WAS BORN","BETHLEHEM"
570 DATA"HOLDS ORNAMENTS","CHRISTMAS TREE"
580 DATA"WHAT A SLED NEEDS","SNOW"
590 DATA"WHERE SANTA LIVES","NORTH POLE"
600 DATA"HOW SANTA ENTERS HOUSE","CHIMNEY"
610 DATA"NOT A CRIB","MANGER"
620 DATA"SENT TO YOUR FRIENDS","CARDS"
630 DATA"HANGS ON TREE","CANDY CANE"
640 DATA"PLACED BY THE CHIMNEY WITH CARE","STOCKING"
1000 CLS:FORX=0TO127:SET(X,2):SET(X,30):NEXT
1011 FORY=2TO30:SET(0,Y):SET(9,Y):SET(127,Y):NEXT
1020 FORI=1TO9:PRINT@(I*64+1),I;:NEXT
1025 IF A1=1 RETURN
1030 FORI=1TO9:PRINT@(I*64+7),A$(L(I));:NEXT
1040 FORI=1TO1500:NEXTI:A1=1:GOTO1000
3000 CLS:PRINT@325,"END OF FIRST GAME -- PRESS ENTER FOR SECOND
HALF"
3010 PRINT@389,"NOTE:  EACH ANSWER IS WORTH 2 POINTS IN ROUND TWO
";
3020 INPUTE$:RETURN
```

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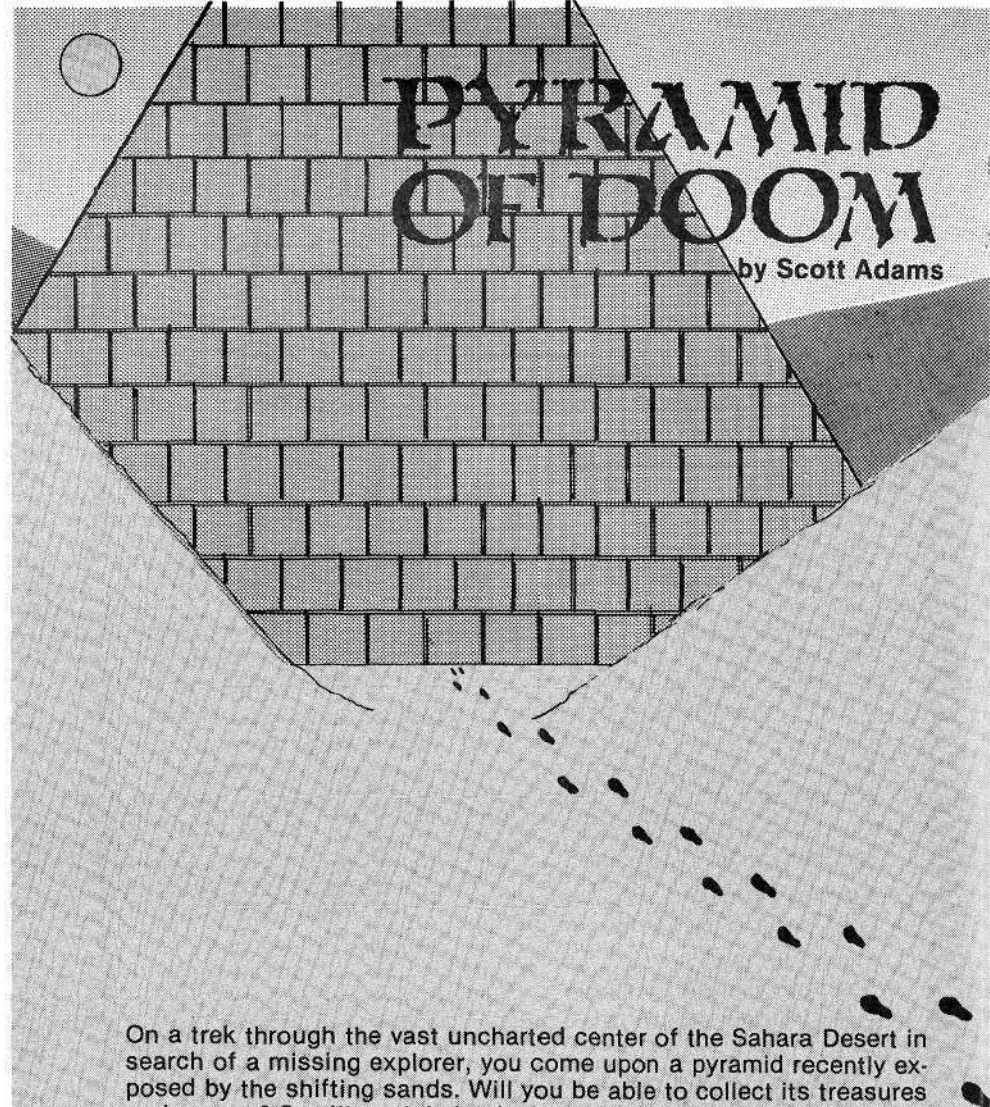

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Index To BASIC REFERENCE MANUAL

by Kemp J. Beaty

A

A ... 9/4, A/4
Abbreviations ... 1/7
ABS ... 7/1, A/13
AND ... 1/5, 8/10
Arithmetic Functions ... Chapter 7, A/13
Arithmetic Operators ... 1/4, A/2
Array/Matrix Subroutines ... 6/4-6
Array Multiplication ... 6/6
Arrays ... Chapter 6, 1/4
ASC ... 5/3, A/12
ASCII Character Codes ... C/2
ATN ... 7/1, A/13
AUTO ... 2/1, A/3

B

Base Conversions ... Appendix G
Bit Manipulation ... 8/10
Bitwise Comparisons ... 8/10
BREAK ... 1/3, A/1

C

nC ... 9/5, A/5
Cassettes, Dual ... 10/1
Cassette Recorder, Use of ... ii
CDBL ... 7/1, A/13
CHR$ ... 5/4, A/12
CINT ... 7/2, A/13
CLEAR (Key) ... 1/2, A/1
CLEAR ... 2/2, 4/3, A/3, A/8
CLOAD ... 2/2
CLOAD? ... 2/2
CLOSE ... 10/3
CLS ... 8/2, A/11
Codes ... 10/3
Codes, ASCII ... C/2
Codes, Control ... C/1
Codes, Error ... B/1
Codes, Graphics ... C/2
Codes, Space Compression ... C/2
Commands ... Chapter 2, A/3
Commands, Disk Basic ... 10/3
Comparisons, String ... 5/2
Constants, Typing of ... 4/15
CONT ... 2/3, A/3
Control Codes ... C/1
Conversions, Base ... Appendix G
Conversion, Data ... 4/14
Conversion, Type ... 4/14
COS ... 7/2, A/13
Cosecant ... F/1
Cotangent ... F/1
CSAVE ... 2/3
CSNG ... 7/2, A/13
Customer Information ... H/2
CVD ... 10/4
CVI ... 10/4
CVS ... 10/4

D

D ... 1/4, A/2
nD ... 9/5, A/5
DATA ... 3/8, A/6
Data Conversion ... 4/14
DEFDBL ... 4/2, A/8
DEF FN ... 10/4
DEFINT ... 4/1, A/8
DEFSNG ... 4/2, A/8
DEFSTR ... 4/2, A/8
DEFUSR ... 10/4
DELETE ... 2/3, A/3
Derived Functions ... Appendix F
DIM ... 4/3, A/8
Disk Basic Commands ... 10/3
Disk Basic Input/Output Functions ... 10/4
DSKF ... 10/4
Dual Cassettes ... 10/1

INDEX TO BASIC R

E

E 9/4, A/2, A/4
EDIT 2/4, 9/1, A/3
Editing ..... Chapter 9
Edit Mode Subcommands A/4
ELSE 4/13, A/11
END 4/4, A/9
ENTER 1/2, 1/3, 9/2, A/1, A/4
EOF 10/4
ERL 8/2, A/14
ERROR 4/10, A/10
Error Codes B/1
Error Messages 1/6, B/2
Error Routine Functions 8/2-3
ERR/2+1 ..... 8/3, A/14
Execution, Speeding Up 11/2
EXP 7/2, A/13
Expansion Interface ..... Chapter 10

F

FIELD 10/3
Field Specifiers 3/3-5, A/7
FIX 7/2, A/13
FOR TO STEP 4/8, A/10
FRE 5/5, A/12
Functions, Arithmetic ... Chapter 7, A/13
Functions, Derived F/1
Functions, Intrinsic 1/6
Functions, Special A/14
Functions, String A/12

G

General Information ..... Chapter 1
GET 10/3
Glossary 1/8
GOSUB 4/6, A/9
GOTO 4/5, A/9
Graphics 1/6, 8/1-2, A/11
Graphics Codes C/2

H

H 9/5, A/5
Hyperbolic Consecant F/1
Hyperbolic Cosine F/1
Hyperbolic Cotangent F/1
Hyperbolic Secant F/1
Hyperbolic Sine F/1
Hyperbolic Tangent F/1

I

I 9/4, A/4
IF 4/12, A/11
INKEY$ 5/5, A/12
INP 8/4, A/14
INPUT # ..... 3/11, A / 6
INPUT 3/7, A/6
Input/ Output ..... Chapter 3, A/5
Input/ Output, String 5/1
INSTR 10/4
Instring Subroutine 5/9
INT 7/3, A/13
Intrinsic Functions 1/6
Inverse Cosine F/1
Inverse Cotangent F/1
Inverse Cosecant F/1
Inverse Hyperbolic Cosecant F/1
Inverse Hyperbolic Cosine F/1
Inverse Hyperbolic Cotangent F/1
Inverse Hyperbolic Secant F/1
Inverse Hyperbolic Sine F/1
Inverse Hyperbolic Tangent F/1
Inverse Secant F/1
Inverse Sine F/1

K

nKc 9/6, A/5
KILL 10/3

L

L 9/3, A/4
LEFT$ ..... 5/6, A / 12
LEN 5/6, A/12

EFERENCE MANUAL

LET 4/4, A/9
Level II Summary ..... Appendix A
LINE INPUT 10/4
Line Printer 10/2
LIST 2/4, A/3
LLIST 10/2
LOAD 10/3
Loading Cassette Programs iv
LOC 10/4
LOF 10/4
LOG 7/3, A/13
Logical Operators 1/5, 8/10-12
LPRINT 10/2
LSET 10/3

M

Map, Memory D/1-2
Matrix Addition 6/5
Matrix Input (2 Dim) 6/4
Matrix Input (3 Dim) 6/5
Matrix Multiplication 6/5, 6/6
Matrix Print 6/4
Matrix Read 6/4
Matrix Subroutines 6/4-6
Matrix Transposition 6/5
Matrix Zero 6/4
MEM 8/4, A/14
Memory Map D/1-2
Memory Overhead A/16
Memory Space, Saving 11/1
MERGE 10/3
MID$ 5/6, 10/4, A/12
Mini Disks 10/3
MKD$ 10/4
MKI$ 10/4
MKS$ 10/4

N

NAME 10/3
NEW 2/4, A/4
NEXT 4/8, A/10
NOT 1/5, 8/11

O

ON ERROR GOTO 4/11, A/10
ON GOSUB 4/7, A/9
ON GOTO ..... 4/6, A / 9
OPEN 10/3
Operating Modes 1/1
Operations, String 5/3
Operational Hierarchy 1/6, A/3
Operations, Order of 1/6, A/3
Operators, Arithmetic 1/4, A/2
Operators, Logical 1/5
Operators, Relational 1/5, A/2
Operators, String 1/5, A/2
OR 1/5, 8/10
Order of Operations 1/6, A/3
OUT 8/4, A/11
Output ..... Chapter 3, A/5

P

PEEK 8/5, A/14
POINT 8/2, A/14
POKE 8/5, A/11
POS 8/6, A/14
Power - Up 1/1
PRINT 3/1, 10/3, A/5
PRINT TAB 3/2, A/6
PRINT USING 3/3, A/6
PRINT@ 3/2, A/6
Print # 3/10, A/6
Program Limits A/16
Program Statements ..... Chapter 4, A/8
PUT 10/3

Q

Q 9/4, A/4

R

RAM Memory Expansion 10/4
RANDOM 7/3, A/10
READ 3/9, A/6
Ready-Aim-Fire H/6
Relational Operators 1/5, A/2

REM 4/12, A/10
Reserved Words . . . . . A / 15
RESET 8/2, A/11
RESTORE 3/10, A/6
RESUME . . . . . 4/11, A / 10
RETURN 4/6, A/9
RIGHT$ 5/7, A/12
RND 7/3, A/13
RSET 10/3
RUN 2/4, A/4

S

nSc 9/6, A/5
SAVE 10/3
Saving Memory Space 11/1
Saving Time and Space . . . . . Chapter 11
Scaler Multiplication 6/5
Secant F/1
SET 8/1, A/11
SGN 7/4, A/13
SHIFT@ 1/3, A/1
SHIFT→ 1/2, A/1
SHIFT← 1/2, A/1
SHIFT↑ 9/3, A/4
SIN 7/4, A/14
Space Compression Codes C/2
Space Ship Lander H/1
Special Features . . . . . Chapter 8
Special Function Keys 1/2
Special Functions A/14
SQR 7/4, A/14
STEP 4/8
STOP 4/5 A/9
String Comparisons 5/2
String Functions A/12
String Input/Output 5/1
String Operations 5/3
String Operators 1/5, A/2
Strings . . . . . Chapter 5
STRING$ 5/7, A/12
STR$ 5/7, A/12
SYSTEM 2/5, A/4
System Set Up i

T

TAB 3/2, A/6
TAN 7/4, A/14
Target Practice H/5
THEN 4/13, A/11
TIME$ 10/4
Transposition, Matrix 6/5
Triangle Computation w/Graphics . . . H/4
TROFF 2/5, A/4
TRON 2/5, A/4
Type Conversion 4/14
Type Conversions, Effects of 4/15
Type Declaration Characters 1/3, A/2
Typing of Constants 4/15

U

User Programs . . . . . Appendix H
USR 8/7, A/14

V

VAL 5/8, A/12
Variable, Array 1/4
Variable Names 1/3
Variable Types 1/3, A/2
VARPTR 8/8, A/14
Video Display Worksheet . . . Appendix E

W

Worksheet, Video Display . . . Appendix E

X

X 9/3, A/4

SYMBOLS

nSpace-bar 9/2
! 1/4, 3/4, A/2, A/7
. . . . . 1/4, 3/3, A/2, A/7
$ 1/4, A/2
$$ 3/4, A/7
% . . . . . 1/4, A / 2
%% 3/4, A/7
&H 10/4
&O 10/4
* 1/4, A/2
** 3/3, A/7
**$ 3/4, A/7
+ 1/4, 1/5, 3/4, A/2, A/7
' (SHIFT 7) 1/7, 4/12, A/1
- 1/4, 3/4, A/2, A/7
● 1/7, 3/4, A/1, A/7
/ 1/4, A/2
: 1/2, A/1
< 1/5, A/2
<= 1/5, A/2
<> 1/5, A/2
= 1/5, A/2
> 1/5, A/2
>= 1/5, A/2
? 1/7, A/1
@, SHIFT 1/3, A/1
↑ 1/4, A/2, A/7
↑, SHIFT 9/3, A/4
↓ 1/2, A/1
← 1/2
n← 9/3, A/4
←, SHIFT 1/2, A/1
→ 1/2, A/1
→, SHIFT 1/2, A/1

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For 32K disk systems - **$79.95**

TOWERS OF HANOI

by Chet Kaczneski

The object is to move up to seven disks from a left hand needle to a right needle, using a middle needle as necessary, in the least amount of moves. The rules are:

a. Only the top disk may be moved in any particular stack.

b. Only one disk at a time can be moved.

c. A larger disk cannot be placed upon a smaller one.

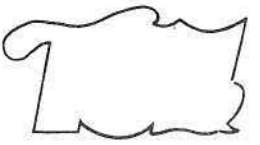
The program checks for validity of inputs. There is one special code that redraws the screen.

```
10 ' * * *  T O W E R S   O F   H A N O I  * * *
   * * *     M O D I F I E D    B Y       * * *
   * * *   C H E T  K A C Z N E S K I     * * *
20 ' * * * R T  # 9  P I O N E E R  D R    * * *
   * * *    M U R F R E E S B O R O       * * *
   * * *       T E N N E S S E E          * * *
   * * *           3 7 1 3 0              * * *
30 CLS:CLEAR400
40 DEFINT D-Z:DEFSTR A-C
50 DIM DN(7,3)
60 PRINTCHR$(23):PRINT@390,"TOWERS OF HANOI"
70 FOR D1=1TO1000:NEXT:PRINT:PRINTTAB(2) "INSTRUCTIONS (Y/N)";
80 A=INKEY$:IF A="" THEN 80
90 IF A="Y" THEN 1240
100 CLS:GOTO 1080
110 PRINT@455,"ENTER NUMBER OF DISKS (1 TO 7)";
120 C9=INKEY$:IF C9="" THEN 120
130 S=VAL(C9)
140 IF S<1 OR S>7 THEN CLS:GOTO 110
150 CLS:FOR R=1 TO 7: FOR T=1 TO 3
160 DN(R,T)=0:NEXT T,R
170 D=7:Y=7:FOR X=ST01 STEP-1
180 DN(Y,1)=D:D=D-1:Y=Y-1:NEXT
190 PRINT@12,"1";:PRINT@32,"2";:PRINT@52,"3"
200 FOR X=64 TO 512 STEP 64
210 PRINT@X,B2:NEXT
```

```
220 PRINT@512,B3;
230 E=1:T=1
240 FOR K=7 TO 1 STEP -1
250 K2=K:K1=K
260 IF DN(K,1)=0 THEN 290
270 GOSUB 870
280 NEXT
290 PRINT@640,"WHICH DISK WOULD YOU LIKE TO MOVE";
300 A5=INKEY$:IF A5="" THEN 300
310 D=VAL(A5)
320 IF D<1 OR D>7 LET A0=A4:GOSUB 1060:GOTO290
330 PRINT D; :FOR ZZ=1 TO 233:NEXT:PRINT@640,CHR$(31)
340 FOR R=1 TO 7:FOR T=1 TO 3
350 IF DN(R,T)=D THEN 390
360 NEXT T,R
370 PRINT@640,CHR$(31):FOR ZZ=1 TO 233:NEXT
380 GOTO 290
390 FOR Q=R TO 1 STEP -1
400 IF DN(Q,T)=0 THEN 420
410 IF DN(Q,T)<D LET A0=A2:GOSUB 1060:GOTO 290
420 NEXT:PRINT@640,CHR$(31)
430 PRINT@640,"PLACE DISK";D;"ON WHICH NEEDLE";
440 A5=INKEY$:IF A5="" THEN 440
450 N=VAL(A5)
460 IF N<1 OR N>3 LET A0=A4:GOSUB 1060:GOTO 430
470 PRINTN:FOR ZZ=1 TO 233:NEXT
480 PRINT@640,CHR$(31)
490 T=N
500 FOR R=1 TO 7
510 IF DN(R,T)<>0 THEN 540
520 NEXT
530 GOTO 580
540 IF D<DN(R,T) THEN 580
550 IF D=DN(R,T) LET A0=A4:GOSUB 1060:GOTO 290
560 A0=A3:GOSUB 1060
570 GOTO 290
580 E=0:FOR V=1 TO 7
590 FOR W=1 TO 3
600 IF DN(V,W)=D THEN 620
```

```
610 NEXT W,V
620 T=W:K1=D:K2=V
630 GOSUB870
640 FOR V=1TO7:FOR W=1TO3
650 IF DN(V,W)=D THEN 670
660 NEXT W,V
670 FOR U=7 TO 1 STEP-1
680 IF DN(U,N)=0 THEN 710
690 NEXT
700 U=7:GOTO 670
710 DN(U,N)=DN(V,W):DN(V,W)=0
720 H=H+1:E=1:FOR V=1 TO 7
730 FOR W=1 TO 3
740 IF DN(V,W)=D THEN 760
750 NEXT W,V
760 T=W:K1=D:K2=V:GOSUB 870
770 FOR R=1 TO 7:FOR T=1 TO 2
780 IF DN(R,T)<>0 PRINT@640,CHR$(31):GOTO290
790 NEXT T,R
800 PRINT@640,CHR$(31)
810 PRINT@659,"YOU DID IT IN";H;"MOVES."
820 PRINT@790,"AGAIN (Y/N)";
830 C9=INKEY$:IF C9="" THEN 830
840 IF C9="Y" THEN CLS:H=0:GOTO 110
850 END
870 IF T=1 P=452
880 IF T=2 P=472
890 IF T=3 P=492
900 IF K1=7 C8=C7
910 IF K1=6 C8=C6
920 IF K1=5 C8=C5
930 IF K1=4 C8=C4
940 IF K1=3 C8=C3
950 IF K1=2 C8=C2
960 IF K1=1 C8=C1
970 IF K2=7 PP=P
980 IF K2=6 PP=P-64
990 IF K2=5 PP=P-128
1000 IF K2=4 PP=P-192
1010 IF K2=3 PP=P-256
```

```
1020 IF K2=2 PP=P-320
1030 IF K2=1 PP=P-384
1040 IF E=0 C8=C0
1050 PRINT@PP,C8,:RETURN
1060 PRINT@640,CHR$(31):PRINT@650,A0:FORZZ=1 TO 2333:NEXT
1070 PRINT@640,CHR$(31):RETURN
1080 A1="WHAT DISK WOULD YOU LIKE TO MOVE"
1090 A2="THAT DISK IS BELOW ANOTHER!"
1100 A3="CAN'T PLACE A LARGER DISK ON A SMALLER ONE"
1110 A4=". . .  I L L E G A L  E N T R Y  . . ."
1120 B1=STRING$(19,32)
1130 B2=STRING$(12,32)+CHR$(149)+B1+CHR$(149)+B1+CHR$(149)
1140 B3=STRING$(12,176)+CHR$(181)+STRING$(19,176)+CHR$(181)+STRI
NG$(19,176)+CHR$(181)+STRING$(11,176)
1150 C0=STRING$(8,128)+CHR$(149)+STRING$(8,128)
1160 C1=STRING$(7,32)+CHR$(188)+CHR$(189)+CHR$(148)+"1"
1170 C2=STRING$(6,32)+STRING$(2,188)+CHR$(189)+CHR$(188)+CHR$(14
8)+"2"
1180 C3=STRING$(5,32)+STRING$(3,188)+CHR$(189)+STRING$(2,188)+CH
R$(148)+"3"
1190 C4=STRING$(4,32)+STRING$(4,188)+CHR$(189)+STRING$(3,188)+CH
R$(148)+"4"
1200 C5=STRING$(3,32)+STRING$(5,188)+CHR$(189)+STRING$(4,188)+CH
R$(148)+"5"
1210 C6=STRING$(2,32)+STRING$(6,188)+CHR$(189)+STRING$(5,188)+CH
R$(148)+"6"
1220 C7=CHR$(32)+STRING$(7,188)+CHR$(189)+STRING$(6,188)+CHR$(14
8)+"7"
1230 GOTO 110
1240 CLS:PRINT"IN THIS PUZZLE YOU WILL TRANSFER DISKS FROM THE L
EFT NEEDLE":PRINT"TO THE RIGHT IN THE LEAST MOVES.  UP TO 7 DISK
S MAY BE CHOSEN."
1250 PRINT"THE NEEDLES ARE NUMBERED 1,2, AND 3, WITH 1 BEING THE
 LEFT":PRINT"NEEDLE, 2 THE MIDDLE, AND 3 THE RIGHT.":PRINT
1260 PRINT"THE DISKS ARE NUMBERED FROM 1 TO 7 WITH 7 THE LARGEST
,":PRINT"6 THE NEXT,...AND 1 THE SMALLEST.":PRINT:PRINT
1270 PRINT"TRY 3 DISKS IF IT'S YOUR FIRST TIME, AND THEN GRADUAL
LY"
1280 PRINT"WORK UP TO 7 DISKS.      *** GOOD LUCK ***"
1290 PRINT:PRINT"PRESS ";CHR$(34);" TO BEGIN";:INPUT A:GOTO 100
```



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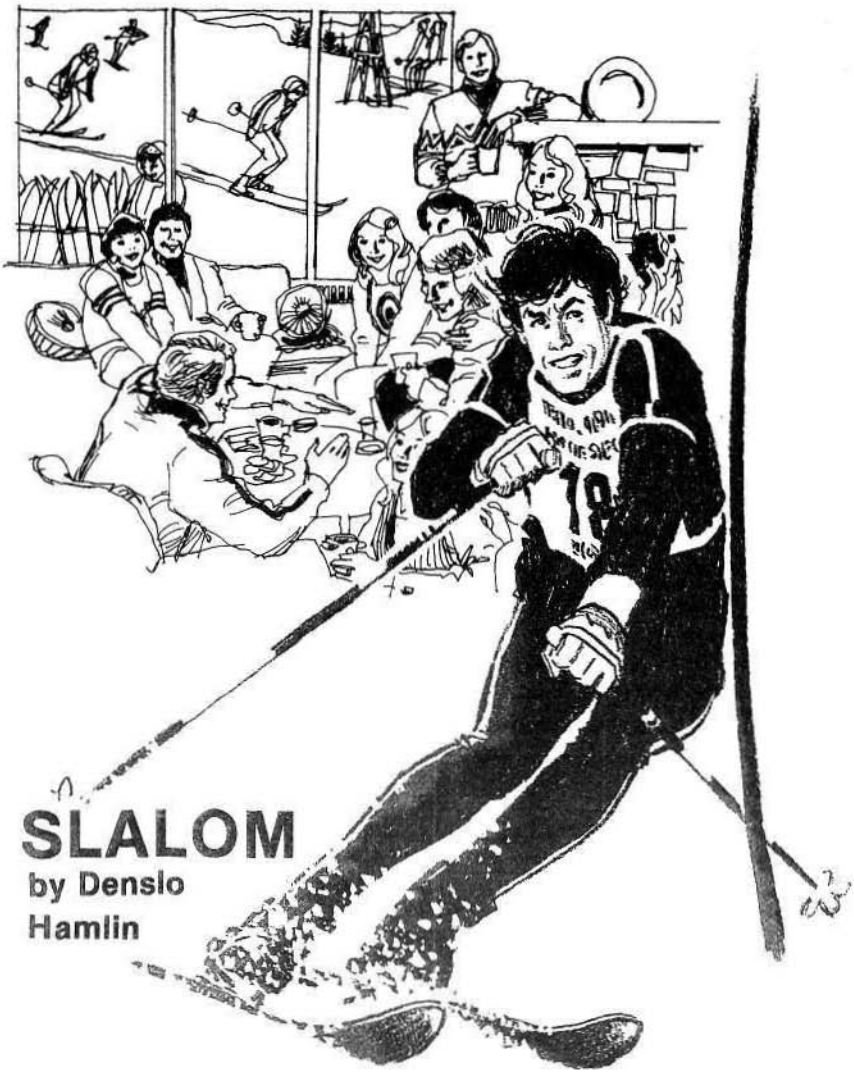

SLALOM

by Denslo Hamlin

One definition of the period from Monday morning to Friday afternoon is "an interval between ski weekends dedicated to paying for the lift tickets". With this program, you can ski every day after work without a lift ticket. With daily practice, you might be good enough for the Olympics.

```
1 REM * * * * * * * * * * * * * * *
      * S L A L O M             *
      *    BY DENSLO HAMLIN     *
      *    COPYRIGHT (C) 1979   *
      *    ALL RIGHTS RESERVED  *
      * * * * * * * * * * * * * * *
10 DEFINT A,B,I,K,X,D:DIM X(166)
20 CLS:PRINT"              S K I   C H A L L E N G E"
25 PRINT"             =====    ================"
30 PRINT"
YOU MAY TRY YOUR SKILL AND BE RATED AT ONE OF THE FOLLOWING:"
40 PRINT"    1. SLALOM
                FOR PLAYERS SKILLED WITH SHARP AND PRECISE TURNS
":PRINT"    2. GIANT SLALOM
                A GAME REQUIRING SPEED AND PRECISION TURNS"
45 PRINT"    3. DOWNHILL
                COMPETE & EXPERIENCE SPEED YOU WOULD NEVER DARE
                TO IN REAL SKIING"
47 PRINT"    4. INSTRUCTIONS
                IF YOU NEED THEM"
50 INPUT"
INDICATE YOUR OPTION HERE";A1
55 ON ERROR GOTO 6100
60 ON A1 GOTO 400,440,480,8300
70 GOTO 50
100 K=0
120 A=64:B=400
130 A1=4:T=0
140 CLS:GOSUB 1200
160 GOSUB 3100
165 Q$=""
170 Q$=INKEY$:IFQ$="" GOTO170
180 Q$=INKEY$
200 FOR I=1 TO B
210 NEXT I:T=B+T+40
212 GOTO 600
215 IF K>150 GOTO6000
220 Q$=INKEY$
230 IF Q$="." GOTO260
240 IF Q$<>"," GOTO270
```

```
250 IF A1>1 A1=A1-1
255 GOTO 270
260 IF A1<7 A1=A1 +1
270 ON A1 GOTO 4600,4500,4400,4000,4100,4200,4300
300 GOTO 200
400 REM COURSE SETTING
410 READ X(8),X(10),X(20),X(21),X(29),X(33),X(40),X(45),X(46),X(
52),X(57),X(59),X(63),X(69),X(71),X(76),X(78),X(82),X(90),X(92),
X(100),X(101),X(107),X(112),X(120),X(126),X(127),X(134),X(136),X
(145),X(151),X(152)
420 DATA -56,43,-35,23,-29,23,-45,45,-45,45,-34,24,-37,47,-39,39
,-42,41,-20,34,-31,43,-29,33,-36,48,-49,51,-51,54,-37,51
430 GOTO 100
440 FOR I=1TO16
450 READ X,X
460 NEXTI
470 READ X(8),X(10),X(21),X(22),X(29),X(32),X(40),X(42),X(47),X(
53),X(54),X(59),X(67),X(68),X(74),X(77),X(86),X(87),X(93),X(94),
X(101),X(106),X(107),X(113),X(122),X(123),X(134),X(136),X(151),X
(152)
475 GOTO 100
480 FOR I=1TO31
490 READ X,X:NEXT I
500 READ X(11),X(12),X(22),X(23),X(29),X(32),X(38),X(39),X(45),X
(47),X(53),X(54),X(60),X(62),X(68),X(69),X(75),X(76),X(85),X(88)
,X(93),X(99),X(100),X(106),X(114),X(115),X(123),X(124),X(134),X(
137),X(151),X(152)
510 GOTO 100
540 DATA -10,24,-31,45,-28,16,-43,55,-46,48,-49,49,-39,25,-36,46
,-27,12,-23,36,-15,10,-10,10,-22,38,-34,47,-31,17
550 DATA -23,37,-54,36,-63,54,-46,58,-28,43,-26,38,-16,32,-21,38
,-15,29,-5,22,-9,7,-7,12,-15,33,-25,43,-50,33,-22,42
600 IF ABS(X(K+2))=A/2 GOTO 6000
605 ON A1 GOTO 215,630,640,670,680,690,215
610 GOTO 215
630 IF ABS(X(K+2))=A/2-1 GOTO 6000
635 GOTO 215
640 IF ABS(X(K+3))=A/2-1 GOTO 6000
641 GOTO 215
670 IF ABS(X(K+3))=A/2 GOTO 6000
```

```
671 GOTO 215
680 IF ABS(X(K+3))=A/2+1 GOTO 6000
681 GOTO 215
690 IF ABS(X(K+2))=A/2+1 GOTO 6000
691 GOTO 215
1000 FOR I=-3 TO 3
1010 SET(A+I,6-I)
1020 NEXT I
1030 SET(A-1,5):SET(A-2,4):SET(A,2)
1040 FOR I=1 TO 3
1050 SET(A-3,1+I):SET(A-1,I):SET(A-2,I)
1060 NEXT I:RETURN
1200 FOR I=2 TO 9
1210 SET(A,I):NEXT I
1220 FOR I=1 TO 3
1230 SET(A-1,I+2):SET(A+1,I+2):SET(A-1-I,I+2):SET(A+1+I,I+2):NEX
T I
1240 RETURN
1400 FOR I=-3 TO 3
1410 SET(A-I,6-I)
1420 NEXT I
1430 SET(A+1,5):SET(A+2,4):SET(A,2)
1440 FOR I=1 TO 3
1450 SET(A+3,1+I):SET(A+1,I):SET(A+2,I)
1460 NEXT I:RETURN
1600 FOR I=0 TO5
1610 SET(A+5-2*I,I+3):SET(A+6-2*I,I+3):NEXT I
1620 SET(A,6):SET(A-1,6):SET(A-2,5):SET(A-3,5):SET(A-5,6):SET(A-
5,5)
1630 FOR I=1 TO 6
1640 SET(A-I-1,4):NEXT I
1650 RETURN
1800 FOR I=0TO5
1810 SET (A-5+2*I,I+3):SET(A-6+2*I,I+3):NEXT I
1820 SET(A,6):SET(A+1,6):SET(A+2,5):SET(A+3,5):SET(A+5,6):SET(A+
5,5)
1830 FOR I=1 TO 6
1840 SET(A+I+1,4):NEXT I
1850 RETURN
2000 FOR I=2 TO 6
```

```
2010 SET(A,I):NEXT I
2020 FOR I=-5 TO 6
2030 SET(A+I,6):NEXT I
2040 SET(A+1,5)
2050 SET(A+1,3):SET(A-1,2):SET(A-1,1):SET(A-1,4)
2060 RETURN
2200 FOR I=2 TO 6
2210 SET(A,I):NEXT I
2220 FOR I=-5 TO 6
2230 SET(A-I,6):NEXT I
2240 SET(A-1,5)
2250 SET(A-1,3):SET(A+1,2):SET(A+1,1):SET(A+1,4)
2260 RETURN
3100 FOR I=K TO K+15
3105 IF X(I)>0 THEN GOTO 3180
3110 IF X(I)<0 GOTO 3190
3130 NEXT I
3140 RETURN
3180 D1=15360+64*(I-K)+X(I):POKE D1,91
3185 GOTO 3130
3190 D1=15360+64*(I-K)-X(I):POKE D1,92
3195 GOTO 3130
4000 IF B<20 GOTO 4000
4010 B=B-13
4020 IF B>100 GOTO 4050
4030 K=K+1:CLS
4031 GOSUB 1200
4032 GOSUB 3100
4038 GOTO 200
4050 B=B-22:GOTO 4030
4080 B=B/1.8:GOTO4030
4100 IF B<20 GOTO 4180
4110 IF B>100 GOTO 4190
4120 B=B-9
4130 A=A+2: K=K+1:CLS
4140 GOSUB 1400
4150 GOSUB 3100
4160 GOTO 200
4180 B=10 : GOTO4130
4190 B=B-20 : GOTO 4130
```

```
4200 IFB<85 GOTO4200
4210 B=B-5
4220 A=A+4:K=K+1:CLS
4230 GOSUB3100
4240 GOSUB1800
4250 GOTO200
4280 IFB<40 B=B+20:GOTO 4220
4290 B=B+12: GOTO 4220
4300 B=1.4*B+40: IF B>400 B=400
4310 CLS:IF B<100 GOTO 4300
4320 GOSUB 3100
4330 A=A+6:GOSUB 2200
4340 GOTO 200
4350 K=K+1:B=B+20
4360 GOTO 4320
4400 IF B<20 GOTO4400
4410 IF B>100 GOTO 4490
4420 B=B-9
4430 A=A-2:K=K+1:CLS
4440 GOSUB 1000
4450 GOSUB 3100
4460 GOTO 200
4480 B=10:GOTO 4430
4490 B=B-20:GOTO 4430
4500 IF B<85 GOTO 4500
4510 B=B-5
4520 A=A-4:K=K+1:CLS
4530 GOSUB3100
4540 GOSUB1600
4550 GOTO 200
4580 IF B<40 B=B+20:GOTO4520
4590 B=B+12: GOTO 4520
4600 B=1.4*B+40:IF B>400 B=400
4610 CLS:IF B<100 GOTO 4600
4620 GOSUB 3100
4630 A=A-6:GOSUB 2000
4640 GOTO 200
4650 K=K+1:B=B+20
4690 GOTO4620
6000 M=2700/(B+40):RANDOM
```

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```
6010 AX=RND(0)*M*M
6020 O$="SLALOM POLE"
6030 GOTO 6200
6100 M=2700/(B+40):RANDOM
6110 AX=5*RND(0)*M*M
6120 O$="TREE"
6200 IF AX>3375 GOTO 6800
6210 IF AX<250 I$="NONE":GOTO 6300
6220 IF AX<600 I$="MINOR INJURIES":GOTO 6300
6230 IF AX<800 I$="CONCUSSION":GOTO 6300
6240 IF AX<1200 I$="BROKEN LEG":GOTO 6300
6250 IF AX<2000 I$="MULTIPLE FRACTURES OF THE LEGS":GOTO6300
6260 IF AX<2500 I$="FRACTURED SKULL AND BROKEN LEG CONDITION:SER
IOUS":GOTO6300
6270 I$="BROKEN NECK AND MULTIPLE LEG FRACTURES
 CONDITION:CRITICAL"
6300 CLS
6310 GOSUB3100
6320 IF A<1 OR A>115 A=63
6330 FOR I=0TO6
6340 SET(A+7-I,I+6)
6350 SET(A+I,I+8)
6360 NEXTI
6370 SET(A+5,9):SET(A+6,10)
6380 SET(A+11,9):SET(A+11,10)
6390 FOR I=4TO14
6400 SET(A+I,11):NEXTI
6410 FORI=8TO12
6420 SET(A+I,12):NEXTI
6430 PRINT@ 384,"YOU HIT A ";O$;" AT ";M;" MPH."
6440 PRINT" INJURIES:";I$
6470 PRINT"YOU COMPLETED ";INT(K/1.5);"% OF THE COURSE IN THE TI
ME:"
6500 GOTO 9005
6800 CLS
6810 PRINT"WE EXTEND OUR DEEPEST CONDOLENCES:"
6820 PRINT@ 139,STRING$(2,CHR$(176));STRING$(5,CHR$(188));STRING
$(2,CHR$(176))
6830 PRINT TAB(10) STRING$(11,CHR$(191));"    THE DECEASED WAS K
ILLED"
```

```
6040 PRINT TAB(10) STRING$(2,CHR$(191));"  ";STRING$(3,CHR$(191)
);"  ";STRING$(2,CHR$(191));"     IN A COLLISION WITH A"
6050 PRINT TAB(11) STRING$(4,CHR$(191));" ";STRING$(4,CHR$(191))
;"        ";O$
6060 PRINT TAB(13) CHR$(191);STRING$(3,CHR$(179));CHR$(191);"
    WHILE SKIING AT ";M;" MPH."
6070 PRINT TAB(14) STRING$(3,CHR$(131))
6080 PRINT"HE COMPLETED ";INT(K/1.5);"% OF THE COURSE"
6090 PRINT" IN THE FINAL MOMENTS OF HIS LIFE IN THE TIME OF:"
6900 GOTO 9005
8000 CLS:PRINT CHR$(23):PRINT "CONGRATULATIONS YOU MADE IT     T
HROUGH OUR COURSE IN A TIME OF"
8005 T1=FIX(T/12000):T2=((T/12000)-T1)*60
8010 PRINT T1;:PRINT"MIN (";:PRINT T2;:PRINT"SEC"
8011 IF AI=3 GOTO 8200
8012 IF T1<3 GOTO 8030
8013 PRINT"RATING: REAL AMATEUR"
8015 INPUT"PRESS ENTER FOR NEXT GAME";X
8017 K=0:RESTORE
8020 CLEAR:GOTO10
8030 IF T1<2 GOTO 8055
8040 PRINT"RATING: CLASS C RACER-----NOT BAD."
8041 GOTO 8015
8050 PRINT"RATING: CLASS A RACER-----
EXCELLENT!"
8051 GOTO 8015
8055 IFT1<1 GOTO8060
8056 IF T2<30 GOTO 8080
8058 PRINT"RATING: CLASS B RACER---
VERY GOOD!"
8059 GOTO 8015
8060 PRINT"RATING: TOP PROFESSIONAL !
ARE YOU SURE YOU DIDN'T MISS ANY GATES ---THAT TIME IS TOO GOOD
TO BE TRUE?"
8065 GOTO 8015
8080 IF T2>15 GOTO 8050
8090 PRINT"RATING: CLASS AA RACER--------
TOP RANKING!!!!"
8095 GOTO 8015
```

```
8200 IF T<9950 GOTO 8060
8210 IF T<11000 GOTO 8090
8220 IF T<12000 GOTO 8050
8230 IF T<14000 GOTO 8058
8240 IF T<16000 GOTO 8040
8250 GOTO 8013
8300 CLS:PRINT"S K I  C H A L L E N G E  I N S T R U C T I O N
 S"
8310 PRINT"-----  ----------  ----------"
8320 PRINT:PRINT"THIS IS A GAME OF REFLEXES AND SKILL"
8330 PRINT:PRINT"TO START CHOOSE A COURSE- SLALOM, G.SLALOM, OR
DOWNHILL."
8340 PRINT"BEGINNERS MIGHT FIND DOWNHILL AS THE EASIEST TO COMPL
ETE."
8370 PRINT"AFTER A COURSE IS CHOSEN, THE COMPUTER WILL DISPLAY T
HE"
8380 PRINT"FIRST FEW GATES.  WHEN YOU PRESS ANY KEY, THE GAME BE
GINS."
8390 PRINT"THE OBJECT IS TO MANEUVER THE SKIER THROUGH EACH GATE
 SO"
8400 PRINT"THAT HE SKIS  BELOW THE '";CHR$(92);"' GATE AND ABOVE
 THE '";CHR$(91);"'."
8410 PRINT"GATE.  (WHEN GATES ARE HORIZONTAL THE SKIER NEED ONLY
SKI "
8420 PRINT"BETWEEN THEM.":PRINT
8425 PRINT"---MORE INSTRUCTIONS ---PRESS ENTER FOR NEXT PAGE":Q$
=INKEY$
8426 Q$=""
8427 Q$=INKEY$:IF Q$="" GOTO 8427
8430 CLS:PRINT"THE SKIER MAY BE TURNED RIGHT OR LEFT BY MEANS OF
 THE"
8440 PRINT"'>' KEY AND THE '<' KEY RESPECTIVELY (NO SHIFT KEY US
ED)."
8470 PRINT"SPEED IS THE GREATEST WHEN THE SKIER SPENDS MOST OF T
HE"
8480 PRINT"TIME WITH HIS SKIS POINTING DOWNHILL.  THERE IS NO RA
NDOM"
8490 PRINT"LUCK IN THIS GAME (EXCEPT FOR INJURIES); YOU DETERMIN
E THE"
```

```
8500 PRINT"RESULTS THROUGH YOUR SKILL."
8510 PRINT:PRINT"DO NOT SKI INTO A SKI POLE OR YOU WILL HAVE AN
ACCIDENT"
8520 PRINT"(AND MAYBE INJURIES).  THE SAME GOES FOR SKIING OFF T
HE EDGE."
8530 PRINT:PRINT"NOTE THE PROGRAM WILL NOT CALCULATE WHETHER OR
NOT YOU COM-"
8540 PRINT"PLETELY WENT THROUGH EACH GATE (THAT WOULD SLOW IT UP
 TOO"
8550 PRINT"MUCH).  YOU MUST DETERMINE THAT FOR YOURSELF."
8560 PRINT:PRINT"PRESS ENTER TO BEGIN":GOTO 9023
9005 T1=FIX(T/12000):T2=((T/12000)-T1)*60
9010 PRINT T1; :PRINT"MIN &"; :PRINT T2; :PRINT"SEC"
9015 Q$=INKEY$
9020 PRINT "PRESS ENTER FOR ANOTHER GAME":Q$=""
9023 Q$=INKEY$:IFQ$="" GOTO9023
9025 K=0:RESTORE
9030 CLEAR:GOTO10
63000 'RECORD SLALOM---1 MIN & 3.425 SEC D.HAMLIN JR 11-6-78
64000 'LAST MODIFIED 12-31-78
```

Announcing a new service from SoftSide Publications

Line Listing Service

Line listings .01 per line plus $1.00 postage and handling.

You don't have a printer? Want listings of your programs?

(Add .50 or enclose stamped mailer for return of your cassette or disk, if you want it back.)

Procedure: Send cassette or diskette and payment to

LINE LISTING SERVICE
P.O. Box 68, Milford, NH 03055

Sorry, No level I, machine, or assembly language programs.

Do not include orders, submissions, or questions in the same package.

Make sure you include your mailing address.

Programming Hints

1

There is a fascinating little bug in TRS-DOS 2.3. The password protection gives up after one try. The first time you try to copy an uncopiable file it will give you the error message "FILE ACCESS DENIED". Just try to copy it again - this time you should succeed.

2 IF . . .THEN . . .ELSE

The most frequent error in software submitted to SoftSide for publication is misuse of the THEN command. There are several considerations:

(1) Yes, you can often replace THEN with a comma, but THEN only uses one byte of memory in Level II storage, just like a comma, so . . . please don't.

(2) Yes, you can often omit the command entirely, but . . . (a) ELSE will not work without THEN. (b) Arithmetic operations often fail without THEN So please include it.

(3) THEN and ELSE imply an automatic GOTO. These are correct:

IF A=1 THEN 100 ELSE 200

IF A=1 THEN GOSUB 100 ELSE GOSUB 200

These lines are **WRONG:**

IF A=1 THEN GOTO 100 ELSE GOTO 200

IF A=1 GOSUB 100 ELSE GOSUB 200

IF A=1 GOTO 100 (THEN is correct and is just as easy to type.)

3 DELETE

When you have a program that takes a lot of memory, needs instructions, and uses string or array space, you can use the DELETE command to use some memory twice. You must cue the user to type RUN after the DELETE command, as it stops the execution of the program. Place your CLEAR and DIM statements in the second program, and your instructions in the first. Try this sample program to illustrate the method.

```
10 PRINT "THIS WOULD BE
   THE INSTRUCTIONS
20 PRINT
30 PRINT"TYPE RUN"
40 DELETE 10-40
50 CLEAR 5000:DIM A(1000)
60 PRINT"THIS IS THE SE-
   COND PROGRAM"
70 PRINT"IF YOU LIST IT,
   YOU WILL FIND LINES 10
   TO 40 MISSING"
80 PRINT
90 LIST
```

4 CLEAR PORTION OF SCREEN

To clear only a portion of the screen, PRINT CHR$(31). This will clear from the point you print it to the end of the screen. Try this short program.

```
10 FOR A=1 TO 1000:
   PRINT@ A, "A";:NEXT
20 PRINT@256, CHR$(31);
   "THIS IS THE NEXT
   LINE."
```

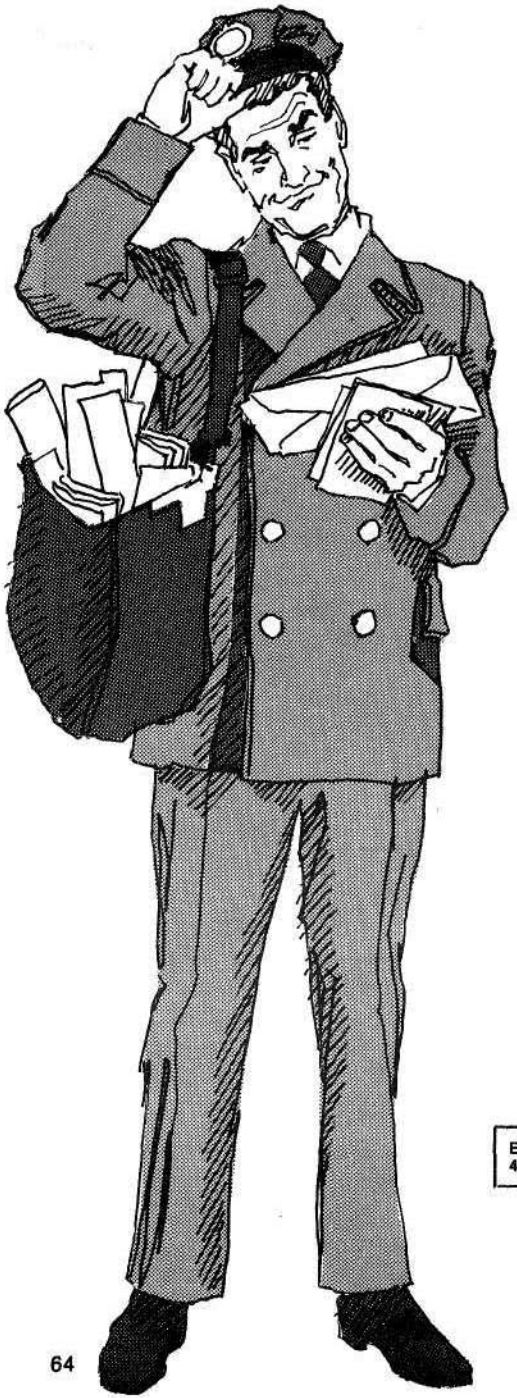
5 EXTENDED TAB

This subroutine will allow you to TAB past 63 on your line printer.

```
30000 INPUT"TAB";T
30010 LPRINT STRING$
      (T-PEEK(16539),32);
```

Thanks to Will Hagenbuch of Nepenthe Programs.

Seasons Greetings
from the staff and management of
SoftSide Publications and
The Software Exchange!



MAIL LIST II

by Roger Robitaille, Sr.

IDEAL for all sorts of small mailing applications, such as small businesses, clubs, churches; for advertising, newsletters, announcements, press releases -- endless possibilities. We use it for a 15,000-name mailing list, yet it is perfect for lists as short as 100 names! You can store 1000 records per data disk, use as many disks as you like . . .

Each record includes:

RECORD NUMBER
RECORD CODE
COMPANY NAME
NAME
ADDRESS
CITY/STATE/ZIP
PHONE NO.
GREETING
PRODUCT CODES
DATE

Utilities include SORT, MERGE, MOVE, BREAK, EXAMINE, and UPDATE.

Prints labels 1, 2, or 3 across.

Sequential file structure makes the most efficient use of disk space: all alphabetic items can be as long as necessary.

EVEN ALLOWS DATA ENTRY ON A SEPARATE 4K, LEVEL II CASSETTE SYSTEM.

2 Disk Drive, 32K minimum $99.95

TSE
The Software Exchange
6 South Street, Box 68, Milford, NH 03055 (603) 673-5144

Bug Report

Ten Pin Bowling (line 30) January

If B1 does not have 5 spaces, the program will not work properly. B1=" "

All Star BaseBall (lines 3890, 3910, 3940) July

The bunts in these lines need to count as times at bat. Add the following to each of these lines:

:AB(IN)=AB(IN)+1

Melt Down (lines 1920, 1930, 1960, 1970, 1980) September

Change MI in each line to W1, or the meters will not work.

Westward 1847 (line 130) October

Our printer did not print the extra line feeds (down arrow required) in line 130. There must be one line of space between each line of text.

Energy Cost (line 830) November

A$(1,0) should be A$(B,0)

9 Games for Pre-School Children

by George Blank

Until they go to school, children think that learning is fun, not work. Is this the reason that they learn so much faster in the early years? And learning is great play. With these games children teach each other the alphabet, addition and subtraction, recognition of letters and words, even art as they play with patterns on the screen. The games are written for ages four to six. The author has a degree in education, with graduate study in child development and counseling, plus a wide variety of teaching experience in industry, the military, public and private schools, and churches. If you have children, and you also have a TRS-80, then you should have **Nine Games for Pre-School Children.** All nine games and the menu are in the computer at one time, and the children will quickly learn to select the one they want. **Level II, 16K $9.95**

TSE THE SOFTWARE EXCHANGE 6 South St., Milford, NH 03055

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**

TSE

The Software Exchange

6 South Street, Box 68, Milford, NH 03055 603-673-5144

RSM 2 (TAPE) $26.95

RSM 2D (DISK) $29.95

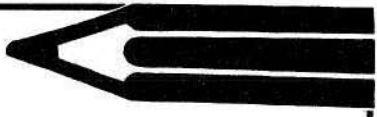
RSM 2/2D

by Small Systems Software

This is what you can do:

COMMAND	
A - ASCII DUMP:	Display ASCII equivalent of memory block
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

INVENTORY 'S'



by Roger Robitaille, Sr.

Inventory 'S' is an exciting advance in small business software for the TRS-80. Its in-memory system of data storage solves the problems of both sequential and random access files while providing extremely fast, random access to any record. Other advantages include the ability to use any combination of characters for stock number, an exceptionally flexible record format (field names are user-definable), and the ability to store data to tape or disk and upgrade at any time. Up to 150 items can be stored per 16K of available memory, with stock number, description, cost, vendor, reorder, and profit data in each record. An important feature is the ability to use your present stock numbers (a sort function is included), unlike competing systems which force you to use a different "record number". User-definable screen and printer reports let you see just the data you need, when you need it.

Inventory 'S' is an extremely powerful business management tool which can be used effectively with a 16K, tape based system or a 48K, disk and printer system — a claim nobody else can make!

Tape version, 16K (min.), **Level II — $24.95**

32K Disk version — $39.95

(same as tape, but on diskette with additional Disk I/O)

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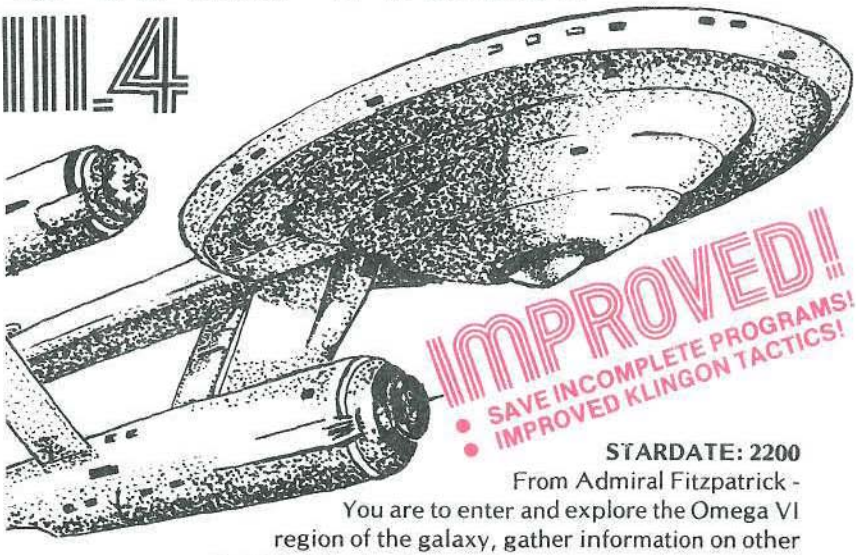
STAR TREK III.4



IMPROVED!!!

- SAVE INCOMPLETE PROGRAMS!
- IMPROVED KLINGON TACTICS!

STARDATE: 2200

From Admiral Fitzpatrick - You are to enter and explore the Omega VI region of the galaxy, gather information on other inhabitable planetary systems you may encounter and defend yourself against hostiles in case of attack. You are in command of the Starship ENTERPRISE and her ship's complement of 371 officers and crew. Omega VI is composed of 192 quadrants containing star systems and planets (a few habitable). Information on Omega VI is sketchy, but astronomical hazards such as pulsars, Class O stars and black holes are known to be present in the region It is also patrolled by Klingon battle cruisers, so look before you leap.

Available on Digital Cassette for Level II, 16K - $14.95

Specs: Star Trek III.4

Play Board: 8 by 8 by 3 quadrants
Weapons Systems: Phasers and Photon Torpedoes
Power Systems: Warp and Impulse
Computer Systems: Science and Ship's computer
Sensors: Long and Short Range
Reports: Damage Control and Status
Play Elements: 20 Klingon battle cruisers, 100 stars and planets, black holes, pulsars

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The Software Exchange
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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 $49.95.

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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INPUT
A COLUMN OF YOUR LETTERS

Gentlemen:

As to several different possibilities for formats for SoftSide, my suggestion is to have one or two of each kind of format a year, that is, to have two 16K programs one month, and 6 or 7 short ones another, etc. . . You could then advertise SoftSide as kind of a Magazine-Of-The-Month. Example: January-Double 16K Issue, February-Educational Issue, March-Practical Applications Issue.

Another suggestion I have is for an issue with several programs all grouped around a central theme, for example: a Graphics Issue, or a Peek/Poke Issue, etc., each one showing a different aspect of the TRS-80 in terms of programming.

I think you should go back to splitting a program into sections and describing how each section works and what it does . . . this was one of the best features of SoftSide, and you appear to have dropped it around January, 1979. This is what made the magazine so appealing . . . it actually explained how it all worked! I have taught programming techniques to other programmers using sections from early SoftSide issues, showing specific parts of certain programs and reading out how they work . . .This is the ONLY thing wrong with your magazine... that is to say, that you have dropped this important feature.

Allan Hurst
Chicago, IL

Dear Sirs;

Today I received the second shipment of TRS-80 programs on cassette. The shipment was again very prompt and the programs loaded fine. Thanks to the good service I am enjoying my new programs shortly after I ordered them. Thanks for your good service!

Ing. T.deMan
Voorschoten, Holland

Many of you have called or written to ask how to use RSM2D to save Sargon II. We are offering FREE - an instruction sheet. Just send a self addressed stamped envelope to SAVE SARGON II, P.O. Box 68, Milford, NH 03055

***NOTE: Our WATS line is now operational. For ordering only, call TOLL FREE 9am - 9pm EST.**

1-800-258-1790

STRANGE ODYSSEY

SCOTT ADAMS' NEWEST ADVENTURE!

Marooned at the edge of the Galaxy you come across the ruins of ancient alien civilization, complete with fabulous treasures and alien technologies. Can you collect the treasures and escape or will you be forever marooned . . .

$14.95 Level II, 16K

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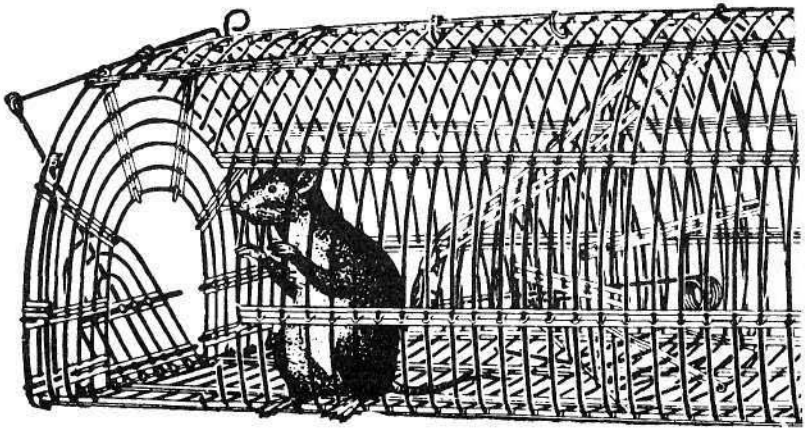
Amazing MAZES

by Robert Wallace

Remember trying to teach a rat to run through a maze in psychology class? **AMAZING MAZES** gives you a rodent's-eye viewpoint as you attempt to escape from a sinister maze in a race against the clock. Keep Moving ... whenever you stop to catch your breath, the passageways change! Excellent use of high-speed graphics and real-time input make this a fast-paced challenge of skill and dexterity.

For 16K, Level II

Amazingly priced at only $7.95



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BY DAVID BOHLKE

Manage a motion picture crew on location as you hunt for exotic animals in the game of SAFARI. Can you get your crew through the hazards? Are you good enough and fast enough to capture some good pictures? Will you get there before the other crews? Find out with Safari.

Level II 16K Tape $7.95

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market basket

GAMES

Warfare I 4-game anthology, Level II, 16K $7.95

Backgammon by Scott Adams.Level II, 16K $7.95

X-Wing II by Chris Freund. Level II, 16K $9.95

Taipan by Art Canfil. Level II, 16K $9.95

Sargon Chess by Dan and Kathe Spracklen. Level II, 16K $19.95

Sargon II by Dan and Kathe Spracklen. Level II, 16K, $29.95.

Chess Companion by Michael Kelleher. Level II, 16K $7.95

Three D Tic Tac Toe by Scott Adams. Level II, 16K $7.95

Concentration by Lance Micklus. Level II, 16K $7.95

Amazin' Mazes by Robert Wallace. Level II, 16K $7.95

Time Bomb by David Bohlke. Level II, 16K $4.95

Snake Eggs by Leo Christopherson. With sound - Level II, 16K $14.95

Life Two by Leo Christopherson. With sound -Level II, 16K $14.95

Android Nim by Leo Christopherson. With sound - Level II, 16K $14.95

Cubes by Leo Christopherson Level II, 16K $9.95

Bee Wary by Leo Christopherson, with sound. Level II, 16K, $7.95.

Mastermind II by Lance Micklus $7.95

Mastermind II - Source List -$20.00

Robot/Breakaway Game duo by Lance Micklus. Level II, 4K $7.95

Tycoon by David Bohlke. Level II, 16K $7.95

Slalom by Denslo Hamlin. level II, 16K $7.95

9 Games for Preschool Children by George Blank. Level II, 16K $9.95

Ten Pin by Frank B. Rowlett, Jr. Level II, 16K $7.95

Atlantic Balloon Crossing by Dean Powell. Level II, 16K $9.95

Space Battles by Level IV, Level II, 16K Tape or 32K Disk, Tape -$14.95, Disk - $19.95

Star Trek III.3 by Lance Micklus Level II, 16K $14.95

Dog Star Adventure by Lance Micklus. Level II, 16K $9.95

Adventures on Tape by Scott Adams. Level II, 16K. Choose one: Adventureland, Pirate's Cove, Mission Impossible, The Count, Voodoo Castle, Strange Odyssey, and Fun House -$14.95 each.

Adventures on Disk by Scott Adams. 1) Mission Impossible, Pirate's Cove, Adventureland; or, 2) Voodoo Castle, The Count, Strange Odyssey. Choose three for $39.95. Now in machine language for faster and easier respone.

Safari by David Bohlke. Level II, 16K $7.95

Treasure Hunt by Lance Micklus. Level II, 16K $7.95

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Kamikaze by Russell Starkey. Level II, 16K $7.95

All Star Baseball by David Bohlke. Level II, 16K $7.95

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Challenge Word game with sound. By Richard Taylor $9.95

Oil Baron by Paul Knechtel $7.95

Galactic Empire by Douglas Carlston $7.95

Casino Anthology Slot Machine, Stud and Draw Poker. $7.95.

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Barricade by Small Systems Software. Machine Language -$14.95

Journey To The Center Of The Earth by Greg Hassett. Level II, 16K Tape $7.95

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Mean Checkers Machine by Lance Micklus. Level II, 16K; tape, $19.95; disk $24.95.

Kriegspiel by Ron Potkin. Level II, 16K, $7.95.

Bridge Challenger Level II, 16K, $14.95.

BUSINESS

Inventory II.2by M. Kelleher and R. W. Robitaille, Sr. 16K disk systems $59.95

Inventory System II.3 by M. Kelleher. Improved version. $79.95

Inventory 'S' by Roger W. Robitaille, Sr. Level II, 16K Tape -$24.95; 32K Disk -$39.95

Payroll by Stephen Hebbler. For disk systems. 32K $59.95

Accounts Receivable II by S. Hebbler. 32K disk systems $79.95

Appointment Log by Michael Kelleher. Level II, 16K $9.95

General Ledger I by M. Kelleher, requires 32K Disk, $79.95

Mail List II by BUS-80 32K disk systems $99.95

Small Business Bookkeeping II by Roger W. Robitaille, Sr. Level II, 16K. With journal - $36.95 disk, $31.95 tape. Without journal - $29.95 disk, $24.95 tape.

SPECIAL PURPOSE

Calculator by R. W. Robitaille, Sr. Level I or II, 4K $2.95

Moving Signboard by Circle Enterprises. Level I or II. 4K $9.95

Histograph/Scattergram by Gary S. Breschini. Level II, 16K $9.95

Simple Simon by George Blank. Level II. Written in BASIC. $4.95

Math Drill by K. L. Brown. Level II, 16K $4.95

RPN Calculator by Russell Starkey. Level II, 16K $9.95

Ham Radio by Michael Kelleher. Level II, 16K $9.95

Keyboard by James Garon. Level II, 16K $9.95

Ham Radio advanced version for 32K disk $24.95

Electronics Assistant by John Adamson. Level II, 16K $9.95

Preflight by Stephen Hebbler. Level II, 16K $20.00

Basic Statistics by Steve Reisser. Level II, 16K $20.00

Drill Masters by Computer Graphics - specify title desired. Level II, 16K $7.95 **ea.** German, Russian, Italian, Spanish, or Music Theory.

PERSONAL

Typing Tutor by Roger W. Robitaille, Sr. Level II, 16K $19.95

Secrets of the Tarot by John T. Phillipp. Level II, 16K $9.95

Biorhythms by Frank B. Rowlett, Jr. Level II, 4K $4.95

Personal Finance by Lance Micklus. Level II, 16K $9.95

Advanced Personal Finance by Lance Micklus for 32K disk systems $24.95

Home Financial Management by Michael Kelleher. Level II, 16K $9.95

UTILITIES

NEWDOS by Apparat $49.95

NEWDOS + by Apparat $99.95

Machine Language Monitor by Small Systems Software. Level II, 16K $26.95

Three Monitors for Disk by Small Systems Software. Disk for 16 through 48K (all in one) $29.95

KVP Extender by Lance Micklus. Tape - $29.95; Disk - $34.95

KVP 232 by Lance Micklus - KVP adapted for the TRS-232. Tape - $29.95

ST80 Smart Terminal Level II, 16K $49.95

ST80D Smarter Terminal for disk systems. $79.95

Micro Text Editor by Don Coons. Level II, 4K or 16K $9.95

Text-80 by Frank B. Rowlett, Jr. For 32K disk systems $59.95

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