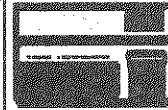




# West Penn 99'ers



Supporting the TI-99/4A Home Computer

*Established 1985*

**ISSUE #73**

**September 1991**

## FOR THE RECORD

by: Frank Zic

The August meeting started approx. 7:15PM at our newest and hopefully final new location at the Penns Wood Civic Bldg in North Huntingdon. Mickey gave special thanks to Bob Sadusky for finding our present location. Bob said additions to the library include; 2 disk set of Page-Pro Instances compiled by Paul Brock, one disk of TIPs ver 1.8 with "TIPs to Page-Pro converter" and one disk of assembly source and objective programs and XB programs from Barry Traver's articles from the Micropendium(June 1990-June 1991). Mickey announced that at several of our next meetings the highlight will be on giving demos. Among those planned are: 1.A mock BBS. 2.Midi-Master(This will also be a raffle prize later-come join us). 3.Cassette systems. 4.A Newsletter program. Next she read a letter from one of our Newsletter members from W.Va., who is interested in cassette systems. They may attend one of our meetings. They and anyone else interested in the TI are more than welcome to visit us anytime.The July Newsletter was late in developing so it was sent with the August issue. Saved postage too, hum, sounds like a good idea. Some future member written articles may include one by Rob Ekl on the portable unit he and his Father are making and one by Norm Rokke on XB/Assm. Give some thought to the silk-screening of T-shirts. The emblems and wording must be determined. We need your ideas. The details can be worked out later. It was noted that the PUG BBS is presently only functional at 300 baud. Samples of Paul Brock's handy computer work were passed around. They were Newsletter front pages done with graphics and fancy lettering. Beery Miller reportedly has a manual for hard drives.

Mickey next covered many interesting articles in the July Micro.; p5 a 12 Mhz TI system, p22 The Art of Assembly, p26 TI console accelerator, p27 Harry Brashear joins Asgard Software and p29 Tony McGovern working on Ver.4.4 of FNLWB. The TI-99er article in the Sept.91 issue of Computer Monthly by Barry Traver continues to be priority reading. Comprodine has a program that catalogs and prints out Instances and Fonts. Our raffle prizes were; TIPs graphics won by John Vukman, tab feed envelopes won by Evelyn Brock and tab feed labels won by Paul Brock. Chris Pratt said the original ESD hard drive controller design will not be produced but will be replaced by a new IDE system, perhaps including a 40 Meg hard drive. ESD will most likely not issue a release date on the new design, but more than likely the finished product will be demoed at a Faire, when FOR-SALE units will be on hand. Chris brought in a TI computer system to sell for a friend. He also brought in a TI NoteBook computer, series 2000 with high resolution and 80 columns. Nice to see Chris Pratt and John Drennen at our meeting.

Many thanks to Judy Muir, Ralph Vasco and Mickey Schmitt for taking the meeting minutes during my recent absences. Sure glad my temporary hand problem cleared up so fast on Tues. night.

May the good 4's be with you.

## WEST PENN 99'ERS CLUB INFORMATION

### NEXT MEETING DATE

SEPTEMBER 17, 1991  
7:00 P.M.

### MEETING LOCATION

PENNS WOODS  
CIVIC ASSOCIATION

JUST OFF ROUTE 30  
N. HUNTINGDON, PA

### LIST OF WEST PENN OFFICERS FOR 1991

PRESIDENT:	Mickey	412-335-0163
VICE PRESIDENT:	John	412-527-6656
TREASURER:	Lynn	412-835-4304
RECORDING SEC:	Frank	412-751-6065
CORRESPONDING SEC:	Mike	614-282-5627
LIBRARIAN:	Bob	412-863-5672
NEWSLETTER EDITOR:	Chris	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.	ASSEMBLY FORUM
8:45 P.M.	HARDWARE CLASS
11:00 P.M.	DOORS CLOSE

### MEETING HIGHLIGHTS FOR THIS MONTH

- \* LATEST T.I. NEWS AND SOFTWARE DISCOUNTS
- \* LATEST NEWS CONCERNING OUR NEW T-SHIRTS
- \* OSCAR - HARDWARE DEMO BY MICKEY SCHMITT
- \* ASGARD'S Y.A.P.P. - DEMO BY MIKE SEALY
- \* "ON-LINE GRAPEVINE" DISK #3 BY VONRICKY
- \* ▶ SPECIAL HARDWARE AND SOFTWARE SALE! ◀

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\$10.00 PER YEAR FOR ONLY OUR NEWSLETTER

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### From the Editor...

I dedicated this issue to graphics because I was inspired by Paul Brock. Graphics have been discussed in Paul's last two articles and last month I was greeted with a newsletter cover-page full of spectacular graphics. Unfortunately due to unusual space constraints this month I was unable to include all of the graphics I was planning. Oh well, next time.

I hope everyone saw the little blurb in this month's issue of MICROpendium about Barry Boone's Digitized Speech program. Sounds wonderful! Can't wait until October. Other TI news: Last night I received a phone mail message from Shane Truffer, President of ESD, and he informed me that his new IDE hard drive was running "great!" on his TI.

I think you will find this month's issue jammed packed with new and exciting TI news. Until next month... CDP

-WP♦

## BEST BUYS Sep '91

This month I encourage everyone to look locally for good buys. One can find some great deals at computer HAMfests. Also look in this newsletter! Usually every month we carry classified ads which have great deals on all sorts of TI stuff. This month is especially good.

-WP♦

# CONFIDENTIAL FILE

~~A POTENTIAL PERIPHERAL~~

## A PRACTICAL PERIPHERAL

As noted in the February issue of this newsletter, Al Beard and myself have been collaborating for over a year on developing a math coprocessor card for the Pbox. Well, as you might guess from the title, it is now functional (not 100% done, but functional).

To recap: in 1989, I did a little research and found that the Motorola 68881 math coprocessor chip (used in Macs and Amigas) could be used with the TI system. I played around with some circuit designs, and ran them past a Motorola engineer who said it might work. In 1990, Al Beard put things into motion by actually buying a 68881 and sending it to me. I started serious design on the peripheral card last summer, wired up the prototype card in the winter of 1990, and developed an all-assembly interface program in early 1991. I finally installed and checked out all the chips the first week of August, and what do you know, the darned thing worked after all.

I am currently (late August) in the process of cleaning up last minute bugs in the interface program; the bugs are related to my lack of assembly programming ability, and are not related to how the 68881 works. What we have envisioned for the 68881 is a PBox card, possibly with its own simple DSR, that can be accessed by various programs on either the /4A, Geneve, or the announced 99105 "accelerator" card. We hope that the basic software and hardware design can be converted into a simple PBox card that the user could put together as a kit, like the Horizon RAMdisk. Assembling the card would be a snap, since there would be only the 68881, 2-3 PALs, and the data/address bus chips. We are currently seeking others who may help us in having the card produced and marketed. If we are very lucky, a working version of the card may be shown at the Chicago show in early November.

Last but not least, everyone keeps asking me "How fast is it?". This is not a trivial question. Once I have debugged the basic interface software, I hope to run some '68881 vs. TI' tests to see how much faster it is to access a 68881 in the PBox, versus the built-in floating point math routines in the console. I will publish the results later when

available. In any case, the 68881 has many more math functions than the /4A, and is good for 17 digits. [Would you believe that earlier this spring, I tried to check the accuracy of 17 digit math on a Compaq at work, and found that DOS machines and hand held calculators are only good to only 15 digits or less? I personally find it quite humorous that a TI 99/4A can be more accurate than a '486 33 Mhz DOS machine.]

That's it for the time being. According to Motorola, I have the only non-Motorola microprocessor hookup to a 68881. Perhaps with the right help we can provide the card to others in the immediate future. If you have questions on the 68881 interface card project, feel free to drop me a card at the address below, or leave a message on Compuserve (73357,1730) or BIX (tonylewis).

Tony Lewis  
409 Drolmond Drive  
Raleigh NC 27615

--WP♦

## KEEPING UP WITH CASSETTES

BY MICKEY SCHMITT

### NUMBER 3

This month's article comes to us via an article that I read in the November 1990 issue of the Manners newsletter. It was entitled "Control of the CS1 Remote" and was written by Ed Hall. [Ed. Note: Also see February 1991 issue of West Penn 99er's].

Have you ever wondered if there might be a way to control the remote line which turns on and off the cassette motor? Well there is a way and it doesn't take too much work either. You do need the 32K memory and for the following program the XBASIC cartridge as well. First let's talk about why you would want to control this line for anything else. What about using the computer to control other devices? With a little bit of circuitry and the following code a program could be written to turn on and off lights or maybe a stereo. Your TI could be at work while you're away. It could be used for security.

The following set up a link program will to allow user control of the cassette remote control for CS1. By doing so, an XBASIC program can be used to control external items other than the cassette recorder. This program has to be loaded and run in Extended Basic with the 32K memory expansion operating.

```
110 CALL INIT
120 CALL LOAD (16368,79,70,70,32,32,32,36,252)
130 CALL LOAD (16376,79,78,32,32,32,32,36,244)
140 CALL LOAD (8194,37,4,63,240)
150 CALL LOAD (9460,2,12,0,45,29,0,4,91,2,12,0,45,30,0,4,91,203,78)
```

Once the program is run, control of the remote is accomplished by the command, CALL LINK("OFF") to turn off the control and CALL LINK("ON") to turn on the control. I would suggest trying this first while watching the cassette spindle, with the cassette on, to see how it operates. Once you get a feel for it, you can write a program in XBASIC to perform the timing.

--WP♦

# IMPORTANT INFORMATION

## SPECIAL REPORT

BY: PAUL A. BROCK

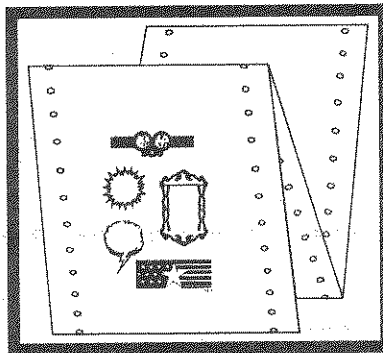
This is a column for those that don't get the Computer Monthly. There is an article written by Barry A. Traver that I haven't seen anywhere else, there is some good information in this article. I thought that I might pass some of that information on to the readers of the WEST PENN 99'ers. the following information comes from Barry's column in the June 1991 issue, called TI-99ers in the '90s. I am coping it and hope that I don't make any typing errors.

In addition to commercial programs published by Asgard, Page Pro 99 has received fairware support as well. Let me mention a few products and addresses. Ed Johnson (399 S. Lexington Ave., St Paul, MN. 55105) has released TIPS2PP (converts tips pictures to Page Pro 99 format) and Page Pro Font Editor (creates new Page Pro Fonts. Paul Scheidemantle (2762 Lovington, Troy, MI 48083) has made available a Page Pro Picture Cataloger (creates a catalog of Page Pro Pictures). Bill Gaskill has come out with a Page Pro Editor/formatter (helpful, according to Chris Bobbitt, in generating text for newsletters) And Chris Bobbitt himself has released Medical Clipart."an extensive collection...useful for physicians and students." (incidentally, this information on fairware products comes from a helpful "Page Pro Productivity Chart produced by Chris.)

I haven't seen the actual program yet, but I understand that Joe Deleko's Screen Preview Program is now available (including disk and 12 page manual) from Asgard for \$12.95 plus \$2.50 shipping. from the description it sounds a bit like Harry Wihelm's Paper Saver program (in that it allows you to see on the screen in miniature what your formatted printout will look like), but Asgard's Screen Preview

sounds more powerful (in that Asgard's program actually allows you to make changes in the text while running the program).

Screen Preview is a replacement for the TI-Writer formatter (it supports most but not all TI-Writer formatter commands) and runs from the TI-Writer Utility option (or any equivalent). Here's how Asgard describes the program: "This program... will format your text file, with embedded TI-Writer formatter commands, to the screen in a miniature format,... You can view an entire page at a glance, checking margins, page breaks and other formatting. if you see an error, you can point to the line that needs correction and change the text on the fly. Finally, when the page is done to your satisfaction, press a key and it's printed on your printer, and you can move on to the next."



Paul is running out of printer paper fast with his big interest in graphical!

According to Asgard, Screen Preview not only works with standard floppy disks, but "is also compatible with hard drive systems and most RAM disks." If (like many people) you

use your computer mostly for word processing, you could find this product to be very helpful. I plan on giving it a try myself. <END >

The following are my comments...

Most of this information was explained at the meeting, but I missed it somewhere! Maybe someone else missed the information, then this will be of some help. Since the beginning I have been using Asgard's products, After I got my printer I went crazy. You might say that I am a graphic freak. I got a pile of pictures. I am having a lot of problems with my equipment, but thanks to the WEST PENN U.G. I am getting them worked out.

R2D2&TI2

MADE IN USA

-WP♦

# THE OTHER GUYS vs TI-99/4A

by  
Richard Lynn Gilbertson



Little do most of us know just what we have in the TI-99/4A. So it made sense to write about it. First off just what do these other guys have, well more memory and a faster processor. They also have hundreds of companies with support lines and so many different versions of the same machines and software too, that it quite boggles the mind to count them. The other guys have years of major research invested into every software package and so many different operating systems of disk and processing data that it would take several books bust to list the names.

Ok what does the TI-99/4A have to compete with that- Well hold on to your hat, the 99 does have several things and none of these are by any means minor.

First off lets get into a little history. When one of the other guys stores data onto a disk like say "STORE THIS" what you will find on the disk is "STORE THIS crlf ". now the "crlf" means it's universal among the other guys for Carriage Return and Line Feed. So every line of the data on the disk has to have this at the end: "crlf" to tell the computer that this is the end of the string of data. Now the 99 has a simpler approach, "OASTORE THIS" is how the 99 does the same thing. The "OA" stands far ID in hexadecimal and you can see being at the front instead of at the rear of the string means you don't have to read the whole line to see how long it is. The other guys have to load the whole line and make the computer count how long it is, while the 99 just looks at the first one and knows how long it is. If you are searching a disk you can see why it takes so long far the other guy.

The history of why that is comes from the concept the other guys system uses which was conceived in 1953. The 99 uses a concept from 1975. And yes the other guys have not changed because if they did all the software written would have to be totally rewritten. Also forget them doing it any time soon. I should also mention that this system of ours is already being used on newer main frames.

Today I was asked if the 99 was compatible with the other guy and as usual was quite insulted. Let me show you why. Go ahead and ask another guy when was the last time he got out his Soldering Iron and added something unique to his system. First off he will look at you like you are truly crazy. Then he will ask 'what do you mean unique?!?!'.

Say 'unique like a interrupt switch to halt everything and do

something else previously loaded. Or just stop what you are doing and do nothing. Or do a total reset and start over.' He will reply 'oh yea, I can do that last one.' and he is right he can only do the last one. His software has to do the others, the 99 is already built for those and doesn't care if hardware or software causes it to happen. Or ask the other guy to load and run his very best Telecommunications, Word Processor, Disk Manager, and Assembly Compiler from one disk without changing disks. Honestly he will say 'you can't get all that on one disk', reply 'Really! I can do it on mine. And I still have room for almost a third more.'

Also mention that most of the other guys you've shown your 99 to really love your telecommunications program. (Telco)

How about Operating Systems? The other guy on most of them has to load one before he can do anything. First off what are the advantages of this, one is for a particular application this will allow you to have the fastest program loaded possible, and the second is it will be as small as possible for the application. Disadvantages? History should be explained now as the advantages are distorted. Back in 1950 the concept of loading a new Operating System to speed things up was the best solution to lack of memory. Also it had the other advantages mentioned and it made sure the system was running at peak ability. But that is also where all the trouble started. You see if you want to run something else you'll load it someplace that is already being used. This means you will have to load a program that moves it out of the way, so you can load something else, then you can load this other program.

Does it require much thought to see it is similar to digging a hole and filling it with dirt from another hole so you can re-dig the original hole. That is not even without mentioning the fact that the other guy may on some systems have as many as three types of Operating Systems, and they are not compatible with each other even though they are all written for the same computer.

So the 99 doesn't have a problem of creating while loading the third program because it is too large. It knows the 2nd program used up all the space. The 99 uses what's called Relocatable Code, which means it just loads where there is space left, and knows how much memory is left. This is Artificial Intelligence. The 99 does not have to ruin everything in memory to see there is a problem, the other guy has to reboot from scratch.

Expansion of the system over time on the other guy also requires a history lesson. For lack of a better term we will say the other guy has a 'Hard Coded' system. I got that term from a Computer Science Professor as he coined it on the air. Hard Coded means that you can't run any program from the area dedicated to the disks or the RS232 or other peripherals. You can't load anything there or even move anything there without special hardware and software. The 99 only has one Hard Coded area, the operating system. The other guy has several and can't move them to another location, remember they are Hard Coded (physically located by hardware).



Let us say we want to add a 1 Meg of memory to a fully expanded system the guy has. Sorry no can do, Hard Coded. For the 99 that is no problem as it can without any modifications at all talk to 128 devices, so just make it a device and add it on. An example is the 192K Video Display Processor (9958) added to the 99. It can be upgraded and increased in size also. And the GRAM/GROM port for cartridges can talk to 640K of GRAM/GROM but turned into a device could be expanded to a unbelievable 4095 Meg or 4 Gigabytes. This is without even mentioning the RAVE CARD which is an other guy approach to expansion, but that is only 3.5 Meg maximum for the 99.

Five years from now I'll have my TI-99/4A and will still be adding devices and Cards to it. The other guy will have gone through two systems by then just to stay current with expansions. I mentioned one thing the Professor said. He also said that current Mini and Micro computers are similar to shoot-and-throw-away cameras.

The Tamira, 990/10, TI-99/4A, and NXT are the only Memory to Memory transfer, Memory Mapped Memory, and Memory to Memory Architecture computers ever built. So I don't think he knew about the TI-99/4A or it's relatives. All the rest are all like the 'Hard Coded' machines he mentioned, why do you suppose they have to replace the mother board for the simplest upgrade? 1950's concept in the 1990s!! Does the other guy really have that much on the TI-99/4A? We shall see. We shall see!

--WP♦

## CLASSIFIED ADS

**Wanted:** TI-99/8 computer.  
Call 703-415-3964 or write:  
Christopher Pratt  
801 15th ST, S. APT 605  
Arlington, VA 22202-5017  
or GENie (e-mail): C.PRATT8  
with information.

**Wanted:** TI Interface  
card for PBOX.  
Call or write above address.

**For Sale:** TI-99/4A Consoles(2)  
w/ RF Modulators & Power Supplies.  
CorComp 9900 Micro Expansion System  
(includes RS-232, 32K Memory  
Expansion, & DS/DD Disk Controller).  
Half-Ht. DS/DD 5¼" Drives w/ power  
supply and case.  
Speech Synthesizer.  
Large qty. of software, documentation  
and other related books and cables.  
Best offer takes all!  
Contact Eric of Bill at:  
(412) 373-2104

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♦



Counter 3900 - Don O'Neal  
An accelerator mod for the 99/4A based on the 99105 CPU chip

Counter 4200 - Bud Mills  
On screen demos of Memex Memory Expansion / P-gram / Horizon Ramdisk

Counter 4900 - Barry Traver  
GENie / Genial

Tape 3  
=====

Counter 0100 - Joe Ross  
C-Shell 99

Counter 2010 - Chris Bobbitt  
Asgard Software support for Page Pro 99

Counter 2730 - E. M. Smith  
Demo of Newsletter Printer / software by Art Gibson for formatting and printing newsletters

Counter 3765 - Mike Maksimik  
The Midi Interface for the 99/4A and Geneve

Counter 3925 - Various  
Video of displays and interviews with people in the exhibit area

As you can see - everyone who is anyone in the TI community could be found at the 1991 Lima show!

I would like to offer my personal thanks and appreciation to those members of the Lima Users Group who once again have put on "THE BEST" TI show of the year!

For those of you who attended the show - you know what I mean. This group really does an outstanding job in all areas of hosting a show. No other club, or show has been able to match their success.

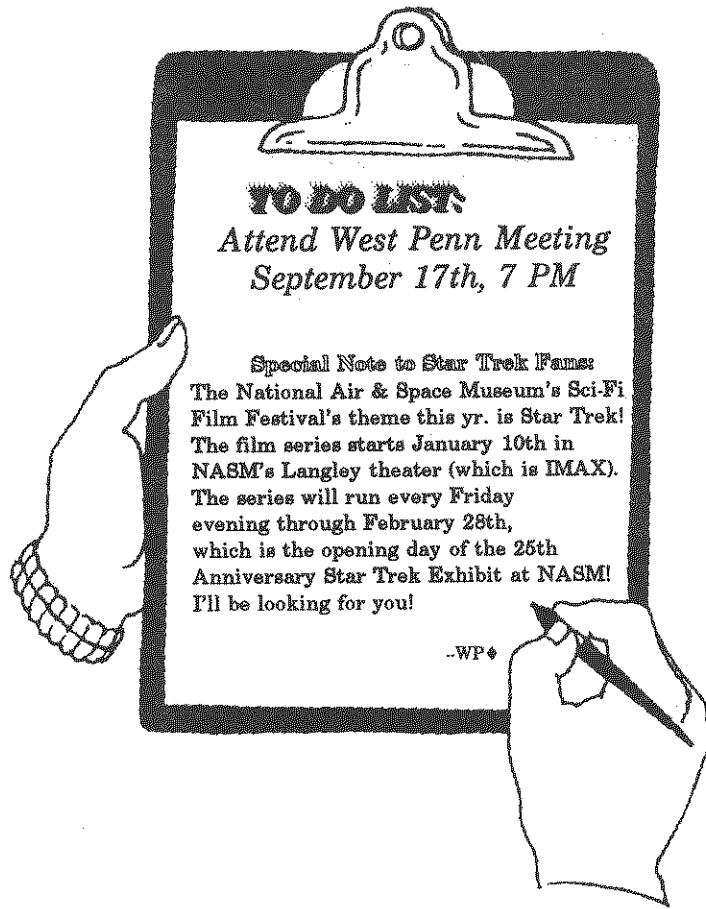
For those of you who have never attended a Lima show - you can get just a small idea of what all was available at the show by watching these tapes. I say small idea only because I personally attended this years show and I know for a fact that there was an over-abundance of things to see, people to meet, things to buy, and seminars to attend.

I would encourage all those in the TI community who attended the show to express their appreciation to this fine club and strongly suggest that they invest in this years Lima Video Tapes.

It is such a small cost to pay - for so much information.

Mickey Schmitt

President of the West Penn 99ers



**TO DO LIST:**

*Attend West Penn Meeting  
September 17th, 7 PM*

**Special Note to Star Trek Fans:**

The National Air & Space Museum's Sci-Fi Film Festival's theme this yr. is Star Trek! The film series starts January 10th in NASM's Langley theater (which is IMAX). The series will run every Friday evening through February 28th, which is the opening day of the 25th Anniversary Star Trek Exhibit at NASM! I'll be looking for you!

..WP♦



Oh, Wow!

**WEST PENN 99'ERS**

% Mike Sealy  
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Toronto, OH 43964

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