

## DELAY THE POWER AND SYNC IT RIGHT

by

Wayne Garrison

How many times have you powered up your TI 99/4a and expansion box only to find that the system comes up in a locked condition? That's when everything appears to be running but as soon as you try to load something from disk, everything acts as if it were asleep. You may be answering never, but for those of us who have all of our computer hardware (console, expansion box, printer, etc.) plugged into one of those powerstrips with one convenient switch to turn it all off or on at one time, we may have a different answer. If one were to dig out that dusty old book which came with your expansion box and page through it you would come to the instructions on how to get started with your new toy. It recommends that the expansion box be turned on first then the console. If power-up isn't done in this manner, a lock-up condition may occur. You have a fifty/fifty chance that something will go wrong if it is not done in that order. This is due to the timing pulses which must synchronize between the console and the interface card in the expansion box before these two units can talk to each other. This may sound like a bunch of Greek to you, but imagine that you and a friend are talking to each other, but instead of taking turns talking and listening, you are both talking at the same time and stopping to listen at the same time. What kind of conversation could you have? Certainly not a very good one. Well, this is basically the same with computers, except they talk on wires much like phone lines.

I get aggravated when my computer locks up for this reason but I like the convenience of my powerstrip. I thought, "What I need is a way to delay the a/c power to the computer console for just a few seconds until the expansion box has had enough time to power-up and prepare for synchronization." Sounds easy enough but what's the best way to do it? Well to answer myself, there are a couple of ways of doing it. I could design a circuit with an R/C network to gate an SCR that would hold the power off momentarily. This would do it but I would prefer something a little easier.

What I decided to do was to use a relay. There is a device called a time delay relay. It does just as it's name implies; it has a delayed response when it is turned on and it is used to switch electrical devices on or off. I sat down and drew up a wiring diagram to determine exactly what I would need in the way of parts. After looking in an electronics parts catalog, I realized there was one slight obstacle; the cost of such a relay. The prices ranged from about \$35.00 to about \$100.00 depending on the amount of delay and the method of determining the delay time. It wasn't long before I began to wonder if it would be worth it. Before giving up on my idea I paid a visit to my favorite surplus electronics store to see if I could find a bargain on a used time relay. Well I rummaged through some old junk and found just what I was looking for. I also found a regular relay which I would also need for the project. The guy at the sales counter let me have these items for a mere fraction of what they would have cost me for new.

Now that I had the main ingredients for my new project, it was time to start putting this thing together. I went downstairs to the basement in search of some sort of box or case to mount this contraption in or on. I found a couple of electrical junction boxes in a bunch of junk I had left over from a small electrical job I did a few years ago. It's a good thing I don't take my wife seriously when she tells me to get rid of some of that junk.

Both relays had eight mounting pins like the old vacuum tubes that were once used to make our radios and televisions work. I had some old replacement tube sockets in my electronics parts. I couldn't believe I was having such good luck at finding everything I needed. Next I fastened the two "J" boxes together knocking out a hole between them for wiring. My local hardware store had a few other things I needed such as a "J" box cover with the holes for mounting a wall outlet, or as some refer to them, "wall plug". I also had to get a cover which didn't have any holes in it. I would need it to mount the relay sockets. Using a drill and a hole saw, I cut holes in the blank cover to accommodate the relay sockets.

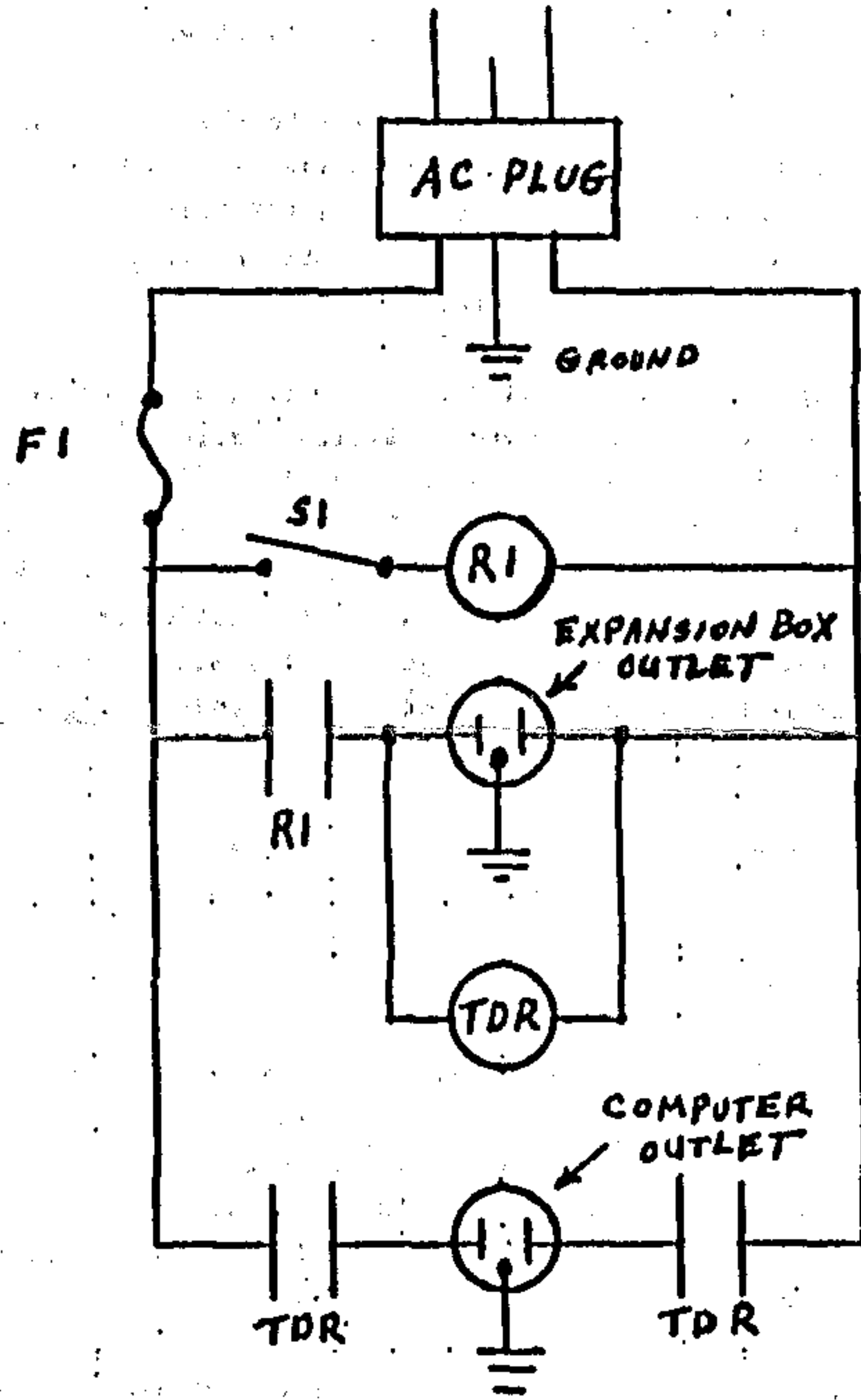
If you are wondering what the other relay is for, it is used to turn on the time relay and the a/c power to the expansion box. Since this relay unit would probably be somewhat unsightly and would be an eye-soar on my desk, it would be necessary to have a small plastic case with a switch to operate my relay unit sitting on the desk with a cable connecting it to the relay unit sitting on the floor behind my desk. It has to have an acceptable appearance to avoid verbal attacks from my beloved wife. I decided to use a couple of push-button switches and some sort of light or light emitting diode to indicate when the power is on.

I separated the two outlets on the receptacle so that one can be used to plug my powerstrip in and the other to provide the delayed a/c power for the computer console. On most receptacles, there is a small jumper strip of metal that connects the wire clamping screws together for both outlets. These jumpers can be removed with a small screwdriver or wire cutters so that they will be separate from each other. This is a must to ensure power-up at different times. The expansion box will plug into the outlet controlled by R1. The console will plug into the outlet controlled by relay TDR.

Below is the wiring diagram for my project. This little device can be used for other things too. I have friends which have rather high speed computers which power up and run their diagnostics and configuration screens before the monitor has had enough time to light up. This would be perfect for those purposes. By the way, I decided to include a fuse holder and fuse as is standard practice when dealing with 120 volts a/c.

The way it works is simple. Plug this device in, then plug your expansion box into the appropriate outlet and do the same for your computer console. You may choose to plug a powerstrip into the outlet labeled computer outlet and have not only your computer, but also your printer and other equipment plugged into the strip therefore all of these things would come on at the same time. Make sure the switches on the expansion box and the computer console are in the on position. When you flip the switch (S1), on the delay unit, the relay "R1" will energize which will close the set of contacts labeled "R1". This will provide power to the expansion box outlet along with the "TDR" relay. Now the time delay relay will start counting. When it times out to what you have it set for, it will close the two sets of contacts marked "TDR" and will provide power to the computer outlet. As stated before, "S1" should be mounted in a plastic box or case with a two conductor cable connecting it to the relay unit which will sit on the floor behind your desk. The only difference between this proposed wiring and mine is that I chose to use two pushbutton switches wired to a set of holding contacts, and I included a small indicator light to mount on the switch box. There are a number of different things you can do with it. For those of you who say have read one of my earlier articles addressing spike protectors and EMI filters, the components mentioned in that article can be integrated into this project.

- WIRING SCHEMATICS FOR POWER DELAY UNIT -



Like I stated before, this is not the only way to handle this small but sometimes annoying problem. The same results can be achieved with electronics possibly with a timing circuit and SCR (silicone controlled rectifier), or maybe a solid state relay. As stated, these relays are rather expensive and if I hadn't had such good luck finding one, then I would have been forced to do it electronically. If one were to open a time delay relay you would find a small electronic timing circuit. The way I did it was the easiest, just wire everything up. Once I had all the materials gathered up, it took me one evening to put it together. This is a rather simple project if you like tinkering with electrical stuff and see a true need for this contraption. I did some checking around and was unable to find anything like it being sold commercially. It works great and I have found by using it that 3 to 5 seconds is sufficient time delay. There are a number of variances that one can come up with. Add a touch of automation to your system and save yourself a little aggravation and a couple of steps in powering up your TI. Delay the power and sync it right. I think you'll like it.

Happy Computing!

ST. LOUIS COMPUTER BRIDGE



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PANASONIC KXP1124I REVIEW  
Review by Gary W. Cox

The Panasonic KXP1124i is one of the latest printers produced by Panasonic. The 1124i is in the same species of printers as the 1123 and 1124 in that they are all 24 pin printers. In this review I will highlight the features of the 1124i and tell you just what I think of it.

In looking for a printer, I looked for something with good print quality. While a laser printer would by far surpass any dot matrix printer, the price of a laser printer was far out of my range so I had to find something as close as I could to laser quality print. A daisy wheel printer would provide good print quality but then I would lose graphics abilities as well as the ability to have different fonts. What I needed was a printer which had a 24 pin print head instead of the traditional 9 pin print head. The more pins on the print head the more dots that make up the characters thus the better the quality of the print. Having seen the quality and reliability of Panasonic printers before, that was where I started in my search for a printer.

My choices for a Panasonic printer were between 3 models, the 1123, 1124 and 1124i. The 1123 was a cheaper model of the 1124 with a few less abilities and slower print speed. The 1124 was slightly faster than the 1123 and only about \$15 more than the 1124. The 1124i is faster than the 1124 plus has the addition of a super letter quality font and an LCD display panel built in. The 1124i was my choice.

The Panasonic 1124i contains 3 draft fonts (Pica, Elite, Micron), 7 letter quality fonts (Courier, Prestige, Bold PS, Script, Sans Serif, Orator, Roman) and 1 Super Letter Quality font (Roman). The maximum print speed in draft mode is 300 characters per second (CPS) (range - 200 CPS to 300 CPS) and the maximum speed in the letter quality fonts is 100 CPS (range - 66 CPS to 100 CPS) and in Super Letter Quality mode the speed range is 33 CPS to 40 CPS. The ribbon in use is the standard cassette ribbon used in the 1123 and 1124 printers and according to specifications has a life of 3 million draft characters (life greatly reduced by LQ fonts and graphics).

Different print styles and modes can be accessed by sending print codes to the printer VIA software or by using the controls on the front panel. An LCD display on the front of the printer indicates the printer status as well as guides you through setting up the built in fonts and print styles. Furthermore, the KXP1124i does not have any dip switches, everything is set through the front panel using the LCD display as all options can be set permanently through the front panel whereas with most printers the user must set dip switches to set the permanent options. The KXP1124i also has the ability to set up 4 different power on defaults (macro's as they are called in the printer manual). So when the printer is turned on it will automatically be setup in whatever print fonts and settings that you want. Using the macro's, printer settings can be set up and switched to by selecting a macro from the front panel instead of going through all the options to set up a particular configuration or the power on default can be set to any of the 4 macro's that the user defines.

Paper can be loaded from three positions, from the back (most common method), from the bottom or from the front. The usual tractor feed paper can be used (most common method) and can be loaded from any of the three positions as well as friction feed paper can be used. The big advantage of being able to load paper from the front is that single sheets can be used and your tractor feed paper does not need to be removed to use single sheets as the printer has a park function that allows the user to park the tractor feed paper by pressing a button. The printer will then accept a single sheet from the front and then from a press of a button the tractor feed paper will automatically re-load. A neat feature that I have never seen in a printer before but included in the KXP1124i is a "paper cut" option where by pressing a button the paper will advance up to the tear line on the cover and the page which was just printed on can be torn off and by pressing the button again the printer will roll the paper back down to the edge of the next sheet of paper and the printer is then ready to print. Thus the "paper cut" option saves an extra sheet of paper as in many printers the user must advance the paper up an extra sheet to tear off the pages which was just printed wasting a blank page.

Under the "TEXT ENHANCEMENT" selection on the printers menu various print styles can be selected including BOLD, DOUBLE HIGH, DOUBLE STRIKE, DOUBLE WIDE, ITALICS, OUTLINE, SHADOW and ZERO SLASH (puts a slash through the 0 on the print).

Under the "PRINT MODE" selection on the printers menu various desired print controls can be set including Uni-Directional (print as print head goes left to right only) and Bi-Directional (print as print head goes both directions) print. A separate setting can be set for in text and graphics modes as it may be desirable to have the printer print Bi-Directional in text mode and Uni-Directional in graphics mode although Bi-Directional will give the greatest print speed. Some people like graphics to print in Uni-Directional mode as the printer may not print vertical lines as strait in Bi-Directional print but I haven't seen any problem with Bi-Directional print for graphics and text.

Other features include the ability to select the country which the printer is going to be used in thus displaying the appropriate language (English, French, German, Spanish and Italian) for that country on the LCD display. Furthermore, the printer has the ability to emulate an Epson LQ-850 or IBM Proprinter X24E. A "QUIET MODE" is available which slows down the speed of the printer to make it print quieter should you need to keep the noise level down. Other features include setting lines per inch, paper length, top and bottom margin, left and right margin and the position for the center of paper. Character sets are available for various countries, characters per inch can be set (CPI) as well, plus many other options are available...

The printer comes with an internal 12k buffer with the ability to add an additional internal buffer of 32k giving a total of 44k. The buffer simply allows the printer to accept more data and hold it in it's memory until it can print it thus freeing up your computer... Note that in order to program your own downloadable characters the 32k buffer option is required. One interesting feature that I noticed is that the LCD display will indicate the amount of data remaining in the printers internal buffer while it is printing.

What is my opinion of the printer? I like it! Both the print speed and print quality is great, in fact, in letter quality mode it is almost impossible to tell that a dot matrix printer printed it. Furthermore, the draft mode in the XIP1124i looks almost as good as the NLQ in my NX-1000 printer. The paper path and tractor feed system works good, I haven't had one paper jam whereas with my old printer I constantly had paper jams when using tractor feed paper and labels. Those who use IBM PRO PRINTERS know how common paper jams occur with those printers!

As for operating the front panel, some operations are immediately obvious while others may require a little thought or may require consulting the book or reference card. With all the features available on the printer the controls are bound to be a little complicated but now that I know how it works I do not have as much trouble setting any of the options that I want to control. However, when I get in a hurry and do not pay attention to what I am doing is when I have trouble setting the panel settings. The easiest thing to do is just to set up 4 macro's for 4 different configurations and switch the macro's instead of changing all of the options each time I want a change.

Have I found any problems with the printer? The only problem that I have found with the printer is compatible software. If you are using the printer just for the TI99/4a most graphics software will not be able to function properly unless they have an option for an Epson compatible 24 pin printer. If your software does not have an option for an Epson compatible 24 pin printer the graphics which are printed will either be too big or too small or not in the correct positions. Text still prints fine, it is just the graphics which are off... In the IBM compatible world most recent software packages allow the user to set an option for the Panasonic XIP1124 printer.

REPORT CARD: Performance ..... A      Retail price ..... under \$300  
Base of Use ..... B+  
Documentation ..... A-  
Value ..... A+  
Final Grade ..... A

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## PUTTING IT ALL TOGETHER No. 10

by Jim Peterson

The hardest part of learning to program is not in learning what the various commands do - it is in learning how to put them all together to do what you want them to do!

Key in this simple routine, and run it, to see what it does. Then read the explanation of each line and see how they do what they do.

```
100 CALL CLEAR
110 INPUT "KNOWN VALUE? ":C
120 X=1
130 GOSUB 180
140 IF A<C THEN Y=X :: X=X*2
   :: GOSUB 180 :: GOTO 140 EL
SE 160
150 IF A>C THEN Y=X :: X=X/2
   :: GOSUB 180 :: GOTO 150
160 Z=(ABS(X-Y))/2 :: Y=X ::
   IF A<C THEN X=X+Z ELSE X=X-
Z
170 GOSUB 180 :: GOTO 160
180 A=X X/X
190 PRINT X;:: IF A=C OR A=B
   THEN STOP ELSE B=A :: RETUR
N
```

Equations such as the one in line 180 are very difficult to solve mathematically, but the computer can solve them quickly by systematic trial and error. You can substitute any other equation of one unknown value, using A for the known value and X for the unknown.

Line 110 gets the known value in C. Line 120 gives X a starting value of 1. Actually we could start with any value except 0, but we must give X some value or the computer will take it to be zero.

Execution jumps to line 180 to try this value in the equation. Line 190 prints the value of X, just so we can see what is going on, and then checks to see if the value obtained for A is the value we specified for C; in this case the problem is solved and execution stops. We will explain the B later. If not solved, execu-

tion returns to 130 and then to 140.

If  $A < C$ , meaning A is less than C, the value we received is too small, so X must be too small. In this case we save the value of X in Y, then double the value of X, GOSUB to the equation and check in 190 whether we have solved it. If not, we return to 140, jump back to the beginning of 140, see if A is still smaller than C and, if so, repeat the process again. Eventually the doubling of X will cause A to be more than C, if we do not hit it exactly in 190, and the ELSE 160 jumps us to that line.

However, if the first value we obtained for A was more than C, execution would drop right through line 140 to line 150. Here we would do exactly the same thing except that we would halve the value of X each time until A became less than C.

In either case, we end up in line 160 for the final step. Now here is why we were saving the previous value of X in Y each time. We subtract Y, the previous value, from X, the current value. Either one may be larger than the other, so we may get a negative value. ABS changes the negative to a positive. We divide the result by 2, and give that value to Z. If A is less than C we add Z to X, otherwise we subtract it. Then we GOSUB to 180 repeatedly until 190 finds that we have found the answer. Each time around the difference between Y and X will be half of what it was the previous time, and the result of the equation will alternate between  $A > C$  and  $A < C$  until it finally centers on the exact value.

Now, the reason for the B in line 190. The true value of X will usually run out to more decimal places than even our 16-bit TI-99/4A can handle and, since the exact full value cannot be reached, the program would go on forever. So, we save the value of A in B each time, and check each time to see if the next value received for A is that same value. If so, we have reached the limit of computer accuracy, so we stop. The same number will probably appear on screen several times at the end, because the screen shows only 10 digits but the computer continues calculating to 13 or 14 digits.



# RANDOM ACCESS TO MY MEMORY BANKS

by Jim Peterson

The 99105 Accelerator, to be priced at \$250, will speed up the TI by a factor of 5; in combination with the PEB RAM interface card, to be priced at \$90, the increase will be 10-fold. These are remarkable devices, and I am sure the hardware hackers will love them - but do the computer USERS really need them?

Personally, every program I'm apt to use is on my Ramdisk, for almost instant access. Prescanning has eliminated those initialization delays. The programs generally run as fast as I want them to.

I know that Stephen Shaw over in England is writing graphics plotting routines that take hours and hours to run, but that is the kind of thing you boot up and start just before you go to bed; nothing is going to speed it up so much that you would want to sit and wait on it.

Yes, sorting routines are a bit slow, even in assembly, but the TI just doesn't have the memory to sort any sizeable amount of data anyway. TI-SORT gets around that limitation, to some extent, by writing and reading a scratch file on disk - but disk access is necessarily slow. Other chores you might like to speed up, such as archiving, are slow because of disk access. I know, I know - the hard drive overcomes that limitation. Sorry, my time is valuable but not THAT valuable!

And maybe you would like to speed up Multiplan, or TI-Base. Here again, the TI is handicapped by lack of memory. It was designed as a HOME computer, not a business computer. I have only two projects I would like to put in a database, and both are too large to be practical on a TI. If I ever get around to working on them, I'll put my money into a second-hand PC (pardon the word) rather than add more hardware to my little home computer.

But if you absolutely have to speed things up, maybe there are cheaper ways. For years, there have been references to changing a crystal, costing about \$4.50, in the console. Finally, in the Hoosier newsletter of August 1991 I ran across an article downloaded from DELPHI, in which Jesse Slicer explains exactly how to do it. He says you will gain an increase of 19.3% in microprocessor speed, but you will experience problems with terminal programs and graphics-intensive programs. So, he tells how to install the new crystal in addition to the old one, with a switch to alternate between them.

In the same newsletter are two other DELPHI downloads. One is a step-by-step description of Mike Ballman's method of adding 32k of RAM memory on the 16 bit bus, for a speed increase of about 50%. It requires two chips costing about \$13 and a couple of other doohinkies, price not mentioned.

The other file describes a modification to this method, by the late John Guion. Now, all of this is complete Greek to a technoklutz like me, but if some hardware hacker was to start buying up \$25 consoles, making those modifications and reselling them at a reasonable price, I might be interested.

Perhaps a better way to speed things up is through the software rather than the hardware. A few years ago, RYTE Data was marketing a so-called Basic compiler. It wasn't really that, but it did speed up XBasic programs quite drastically. Unfortunately it had so many limitations and created so many bugs that it was worthless. Last year, someone on the East Coast announced that they were writing a true Basic compiler, but I have heard no more about it. I believe that J. Peter Hoddie and Paul Charlton examined that idea previously, and decided that it was impossible within the memory limitations of the TI.

Ideally, programs should be written in assembly for maximum speed and efficiency - as Mike Ballman would be quick to point out. Trouble is, there are very few programmers with his skill, and very few programs being written in assembly.

But actually, XBasic is a perfectly satisfactory programming language, easy to write and easy to modify, and can be fast enough for any purpose if it is supplemented by CALL LINKs to assembly to do whatever XBasic can't do fast enough or can't do at all. Some of the best programmers have gone that route, but most of us don't know how to write those assembly routines to link to - we need someone to do it for us. Some extremely useful routines have been written for us by such skilled programmers as Karl Romstedt, Barry Traver, Bruce Harrison, Bud Wright, Ross Mudie and others. We need more of them.

Just think. If, back in 1984 when I put out my first 100 Nuts Bolts XBasic subprograms, some assembly genius had started putting out disks full of assembly subprograms. What a powerful programming language we would have by now, and what wonderful programs might have been written!

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Improved Video

by, Bob Lawson

In my travels through the Texas Instruments Manuals, specifically the TMS-9918, 28, 29 Manual, I read, "The load resistor (RL, pin 36 to ground) defines the sharpness of the edges on the video signals. A lower resistor value gives faster fall times and a sharper picture." Hmm! I don't remember any 330 ohm resistors.

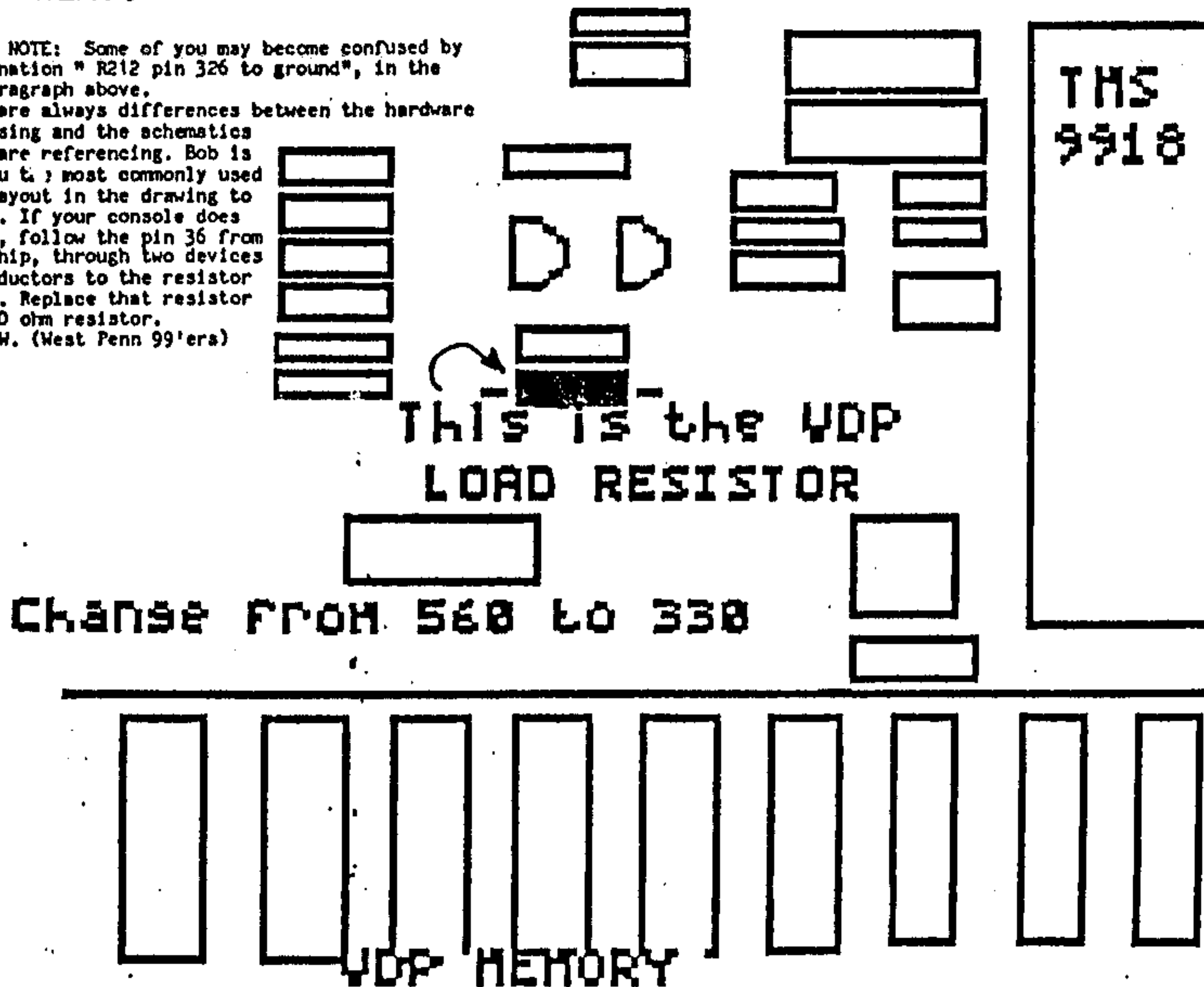
Well, I pulled out the "TI Console and Peripheral Manual, and sure enough, R212 pin 36 to ground was 560 ohms per the schematic. The next step was to check out a console, and well you guessed it, R212 was 560 ohms, not 330 ohms as recommended in the TI Manual!

Next step was to try some different value resistors, 330 ohms seems to be about the best common value resistor to use.. I wonder why TI chose to use 560 ohms. I did find one old TI Manual which recommended 390 ohms (1979), but they're sometimes hard to find in 1/4 watt. This 30 cent change gives about a 40%, that's right, I said 40% improvement in the picture. The improvement is so good, you'll wonder where the WHITE SHADOWS WENT.

EDITOR'S NOTE: Some of you may become confused by the designation "R212 pin 36 to ground", in the second paragraph above.

There are always differences between the hardware you are using and the schematics that you are referencing. Bob is giving you the most commonly used console layout in the drawing to the right. If your console does not match, follow the pin 36 from the VDP chip, through two devices called inductors to the resistor to ground. Replace that resistor with a 330 ohm resistor.

J.F.W. (West Penn 99'ers)



# PRINTHEAD PROBLEMS? HERE'S THE SOLUTION!

by TERRY PRIEST  
PORTLAND USERS NINETY NINES

Having trouble with your printer? Are the descenders faint or gone? Funny blank lines where they don't belong? Incompletely or poorly formed characters? All of a sudden the ribbons seem to get holes in them and the printhead hangs up?

If you are having any of the above problems your printhead needs servicing. In the old days this meant buy and install a new printhead. That's a pricey choice today, and you might want to consider some options.

## OPTION #1

First option is to put in a FRESH ribbon and run the following XB program. This will get your descenders back temporarily.

```
100 OPEN #1:"PIO" :: A$(1)=RPT$(CHR$(239),80)
:: A$(2)=RPT$("g",80)
110 FOR X=1 TO 2 :: FOR Y=1 TO 66 :: PRINT
#1:A$(X) :: NEXT Y :: NEXT X :: CLOSE #1 ::
END
```

CHR\$(239) is a 6 by 6 dot block on the Gemini 10X. If you get a different character consult your printer manual for the number of the correct shape. Run this several times, if necessary, to heat up the printhead and hammer through the dirt that keeps the wires from striking hard enough. Almost all the problems with print quality have to do with just plain dust and dirt!

## OPTION #2

The second thing to do is to simply clean the printhead. Follow the directions in your printer manual for removal. Then clean it by spraying liberally with TV tuner cleaner - make sure the label says safe for plastics. Cup it in a paper towel to keep the mess out of your hands and eyes. Blast it from inside to outside and all over. The solvent will run off and evaporate.

Purchase cleaner at Radio Shack and electronic outlets. It is banned in some areas since it's harmful to the ozone layer. (Available in Washington, but not Oregon.)

Take care not to blast off the "ruby" on the front of the printhead. If it comes off you can get it back on by gently rocking and pushing it till the wires line up and it settles in, but you had better be a patient type person! Reinstall per manual's directions. IMPORTANT!!! DO NOT USE ANY KIND OF OIL ON THE PRINTHEAD OR THE RIBBON. The ink on the ribbon supplies the correct and sufficient lubrication.

## OPTION #3

If this still does not produce a cure (or the repair doesn't last) then you need to replace or rebuild. This is your only option if the printhead is snagging holes in the ribbon, or if there is a consistent blank line where there shouldn't be. Now you can have your printhead rebuilt for about 1/3 to 1/2 the price of a replacement.

The place to get this done is the Dot Shop, 608 SE 181st St, Gresham, OR 97030. The phone is (503)666-6425. To start the procedure phone them and get an order number to use when you send in your printhead. They repair all the common brands and quite a few more. Return is by UPS ground (extra for air). Turn around time is several days usually.

They will completely rebuild the printhead and put in new wires, pins and solenoids if necessary. The repair is guaranteed for 90 days or they will fix free of charge.

I first used the Dot Shop to rebuild a printhead for a Gemini 15X that was snagging ribbons. The printhead broke a pin on the fourth page of text. I returned it to them --no hassle--no problem. Two days later I got it back and proceeded to print 300,000 graphic characters (6 dots by 6 dots). It is working perfectly and the quality of regular text is that of a new printer.

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## DO YOU KNOW YOUR TI'S BIRTHDAY?

If you wish to find out when your TI Computer was manufactured, turn your computer over and read the LTA number on the bottom. The first two digits are the week and the last two digits are the year that your console was manufactured.

-from "Trivia For The Month," BUG NEWS, Brea 99ers UG, Southern Calif.



NEXT MEETING TUESDAY, FEBRUARY 11, 1992

MUNCH OFFICERS AND NUMBERS (all in 508 area unless noted)

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EW-AGE/99	Jack Sughrue	476/7630		

JANUARY MEETING. There were 13 members present at an unusually mild, temperature wise, January meeting. Jack demoed a disk of space programs and the MUG loader. Corson then demoed a new program called Sound F/X. This program shows the versatility of the T.I. sound capabilities. Frank had seen the program earlier in the month and had a number of additional sounds to demo. The Group decided to take advantage of the User Group discount and purchased five copies at a 20% discount. The member cost is only \$12.00, four have been sold and 1 will be available at the meeting. Chris Georges won the raffle.

FEBRUARY MEETING. This month I hope Jack will be able to demo Video Chess, along with the usual assortment of surprises. I will have the library there and I hope to have an updated software catalog.

RAFFLE. Every month we have a raffle to help defer the rental cost of our meeting hall. A typical raffle will have game and utility programs T-Shirts, books, bumper stickers, blank discs and all sorts of odds and ends for the T.I.

LIBRARY NOTICE. Please return any items borrowed from our library. If you cannot come to a meeting or give these items to someone who will be at the meeting.

REPRINTS. Reprints are permitted as long as credit is given to M.U.N.C.H.

ARTICLES. I am always looking for articles for this newsletter, anything which interests you will probably interest other members of the TI community, so please share your ideas and opinions with all of us.

DISK LIBRARY. The disk library will be at the meetings from now on. We have copies of all disks in the library and they are available to members for just 1.50 each for single discs, \$2.00 floppies, \$3.00 double discs and \$4.00 double floppy.

FOR SALE. The group has a TI Count Business Software package available for sale. If interested contact Jim Cox at the above number or the club address.

DISK OF THE MONTH. This month's disk is Imagic games Demon Attack, Fathom and Microsurgeon.

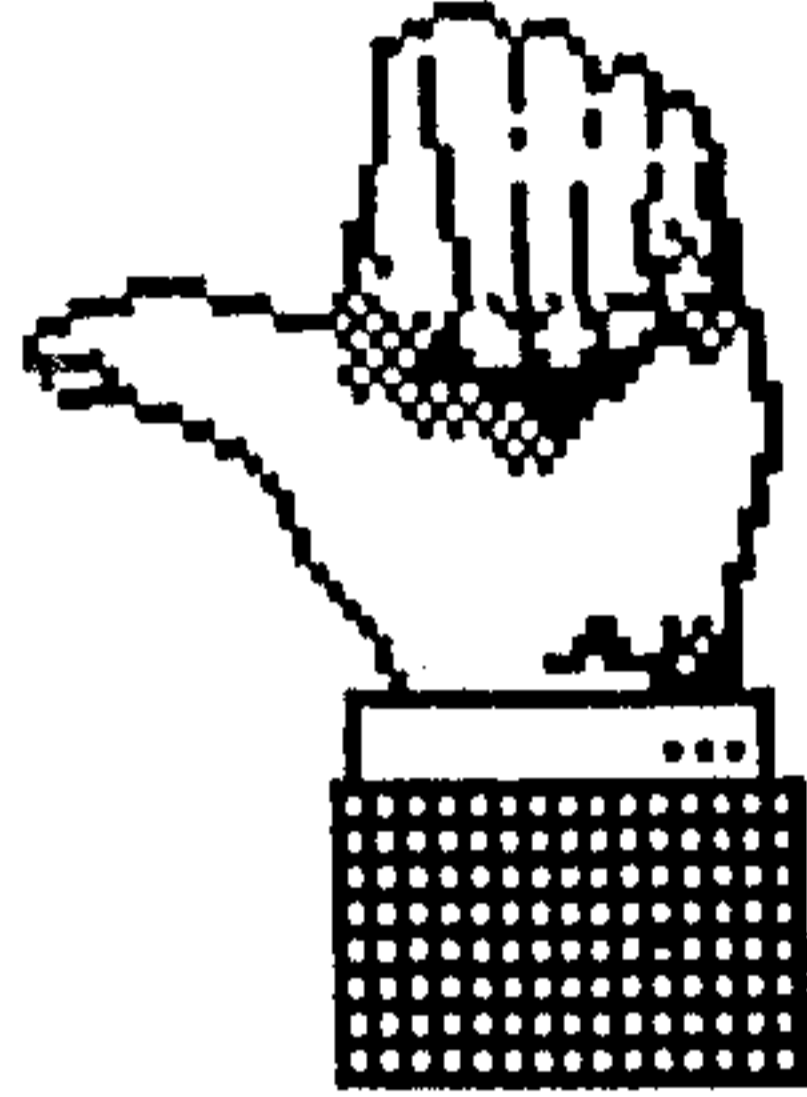
The B.C.S. has announced the date for the 1992 T.I. Fayah, it will be on Saturday April 4th at the Waltham Junior High School. Let's start to make plans now for the Fayah.

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Mass Users of the Ninety-nine and Computer Hobbyists  
 FEBRUARY 1992 Monthly Newsletter Version 11.02



TI-99/4A



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FIRST CLASS

Next Meeting FEBRUARY 11th

POSTMASTER: Forwarding and Address Correction Requested.