



# West Penn 99'ers

Supporting the TI-99/4A Home Computer



*Established 1985*

ISSUE #68

April 1991

## FOR THE RECORD

by: Frank Zic

The March meeting started at 7:15PM at our new (very nice) location at the North Huntingdon Town House. Mickey gave special thanks to, who else, our very special John Willforth for finding our new meeting place. Our entire TI computer club thanks all Township personnel for being so kind to us. Thanks also went to Joe Ekl for bringing in the goodies and supplying the TI-Writer supplements. Lynn gave a positive treasurer's report. We all thank Art for bringing in the nice, low priced monitors. The Gardners have done a wonderful job for our club. Thanks went to Scott, Lynn, Art, Mike, Jack and Bill for moving supplies out of our previous location. Mike and Paul will bring a computer set-up to each meeting. Without everyone pitching in, as they have, we could not exist. Please be ready to do a little extra when asked. Norm still handles the modules and cassettes and Bill will bring in our ever expanding disk library. The TICOFF/Hamfiest held 3/9/91 was better attended this year. Important demos were on Progidy and C-Shell 99. Ten major equipment suppliers were in attendance. The Boston faire is April 6 and Lima on May 18. The PUG and WP99er's will probably have a table at Lima. Our own MS Express software will be represented.

Gary gave a report on the BBS. Don't forget with Gary's taking over the Presidency of PUG he is looking for someone to take over the BBS. Like we mentioned above, step forward and do a little extra for the club. By doing so, you will learn and enjoy while doing your part to help the club. Disk prices have been reduced to .30 cents. Norm will write a newsletter article and present a class on XB/Assembly sprites control. Sounds like an interesting session, plan to attend. A contest on benefits of belonging to a computer club is being conducted. Entries are due May 21, call Mickey for details. First prize will be a packet of 20 disks. MICROpendium references this month are: p16 TI-Base users guide, p26 Artist Enlarger and p33 Artist Fonts and Borders. Look for more cassette based reports from Mickey and the nice article by Jack Sughrue about Mickey fine contribution to TI cassette and Adventure enthusiasts. Norm demonstrated his new Sliding Block II puzzle and hints. Norm always does a nice programming job. Welcome to new member John Wehland. Nine prizes were in the raffle this month. Show up and get a piece of the action.

May the good 4's be with you.

## WEST PENN 99'ERS CLUB INFORMATION

### NEXT MEETING DATE

April 16, 1991  
7:00 P.M.

### MEETING LOCATION

NORTH HUNTINGDON  
TOWN HOUSE

OLD ROUTE 30  
NEAR IRWIN, PA

### LIST OF WEST PENN OFFICERS FOR 1991

PRESIDENT:	Mickey Schmitt	412-335-0163
VICE PRESIDENT:	John Willforth	412-527-6656
TREASURER:	Lynn Gardner	412-835-4304
RECORDING SEC:	Frank Zic	412-751-6065
CORRESPONDING SEC:	Mike Sealy	614-282-5627
LIBRARIAN:	Bob Sadusky	412-863-5672
NEWSLETTER EDITOR:	Chris Pratt	703-415-3964

### GENERAL ITINERARY OF THE CLUB'S MEETING

6:45 P.M.	DOORS OPEN
7:00 P.M.	GENERAL MEETING
7:45 P.M.	DEMOS & NEW INFO
8:45 P.M.	TI BASE SIG
8:45 P.M.	PAGE PRO SIG
11:00 P.M.	DOORS CLOSE

### 2MEETING HIGHLIGHTS FOR THIS MONTH

- \* LATEST T.I. NEWS AND SOFTWARE DISCOUNTS
- \* LATEST T.I. NEWS FROM THE "BOSTON SHOW"
- \* UNVEILING OF JOE AND ROB'S NEW PORTABLE
- \* ARTIST CATALOGER DEMO BY MICKEY SCHMITT
- \* ASGARD'S WATERWORKS DEMO BY GARY TAYLOR
- \* →SPECIAL HARDWARE AND SOFTWARE SALE!←

### RENEW YOUR MEMBERSHIP DUES!

\$15.00 PER YEAR FOR INDIVIDUAL / FAMILY  
\$10.00 PER YEAR FOR JUST THE NEWSLETTER

### CONTENTS FOR THIS ISSUE...

For the Record.....	1
Club Information.....	2
From the Editor.....	2
Best Buys.....	2
P.S. by JFW (part 2).....	3
P.S. by JFW (addendum)....	6
Classified Ads.....	6
New Age 99 #14.....	7
WP Flyer Contest!.....	9
Design Guide Announcement.	9
Post It Notes.....	10

### From the Editor...

It's April already and spring is finally here (hooray!). That also means the Lima conference is not far away! I'm making all my plans now.

My optical scanner is not working, so this month's newsletter will look mildly different in a few spots. I will have it back on line by next month though. Also returning next month will be my series, *Confidential File*, which is not appearing in this month's issue because of time constraints.

Remember to submit those articles. Better act now before the weather gets too nice and you are stuck outdoors!

CDP

--WP♦

### Best Buys April '91

#### Dot Matrix 24 pin printers! --

Wow, 24 pin quality at prices that are affordable. Epson & Panasonic both reputable brands are now under \$300 (around \$275). Computer Discount Warehouse, 2840 Maria Ave., Northbrook, IL 60062, carries a wide selection of printers (including the more affordable laser printers too like the TI MicroLaser). It's nice to see output from your computer that looks clean, crisp and professional! It's wonderful that our TI's can support these devices, and they keep getting cheaper. Call CDW: 1-800-827-4239 (in Illinois: 708-498-1426)

[Best Buys are the editors choice for products that are compatible with the TI and are based upon the editor's personal experiences with the products listed in this column. Items are selected on the basis of quality, price, and performance. Suggested vendors are sometimes included either because they are the only ones who carry the product, or because of outstanding customer support from the vendor.]

--WP♦

If you decide to solder the four wires directly to the system bus board (see Fig. E below, clean the holes very well and as you dress the selected wires from the new PC power supply, be careful not to nick the strands since nicked wires may break and dance around the top surface of the system bus board ( eight slot board in PEB that you plug the PEB cards into ), causing shorts between +12, -12, and the +5 DC lead and the killer ground is very tight around those three holes on the board. Do not allow too much lead to extend past the bottom of the board, since shorts then could exist to the metal below.

We've some confusion to deal with when reconitering DC power output from the PC power supply board. The location of these DC voltage outputs vary with each power supply. They'll probably be considerably low if read with a meter and no load is applied. To assist in this area, try plugging a disk drive into one of the disk power connectors coming from the PS power supply. Mount the new +12 PS (power supply) in the PEB and with only the disk drive plugged in and AC provided to the PS at TPC1 and TPC2, from S1 and IF, CAREFULLY power the unit up. Now you can short pins 16 and 15 on the disk drive together to turn on the motor to the disk drive. This causes an increase in +12 volt draw on the PS. Pins 15 and 16 are on opposite sides of the logic board on the disk drive where you would plug in the 34-pin ribbon cable. They are the eighth pin on a side counting from the end of the board that has a notch between the second and third edge connectors. All odd pins are ground so it doesn't matter which pin you touch on the odd pin side.

Locate by metering, the +5, +12 and -12 wires coming from the PS. Also find the many grounds. You will note that there are many +5, +12 and Grounds on the board but usually only one -12. Use the extra disk power connector(s) to measure the +5 and +12. Note as you do

the colors of the wires, because the manufacturers usually keep the same colors for the voltages and ground on the PS units and this would make identification of the DC power on the PS much more precise.

If all looks good at this point, you may want to hook up the power to the system bus Item "P" in Fig. E. It shouldn't matter which ground and which +12 or which +5 you use, but I believe that your choice will be limited to the one -12 volt wire you find.

You can reinstall the fan if you reversed the field (laminated zink plates shown in Fig. G) to quiet the PEB. Connect IF to FC and S1 to FA or visa-versa (it doesn't matter this is Alternating Current were talking about here). By the way, to reverse the fan, remove the plastic fan blades (a very hard pull), then remove the two screws that hold the fans main parts together. By the way, it might be smart to mark the main three housing parts, so you KNOW that you actually did turn the field 180 degrees. All other parts remain in exactly the same position. Watch where the small washers on the armature shaft are (how many and on which end) and be sure not to lose any. You may find that doing this, will make all the work worthwhile.

FIG. E  
"ITEM P"

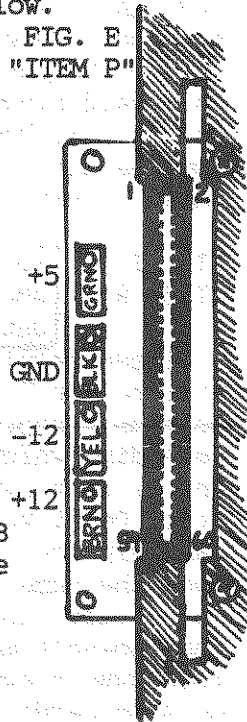


FIG. F  
"ITEM T"

Note that there can be many connectors for the various voltages on the board, and they can be located anywhere on the PS board.

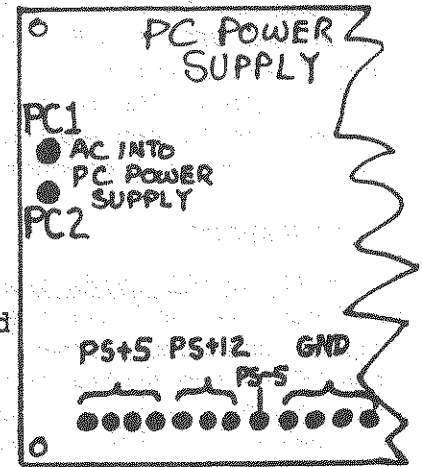
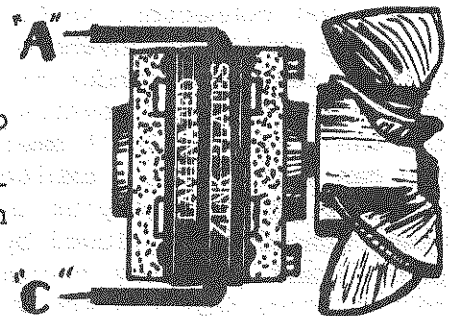


FIG. G  
"ITEM F"

You may want to lubricate the two brass bushings on the fan while you have the PEB apart.



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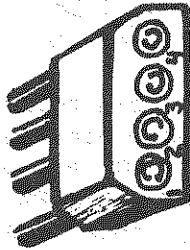
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Below in Fig. H, Item "D" you may reference the pin-outs for a disk power connector. They are the same in the PEB as the ones found on the new PC power supply. The connectors are both identical but the wire colors will, in all likelihood be different. There may also be only one wire running to the number 2 and 3 pins since these are both ground, and a loop of wire is sometimes used between these two pins. i.e.: You may have only three wires from the new PC PS. This is OK.

FIG. H  
"ITEM D"

None of the connectors on the new power supply is likely long enough to reach the drive

+5  
GND  
GND  
+12



port with enough to spare to allow for comfortable hook-up of disk drives. It will then be prudent to splice the old PEB disk drive power cable to the new PC disk power cable using information you gathered and I've provided to this point. Use the voltage/wire color table that you should have drawn up earlier. You can survive if you failed to do any thing about checking voltages, if you at the very least NOTED ALL THE +5, +12, -12 and GROUND WIRE COLORS on the new PS or at the VERY LEAST have a means to accurately meter the voltages on a live power supply. The better you note the items I mentioned earlier, the less difficulty you will encounter.

CHECKPOINT

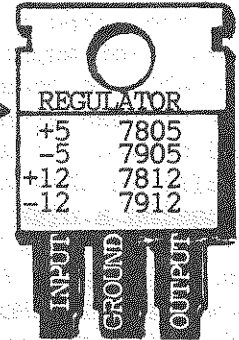
With no PEB cards installed, the new PS installed and all the AC wiring ( 7 wires connected, shown just above FIG.A) the DC to the system board (see FIG.E), and the DC voltages to the disk power connector (see FIG. H above), and at least one disk drive connected to that disk power connector, APPLY POWER. Note that you can't get anywhere accurate DC voltage readings without a load on most of the new switcher power supplies. If the fan runs, you don't smell anything, you can start getting excited! A quick check of the voltage pins on the disk power connector, followed by shorting pins 15 and 16 on the 34-pin connector should prove that you are doing pretty well. Now, CAREFULLY meter the four

connections shown in Fig. E to see that the +5 DC is present on the point marked GRN (green not ground), ground should be on the point labeled BLK (black), that -12 DC is present on the point marked YEL (yellow), and finally +12 DC is on point marked BRN (brown). I wondered what TI would have done if the wire manufacturer ran out of green, black, yellow or brown wire since they etched the colors of the wires right into the board. With all the mistakes I make, I'd never dare etch a variable into a board.

If all still looks good, it is time to learn the FINAL step in upgrading the PEB, and that is the modification(s) to the individule PEB cards, including the seldom thought of PEB interface card. This card plugs into the left-most slot in the PEB. Remove the cover and find a component that resembles the regulator shown in Fig. I Item "R".

FIG. I  
"ITEM R"

To bypass, short input to output.



These regulators will be found in up to four flavors, depending which card and by what manufacturer. Don't worry, I can help you here by saying that they all look the same, have numbers that appear to be very close and confusing, but all that doesn't matter. Just look for at least one on every card, and up to three on some cards like the GENEVE (9640). The regulator was chartered with the job of reducing and controlling the RAW DC voltages fed to them from the old TI PEB type power supply. Since the new PC power supply already does this, they can be bypassed.

One way is to remove the item, and put a jumper wire across the outer two holes that are left (staying clear of the center hole, ground). Another way is to not remove the component, but to just jumper the outer two leads. The regulator will then be quiescent and inert.

Bypass the regulator in the PEB interface card, reassemble, and install the card in the PEB. Connect the firehose to the TI-99/4A, and power up the PEB, followed by the TI console, (unless you have a 9640, GENEVE) in which case you won't have

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a fire-hose attached. In this case I think that you are going to have to do as Mr. Beard did, modify your 9640 board as described (short out the three voltage regulators or remove and jumper) and just try it.

\*\*\*\*\*  
\*\*\*\* This project should not be under \*\*\*  
\*\*\*\* taken by any but experienced \*\*\*  
\*\*\*\* project doers, or those with a \*\*\*  
\*\*\*\* lot of money to replace the unit \*\*\*  
\*\*\*\* that no longer works. I cannot \*\*\*  
\*\*\*\* take responsibility for misprint \*\*\*  
\*\*\*\* errors or your failures to com- \*\*\*  
\*\*\*\* ply with instructions. As a mat- \*\*\*  
\*\*\*\* ter of fact I'm sure that I'm \*\*\*  
\*\*\*\* speaking for the User Group that \*\*\*  
\*\*\*\* prints this article as well as \*\*\*  
\*\*\*\* any other reprint. J.F.W. \*\*\*  
\*\*\*\*\*

All cards that are installed in the PEB will now have to be modified as shown in Fig. I to the items that look like the voltage regulator, and it is VERY IMPORTANT to note that unless the jumpers are removed, these cards can never be used in a standard PEB with the old style linear PS inside. The reason is that if jumpers are in place, RAW +16, RAW -16, and RAW +8 VDC (actually as much as 50% above these values is possible) will be put on the voltage pins of chips which are not designed to be operated at these extreme levels. Basically all chips on a board can be "SMOKED". Here is a simple rule:

Any PEB board, modified or unmodified may be put in a modified PEB, but only a modified card will function, the unmodified card will fail to function but is not damaged.

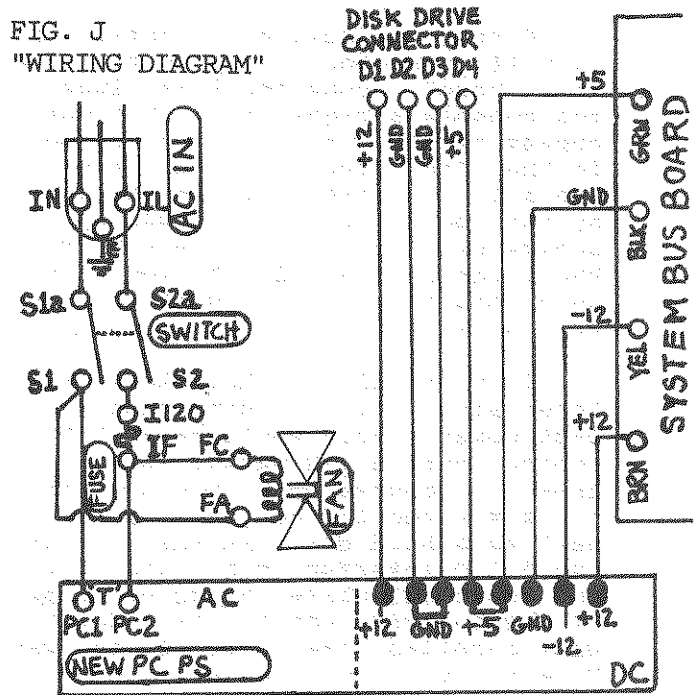
An unmodified PEB will DESTROY ALL cards that are modified.

SUGGESTION, place a bright red or yellow sticker attesting to the fact that the card should never be placed in an unmodified PEB on the TOP SURFACE of that card.

I might mention here that if you wish to modify your old style TI PEB, the type with the PUSH switch (not the rocker type described in this article), the units are primarily different in the area of the transformer and the fuse. Since the fuse is easily located this should cause no problems, and the transformer will be removed completely anyway, you should be able to reference the wiring diagram in

this column and modify any PEB that TI released. You can either solder directly any wire to a spade lug connector, but putting a shielded female lug connector would make adjustments, repair, and disassembly much easier should it become necessary.

FIG. J  
"WIRING DIAGRAM"



I know that many things may be confusing in the last four and three quarter pages, but please read the entire article carefully first, locate all the items in your PEB, and familiarize yourself with your new PC power supply. Chart all measured voltages in the PEB and on the new PS to wire color. If you feel more comfortable just wire as indicated above. Some people won't need all the detail I've tried to place here. Caution with repeated checking as you go along is always wise.

You can even use the DC fan from the new PC power supply, but you will have to plug it into the new PS and not wire it to the AC as was your old PEB fan. This could give you a quieter PEB, depending on the fan that was in your new PS. Try in either case to have the air flow into the PEB and not out of the PEB (this is the reason for a muffled quieter PEB).

This is the end of the PEB power supply upgrade (modification) article. You should be referencing five pages, if not something is missing. I hope that you will benefit a great deal from this article.

Maybe you'd like to make the PEB into a MINI-TOWER, with the TI-99/4A inside? Might be next!  
ML J.F.W.



Parts one and two are as correct as I can get things the first time. This should be considered more of an addendum to the original article. I have one very important addition to add and some construction hints.

First, I failed to mention the +5 volt regulator in the foot of the "fire hose" connector that plugs in the console's right side. Without a bypass of this regulator as was done in the PEB interface card, the PEB and all it's cards will not be found by the console (CPU) on power-up. No damage will be done to the PEB or to the cards in the PEB. If you've not been able to get your unit to work, try checking this out.

If your PEB will have less than three slots left, I think that a 200 watt power supply would be a better choice (over a 150 watt). This will depend of course on if you are using let's say two 1/2 height floppies as well as a hard drive in the PEB with the 5 I/O, interface, controller cards and can't calculate the power drawn by these cards. Don't settle for 135 watt supplies! Ask Mike. By the way Mike Sealy drew it to my attention that I missed the regulator in the foot of the firehose.

An alternate construction idea would be in mounting the PC PS PCB ( Personal Computer Power Supply Printed Circuit Board). Cut a sheet of plexiglass or plastic to use as a intermediate mounting media for the PC PS PCB as large as the mounting holes on the PCB ( this should be at least large enough to span the holes on plastic bracket that originally supported the TI PS PCB, see FIG. D of part 1). When this is done, you will see that by manipulating the relationship of the three parts, you can develop a convenient and secure position for the new PC PS PCB with

in the PEB PS cavity. Use the piece of plastic as an adapter in other words.

The PEB is but 17 1/4" high if set vertically. If you are a GENEVE owner, you could make a great mini-tower. A neat way to do that, would be to remove the 5 rubber feet from the bottom of the PEB and relocate 4 of them to the corners of the end you would feel most comfortable with as the bottom. If the now exposed bottom of the PEB is too unattractive to you, think of making a solid metal plate ( aluminum would be easy to work with ), 11 1/2" x 17 1/4" to attach to the bottom. The 6 screws holding the cover to the base plate ( around the perimeter of the bottom on the PEB ) could be removed and replaced with screws tapered and recessed into the new bottom plate. If you would like to really provide a clean looking bottom, use double-sided tape.

If you operate a 99/4A, you can do the same, but you would probably find that the diskette drives would be best located on top. The firehose would be closer to the surface where the console itself is located. This mini-tower concept, in either case, is nice if you want to put the PEB on the floor. Think about it. The floppies would be up at knee level, it doesn't matter where the hard drive is within the PEB, so long as it is mounted in accordance with the rules for installing your particular drive ( some drives must be mounted horizontally ). The noise would most certainly be reduced, and valuable desk space would be increased.

More can be done to improve the PEB, and the next article will point to another idea.

----- more later JFW

## CLASSIFIED ADS

**Wanted:** CorComp DS/DD Controller. Call Patrick Morris @ 301-647-3658 or Email on Delphi, PMORRIS.

**Special:** Hardware and Software at the next West Penn Meeting! Don't miss it.

[Classified ads may be placed by any member of the West Penn 99'er User's Group free of charge. Please send ads directly to the editor or give to Mickey at the meetings. The normal deadline for submission applies.]

--WP♦

~~~~~  
W-AGE/99 \* NEW-AGE/  
99 \* NEW-AGE/99 \* N  
EW-AGE/99 \* NEW-AGE  
/99 \* NEW-AGE/99 \*  
~~~~~

\* by JACK SUGHRUE, Box 459, East Douglas, MA 01516 \*

#14

## GENTLEMAN GENIUS

Of the two tags, Gentleman and Genius, I think the former gets my approbation concerning the best way to describe John Willforth. My wife, Elaine, agrees. For John is first a real gentleman; and that is what you think of before realizing he's also a genius. Gentlemen, I think, are rarities today, even among TIers; though I've discovered more in the 99er ranks than in other walks of life. People like Charlie Good, Jim Cox, Jim Peterson, Barry Traver.

Geniuses, though, are a dime a dozen in the computer world, and most of them are far from civilized.

An example, small but significant: Lots of TIers have been to my home, all of them treated to Elaine's gracious welcome, her extended hospitality in the matters of food and lodgings, so they get to know her and discover, too, that we two rattle alone around our hut, now that our four tykes have leapt into the grownup world, returning us to "couplehood" these past two years. So any female voice answering our phone will be Elaine. But John is the ONLY "adult" TI person who will acknowledge Elaine's existence on the phone. He always says, "Hi, Elaine, this is John Willforth," when she answers, just as if she's not a non-person. Sometimes they converse so long I have to pry the phone from her fingers so I can get to talk to John.

With others who've been here, however, it's usually "Jack there?" when she answers, without even mentioning who they are.

I don't know. Maybe I'm old fashioned, but I still believe a lot in courtesy and friendliness and the acknowledgment of the existence of someone I've met.

Anyway, John's old fashioned in this way, too, and I like it: 19th Century values in a 21st Century mind. It's fun being in tune to someone as family oriented as he is. He talks about his wife (Fay) and his three daughters with such joy that you know love and sensitivity are a VERY LARGE part of his nature.

My wife and I talk about John so much that my son Matthew and his wife (Carolyn) wanted very much to meet him. The last time he came over for dinner, we had the "kids" over, too, and all of us enjoyed his pleasant, witty company all evening.

John's a talker. That's a compliment. And he can converse about almost anything but literature (as he claims he doesn't have time to read novels, thus leading to the time-worn argument in THIS house that all the major social changes in the world have been brought about by fiction ... and so on). It's fun arguing with John because the conversation is stimulating and he's still your friend in the end.

John's logical. He even tries to use logic with his teenagers (which probably makes him illogical, when you think about it).

He's hardworking (to a workaholic degree, I think) at some pretty heavy duty electronic wizardry. John even has a calculator on his watch, which he uses.

He writes well. His articles on printers, as well as the long-term articles on hardware (and software) are lucid, practical, and scary: SCARY in the sense that he takes apart consoles and P-boxes and anything else mechanical, electrical, and electronic that he can get his hands on and performs vivisectionist surgery on their innards. He seems to be able to radically modify anything, from computer chips to his backhoe and assumes everybody else should be able to do so.

Whew! Not me. My hands shake when I have to dump my pencil sharpener or fill my stapler.

But John's made me a believer. One evening he came up to my computer room, still chatting about his family, and, while carrying on the conversation, took apart my working P-box. Completely! Screws, nuts, bolts, fans, stuff, whachamacallits, and thingamajigs. Then he reversed my fan, explaining that it would keep my box cool (maybe even cooler) while it would cut down the noise to one-third. It did. We turned on other P-boxes in the room and compared them to the fix.

He also told me where and how to order floppy drives and how to install them (5.25 and 3.5 operate with no cable modification on the TI). I learned that I could buy any IBM compatible half-height disk drives and put them in my TI. [ERM Electronic Liquidators (1 800 776 5865)] for fully warranted reconditioned drives. I called, bought two Panasonic DSDD (\$29 each!!!!), installed them myself, just like a computer grownup. Though they also sell cables and disks (for as low as .15 each DSDD), I ended up getting a Power Y cable for internal power connector (\$.99) and an AT-HDDR cable set for double connector to controller (\$2.89) and a whole lot of other things from another company he recommended: National Computer Accessories (916-441-1568). So, thanks to John, I was able to convert my setup on my school system from one SSSD to two DSSD at a cost of around \$60! And does that make a LARGE difference in my ability to do TI things in my classroom. As a matter of fact I'm writing this at school on my quiet P-box, DSSD system and it! Everything works great. (Remember, we're talking about John teaching me, the man who has to use a manual to open a jar of peanut butter. You readers are chuckling over this "big" hardware deal, but John opened up new worlds to me. I plan to confidently upgrade another system soon and maybe even do a user group demo.

Which brings me back to John's generous spirit. While at a training session in Connecticut some months ago, John willingly came to our M.U.N.C.H. in Worcester, Massachusetts, one evening and shared some great insights and answered all kinds of questions, including some about things he had written as newsletter editor of the West Penn user group, which he founded many years ago to reach out to users outside the Pittsburgh area.

He was also the hit of the New England Fayuh that same week. Everyone there was thrilled to meet the man they all knew through his writings and references to his work by others. He ended up being the biggest TI star at the whole event. People at the fair were in awe of him and still talk about his visit, yet I've met very few humbler men.

Now, back at my desk at home, I'm using a console John modified a while ago and recently gave to me. It has a plexiglass cutaway of the interior housing of a Zenoboard containing a clock, speech, 32K, E/A, XB, ADVENTURE, TIW, DM, and a system Pause button. All switchable. I feel as though I died and went to TI Heaven.

The man's a genius, no doubt, but more important, he sure is a warm and sensitive friend. To me, it's worth owning a TI just to have met John Willforth.

[If you use NEW-AGE/99 please put me on your exchange list.]

-WP♦



For some time now, I have wanted to see our club distribute flyers throughout our communities so that those owning a TI-99/4A computer would know of our existence.

Now that we have recently moved to a new meeting place, I feel that this is an ideal time to put this idea into action, thus, the creation of this contest.

The official rules for this contest are as follows:

You must use your TI-99/4A computer to create your flyer, though you may use any program(s), picture(s), or font(s) that you wish.

Your flyer must clearly state all of the necessary details concerning our club, (i.e., WHO, WHAT, WHEN, and WHERE).

Your flyer must be submitted both on disk and on 8 1/2 inch by 11 inch paper.

All West Penn members (having paid their \$15.00 membership fee for 1991) are eligible to participate.

You may enter as often as you wish, just as long as all entries are submitted to Mike Sealy by the end of the May 21st, West Penn meeting.

Voting will be done by all members present at the June 18th, West Penn meeting.

The winner will receive a Memorex Work System (disk case with 20 disks), a package of disk labels, a package of printer paper, and a package of printer envelopes.

Copies of the winning entry will be passed out at the July 16th, West Penn meeting to all members present, so that they can be circulated throughout our communities.

If you have any questions concerning this contest, please contact Mike Sealy, our contest coordinator at R.D. #1, Box 184, Toronto, Ohio 43964-9719, or by phone at 614-282-5627.

Tony Lewis has sold the rights to his Interface Standard and Design Guide for the TI-99/4A Peripherals to Jeff Guide as of 1991. Jeff will be the sole distributor for the manual and utility programs. Tony will still be available to answer inquiries concerning the contents of the manual. Jeff is in the process of updating and enhancing the manual format to make it even more useful. Unfortunately, the new manual may not be available for a while, so send letters of inquiries to:

Jeff Guide  
PO BOX 244  
Lorton, VA 22079

Please be advised that the final price of the enhanced manual has not been set to date (3/15/91), so it is recommended that you write for more information before sending an order. No orders should be sent to Tony Lewis.

Tony has also added a couple of new programs to the utility disk for DSR writers. First, Wayne Stith has graciously provided some useful standalone subroutines, such as VSBR, that can be put into a DSR (you can't use these external routines by REF or DEF in a standalone DSR; they will be loaded outside the >4000 block by the /4A). Another useful program that Tony wrote is called EE/DSR for people that want to program an EPROM, EEPROM, or static RAM in one of the peripheral spaces. It is a modified version of John Johnson's DSRL program which now will load an executable program (E/A option 5) into the >4000 peripheral space from a disk file (DSRL could not load programs into the peripheral space, unless the file was modified). Now, a DSR author can write his or her DSR, save it via the RAG Linker, then load the program into the memory chip. This eliminates the problem of using the Editor/Assembler package for creating DSRs; the E/A system WILL NOT allow you to save a memory image (opt. 5) program that is AORG'd to the >4000 block. The EE/DSR program has some error checking included to insure that a true memory image program is being loaded into the memory chip, and that the total number of bytes being loaded is less than 8K long. The program has also been rewritten to insure that it works properly with the EEPROM programmer design that was presented last year in a series of MICROpendium articles. The program should work equally as well if a static RAM or EPROM is used. EE/DSR is also available on some of the major computer networks.

--Tony Lewis

President, Mickey Schmitt

-WP\*

Interesting last minute news break...

Sources say that Tony McGovern is still very interested in working on FunnelWeb! Charles Good, from Lima, OH, has contacted me regarding Tony McGovern's interest. Tony wants to add hard drive support for the Electronic Systems Development H/F Controller card to funnelweb. I have written Tony to obtain more details. I have also assured him that ESD will provide him with any technical information he needs. ESD will even send Tony a card of his own. Hopefully I will have many more details next month. It is very encouraging to see this develop. Funnelweb is a wonderful program and with hard drive support it can satisfy even more peoples needs!

-WP♦

Good luck to everyone in the West Penn Flyer Contest. Who will win???


-WP♦

## WEST PENN 99'ERS

c/o Mike Sealy  
RD #1 BOX 184  
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