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VOL. 2, NO. 9

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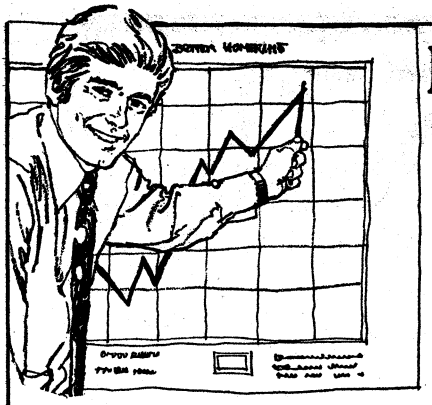

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Cover portrait for MICRO MILLIONAIRE by Elaine Cheever.

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During the summer our programmers will be taking a much-needed and well-deserved break—therefore, effective July 1st we will be temporarily suspending our HOTLINE service.

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

MOVIN' ON UP

Well, George Blank, your Editor for lo these many months, has moved up to the mysterious "Fourth Floor" of our imposing Milford, New Hampshire offices. No one really knows what transpires at those lofty elevations, but if G.W.B. ever comes down and tells me, I'll pass the secrets on to you...

"Whooo, are Yooou??", I can hear you asking, (as the hookah-smoking caterpiggle once asked Alice in a similar situation). My name is James Garon, late of sunny California, with a background in TRS-80 programming, teaching, mathematics and secretary-teasing.

LOOKING BACK...

This seems like a good opportunity to look back over the last few years and see how the TRS-80 has grown and evolved (not to mention the growth and evolution of its users — namely us!). Some of you may be relatively new additions to the TRS-80 community, and as such, may not be aware of the flavor of those early days...

THE MAKING OF A COMPUTER WIDOW

The afternoon of the arrival of our 4K Level I machine was exciting to say the least. Having waited over three months, we had actually decided to cancel our order when the long awaited phone call came. A reckless drive to the Radio Shack store, a big box which would barely fit into our compact car, a hasty drive home (we were so excited that we somehow took a wrong turn and got lost!), the frantic ripping of cardboard while the little woman stood by in gentle amusement (unaware that she was seeing her new "rival" for the first time), the setting up and plugging in — and the TRS-80 adventure was in full swing! We stayed up until 5:30 AM that first night, and at 8:00 AM we were back at it. To put it mildly, we were hooked! (Please note that the use of the word "we" is strictly editorial.)

We soon ran into the many limitations of Level I: only two strings, A$ and B$, no string comparisons, only one array, A(N), just 26 variables, slow graphics, etc., but by gosh, it was an honest to goodness COMPUTER, it worked — and it was ours!

The limitations were a challenge to the true programmer in us. We

soon had the Level I simulating multi-dimensional arrays and even playing tunes over the radio; but we had a nagging yearning to explore the mysteries and power of the recently announced Level II. Again the wait began. After the promised delivery date had come and gone, a trace was placed on our order. Meanwhile a new Level II was ordered...

"I LEFT MY HEART IN NASHVILLE"

We found out later that the first order had somehow wound up in Tennessee, where the local Radio Shack dealer sold it to one of HIS frantically impatient customers. In all, it took FOUR tries before our Level II at last arrived.

Well, it was certainly worth the wait. All that computing power at our fingertips; even machine language subroutines! Of course, it took many months to become comfortable with all the features of the new language, and the abbreviations of Level I were missed for many weeks, but the new possibilities were endless. INKEY$ alone would have been worth the price.

WANTED: NEW MONARCH TO RULE ANCIENT SUMERIA. NO EXPERIENCE NECESSARY

Back then, almost every program that came along seemed fascinating. HAMMURABI, copied from a book of games, engaged our attention for hours, even though it had no graphics and scrolled up the screen like teletype paper. The level of expectation of today's user is much higher. Not many of those early programs have withstood the test of time. Most are gathering dust on a shelf somewhere.

One of the few exceptions was STARTREK by Lance Micklus. It came on strong, surpassing in quality most other games available at the time. (It was by far the best-selling piece of software at TSE.) The final tribute to this remarkable program was paid last month with the publication in SoftSide of STARTREK III.4. (A further measure of the value of this program can be seen by comparing the cover price of that issue with any other to date.)

Another prime example is SANTA PARAVIA EN FIUMACCIO by our own George Blank. With its excellent graphics and sophisticated simulation, we discover what HAMMURABI was meant to be, but never achieved. (While SANTA PARAVIA bears the Instant Software label, we are proud to announce that it has returned to the fold, like the Prodigal Program, and is now available from TSE.)

Of course, Level II was not the end of the story (although there are many who feel that the Level II 16K machine was the utlimate in reliable computing power). With TRS-80s now available off-the-shelf in many Radio Shack stores, the wait began for Interfaces and Disk Drives.

When this latest patient wait came to an end, many of us found that our troubles were just starting. Strange problems were reported with the Interface; one solution after another emerged from Fort Worth: The Buffered Cable, the Twisted Pair, etc., each attempting to rectify some newly discovered design problem.

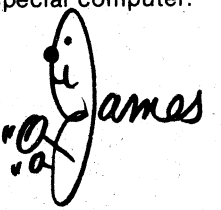
"DON'T BLAME YOUR DRIVES..."

When the dust had settled from all this, and we got our disk drive running, we found that the DOS

(TRSDOS 2.0 or 2.1) had a lot of errors and omissions. Just as some customers had almost decided that constant rebooting and clobbered files were just cause for junking the entire system, we began to see those NEWDOS ads which offered hope that it might not be the fault of our drives after all, but a problem which could be solved once and for all by changing to NEWDOS from Apparat.

Finally the TRS-80 had become a viable system even in the business environment. (Even Radio Shack has finally come out with a superior piece of software in SCRIPSIT—outpenciling PENCIL at 2/3 the price.)

With the announcement, just weeks ago, of NEWDOS/80, we find ourselves about to enter into what promises to be an amazing decade for our special computer.



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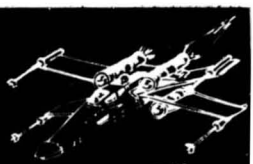

X-WING II

by Chris Freund

You are Pilot of an X-Wing fighter ... Your Mission, Destroy the Death Star!

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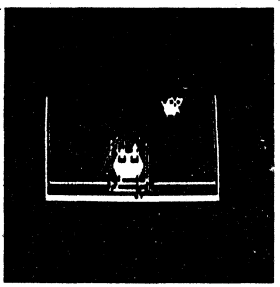
Magic from Leo Christopherson



Bee Wary..

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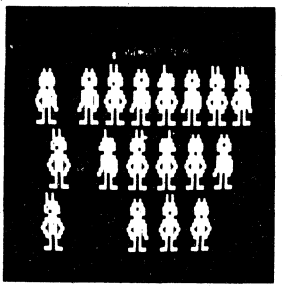

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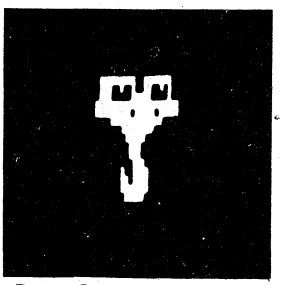
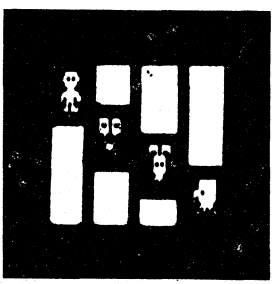


Snake Eggs..

Here is a computerized reptilian version of 21 complete with arrogant snakes and appropriate sound. Level II, 16K **$14.95**



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PRINTING CALCULATOR PROGRAM

by D. L. Morrow

With tax time upon us and my old adding machine giving up, I decided to put my TRS-80 to work in its place. The result is this program. It is written to use a Quick Printer, but will also work without it. As written, 4K bytes of memory are required to execute it. When the remarks are removed it should run in a Level II 4K system.

"Printing Calculator" will allow

the TRS-80 to function as an adding machine, but with the added features of a calculator, such as division and multiplication, and allow up to eight totals. An added feature is that you can put titles (Headings) with each total. Examples might be; Medical, Interest, Taxes, etc. You also can reuse or recall any one of the eight totals for later use.

When the Printing Calculator program is first RUN the printer status is checked by statements 625 to 640. At this time variable P is set to 0 or 1 with 0 = no printer output. Next the program will display its Title followed by a list of the "modes" which it can perform.

The first input required will be to select one of the modes. This will be entered in response to the display of "ENTER MODE ". The only inputs accepted are the characters displayed in the MODE column. Statements 195 to 260 use the INKEY$ function of BASIC to input the mode character and then go to the first routine after displaying the active mode flag "**" to the right of the entered mode character. This is done by statements 140 to 155.

It is suggested that the first mode selected be H. This is to enter a heading or title to the Total you will be using. When this mode is selected, statements 535 to 555 will request an input by displaying "ENTER HEADING (#,TITLE)". An example might be (1, TAXES). This would place the title TAXES to the right of the first total column and print the Heading TAXES on the printer. Now you enter your amounts via mode A.

When mode A is entered the line " ENTER VALUE " will be displayed. Only numeric values will be accepted by statements 270 to 300. As each value is entered it will be printed and added to the total currently selected; also the last entry is displayed to enable you to keep track of your entries. After all of the desired amounts have been entered pressing the ENTER key only will return to the ENTER MODE feature.

Mode M (subtract) will function the same as mode A, except the input value is subtracted from the selected total and printed on the printer followed by "-".

Mode X (multiply) will multiply the selected total by the value entered, then display the new total, print a Subtotal followed by the value entered, then the new total, and return to enter mode.

Mode D (divide) will divide the selected total by the entered value, then perform the same operations as mode X.

Mode % (percent) requires only a numeric value which will then be converted to percent. A Subtotal will be printed followed by the entered value and the computed percentage. The percentage will also be displayed to allow it to be used if no printer is on. Statements 500 to 525 are used for this feature.

Modes S and T both just print the selected total only followed by their respective letter, then return to mode selection.

Mode R (recall) is used to select the current total. At run time, this is number 1,"H1". When this mode is selected the line "ENTER RECALL HEADING # " is being displayed. Entries now can only be values 1-8. After your selected entry, the selected total pointer (left arrow) on the left side of the display will now point to the current or active

total, to which all future modes will apply.

The final mode P was added to allow the printing of all the totals and headings (statements 590 to 620).

This program was written to use the RS Quick Printer in 40 character per line mode. The divide and multiply calculations are rounded off to the nearest cent by statements 480 to 490.

```
10 '  ************************************
15 ' PRINTING CACULATOR PROGRAM FOR TRS 80
20 ' BY D MORROW  ALBUQUERQUE NM  JAN 1980
25 '  (MAY BE USED WITHOUT A PRINTER )
30 '   **    VARIABLES    **
35 CLS:CLEAR(1000):GOSUB625:FOR W=1 TO 600:NEXT:CLS
40 A=0:S=0:M=0:D=0:T=0:V=0:L=V:H=1:X=H:C=0:A%=0
45 T$="":I$="":A$="":L$=STRING$(60,32)
50 GOSUB65
55 GOSUB195
60 GOTO 50
65 ' ***    MENU   FEATURES DISPLAY   **
70 GOSUB 140
75 PRINT@0,"   P R I N T I N G   C A C U L A T O R   P R O G R
A M "
80 PRINT@ 128,"";TAB(6);"** MODE ";TAB(30)"TITLES";TAB(50)"TOTAL
S **"
85 PRINTM$(1);  TAB(6);"A = ADD";TAB(25);"H1 = ";H$(1);TAB(50);T(
1)
90 PRINTM$(2);  TAB(6);"M = SUBTRACT";TAB(25);"H2 = ";H$(2);TAB(5
0);T(2)
95 PRINTM$(3);  TAB(6);"X = MULTIPLY";TAB(25);"H3 = ";H$(3);TAB(5
0);T(3)
100 PRINTM$(4);TAB(6);"D = DIVIDE";TAB(25);"H4 = ";H$(4);TAB(50)
;T(4)
105 PRINTM$(5);TAB(6);"% = PERCENT";TAB(25);"H5 = ";H$(5);TAB(50
);T(5)
110 PRINTM$(6);  TAB(6);"T = TOTAL";TAB(25);"H6 = ";H$(6);TAB(50)
;T(6)
115 PRINTM$(7);TAB(6);"S = SUBTOTAL";TAB(25);"H7 = ";H$(7);TAB(5
0);T(7)
120 PRINTM$(8);TAB(6);"H = HEADING";TAB(25);"H8 = ";H$(8);TAB(50
);T(8)
```

```
125 PRINTM$(9); TAB(6);"R = RECALL TOTAL (H1-8)"
130 PRINTM$(10);TAB(6);"P = PRINT TOTALS $ HEADINGS";
135 GOSUB165:RETURN
140 ' ** SET ACTIVE FLAG **
145 FOR A%=1 TO 10
150 IF A%=M THEN M$(A%)="**"ELSE M$(A%)=""
155 NEXT A%:RETURN
160 ' ** SET TOTAL POINTER **
165 FOR W=15614 TO 16382 STEP 64
170 IF W=(15488+(64*H)+62) THEN 175ELSE 185
175 POKE W,93:GOTO185
180 POKE W,32
185 NEXT:RETURN
190 '
195 ' ** MENU INKEY ROUTINE **
200 PRINT@832,L$;:PRINT@832,"ENTER MODE <> ";
205 I$=INKEY$:IF I$="" THEN 205ELSE 210
210 IF I$="A" THEN M=1:GOSUB65:GOSUB 310:RETURN
215 IF I$="M"THEN M=2:GOSUB65:GOSUB335:RETURN
220 IF I$="X"THEN M=3:GOSUB65:GOSUB360:RETURN
225 IF I$="D"THEN M=4:GOSUB65:GOSUB445:RETURN
230 IF I$="%"THEN M=5:GOSUB65:GOSUB495:RETURN
235 IF I$="T"THEN M=6:GOSUB65:GOSUB420:RETURN
240 IF I$="S"THEN M=7:GOSUB65:GOSUB400:RETURN
245 IF I$="H" THEN M=8:GOSUB65:GOSUB535:RETURN
250 IF I$="R"THEN M=9:GOSUB65:GOSUB565:RETURN
255 IF I$="P" THEN M=10:GOSUB65:GOSUB595:RETURN
260 RETURN
265 '
270 ' *** INPUT VALUE ROUTINE **
275 V$="":PRINT@832,L$;:PRINT@832,"ENTER VALUE >> ";:INPUT V$
280 IF V$="" THEN 300ELSE285
285 IF ASC(V$)<46 OR ASC(V$)>57 THEN 275ELSE 290
290 V=VAL(V$):L=LEN(V$)
295 PRINT@896,"LAST ENTRY ";V$;:RETURN
300 PRINT@896,L$;:RETURN
305 '
310 ' ** ADD MODE **
```

```
 315 GOSUB270:IF V$="" THEN RETURN ELSE
 320 T(H)=T(H)+V:GOSUB80:IF P=0 THEN 315ELSE 325
 325 IF P=1 LPRINT USING "#########,###.##";V:GOTO315
330 '
 335 ' ** SUBTRACT MODE **
 340 GOSUB270:IF V$=""THEN RETURN ELSE 345
 345 T(H)=T(H)-V:GOSUB80:IF P=0 THEN 340ELSE 350
 350 IFP=1 LPRINT USING"#########,###.##";V;:LPRINT" -":GOTO340
355 '
 360 ' **  MULITPLY  MODE **
 365 GOSUB270:IF V$="" THEN RETURN
370 IF P=1 GOSUB400
 375 T(H)=T(H)*V:GOSUB400:GOSUB80:IF P=0 THEN 390ELSE 380
 380 LPRINT CHR$(15);TAB(15-L);"X";V
 385 LPRINT CHR$(14):V=T(H):GOSUB675
390 PRINT@896,L$;:RETURN
395 '
 400 ' ** PRINT SUB-TOTAL **
 405 IF P=0 THEN RETURN ELSE 410
 410 LPRINT USING "#########,###.##";T(H);:LPRINT" S"
415 RETURN
 420 ' ** PRINT TOTAL   **
 425 IF P=0 THEN RETURN ELSE 430
 430 LPRINT USING "#########,###.##";T(H);:LPRINT" T"
 435 LPRINT" ":LPRINT" ":RETURN
440 '
 445 ' **  DIVIDE MODE  **
 450 GOSUB270:IF V$=""THEN 470ELSE 455
 455 GOSUB400:T(H)=T(H)/V:GOSUB480:IF P=0 THEN 470
 460 LPRINT CHR$(15);TAB(15-L);"D";V
 465 LPRINT CHR$(14):V=T(H):GOSUB675
470 PRINT@896,L$;:RETURN
475 '
 480 ' ** ROUND OFF TOTAL **
 485 IF (T(H)*100)-INT(T(H)*100))=.5 THEN T(H)=T(H)+.01
 490 T(H)=(INT(T(H)*100)/100):GOSUB80:RETURN
495 '
 500 ' **  %  PERCENT MODE **
```

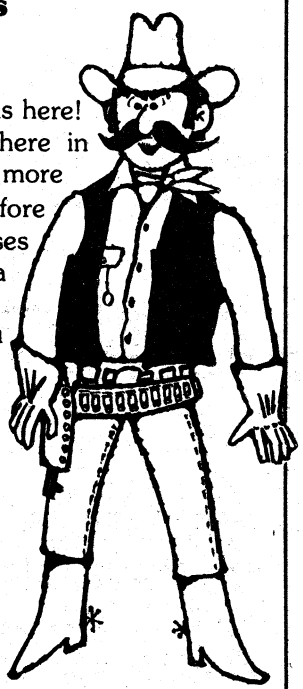
```
505 GOSUB270:IF V$="" THEN 525ELSE 510
510 V=V/100:V=V*T(H):IF P=1 THEN 515ELSE 525
515 LPRINT CHR$(15):GOSUB400:LPRINT CHR$(14)
520 LPRINTV$;" %  =";:LPRINT USING "##,###.###";V
525 PRINT@896,V$;"%  = ";V;"        ";:RETURN
530 '
535 ' ** HEADING ROUTINE **
540 PRINT@832,"ENTER HEADING  ( # , TITLE )";:INPUT H,H$(H)
545 IF H<1 OR H>8 THEN 540ELSE 550
550 IF P=0 THEN 555ELSE LPRINT TAB(5);H$(H)
555 T(H)=0:PRINT @832,L$;:RETURN
560 '
565 ' ** RECALL MODE **
570 PRINT@832,L$;:PRINT@832,"ENTER  RECALL HEADING  #";
575 INPUT H :IF H<1 OR H>8 THEN 570ELSE 580
580 PRINT@832,L$;:RETURN
585 '
590 ' ** PRINT TOTALS & HEADINGS **
595 IF P=0 THEN RETURN ELSE 600
600 FOR A%=1 TO 10
605 IF T(A%)=0 THEN 620ELSE 610
610 LPRINT USING "########,###.##";T(A%);:LPRINT " ";
615 LPRINT " ";H$(A%)
620 NEXT A%:RETURN
625 '  **      PRINTER STATUS  CHECK   **
630 P=PEEK(14312):IF P=255 PRINT"PRINTER NOT ON ":P=0:RETURN
635 IF P=191 THEN PRINT"PRINTER NOT SELECTED":P=0:RETURN
640 LPRINT CHR$(30):IF P=63 THEN P=1:RETURN
645 '
650 '  **      PRINT CATAGORY     **
655 '  ENTER WITH DATA IN T$
660 L=LEN(T$):LPRINT TAB(15-L);T$:RETURN
665 '
670 '  **     PRINT VALUE        **
675 '  ENTER WITH VALUE IN ' V '
680 LPRINT USING "#########,###.##";V
685 RETURN
690 END
```

GHOST TOWN

by Scott Adams

Scott's long-awaited 9th adventure is here! Thirteen treasures are hidden somewhere in the GHOST TOWN. You'll need more resourcefulness than ever to find them before sunset. Be ready for a town full of surprises and some REAL ghosts! Bring along a sense of humor, but be alert for danger as well. If you live so long, you MAY learn the answer to the tantalizing question:

"What goes on in the saloon after dark?"



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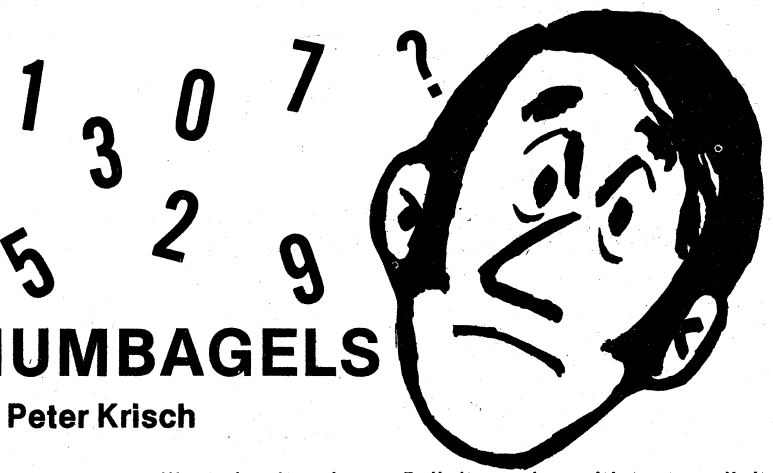

NUMBAGELS

by Peter Krisch

The computer will randomly select a 5-digit number with no two digits the same. Digits may range from 0 to 9. Try to guess the number in as few turns as you can.

At the prompt of the computer, enter each digit one at a time in the order you think the computer has chosen them. Since no two digits in a number are repeated, you must enter five different digits. The computer will also not choose 0 as its first digit.

The computer will provide clues below your current guess. If a digit is in the correct position, the computer will print C for each one. If a digit is in the wrong position, but in the number, the computer will print R for each one. If you repeat a digit during a turn, "ERROR" will be printed across your current position and you lose that turn.

If you wish to give up on a particular number, enter a 0 as your first guess that turn. The computer will keep track of your games, number of turns, and games 'Skunked' (didn't guess the number).

```
1 '        NUMBAGELS
       BY  PETER KIRSCH
          DEC.  1978
      REVISED NOV.  1979
         VERSION  2.2
5 CLS:RANDOM:PRINT@408,"NUMBAGELS"
10 PRINT@529,"DO YOU WANT RULES (Y,N)?"
15 F$=INKEY$:IFF$=""GOTO15
20 IFF$<>"N"GOTO25
23 GOTO200
25 CLS:PRINT@192,"THE COMPUTER WILL RANDOMLY SELECT A 5-DIGIT NU
MBER, NO TWO"
30 PRINT"DIGITS THE SAME.  DIGITS MAY RANGE FROM 0 - 9.  TRY TO
```

```
GUESS THENUMBER IN AS FEW TURFS AS YOU CAN."
40 PRINT:PRINT"AT THE PROMPT OF THE COMPUTER, ENTER EACH DIGIT O
NE AT A TIME"
50 PRINT"IN THE ORDER YOU THINK THE COMPUTER HAS CHOSEN THEM.  Y
OU DO NOTHAVE TO PRESS  =ENTER=.  SINCE NO TWO DIGITS IN A NUMBE
R ARE"
70 PRINT"REPEATED, YOU MUST ENTER FIVE DIFFERENT DIGITS.  THE CO
MPUTER"
80 PRINT"WILL ALSO NOT CHOOSE 0 AS ITS FIRST DIGIT."
90 PRINT:INPUT"HIT ENTER";B$
100 CLS:PRINT@192,"THE COMPUTER WILL PROVIDE CLUES BELOW YOUR CU
RRENT GUESS."
110 PRINT"IF A DIGIT IS IN THE CORRECT POSITION, THE COMPUTER WI
LL"
120 PRINT"PRINT  C  FOR EACH ONE.  IF A DIGIT IS IN THE WRONG PO
SITION,"
130 PRINT"BUT IN THE NUMBER, THE COMPUTER WILL PRINT  R  FOR EAC
H ONE."
140 PRINT:PRINT"YOU HAVE UP TO 24 TURNS TO GUESS THE COMPUTER SE
LECTED NUMBER."
150 PRINT"TURNS WILL MOVE FROM LEFT TO RIGHT ACROSS THE SCREEN I
N GROUPS"
160 PRINT"OF FOUR.":PRINT:INPUT"HIT ENTER";B$
170 CLS:PRINT@192,"IF YOU REPEAT A DIGIT DURING A TURN,  E R R O
 R  WILL BE"
180 PRINT"PRINTED ACROSS YOUR CURRENT POSITION AND YOU LOSE THAT
 TURN."
190 PRINT:PRINT"IF YOU WISH TO GIVE UP ON A PARTICULAR NUMBER, E
NTER A 0 AS YOURFIRST GUESS THAT TURN.  THE COMPUTER WILL KEEP T
RACK OF YOUR"
194 PRINT"GAMES, NUMBER OF TURNS, AND GAMES 'SKUNKED' (DIDN'T
GUESS THE"
196 PRINT"NUMBER).":PRINT:INPUT"HIT ENTER TO PLAY";B$
200 CLS:A=64:V=V+1:U=0:A$="E R R O R"
205 C$="NEXT SET.  ENTER FIRST DIGIT."
210 F=RND(9):G=RND(10)-1:H=RND(10)-1:I=RND(10)-1:J=RND(10)-1
220 IF(F=G)+(F=H)+(F=I)+(F=J)THEN210
230 IF(G=H)+(G=I)+(G=J)THEN210
240 IF(H=I)+(H=J)+(I=J)THEN210
```

```
245 PRINT"G A M E   ";V:PRINT"? ? ? ? ?";:PRINT@960,"START GAME.
  ENTER FIRST DIGIT.";
246 Y$=INKEY$:IFY$=""THEN246ELSECLS:X=0:Y=0:GOTO305
300 X=0:Y=0
303 Y$=INKEY$:IFY$=""GOTO303
305 K=VAL(Y$):IFK=0GOTO7000
310 U=U+1:PRINT@A,K;:PRINT@961,"ENTER SECOND DIGIT";CHR$(31);
320 Y$=INKEY$:IFY$=""GOTO320
322 L=VAL(Y$):GOSUB8000:PRINT@A,L;:IFL=KTHEN1000ELSEPRINT@961,"E
NTER THIRD DIGIT";CHR$(31);
330 Y$=INKEY$:IFY$=""GOTO330
333 M=VAL(Y$):GOSUB8000:PRINT@A,M;
335 IF(M=L)+(M=K)THEN2000ELSEPRINT@961,"ENTER FOURTH DIGIT";CHR$
(31);
340 Y$=INKEY$:IFY$=""GOTO340
343 N=VAL(Y$):GOSUB8000:PRINT@A,N;
345 IF(N=M)+(N=L)+(N=K)THEN3000ELSEPRINT@961,"ENTER LAST DIGIT";
CHR$(31);
350 Y$=INKEY$:IFY$=""GOTO350
353 O=VAL(Y$):GOSUB8000:PRINT@A,O;
355 IF(O=N)+(O=M)+(O=L)+(O=K)THEN4000ELSEPRINT@961,C$;
360 IFK=FTHENX=X+1
370 IF(K=G)+(K=H)+(K=I)+(K=J)Y=Y+1
380 IFL=GTHENX=X+1
390 IF(L=F)+(L=H)+(L=I)+(L=J)Y=Y+1
400 IFM=HTHENX=X+1
410 IF(M=F)+(M=G)+(M=I)+(M=J)Y=Y+1
420 IFN=ITHENX=X+1
430 IF(N=F)+(N=G)+(N=H)+(N=J)Y=Y+1
440 IFO=JTHENX=X+1
450 IF(O=F)+(O=G)+(O=H)+(O=I)Y=Y+1
460 IF(X=0)*(Y=0)GOTO9000
470 IFX=5GOTO6000
475 B=0
480 IFX=0GOTO520
490 FORT=1TOX
500 PRINT@A+60+B,"C":B=B+1
510 NEXTT
515 IFY=0GOTO550
```

```
520 FORT=1TOY
530 PRINT@A+60+B,"R":B=B+1
540 NEXTT
550 A=A+6
560 IFU=20A=192
570 IFU=40A=320
580 IFU=60A=448
590 IFU=80A=576
600 IFU=100A=704
650 IFU=120GOTO750
700 GOTO300
750 PRINT@960,CHR$(31);:FORZ=1TO500:NEXTZ
800 PRINT@897,"GAME OVER! ";
805 PRINT"THE CODE WAS: ";F;",";G;",";H;",";I;",";J
810 W=W+24:D=D+1
820 PRINT@960,"ENTER S FOR SCORE; ENTER R FOR RULES; ";
830 PRINT"ENTER P TO PLAY AGAIN";
833 I$=INKEY$:IFI$=""GOTO833
840 IFI$="S"THEN5000ELSEIFI$="R"THEN25ELSEIFI$="P"THEN200ELSE833
1000 PRINT@A-1,A$;:PRINT@961,C$;:A=A+12:U=U+3:PRINT@0,"";:GOTO56
0
2000 PRINT@A-3,A$;:PRINT@961,C$;:A=A+10:U=U+2:PRINT@0,"";:GOTO56
0
3000 PRINT@A-5,A$;:PRINT@961,C$;:A=A+8:U=U+1:PRINT@0,"";:GOTO560
4000 PRINT@A-7,A$;:PRINT@961,C$;:A=A+6:PRINT@0,"";:GOTO560
5000 CLS:PRINT@26,"YOUR SCORE"
5050 PRINT@164,"AVERAGE TURNS":PRINT@184,"GAMES"
5100 PRINT@193,"GAMES PLAYED":PRINT@212,"TOTAL TURNS"
5250 PRINT@230,"PER GAME"
5400 PRINT@247,"SKUNKED"
5425 PRINT@261,V
5426 PRINT@279,W
5427 P=W/V:PRINT@296,P
5450 PRINT@313,D
5500 PRINT@469,"";:GOTO830
6000 PRINT@A+57,"R I G H T":W=W+U/5:GOTO820
7000 PRINT@897,"YOU GAVE UP! ";:GOTO 805
8000 U=U+1:A=A+2:RETURN
9000 PRINT@A+57,"W R O N G":A=A+6:GOTO560
```

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I. In a recent Adventure-type game, I didn't want the user to LIST the program, so I found a way to disable LIST:

```
POKE 16863,195
POKE 16864,114
POKE 16865,0
```

Originally, these locations contained a Z-80 RETurn instruction; the POKEs change them to a jump back to the " > READY" prompt. LIST can be restored by POKE 16836,201 (the other 2 bytes don't matter).

II. In a shooting gallery or air raid-type game, a string of characters can be made to travel across the screen in very few lines.

```
Step 1) Set up string S$, 64 characters long
Step 2) Print @ 0,S$;
Step 3) S$=RIGHT$(S$,63)+LEFT$(S$,1) : GOTO Step 2
```

Jeff Myers
Hillsboro, Ohio

If you wish to lock out the keyboard, try these POKEs:

```
10 POKE 16405,2 ' LOCK KEYBOARD
20 FOR A=1 TO 5000 : NEXT
30 POKE 16401,1 ' UNLOCK KEYBOARD
```

In Level II, all keys will be deactivated by Line 10. Under Disk BASIC, only the [BREAK] key will still function.

(To lock out the [BREAK] key in either language, POKE 16396,60: POKE16397,201.)

If your program creates a display which you do not wish disturbed, POKE 16405,2 should be the last line of your program

Deron Gilmore
Carmel, CA

If you own a 16K TRS-80 and have ever NEWed a program by accident, or if you ever fear of doing so, then this is for you. If the program you mistakenly NEWed is on a cassette, and the first few lines are unchanged in memory, then simply load the cassette and when you see the first "snowflake" blink, hit the reset button and the program should be revived.

This approach is much easier than previous methods, because you don't have to remember ugly POKE addresses or system codes. This method works because a NEW statement only resets the program pointers. When the computer receives an inputed data i.e., from the cassette player, it checks it and compares it to data in memory. If the data is identical, it automatically sets the pointers to their original positions and won't change them unless the incoming data varies from memory. So, after the first couple blinks, the program is restored.

May you never have an unhappy NEW again! Erik Skyten , NH

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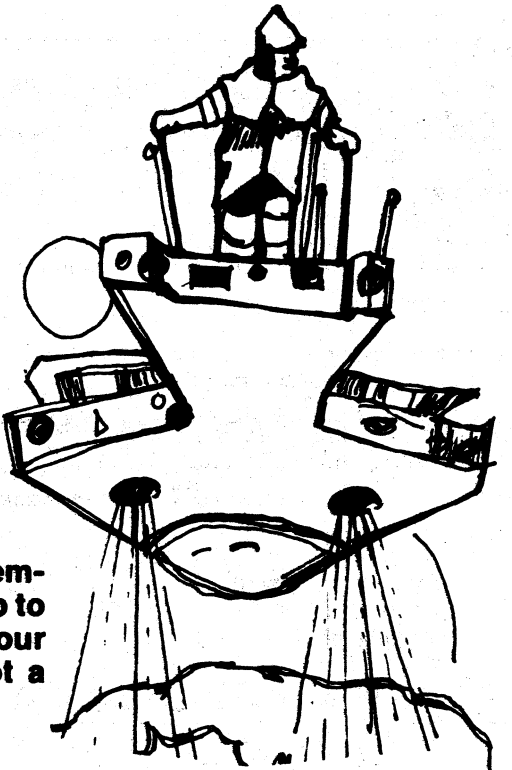

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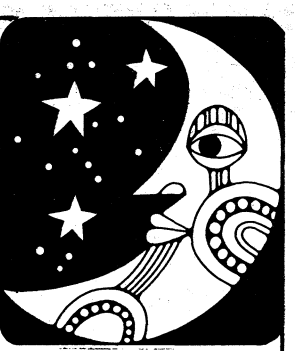

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by George Blank

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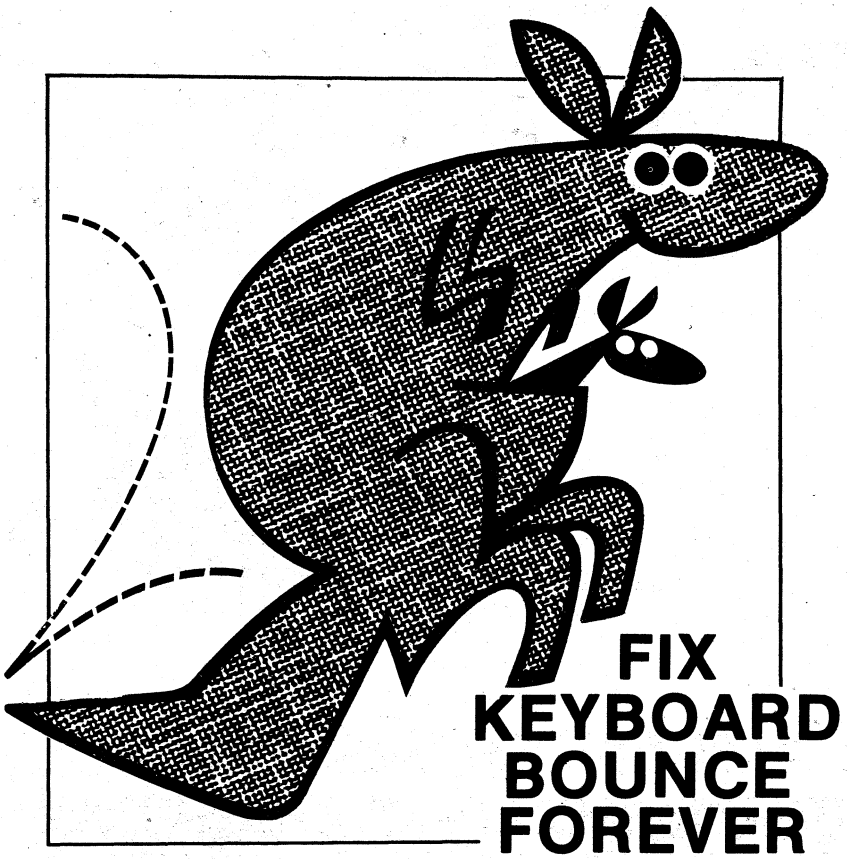

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A long time ago I had a problem with keyboard bounce, but it's been so long ago I almost forgot what it was like. About a year and a half ago when I first bought my TRS-80, I started to have problems with some of the keys. First it was just one key then another, then another, before my computer was two weeks old, there were half a dozen keys that would put two sometimes three characters on the screen with one keystroke. Enough is enough I thought, so I took about five minutes and fixed my keyboard. I have not had another keybounce since.

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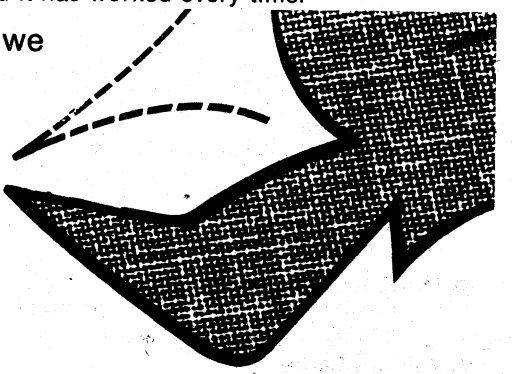
Run out to the garage and find that spray can of "WD-40". That's

right that stuff you use on rusty nuts and bolts. (Be sure it is "WD-40". I have not tried any of the other products.) I know what you are thinking but trust me.

Use a small hook type tool and remove the key tops by pulling straight up on the key. Now take the can of "WD-40" insert the little red tube that comes with every can. Now spray a very small amount directly on the contacts of each key. Remember you don't need much, about one drop per key. That's all there is to it. Your keybounce is now cured. This fix has been tested on several TRS 80 keyboards and it has worked every time.

by Al & Gary Lowe



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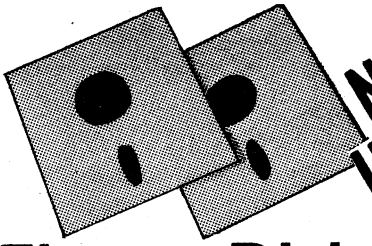

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by Dave Stambaugh

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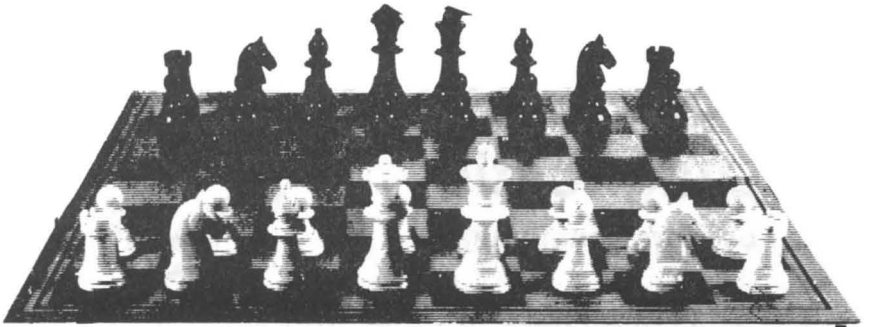
Chess Lovers!



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REFERENCE GUIDE TO LEVEL II BASIC

$19.95 plus $1 shipping

SUPERMAP from Fuller Software previously sold at $18.95

TRS-80 Disassembled Handbook

by Robert Richardson previously sold at $10.00

Hex Mem monitor written in BASIC by John Phillip

Z-80 Disassembler by George Blank

Description of the contents of the Level II BASIC ROM by memory location, by function, and in lesson format. Includes several BASIC and Assembly Language programs in listing format to examine and use ROM routines.

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SUPER SIMPLE SOUND INTERFACE FOR TRS-80*

by Edward Ting

You've had your TRS-80 for some time now, and you're beginning to build up a decent software collection. You've heard about one of the new programs which feature sound to add lively effects to your game. But you're told a small amplifier is needed and you don't have one. You look in the Radio Shack catalog and — HORRORS! Their pocket amplifier will cost you $10.95, more than most people would pay for such a device. So the amplifier idea is rejected, and most people never get to hear those wonderful sounds that come in so many of today's programs.

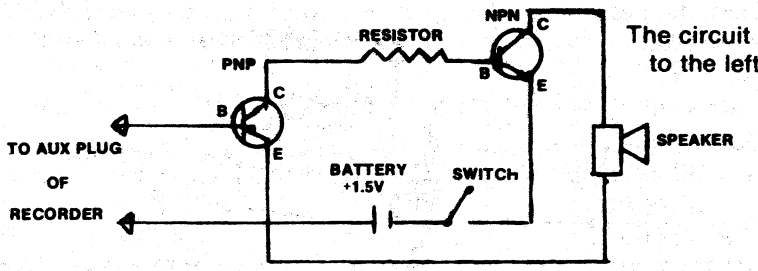
But now, a solution to this dilemma is solved as you can easily build your own. A very simple electronic circuit can be put together for an absolute maximum of about $5. Most of us can build the amp for under half that, and electronic hobbyists of all types will be able to build it for nothing.

The circuit is of very basic design and contains only three electronic components plus a speaker and switch. A small speaker, ripped-off from a portable radio, will do nicely. The other parts are as follows:

1. A general purpose PNP type transistor. Almost any PNP will do. If you have to run to the Shack, get Cat. No. 276-2004.

2. A general purpose NPN type transistor. This is the very popular 2N-2222 which often goes 20 for $1.00. Again, if you're starting from scratch, Cat. No. 276-2009 from Radio Shack will do superbly.

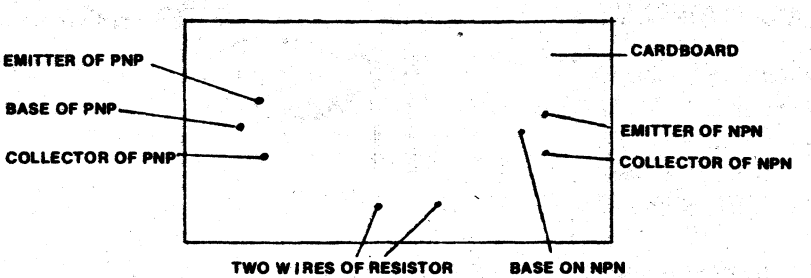
3. A resistor, which can range from 2.7K to about 5.6K.



The circuit is to the left.

Construction

If you know how, go ahead and build the circuit. If not, here's how. You do not need perforated board as it would be a waste. Take a small square of cardboard from a cereal box, tissue box, etc. Punch holes in the configuration shown:



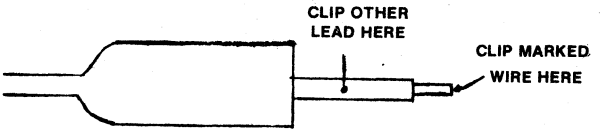
The package of the transistor should tell you which lead is which. Push in the parts where shown, bending wires as necessary. Solder the collector of the PNP to the closer lead of the resistor. Solder the other wire of the resistor to the base of the NPN. Solder a length of wire to each terminal of the speaker. The other end of one of the wires goes to the collector of the NPN. The remaining speaker wire goes to the emitter of the PNP.

Solder a "C" or a "D" cell into the circuit. You can use a battery holder if you wish. Solder a length of wire from the + end of the battery and the emitter of the PNP. Solder another length of wire from the - end of the battery and the emitter of the NPN, but break the connection and put in a small switch.

Next, solder two long lengths of wire, one to the base of the PNP and the other to the emitter of the PNP. Mark the second wire with some tape so you'll be able to recognize it later. Solder two small alligator clips to the free ends of the wires just connected into the circuit. The amplifier is now complete. You might want to put it in a small enclosure, but you don't have to go out and get an expensive, feature-loaded cabinet. Something as simple as an empty cardboard tissue box cut in half will suffice. Remember, the amplifier could care less whether the enclosure has metal screws or Captain Crunch on the cover.

Testing

CLOAD your sound program. When the computer is READY, take the large grey plug that connects to the AUX. jack of your recorder. Clip the wire (the one you marked with tape) to the TIP terminal of the plug. Clip the remaining lead to the other terminal..



Flip the switch on and listen in on the fun!

byte off all you can chew!

Z-80 and 8080 Assembly Language Programming

by Kathe Spracklen

Finally! A good tutorial book on assembly language programming by a master of the art! Kathe Spracklen, co-author of Sargon, tells you how with simple straightforward instruction. **$7.95**+ $1 shipping

Microsoft Editor/Assembler Plus

Plus what? Well, you get the features of the T-Bug and the original editor/assembler plus macros and conditional assembly, plus extra commands like substitute, move, copy, and extend, plus Z-Bug, a powerful debugging monitor with 8 level breakpoint capability. A bargain at **$29.95**

Super Simon

By George Blank

Complete Z-80 Disassembler with ability to generate symbol tables, dump in Hex, ASCII, or even decimal with poke addresses. Writes machine language tapes. Written in BASIC so it loads easy and is easy to modify. **$9.95**

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MICRO MILLIONAIRE

by George Blank

If you will look through the various microcomputer magazines and computer stores, you will find more than 100 different software companies represented. Some of these "companies" are really nothing more than the part-time effort of a single programmer. Such small efforts can survive on the strengths of one or two programs and a few dollars for advertising.

Yet, while it takes little to survive as a software publisher, it takes a great deal to flourish. The market for good programs is very competitive. Best selling authors look for the firms that advertise their programs well, treat them fairly, and pay good royalties. Computer stores are starting to demand exceptional packaging. Software piracy cuts into sales and expensive countermeasures, including good documentation, are required. You always risk a better product coming out at a lower price. Production problems can lead to slow delivery, lost sales, and turned-off customers. Advertising is expensive; TSE currently spends $20,000 a month on advertising for our products.

Can you make it as a software publisher? This simulation is based on the experience of The Software Exchange. The factors are realistically balanced, though for the sake of simplification, the factors have been reduced. For example, in most cases you can look to more sales from a given amount of advertising than this program will allow, but I have omitted some other selling costs such as the preparation of the ads and salesmen's salaries to compensate. In addition, all sales are considered retail, when most companies offer significant discounts to dealers and distributors.

You start the game with a random amount of money to begin your company. From this amount is immediately deducted the cost of a small computer. Then you move into the monthly cycle of the game.

At another point later on in each turn, you will be given an opportunity to debug any of your programs, so if you want to wait and hire a programmer to do it on the next turn, you can do so. However, if you choose this route, do not order any tapes or disks until the debugging, or you will have to salvage them.

The next phase of the program is the inventory routine. The screen will display for each program the current monthly sales and the number of cassettes or diskettes and manuals in stock. If the number is negative, you are backordered and must order enough to satisfy your backorders before continuing. When you order, quantity discounts are calculated automatically. You must verify any order before it is posted, so you may get several quotes for different quantities before accepting one of them. If you wish to conserve cash, it is not necessary to order a product until it has been advertised for one month. After that, sales are affected by whether

or not the item is in stock, though some sales will continue.

The next step is an outlook forecast from the sales manager, who will interpret sales and report your returns. If returns exceed 3% on any program, which is normal for minor tape loading problems, etc., you will be given the opportunity of debugging the program further, simply replacing the tapes, or cancelling the product and refunding the customer's money.

If you are spending money you don't have, you must "pay the piper" at this time. If you are small, you must borrow from a loan shark. Once you get big, the bank is willing to offer credit. The loan shark charges 25% a month, the bank a mere 2% a month.

This report will also describe any significant competitive products introduced by other publishers. In some cases, they will drastically affect your sales, in much the same way that Scripsit clobbered Electric Pencil. In other cases, the effect will be minor.

You will now have an opportunity to eliminate items from your line, change prices, and debug current programs as you desire.

Each turn begins with an opportunity to determine your working hours. Up to 20 hours a week can be thought of as a part-time job while you are earning your living elsewhere. Over that amount of time, you are charged $5 an hour toward your living expenses.

After determining your own time, you are given the opportunity to hire employees and install a WATS line. You need skilled technical employees to analyze and debug programs and answer technical questions. Unskilled employees can take orders and fulfill them. You pay more for the skilled employees. It is not a good idea to hire people before you have work for them to do. Unfortunately, not having enough people means cancelled orders, lost sales, and no time to fix problems in programs. Additional WATS lines increase sales, but on a percentage basis, so you need a good strong base to justify the cost of a WATS line.

The next phase of the game is the program submission phase. You must decide how much time you will spend screening each program submitted. The more time you spend, the more accurate your report on the program will be. You have a chance to reject each program immediately or evaluate it further. Subsequent evaluation is similar to screening, except that you are also given an approximate market value for each product. At this time you must decide whether or not to publish the program, and if so, at what price.

If you decide to publish a program, you are given the option of debugging it. You must have at least 2 hours of programmer time available to even start debugging, and it usually takes at least 8 hours just to determine that a good program has no bugs. Correcting bugs can take a lot longer. In the debugging routine, a miniature computer is displayed on your screen, running a test program. The test program alternates between displaying OK and --- -.- (Morse code for OK). If there is a bug in your program, it will show up as an asterisk, with a Y appearing to the left of the small computer to indicate that a known bug exists. If you are lucky, a little bug will appear on the screen and dance around long enough for you

to actually 'ZAP' or correct the bug. The process is very much like the real effort. You have to use the program long enough to find the bugs, hunt down each bug, then test to make sure you have gotten them all. You can leave the debugging routine at any time by pressing the up arrow, if you are confident that there are no further bugs, or if you want to examine another program.

The next phase is placing your advertising. If you have a large mailing list of customers, you may print and mail out a catalog, the most effective form of advertising. Otherwise, you must advertise in the magazines. The personality of the magazines reflects our experience with them at The Software Exchange. There is a random factor involved that gives each magazine a slightly different personality each time you play, but in general you will find that:

Byte has sophisticated readers with high incomes and is a good place to advertise expensive, quality products.

Creative has a lot of readers interested in applications and is a good place to advertise medium price, quality products.

The S-8ighty is a free magazine, and appeals to bargain hunters. Low-price packages sell well. Advertising rates are low, so you get a lot for your money.

Kilobaud has unsophisticated readers and offers credit to advertisers like Data Sync and Word Power Systems, making it the best place in the industry to offer worthless products.

Your mailing list grows each time you advertise in Creative or Byte, so you will benefit by building up your list for catalogues. There is a point of diminishing returns beyond which more advertising for a product does not bring in as many sales, so you should experiment with your advertising mix. It might be helpful for you to know that in the real world, a page of advertising runs from $450 in the S-8ighty to over $2000 in Byte.

After your advertising is placed, you get your sales report for the month, by product. Remember that it takes a couple of months from the time you place (and pay for) an ad to the time when sales come in. Sharp players will note the relationship of sales to advertisements in different magazines. Other factors that affect sales are the quality and price of the program, competitive products, bugs in the program and your overall quality reputation (based on the total number of bugs in all your programs), the time of year (sales are best in January and February, worst in July and August), and random factors.

The final phase in each month is your income statement and balance sheet. This tells you where your money went and how much you have.

Once a year, in January, your taxes are calculated. If you cannot pay your taxes, you go bankrupt and lose. If you are worth one million dollars after taxes, you win, and get to retire.

If you go bankrupt too often, or if you don't have the money or the time it takes to be established in the software industry, then my recommendation is that you consider letting someone else publish your software. Different products do better with different publishers, but my experience is telling me again and again that you do best with either Ramworks or Personal Software for TRS-80 products.

```
10 REM * MICRO MILLIONAIRE COPYRIGHT (C) 1980 GEORGE BLANK *
20 RANDOM:CLEAR750:DEFSTRA,G:DEFDBLC:DIM A(25):DIM S(24,3):DIM P
(26,17):MY=1980:J0=20+RND(20):J1=5+RND(20):J2=25+RND(10):J3=8+RN
D(10):J4=(10+RND(25))/100:J5=RND(25)/100:J6=RND(25)/100:J7=RND(2
5)/100
30 M=1:G=STRING$(50,140):G1="$#,###,###.## ":G2="####.## HOURS":
G3=CHR$(149)+"        "+CHR$(170):G4=STRING$(10,188):G5=" "+CHR$
(168)+CHR$(175)+CHR$(173)+" ":G6=" --- -.-    OK  ":GM="JANFEBMA
RAPRMAYJUNJULAUGSEPOCTNOVDEC"
40 CLS:PRINT"MICRO MILLIONAIRE":PRINT
50 INPUT"WHAT IS THE NAME OF YOUR SOFTWARE HOUSE";N$
60 C=(RND(10)+5)*1000:PRINT"YOU HAVE RAISED $";C;" TO GO INTO BU
SINESS"
70 PRINT"YOU HAVE JUST PURCHASED A COMPUTER SYSTEM FOR $2000":CT
=C:C=C-2000:CE=2000:CC=2000
80 PRINT"YOU HAVE $";C;" LEFT.":PRINT
90 GOSUB120:GOTO140

100 FORZZ=1TO150:NEXT:RETURN

110 AB=MID$(GM,(M-1)*3+1,3)+STR$(MY):PRINTAB:RETURN

120 PRINT"<<PRESS ENTER>>";
130 AA=INKEY$:IFAA=""THEN130ELSEPRINTAA:RETURN

140 GOSUB340: ' SCHEDULE & HIRING
150 GOSUB470: ' SUBMISSIONS
160 GOSUB960: ' INVENTORY
170 GOSUB1620: ' OUTLOOK
180 GOSUB1150: ' ADVERTISING
190 GOSUB1310: ' SALES REPORT
210 IF M=1ANDMY>1980THENGOSUB250: ' TAXES
220 GOSUB750: ' FINANCIAL REPORT
230 M=M+1:IFM>12THENM=1:MY=MY+1
240 GOTO140: ' LOOP BACK FOR NEXT YEAR
```

```
250 CLS:PRINT" ","- TAX TIME -"
260 PRINT"YOUR FAVORITE UNCLE REQUESTS THE PLEASURE OF YOUR MONE
Y TO PAY":PRINT"IDLE BUREAUCRATS, HARASS BUSINESSMEN, AND WAGE W
AR.":PRINT
270 PRINT"TAX DUE:  ";:CZ=(CE-CN)+C+CV-CT:CT=CZ:CC=CC/10:CZ=CZ/2
:IFCZ<0THENCZ=0
280 PRINTUSINGG1;CZ:IFCC>CZTHENCC=CZ
290 PRINT"LESS INVESTMENT TAX CREDIT:  ";USINGG1;CC
300 PRINT"NET TAX"TAB(32)USINGG1;CZ-CC:C=C-CZ+CC
310 IF(C+CV/3)<0THENPRINT"UH - OH! YOU JUST WENT BANKRUPT!":END
320 IFC>1000000THENPRINT"CONGRATULATIONS! YOU ARE A MILLIONAIRE"
:PRINT"WHY DON'T YOU SELL THE BUSINESS, BUY A YACHT, AND RETIRE!
":END
330 GOSUB120:CC=0:RETURN

340 CLS:PRINTN$,"- WORK SCHEDULE - ";:GOSUB110:PRINT
350 H=60:IFP<1ANDE<1THENINPUT"HOW MANY HOURS WILL YOU WORK PER W
EEK";H:IFH>60THENH=60
360 CD=0:IFH>20THENCD=(H-20)*25:C=C-CD
370 PRINT:PRINT"SKILL LEVEL        PRESENT STAFF        HOURLY C
OST"
380 PRINT"ORDER FULFILLMENT  ";E TAB(44)"$ 5.00"
390 PRINT"TECHNICAL STAFF    ";P TAB(44)"$ 9.00":PRINT"WIDE AREA
 TELEPHONE SERVICE (WATS) $1000 PER MONTH PER LINE"
400 E1=0:INPUT"HOW MANY ORDER TAKERS DO YOU WISH TO HIRE";E1:P1=
0:INPUT"HOW MANY PROGRAMMERS";P1:W1=0:INPUT"HOW MANY WATS LINES
WOULD YOU LIKE TO ADD";W1:W=W+W1
410 HA=E*2+P*2:IFHA>H/3THENHA=H/3
420 H=H*2:PRINT"YOU WILL SPEND ";H+HA;" HOURS ON ADMINISTRATION
AND ";E1*1+P1*3:PRINT"HOURS INVERVIEWING THIS MONTH.  ";:H=H-(E1*
1+P1*3+HA):IFH<1THENH=1
430 PRINT"YOU HAVE";H;"HOURS LEFT."
440 E=E+E1:H=H+P1*60+P*150:CP=E*160*3+P1*75*7+P*160*7:P=P+P1
450 C3=E1*1000+P1*3000:IFC3>0THENPRINT"YOU HAVE ORDERED $";C3;"
WORTH OF EQUIPMENT FOR NEW STAFF":CE=CE+C3:CC=C+C3
460 PRINT:GOSUB120:RETURN

470 CLS:PRINTN$,"- SUBMISSIONS -  ";:GOSUB110:PRINT
480 S=RND(3):FORX=1TOS:S(X,0)=RND(100):S(X,1)=RND(10)+RND(10)+RN
```

```
D(10):IFRND(7)=1THENS(X,1)=S(X,1)*2+RND(1)
490 NEXTX
500 Y=30:INPUT"HOW MANY MINUTES WILL YOU SCREEN EACH PROGRAM (5-
30)";Y:IFY<5THENRETURNELSEH=H-S*Y/60:IFY>30THENY=30
510 PRINT@64,"PROGRAM        INITIAL RATING";CHR$(31):PRINTTAB(8
)0TAB(18)20TAB(28)40TAB(38)60TAB(48)80TAB(58)100
520 Z=50-Y:XX=0:FORX=1TO5
530 SS=S(X,0)+RND(Z)-RND(Z):IFSS<1THENSS=1ELSEIFSS>100THENSS=100
540 S(X,3)=SS:SS=SS/2:PRINT@192,XTAB(8)LEFT$(G,SS);CHR$(31)
550 PRINT:PRINT"DO YOU WISH TO EVALUATE THIS PROGRAM FURTHER (Y/
N)";:GOSUB130:IFAA="N"THENS(X,0)=0ELSEXX=1
560 NEXT:IFXX=0THENRETURN
570 Y=120:INPUT"HOW MANY MINUTES WILL YOU EVALUATE EACH PROGRAM
(0-120)";Y:IFY<0ROY>120THEN570ELSEZ=48-Y/3
580 PRINT@78,"FINAL RATING      ";
590 FORX=1TO5:IFS(X,0)=0ORH<1THEN740
600 SS=S(X,0)+RND(Z)-RND(Z):IFSS<1THENSS=1ELSEIFSS>100THENSS=100
610 H=H-Y/60:IFS(X,0)<60ANDSS>80THENSS=SS-RND(20)
620 IFS(X,0)<60THENS(X,1)=1
630 SL=S(X,1):IFSL>5THENSL=SL+RND(SL/2)-RND(SL/2)
640 S(X,3)=SL:PRINT@192,XTAB(8)LEFT$(G,SS);CHR$(31)
650 PRINTTAB(12)"ESTIMATED RETAIL VALUE $";SL
660 PRINT"DO YOU WANT TO PUBLISH THIS PROGRAM (Y/N)";:GOSUB130:I
FAA="N"THENS(X,0)=0:GOTO740
670 Z=0:IFN<25THEN690ELSEFORY=1TO25:AY=A(Y):IFLEN(AY)>10THENAY=L
EFT$(AY,10)
680 PRINTY;AY,:NEXT:INPUT"WHICH CURRENT PROGRAM DO YOU WISH TO R
EPLACE (OR 0)";Z:IFZ=0THEN740
690 IFZ=0THENZ=N+1:N=N+1
700 INPUT"WHAT WILL YOU CALL THIS PROGRAM";A(Z):INPUT"WHAT PRICE
 WILL YOU CHARGE";P(Z,4):INPUT"HOW MANY PAGES OF DOCUMENTATION";
P(Z,6):H=H-P(Z,6)/2:P(Z,14)=0:IFRND(2)=1THENP(Z,14)=RND(7)
710 IFLEN(A(X))>14THENA(X)=LEFT$(A(X),14)
720 PRINT"DO YOU WISH TO DEBUG ?";:GOSUB130:IF AA="Y"GOSUB850
730 P(Z,0)=100:P(Z,1)=0:P(Z,2)=S(X,0):P(Z,3)=S(X,1):P(Z,5)=0:P(Z
,7)=0:P(Z,8)=0:P(Z,9)=0:P(Z,10)=0:P(Z,11)=0:P(Z,12)=S(X,2):P(Z,1
3)=S(X,3):P(Z,15)=0
740 NEXTX:RETURN
```

```
750 CLS:PRINTN$,"- MONTHLY STATEMENT -";:GOSUB110:GOSUB1270
760 PRINT"DRAW",USINGG1;CD,:PRINT"  SALES",USINGG1;CS
770 PRINT"PAYROLL",USINGG1;CP,:PRINT"  SALVAGE",USINGG1;CL
780 PRINT"STOCK",USINGG1;CI:PRINT"ADVERTISING",USINGG1;CR
790 PRINT"POSTAGE",USINGG1;CM:PRINT"EQUIPMENT",USINGG1;C3:PRINT"
RENT/UTIL",USINGG1;CR:PRINT"ROYALTIES",USINGG1;CY
800 PRINT" ","- BALANCE SHEET -":PRINT"ASSETS",,"LIABILIITES"
810 CN=CN+CE/100:IFCN>CE*.9THENCN=CE*.9:REM * DEPRECIATION *
820 PRINT"CASH",USINGG1;C,:PRINT"  EQUITY",USINGG1;C+CV+CE-CN
830 PRINT"INVENTORY",USINGG1;CV:PRINT"EQUIPMENT      "USINGG1;CE:
PRINT" LESS DEPREC -";USINGG1;CN:PRINT" EQUIPMENT",USINGG1;CE-CN
,:PRINT"  ";:GOSUB120
840 RETURN
850 PRINT@512,CHR$(31);"DEBUGGING","TIME AVAILABLE:":PRINTA(Z);
860 PRINT@912,"PRESS ^ WHEN FINISHED DEBUGGING":GD=LEFT$(G6,8):Z
D=9
870 PRINT@600,CHR$(156);LEFT$(G,8);CHR$(172):PRINTTAB(24)G3:PRIN
TTAB(24)CHR$(141);LEFT$(G,8);CHR$(142):PRINT"KNOWN FLAWS";TAB(24
)G4;TAB(47)"BUGS ELIMINATED";:POKE16120,48:POKE16070,78
880 PRINT@560,USINGG2;H;:PRINT@665,GD;
890 IF P(Z,14)<1THEN930ELSEZX=RND(12-P(Z,14)):IFZX>1THEN930ELSEZ
X=RND(3):IFZX=1THEN900ELSE920
900 PRINT@665,G5;:GOSUB100:PRINT@666,G5;:GOSUB100:PRINT@667,G5;:
GOSUB100:PRINT@666,G5;:GOSUB100:PRINT@667,G5;:GOSUB100:PRINT@668
,G5;:GOSUB100:PRINT@667,G5;:GOSUB100:PRINT@666," Z A P ";:POKE16
120,PEEK(16120)+1:GOSUB100:GOSUB100
910 POKE16070,78:P(Z,14)=P(Z,14)-1:GOTO880
920 POKE16070,89:H=H-1/5:GD=RIGHT$(GD,7)+"*":GOSUB100:ZD=ZD+1:IF
ZD>15THENZD=1:GOTO880ELSE880
930 H=H-1/5:GD=RIGHT$(GD,7)+MID$(G6,ZD,1):GOSUB100:ZD=ZD+1:IFZD>
15THENZD=1
940 IFH<1THENRETURN
950 IFINKEY$="^"THENRETURNELSE880
960 CI=0:CLS:PRINTN$,"- INVENTORY -";:GOSUB110
970 IFN<1THEN1140
980 PRINT@128,"PROGRAM    ON HAND   DOCUMENTATION/ON HAND  RETAI
L  MON. SALES"
990 FORX=1TON
1000 IFP(X,6)=0THENP(X,7)=0
```

```
1010 PRINT@256,CHR$(31);A(X)TAB(15)P(X,1)TAB(25)P(X,6);"PAGES"TA
B(35)P(X,7)TAB(45)"$";P(X,4)TAB(55)P(X,5)
1020 PRINT@448,CHR$(31);"CURRENT PURCHASES ";USINGG1;CI:PRINT"<T
YPE: C -CONTINUE  D-DOCUMENTATION  M=DISK OR TAPE MEDIA>"
1030 GOSUB130:IFAA="C"THEN1110ELSEIFAA="D"THEN1040ELSEIFAA="M"TH
EN1080ELSE1030
1040 INPUT"HOW MANY COPIES OF THE MANUAL";D:D1=D*P(X,6):DC=D1*.0
5:IFD1>1000THENDC=D1*.03:IFD1>5000THENDC=D1*.015
1050 IFP(X,4)>20THENDC=DC*2
1060 IFP(X,4)>50THENDC=DC+D
1070 PRINTD;" COPIES WILL COST $";DC:PRINT"IS THIS OK (Y/N)";:GO
SUB130:IFAA="Y"THENCI=CI+DC:P(X,7)=P(X,7)+D:D=0:DC=0:D1=0:GOTO10
00ELSED=0:DC=0:D1=0:GOTO1020
1080 INPUT"HOW MANY CASSETTES OR DISKETTES";D:DC=50:IFD>33THENDC
=D*1.5:IFD>100THENDC=D*1:IFD>250THENDC=D*.7:IFD>1000THENDC=DC*.5
1090 IFP(X,4)>25THENDC=DC*3
1100 PRINTD;"DUPLICATION WILL COST $";DC:PRINT"IS THIS OK (Y/N)"
;:GOSUB130:IFAA="Y"THENCI=CI+DC:P(X,1)=P(X,1)+D:D=0:DC=0:GOTO101
0ELSED=0:DC=0:GOTO1020
1110 IFP(X,1)<0THENPRINT"YOU MUST PURCHASE MEDIA":GOTO1080
1120 IFP(X,7)<0THENPRINT"YOU MUST PURCHASE DOCUMENTATION":GOTO10
40
1130 NEXT
1140 C=C-CI:RETURN
1150 U1=0:C1=0:CA=0:CLS:PRINTN$,"- ADVERTISING -";:GOSUB110
1160 IFN<1THEN1260ELSEAN=STR$(MY):M1=M*3+1:IFM>10THENM1=(M-11)*3
+1:AN=STR$(MY+1)
1165 GOSUB 1900
1170 AN=MID$(GM,M1,3)+AN:PRINT@128,"PROGRAM       ON HAND   LIST
     MONTH -SALES- TOTAL"
1180 FORX=1TON
1190 PRINT@256,CHR$(31);A(X)TAB(15)P(X,1)TAB(25)"$";P(X,4)TAB(40
)P(X,5)TAB(50)P(X,15)
1200 C1=P(X,8)+P(X,9)+P(X,10)+P(X,11):PRINT@448,CHR$(31);"CURREN
T ADVERTISING ";USINGG1;CA+C1:PRINT"<TYPE  B-BYTE   C-CREATIVE
  8-8IGHTY    K-KILOBAUD  N -NEXT>"
1210 PRINTUSINGG1;P(X,8),P(X,9),P(X,10),P(X,11)
1220 GOSUB130:IFAA="N"THENCA=CA+C1:GOTO1250ELSEIFAA="B"THENAN="B
YTE":D=8:GOTO1230ELSEIFAA="C"THENAN="CREATIVE COMPUTING":D=9:GOT
```

```
01230ELSEIFAA="8"THENAM="THE S-8IGHTY":D=10:GOTO1230ELSEIFAA="K"
THENAM="KILOBAUD MICROCOMPUTING":D=11:GOTO1230ELSE1220
1230 PRINT"HOW MUCH DO YOU WISH TO SPEND ADVERTISING THE PROGRAM
":PRINTA(X);" IN THE ";AN;" ";AM;" $";:INPUTD1
1240 PRINT:PRINT"$";D1;"IN ";AM;". IS THIS CORRECT (Y/N)?";:GOSU
B130:IFAA="Y"THENP(X,D)=D1:GOTO1190ELSED1=0:GOTO1200
1250 U=U+P(X,8)/3+P(X,9)/3:NEXT:U=FIX(U)
1260 C=C-CA:RETURN
1270 CR=(E+P)*320+1000*W+150:C=C-(CP+CR):REM * SEE 470 FOR CP *
1280 PP=0:CV=0:IFND>0THENFORX=1TON:CV=CV+P(X,1)*P(X,4)/6:PP=PP+P(
X,5):NEXT
1290 CY=CS/5:CM=PP/2+TR
1300 RETURN

1310 CLS:PRINTN$,"- SALES REPORT -";:GOSUB110
1320 CS=0:IFN<1THENPRINT"NO SALES THIS MONTH":GOTO1590
1330 PS=0:F1=0:F2=0:F3=0:F4=0:F5=0:FORX=1TON:F1=F1+P(X,8):F2=F2+
P(X,9):F3=F3+P(X,10):F4=F4+P(X,11):F5=F5+P(X,14):NEXT:F0=F1+F2+F
3+F4
1340 REM * TOTAL BUGS *
1350 IFF5>1THENF5=RND(F5)
1360 REM * TOTAL ADVERTISING *
1370 F0=INT(F0/1000):IFF0>1THENF0=RND(F0)
1380 REM * MAXIMUM POSSIBLE SALES *
1390 F6=1:IFF1>20000THENF6=20000/F1
1400 F7=1:IFF2>10000THENF7=10000/F2
1410 F8=1:IFF3>5000THENF8=5000/F3
1420 F9=1:IFF4>15000THENF9=15000/F3
1430 GOSUB1610:FORX=1TON
1440 P(X,0)=P(X,0)-RND(5):IFF5>1THENP(X,0)=P(X,0)-RND(F5)
1450 IFF0>1THENP(X,0)=P(X,0)+RND(F0)
1460 PT=(P(X,0)+P(X,6))/100*P(X,2)/100*P(X,3)/P(X,4)*((P(X,8)*F6
*1.3)+(P(X,9)*F7*1.5)+(P(X,10)*F8*2)+(P(X,11)*F9*.7))+P(X,5)/(3+
RND(10)):PT=PT*(90+RND(20))/100
1470 IF(P(X,4)>J0)AND(P(X,6)>12)THENPT=PT+P(X,8)*J4
1480 IFP(X,4)<J2ANDP(X,4)>J1THENPT=PT+P(X,9)*J5
1490 IFP(X,4)<J3THENPT=PT+P(X,10)*J6
1500 IFP(X,4)<5ORP(X,14)>4THENPT=PT+P(X,10)*J7
1510 IFW>0THENPT=PT+W*(5+RND(10))*PT/100
```

```
1520 IFPT)P(X,1)THENPT=PT+P(X,1)/2
1530 IFM=7ORM=8THENPT=PT*.9
1540 IFM=1ORM=2THENPT=PT*1.1
1545 PT=PT+U1*(5+RND(7)):P(X,17)=P(X,17)+FIX(U1*(2+RND(6))/P(X,4
)):REM * CATALOG SALES *
1550 PT=PT/P(X,4):PT=FIX(PT):IFH>21ANDP(X,5)>22THENHR=RND(H-20):
PT=PT+HR:H=H-HR/2
1560 P(X,5)=P(X,16):P(X,16)=P(X,17):P(X,17)=PT:P(X,15)=P(X,15)+P
(X,5):CS=CS+P(X,5)*P(X,4):P(X,1)=P(X,1)-P(X,5):PS=PS+P(X,5):P(X,
7)=P(X,7)-P(X,5):PRINTA(X),"$";P(X,4),P(X,5),USINGG1;P(X,4)*P(X,
5)
1570 IFX=14THENGOSUB120:PRINT@64,CHR$(31);:GOSUB1610
1580 NEXT
1590 PH=(H+E*100)*20+20:IFPS<=PHTHEN1600ELSECLS:PRINT"INSUFFICIE
NT STAFF":PRINT"CANCELLATIONS NOW COMING IN":Z=1-PH/(PS+1):FORX=
1TON:P(X,17)=FIX(P(X,17)*Z):NEXT
1600 C=C+CS:GOSUB120:RETURN

1610 PRINT"PROGRAM","LIST PRICE","UNITS SOLD","SALES":RETURN

1620 CL=0:IFN<1THEN1750ELSECLS:PRINTN$,"- SALES MANAGER'S COMMEN
TS-":PRINT
1630 IFM=7THENPRINT"SALES ARE NORMALLY SLOW IN JULY AND AUGUST"E
LSEIFM=1THENPRINT"A LOT OF PEOPLE MUST HAVE GOTTEN COMPUTERS FOR
 CHRISTMAS"
1640 PRINT"RETURNED MERCHANDISE":FORX=1TON:IFP(X,15)<(P(X,5)+3)T
HEN1720
1650 IFP(X,2)<1THEN1720ELSEY=RND(3+14*P(X,14))
1660 YT=FIX(Y*P(X,15)/100):PRINTA(X),YT;" UNITS"
1670 IFY<4THENP(X,1)=P(X,1)-YT:CL=CL+YT/8:GOTO1720
1680 PRINT"< D -DEBUG & REPLACE   $ -REFUND & CANCEL  R -REPLACE
 >";:GOSUB130:IFAA="D"THEN1690ELSEIFAA="$"THEN1700ELSEIFAA="R"TH
EN1710ELSE1680
1690 Z=X:GOSUB850:PRINT@448,CHR$(31);:CL=CL+P(X,1)/3:P(X,1)=YT*-
1:GOTO1720
1700 C=C-YT*P(X,4)*1.4:CL=CL+P(X,1)/6+YT/8:FORY=0TO17:P(X,Y)=0:N
EXT:IFX=NTHENN=N-1:GOTO1720ELSEFORY=XTON:FORZ=0TO17:P(Y,Z)=P(Y+1
,Z):NEXT:NEXT:N=N-1:GOTO1650
1710 P(X,1)=P(X,1)-YT:CL=CL+YT/8:P(X,0)=P(X,0)-5
```

```
1720 NEXT
1730 IFC<0ANDCV<50000THENPRINT"YOUR CREDIT IS NOT GOOD. YOUR LOC
AL LOAN SHARK CHARGES 25% PER  MONTH INTEREST!":C=C*1.25
1740 IFC<0ANDCV>49999THENPRINT"YOU ARE PAYING 24% INTEREST ON YO
UR WORKING CAPITAL":C=C*1.02
1745 GOSUB120
1750 T=RND(35):IFT>NTHEN 1810
1760 PRINT"COMPETITOR INTRODUCES NEW PRODUCT TO COMPETE WITH ";
1770 PRINT A(T):T1=RND(2):PRINT"NEW PRODUCT IS ";:IFT1=1THENPRIN
T"ABOUT AS GOOD" ELSE PRINT"BETTER"
1780 T2=RND(50)+75:P(T,2)=P(T,2)-5:IFT2>P(T,2)THENP(T,2)=P(T,2)-
(T2-P(T,2)):IFP(T,2)<40THENP(T,2)=40
1790 T3=INT(P(T,4)+.5):IFT3>8THENT3=5+RND(T3-2)
1800 T3=T3-.05:PRINT"IT SELLS FOR $";T3:IFT1=1THENP(T,3)=T3ELSEP
(T,3)=T3*2/3
1805 GOSUB 120
1810 CLS:PRINT"PRODUCT LINE":FOR T=1TON:PRINT"<";T;"> ";A(T);" $
";P(T,4),:NEXTT:PRINT
1820 PRINT"<E>LIMINATE ITEM  <P>RICE CHANGE  <D>EBUG  <C>ONTINUE
 ";
1830 GOSUB130:IF(AA="E")OR(AA="P")OR(AA="D")THEN1840 ELSE1890
1840 INPUT"ITEM NUMBER";T:IFT<1ORT>NTHEN1890
1845 IFAA="P"THEN1870 ELSEIFAA="D"THEN1880
1850 CL=CL+P(T,1)*P(T,4)/4:FORY=0TO17:P(T,Y)=0:NEXTY:IFT=NTHENN=
N-1ELSEFORY=TTON:A(Y)=A(Y+1):FORZ=0TO17:P(Y,Z)=P(Y+1,Z):NEXT:NEX
T:N=N-1
1860 GOTO1810
1870 INPUT"NEW PRICE $";P(T,4):GOTO1810
1880 Z=T:GOSUB850:GOTO1810
1890 C=C+CL:RETURN

1900 IFU<1000THEN1990
1910 PRINT"YOU HAVE A MAILING LIST OF ";U;" NAMES."
1920 PRINT"DO YOU WISH TO SEND YOUR CUSTOMERS A CATALOGUE ?";:GO
SUB130:IFAA="N"THEN1990
1930 INPUT"HOW MUCH DO YOU WISH TO SPEND  $";U1:CA=U1:IFU1>U*10
THENU1=U*10+(U1-U*10)/9
1940 U1=FIX(U1/(10*N))
1990 RETURN
```

The new word processor from Radio Shack!

Scripsit

FEATURES:

● Lower case capability ● Total document formatting ● Error correction by deletion, insertion, overwriting and exchanging ● Automatic headers, footers and page numbers ● Global find, repiace and delete ● Operator-defined blocks for hyphenation and editing

SCRIPSIT will produce letters or any text material. The documents can be stored on disk for revision and update.

REQUIREMENTS:

● 32K Level II TRS-80; one or more disk drives; line printer

If you've seen or used the Electric Pencil, you'll be delighted with SCRIPSIT's versatility and extra features. Rapid typists will appreciate the fact that SCRIPTSIT does NOT lose letters at the end of each line. Titles can be automatically centered. The Screen width can be changed to match your printer. Tabs can be set, etc...

If you are a BASIC programmer, you'll want to utilize SCRIPSIT's ability to work directly with BASIC programs.

SCRIPSIT comes on disk with thorough documentation and sample text files. Includes three audio cassette tapes which cover all aspects of this exciting Word Processing Package.

The Complete SCRIPSIT Package (with Binder, Manual, 2 Disks, 3 Cassettes, Instruction Summary Card and special press-on key labels) is **only $95.00 + $2.00 shipping.**

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For business users, an add on package includes multiple precision packed decimal arithmetic, with up to 127 digits of accuracy, binary search of sorted arrays, insert elements in sorted arrays, automatic page headings, footings, and pagination including forced end of page, and automatic hash for record retrieval. **Infinite BASIC $49.95. Infinite business (add on) $29.95**

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Chain multiple steps in disk BASIC upon power up, relocatable key debounce, allows pauses for data entry at specified steps during execution (on cassette for disk systems only) for **$19.95.**

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BASIC control program with high speed machine language sort for disk users. Merge and sort files on more than one disk if you have 2 or more drives. Self prompting with manual. Specify 32K or 48K version **$34.95.**

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

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

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

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

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DSM IS POWERFUL!!!!!!

- Sorts large multiple diskette files on a minimum two drive Mod-I disk system.
- All records are physically rearranged — no key files are required.
- Sorts random files created by BASIC, including files containing sub-records spanning sectors.
- Sorts on one or more fields in ascending or descending order. Fields may be character, binary integer, or floating point.
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- Sort commands can be saved for reuse in production applications.
- Single sort, merge, or mixed sort/merge operations may be performed in a single DSM application.
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NOTE: ST-80 is a trademark of Lance Micklus, Inc.

by Lance Micklus

The ST-80 family of smart terminal packages

Now you can have the right terminal package for your communication needs! From ST-80 UC — the simple, pre-set, inexpensive terminal program designed for users of THE SOURCE, MICRONET, and FORUM 80 — to the power and sophistication of ST-80 III, The Software Exchange has the package for you.

All four programs include the ability to use an unmodified TRS-80 keyboard to produce RUB, ESC, and other control characters for time sharing, software control of the RS-232-C board, repeat key, bell, software support for the three most common upper/lower case hardware conversions, and line printer output.

ST-80 UC 4K Level II cassette, $24.95

This universal communicator program is an easy-to-use timesharing program for the beginner. Special features include preset parity, word length, and baud rate (regardless of switch settings on the RS-232-C board) for THE SOURCE, MICRONET, and FORUM 80, automatic testing of the RS-232-C board, and even spooling of prepared messages on tape directly into FORUM 80 using a basic program supplied as a line listing.

ST-80 4K Level II cassette $49.95

The original smart terminal program for the TRS-80, ST-80 lets you reprogram your RS-232-C board from the keyboard, and run at different baud rates. Does not have auto testing of RS-232-C or tape spooling.

ST-80 D 32K disk program, $79.95

Special features include connection time clock, option of user-created translation tables for keyboard, gathering and pre-formatting data to be sent directly from disk to host computer, spooling of received files to disk or printer, editing of received files, and auto logon. If you use it with VTOS 3.1, you also get device driven I/O, job logging, and chaining.

ST-80 III 32K disk program, $150.00

ST-80 D with extra utility programs

The Software Exchange

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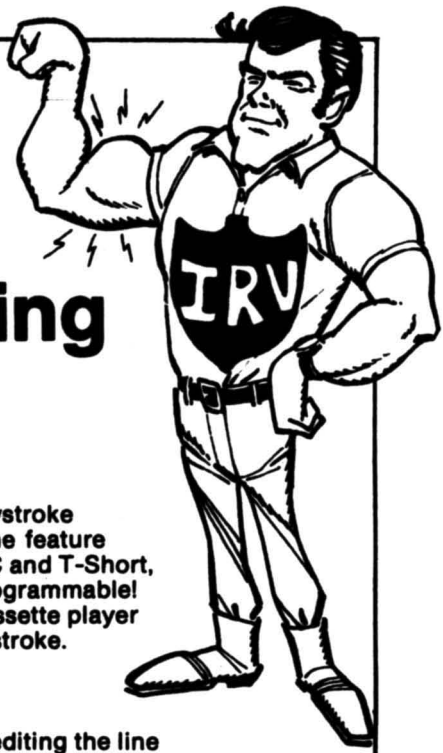
Put IRV on your programming staff!



Comes with manual

Input shorthand — one keystroke can enter a whole line! The feature you liked in Level III BASIC and T-Short, now with all keys user programmable! You can even turn your cassette player on or off with a single keystroke.

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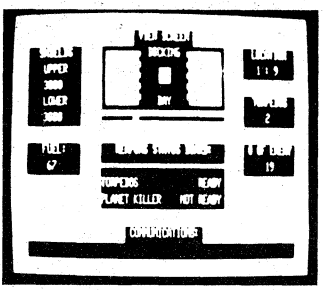
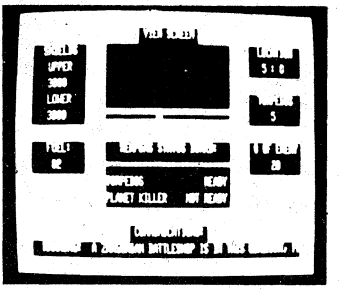
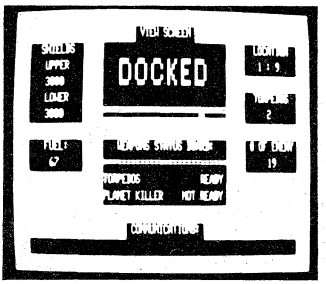
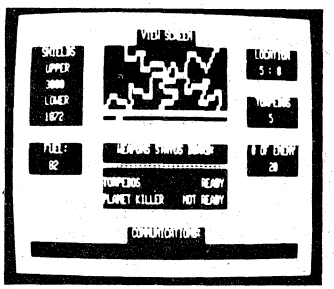








GALAXY COMBAT II

by Phil Case

You were on a routine assignment when it happened. While you were out charting asteroids, the entire defense fleet was being devastated by a massive Zargonian invasion. It happened so quickly that you didn't even receive any distress calls until after you returned — to find the entire fleet in ruins.

The Zargonians are a humanoid race which lives across the star desert. They make long trips to raid the Inner Orbits every centon. If it wasn't for that one planet in the middle of a star desert, they wouldn't be able to make the long trek.

The confederation had just developed a secret weapon to destroy the Zargonian base planet, but now that the fleet has been destroyed, there is no way to stop the inevitable — the Zargonians will take over the Inner Orbits and turn them into another one of their slave systems. Already twenty Zargonian battleships have taken positions in the Inner Orbits. However, if you could somehow secretly visit the ten space stations scattered across the Inner Orbits, you could pick up the ten parts of the secret weapon. Once assembled, you could destroy the Zargonian Base Planet, and if extremely lucky, hunt down and destroy the Zargonian battleships. Can you meet the challenge?

Here's your chance. the Inner Orbits is a solar system which is on a 10x10 grid. Your goal is to attack

and destroy the 20 Zargonian Battleships which have already taken position in the Inner Orbits. You must also visit the ten space stations, pick up the ten parts of the secret weapon and destroy the Zargonian Base Planet before another fleet of Zargonians cross the star desert.

Warning!!! Your ship is a scout ship — not a battle ship; the key to your success is speed. You are much more mobile than the Zargonians, therefore you must work quickly to destroy them before they start firing at you — their missles carry a heavy charge. It is now up to you; if you fail, the system is doomed to become a Zargonian Slave System. Good luck!!!

Playing the Game:

This game is played in a fashion similar to the many STARTREK programs. Once started, the game is totally real-time. After selecting the difficulty level you wish to play, you will find yourself in the cockpit of an everyday, ordinary scout ship.

First of all, let's review the instruments:

1. In the upper center of the screen is the View Screen; this portal is used to visually view what is happening outside the ship and is the medium for activating the L-R Scanner.

2. Below the View Screen is the Weapons Status Board; this is used for a quick reference to check on the operational status of the two weapons.

3. At the bottom of the screen is the Communications Window. This instrument displays all incoming messages, onboard communications, and computer reports.

4. In the upper-left corner is the Shields Status Indicator. This gauge is used to check on the amount of reserve power to the shield. (If this instrument shows either shield as being below 700 units, it will automatically trip a warning message to the Communications Window.)

5. Below the Shields Status Indicator is the Fuel Gauge. This tells you the amount of fuel you presently have onboard. Note: careful pilots always keep watch of this gauge. There is no excuse for running out of fuel.

6. In the upper-right corner is the Location Indicator. This instrument tells you your position in the galaxy in an X-Y coordinate fashion. X is the horizontal position and Y is the vertical position. Note: The galaxy is on a 10x10 grid. Any attempt to leave the galaxy will activate safety systems which prevent you from doing so.

7. Below the Location Indicator is your Torpedoes Counter. This instrument simply tells you the number of torpedoes you have left on board.

8. Below the Torpedoes Counter is an Enemy Counter which shows you the number of enemy ships left to be destroyed.

9. There is one other instrument, the L-R (Long Range) Scanner. If you press the ENTER key, the L-R Scan will be displayed on the view screen. This scanner shows you what is in the four quadrants or sectors around you. After viewing this instrument as long as desired, press ENTER to go back to the External View, or, if desired, you can move directly from this mode and the view screen will automatically be reset.

Now that you know where everything is, it's time to play. First, you already know about activating the L-R Scan. So let's do so and see what we find. Was there an enemy ship in any of the quadrants around you? If so, press the arrow pointing in the direction you need to go to enter his quadrant; else go in any direction until something happens.

If you are in a quadrant with an enemy ship, here is how to destroy him. First you need to center him on the "+"; otherwise you will not hit a critical portion of the ship and he will only be damaged. Once centered over the "+", press the (SPACE BAR) to fire your torpedoes. If you miss, correct his position and fire again. NOTE: You cannot retreat; once in a battle you fight to the end. As he fires you will see the torpedo get larger and larger until it shatters on your shields, if they are strong enough. Your cockpit will be destroyed if your shields are too weak to resist his torpedo. NOTE: Your Shield Status Indicator will be updated after each torpedo so that you will see how strong your shields are. One last thing — your L-R Scanner cannot be activated while you are in battle.

Now a little more about moving about. While you are in the search or exploratory mode, i.e., not in battle, you move from sector to sector by pressing the arrow of the direction you wish to move. You cannot press more than one arrow at a time. When you are moving between sectors you see no stars because you are in a hyper-drive, which is faster than light. Once stopped in a given sector, the stars move because you are actually still moving about a central point within that quadrant. When in the Combat Mode, you use the arrows the same way, i.e., to move YOUR ship. Therefore, if an enemy ship is to the left of your targeter, you need to move to the left to move him right, so you press your left arrow.

If, by chance or on purpose, you find a space station, the station will automatically guide you into docking, so you do not need to worry about doing this touchy maneuver. Once docked, your ship will be recharged; that is the number of torpedoes brought to 5, fuel brought to 100, and shields recharged to 3000 each. Also, if you have not visited this space station before, a piece of the secret planet killer weapon will be loaded on board. Once all ten pieces of the weapon are onboard the ship, you will be told the weapon is ready to use. NOTE: You can visit a space station any number of times to recharge. However each station only has one part of the weapon.

If you run across the base-planet before your weapon is assembled, just go about your business until you complete the weapon — then return later to destroy it.

YOU ARE READY!!! GOOD LUCK!!!

```
10 REM ********************************
       **      GALAXY-COMBAT II      **
       **----------------------------**
       **    (C) COPYRIGHT 1980      **
       **----------------------------**
20 REM ** BY WILLIAM PHILLIP CASE, JR **
       ********************************
```

```
100 CLEAR2600:RANDOM:DEFINTA-Z:DIMS(11,11):CLS:PRINTCHR$(23);"

      GALAXY-COMBAT II"
105 ONERRORGOTO10000
110 REM          INITIALIZE GALAXY
115 S(9,9)=9:FORA=1TO20
116 X=RND(10):Y=RND(10):IFS(X,Y)=9ORS(X,Y)=1THEN116ELSES(X,Y)=1:
NEXT
117 FORA=1TO10
118 X=RND(10):Y=RND(10):IFS(X,Y)=9ORS(X,Y)=1ORS(X,Y)=3THEN118ELS
ES(X,Y)=3:NEXT
119 X=RND(10):Y=RND(10):IFS(X,Y)=0THENS(X,Y)=5:OI=X:OP=Y:ELSE119
130 REM          INITIALIZE GRAPHICS
135 ST$=STRING$(12,32)+CHR$(160)+STRING$(8,32)+CHR$(144)+CHR$(26
)+STRING$(16,24)+CHR$(129)+STRING$(6,32)+CHR$(144)+"   "+CHR$(26
)+CHR$(160)+CHR$(26)+STRING$(11,24)+CHR$(129)
140 E$=STRING$(27,32)+CHR$(26)+STRING$(27,24)+STRING$(27,32)+CHR
$(26)+STRING$(27,24)+STRING$(27,32)+CHR$(26)+STRING$(27,24)+STRI
NG$(27,32):W$=STRING$(27,191)+CHR$(26)+STRING$(27,24)+STRING$(27
,191)+CHR$(26)+STRING$(27,24)+STRING$(27,191)+CHR$(26)
150 W$=W$+STRING$(27,24)+STRING$(27,191):P$=STRING$(9,32)+CHR$(1
60)+CHR$(176)+STRING$(5,140)+CHR$(176)+CHR$(144)+STRING$(3,26)+S
TRING$(9,24)+CHR$(138)+CHR$(131)+STRING$(5,140)+CHR$(131)+CHR$(1
29)
160 P$(1)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(129)+CHR$(32)+CH
R$(138)+CHR$(139)+CHR$(167)+STRING$(3,32)+CHR$(138)+CHR$(169)+CH
R$(26)+STRING$(11,24)+CHR$(165)+CHR$(144)+"  "+CHR$(173)+CHR$(14
8)+"  "+CHR$(139)+CHR$(168)+CHR$(154)
170 P$(2)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(129)+CHR$(175)+C
HR$(143)+CHR$(145)+"    "+CHR$(138)+CHR$(169)+CHR$(26)+STRING$(1
1,24)+CHR$(165)+CHR$(144)+CHR$(138)+CHR$(188)+"   "+CHR$(139)+"
"+CHR$(168)+CHR$(154)
180 P$(3)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(175)+CHR$(143)+C
HR$(145)+"     "+CHR$(138)+CHR$(169)+CHR$(26)+STRING$(11,24)+CHR
$(165)+CHR$(154)+CHR$(188)+"   "+CHR$(139)+"  "+CHR$(168)+CHR$(1
54)
190 P$(4)=CHR$(26)+STRING$(8,32)+CHR$(190)+CHR$(143)+CHR$(145)+"
      "+CHR$(138)+CHR$(169)+CHR$(26)+STRING$(11,24)+CHR$(175)+CH
R$(188)+"   "+CHR$(139)+"   "+CHR$(168)+CHR$(154)
```

```
200 P$(5)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(145)+"          "+C
HR$(138)+CHR$(189)+CHR$(26)+STRING$(11,24)+CHR$(173)+CHR$(144)+"
 "+CHR$(139)+"       "+CHR$(160)+CHR$(159)
210 P$(6)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(129)+"          "+C
HR$(191)+CHR$(189)+CHR$(26)+STRING$(11,24)+CHR$(165)+CHR$(144)+C
HR$(139)+"       "+CHR$(170)+CHR$(158)
211 SA$=STRING$(4,136)+STRING$(3,160)+STRING$(13,25)+STRING$(3,1
44)+STRING$(4,132)+CHR$(26)+STRING$(20,24)+CHR$(191)+CHR$(131)+S
TRING$(9,179)+CHR$(131)+CHR$(191)+CHR$(26)+STRING$(13,24)+CHR$(1
91)+CHR$(176)+STRING$(9,179)+CHR$(176)+CHR$(191)+CHR$(26)
212 SA$=SA$+STRING$(20,24)+STRING$(4,136)+STRING$(3,130)+STRING$
(13,25)+STRING$(3,129)+STRING$(4,132)
213 SB$=CHR$(129)+STRING$(3,132)+STRING$(3,144)+STRING$(13,25)+S
TRING$(3,160)+STRING$(3,136)+CHR$(130)+CHR$(26)+STRING$(20,24)+"
 "+CHR$(188)+STRING$(9,140)+CHR$(188)+" "+CHR$(26)+STRING$(13,24
)+" "+CHR$(143)+STRING$(9,140)+CHR$(143)+" "+CHR$(26)
214 SB$=SB$+STRING$(20,24)+CHR$(144)+STRING$(3,132)+STRING$(3,12
9)+STRING$(13,25)+STRING$(3,130)+STRING$(3,136)+CHR$(160)
220 P$(7)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(129)+"          "+CH
R$(175)+CHR$(143)+CHR$(185)+CHR$(26)+STRING$(11,24)+CHR$(165)+CH
R$(155)+"       "+CHR$(138)+CHR$(188)+CHR$(154)
230 P$(8)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(129)+"       "+CHR
$(175)+CHR$(143)+CHR$(147)+CHR$(169)+CHR$(26)+STRING$(11,24)+CHR
$(165)+CHR$(144)+"       "+CHR$(138)+CHR$(188)+CHR$(160)+CHR$(154)
:C$=CHR$(24)+CHR$(156)+CHR$(143)+CHR$(172)
240 P$(9)=CHR$(26)+STRING$(8,32)+CHR$(150)+CHR$(129)+"     "+CHR$
(175)+CHR$(143)+CHR$(145)+CHR$(130)+CHR$(169)+CHR$(26)+STRING$(1
1,24)+CHR$(165)+CHR$(144)+"     "+CHR$(138)+CHR$(188)+" "+CHR$(16
0)+CHR$(154)
250 F$=CHR$(26)+STRING$(13,25)+CHR$(176)+CHR$(26)+STRING$(4,24)+
CHR$(176)+CHR$(140)+CHR$(131)+CHR$(25)+CHR$(131)+CHR$(140)+CHR$(
176)+CHR$(26)+STRING$(18,24)+CHR$(176)+CHR$(140)+CHR$(131)+STRIN
G$(7,25)+CHR$(131)+CHR$(140)+CHR$(176)
260 M$(1)=CHR$(26)+STRING$(13,25)+CHR$(140):M$(2)=CHR$(26)+STRIN
G$(12,25)+STRING$(3,191):M$(3)=STRING$(11,25)+STRING$(5,176)+CHR
$(26)+STRING$(5,24)+STRING$(5,191)+CHR$(26)+STRING$(5,24)+STRING
$(5,131)
270 M$(4)=STRING$(10,25)+STRING$(7,188)+CHR$(26)+STRING$(7,24)+S
TRING$(7,191)+CHR$(26)+STRING$(7,24)+STRING$(7,143):M$(5)=STRING
```

```
$(4,32)+CHR$(170)+STRING$(2,176)+CHR$(140)+CHR$(156)+STRING$(9,3
2)+CHR$(156)+CHR$(140)+CHR$(176)+"  "+CHR$(152)+CHR$(131)+CHR$(2
6)
280 M$(5)=M$(5)+STRING$(17,24)+CHR$(141)+CHR$(140)+CHR$(163)+STR
ING$(2,179)+CHR$(188)+CHR$(134)+CHR$(169)+CHR$(176)+CHR$(186)+"
  "+CHR$(131)+CHR$(134)+CHR$(26)+STRING$(18,24)+CHR$(168)+CHR$(1
64)+CHR$(176)+CHR$(144)+" "+CHR$(149)+" "
290 M$(5)=M$(5)+CHR$(140)+STRING$(2,179)+CHR$(177)+" "+CHR$(168)
+CHR$(177)+STRING$(2,140)+CHR$(166)+CHR$(135)+" "+CHR$(176)+CHR$
(144)+CHR$(26)+STRING$(26,24)+CHR$(160)+CHR$(134)+CHR$(131)+STRI
NG$(2,140)+CHR$(178)+CHR$(132)+" "+CHR$(130)
300 M$(5)=M$(5)+CHR$(131)+CHR$(129)+" "+CHR$(184)+STRING$(2,140)
+CHR$(131)+"    "+CHR$(136)+CHR$(141)+CHR$(134)+CHR$(131)+CHR$(1
60)+CHR$(133)
310 S$(1)=CHR$(26)+STRING$(9,32)+CHR$(168)+STRING$(3,188)+CHR$(1
56)+STRING$(3,188)+CHR$(180)+CHR$(26)+STRING$(8,24)+STRING$(7,13
1)+CHR$(129):S$(2)="  "+STRING$(23,176)+CHR$(26)+STRING$(25,24)+
STRING$(2,188)+STRING$(9,191)+CHR$(151)+CHR$(163)+CHR$(131)
320 S$(2)=S$(2)+STRING$(11,191)+STRING$(2,188)+CHR$(26)+STRING$(
27,24)+STRING$(2,131)+STRING$(9,191)+CHR$(189)+STRING$(2,188)+ST
RING$(11,191)+STRING$(2,131):S$(3)=" "+STRING$(7,188)+CHR$(132)+
" DOCKING "+CHR$(136)+STRING$(7,188)+" "+CHR$(26)+STRING$(27,24)

330 S$(3)=S$(3)+" "+STRING$(7,191)+CHR$(145)+"    "+CHR$(168)+CHR
$(156)+CHR$(188)+"    "+CHR$(162)+STRING$(7,191)+" "+CHR$(26)+STR
ING$(27,24)+" "+STRING$(7,191)+CHR$(132)+"    "+CHR$(130)+STRING$
(2,131)+"    "+CHR$(136)+STRING$(7,191)+" "+CHR$(26)
335 S$(3)=S$(3)+STRING$(27,24)+" "+STRING$(7,143)+CHR$(129)+"
BAY   "+CHR$(130)+STRING$(7,143)+" "
340 S$(4)=CHR$(26)+"    "+CHR$(170)+CHR$(131)+CHR$(169)+" "+CHR$(
150)+CHR$(131)+CHR$(140)+CHR$(168)+CHR$(131)+CHR$(137)+" "+CHR$(
181)+CHR$(134)+" "+CHR$(183)+CHR$(147)+" "+CHR$(151)+CHR$(131)+C
HR$(140)+CHR$(26)+STRING$(28,24)+CHR$(138)
350 S$(4)=S$(4)+CHR$(140)+CHR$(134)+" "+CHR$(137)+CHR$(140)+CHR$
(129)+CHR$(130)+CHR$(140)+CHR$(134)+" "+CHR$(133)+CHR$(137)+" "+
CHR$(141)+CHR$(140)+" "+CHR$(141)+CHR$(140)+CHR$(129)
359 '                  MACHINE LANGUAGE WHITE-OUT  (M$)
360 M$=CHR$(33)+CHR$(0)+CHR$(60)+CHR$(54)+CHR$(191)+CHR$(17)+CHR
$(1)+CHR$(60)+CHR$(1)+CHR$(255)+CHR$(3)+CHR$(237)+CHR$(176)+CHR$
```

```
(201)
365 PP=146:X$=STRING$(11,32):X1$=X$+" ":CLS:INPUT"ENTER DIFFICUL
TY LEVEL (1-20)";LP:IFLP<1ORLP>20THEN365ELSELP=22-LP:CLS
370 US=3000:LS=3000:TP=5:NE=20:GOSUB5000:GOSUB5100:PRINT@89," VI
EW SCREEN ";:PRINT@131,"  SHIELDS  ";:PRINT@195,"   UPPER   ";:P
RINT@259,X$;:PRINT@323,"   LOWER   ";:PRINT@387,X$;:PRINT@515,"
  FUEL:    ";:PRINT@579,X$;:PRINT@177,"  LOCATION  ";
375 FU=100:HC=9:VC=9:PRINT@402,STRING$(27,179);:SI=402
380 PRINT@241,X1$;:PRINT@369,"  TORPEDOS  ";:PRINT@433,X1$;:PRIN
T@561," # OF ENEMY ";:PRINT@625,X1$;:PRINT@530,E$;:PRINT@855," C
OMMUNICATIONS: ";:PRINT@899,STRING$(58,32);:PRINT@533,"WEAPONS S
TATUS BOARD:";:PRINT@658,"TORPEDOS";:PRINT@722,"PLANET KILLER";
390 PRINT@679,"READY";:PRINT@739,"NOT READY";:GOSUB5500:PRINT@59
4,STRING$(27,"=");
400 '    START LOGIC LOOP
410 PRINT@PP,E$;
1000 IFS(HC,VC)=5GOSUB5600
1005 IFNE=0ANDS(OI,OP)=0THEN7000
1100 IFS(HC,VC)=3ORS(HC,VC)=2THENGOSUB6100
1200 IFS(HC,VC)=1GOSUB6200
2900 IFFU=0GOTO6000
2905 IFPEEK(14400)>1THEN3000
2910 PRINT@PP,E$;:PRINT@PP,ST$;:RESTORE
2950 READR1,R2:GOSUB5800:READS1,S2:GOSUB5800:RESET(R1,R2):SET(S1
,S2)
2960 IFPEEK(14400)=1THENGOSUB20000;:GOTO2910
2999 IFPEEK(14400)<2THEN2950
3000 IFPEEK(14400)=8THENVC=VC+1:IFVC>10THENVC=10:GOSUB5900
3010 IFPEEK(14400)=16THENVC=VC-1:IFVC<1THENVC=1:GOSUB5900
3020 IFPEEK(14400)=32THENHC=HC-1:IFHC<1THENHC=1:GOSUB5900
3030 IFPEEK(14400)=64THENHC=HC+1:IFHC>10THENHC=10:GOSUB5900
3050 GOSUB5800
3100 FU=FU-3:IFFU<0THENFU=0
4999 GOSUB5500:GOTO400
5000 I1=VARPTR(M$):I2=PEEK(I1+1):I3=PEEK(I1+2):IFI3>127THENI3=I3
-256
5001 DEFUSR0=I3*256+I2
5002 X=USR(0):RETURN
5100 PRINT@146,E$;:RETURN
```

```
5200 PRINT@146,W$;:RETURN
5300 FORA=1TO10:PRINT@PP,W$;:GOSUB5800:PRINT@PP,E$;:NEXT:RETURN
5400 GOSUB5000:FORA=1TO20:L=USR(A):FORB=1TO5:NEXTB:CLS:FORB=1TO5
:NEXT:NEXTA:RETURN
5500 PRINT@261,US;:PRINT@389,LS;:PRINT@243,HC;":";VC;:PRINT@437,
TP;:PRINT@582,FU;:PRINT@629,NE;:RETURN
5600 ME$="SENSORS REPORT THAT THE ZARGONIAN BASE PLANET IS NOW I
N VIEW.":GOSUB5700:PRINT@PP,P$;:PRINT@PP,P$(1);:IFPK=1THENME$="Y
OUR PLANET KILLER WEAPON IS READY TO USE!!!  PRESS THE <SPACE BA
R> TO FIRE.":GOSUB5700
5610 IFPK<>1THENME$="WEAPONRY REPORTS THAT THE PLANET KILLER STI
LL NEEDS ADDITIONAL PARTS, AND IS NOT OPERATIONAL.":GOSUB5700
5620 IFPK=1GOTO5680
5630 FORA=1TO9:PRINT@PP,P$(A);:GOSUB5800:IFPEEK(14400)<>0THENPRI
NT@PP,E$;:RETURN:ELSENEXTA:GOTO5630
5680 FORA=1TO9:GOSUB5800:PRINT@PP,P$(A);:IFINKEY$=CHR$(32)THENGO
TO5685ELSENEXTA:GOTO5680
5685 PRINT@PP,F$;:IFRND(5)=1THENGOSUB5300:ME$="SENSORS REPORT TH
AT THE ZARGONIAN BASE PLANET HAS BEEN TOTALLY DESTROYED":GOSUB5
700:S(HC,VC)=0:RETURN
5690 PRINT@PP,E$;:PRINT@PP,P$;:PRINT@PP,P$(A);:GOTO5680
5700 ME$=STRING$(54,32)+ME$+STRING$(55,32):FORA=1TOLEN(ME$)-54:P
RINT@899,MID$(ME$,A,58);:GOSUB5800:NEXTA:ME$="":RETURN
5800 PRINT@SI,CHR$(179);:SI=SI+1:IFSI>428THENSI=402
5810 PRINT@SI,CHR$(191);:RETURN
5900 ME$="NAVIGATION COMPUTER REPORTS YOU HAVE TRIED TO LEAVE TH
E GALAXY----ONBOARD SAFETY SYSTEMS TAKE OVER AND PREVENT THIS.":
GOSUB5700:RETURN
6000 ME$="ENGINEERING REPORT:  WE ARE OUT OF FUEL AND DOOMED TO
FLOAT IN SPACE FOREVER!!!":GOSUB5700:ME$="THE GAME WILL AUTOMATI
CALLY START AGAIN IN 10 SECONDS.":GOSUB5700:GOTO7010
6100 PRINT@PP,E$;:ME$="SENSORS REPORT A SPACE-STATION IN THIS QU
ADRANT.":GOSUB5700:PRINT@PP,S$(1);:ME$="SPACE STATION TO SCOUTSH
IP:  WE HAVE YOU ON SCANNER AND ARE PULLING YOU IN ON TRACTOR B
EAMS.":GOSUB5700
6110 FORZA=2TO4:FORB=1TO50:GOSUB5800:NEXTB:PRINT@PP,E$;:PRINT@PP
,S$(ZA);:NEXTZA
6120 PRINT@675,"   ";:FU=100:US=3000:LS=3000:TP=5:ME$="ENGINEERI
NG REPORTS SHIP IS BEING PREPARED FOR COMBAT.":GOSUB5700:GOSUB55
```

```
00
6130 IFPK<>1ANDS(HC,VC)=3THENME$="A PIECE OF THE PLANET KILLER W
EAPON IS NOW BEING LOADED ON BOARD.":S(HC,VC)=2:PK=PK-1:IFPK=-10
THENPK=1:PRINT@739,"    ";:ME$="THE PLANET KILLER WEAPON IS NOW A
SSEMBLED AND READY TO USE."
6140 GOSUB5700:PRINT@PP,E$;:RETURN
6200 PRINT@PP,E$;:ME$="WARNING:  A ZARGONIAN BATTLESHIP IS IN TH
IS QUADRANT, PREPARE FOR ATTACK!!!":GOSUB5700
6210 PG=(RND(4)+1)*64:PH=RND(24)+19:PS=PG+PH:PRINT@PP,E$;:PRINT@
223,"+";:PRINT@PS,C$;
6215 X=RND(LP):GOSUB5800:IFX=1GOSUB8000
6217 PO=PS
6220 IFPEEK(14400)=0THEN6215
6230 IFPEEK(14400)=8ANDPS<300THENPS=PS+64
6235 IFPEEK(14400)=128THENFR=1:IFPS=223THENHT=1
6240 IFPEEK(14400)=16ANDPS>192THENPS=PS-64
6250 IFPEEK(14400)=64ANDPS>147ANDPS<172THENPS=PS-1
6251 IFPEEK(14400)=64ANDPS>211ANDPS<236THENPS=PS-1
6252 IFPEEK(14400)=64ANDPS>275ANDPS<300THENPS=PS-1
6253 IFPEEK(14400)=64ANDPS>339THENPS=PS-1
6260 IFPEEK(14400)=32ANDPS<171THENPS=PS+1
6261 IFPEEK(14400)=32ANDPS>210ANDPS<235THENPS=PS+1
6262 IFPEEK(14400)=32ANDPS>274ANDPS<299THENPS=PS+1
6263 IFPEEK(14400)=32ANDPS>338ANDPS<363THENPS=PS+1
6299 IFTP<1THENFR=0:HT=0
6300 IFFR=1THENPRINT@PP,F$;:TP=TP-1:FR=0
6320 FU=FU-1:IFFU<1THENPS=PO:FU=0:IFTP<1THEN6325ELSEPRINT@900,"C
ONDITION CRITICAL-------OUT OF FUEL";
6325 GOSUB5500
6340 IFTP<1PRINT@675,"NOT";:PRINT@900,"CONDITION CRITICAL-------
--NO TORPEDOS";:IFFU<1PRINT" OR FUEL.";
6350 IFHT=1THENGOSUB5300:NE=NE-1:S(HC,VC)=0:HT=0:GOSUB5500:RETUR
N
6500 PRINT@PP,E$;:PRINT@223,"+";:PRINT@PS,C$;
6999 GOTO6215
7000 PRINT@PP,E$;:ME$="RADIO MESSAGE-----------------------COMM
AND HEADQUARTERS:  YOU HAVE JUST DESTROYED THE LAST OF THE ZARGO
NIANS AND SAVED THE CONFEDERATION.":GOSUB5700:ME$="THE GAME WILL
 AUTOMATICALLY START AGAIN IN 10 SECONDS.":GOSUB5700
```

```
7010 FORA=1TO300:GOSUB5800:NEXT:RUN
8000 X=RND(1000):X1=RND(2):IFX1=1THENYU=USELSEYU=LS
8010 IFX>YUTHENE=4ELSEE=5
8020 FORZA=1TOE:FORBZ=1TO10:GOSUB5800:NEXT:PRINT@PP,M$(ZA);:NEXT
ZA:IFE=4GOSUB5400:CLS:INPUT"YOU HAVE BEEN DESTROYED BY THE ZARGO
NIAN FIGHTER, YOU ARE DEAD!!**********************************
**************************PRESS ENTER TO PLAY AGAIN";A:RUN
8030 IFX1=1THENUS=US-XELSELS=LS-X
8032 GOSUB5500
8035 PRINT@PP,E$;:PRINT@PS,C$;:IFTY=0ANDLS<700ORTY=0ANDUS<700THE
NME$="DANGER:  SHIELDS ARE LOW!!!":GOSUB5700:TY=1
8040 RETURN
10000 IFERR/2+1=23THENPOKE16526,PEEK(VARPTR(M$)+1):POKE16527,PEE
K(VARPTR(M$)+2):RESUME NEXT
10005 RESTORE:RESUME
10010 DATA61,12,61,13,61,13,60,14,60,14,59,14,48,12,47,12,73,11,
74,12,59,14,58,15,47,12,46,12,74,12,75,12,68,10,68,9,58,15,57,16
,46,12,45,12,75,12,76,12,68,9,69,8,57,16,56,17,45,12,44,12,76,12
,77,13,69,8
10020 DATA70,7,56,17,50,15,44,12,43,12,77,13,78,13,70,7,71,6,43,
12,42,13,78,13,79,13,71,6,61,8,42,13,41,13,79,13,80,13,41,13,40,
13,80,13,81,13,40,13,39,13,81,13,82,13,39,13,38,13,82,13,83,13,3
8,13,37,13,83,13,84,14,37,13,36,14,36,14,48,9,84,14,85,14
10030 DATA85,14,86,14,86,14,87,14,87,14,88,14,88,14,89,15,89,15,
61,8
20000 PRINT@PP,E$;:IFS(HC,VC+1)=5THENA1$=" BASE PLANET "ELSEIFS(
HC,VC+1)=3ORS(HC,VC+1)=2THENA1$="SPACE STATION"ELSEIFS(HC,VC+1)=
1THENA1$=" ENEMY  SHIP "ELSEIFS(HC,VC+1)=0ORS(HC,VC+1)=9THENA1$=
"EMPTY  SECTOR"
20010 IFS(HC,VC-1)=5THENA3$=" BASE PLANET "ELSEIFS(HC,VC-1)=3ORS
(HC,VC-1)=2THENA3$="SPACE STATION"ELSEIFS(HC,VC-1)=1THENA3$=" EN
EMY  SHIP "ELSEIFS(HC,VC-1)=0ORS(HC,VC-1)=9THENA3$="EMPTY  SECTO
R"
20020 IFS(HC-1,VC)=5THENA2$=" BASE"+CHR$(26)+STRING$(5,24)+"PLAN
ET"ELSEIFS(HC-1,VC)=3ORS(HC-1,VC)=2THENA2$=" SPACE"+CHR$(26)+STR
ING$(6,24)+"STATION"ELSEIFS(HC-1,VC)=1THENA2$=" ENEMY"+CHR$(26)+
STRING$(6,24)+" SHIP"
20030 IFS(HC-1,VC)=0ORS(HC-1,VC)=9THENA2$="EMPTY"+CHR$(26)+STRIN
G$(5,24)+"SECTOR"
```

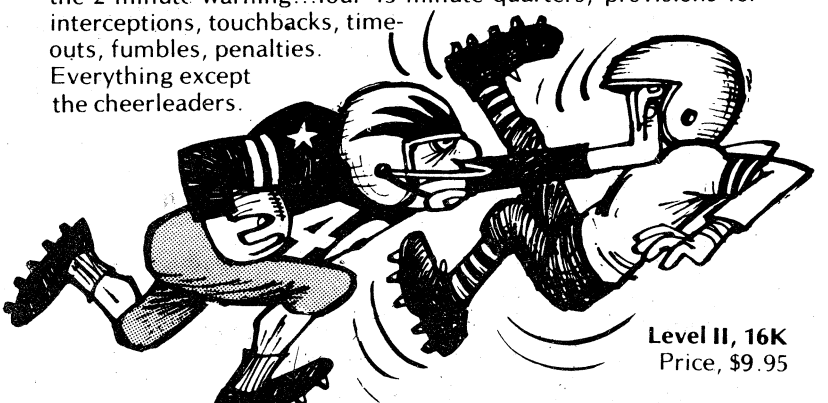
```
20040 IFS(HC+1,VC)=5THENA4$=" BASE"+CHR$(26)+STRING$(5,24)+"PLAN
ET"ELSEIFS(HC+1,VC)=3ORS(HC+1,VC)=2THENA4$=" SPACE"+CHR$(26)+STR
ING$(6,24)+"STATION"ELSEIFS(HC+1,VC)=1THENA4$=" ENEMY"+CHR$(26)+
STRING$(6,24)+" SHIP"
20050 IFS(HC+1,VC)=0ORS(HC+1,VC)=9THENA4$="EMPTY"+CHR$(26)+STRIN
G$(5,24)+"SECTOR"
20060 PRINT@153,A1$;:PRINT@210,A2$;:PRINT@345,A3$;:PRINT@230,A4$
;
20070 IFPEEK(14400)<>0THENPRINT@PP,E$;:RETURN:ELSEGOSUB5800:PRIN
T@PP,SA$;:GOSUB5800:PRINT@PP,SB$;:GOTO20070
```


NEW!

END ZONE II

by Roger W. Robitaille, Sr.

Rough and tumble gridiron action, from the toss of the coin to the 2-minute warning...four 15-minute quarters, provisions for interceptions, touchbacks, time-outs, fumbles, penalties. Everything except the cheerleaders.



Level II, 16K
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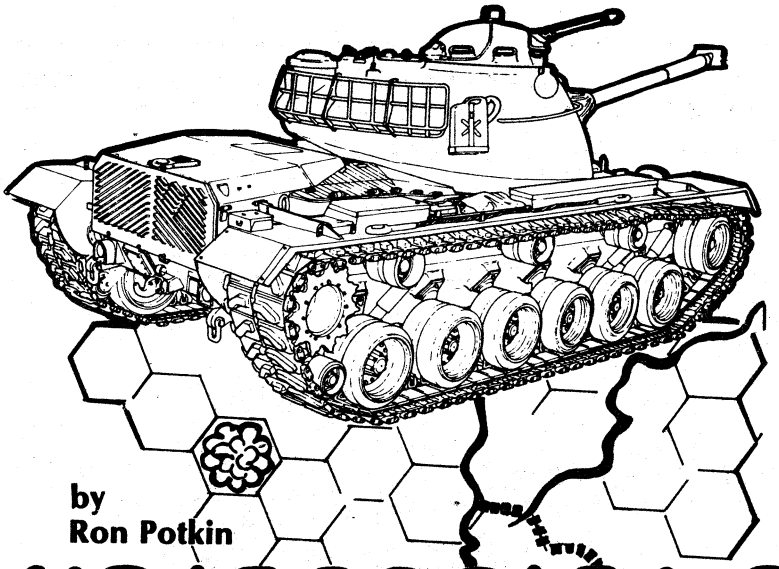

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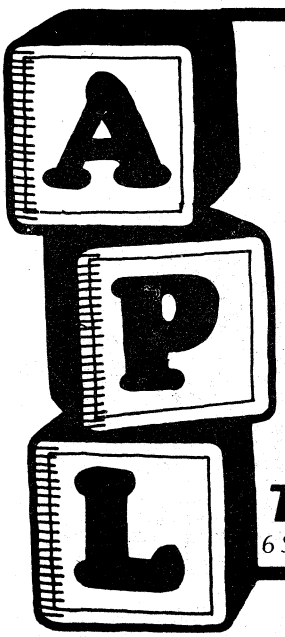

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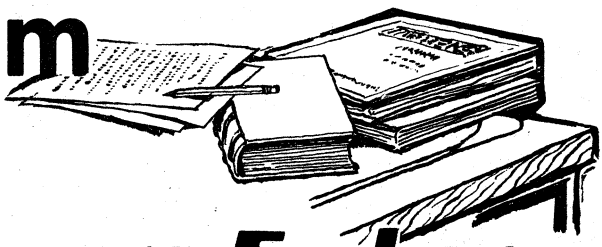

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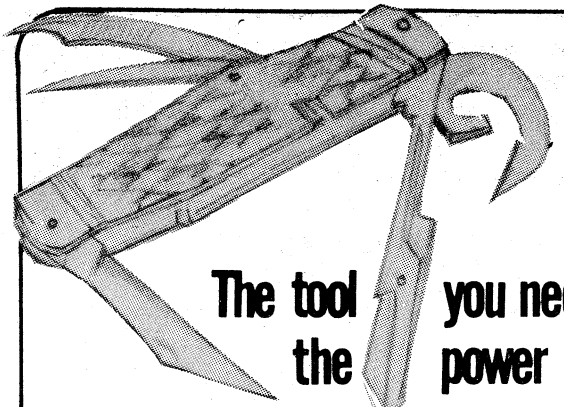

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0044 0000 C000 B77C 6433 FFFF 0102 0000 4000 3FC0 41FC 4400
4400    LD     A,93
```

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A FIRST 0	formatted ASCII dump
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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
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P ENTRY	write memory blocks and start
P FIRST LAST	define a memory block
Q FIRST LAST	calculate checksum
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T COUNT OPTION(6)	trace instructions
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V FIRST LAST BLOCK	verify memory
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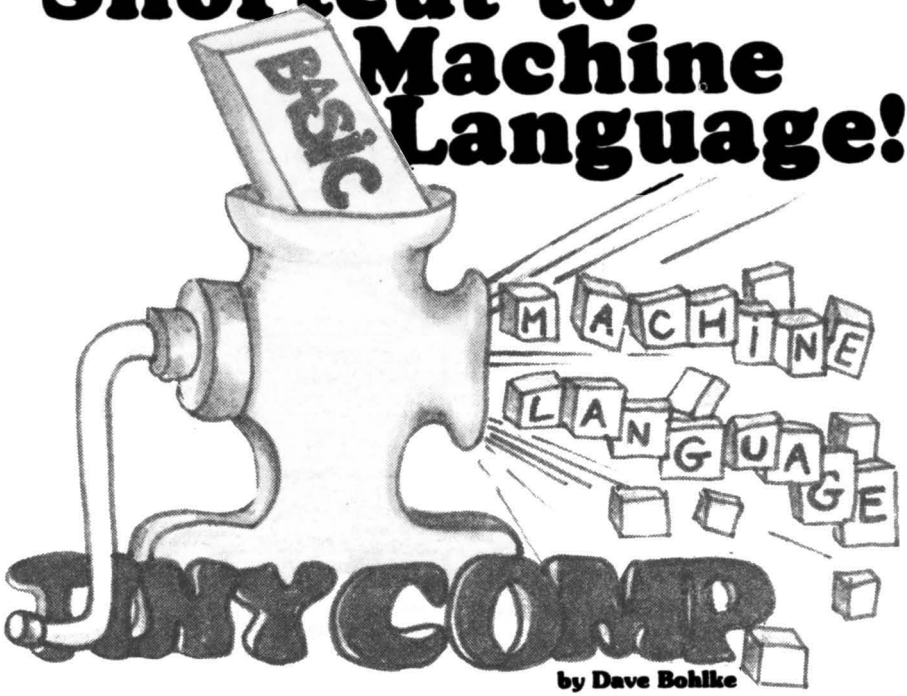

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