

C for yourself
Part 3 continued
from June, page 9.

much like CALL HCHAR in XB. the only difference is that you must supply the fourth argument (number of times to repeat character) even if it is one as in this case.

Then we print a centered line of text containing an even number of characters for comparison. The last locate statement positions the cursor at the bottom of the screen for printing the exit rerun? message when the program ends.

The # include compiler directive tells the computer to deal with the text in the file STRINGFNS as if it were right here in this program. The file STRINGFNS contains the code for strcpy() and strcat() as well for other functions which we don't use. Since the code for strcpy() and strcat() will be compiled when we compile our program we do not need extern statements for these functions.

While this program works, it leaves much to be desired. We really need a program that will let us enter the text we want to center. Also the program would be improved if we could write the character redefinition statements directly to a DV80 file so that they be used directly in a C 99

program without copying from the screen and typing.

We'll look at how we can make these improvements in future articles. C YOU next time. In future articles, we'll also look at writing a function comparable to CALL CHRAT from XB.

Users groups may reproduce this article provided that they acknowledge the author and indicate that the article appeared originally in the West Penn 99'ers' Newsletter. N.R.

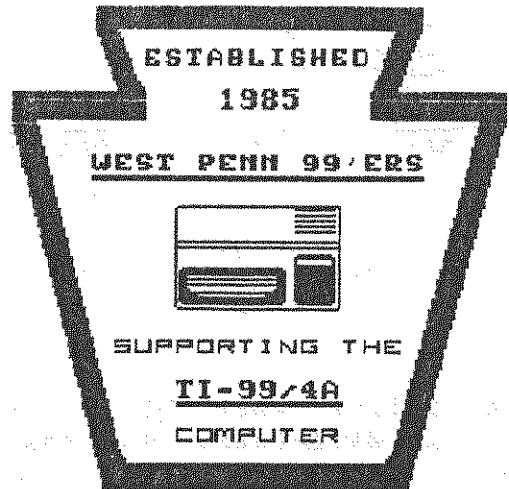
Question! Have you recently purchased a piece of hardware or software that hasn't come up to your expectations- or on the other hand, impressed you with its performance? Send me a letter telling me all about it, so I can put it in the newsletter. Perhaps you've modified your TI or interfaced it with some unique or useful hardware. Send me your HOW-TO-DO-IT story.

If you don't get everything you want, think of the things you don't get that you don't want. He who has a thing to sell and goes and whispers it in a well, is not so apt to get the dollars as he who climbs a tree and H O L L E R S .

I read in a Newsletter that I should beware of Programers that carry screw drivers. Pittsburg'ers are getting a temporary tax, those that have TI-99/4A are exempt .

WEST PENN 99'ERS CLUB INFO

Next Meeting Date: July 15, 1997
 Meeting Location: Penns Woods Civic Association
 Just off Route 30
 N. Huntingdon, Pa
 Time of Meeting: 7: P.M.



GENERAL ITINERARY OF OUR CLUB'S MEETING

6:45 P.M. Doors Open
 7:00 P.M. Genrral Meeting
 7:45 P.M. Demos and New Info
 8:45 P.M. Questions and Answers
 9:30 P.M. One on One Help
 10:00 P.M. Socializing
 10:00 P.M. Doors Close

MEETING HIGHLIGHTS FOR THIS MONTH

PAGE PRO TEMPLATES.....Demo by Paul Brock
 PARSEC.....Demo by Paul Brock
 BEYOND PARSEC.....Demo by Paul Brock
 Open Interest.....Demo by Anyone
 Open Intrest.....Demo by Anyone

LIST OF WEST PENN OFFICERS FOR 1997

President:	Paul Brock	412-478-2754
Vice-President:	Norm Rokke	614-264-6442
Treasurer:	Ed Mandich	412-824-5566
Recording Secretary:	Paul Brock	412-478-2754
Corresponding Secretary:	Paul Brock	412-478-2754
Librarian:	Mickey Cendroski	412-265-5201
Newsletter Editor:	Paul Brock	412-478-2754
Assistant Editor:	Paul Brock	412-478-2754

The West Penn 99'ers Users Group is a Non-Profit organization, dedicated to encouraging the continued use of the TI-99/4A home computer.

Our Membership Fee is:

- * \$15.00 per year for an INDIVIDUAL / FAMILY membership.
- * \$10.00 per year for a NEWSLETTER ONLY membership.

Those having Full memberships are entitled to the many extra benefits our club has to offer.

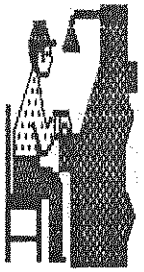
Some of those benefits are:

- * Getting to meet some of the nicest people.
- * Demos of the latest TI-99/4A software.
- * Free copying of our West Penn 99'ers Disk Library.
- * Up date of T.I. news, Local, National, International.
- * One on one help / Problem solving.
- * Participation in our Module Lending Library.
- * Participation in our Video Lending Library.
- * Ribbon re-inking- for just \$1.00 per ribbon.
- * Various Computer supplies - at a substantial savings.
- * Ability to trade or sell computer equipment, or electronics.
- * Help on getting equipment fixed.

We meet the third Tuesday of each month at the PENNS WOODS CIVIC ASSOCIATION in North Huntingdon, PA. at 7:00 P.M.

If you can't make it to our meetings...at least become a Newsletter member - and enjoy our NEWSLETTER FORMAT- done entirely on a TI-99/4A computer.

SEE PAGE 10 FOR OUR WEST PENN MEMBURSHIP APPLICATION.



FOR THE RECORD BY PAUL BROCK JUNE MINUTES



I most apologize for the minutes of the ~~MEETING~~ for June, I lost my notes and have to rely on my memory (ha,ha). It has been a few days and I am at a loss for what went on at the meeting. We had a nice turn out.

There was no corrections for the June meeting. The June min. will stand as read.

The Vice President was in touch with W. C. White from Texas. He could not make this meeting, but will be looking forward to a future meeting. It seems that he is still interested in joining the WP.99'ers.

We had a good Treasure's report, we also got some more 5 1/4 disks OSDD. We are well stocked. Mickey spoke of the library. We will have more information at the next meeting. I really wanted a treasure report and kept asking ED for a library report. I think that I had everyone well confused. We also had a surprise mystery guest. If any one can help me remember I will report on it next month.

Art was not present so there wasn't any inking done. We had coffee and both TI systems were running. The disk library was being used.

We had discussed the possibility of three different T-shirts for the raffle prizes. Norm said that they had three different logos and were pretty nice.

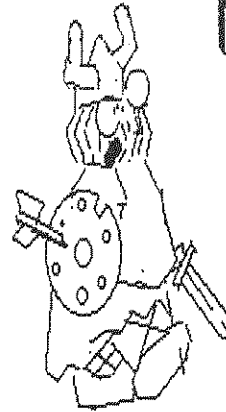
The demo of Parsec and Beyond Parsec sparked some interest because I didn't use joy sticks. Because of the time I will demo these again.

Some time something old is new.



Until then my QUILL has run out of ink!

See you on the 15th of JULY



MESSAGE FROM THE PRESIDENT & EDITOR

I am hoping that everyone receives the newsletter on time. There seems to be so many things to do and so little time to do them. I came home from the meeting, put the equipment away (just piled it in one corner). Then in the morning I get up and I have some chores to do around the house one thing right after the other, The next time I get to use the computer it is the end of the month. Is this just my problem or am I normal. It seems like there is only 4 hours in the day. I can't get anything accomplished. Therefore I must apologize if the newsletter is not on time. The faster I go the behinder I get.

I received a few articles for this month from Lew King. Thanks to the fine efforts of Ed Mandich, we now have another monitor for our equipment. Ed went out of his way to meet with Lew and pick up the monitor.

RIGHT JUSTIFIED

from Pug Peripheral
March/April 1995

Here is an interesting thing that has been added to Funnelweb 5.01.

For those of you who want to print out our documents (text files) using the editor and still would like to have them RIGHT JUSTIFIED (all the columns line up at the right margin) then this is for you.

Type your text the way you normally do using word-wrap mode. When you have finished your paragraphs, just go to the first word of each paragraph and press insert (FCTN 2). Then press CTRL R and watch what happens. The Funnelweb editor will put in spaces and fill each line until your right margins are all justified. This is really neat, as Charlie Good would say. Me too!!!

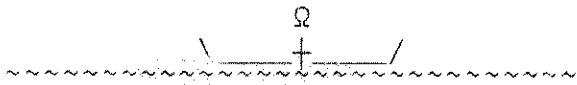
CONTINUED Page 9.....

HAPPY BIRTHDAY!

TI'er where ever you are!

A WORLD CRUISE in a ROWBOAT

Well, that's what it seemed like at first. (no pun intended)



Lets go back to the Sep 96 meeting on one of those rare occasions when I had Tuesday off work and was able to attend. At that time two things transpired. 1. I had promised a report on Term-80, and 2. The lady from the Cheswick Christian School (believe Eunice Williams was her name) issued a challenge. She stated that you can not use the TI on the internet.

As you may recall, Term-80 was reviewed in the Dec 1995 issue of MICROpendium by Dr. Charles Good. This is what prompted my ordering of the program. once I got a modem and a internet connection. At the time of writing, Jeff Brown, the author was only fifeteen years old. It is written in 100% TMS9900 assembly language.

Term-80 is a rather quirky program. It can work well, work bad, or not work at all. If you change configurations within the program with FCTN 4 and 5, then it is almost guarenteed not to work well...sometimes. Also running C_MAINCFG to permantly configure options in the program more than three times on any one disk will render the program inoperative. Despite these problems, it is the only terminal program that will work on my TI. This may be due to some idiosyncrrasy in my RS232 card. One user stated that it is the way you hold your tongue when the program is booting up that determines it's success or failure. This explanation is as logical as any I have heard.

What about those characters that are three pixels wide. Are

they hard to read? Yes, very hard to read. Those using a composit monitor or TV will almost be forced to to use a forty or sixty four column character set. By using a VGA monitor with the text set to black on a light background, the eighty column character set is mostly easy to read. Even with the VGA, some characters such as the tilde ~ and the at sign @, used in e-mail and WWW addresses are hard to decipher.

Term-80 also has some other exciting challanges. Such as ctrl-fctn-shift-6 for ASCII file transfers. Four keys at once may seem awkward at first, but is really easy to do with two people on the keyboard.

Now that we have the terminal program up and running, can we connect our TI to the internet? No! At the present time the TI can not connect directly to the internet. However many on line services, free nets, librarys, and others provide for a text based connection to their servers. Some are a menu driven interface familiar to all TI users, and others are a Unix command line interface. In all cases the TI is connected as a terminal, utilizing the power of the server it is connected to.

Unix, probably the worlds most powerful operating system, is the backbone of the internet. Whatever type of interface you use, either menu or graphical, all your choices are interpreted and sent out as Unix commands. As in basic, this slows down the process somewhat.

The internet provider I use is the Beaver County Freenet. As the name implies, after a small initial fee, the service is free. Of

WP 99ers Continued on Page 5

course we all pay for this in the form of taxes, so not to take advantage of it is a waste of our own tax dollars. This type of service or one similar is available in most areas. Though not well advertized, you may have to do some investigating to find one. My provider is a Unix command line type of operation. The disadvantage is that a few Unix commands must be learned. But this is not hard to learn. The advantage is speed. Lots of speed. The TI operating under these conditions can greatly outrun a new Pentium computer using a graphical interface with a commercial on line service. Don't believe that?...try it.

How fast can we connect the TI? 1200 baud? 2400 baud? Guess again. I regularly connect at 14.4k bps. Tim Tesch of S&T Software states that TI's can connect at 38,400 bps just fine when hardware hand shaking is used. This requires the proper serial cable and software.

Now that we are on the internet, what can we find? Anything and everything. Need help with the garden? It's there. Your microwave oven quit working? Yep, information on that too. On and on, everything you could think of and a whole lot more.

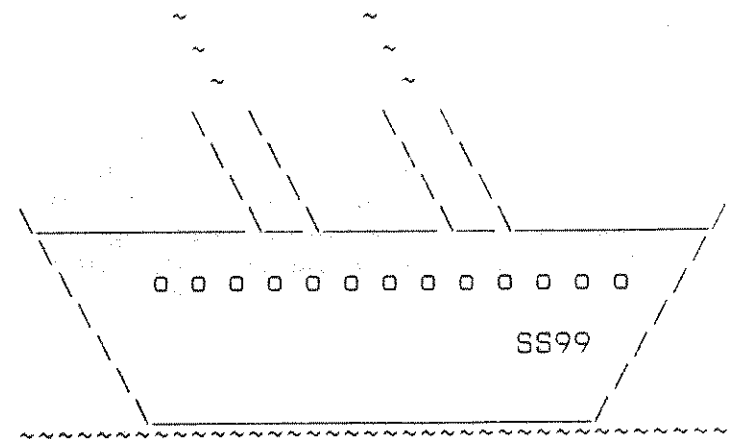
It becomes aparent very quickly how popular our old TI still is. There are so many web sites dedicated to the TI from TI'ers around the world. So where do you start? www.io.com/~jkoloen/ is a excellent place to start. This is MICROpendiums home page. Aside from all the information there, are a lot of links to other TI web sites. These sites yeald even more links to other sites. The chain of links seems almost endless. Only a retired person would have enough time to visit them all.

Of special interest is the TI list server. This is a automatic mailing list sponsored by Tom Wills of the Southwest 99ers. There are

over one hundred subscribers to this list. A message posted by any one subscriber gets sent to everyone on the list. There are many messages daily, most all dealing with some aspect of the TI or Geneve. New web sites, new products, questions and answers, all the latest news is there on the list. If you want to subscribe just send a email to Majordomo@TheRiver.com. Leave the subject line blank, in the body of the message type subscribe ti99. Unless you are a Commodore user or something like that, you will receive a message saying Welcome to the ti99 mailing list. At this point you are a subscriber and can read all the messages and post your own questions and comments.

With prices of 14.4 external modems down to \$39.95 or less, much less for a used one, and freenet internet connections, there should be little reason why most TIers could not use the internet. That is IF they want to. Still have an older 1200 or 2400 baud modem? Don't worry, it will probably work OK. just slower.

Now we are steaming along full speed ahead with the TI99/4A.



As usual, any questions or comments concerning this or any TI related subject are welcome. You can contact me at...

Lew King
PO Box 144
Industry, pa. 15052-0144
412-643-4791
E-mail kingt@rams1.rasd.k12.pa.us

The following came from Brian Tristan Williams, a TI user from South Africa. This message was posted after a round of discussions on the TI video process. The original source is unknown.

>From Sprites to the TMS34010 Graphics System Processor

I lot of people, when they think of TI and graphics, think of the 9918 and sprites (the term "sprites", a greek fairy, was coined by one of the 9918's definers). Some people have asked about why the 34010 did not have sprites, and my answer is that the 34010 was designed to handle many more "sprites" and with more capability than the 9918 ever could, but it does them differently. It so happens I was one of the designers of the 9918 and I was in charge of the definition of the 34010 -- and yes there is a connection. Below is that story.

Perhaps the most outstanding feature of the TMS9918 and 9928 (the 9928 was digitally identical to the 9918 but it had different analog outputs) VDP's developed in 1977-78 were the sprites. The sprite concept meant that one could move an object around the screen by merely changing the X and Y coordinate. The '18 was designed in the days when the microprocessor's processing power was very limited and thus "bit-bltng", the bit aligned movement of pixel arrays, was not practical.

While sprites were great for games (the 9928/18 were used in Colecovision, TI's home computer, the Japanese home computer standard MS/X, plus a vast number of consumer video products), they have their limitations. For every sprite to be displayed on a given line there had to be a set of hardware which included shift registers, color latches, and counters. The 9918/28 had sprite pre-processing logic (that I designed) that sorted through a list of 32 sprites to show those sprites that would appear on a given line AND kept track of priority (who was on top of who), but due to hardware limitations only 4 sets of display hardware existed. Also, limits on the amount of hardware meant that a given sprite could only be 1 color and the size of the sprites were limited to 16 pixels wide (this could be magnified by 2). To have more colors per sprite would mean more shift registers and to have wider sprites would mean longer (bigger) shift registers.

On top of the hardware requirements of sprites, there were bandwidth issues as well. Sorting through the list of sprites consumed a number of the few available memory cycles. If the sprites where bigger or had more colors there would not have been enough bandwidth to support over the 9918's 8-bit bus. Did you know why the 9918 never supported full color bitmapping? - it was because there was not enough memory bandwidth available.

After the 9918, I went off to architect the TMS9995 and TMS99000 16-bit microprocessors for the next 3 years -- they were well designed chips but were late and not well marketed (oh well). In late 1981 I was considering what I wanted to do next, when an application group from TI in England claimed they could do "bit-mapped sprites" (generate sprite like objects on a bitmapped display) IN SOFTWARE with a 9995. The 9995 has an 8-bit external bus and 16-bit internal bus with a 16-bit-wide 256-byte on-chip 333ns RAM which could be used to store tight loops (which made it a lot faster than an 8088 at some things).

Even so, I thought they must be wrong (heck, I new what they both could do), but I pulled out a calculator, pencil, and paper to see. The calculations showed that the 9995 could handle a few "bitmapped sprites". The reason was that while the 9918 would have to construct each sprite, line by line, which wasted lots of time and memory bandwidth, the 9995 could be much more

organized in moving "bitmapped sprites." -- for example, the 9918 had to constantly re-fetch information on each scan line to define a sprite, whereas the 9995 would work on each sprite from start to finish into the bitmapped frame buffer.

The nasty problem with the 9995 handling sprites was the bit alignment and field extracting and inserting problems in the moves, which severely restricted the number and size of sprites it could handle. The 9995 could not do everything that the 9918 could, BUT it could do some things that we would not have tried on the 9918 such as multicolored sprites and big spr

I then started to consider what could happen if one designed a processor that could handle the bit-aligned manipulations. I worked out that you could generate such sprite effects that it would be prohibitive to build a "hardware sprite chip" that could even come close. You could have more sprites on a line and each of them could be multi-color and not have the severe size limits that hardware imposed.

It turned out that some of the operations "bit-mapped sprites" required already had a name. Xerox had coined the term BitBlts (bit block transfers). In the same time frame as I was calculating "bitmapped sprite and what they could do, Xerox's Smalltalk graphics kernel article appeared in Byte (August 1981 pp 168-194). I was hooked, and the rest, as they say is history.

We had very lofty goals for this new chip concept. We wanted to go beyond what was already being done. Particularly there was NOTHING we could find written about COLOR -- so we started creating. The first problem to solve was "TRANSPARENCY", this was the concept that while you might define an object by a rectangle, there could be "holes" in the rectangle defined by place-saver "transparent" pixels (we had "transparency" on the 9918 and we were not going to give it up -- but note a number of the "new" graphics chips DON'T support transparency). We invented (or re-invented as some of these concepts may have first been thought of elsewhere but had not been published that we could find) arithmetic operators, plane masking, binary color expansion, and transparency. In the end, we called the new set of color options (including the boolean operations) PixBlts, since we thought of them as pixel rather than simply bit operations.

When our people were writing the MS-Windows driver, they needed a "hardware cursor" (essentially a "hardware sprite"). They used a technique I developed back when looking at bitmapped sprites. What you do is just before the cursor is to be displayed you save the image under where the cursor is to be drawn, then inhibit drawing until the lines having the cursor have been displayed, and then un-draw the cursor by replacing the saved image. This technique may sound on the surface wasteful (and it is, there are more efficient methods), but on a 640 by 480 display with a 16 by 16 cursor it only takes up about 3% of the total bandwidth (ie you could but up many cursors this way). And the net effect is just what you would get with a "hardware cursor" only you can support more of them with less restrictions than any chip I know of that has "hardware cursors" -- ah, but that is what the 34010 was about in the first place.

Karl Guttag

From zapf@vsb.informatik.uni-frankfurt.de Fri Jun 27 10:18:00 1997
Date: Fri, 27 Jun 1997 08:59:11 +0200
From: Michael Zapf <zapf@vsb.informatik.uni-frankfurt.de>
Reply-To: ti99@TheRiver.com
To: ti99@TheRiver.com
Subject: TI99: Just to inform you...

At first I thought I didn't need to comment on this, but just to inform you:

The TCP/IP project is running. When we have significant progress, we'll info you, but I won't post a success message for every subroutine.

Just to contradict the impression that this project is one of those "that is begun but never finished".

If someone of you is interested in more news and probably willing to participate, just join my mailing list "tcpip99@vsb.informatik.uni-frankfurt.de". Send the message "subscribe tcpip" to "majordomo@vsb.informatik.uni-frankfurt.de".

Thank you for your attention.

Michael

--

Michael Zapf --- J.W.Goethe-Universitaet, Informatik (Comp. Sci.)
==> <http://www.uni-frankfurt.de/~zapf/> <===

TI/Geneve: ...tigen.html/tigene.html --- neu/new: spdump, monitor

NOTE: What this TCP/IP project means to us as TI users is that when the project is completed, the TI will be able to connect directly to the internet.

A TI Fest West at the Lubbock facility not only has us excited, but even people at Texas Instruments.

This is a good sign.

Tom Wills

* Tom Wills - President & TI99 List Server Moderator
* SouthWest Ninety Niners User Group, Tucson, AZ 85731
* Hosts of the International Fest West '98 - Lubbock
* <http://personal.riverusers.com/~twills/sw99ug.html>
* Internet E-Mail: twills@theriver.com

Competition For Mickey

For all of us, Mickey is probably the biggest Pepsi fan we know and it's hard for us to imagine that there could be a bigger Pepsi fan. Well, according to the May 28, 1997 Minneapolis Star Tribune, Mickey has some definite competition.



Associated Press

Pepsi generation

Heather Denman, 18, of Richland Center, Wis., has attached 7,000 Pepsi cans to her bedroom walls with duct tape and caulk. Her loyalty led to a trip to Los Angeles, where she watched Shaquille O'Neal and other athletes film a Pepsi commercial. Denman, who calls herself a "little bit wired," said, "My family wants me to get on caffeine-free Pepsi."

CONTINUED from Page 3

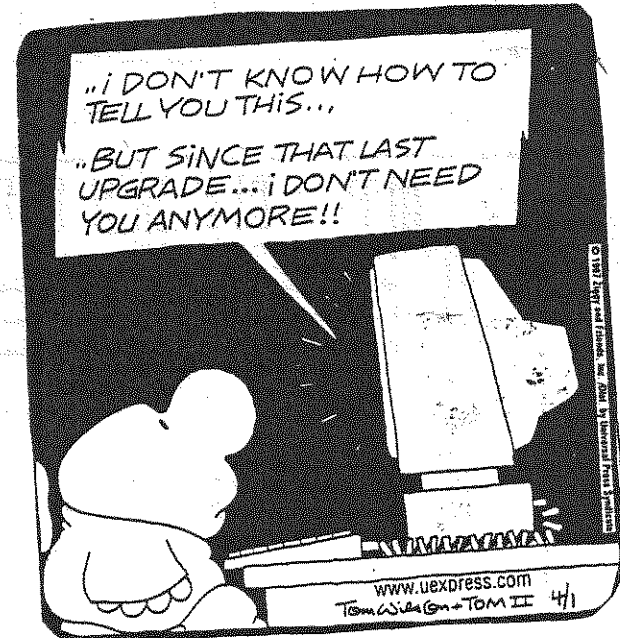
You can then use PF(print file) to print the text from the screen. You have to go through the formatter and worry about the 3 lines at the top and bottom of each page. What you see in the screen will be what you get. Of course, the IBM character set will also be printed so that you can get boxes or fancy Greek symbols or whatever.

You just have to try this! Oh YES, if you do not want to have the right justification on reformatting(using CTRL R) then use CTRL 2 instead. Try it and see the difference.

This effect (CTRL R) has saved me time and anguish in preparing this newsletter. It saves time because I do not have to go through the FORMATTER to get my text right justified. It saves the anguish of having to worry if the @ and & signs will print out properly. Now I just type and go back and reformat each paragraph with CTRL

R and then save the file using PF with C DSKx.TI-95x: C is to remove the control characters like line feed and carriage return. . . EDITOR.

SPECIAL THANKS-- this month to Norm Rokke and Lew King for their articles.



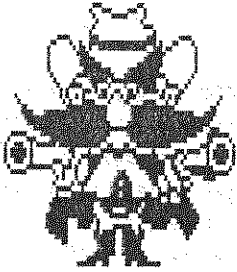
WEST PENN 99'ERS
C/O Paul A. Brock
P.O. Box 222
North Apollo PA 15673-9999



Newsletter Editors

Please note new address
and up date your mailing list

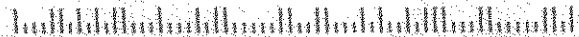
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using a TEXAS INSTRUMENTS TI-99/4A computer

NEXT

MEETING JULY 15th . 7:00 PM

WP MEMBERSHIP APPLICATION

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Address _____
City _____ State _____ Zip _____

Please check one

Newsletter membership
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