

For headache, take aspirin. For tension...

Not another dumb question??!! I'll have the editorial tomorrow! Ad by Thursday. Oh, no! A bug in a program? Tom, get to work. What do you mean, I'm not a nice guy anymore? My attitude needs a tune-up? I should take a vacation? But I had a REAL one 3 years ago. What do I need another one for? Oh, Robin mentions that I WILL take a vacation. I see. Won't the shop fall apart without me? No? How will I survive a week without computers? How does it feel to be needed...



P.O. Box 1448, Santa Barbara, CA 93102

May 1982

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* Side Title Filename Turns Count
* CTR-41 CTR-80
*
* **** Slots Cover 13-31/158-172 A 16 & 272 9 & 158
* ** ** Island Adventure 37-110/176-232 115-132 B 236-250 58 & 303 34 & 176
* ** ** Line Demo (Model I - see notes) C 195 & 408 113 & 237
* **** Victory at Sea (System /) VICICR 234 & 439 136 & 255
*
* ** Destiny A 9 & 267 5 & 155
* *** Math Drill B 120 & 347 70 & 201
* ** Crossdex (48K disk only) C 184 & 397 107 & 230
* **** Zapper (Mod I disk - System /) ZAP 241 & 444 140 & 258
*
* CLOADING Notes - This tape may load at an ODD RECORDER VOLUME. Set the volume LOWER than normal for your first attempt, then
* increase it slightly until the tape loads. If the first copy of a program won't load, try the second. That is why it is
* there. Model I only: Put an AM radio very close to the keyboard, tune it to a non-station, and you can listen to the tape
* loading in. Adjust the recorder volume so the hash from the computer sounds 'cleanest' during a load.
*
* Model III notes - Load the tapes at the LOW speed (POKE 16913,0). An occasional program will NOT run. There may be upper and
* lower case goofs in some programs. Arrow keys often are translated as follows: (↑, ↓, ←, →) = ([, \, ], ^).
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Slots Cover is probably as close as we'll come to publishing a slot machine program (editor's bias and all that good stuff...). This one has sound, so take the large grey plug that normally goes to your recorder and connect it to an amplifier.

Maybe you should take a vacation on an island. Have a little Island Adventure! Like most adventures, you type in one or two word commands (ie: HELP or GET DIAMONDS) in order to move around and do things. Be observant and imaginative - the thing that you do in one place may have an important effect in another area. Notes - All commands must be in upper case. You can give 3 character abbreviations for commands (ie: 'CL1 TRE' for 'CLIME TREE'). You can just type 'N', 'S', 'E', or 'W' for 'GO NORTH', 'GO SOUTH', etc. Type 'L' to see where you are.

Let me show you Model I's how to walk a thin line with Line Demo. This program demonstrates the power of last month's Line program. That's right, if you don't have the April 1982 issue or a Model I TRS-80, Line Demo will give you fits (and it won't work either). To use Line Demo, first load in Line as described in the April issue. Then CLOAD and RUN Line Demo. Impressive, ain't it?

Something to shout about! Victory at Sea (no reflection on the Falklands) pits you in your plane against a hoard of firing ships. You use the up and down arrow keys to dodge their missiles (ho hum...). Now, if you have a Model I with a CTR-41 or CTR-80 recorder (other recorders may work also), put the recorder in record mode (take out the tape first) and you can just shout into the microphone in order to fire! If you have a Model III, a recorder that won't work right, or are tired of shouting, you can use <spacebar> to fire.

Victory at Sea is a machine language program, so type 'SYSTEM'<enter>, answer the '*' with 'VICTOR'<enter>, and the program will load in. Then just follow the instructions that appear on the screen. Disk users - if you have a Model III with the system program 'TAPE' on it, all you have to do is put Victory at Sea on disk and execute it from DOS. Other disk users will probably have to use Disk Exec from our August 1981 issue. The first page of instructions will flash by in either case (it has been summarized above) and you have to hit <clear> to start.

"To dare to go where many programs have gone before" - The object of Destiny is to save the Federation from attacking Klingons. Your ship has a radar that goes from short to long range, an informal gaggle of missiles, thrust, turning, and a bunch of other interconnecting attributes. This program takes a bit of patience and a lot of thought (something I have little of). However, I have been informed by people that enjoy this type of program that this is a good one. The instructions are sketchy (I'm being polite!) so it will take a little time and a lot of defeats before you get the hang of Klingon Klobbering. For those willing to brave the unknown, an overview of the commands is beamed below:

E or R - Range of radar A, S, D or F - Alpha direction adjust
 Z, X, C or V - Beta direction adjust W - Calibrate forward radar
 N - Start torpedo sequence @ - Fire at blinking target (after N)
 M - Lay a mine G, U, I, O or P - Adjust thrust level T - Thrust on
 Y - Thrust off H - Stop moving B - Operate warp drive
 J or K - Adjust shield strength

Code explanations (from the upper corner of the screen):

+ Thrust on - Radar not calibrated
 @ Radar being recalibrated * Housekeeping (keyboard dead)

I'll get 'em right if it takes a million tries - and Math Drill will let me do multiplication and division until Hades freezes over (or we get an issue out on time...). Math Drill has sound, so do the "Connect the large grey recorder plug to an amplifier" shuffle.

I saw an article on that somewhere but I can't remember where. Crossdex is a mini data base set up to help 48K disk users keep track of all that magazine info. You enter the title, description, category, date, page, and magazine of the article. You then enter up to four keywords that will allow you to 'key' into the information later! After entering a bunch of articles, you can then search for articles that have information on certain topics and even sort the files by titles or magazines or whatever. This is where computers shine! Let me explain:

First, a comment - If you have information which can be referenced and updated easily in a card file, DO NOT put it on computer! But data bases have a couple of advantages over a card file. 1) A card file has the information in a particular order, and it is referenced according to that order. A data base, on the other hand, allows someone to order the information in many ways, according to the particular need at the time. 2) It is difficult to search for a particular group of items having similar attributes in a card file. But information can be searched for through indirect references (the keywords in Crossdex's case) in a data base. For example, let's say that you have a hundred magazine articles on file. You can see them listed in alphabetical order by title, magazine, or predefined categories. If you are looking for articles dealing with MX-80 printers, and you have entered a number of files with one of their keywords as MX-80, you can search for and get a list of them. Better yet, if you only want articles dealing with the MX-80 and special problems relating to a TRS-80 Model III, those can be picked out by letting Crossdex search for articles having both the MX-80 and Model-III keywords.

Crossdex notes: Title and description is limited to 36 characters with no commas. Keywords are not listed to the printer or video except during a correction. Items will be sorted as if all the characters in the field to sort by are upper case. The keyword list is to be used as a reference - you are not limited to those keywords. If you do a little programming, this program could be adapted to keep track of items other than magazine

articles. 32K disk system users can use the program by changing the 'CLEAR20000:CLS:A=350' in line 110 to 'CLEAR10000:CLS:A=175'. Model III's - Line 470 has a POKE 16916,2 in it that protects the top 2 lines from scrolling. Line 520 undoes line 470. Line 1660 uses CMD"O" to alphabetize the keyword list.

Model I disk tweekers - Zapper is for you! It is a machine language disk monitor program that allows to look at and modify the disk. When you are displaying and/or modifying a sector of the disk (whether you are doing it in memory for dumping to disk later, or doing it directly to the disk), the following commands work:

Break Key - go back to menu.

Right/Left Arrows - move you forward and backward.

P - send screen to printer if printer is ready.

M - modify disk or memory:

4 Arrow Keys and Space Bar - change which character is flashing.

0-9 and A-F - change the flashing character to the key pressed.

Enter Key - make the changes just completed permanent (they are only made in the video buffer until Enter is hit) and exit.

Break Key - no changes made if hit before Enter.

Least of the problems...

Stephen Wood, the author of February 1982's Least Square noted that you can get more than 17 pairs of data in a 16K machine by deleting the instructions (lines 100-1870).

Call in the editor...

Last month's Text Edit was a nice program - if you have a disk system. Not that the program wasn't set up to handle disk and non-disk systems, but the way it was set up was faulty. In order to see if a person was using a disk system or not, a byte in the program itself was checked (PEEK 17131) and if the byte's value was not 100, then it was assumed that the program had been moved and that the user had a disk system (the area reserved for BASIC programs starts much higher in a disk system). That is NOT a good thing to do! For one thing, modifying the program in any way could cause the value at location 17131 to change, whether a disk system was being used or not (adding our copyright notice in the first line probably caused the problem in this case). For another thing, the start of the area reserved for BASIC programs on tape-based Model IIIs is different than it is for Model Is. So this program would never work on a Model III tape machine even if it did work on a Model I. But take heart! There is a way to check if a machine is tape-based or has disks: if PEEK(16396)=201 then it is a tape machine, otherwise it is a disk machine. This is where the <break> key jumps to when it is pressed. So, to fix Text Edit so that it will run on a tape system, change the 'PEEK(17131)=100' to 'PEEK(16396)=201' in lines (here it comes) 310, 550, 600, 630, 870, 880, and 890.

Eating a bit faster...

The author of last month's Chompers has a fix to make the program run MUCH faster. At the end of line 0 add:

```
:DIMTP!,N%,N1!,U!,M3!,X!,A!,CT!,DI!,Y%,C!,N2%,CP!,OL!,PR$,DE!,D!,SC!,T!,
  N9%,EM!,N8%,MP$,OD!,MN$,MP!(10)
```

This allocates space for the variables used in the program in the order of their frequency of use. Why does this make a program run faster? BASIC searches for variables linearly, so the ones defined first are found first. And if a program looks for a variable 1000 times, it will be a lot faster if it finds that variable at the front of the variable list, rather than having to step over a bunch of other variables EVERY time it needs the much used one.

He also mentioned that line 99 should read '99 NEXT:PRINTCHR\$(23);:GOTO42'.

Anne of less than 1000 bytes...

Softside (a magazine somewhat similar to us but they get their issues out earlier) has a program called Mini-Invaders in their May 1982 issue. They call it a K-BYTER because it loads in less than 1K (1024 bytes). The program POKES a machine language routine in memory that it reads from data statements. What is interesting about the program (to me, anyway) is the way that the machine language bytes are read. The bytes are stored as pairs of characters in string arrays, and the actual byte value is received by multiplying an adjusted ASCII value of the first character by 16 and adding an adjusted ASCII value of the second character. Why is this neat (it sounds like a mess...)?

There are three main problems with merging BASIC and machine language. 1) Sometimes you have to load in separate programs. 2) This can be solved by putting the machine language in DATA statements, READING the bytes, and POKING them in memory. This takes a lot of memory, however. 3) An elegant solution is to put the machine language in strings and access it from there. The problems with this arise when you need to put a 0 or a 34 (a double quote) in the string. The rest of the string (and sometimes even the rest of your program) disappears, not to mention your machine language. Also, it is tricky to pack strings in the first place (you must POKE the values in the string area) and the strings can't be edited if there is an error (they must be rePOKEd). The method used in Mini-Invaders takes very little memory, is easy to create (no unprintable or untypable characters used), can generate values from 0 to 255, and allows the strings to be edited. Here's an example:

```

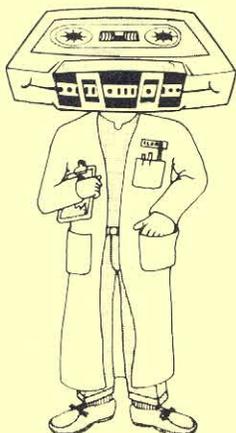
5 L=30000: REM STARTING LOCATION OF OUR SAMPLE ROUTINE
10 READ Q$: REM GET STRING CONTAINING MACHINE LANGUAGE
20 FOR I = 1 TO LEN(Q$) STEP 2: REM GET PAIRS OF CHARS TO MAKE BYTE VALUE
30 POKE L, (ASC(MID$(Q$,I,1))-48)*16 + ASC(MID$(Q$,I+1,1))-48: REM GET
    VALUES FROM STRING, CALCULATE VALUE OF BYTE AND PUT IT IN MEMORY
40 L=L+1: NEXT I: REM GO ON TO NEXT MEMORY LOCATION AND GET ANOTHER VALUE
50 DATA "3>3006042100"
    
```

The values that will be POKEd in locations 30000-30005 are 62, 48, 6, 4, 33, and 0. To see the program that caused this tutorial, write Softside, 515 Abbot Drive, Broomall, PA 19008 (1-800-345-8112 or in PA 1-800-662-2444).

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ed.

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