

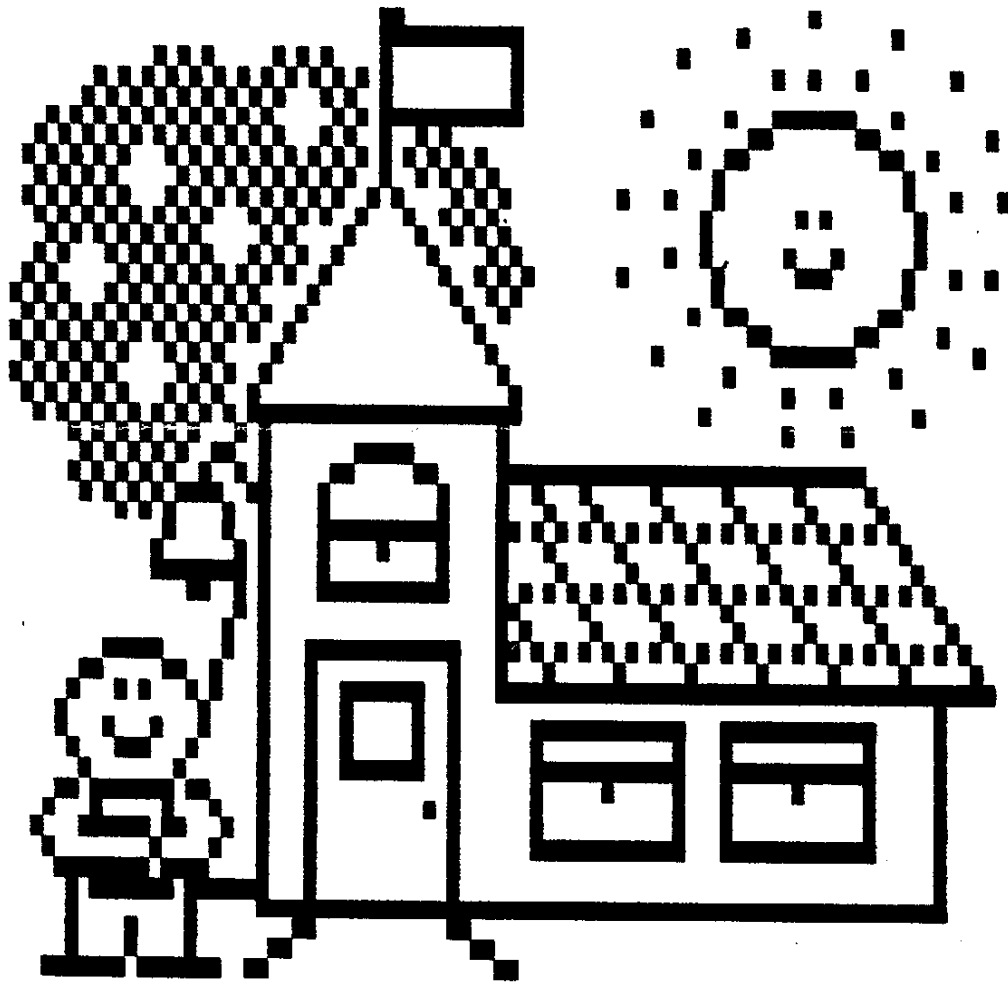


# THE PUG PERIPHERAL



THE MONTHLY NEWSLETTER OF THE  
PITTSBURGH USERS GROUP

SEPTEMBER 1992



GEN-TRI  
A review by  
Gary Kuehn

Some final notes.

In the article about word processing I voiced concern about not having enough disk space for Exec and an autoexec file. This was solved by transferring the Dictionary file to be used on DSK2. This cleared over 380 sectors on the main disk to be used for the above files plus room for the System/sys files. Plenty of space. A small change in the configure file then corrected the way the program looked for the dictionary. All is right with the world now.

There are so many fine features in the word processor, that to go into detail would bore both you dear reader, and myself. The best way to learn the program is to dig right in and try it for yourself. I have been recently learning Word Perfect, (you know, the other program) and the learning curve doesn't seem as bad for Gen-Tri, and you do have 3 program at once. Yes, I realize that Word Perfect can do scads of things that Gen-Tri can't do but how many people can use all of the Word-Perfect functions?

The disk manager is easy and does all that is promised in the manual. Switching between programs is a snap and once you do it a few times it becomes almost routine. Format a disk, use it in the word processor, jump to the terminal emulator and call your favorite BBS. It's as easy as 1,2,3.

After using the emulator I found one small deficiency, the TIBBS protocol was not included with the package. The XMODEM protocol works fine although but for some BBS's it would help to have the former.

Wrapping up, it is with great encouragement to say "If you own a Geneve then Gen-Tri should be on your disk in drive one. A new power in Geneve-land for one small price, under \$50 dollars. Try that in Big Blue land. Keep em coming!!!



## DISK DRIVES

By Jim Ness

Reprinted from the LA 99ers

It's funny (at least to me), but there are lots of people who seem to know lots of stuff about their computers, and all those tiny chips, and how the bits and bytes are handled. And there seems to be next to nobody that knows anything about disk drives, and how they work. Sensing this huge gap in man's knowledge, I decided to figure out what makes them tick.

The great thing about disk drives is that they can find files buried randomly within a huge field of data, and they do it pretty fast. Actually, they can do it so fast because it's not at all random.

The mechanical concept is not all that complicated. A small motor spins at 300 rpm (at least in this country, with it's 60 hz power supply), and there is a tiny stepping motor attached to a read/write head. A stepping motor is a common item in indexing applications, where you want a motor to move a precise distance and stop on a dime. The read/write head is just a smaller version of what you have on a cassette recorder.

The stepping motor "steps" the head from track to track on a diskette. The tracks are concentric circles, not a long spiral as you would have on an album.

All of this is ultimately controlled by the disk software provided with your computer. Usually this is located in ROM within the machine. In most machines, the ROM is only sophisticated enough to load in the official Disk Operating System (DOS) which is located on the disk in the drive when the machine is turned on. The DOS contains all the file handling software, etc, and because it is on the disk, it can be easily modified and/or updated as time goes by.

Our friends at TI decided to put the whole thing in ROM, which has a few bad side effects. First, it makes it hard to update and improve the software, which is located in the Disk Controller Card. Second, although the machine is a 64K machine, just like all the others, TI has set aside so much memory for special purposes, that there is only 32K left to play with. They set aside 8K for cartridges, 8K for disk drive, 8K for RS232/PIO card, 8K for the Operating System (can't complain about that one), and 8K for various interfaces (speech, sound, VDP). OK those are all

good applications to have, but if you don't use them, you still can't use that memory for other things.

Anyway, all of the controlling software for the TI99/4A is located in the ROM card, as I said. This software tells the step motor when to step to the next track, when to return to the beginning, etc.

There is no standard for how a computer keeps track of data. In the case of the TI, there is a directory of existing files, and a map of where they are located, at the beginning of each disk. These files are not necessarily all in complete groups. If you delete a 12 sector file from a disk, there is a 12 sector gap recorded in the map. Then if you add a 20 sector file, the software will put the first 12 sectors in the gap, and put the rest in the first available spot. When you ask for a file that is broken this way, you can hear the disk head scooting along to read each individual segment.

Because the disk drives themselves are pretty standard, there are a few things that don't change. For instance, there are 48 tracks per inch in most 5 1/4" systems (There is a new 96 TPI system around, not TI compatible). And most systems only use 35 or 40 of the available 48 tracks. There are either 9 or 18 sectors per track (single or double density). Each sector holds 256 bytes of data. And the standard design allows 250,000 bits per second to be written.

The following is a complete and, to the best of my knowledge, accurate description of the Disk Directory format and file storage allocation used by the TI/99A computer.

## SECTOR 0 - Volume Information Block

ADDRESS	CONTENTS
0000-0009	Disk name - up to 10 characters
000A-000B	Total number sectors on disk (>1068=360, >02D0=720, >05A0=1440)
000C	(#of sectors/trk) >09=5D >12=DD
000D-000F	"DSK" (>44534B)
0010	>50=Disk backup protected, >20=not protected
0011	# of tracks/side(>28=40, >23=35)

0012-0013 # sides/density (>0101-SS/SD,  
>0201-DS/SD,  
>0102-SS/DD, >0202-DS/DD

added to above.

000D # of (MAXRECSIZE) records/sector

0038-end Sector allocation bit map

000E-000F Number of sectors allocated to the file. (Disk Manager 2 will list one more than this number thereby including this sector in the sector count)

This is a sector-by-sector bit map of sector use; 1=sector used, 0=sector available. The first byte is for sectors 0 through 7, the second for sectors 8 through F, and so on. Within each byte, the bits correspond to the sectors from RIGHT to LEFT. For example, if byte >0038 contained >CF00 then the first byte equals 1100 1111. This means that sectors 0 through 3 are used, sectors 4 and 5 unused and sectors 6 and 7 are used.

0010 For memory-image program files and variable-length data files this contains the number of bytes used in the last disk sector. This is used to determine end of file.

Information for sector 168 starts at >0065. Therefore, if your disk is SS/SD, all addresses from >0065 to end should be FFFF if it was formatted by DISK MANAGER and has not been tampered with.

0011 MAXRECSIZE of data file  
>50-80 >FE-254 etc.

0012-0013 File record count, but with the second byte being the high-order byte of the value.

SECTOR 1 - Directory Link

001C-end Block Link (see note)

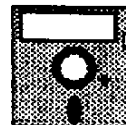
Each 16-bit word lists the sector number of the File Descriptor Record for an allocated file, in alphabetical order of the file names. The list is terminated by a word containing >0000; therefore, the maximum number of files per disk is 127 R(256/2)-1. Any addresses past >0000 will not catalog, but will still be accessible. If the first address is >0000, move all addresses four digits to the left. (eliminating this false address) then the disk will catalog. If the alphabetical order is corrupted (by a system crash during the name change, for instance), the binary search method used to locate files will be affected and files may become unavailable.

Note on file storage: Files are placed in the disk in first-come/first-served manner. The first file written will start at sector >0022, and each subsequent file will be placed after it. If the first file is deleted, a newer file will be written in the space it occupied. If this space isn't big enough, the file will be "fractured" and the remainder will be placed in the next available block of sectors. The block link map keeps track of the fracturing. Each block link is 3 bytes long. The value of the second digit of the second byte followed by the 2 digits of the first byte is the address of the first sector of this extent. The value of the 3rd byte followed by the 1st digit of the second byte is the number of additional sectors within this extent.

SECTOR >2 TO >21 - File Descriptor Records

Sectors 2 through >21 are reserved for File Descriptor Records and are allocated for file data only if no other available sectors exist. If more than 32 files are stored on a disk, additional File Descriptor Records will be allocated as needed, one sector at a time, from the general available sector pool.

ADDRESS	CONTENTS
0000-0009	File name up to 10 characters
000C	Filetype: >01-Program (memory image) >00-DIS-FIX, >80-DIS/VAR >82-INT/VAR File deletion protection invoked by Disk Manager 2 will be shown by >08





## HOW TO DO A PERSON TO PERSON DOWNLOAD

By Jeff Overton  
From PUNN

How many times have you wished that you could get a copy of a program from someone? You could go to their home and make a copy, or you could just wait until the next group meeting. But what if you needed that program yesterday?

If you own a modem you can get the program you need in a matter of minutes. You call the BBS and get programs all the time. Why not call a friend and get the program that you want?

I know what you're thinking. I have tried it before and it didn't work, but this time it did.

I will try to take you through step by step how it is done using TELCO 2.3.

The first thing you must do is call your friend, (on voice) and tell them what you want to do. Tell your friend what program you want. If that program has more than one file your friend should archive it, or you will have to transmit the files one at a time.

Each of you just set your terminal to HALF Duplex. If you don't do this neither of you will be able to see what you are typing. FULL Duplex sends or "echoes" the received characters BACK to the sender ONLY

if the receiving terminal "remote echo" is set on. Let me assure you this is not a good choice!! To go to HALF Duplex you will press FCTN N from the terminal screen. or use the Setup Terminal option screen and select option "I".

It is also a good idea to make your Setup Terminal option "C" a CR/LF. Doing this will make your text automatically advance a line at the end of your line width, or every time you hit "ENTER". This is a good way to signal the other user that you are through sending text. Hit enter two or three times and your text will roll up that many lines.

One of you will have to put your modem in Auto-Answer. To set a HAYES compatible modem to Auto-Answer, type "ATSO=1". This will answer on the first ring. The modem will retrain to non Auto-Answer after it is powered off.

You hang up and whoever is NOT in Auto-Answer calls the other modem. When his computer answers, you will see on your screen "CONNECT" or "CONNECT 1200" or "CONNECT 2400" depending on the baud rate. This is just like the way that you call the BBS. Now you can talk to each other with the keyboards and display screens.

If you are to receive the file you must press FCTN 4 to select a transfer protocol. Both computers must be using the same protocol (Xmodem or Ymodem) and this should already have been agreed upon. In our tests Ymodem is about three times as fast as Xmodem. On paper it should be 8 times as fast as Xmodem transfers 128 bytes at a time and Ymodem transfers 1024.

The person sending you the file must press FCTN 6 and select a transfer protocol. The sender must then enter the FILENAME exactly as it is stored on the disk. However, the receiver can name the file to be received anything, as long as it follows TI disk file header rules (not more than 10 characters, no blanks or periods—you know the rules.) Just type in the file name and it's automatic from then on.

I am sorry to say, if neither of you have Auto-Answer I don't know how it will work. If only one has Auto-Answer, it will still work.

With a little practice this will become as easy as file transfers to a BBS.

PITTSBURGH USERS' GROUP AUGUST MEETING  
 WHITEHALL COMMUNITY BUILDING  
 DATE - AUGUST 9, 1992  
 TIME - 6:30 PM.

Meeting was called to order by the President Gary Taylor. The question of copying files from the club library was discussed. Most of the club's income is derived from the sale of blank discs, disk holder files etc. Various proposals were discussed. The club in 1988 managed to survive because of the sales of discs from the library. The costs have been substantially reduced, and there have been some cost increases. Mainly the bulletin board, postage etc. Proposals were advanced from charging \$.40 per copy (the cost of the disc) to a flat fee of \$5.00 for copying as many discs as desired. After much discussion, the matter was tabled as an unresolved matter. Our expenses are \$75 per month - we have 45 members and realize about nine months operation on membership dues! The real problem in copying is getting the machine in to the club. A specific hour would be set aside for copying.

After much discussion, the matter was tabled as an unresolved matter! **THERE WILL BE FREE COPYING NEXT MONTH!**

Due to the lack of attendance during the summer months, June, July and August, it is under consideration to shut the club down during these months.

A general discussion ensued on the raffle (a break even or losing proposition).

Gary Taylor announced that his work schedule and working conditions are such that he will not be able to devote as much time to the club as he has done in the past.

Gary reviewed the mail received in the past couple months. During July, there was no meeting.

The "program demo" of the month was on "PAGE-PRO" by Frank Smith. He gave a very interesting demonstration of "POSTER MAKER" - "PRO-99". He demonstrated the various magnifications etc. he circulated several copies of his recent work - cars, house, tiger, and a large poster of Saddam Hussein. The Hussein poster was with a magnification of 8x and took 50 minutes to

print. "PIX PRO costs \$16. To add text to the pictures, "PAGE-PRO" costs \$25.

"WAR ZONE - II" will be presented at the next month's meeting in September.

Some posters advertising the "PUG". "HI, REMEMBER ME" ETC. The TI 99/4A Computer Group were made up by TOM PUHATCH. Meeting was adjourned at 7:45 PM.

GEORGE O. DICK - SECRETARY



WHY DSKU REFUSES TO BOOT FW  
 By Charles Good  
 Lima, Ohio User Group

DSKU v 4.2 was distributed by the Lima User Group with Funnelweb v 4.40 and the earlier v4.31. There is an item on the main DSKU menu that says "LOAD FW". It usually doesn't work. The reason is that DSKU searches the drive you specify for a file named UTIL1, which is what the main Funnelweb file used to be called. The main Funnelweb file is now called FW. It is easy to modify DSKU to boot file FW every time you ask DSKU to "LOAD FW". Here's how. Use Funnelweb's DISK REVIEW or other sector editor to search the third DSKU file (named either DW or DSKW for the ASCII text "UTIL1". You will find "DSK1.UTIL1". Change UTIL1 to "FW" and put blank spaces over the "IL1". Then change the screen display to Hex (CTRL/W and then CTRL/A if you are using Disk Review). This change shortens the length of the text the computer expects to find since DSK1.FW is shorter than DSK.UTIL1. DSKU will now properly boot Funnelweb when you select "LOAD FW" from DSKU's main menu.



### WAR ZONE II

Review by Tom Puhatch

War Zone II takes place in the year 2062 and you are ordered to conquer five planets for the Earth to colonize. You are supplied with three ships to do the job, but if you're good enough to pick up 50,000 points, you will be awarded another one by HQ. Each additional 25,000 points will get you another ship.

Each planet is divided into four areas and your mission has been arranged from least to most difficult.

The natives are nearly as advanced and have a definite outnumbering advantage. There are seven basic alien structures that you have to deal with. Pressing Fire will do two things. First, it will shoot a plasma ball straight forward. Second, it will release a bomb if your crosshairs are over a ground vehicle or building.

The graphics and sound effects are nice, but I feel that more variety should exist between levels for added interest.

You can use joystick one or two or the keyboard for play, but I found that the program has an error that causes the computer to lock up after using the keyboard and it becomes necessary to turn off the computer and reload to continue play after each game. The joysticks are smooth operating and error free. The device you use to press down will be the device you will be allowed to use during play.

The program keeps track of the top six scores and you are asked for your initials if you have a high score.

War Zone II is an option 5 assembly program with an Extended Basic loader. It will also load from TI Writer or Mini Memory. Written by Quinton Tormanen and distributed by Comproline.

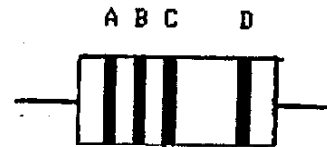


### YOU DON'T HAVE TO BE A TECHIE TO BE INQUISITIVE

Reprinted from the Kawartha Kronicle

Have you ever looked at the insides of your console, or your TV or VCR for that matter, and wondered what the colored bands on the resistors mean? Resistors? They're the little cylinders with wires sticking out of each end. Here's a quick look at the codes, not intended to be complete, but maybe enough to satisfy your curiosity.

Each resistor has at least three colored bands at one end (A,B and C in the figure below). These are used to identify the value of the resistor. A fourth band is sometimes used to indicate wattage rating. At the other end, you will usually see another band (D) colored gold or silver, indicating manufacturing tolerances.



Black	0	Green	5
Brown	1	Blue	6
Red	2	Violet	7
Orange	3	Gray	8
Yellow	4	White	9

Gold identifies a 5% tolerance.  
Silver indicates 10% tolerance.

Band A color gives the value of the first figure, band B that of the second, while band C tells how many zeros follow B. For example, if A is brown, B orange, and C red, the value of the resistor is 1300 ohms or 1.3k ohms.; a 27k (27000) ohms resistor would be coded red, violet and orange.

Dick Bulmer



## VAPORWARE, SLOWWARE NO WARE AT ALL

By Jim Peterson

When Texas Instruments was still selling the TI99/4A, and producing new peripherals and software, they tended to be extremely secretive about what they were working on - thus effectively discouraging any third party developers who would have faced financial disaster if TI came out with the same product.

After Black Friday, all such restraints disappeared. Third party hardware, software and publications began to appear. Others were announced but never did appear, thus the term "vaporware" was coined, although perhaps it did not originate in the TI world.

One of the foremost early examples of vaporware was the fabled Phoenix computer announced by CorComp, which never did arise from the ashes as did its equally mythological namesake.

And a more recent example was PRESS, the long awaited program that would make the TI as good as the I-word computer.

Sometimes the vaporous mists did finally blow away to reveal a new and valuable product such as Myarc's 9640, the Geneve - but then its promised support again became enveloped in the mist.

And so the TI world became very wary of any announcements of new products. I have been contacted a few times by hardware hackers and programmers who envision some great new product and want to know what the market might be, or just want to talk about it. The advice that I give is - do not even tell your mother about it until you are ready to ship!

Almost all new hardware products are still being announced long before they are ready to sell, although nowadays most of them do eventually come on the market. There are many reasons why they announce their product ahead of time, I am sure. Some developers want to test the market reaction before they commit time and money in the shrinking TI market. Some perhaps want to discourage competition, as Texas Instruments did. But most, I believe, just cannot wait to tell the world what they have accomplished, or expect to accomplish. I cannot blame them - they are doing some fantastic things with this long-obsolete

computer.

Once the Vaporware has become a reality and is actually on the market, all too often the Vaporware becomes slowware - the customer sends his order, his check is cashed, and he waits - and waits - and waits!

Again, there are probably many reasons. The person is in most cases working a full-time job or going to college, and marketing his product in his spare time. Perhaps he is swamped with orders - although, after 8 years of trying to sell to the TI community, I find that unlikely.

More likely, he is being swamped with questions and complaints regarding the products he has already shipped. Some of the customers try to call collect, and those who write seldom give enough information. If it is software, some of complaints are on the level of "it says to push 'any' key". If it is hardware, it probably requires some technical knowledge to install and any technoklutz - like me - is bound to need some help. And, with so many independent developers, compatibility problems are enormous.

Also, maybe the fellow has become aware of a serious bug that needs fixing, or has almost completed a major improvement, and is trying to find time to take care of that before filling any more orders.

I can sympathize with all of these reasons, and others. Those who are still developing hardware and software for the TI are doing it largely as a labor of love, and their remarkable knowledge and ingenuity could probably be more profitably directed toward a computer which has an expanding rather than decreasing user base. We owe them our gratitude. HOWEVER! -

ANY VENDOR WHO CANNOT SHIP HIS PRODUCT WITHIN TWO WEEKS OWES HIS CUSTOMER A POSTCARD EXPLAINING THE REASON FOR THE DELAY AND THE ESTIMATED DATE OF SHIPMENT!

And another postcard, with offer of refund, if that date is not met! Postcards cost 19 cents, and take a minute to write - no one is too busy to do that.

The same applies to items sent for repair - if they cannot be repaired in two weeks, or within whatever period is specified in advertising, the customer deserves a postcard!



# Asgard Mouse

The *Asgard Mouse* is a high-quality pointing device for the TI-99/4A and the Myarc Geneve 9640. Installed on any RS232 port in seconds - to use it simply load a compatible program and go! The mouse package includes a new and improved driver (version 2.0) for use with *TI-Artist* that automatically sets itself up, as well as demonstration programs and extensive documentation. We are so confident that you'll like this product it carries a money-back guarantee and a lifetime warranty. Requires an RS232 card, disk system & 32K. Order an *Asgard Mouse* before November 1, 1992 and receive a copy of *Classic Checkers* FREE.

**\$39.95**

*New reduced price!*

To order send a check or money order to:

**Asgard Software**  
P.O. Box 10306  
Rockville, MD 20849

Send for a free catalog

## Mouse Compatible Software

### Page Pro Page Composer

Designed from scratch for use with the *Asgard Mouse - Page Composer* allows you to create documents up to 999 pages in length, with up to 30 pictures of any size per page! Pages can be in a variety of resolutions (including 80 and 120 columns), and printed in landscape or portrait orientation. Pictures can be either transparent or opaque - merge pictures together for the first time! All "icon"-driven, select functions by clicking their picture - use scroll bars and arrows to move the window around, answer questions with a mouse click. Requires 32K, a disk system, and either XB or the E/A modules, and an Epson or compatible printer. *Page Pro 99* recommended.

**\$14.95**

### TI-Pei

This classic game of solitaire by Bill Reiss is a game of beauty and symmetry. The object is to remove like tiles from a pile two at a time. Tiles can only be removed from outside edges of the stack. Simple in concept, *TI-Pei* is a game that is very hard to master. This variation of Mahjongg will find all the tiles for you that can be removed, allows you to create your own stacks, has an "oops" key, and is compatible with the *Asgard Mouse*, a 9938 mouse or the keyboard. *TI Pei* requires expanded memory, a disk system, and either Extended BASIC or the Editor/Assembler module.

**\$14.95**

### Mouse Developers Package

Perfect for the programmer that wants to add mouse support to their programs, the *MDP* contains routines for Assembly, c99 and Fortran 99/9640 programmers. All routines are fully documented in the accompanying manual. Copious examples with highly commented source code are included both in the manual and on disk. All routines may be used in your own programs without license or royalties. The *Mouse Developers Package* requires an *Asgard Mouse*, either Extended BASIC or E/A. By Jim Reiss and Asgard Peripherals.

**\$14.95**

### Classic Checkers

*Classic Checkers* is an all-new implementation of the "Rodney Dangerfield of games" that allows you to play checkers against the computer, or two people to play against each other using the machine as a game board. Large, beautiful graphics and support for joysticks, keys and the *Asgard Mouse* make this a game all will enjoy. By Chris Bobbitt. Requires expanded memory, a disk system and either Extended BASIC or the Editor/Assembler modules.

**\$14.95**

Other *Asgard Mouse* compatible products available from Asgard Software include *Batch It 2.0*, *Y.A.P.P.* and *Page Pro Poster Maker*.

Shipping & Handling:

U.S. add \$3.00

Canada add \$4.00

Airmail add \$10.00

THE PUG MEETS  
 ON THE 2ND SUNDAY OF THE MONTH  
 AT WHITEHALL BOROUGH COMMUNITY ROOM  
 100 BOROUGH PARK DRIVE  
 WHITEHALL, PA.

CLASSES BEGIN AT 3PM  
 GENERAL MEETING BEGINS PROMPTLY AT 6PM

SEPT 1992						
S	M	T	W	T	F	S
6						
13	MEETING					
20						
27						

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Pres:	Gary Taylor	412-341-6874
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OCT 1992						
S	M	T	W	T	F	S
4						
11	MEETING					
18						
25						

**SCHEDULE**

3-6PM Questions, problems and answers  
 FREE COPYING  
 Help plan the year's program  
 6PM-? Meeting

DUES \$15/YR



PITTSBURGH TI USER'S GROUP  
 P.O. Box 8043  
 Pittsburgh, PA 15216



President's Page.....	1
Gen-Tri #5.....	2
Disk Drives.....	3
Person to Person Downloads.....	5
Meeting Minutes.....	6
Why DSKU (refuses to Boot FW).....	6
War Zone II a Review.....	7
Resistors.....	7
Vaporware by Jim Peterson.....	8

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PUG BBS  
 412-885-3483  
 300/1200/2400 BAUD  
 24 HOURS

