

ISSUE #62 OCTOBER 1990

**FOR THE RECORD**  
by Ed Bittner

Here we go again. #62 in the series. Will we make #100 ?. I hope so.

The September meeting of the West Penn 99ers was opened by President Mickey Schmitt at 7:16 PM. sharp ! The President's Appreciation of the Month award was shared by two of our members, namely Joe Ekl, for the reproduction and distribution of the West Penn 99ers library catalog, and to Jack Skinner for a ton of printer paper donated to the club (maybe it was only a half of a ton).

The club officers were then asked for their reports and might I add that, indeed, last months minutes were to be corrected. This marks the first time for such an event! Specifically, this is the first time that the Sept. 1990 minutes needed to be corrected! **MX** software is to be corrected to read **MS EXPRESS SOFTWARE..** The library reported nothing new..Lynn reported a large surplus of money in the treasury...hummmm..and it was decided that we would not send Mickey to Germany for the Ti International unless she agreed that it would be a one way trip !!! Mike Sealy, sitting in for corresponding secretary Gene Kelly, was absent... Perhaps no news is good? news. Membershipwise we welcome a new member who resides in Fort Walton Beach, FLA.(Ray signed him up !!) Mickey reported that the club inventory is a constant and that Art, thats Lynn's Art, will re-ink ribbons at the next meeting for some doe (I think a BUCK). The Lima Tapes are available for the next meeting.

Gary Taylor gave a BBS update: John Willforth might/has/is donate/d/ing a hard drive to PUG when the new HFDC arrives. Gary encourages all in the West Penn 99ers to use the BBS. Currently 50 or more people use it !!!

Scott Coleman led a discussion centered around nominations for new officers (see below), which led into a discussion on the appointed newsletter editor position. It was agreed by all that we've had it toooo, toooo, goood, leaving the job solely to John W. who has done a superrrrrrrb job. After 20 minutes discussion on what to do, who might do it, and who definitely won't do it, Mickey appointed Scott to come up with something concrete regarding the future of the newsletter. Raffle prizes included y-extender cables and a power distribution center. Lastly, we were treated by several of the original authors of MS Express Software, including Adventure Hints; Lynn G., Galactic Emperors; Eric K., and Sliding Blocks, Puzzles and Solutions; Norm R.

Religiously submitted,  
Scoops Bittner

**Nominations:**

V Pres. Scott Coleman	Rec Sec. Frank Zic
Librarian Bob Sadusky	Cor Sec. Mike Sealy
Treasurer Lynn Gardner	Pres. Mickey Schmitt

PS: Licence plata of the month : **99S4EVR**

**WEST PENN 99'ERS CLUB INFORMATION**

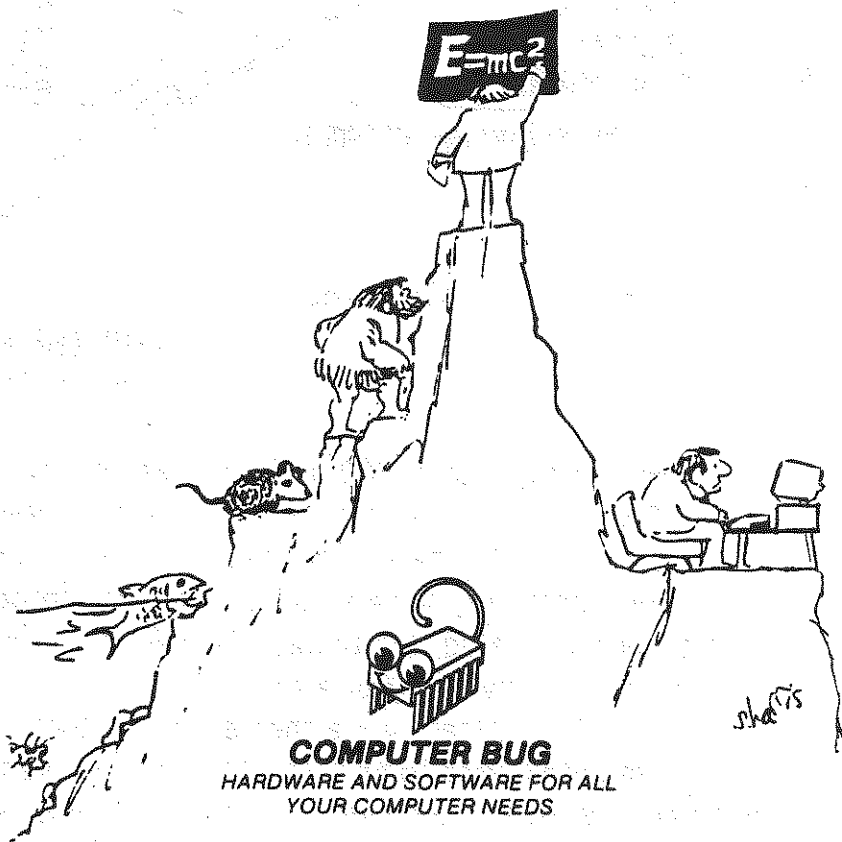
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**NEXT MEETING DATE:** OCTOBER 16 1990  
**MEETING LOCATION:** ST. STEPHEN'S  
 BYZANTINE CATHOLIC  
 CHURCH  
 JUST OFF ROUTE 30  
 BETHEL ROAD, NORWIN  
**TIME OF MEETING:** 7:00 P.M.

**LIST OF WEST PENN OFFICERS FOR 1990**

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**PRESIDENT:** MICKEY 335-0163  
**VICE PRESIDENT:** SCOTT 523-3754  
**TREASURER:** LYNN 835-4304  
**RECORDING SEC:** ED 864-4924  
**CORRESPONDING SEC:** GENE 829-0469  
**LIBRARIAN:** BOB 863-5672  
**NEWSLETTER EDITOR:** JOHN 527-6656



**COMPUTER BUG**  
 HARDWARE AND SOFTWARE FOR ALL  
 YOUR COMPUTER NEEDS

Chuck Percherke  
 412-882-3374

4110 Brownsville Rd., Suite #50  
 Pittsburgh, PA 15227

**GENERAL ITINERARY OF THE CLUB'S MEETING**

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6:45 P.M. DOORS OPEN  
 7:00 P.M. GENERAL MEETING  
 7:45 P.M. DEMOS AND NEW INFO  
 8:45 P.M. HARDWARE & PRINTERS  
 8:45 P.M. INTRO TO ASSEMBLY  
 11:00 P.M. DOORS CLOSE

**1990 NOMINATIONS FOR OFFICERS OF THE WEST PENN 99'ERS ARE.....**

<b>PRESIDENT</b>	- MICKEY SCHMITT	<b>VICE PRESIDENT</b>	- SCOTT COLEMAN
<b>REC. SECRETARY</b>	- FRANK ZIC	<b>CORR. SECRETARY</b>	- MIKE SEALY
<b>LIBRARIAN</b>	- BOB SADUSKY	<b>TREASURER</b>	- LYNN GARDNER

ADDITIONAL NOMINATIONS FROM THE FLOOR WILL BE MADE AT THE OCTOBER MEETING.  
 YOU WILL HAVE AN OPPORTUNITY TO VOTE (IF YOU'RE A FULL MEMBER [\$15. PAID FOR  
 1990]) DURING THE NOVEMBER MEETING FOR THE FULL SLATE OF CANDIDATES.

**MEETING HIGHLIGHTS FOR THIS MONTH**

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LATEST T. I. NEWS AND SOFTWARE DISCOUNTS  
 PREMIER RELEASES BY MS EXPRESS SOFTWARE  
 NOMINATIONS FOR CLUB OFFICIERS FOR 1991  
 "LATEST NEWS CONCERNING OUR NEWSLETTER"  
 "COLUMN ATTACK" DEMO BY FRANK N. ZIC  
 "KARATE CHALLENGE" DEMO BY FRANK N. ZIC

**RENEW YOUR MEMBERSHIP DUES!**

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

I just finished three days of frustration getting a bug out of a Pascal program and I would like to pass along the solution.

First the problem; I wanted to do some error trapping in a program that I made and use. In Pascal if you enter a wrong file name it will cause the entire program to "bomb" and take you back to the command line. I wanted to error trap this so that I could re-enter a correct file name without the program bombing. In order to do this one can disable the I/O checking of the compiler and then you check the I/O in the program. To do this one issues the compiler directive {\$I-} and {\$I+}; the first disables the I/O checking and the second enables the I/O checking.

Let me show you a segment of BAD code to do this;

```
Repeat
  {$I-}
  Reset(f, S1);
  Result:=IOresult;
  {$I+}
  If Result<>0 then
    Begin
      Writeln('This is a bad file name');
      Write('Press enter to continue');
      Readln;
      Filename;
    End;
Until Result=0;
```

"Filename" is another procedure, outside the Repeat..Until loop, that allows for the input of a file name. What we are doing at "Filename" is leaving a Repeat...Until loop. What this action did was to cause the program to read the correct file twice not once.

Now the solution. Here is the correct code segment;

```
Repeat
  {$I-}
  Reset(f, S1);
  Result:=IOresult;
  {$I+}
  If Result<>0 then
    Begin
      Close(f);
      Writeln('This is a bad file name');
      Write('Enter correct name ');
      Readln(Fname);
      S1:=Concat('#5:', Fname);
    End;
Until Result=0;
```

With this code you stay in the Repeat..Until loop until you have made the correction and then the file will only be read once.

**MORAL;** In Pascal if you are in any kind of loop (For..Do, Repeat..Until or While..Not) STAY IN THE LOOP, do not leave for any reason. It is like HELL, you must stay until your time is up.

Through all eight of the previous articles I avoided mentioning the hardware because you need to know a little of how a printer works before you try building one (or repairing one). There is no order to the presentation of the next several articles on printer hardware.

Let's say that you were missing dots on your hardcopy and these dots were in a particular row, for this example lets say the top row. You have cleaned and inspected the head for bent, broken or binding print head wires. Disconnect the head from the logic/driver board and using a continuity meter (ohms meter), see that all of the coil readings (usually referenced to a common) are about equal. If you see that one reads either zero or extremely close to it or infinity (as in an open circuit), the head is damaged. You can replace it if the print head is available and does not constitute too large an investment (this based on what current printer replacement is) but my experience is that todays printer technology has brought the price of printers down and the price of print heads up. Strange, since each printer includes one when you purchase!

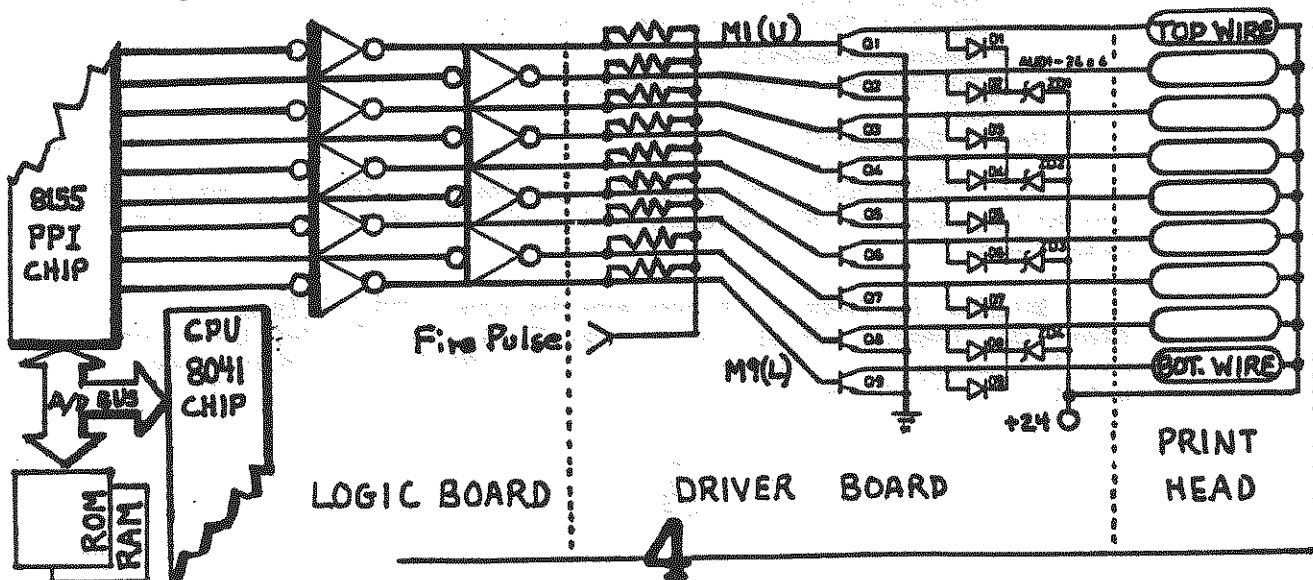
If you do decide to buy a print head, you would do well to check to see if the print head failure was due to a problem in the printer such as the circuit that drives/controls the firing of the print wires, the ribbon/paper paths, or the paper itself (too soft allowing wire penetration). If the driver/control logic is to blame you might see an immediate loss of the new print head before you can smell the smoke or hear the crackling.

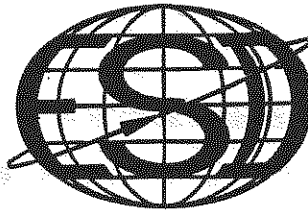
The circuit below is from the original TI serial/parallel printer and though your printer may not coincide you can reference this as a guide.

The nine head wires that make up the print head are driven by nine driver circuits on the driver circuit board. Please note that on many of the newer printers all circuitry is on the same circuit board. If one print wire coil was found to be shorted/open check the corresponding circuit in the driver section. Most of the driver circuits act like a switch providing a return or ground to the print wire coil. The diodes often found in the circuit are there to protect the driving device, a transistor or IC chip, from being damaged by the high voltage created by the collapsing field which occurs after each fire pulse is provided to the print wire coil.

The selection of which wires to fire is made by the CPU based on ROM info, which describes what this dot column will look like (unless in graphic mode), and this information is passed through inverter/drivers activate the specific driver transistor which when turned on provides a ground path for the selected print head wire which has been sitting there with a +24 volts applied. Study the text above and the drawing below and if you have questions see me at the meeting or call (412) 527-6656

ML JFW





Electronic Systems Development Corp.

September 27, 1990

John Willforth  
RD #1 BOX 73A  
Jeannette, PA 15644

E.S.D. Corp.  
P.O. Box 23805  
Washington, DC  
20026-3805

Dear John Willforth,

Thank you for inquiring about our new hard drive controller card for the TI-99\4A. I am very excited about this new product and it promises to be hot item.

We do not as of yet have a shipping date set. However, I think it will be fairly soon, especially with the Chicago fair coming up in November. The retail price for the controller is \$225.00 (Maryland residents must add appropriate sales tax).

The controller card is capable of controlling a maximum of four floppy drives ranging from 5.25" 90KB to 3.5" 1.44MB capacity, and four MFM hard disk drives, each of which may have up to 1024 cylinders and 8 heads. Any regular MFM hard disk will work with this controller, but I recommend the Seagate ST-251-1 40MB hard disk. This is a fast access drive allowing for ample storage in the TI community. And because there are no logical drive size limitations, as in the IBM arena, there will be no need to partition the drive.

Enclosed find one of our flyers. It too will provide you with some valuable information. Thank you for your interest in ESD's TI compatible products.

Sincerely,

Christopher Pratt  
ESD Computer Specialist  
TI Division

- \* A new revolutionary design using surface mount parts
- \* Controls up to 4 hard drives and 4 floppy drives
- \* Formats 90K 5 1/4" drives to 1.44MB 3 1/2" drives
- \* User friendly set-up and support software
- \* Designed by an electronics and computer corporation which supports its users
- \* Features an EPROM which allows future DSR upgrades to be loaded by disk
- \* Uses only Western Digital drive controller chip sets
- \* Two separate floppy drive connectors, one for internal drives and one for external drives, allow for easy installation
- \* 100% TI compatible
- \* Unique design eliminates heat problems on the card
- \* Set-up information stored in the EPROM eliminates dip switches on the board
- \* Special PATH command allows user to specify alternate path for DSK1. (i.e. HD1.GRAPHICS.TOOLS)
- \* Basic CALL routines add an extra dimension to TI Basic

\*\*\*\*\*  
\* PRESS RELEASE \*  
\*\*\*\*\*

8TH ANNUAL TEXAS INSTRUMENTS  
99/4A HOME COMPUTER FAIRE  
HELD IN THE CHICAGOLAND AREA!

THE CHICAGO TI INTERNATIONAL WORLD FAIRE WILL FEATURE OVER 60 BOOTHS OF VENDORS SELLING HARDWARE AND SOFTWARE FOR THE TI-99/4A HOME COMPUTER WHICH WAS ORPHANED BY TEXAS INSTRUMENTS IN 1983. ALSO A FULL DAY OF SEMINARS TO LEARN ABOUT ALL THE NEW PRODUCTS ON THE MARKET. THIS EVENT WILL BE HELD SATURDAY, NOVEMBER 3RD FROM 9 AM TO 6 PM AT THE HOLIDAY INN ROLLING MEADOWS (3505 ALGONQUIN RD). ADMISSION TO NON-MEMBERS OF THE CHICAGO AREA TI-99/4A USERS' GROUP IS \$4.

A SOCIAL MIXER WILL BE HELD FRIDAY, NOVEMBER 2ND, FROM 8 PM TO MIDNIGHT. ADMISSION WILL BE \$5.

AN AFTER-THE-FAIRE CELEBRATION DINNER WILL BE HELD SATURDAY, NOVEMBER 3RD, FROM 6 PM TO 9:30 PM. ADMISSION WILL BE \$15. (RESERVATIONS NECESSARY)

FOR MORE INFORMATION, CONTACT: HAL SHANAFIELD (BETWEEN 2 PM-10 PM) 708-864-8644 OR THE CHICAGO AREA TI USERS' GROUP HOT LINE 708-869-4304 OR THE BULLETIN BOARD SYSTEM 708-862-0182.

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MAKE IT A FULL WEEKEND BY ALSO ATTENDING THE MILWAUKEE TI FAIRE BEING HELD AT THE QUALITY INN AT 5311 S. HOWELL AVE. (ACROSS FROM MITCHELL FIELD AIRPORT) MILWAUKEE, WISC. THIS WILL BE SUNDAY, NOVEMBER 4TH FROM 9 AM TO 5 PM. ADMISSION IS \$2 (ADVANCE TICKETS \$1).

FOR MORE INFORMATION CONTACT: GENE HITZ (414-535-0133)

How to program 25 series eproms when your programmer only does 27xx.  
By Dan Eicher

One problem I have come upon many times is the need to duplicate or modify 25 series eproms. These are used in TI disk controllers, TI rs-232 and are used in the console to store part of the operating system code. Only TI used the 25 series eproms - the rest of the world including Corcomp and Myarc all use 27 series eproms in their equipment. One unfortunate result of all this is that the commonly available eprom programmers are only designed to "burn" 27 series eproms. This leaves the TI hardware hacker in a world of hurt unless he or she has: 1. The Mechratronic eprom programmer or 2. Builds the daughter board described in this article.

I present to you in this figure the pin configuration of both the 27 and 25 series eproms:

A7=	o V	=Vcc	A7=	o V	=Vcc	A7=	o V	=Vcc	A7=	o V	=Vcc
A6=		=A8	A6=		=A8	A6=		=A8	A6=		=A8
A5=		=A9	A5=		=A9	A5=		=A9	A5=		=A9
A4=		=Vpp	A4=		=A11	A4=		=Vpp	A4=		=Vpp
A3=	2	=!G	A3=	2	=!G/Vpp	A3=	2	=CS	A3=	2	=PGRM
A2=	7	=A10	A2=	7	=A10	A2=	5	=A10	A2=	5	=A1
A1=	1	=!E	A1=	3	=!E	A1=	1	=PGRM	A1=	3	=A1
A0=	6	=Q8	A0=	2	=Q8	A0=	6	=Q8	A0=	2	=Q8
Q1=		=Q7	Q1=		=Q7	Q1=		=Q7	Q1=		=Q7
Q2=		=Q6	Q2=		=Q6	Q2=		=Q6	Q2=		=Q6
Q3=		=Q5	Q3=		=Q5	Q3=		=Q5	Q3=		=Q5
GND=		=Q4	GND=		=Q4	GND=		=Q4	GND=		=Q4

If you build a daughter board you can tell your eprom programmer that you are going to program a 2732 and then place your 2532 in the "carrier". Then put the daughter board containing your 2532 in the programmer, select the voltage level at 25 volts and then burn away.

You will need the following parts.

1. A 24 pin ZIF <Zero insertion force socket>
2. A 24 pin wirewrap socket. RS# 276-1983
3. A wire wrap protoboard. RS# 276-148
4. Electrical tape or heat shrink tubing.

=	1	V	24	=
=	2		23	=
=	3		22	=
=	4		21	=
=	5		20	=
=	6		19	=
=	7		18	=
=	8		17	=
=	9		16	=
=	10		15	=
=	11		14	=
=	12		13	=

Take the wire wrap socket move pin 18 to 21  
pin 19 to 19  
move pin 20 to 18  
move pin 21 to 20

The right side should look something like this.



TI states in their 9900 Family Systems Design book - 2532 EPROM

- \* 4096x8 Organization
- \* Single + 5v Power Supply
- \* Pin Compatible with all 8K & 16K EPROMS
- \* Plug in Compatible with the TMS 4723 32K ROM
- \* Static Operation\* Interchangeable with Intel 2716

This project was devised by Tom Spillane of Dijit for his own use, and neither the author take any responsibility for damages arising from this project.

